

**THE REPUBLIC OF KENYA
MINISTRY OF AGRICULTURE, LIVESTOCK AND
FISHERIES**



**THE SHIMONI-VANGA JOINT FISHERIES CO-MANAGEMENT
AREA PLAN**



**A FIVE-YEAR (2017 - 2021) CO-MANAGEMENT PLAN TO GUIDE THE
DEVELOPMENT OF SHIMONI-VANGA JOINT FISHERIES CO-
MANAGEMENT AREA**

JUNE 2017

ACKNOWLEDGEMENT

The development of this Shimoni-Vanga Joint Fisheries Co-Management Plan is a result of the contribution of several institutions and individuals whom the Consulting Team would wish to acknowledge. We acknowledge the financial support provided by the Government of Kenya through the Kenya Coastal Development Project (KCDP); we are grateful to its management team led by Dr. Jaqueline Uku, the Fisheries Component Manager, Mr. Kennedy Shikami, and Governance Sub- Component Leader, Ms. Mwaka Barabara, Fisheries Component Technical Coordinator, Mr. Collins Ndoro and other project administrators for their support. We also thank the State Department for Fisheries and the Blue Economy, currently Kenya Fisheries Service (national and regional offices) and the Kwale County Fisheries Department office for logistical arrangements and provision of invaluable information that helped in the development of the plan. Contributions from representatives of other government agencies, CBOs and NGOs through different fora and during stakeholders' survey is appreciated. We acknowledge the cooperation given by the seven BMUs in the area (Shimoni, Wasini, Mkwiro, Kibuyuni, Majoreni, Vanga and Jimbo) and Kwale BMU network that was evident during focus group discussions, meetings and other consultative fora. Special thanks go to members of the Shimoni-Vanga community who volunteered useful information and provided guidance during participatory mapping exercises.

The findings found herein are based on the Consulting Team's understanding, observation, analysis and interpretation of field data obtained based on the Terms of Reference provided by the contracting agency.

Technical support provided by COMRED Coastal Consulting, Mombasa

APPROVAL BY THE DIRECTOR-GENERAL AND THE COUNTY GOVERNMENT OF

KWALE

Pursuant to the provisions of Part V of the Fisheries Management and Development Act No. 35 of 2016, WE hereby:

DESIGNATE Shimoni-Vanga Joint Co-Management Area as an area in which the Beach Management Units of Shimoni-Vanga shall undertake fisheries co-management activities jointly with the Director General of Kenya Fisheries Service and County Government of Kwale.

DECLARE Shimoni-Vanga Joint Co-Management Area Plan as a plan specifying the fisheries management measures that are to be taken to ensure the sustainable utilization of fisheries resources within the Shimoni-Vanga Joint Co-Management Area,

Director-General,
Kenya Fisheries Service

Signature

Name.....

Date.....

County Executive Committee Member for Agriculture, Livestock and Fisheries
County Government of Kwale

Signature

Name.....

Date.....

FOREWARD

In the recent past, fisheries resource management has shifted from a centralized system to a participatory co-management approach. This is often seen as a strategy to strengthen and make fisheries management more effective by involving local resource users primarily represented by the Beach Management Units (BMUs). The Shimoni-Vanga Joint Co-Management Area Plan (JCMAP) confirms government commitment to shift from top-down to bottom-up management approach by empowering local communities to manage fisheries resources. In retrospect, the top-down approach was associated with myriad management challenges and failures that led to decline in fisheries resources not only in the Shimoni-Vanga area but also the entire Kenyan coast with dire socio-economic and ecological consequences. Further, this plan promotes community participation and involvement in the joint management of fisheries resources for present and posterity.

The Shimoni-Vanga Joint Co-Management Area extends to the edge of the 12 nautical miles limit of the territorial sea, giving fishers a wider area in which to co-manage, with county authorities, their fisheries resources so as to enhance their livelihoods. This means that fishers should expand their capacity and skills to benefit fully. The national and county governments, development partners and private sector will work together to achieve this.

The development of this joint co-management area plan (JCMAP) took a multidisciplinary approach that involved experts with diverse skills, knowledge and long-term experience in coastal and marine fisheries and socio-economic issues. I am confident that the contents herein are a true reflection of the reality on the ground, and that the JCMAP will be a means to improving fisheries management and the living standards of the dependent local communities.

I strongly believe that implementation of this plan will significantly reduce numerous management issues facing the Shimoni-Vanga fishery and I therefore urge stakeholders to work together to ensure its successful implementation for the benefit of the present and future generations.

H.E. The Governor,

County Government of Kwale

Signature

Date

LIST OF ACRONYMS

ANO	African Nature Organization
BMU	Beach Management Unit
BRD	By-Catch Reduction Device
CMA	Community Management Area
CFA	Community Forest Association
CWC	Community Wildlife Conservancies
CANCO	Community Action for Nature Conservation
CBD	Convention on Biological Diversity
CBO	Community Based Organization
CDF	County Department of Fisheries
CEC	County Executive Committee Member
CMS	Convention on Migratory Species
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COFI	FAO Committee on Fisheries
CSO	Civil Society Organization
EAWLS	East African Wild Life Society
EAF	Ecosystem Approach to Fisheries
ERA	Ecological Risk Assessment
ESD	Ecological Sustainable Development
FAD	Fish Aggregating Device
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
JCMA	Joint Co-Management Area
JCMAP	Joint Co-Management Area Plan
ICZM	Integrated Coastal Zone Management
KeFS	Kenya Fisheries Service
KMFRI	Kenya Marine and Fisheries Research Institute
KMMNP&R	Kisite Mpunguti Marine National Park and Reserve
MCS	Monitoring, Control and Surveillance
M & E	Monitoring and Evaluation
MPA	Marine Protected Area
NGO	Non-Governmental Organization
NLC	National Lands Commission
SDF & BE	State Department for Fisheries and the Blue Economy
SWIOFP	South West Indian Ocean Fisheries Project
TED	Turtle Excluder Device
UNDP-SGP	United Nations Development Program-Small Grants Program
WB	The World Bank
WWF	World Wildlife Fund

DEFINITIONS

1. Citation

This Co-Management Plan shall be cited as ‘Shimoni-Vanga Joint Co-Management Area Plan’ herein referred to as “The Joint Co-Management Area Plan”.

2. Interpretation

In this Management Plan, unless the context otherwise requires:

“Joint Co-Management Area” means an area co-managed by more than one BMU.

“BMU” means an organization of fishers, fish traders, boat owners, fish processors and other beach stakeholders who traditionally depend on fisheries activities for their livelihoods.

“By-law” means a rule or law established by an organization or community to regulate itself, as allowed or provided for by some higher authority.

“Co-management” means a partnership arrangement in which government and the legitimate interested parties in a fishery – in particular including fishing communities and others in the fisheries value chain - share the responsibility and authority for the management of a fishery.

“Monitoring, Control and Surveillance (MCS)” means a set of activities undertaken by the fishery enforcement system to ensure compliance with fishery regulations and to support fisheries management.

“Sea turtle” means any animal of the family Testudinae living in the aquatic environment and includes eggs and young thereof.

“Fishing operations” includes fishing, supply of provisions to fishing vessels, and the handling and processing of fish up to the time it is first landed.

“Fish landing site” means a point on the shore of any waters or coastline of which the Director General has, by notice in the Gazette, designated as a point to land fish.

“Closed Season” means a specified period of time closed for fishing.

“Fisher” means an individual who takes part in fishing.

“Director General” means a person appointed to the office in the public service of Director General of fisheries.

“Critical habitats” means areas that are crucial for the survival of fish and essential for their conservation including breeding and fish spawning sites.

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EXECUTIVE SUMMARY

Unsustainable exploitation of coastal and marine fisheries has long since become endemic in most parts of the world. Early management initiatives including top-down approach by governments have generally not been effective, and as such overfishing and degradation of ecosystems are still being experienced, worsened with the unprecedented impacts of climate change. One approach to improve fisheries management effectiveness in Kenya is the establishment of joint fisheries co-management areas (CMAs) and plans, where fishing activities within a co-management area are directly managed by local communities - represented by Beach Management Units (BMUs) in collaboration with county authorities. This arrangement is entrenched in the legal framework, specifically the Fisheries Management and Development Act No. 35 of 2016 as well as the Fisheries (BMU) Regulations, 2007. This co-management system adopts an ecosystem approach to fisheries (EAF) for long-term sustainability.

At the time of preparation of this plan, a total of 18 co-management areas (CMAs) and plans spread along the Kenyan coast were recorded. These include one joint co-management area (JCMA) comprising 14 BMUs in Malindi-Ungwana Bay, with an approved management plan for 2016-2021 (Government of Kenya, 2016). While sustainable fish production is yet to be achieved, this management approach is already believed to have strengthened community engagement, governance and compliance in fisheries resource management. The Shimoni-Vanga Fishery Joint Co-Management Area is situated on the southern coast of Kenya bordering with the united republic of Tanzania. The area is proposed to be jointly co-managed by seven BMUs, namely Shimoni, Wasini, Mkwiro, Kibuyuni, Majoreni, Vanga and Jimbo, in conjunction with Kwale County authorities. The joint CMA has the following three-fold objectives: i) To improve governance and management of Shimoni-Vanga Fishery; ii) To optimize social and economic benefits to the local communities from the sustainable use of the coastal and marine fisheries resources, and iii) To conserve the underlying ecological integrity of the Shimoni-Vanga Fishery.

The Shimoni-Vanga joint co-management area (JCMA) covers a total area of about 860 km², including existing village-level CMAs but excluding the Kisite-Mpunguti Marine National Park and Reserve (KMMNP&R) which is under the management of the Kenya Wildlife Service (KWS). The JCMA boundary extends to the outer edge of Kenya's territorial seas, 12 nautical miles offshore. In order to inform management actions for the area, a myriad of issues were identified through ecological risk assessment (ERA) process and other fora. Existing national fisheries management plans (Small-scale Purse Seine Fishery Management Plan, Lobster Fishery Management Plan, Marine Aquarium Fishery Management Plan, and Malindi-Ungwana Bay Area Fisheries Co-Management Plan) guided the development of appropriate management measures for the Shimoni-Vanga JCMA Plan. Priority issues ranging from ecological to socio-economic were identified. This culminated in formulation of management rules and designation of different management zones, such that socio-ecological concerns were primary factors in decision-making. Key management measures include catch and effort restrictions, protection of endangered species as well as temporal and spatial limitations for fishing activities. Implementation of the JCMA requires putting in place operational, management and control systems. Thus, different penalties corresponding to management rules have been formulated and incorporated into BMU by-laws. For effective implementation, a management structure is outlined herein that provides for the engagement of all key stakeholders responsible for implementation of the plan, and defines specific roles and responsibilities of BMUs, county and national governments and other stakeholders. Finally, a communication plan, monitoring and evaluation mechanism and conflict mechanism are put in place as critical implementation elements. The overall joint co-management area plan is reviewable every five years.

1 INTRODUCTION

Fisheries co-management approaches have been widely adopted internationally in response to the degradation of fisheries resources. The Kenya government in collaboration with civil society organizations and other development partners has, in the recent past, provided frameworks within which natural resources including fisheries, forests and wildlife can be co-managed. This is to improve compliance, promote community-led ecosystem management for enhanced human livelihoods, biodiversity conservation and sustainable fisheries.

Co-management tools, among them Beach Management Units (BMUs), Community Forest Associations (CFAs), and Community Wildlife Conservancies (CWCs) have been seen to improve democracy, transparency and accountability and are required to yield benefits to nature and people, particularly local communities. In this regard, a total of 15 BMU co-management areas (CMAs) plans, and 3 joint co-management area plans have been established along the Kenya coast mainly concentrated in Lamu and Kwale Counties. In the year 2016, The Northern Rangeland Trust (NRT) and the Nature Conservancy (TNC) spearheaded the development of six co-management area plans within Pate Marine Conservancy covering Kizingitini, Mtangawanda, Ndau, Tchundwa, Pate-Shanga (joint) and Faza-Siyu-Mbwajumwali (joint). Earlier in 2011, the East African Wild Life Society led the development of seven draft CMA plans (formally CCAs) in Kwale County covering Shimoni, Mkwiro, Wasini, Kibuyuni, Majoreni, Vanga and Jimbo. Others are Malindi-Ungwana Bay Joint Co-management Area plan (2016) that spreads across Kilifi and Tana River counties; Kuruwitu CMA plan (2017) in Kilifi County; Kiwayu (2016) CMA plan in Lamu County; and Munje (2015) and Mkunguni (2015) CMA plans, both in Kwale County. These CMAs plans cover natural ecosystems that provide important ecosystem services as well as harbour biodiversity and cultural values where local communities, through BMUs, manage in collaboration with national and county governments.

1.1 Geographical Location of the Shimoni-Vanga Area

The Shimoni-Vanga area lies in the south coast region of Kenya, Kwale County and borders the united republic of Tanzania as shown in Figure 1. The area is endowed with rich biodiversity and fisheries resources that provide important sources of livelihood and food security to the local communities (McClanahan et al., 2008). The Kisite-Mpunguti Marine National Park and Reserve (KMMNP&R), which is managed by the Kenya Wildlife Service (KWS), is situated within the larger co-management area and thus partially complements the co-management initiative. Seven (7) BMUs are located within the area, they are: Shimoni, Mkwiro, Wasini, Kibuyuni, Majoreni, Vanga and Jimbo.

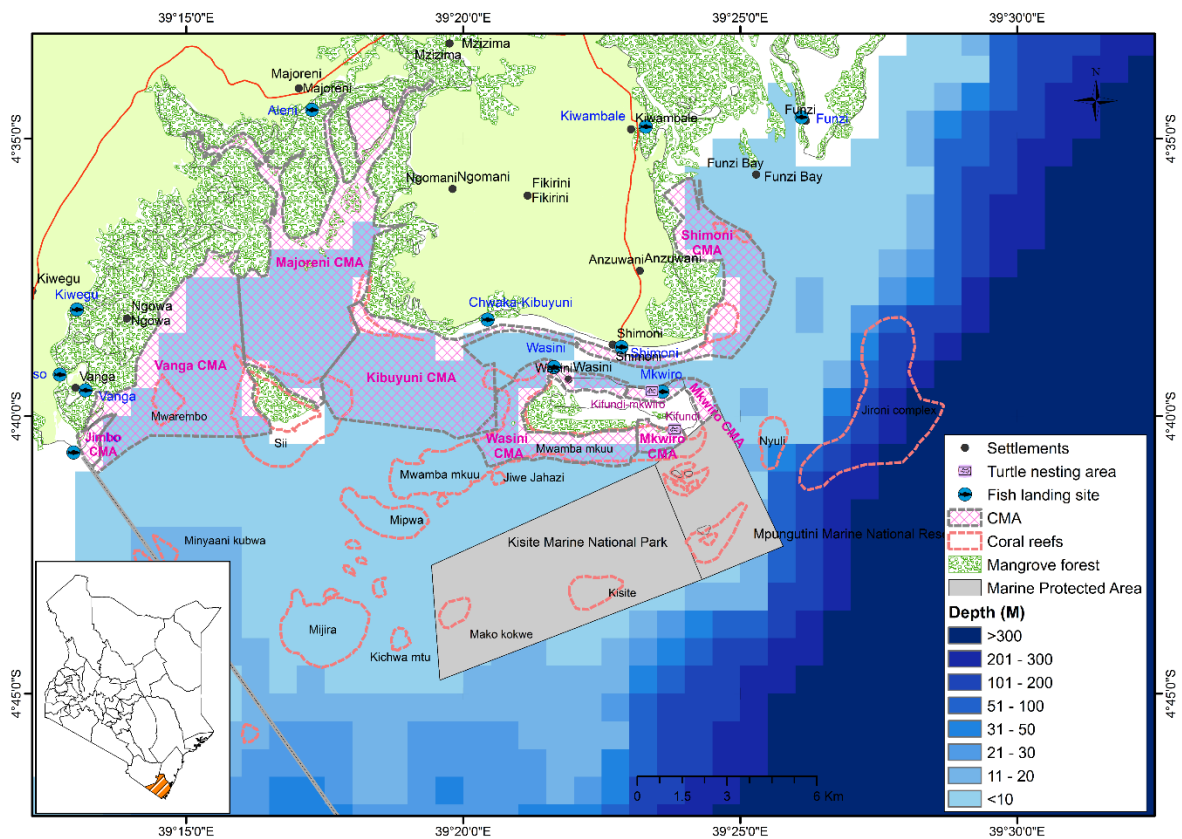


Figure 1. General area map showing the Shimoni-Vanga Area, fishing grounds and Community Management Areas of the respective BMUs in south coast Kenya.

1.2 History of Village based CMA development

Between 2010 and 2015, significant work was done towards the development of co-management plans for individual BMUs within the Shimoni-Vanga area. The work was led by number of civil society organizations including the East Africa Wildlife Society (EAWLS) in partnership with the Flora and Fauna International (FFI) which initiated work through development of Community Conservation Areas plans (CCAs) under the Darwin initiative project (2009-2012).

Draft CCAs plan were developed for Shimoni, Wasini, Mkwiro, Kibuyuni, Majoreni, Vanga and Jimbo in 2011. Management plans for Kibuyuni and Vanga were finalised in 2014 by EAWLS through funding from the UNDP-GEF SGP. Africa Nature Organization (ANO) with funding from UNDP GEF SGP also finalized the management plan for Wasini BMU in 2015. State Department of Fisheries (SDF) with support from KCDP, supported the upgrading of the initial draft management plans for Shimoni, Majoreni and Jimbo in 2014. Both Wasini and Kibuyuni BMUs are actively implementing their management plans. Mkwiro and Majoreni draft management plans are being finalised concurrently with this joint plan.

Initially, there was confusion in terminologies in the development of the co-management plans. Community Conserved Areas (CCAs) a term used and recognized under CBD was used to refer to areas under the BMUs which included both no-take and local multiple use management zones. However, CCAs does not appear in the Kenyan legislation and later, upon advice and direction from the State Department of Fisheries, the term Co-management areas (CMAs) was adopted and which is the term used in the *Beach Management Unit (BMU) Regulations, 2007*.

Against this background of work, the main outstanding need is to consider where fishers from the different BMUs are substantially sharing fishing grounds with neighbouring BMUs, and in line with that to develop *joint* co-management area (CMA) plans as appropriate, in line with the *Beach Management Unit (BMU) Regulations, 2007*.

1.3 Social and environmental conditions of Shimoni-Vanga Area

The populace within the Shimoni-Vanga area, comprising of about 18,000 people, mainly depend on farming, fishing, tourism and trade for their livelihood. There is livestock keeping in mainland while mixed farming is practiced throughout the entire area. Cash crop farming contributes 22% while livestock production contributes 18% of household incomes. A baseline study for this JCMAP identified a total of 6 types of livelihood sources. Fishing as a livelihood was the most common in all the 7 BMUs, with nearly 100% of the population in Mkwiro village dependent on fishing, followed by fish trading (25%). Small-scale fish processing was recorded in Kibuyuni, Majoreni and Shimoni BMUs. Boat tour operation and employment contributed the least in livelihood sources in the area.

Like any other tropical artisanal fishery, the Shimoni-Vanga is a multi-gear with a total of 2,632 fishermen. The number of fishers for each of the 7 villages is broken down as follows: Shimoni (420); Mkwiro (180); Wasini (150); Kibuyuni (370); Majoreni (252); Vanga (1100); and Jimbo (200). According to marine frame survey report 2016, a total of 2459 gears were recorded in the Shimoni-Vanga joint Co-management area, with the hand line (543 pieces) being the most common, followed by basket traps (720 pieces) while harpoon was the least used with only four (4) pieces. Other gears were monofilament (53 pieces), beach seine (18 pieces), cast net (44 pieces), foot fishers (12), hand gatherers (54), ring net (14 pieces), seine net (34 pieces), gill net (123 pieces), pointed stick (4 pieces), spear gun (56 pieces), long line (182 pieces) and reef seine (18 pieces). Among landing sites, Jimbo-Vanga area recorded the highest number of gears (1362 pieces) followed by Wasini-Mkwiro (416 pieces), Shimoni-Kibuyuni (397 pieces) and Majoreni (284), implying that most fishing effort was concentrated in the southern part of CMA. Illegal gears such as spear gun and beach seine were primarily recorded in Vanga-Jimbo and Majoreni respectively.

According to the baseline study, migrant fishers made up 15% of the total number of fishers in the area, and these mainly came from Vanga and Jimbo BMUs. Fisherwomen made up only 3% of the total and these were reported in Kibuyuni, Mkwiro and Wasini BMUs.

1.4 Problem Statement

The Shimoni-Vanga JCMS is endowed with diverse fisheries resources that include crustaceans (shrimps, lobsters and crabs), pelagic and demersal fishes, cephalopods (octopus, squids and cuttlefish) and other molluscs (e.g. sea cucumbers). The area also harbours important ecosystems that include mangrove forests, sea grasses, corals and the Uмба and Ramisi river estuaries. According to the baseline study results accompanying this work, the fishery resource is threatened by overfishing, persistent resource use conflicts especially in the shared fishing grounds, destructive fishing practices such as use of beach seines and the negative impacts of climate change. Further, economic returns are dwindling, school drop-out rate is high, drug use is on the rise and cultural values are under threat. In addition, several challenges face the demand and supply chain of fish production. Among them, fish stock sizes are unknown, poor fish handling, high post-harvest losses, fragmented fish markets, lack of credit access to fishers, unreliable accruing benefits to fishers and traders, and fish value addition is nearly non-existent.

1.5 Justification

Existing policy and legal frameworks provide an opportunity for the government and local communities through the BMUs to collaboratively develop fisheries co-management structures to address social, environmental and ecological issues in fisheries. Therefore, there is need to develop the Shimoni-Vanga Co-management Area Plan as a fisheries co-management approach to enable BMUs within the area develop focussed and targeted management measures to address the various challenges facing the fishery.

Although village based co-management plans exist, resource exploitation within the Shimoni-Vanga Area is largely without an integrated and well-coordinated management regime, resulting in negative ecological and social impacts. Several segmented past efforts have tried to address management challenges in the area with little success. Therefore, an integrated participatory approach is needed to improve the socio-economic wellbeing of user communities. Essentially, the Shimoni-Vanga Co-management Area Plan specifies fisheries management measures required for sustainable utilization of fisheries and aquatic resources.

1.6 Guiding principles

- i. Good governance (multi-level governance, Integrity and transparency, tenure rights)
- ii. Ecosystem approach (holistic approach to resource management)
- iii. Pro-poor
- iv. Precautionary approach (taking management measures based on best available information),
- v. Participatory (Public private partnership (PPP),
- vi. Sustainability and environmental integrity,
- vii. Subsidiarity (making and implementing decisions at the most relevant levels)
- viii. Equity (generational equity, fair access and use of resources, Pro-poor)

1.7 Management Objectives

- i. To improve governance and management of the fisheries resources of Shimoni-Vanga joint co-management area
- ii. To optimize social and economic benefits to the local communities from sustainable use of the coastal and marine resources;
- iii. To promote conservation of the fisheries resources and ecological integrity of the Shimoni-Vanga fishery

Several operational objectives, activities, indicators and outputs derived from the above management objectives are captured in the implementation matrix (Annex 1).

PART 1 SITUATION ANALYSIS

This part describes different conditions and processes fulfilled during co-management planning. These are policy, legal and institutional provisions, key issues highlight and above all stakeholder identification.

2 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORKS

The development and eventual implementation of Shimoni-Vanga Joint Co-Management Area Plan is in line with the national policies and laws of Kenya. This is in addition to multilateral agreements where Kenya is a signatory as described in the proceeding section.

2.1 National Policies

2.1.1 National Oceans and Fisheries Policy, 2008

The overall objective of this policy is “to enhance the fisheries sector’s contribution to wealth creation, increased employment for youth and women, food security, and revenue generation through effective private, public and community partnerships”.

2.1.2 Other Relevant National Policies and Strategies

These include the Forest Policy, The Wildlife Conservation and Management Policy, the Natural Resources Development and Management Policy, the Integrated Coastal Zone Management (ICZM) Policy, and Kenya Shoreline Management Strategy 2010.

2.2 National Laws

2.2.1 Constitution of Kenya 2010

Articles 10, 42 and 69 advocate for sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensures the equitable sharing of the accruing benefits. It also encourages public participation in the management, protection and conservation of the environment.

2.2.2 The Fisheries Management and Development Act No. 35 of 2016

The Act provides for the conservation, management and development of fisheries and other aquatic resources to enhance the livelihood of communities dependent on fishing. For proper management of fisheries resources, the Act provides for the Director General to impose *inter alia* management measures for the conservation and management of any fishery.

2.2.3 Fisheries (BMU) Regulations, 2007

In Part 2, Section 7 of the Fisheries (BMU) Regulations 2007, all BMUs are required to develop co-management plans for their respective co-management areas (CMAs). This ultimately promotes community-led ecosystem management for improved human livelihoods, biodiversity conservation, enhanced fisheries management, and ultimately strong fisheries governance.

2.2.4 County Government Act Cap 265, 2012

This Act of Parliament elaborates on the county government powers, functions and responsibilities. The Act clarifies how the county governments shall perform their constitutional mandate, which includes the implementation of specific government policies on natural resources and environmental conservation. This includes participatory development of spatial plans indicating the areas designated for conservation and recreation. Fisheries management being one of the devolved functions calls for

close co-operation between the national and county governments in the management of natural resources including fisheries.

2.2.5 Environmental Management and Coordination (Amendment) Act (EMCA), 2015

The Act establishes an appropriate legal and institutional framework for the management of the environment. Sections 54 and 55, provide for a consultative process for the development of management measures such as protection and conservation of environmental sensitive areas such as co-management areas along the coast as well as development of an integrated coastal zone management (ICZM) plan. The Act specifies that such a process should include the engagement of lead agencies and other stakeholders.

2.2.6 The Wildlife (Conservation and Management) Act, 2013

The Act provides for the conservation and management of wildlife in Kenya and establishes the Kenya Wildlife Service (KWS). It recognizes the participation of local communities in the conservation and management of wildlife through several sections. Section 33 allows for participatory development of an integrated wetland management plan while sections 36 and 44 allow for the creation of marine conservation areas with defined areas for fishing, protection and other purposes through a participatory process between KWS and dependent communities. Sections 70 and 72 of the Act also allow for dependent communities where protected areas have been established to benefit from wildlife in those areas.

2.2.7 Land Act, No. 28 of 2016

The Act mandates the National Land Commission (NLC) to take appropriate action to maintain public land that has endangered or endemic species of flora and fauna, critical habitats or protected areas and to identify ecologically sensitive areas that are within public lands. It further requires the Commission to undertake an inventory of all land-based natural resources, and reserve public land for any purposes, including environmental protection and conservation. Though, the role of NLC in fisheries co-management is not clear, its role in securing fish landing sites as public property is evident.

2.2.8 Forest Conservation and Management Act, No. 34 of 2016

The Act provides the legal framework for collaborative management of forest resources in the country including the coastal mangrove forests which constitute important fish habitat. Community participation is encouraged through community forest associations (CFAs).

2.2.9 Other Relevant National Acts

These include the Coast Development Authority Act (Cap 449), Science, Technology and innovation Act No. 28 of 2013 which establishes Kenya Marine and Fisheries Research Institute (KMFRI), Kenya Ports Authority Act Cap 391, Tourism Act Cap 383, the Maritime Zones Act Cap 371 of 1989, and the Intergovernmental Relations Act 2012.

2.3 Multilateral Agreements

These include among others the United Nations Convention on the Law of the Sea (UNCLOS, 1982), FAO Code of Conduct for Responsible Fisheries, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Ecological Sustainable Development (ESD), World Summit on Sustainable Development (WSSD, 2002), Convention on Biological Diversity (CBD), Convention on Migratory Species (CMS), Nairobi Convention (NC), the Ramsar Convention and other appropriate instruments.

2.4 Institutional Frameworks

The authority to implement the above national policies and laws largely rests in the following institutions: Kenya Fisheries Service, The State Department for Fisheries and the Blue Economy, County Government of Kwale, Kenya Marine and Fisheries Research Institute, National Environmental and Management Authority (NEMA), Kenya Wildlife Service (KWS), Kenya Forest Service, Kenya Maritime Authority (KMA), Kenya Ports Authority (KPA) and Coast Development Authority (CDA).

3 SHIMONI-VANGA JCMA DEVELOPMENT PROCESS

The FAO Ecosystem Approach to Fisheries (EAF) framework was used in the establishment of the Shimoni-Vanga JCMA. The EAF was adopted by the FAO Committee on Fisheries (COFI) since 2003 as the appropriate and practical way to fully implement the Code of Conduct for Responsible Fisheries.

The EAF approach was developed and adopted by FAO in response to the need to implement, in a practical manner, the principles of sustainable development (WCED, 1987), the Convention on Biological Diversity (CBD, 1992) and, more recently, the Code of Conduct for Responsible Fisheries (FAO, 1995). The approach takes into cognisance all the ecological consequences of fishing in addition to the social and economic implications. EAF also assists in understanding interactions between the ecological components and resource users. The approach is also helpful to the management agency to plan, co-ordinate and prioritise current and proposed management activities, making them clearer for improved effectiveness and efficiency.

Kenya adopted the EAF approach in 2011, facilitated by EAF Nansen project in collaboration with South West Indian Ocean Fisheries Project (SWIOFP). The Small and Medium Pelagic Fishery Management Plan was the first to undergo the EAF process.

Since then several management plans (area-, species- and gear-based) have been developed using this approach and include the Malindi-Ungwana Bay Fishery Co-Management Plan, the Lobster Fishery Management Plan, Small-Scale Purse Seine Fishery Management Plan, and Marine Aquarium Fisheries Management Plan. Precautionary and adaptive management approaches are also used in the decision-making process to cater for uncertainties related to limited data and information. Thus, development of the Shimoni-Vanga JCMA incorporated these approaches. Further details on actual activities, timings and number of participants involved during the process, including ERA (EAF process chart) are given in annexes 2 and 4.

Three main steps used in the process are listed and summarised below:

- i. Initiation and scoping
- ii. Identification of Assets, Issues and Priorities (Ecological Risk Assessment)
- iii. Development of JCMA plan

3.1 Initiation and Scoping

Initial meetings were held with the KeFS and County Government in June, 2016 to discuss the EAF roadmap. A total of 6 participants drawn from the above mentioned institutions participated in the meetings. This was followed by a meeting involving 35 BMU officials, 3 KeFS officials and 2 Kwale County department of fisheries. Sensitization meetings with local communities were held in July, 2016 in Shimoni, Mkwiro, Wasini, Kibuyuni, Majoreni, Vanga and Jimbo where a total of 643 representatives from the 7 BMUs participated in the meetings. Thereafter, socio-economic and fisheries resource assessments as well as participatory GIS mapping were undertaken from July to September, 2016 to collect information for the Baseline report of the JCMA.

3.2 Identification of Assets, Issues and Priorities (Ecological Risk Assessment)

Based on the Baseline report an ERA workshop was held in Shimoni in October, 2016. Representatives from the BMUs, KEFS, CDF and other stakeholders participated in the workshop where assets, issues and priorities in relation to the JCMA were identified.

3.3 Development of JCMA Plan

Development of the draft JCMA Plan was undertaken through a series of stakeholders' workshops. Initial draft of the JCMA plan was developed through a workshop held in November, 2016 in Shimoni by representatives from BMUs, KeFS, CDF and CSOs with facilitation by Consultants. A total of 107 participants participated in the workshop. The draft was shared with higher level stakeholders comprising of government agencies in December, 2016. By-laws were later developed in January, 2017 with a presentation of both the draft by-laws and draft management plan done to the local communities in January and February, 2017. A total of 651 community members participated in the feedback meetings. The draft joint co-management plan provides clear operational objectives, management measures, monitoring protocols to assess performance of the Fishery.

4 THE SHIMONI-VANGA FISHERY TYPES AND MANAGEMENT ISSUES

4.1 Fishery Types

Eight key fishery types identified in Shimoni-Vanga area are:

- i. Pelagic fishery (e.g. barracuda, mullets, kingfishes, tuna, sailfish)
- ii. Demersal fishery (e.g. rabbitfishes, wrasses, rock cod, parrotfishes, eels)
- iii. Crustacean fisheries (shrimps, lobsters and crabs)
- iv. Cephalopods (octopus, squids, cuttlefishes)
- v. Holothurians (sea cucumber)
- vi. Marine aquarium fishery
- vii. Marine shells
- viii. Sea weeds

Ecological, socio-economic and governance issues for the above fishery types as well as external drivers were exclusively identified by stakeholders through an Ecological Risk Assessment (ERA) workshop and other fora are summarised below.

4.2 Management Issues

4.2.1 Key Ecological Issues

General ecological issues affecting target species, by-catch, general ecosystem and environment were:

- Scarce information on stock status and poor understanding of population dynamics
- Fishing of immature and under-sized individuals
- Use of destructive fishing gears and methods such as beach seines, spear guns, explosives, poison, monofilament nets
- Inadequate catch and effort data
- Declining catches of high value species such as sea cucumber and lobster
- Impacts of ghost fishing
- Scarce information on fish spawning and breeding areas
- Removal of keystone species (e.g. acanthurids or balistids) by fishing
- Reduction in number of some species and increase in others causing ecological imbalance
- Destruction of the benthic cover e.g. corals, seagrass beds

4.2.2 Key Socio-Economic Issues

4.2.2.1 Key socio-economic issues affecting fishing and processing industries were:

- Open access nature of fishery
- Unpredictable income accruing to fishers
- Increased population
- Negligence of sea safety measures such as use of life-saving equipment
- Limited skills and knowledge on sea survival techniques
- Resource use conflicts (foreign or migrant vs local fishers)
- Inadequate knowledge, skills and gears for offshore fishing
- Use of inefficient, often traditional fishing equipment
- Unwillingness by fishers to borrow credit due to high interest rates that is contrary to Islamic guidance
- Poor fish handling and processing
- Lack of incentives to sustain sustainable nearshore fishery
- Lack of subsidies to encourage access to offshore fisheries
- Inadequate capacity to produce value added products
- Seasonality in high value and preferred species during certain season (scarcity of catch)
- Low uptake of knowledge on post-harvest techniques and value addition
- Lack of a centralized fish market within Shimoni-Vanga e.g. crab and octopus fishers sell in segregation
- Low uptake of improved market information technologies e.g. EFMIS
- Uncertainty in the international market for some species such as octopus, lobsters
- Lack of a product certification e.g. lobster, sea cucumber, crabs and octopus.

4.2.2.2 Key socio-economic issues affecting local communities and national wellbeing were:

- low social capital
- Breakage of family ties and values and erosion of culture
- Inadequate infrastructure and services at fish landing sites
- Failure to formalize self-help initiatives e.g. the informal *kapu-ya-wazee-na-wamama* associated with the small-scale purse seine (ring net) migrant fishers
- Lack of proper liquid and solid waste management systems
- Increased infection of HIV AIDS and, drug and substance abuse
- Increased school dropout rate and early marriages
- Low education levels
- Potential resource use conflict due to oil and gas exploration activities

4.2.3 Governance Issues

Key governance issues were:

- Inadequate political support and goodwill
- Inadequate regulations on minimum sizes for most fish species
- Low user compliance to existing regulations
- Slack enforcement by relevant authorities
- Inadequate Monitoring, Control and Surveillance (MCS) capacity for the fishery
- Low levels of consultations between the industry, community and other key players
- Conflicting sectorial policies and laws

4.2.4 Issues Related to External Drivers

- Climate change impacts (sea level rise, sea surface temperature rise, ocean acidification)
- Sedimentation and siltation from rivers Umba and Ramisi

5 KEY STAKEHOLDERS IN THE SHIMONI-VANGA AREA

A number of government and non-government institutions play a key role in the governance and management of the Shimoni-Vanga area as shown in table 2.

Table 1. Key government and non-government institutions relevant to the governance and management of Shimoni-Vanga area

INSTITUTION	ROLE
Government institutions	
State Department for Fisheries and the Blue Economy (SDF & BE)	Fisheries Policy, research and regulations
Kenya Fisheries Service	Conservation, management and development of Kenya’s fisheries and other aquatic resources
Kenya Marine and Fisheries Research Institute (KMFRI)	Research on aquatic, coastal resources and environment
County Government of Kwale	Governance and fisheries legislation
Beach Management Units (BMUs)	Exploitation and participatory management of fisheries resources and fish landing areas
Kenya Wildlife Service (KWS)	Conservation and management of wildlife and enforcement of related laws and regulations. In charge of MPAs
Kenya Forest Service (KFS)	Management and conservation of Kenya’s forests
Community Forest Associations (CFAs)	Participatory management of forest resources
Kenya Navy	Security and surveillance of international borders including Exclusive Economic Zone (EEZ)
Kenya Maritime Authority (KMA)	Custodian of laws relating to the territorial waters.
Kenya Ports Authority (KPA)	Port management including cargo handling and regulation
National Environmental and Management Authority (NEMA)	Oversees the implementation of EMCA, 1999. It is Kenya’s lead environmental watchdog
East African Community (EAC)	Promote integration of East Africa states. Provides for a legal framework to effectively streamline the management of trans-boundary ecosystem to enhance the quality of environment and ensure sustainable utilization of shared natural resources
Department of Immigration Services	Control and regulate entry and exit of persons, removal of prohibited immigrants, issuance of travel documents, control and regulation of residency through issuance and renewal of entry/work permits and other passes
Marine police	Maintain security and order within the maritime zones
Kenya Revenue Authority	Tax collection and licensing

Office of the President (State Department of Interior and National Cohesion)	Public administration and internal security
Local Universities	Coastal and marine based undergraduate and post-graduate studies

Non-governmental organizations

Seacology Foundation	Funding of local communities initiatives for the conservation and protection of habitats and species
CORDIO East Africa	Coastal oceans Research and development
Wildlife Conservation Society (WCS)	Research and monitoring of coral reefs ecosystems, climate change
Eco-ethics International Kenya Chapter	Advocacy, social development, environment education and awareness
Africa Nature Organization (ANO)	Water catchment management plans, BMU capacity building, co-management plans and mapping of co-management areas, advocacy and awareness creation, enterprise development.
Coastal and Marine Resources Development (COMRED-Africa)	Coastal and Marine Research and development
East Africa Wildlife Society (EAWLS)	Environment and wildlife conservation, and Advocacy
Community Action for Nature Conservation (CANCO)	Advocacy, capacity building and training
ACT-Kenya	Advocacy, capacity building and training

Community-Based Organizations

Wasini Women Group	Eco-tourism and mangrove conservation
Jimbo Environmental Group	Mangrove conservation, promotion of alternative livelihood options
Mkwiro Eco-friendly Environmental Group	Conservation, promotion of alternative livelihood options
Shimoni Slave Caves Association	Eco-tourism and community development

PART 2 MANAGEMENT PLAN

This part prescribes the actual management blueprint against which success will be measured. This will be through application of specific management measures applicable to among others zones, species, effort and seasons. Management measures proposed here are consistent with existing regulations while new ones have been proposed where no guidelines exist. A comprehensive implementation framework has been developed to guide implementation of prescribed measures as well as risk assessment and conflict resolution mechanism. Further, the part provides a monitoring and evaluation guide that paves way for review and amendments.

6 FISHERIES MANAGEMENT ZONES

Different management zones were identified within the Shimoni-Vanga area as shown in Figure 3. The entire Joint Co-Management Area including the 7 BMU CMAs covers an estimated total area of 860 km² excluding the Kisite-Mpunguti Marine Park and Reserve, and extends 12 nm to the outer boundary of the territorial sea. The area is divided into 11 management zones that include existing BMU CMAs, Sii Island complex, Mwamba-mkuu complex, Mijira complex, Nyuli-Jironi complex and multi-use zone. The multi-use zone covers the largest area (703 km²) where the use of legal gears including the small-scale purse seine (commonly known as ring net) is allowed. The small-scale purse seine is restricted to the area beyond the baseline boarder covering the marine fishery waters up to the EEZ (Section 5, sub-section 5.1). Another version of small-scale purse seine, the sardine net, has emerged and its use has been excluded in Sii Island and Nyuli-Jironi complexes in order to protect breeding grounds and reduce gear conflict in these shared zones.

Though the zones are not physically demarcated and this is not feasible, BMUs were engaged in defining the zones and the plan proposes continuous engagements to raise awareness on the different management zones.

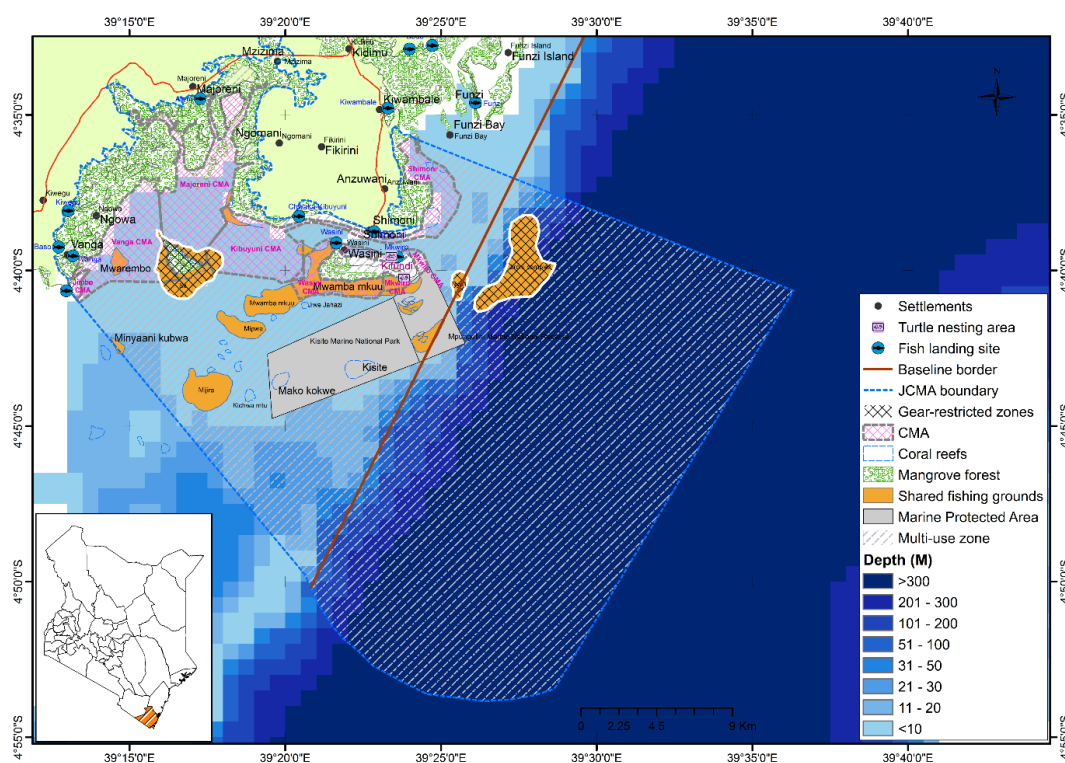


Figure 2. Fishery management zones (use zones) within the Shimoni-Vanga Joint Fishery Co-Management Area in south coast Kenya

6.1 Zoning Plan and Gear Restriction

The zoning plan for the Shimoni-Vanga JCMA includes the seven individual BMU CMAs that were established to pioneer the fisheries co-management initiative in the area; four other areas where BMUs jointly use marine resources; and a general multi-use zone for the remaining lower priority waters. Therefore, Table 2 below provides a summary of the description of the various use zones within the co-management area. This include the area coverage, associated fishing grounds, and restricted fishing gears and methods.

Table 2. Zoning plan based on shared fishing grounds and gear use

Shared Use Zones	Area (K m ²)	Fishing Grounds contained within each zone	Fishing gears permitted	Fishing gear not permitted
Sii Island Complex	13.4	Sii Island, Sii Boyani, Kwikwiri, Dikoni, Kifungu cha Kasa, Mwamba-mkuu, Kifungumawe, Chamboni, Vilangoni, Mwangoni, Mramani, Minyaani-kubwa, Ngunini, Kinuni, Pigiliwa, Ombwe, Utoni, Jironi, Mpunguti-ya-juu, Mpunguti-ya-chini	<ul style="list-style-type: none"> · Basket trap · Handline · Gillnet · Castnet · Hand/Long line · Scoopnet · Diving (aquarium) 	<ul style="list-style-type: none"> · Poison fishing · Sardine net · Small-scale purse seine · Beach seine · Monofilament · Speargun · Dynamite · Any other listed as illegal in Fisheries Management and Development Act
Mwamba-mkuu Complex	13.4	Mwipwa, Mwamba-mkuu, Kifungumawe, Chamboni, Vilangoni, Mwangoni, Mramani, Minyaani-kubwa, Ngunini, Kinuni, Pigiliwa, Ombwe, Utoni, Jironi, Mpunguti-ya-juu, Mpunguti-ya-chini	<ul style="list-style-type: none"> · Basket trap · Hand/long line · Gillnet · Octopus fishing · Diving (aquarium) · Sardine net 	<ul style="list-style-type: none"> · Small-scale purse seine · Beach seine · Poison fishing · Monofilament · Speargun · Dynamite · Any listed as illegal in Fisheries Management and Development Act
Mijira Complex	5.2	Mijira, Minyaani-kubwa, Ngunini, Kinuni, Pigiliwa, Ombwe, Utoni, Jironi, Mpunguti-ya-juu, Mpunguti-ya-chini	<ul style="list-style-type: none"> · Octopus fishing · Hand/long line · Scoop net · Basket trap · Diving (aquarium) · Sardine net 	<ul style="list-style-type: none"> · Small-scale purse seine · Poison fishing · Beach seine · Monofilament · Speargun · Dynamite · Any listed as illegal in Fisheries Management and Development Act

Nyuli-Jironi Complex	12.8	Nyuli, Jironi, Mpunguti-ya-juu, Mpunguti-ya-chini	<ul style="list-style-type: none"> · Handline · Basket trap · Hand/long line · Diving (aquarium) · Small-scale purse seine 	<ul style="list-style-type: none"> · Beach seine · Sardine net · Poison fishing · Monofilament · Speargun · Dynamite · Any listed as illegal in Fisheries Management and Development Act
Shimoni CMA	10.9	Zone within Mkwiwo CMA jurisdiction	<ul style="list-style-type: none"> · Basket trap · Handline · Gillnet · Castnet · Hand/Long line · Scoopnet · Sardine net 	<ul style="list-style-type: none"> · Small-scale purse seine · Beach seine · Poison fishing · Monofilament · Speargun · Dynamite · Any listed as illegal in Fisheries Management and Development Act
Mkwiwo CMA	3.0	Zone within Wasini CMA jurisdiction	<ul style="list-style-type: none"> · Basket trap · Handline · Gillnet · Castnet · Hand/Long line · Scoopnet · Sardine net 	<ul style="list-style-type: none"> · Small-scale purse seine · Beach seine · Poison fishing · Monofilament · Speargun · Dynamite · Any listed as illegal in Fisheries Management and Development Act
Wasini CMA	9.5	Zone within Shimoni CMA jurisdiction	<ul style="list-style-type: none"> · Basket trap · Handline · Gillnet · Castnet · Hand/Long line · Scoopnet · Sardine net 	<ul style="list-style-type: none"> · Small-scale purse seine · Beach seine · Poison fishing · Monofilament · Speargun · Dynamite · Any other listed as illegal in Fisheries Management and Development Act
Kibuyuni CMA	18.1	Zone within Kibuyuni CMA jurisdiction	<ul style="list-style-type: none"> · Basket trap · Handline · Gillnet · Castnet · Hand/Long line · Scoopnet · Sardine net 	<ul style="list-style-type: none"> · Small-scale purse seine · Beach seine · Poison fishing · Monofilament · Speargun · Dynamite

				<ul style="list-style-type: none"> · Any other listed as illegal in Fisheries Management and Development Act
Majoreni CMA	26.3	Zone within Majoreni CMA jurisdiction	<ul style="list-style-type: none"> · Basket trap · Handline · Gillnet · Castnet · Hand/Long line · Scoopnet · Sardine net 	<ul style="list-style-type: none"> · Small-scale purse seine · Beach seine · Poison fishing · Monofilament · Speargun · Dynamite · Any other listed as illegal in Fisheries Management and Development Act
Vanga CMA	21.7	Zone within Vanga CMA jurisdiction	<ul style="list-style-type: none"> · Basket trap · Handline · Gillnet · Castnet · Hand/Long line · Scoopnet · Sardine net 	<ul style="list-style-type: none"> · Small-scale purse seine · Beach seine · Poison fishing · Monofilament · Speargun · Dynamite · Any other listed as illegal in Fisheries Management and Development Act
Jimbo CMA	0.9	Zone within Jimbo CMA jurisdiction	<ul style="list-style-type: none"> · Basket trap · Handline · Gillnet · Castnet · Hand/Long line · Scoopnet · Sardine net 	<ul style="list-style-type: none"> · Small-scale purse seine · Beach seine · Poison fishing · Monofilament · Speargun · Dynamite · Any other listed as illegal in Fisheries Management and Development Act
Multi-use zone	702.8	All fishing grounds	All illegal fishing gears as provided in the Fisheries Management and Development Act No. 35 of 2016	All illegal gears listed in Fisheries Management and Development Act

7 FISHERIES MANAGEMENT MEASURES

Consultative and participatory approaches were used in the development of this Joint Co-Management Area Plan as outlined in section 3 above. Management measures are in line with existing management plans for Shimoni-Vanga CMA, Small-scale purse seine fishery, Aquarium fishery and Lobster fishery. They are also consistent with the Fisheries Management and Development Act No. 35 of 2016 and other relevant laws mentioned in preceding chapters. Further details are specified in the proceeding section on management rules

7.1 Spatial and Temporal Measures

- Designate closed (no-take) zones and prohibit fishing and other extractive activities in
- Restrict use of specific fishing gears in designated fishing zones
- Prohibit fishing activities in fish breeding areas
- Regulate coral mining and sand harvesting along the beaches

7.2 Effort and Catch Controls

- Enforce issuance of fishing licences for specific fishery types as provided within the respective management plans and enforce regulations on use of illegal/destructive fishing gears and methods such as spear guns, beach seines, poison, dynamite and monofilament nets.
- Develop regulations and guidelines on the use of new fishing technologies and practices such as gated traps, droplines, hookah, sardine net, and Fish Aggregating Devices (FADs)
- Restrict the number of fishing vessel licences or fishing licences that may be issued.

7.3 Inspection and Observation

- Develop a traceability system for the fishery along the supply chain with mandatory declaration of all catches at the nearest BMU landing site or County Fisheries Office
- Develop a standardized/prescribed format and issue traceability certificate
- Prescribe and implement the marking of fishing vessels and gears.

7.4 Reporting Requirements

- Adopt a standardized data collection systems and implement regular data collection and reporting.
- Enforce mandatory reporting of fish landings in a prescribed format.

7.5 Fisheries co-management

- Harmonize and regulate levy fees and charges administered by the BMUs for services rendered,
- Ensure all stakeholders are members of the BMUs and encourage participation in co-management activities.
- Encourage continuous use of marketing information sharing system
- Explore opportunities for savings and credit, and marketing.
- Promote a benefit-sharing and conflict resolution mechanisms.
- Encourage the community to build social capital

7.6 BMU network and Inter-Agency Collaboration

- Strengthen BMU network, inter-agency collaboration and information sharing framework

7.7 Endangered Threatened and Protected species (ETPs)

- Prohibit, enforce and monitor the capture, holding, harassment and possession of endangered and threatened species namely sea turtles, whales, dolphins and dugongs

7.8 Management Rules

Other than the above management measures, the following management rules, proposed by BMU executive members and ratified by their respective assemblies will guide utilization of the Shimoni-Vanga Co-Management area. Penalties were also developed during the consultative process as annexed.

7.8.1 Spatial-temporal Restriction

- No person shall fish or conduct any extractive activity in designated closed areas of Wasini, Kibuyuni and Mkwiro BMU CMA
- No person shall fish for sardines during the closed fishing season from 1st of April to 31st July
- Restrict use of specific fishing gears in designated fishing areas

7.8.2 Effort Restriction

- No person shall fish using a sardine net within Nyuli-Jironi complex and Sii Island
- Use of small-scale purse seine within internal waters is prohibited (less than baseline) as provided in the small-scale purse seine fishery management plan
- No person shall fish without a valid fishing license
- The following fishing gears and methods are prohibited: spear guns, harpoons, beach seines, poison, dynamite, monofilament and any other prohibited fishing gear within the Fisheries Development and Management Act.
- No person shall use new fishing technologies and practices without prescribed regulations and guidelines
- No person shall be issued a fishing license without being vetted by the respective BMU
- Every licensed person shall have his/ her catch inspected and data collected by the respective BMU
- No person shall participate in fishing and fishing related activities without paying the necessary fees and levies prescribed by the BMU
- It is prohibited to fish in the following fish breeding areas using sardine net: Chanjale, Jibweni, Mwamba-mkuu, Mwarembo, Sii, Bazo, Nyuli-Jironi
- All fishing vessels and gears shall be clearly marked as prescribed from time to time

7.8.3 Species and Conservation

- No person shall harass, or engage in fishing for, catch, possess, transport, buy or sell any species of fish or their products declared endangered or threatened or protected; turtles, whales, dolphins, dugongs etc.
- Coral mining and sand harvesting along the beaches is prohibited

8 IMPLEMENTATION STRUCTURE

Implementation of this plan is guided by both fisheries governance and management structures (Figures 3 and 4). At the top level of governance is the Director General (DG) who represents the national government's ministry of Agriculture, Livestock and Fisheries while the County Executive

Committee Member (CECM) for Agriculture, Livestock and Fisheries represents Kwale county government. Under this docket is the county department of fisheries that is further devolved to BMUs. BMUs are led by elected Chairpersons who work through executive committees.

The Shimoni-Vanga JCMSA Executive Committee will be in charge of overall management, assisted by various sub-committees that reflect three management objectives (section 1.7) and their actions as outlined in the implementation matrix. Members of these sub-committees will be drawn from existing BMU executive committees.

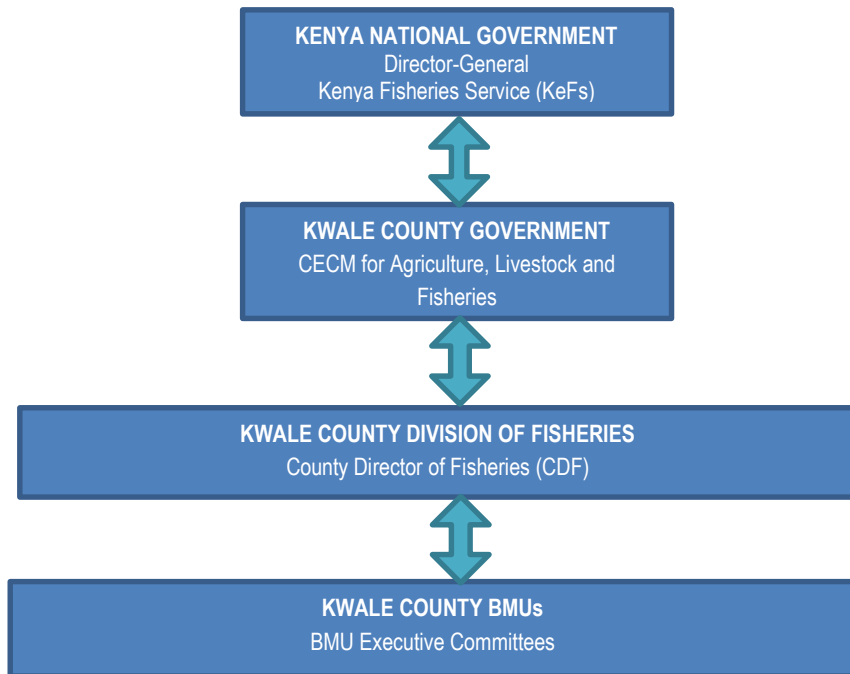


Figure 3. Fisheries Governance Structure.

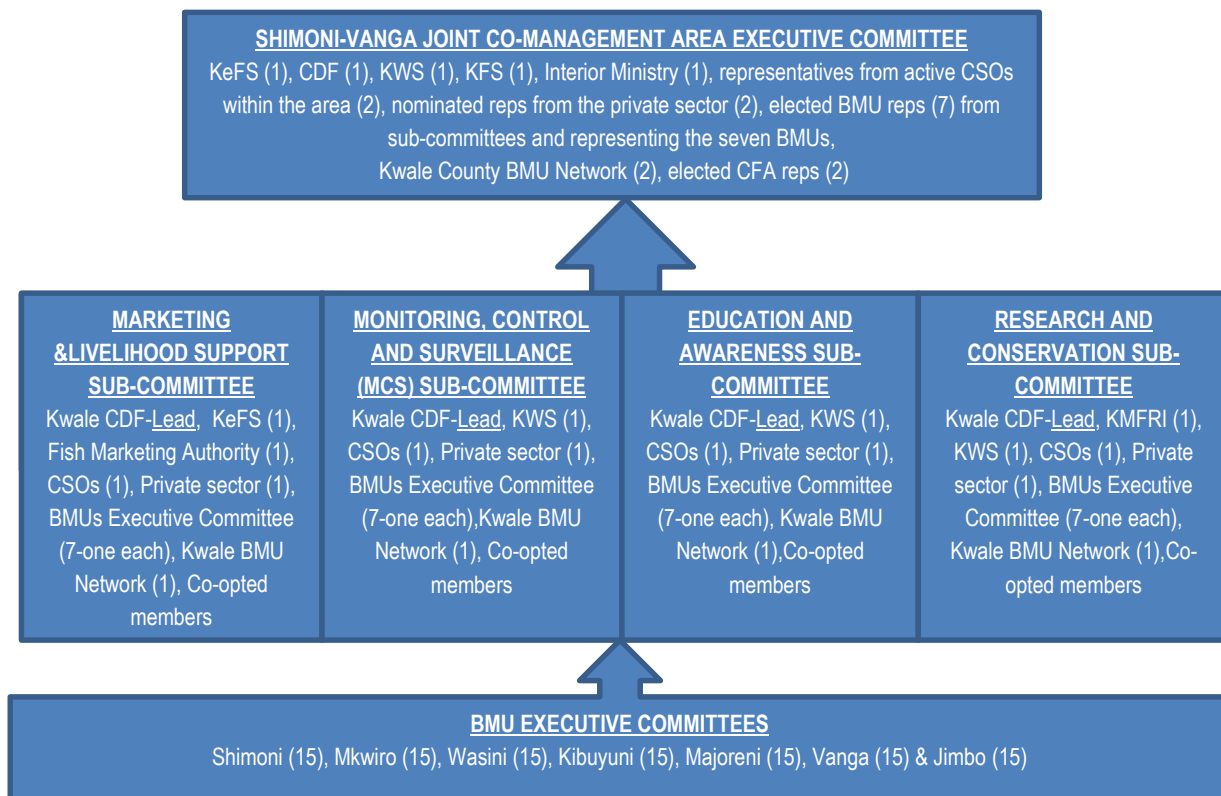


Figure 4. Shimoni-Vanga JCMA Management Structure

8.1 Management Roles and Responsibilities

8.1.1 Shimoni-Vanga Joint Co-Management Area Executive Committee

This new committee will comprise of 14 permanent members (Figure 4) and 6 co-opted members. Co-opted members will include but not limited to representatives from the following:

- Kenya Ports Authority
- Kenya Maritime Authority
- Coast Development Authority
- Kenya Navy
- Marine Police
- Customs and Immigration

The committee will carry out the following functions:

- Administrative and technical support
- Financial supervision and oversight
- Budgeting, work planning and Reporting
- Fundraising
- Propose new JCMA management measures
- Monitoring and evaluation of the plan

8.1.2 Marketing and Livelihood Support Sub-Committee

This sub-committee, comprising of at least 13 permanent members, will oversee implementation of actions under objective 2 section 1.7. Their functions include:

- Development of Alternative Income Generating interventions
- Establishment of cooperatives
- Development of Public Private Partnerships

- Establishment of the levy fund
- Support for fish marketing including development of the EFMS and Central marketing system
- Fish quality control
- Gear exchange programs

8.1.3 Monitoring, Control and Surveillance (MCS) Sub-Committee

This sub-committee, comprising of at least 12 permanent members, will oversee implementation of actions under objective 1 section 1.7. Their functions include:

- Designation of critical areas and development of measures for the new zones
- Fisheries prioritization
- Data collection, analysis and reporting
- Participatory monitoring
- Fishers register maintenance
- MCS plan development and implementation
- By-laws development

8.1.4 Education and Awareness Sub-Committee

This sub-committee, comprising of at least 12 permanent members, will oversee implementation of education and awareness actions under objective 3 section 1.7 that include awareness on the following:

- Gear technologies
- Marine environmental
- Awareness on cross-cutting issues such as HIV/AIDS, Drug abuse etc.
- Climate change

8.1.5 Research and Conservation Sub-Committee

This sub-committee, comprising of at least 14 permanent members, will oversee implementation of research and conservation actions under objective 3 section 1.7 that include:

- New fishing gear guidelines development
- Periodic resource monitoring and assessment
- Stock assessment

8.1.6 BMU Executive Committees

These are already existing and their responsibilities are outlined in their respective by-laws and include development of individual CMA management rules and implementation of village based CMA plans.

8.2 Communication Plan

The Shimoni-Vanga JCMA Communication plan outlines actions that will be used for the overall JCMA communication, information distribution, feedback and stakeholder management; and how the various management measures adopted will be managed over the implementation period of the JCMA plan. Key communication activities that need implementation are highlighted in Table 4.

Table 3. Communication Plan

Activity	Target	Medium	Responsibility	Timing & Frequency
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Awareness campaigns	All	Workshop, Website, Posters, Brochures, Email, Fliers, Mosques and church announcements	CDF, SDF & BE, JCMA Committee, BMUs	On approval of JCMA plan
Conduct sensitization meetings to mobilize support for the implementation of the JCMA plan	County Government of Kwale	Workshops and Consultative meetings	CDF, BMUs, JCMA Management Committee	Immediately
Management decisions	Co-management Committees	meetings	CDF, BMUs, JCMA Management Committee	Quarterly
Progress reporting on the implementation of the JCMA plan	County Government, relevant government agencies, BMUs, NGOs, Donors	Workshop, Email, Website, Brochures, Reports	CDF, BMUs, JCMA Management Committee	Annual
Work plan and budgeting of the JCMA plan	County Government, BMUs and relevant government agencies	Workshop, Website, Email BMU Assembly meetings, Annual work plans and budgets	CDF, BMUs, JCMA Management Committee	Annual
Feedback on monitoring and evaluation of the JCMA plan	County Government, BMUs and relevant government agencies	Website, Email Posters, Assembly meetings, Reports	CDF, BMUs, JCMA Management Committee	Mid and End of implementation period

9 RISK ASSESSMENT AND MITIGATION MEASURES

The risks associated with implementation of the JCMA plan comprises both external factors and their corresponding mitigation measures as outlined in Table 5.

Table 5. Risk Assessment and Mitigation Measures

Risk	Mitigation measures
External Risks	
Inadequate funding for the implementation of the JCMA plan	<ul style="list-style-type: none"> · Review work-plan and budget in consultation with stakeholders and relevant government agencies · Develop a subsidiary strategy for financing, involving KeFS, Kwale County and BMUs
Managing high community expectations	<ul style="list-style-type: none"> · Assess level of community expectations and communicate expected plan outputs
Lack of political support for the plan	<ul style="list-style-type: none"> · Forge links with the local leaders early in plan implementation
Insecurity within the Shimoni-Vanga Fishery	<ul style="list-style-type: none"> · Strengthen MCS and information sharing with national security agencies · Conduct periodic reporting and identification of migrant fishers
Emerging issues such as oil and gas exploration within the Fishery	<ul style="list-style-type: none"> · Participatory marine spatial planning
Negative impacts of climate change	<ul style="list-style-type: none"> · Create awareness within the local community on impacts. · Liaise with government agencies on disaster management · Conduct trainings on disaster management within the local communities
ix. Internal Risks	
Poor communication across the organizations and partners implementing the plan	<ul style="list-style-type: none"> · Create linkages between plan implementers, local communities and other stakeholders to share information on plan implementation and progress
Poorly planned and executed community mobilization campaigns	<ul style="list-style-type: none"> · Adequate planning and allocation of resources (financial and time) required to manage community engagement activities
BMU Officials lacking adequate skills to implement management actions	<ul style="list-style-type: none"> · Provide access to staff to appropriate training programs
Weak buy-in from BMUs and fishing communities	<ul style="list-style-type: none"> · Continuous awareness creation of Shimoni-Vanga JCMA

10 IMPLEMENTATION, MONITORING AND EVALUATION

10.1 Implementation planning and reporting

Implementation of this management plan will be guided and monitored through preparation of annual work plans developed by the JCMA Management Committee. Each BMU will then develop its own annual workplan consistent with the overall JCMA workplan. The mechanisms that will be used to monitor the annual work plan will include:

- Quarterly progress reports, including both technical and financial information that will provide detailed information on activities conducted, projected results, progress and achievements and work carried over;
- Annual progress reports, including both technical and financial
- Final reports, including both technical and financial, prepared at the end of the project
- Reporting procedure will be as follows:
 - BMUs executive committee will report to the JCMA Management Committee
 - JCMA Management Committee will report to the County Director of Fisheries (CDF)
 - CDF will report to KeFS and County Executive Committee Member

10.2 Monitoring and Evaluation (M&E)

The Director-General of Fisheries in consultation with the County Executive Member responsible for fisheries shall have overall responsibility for ensuring the Monitoring and Evaluation (M&E) of this Management Plan is carried out. The County Director of Fisheries will be responsible in practice for implementing and reporting on monitoring.

Monitoring and Evaluation (M&E) activities shall be carried out based on the indicators outlined in the implementation matrix in Annex 1. Monitoring of the management actions will be activity specific and undertaken regularly during the entire management plan period. At the initial stage, relevant indicators to monitor the implementation of the plan will be agreed between the various players.

Collection of monitoring data and information will be done in a participatory manner under the direction of the County Director for Fisheries, involving the JCMA Management Committee, BMUs, county government and relevant stakeholders. Reference to the existing baseline studies conducted for the area will be used in measuring the impact of the management plan at the end of the management plan period.

The County Director of Fisheries will be responsible for production of an annual monitoring report that reports on the status of all indicators in the Implementation Plan in Annex 1. Dissemination of M & E report shall include national and county governments, BMUs and relevant stakeholders. The Director-General may initiate additional surveys or assessments to monitor and address specific questions emanating from the management of the Shimoni-Vanga JCMA.

The management plan will be subjected to mid-term and final evaluations. Mid-term evaluation will be done after 30 Months and led by KeFS and Kwale County department of Fisheries while final evaluation will be part of the process of review and renewal of the plan as detailed in the proceeding section on review, amendment and renewal.

11 MONITORING, CONTROL AND SURVEILLANCE (MCS)

Monitoring, Control and Surveillance (MCS) is a key component of any management plan. For the successful implementation of the Shimoni-Vanga Co-management Area Plan and the realization of its goals and objectives, there is need for a strong MCS component. This will be achieved through preparation of an MCS sub-strategy as part of the implementation of this plan. The strategy will:

- Provide a detailed description of surveillance and patrolling arrangements by BMUs in association with Kwale County including:
 - outlining equipment requirements and their management and maintenance;
 - outlining patrolling and surveillance protocols by BMUs in association with Kwale County;
- Provide the degree and types of observations required to maintain compliance with the regulatory controls imposed on fishing activities.
- Provide regulatory conditions under which the exploitation of the resource will be conducted;
- Enable the continuous assessment of fishing effort characteristics and resource yields;
- The strategy will be developed by stakeholders (see implementation matrix in annex 1), led by the fisheries department directorates (national and county), and implemented through a joint approach. This will be in collaboration with the newly created KeFS MCS Unit (Fisheries Management and Development Act No. 35 of 2016).

During 2016-17, the Kwale County Department of Fisheries acquired a boat from the State Department of Fisheries to support monitoring, control and surveillance (MCS) in the Shimoni-Vanga area and a second boat was acquired under the Kenya Coastal Development Project (KCDP) for use by BMUs. To guide use of these resources a preliminary boat management and maintenance plan has been developed (see annex 5) – this plan will need further elaboration and will be incorporated into the MCS strategy.

12 FINANCING STRATEGY

12.1 Justification

One of the key risks identified during risk assessment is limited funding to implement proposed management actions. A financing strategy is therefore requisite to financial sustenance and will have the overall objective of identifying potential revenue sources, main operation costs as well as provide guidelines on financial management.

This will ensure smooth operation of the co-management activities that will enhance the realization of the goals and objectives of the plan.

A detailed financing strategy will be developed by the Shimoni JCMA committee in collaboration with the County government.

12.2 Potential Sources of Funds

Potential sources of revenue to fund the implementation of the JCMA include contributions to a co-management fund from private entities (e.g. hotels and dive companies), the national and county governments, NGOs, the BMUs (7) and development partners (e.g., WB, FAO, NRF, EU, UNDP-SGP, WWF etc.).

12.3 Potential Operation Costs

Anticipated main operation costs for the implementation of the Shimoni-Vanga area CO-management plan would include:

- Costs associated with MCS
- Costs associated with meetings of the Shimoni-Vanga Joint Co-management area Committees
- Costs associated with operation and maintenance of the boat
- Salaries and allowances for staff

12.4 Management of Funds

There will be a need to establish a transparent and accountable financial management system and credible personnel to manage funds of the JCMA. The JCMA Committee will provide guidelines on the development of the system and recruitment of staff.

13 REVIEW, AMENDMENT AND RENEWAL

This Co-Management Plan will have a validity of five years from the date of approval by Director-General of KeFS after which time it will be subject to review, evaluation and renewal. The plan may also be subject to amendment in the interim, as required. The review and amendments shall be done as follows:

- The Director-General of KeFS, in consultation with the Kwale County, BMUs and other stakeholders may review and amend this Co-Management Plan as necessary from time to time, in particular in light of the mid-term evaluation as per section 10.2 above.
- The plan will be subject to a formal process of review and revision after 5 years under the oversight of the Director-General of KeFS in collaboration with the Kwale County Executive Committee Member (CEC).
- Any amendment to the plan shall be approved by the Director-General and the Kwale County Executive Committee Member (CEC), upon having documented consultation and agreement with the JCMA Management Committee, BMUs and other stakeholders that may be affected by the plan.

14 CONFLICT RESOLUTION MECHANISM

Conflicts within the fishery shall be resolved in accordance with the Fisheries Management and Development Act, 2016. Conflict resolution committees shall be established to manage conflicts at all levels of co-management structure. Conflicts at the lower level of management shall be referred to the higher-level Conflict Resolution Committee or BMU Network for settlement. Any party that is aggrieved by the decision of the conflict resolution committees/BMU Network may appeal through the provisions of the Act, to the Director-General of Fisheries, and any decisions made there under shall apply accordingly.

15 ANNEXES

Annex 1. Shimoni-Vanga JCMA Implementation Plan

MANAGEMENT OBJECTIVE 1: To improve the governance and management of Shimoni-Vanga Fishery

Management Action	Expected output	Indicators	Responsibilities
Operational Objective 1: To strengthen Monitoring Control and Surveillance (MCS)			
<ul style="list-style-type: none"> · Establish an MCS plan for the Shimoni-Vanga fishery area · Implement the small-scale purse seine fishery management plan · Develop and implement inspection programs for compliance · Develop by-laws for the Shimoni-Vanga JCMA · Carry out regular patrols · Carry out sensitization and awareness on existing and new laws · Train BMUs and government agencies in MCS and law enforcement · Create awareness and sensitization to the political class · Budget for MCS patrols 	<ul style="list-style-type: none"> · MCS plan for Shimoni-Vanga JCMA established · Inspection programs developed · By laws developed · Improved fisheries compliance · Increased compliance to fisheries regulation · Skilled BMUs and government agencies · An aware Political class · MCS budget · Standardized data collection protocols developed · Data collection, management and sharing modalities established · Revised licensing fees 	<ul style="list-style-type: none"> · An MCS plan in place · Number of small purse seine boats equipped with electronic tracking systems · Number of inspection programs in place · Number of by-laws in place · Number of patrol reports. · Number of awareness campaigns conducted · Number of trained BMUs and government agencies. · Number of awareness campaigns conducted · An MCS budget implementation report · Number of standardized data collection protocols · Number of data collection protocols and sharing modalities developed · Amount of license fees charged 	<ul style="list-style-type: none"> · SDF &BE, County Government of Kwale, KWS, Immigration, Customs, Maritime police, Kenya Navy and BMUs · SDF &BE, County Government of Kwale, KWS, Immigration, Customs, Maritime police, Kenya Navy, BMUs and NGOs

<ul style="list-style-type: none"> · Develop standardized MCS data collection protocols · Establish modalities for data collection, management and sharing · Revise licensing fees to be commensurate with value of the fishery 			
<p>Operational Objective 2: To improve networking and collaboration between resource users, resource managers and other interested actors</p>			
<ul style="list-style-type: none"> · Establish an inter-agency unit for the implementation of the MCS plan · Develop Standard Operation Procedures (SOP) for MCS · Train inter-agency unit on use of SOPs · Equip the MCS inter-agency unit · Operationalize BMU networks · Conduct periodic collaborative and networking meetings 	<ul style="list-style-type: none"> · Established MCS inter-agency unit · Standard Operational Procedures developed · Skilled inter agency unit · Equipped MCS inter agency unit · Operationalized BMU networks · Meetings conducted 	<ul style="list-style-type: none"> · Number of inter- agency unit establishment meeting reports · A SOPs document report · Number of training reports · Number of equipment procurement and issue notes · Number of operationalized BMU networks · Number of meeting minutes and reports 	<ul style="list-style-type: none"> · SDF &BE, County Government of Kwale, KWS, Immigration, Customs, Maritime police, Kenya Navy and BMUs · SDF &BE, County Government of Kwale, KWS, Immigration, Customs, Maritime police, Kenya Navy, BMUs and NGOs

MANAGEMENT OBJECTIVE 2: To optimise social and economic benefits from the use of marine resources for food security, employment and wealth creation for the local community

Management Action	Expected Output	Indicators	Responsibility
Operational Objective 1: To develop alternative livelihood options targeting fishers and local community members within the Shimoni-Vanga JCMA			
<ul style="list-style-type: none"> · Undertake socio-economic surveys to identify suitable alternative livelihoods options. · Develop a catalogue on viable livelihood options · Train and Pilot on selected livelihood options. · Establish a fish levy fund to support development of alternative income generating options · Liaise with micro finance institutions to support fisher financially · Promote collaboration between fisher communities and both public and corporates 	<ul style="list-style-type: none"> · Alternative livelihoods options identified · Catalogue of awareness strategies used · Increased adoption of identified alternative livelihoods · Established levy funds · Enhanced access to grants and credit facilities · Financial institutions identified · Private and public Corporations identified 	<ul style="list-style-type: none"> · Number of baseline reports · Number of trainings conducted and support provided on livelihood options · Number of established Seed funds · Number of livelihood options adopted · Number of MOUs with financial institutions willing to help · Meeting reports/minutes with financial institutions · No. of MoUs with Private sectors 	<ul style="list-style-type: none"> · SDF&BE · Kwale County Government · Department of Cooperatives · BMUs · SACCOs · Financial institutions · NGOs · Research Institutions · CBOs · Department of Trade
Operational Objective 2: To economically empower the fisher community within the Shimoni-Vanga JCMA			
<ul style="list-style-type: none"> · Undertake livelihood assessments to determine income levels and sources 	<ul style="list-style-type: none"> · Economic status of community identified 	<ul style="list-style-type: none"> · Number of livelihood assessment reports 	<ul style="list-style-type: none"> · SDF&BE · Kwale County Government

<ul style="list-style-type: none"> · Conduct financial management trainings to community leaders · undertake awareness campaigns on accessible saving opportunities · Resuscitate fishers' cooperative society · Create linkages between BMUs and SACCOs and other micro finance institutions to develop special credit packages for fishers · Promote collaboration between fisher communities and both public and corporates 	<ul style="list-style-type: none"> · Improved, Secure and predictable savings · Informed fishing community on financial management · Enhanced access to credit facilities · Enhanced access to fishing equipment and facilities · Improved business enterprises · Ease of access to markets 	<ul style="list-style-type: none"> · Number of operational cooperative societies · Number of BMUs trained on financial management · Number of MoUs with SACCOs and other financial institutions · Number of BMUs with new bank accounts 	<ul style="list-style-type: none"> · Department of Cooperatives · BMUs · SACCOs · Financial institutions · NGOs · Research Institutions · CBOs
<p>Operational Objective 3: To create awareness on cross cutting social issues (drug abuse, HIV/AIDs, illiteracy, early marriages and child labour, school drop outs and gender disparities), affecting fisher communities within the Shimoni-Vanga JCMA</p>			
<ul style="list-style-type: none"> · Undertake livelihood assessments to determine community wellbeing · Create awareness on cross cutting social issues · Create awareness on suitable alternative livelihoods options · Train and pilot on selected available livelihood options · Conduct sensitization programmes on community health, drug rehabilitation and preventive measures on prevalent diseases 	<ul style="list-style-type: none"> · Social issues and community economic status identified · More informed community on social issues · Increased enrolments and retention in schools · Reduction in the number of early marriage cases · Improved gender mainstreaming · Reduced cases of drug use and abuse. · Reduced HIV and AIDs prevalence. · Reduced cases of insecurity 	<ul style="list-style-type: none"> · Number of livelihood assessment reports · Catalogue of awareness strategies · Number of trainings conducted on livelihood options · Number of children enrolling in schools and retention rates · Number of women, youths and disadvantaged persons in marine fisheries management activities · Number of drug addicts successfully rehabilitated. 	<ul style="list-style-type: none"> · SDF&BE · Kwale County Government · Ministry of Gender and Social Services · Ministry of Health · NACADA · Ministry of Education · BMUs · NGOs · Research Institutions · Religious leaders Caucus

<ul style="list-style-type: none"> · Involve village administrators and Nyumba Kumi initiatives to address security and other relevant social concerns 	<ul style="list-style-type: none"> · Increased adoption of identified alternative livelihoods 	<ul style="list-style-type: none"> · Number of HIV/AIDs awareness campaigns 	
<p>Operational Objective 4: To strengthen fish handling and quality control of fishery products in the Shimoni-Vanga</p>			
<ul style="list-style-type: none"> · Conduct a fish market analysis · Train community on proper fish handling, hygiene, sanitation, preservation and value addition · Promote proper fish handling, hygiene, sanitation, preservation and value addition · Construct and purchase basic infrastructure (portable water, electricity, toilets, etc) at landing sites · Construct fish storage facilities · Establish fish processing units in the JCMA 	<ul style="list-style-type: none"> · Information on fish market and value chain availed · Reduced post- harvest losses · Increased number of BMUs trained and equipped · Increased fish preservation and storage capacities · Increased number of landing sites with basic infrastructural facilities · Fish storage facilities constructed · Fish processing units established 	<ul style="list-style-type: none"> · Number of market analysis report · Number of community trainings and awareness strategies on fish quality assurance · Number of available fish handling and processing equipment · Number of landing sites with fish storage facilities · Number of fish processing units 	<ul style="list-style-type: none"> · SDF&BE · Kwale County Government · Ministry of Public Health · KeRRA · Kwale Water and Sanitation Company · BMUs · NGOs
<p>Operational Objective 5: To promote marketing of fish and fish related products within the Shimoni-Vanga Area</p>			
<ul style="list-style-type: none"> · Conduct a feasibility study to determine appropriate marketing strategies. · Create a central marketing system for fish and fishery products · Revive Electronic Fish Marketing Information System (EFMIS) 	<ul style="list-style-type: none"> · Marketing strategies identified · Centralized fish market system established · Fish market centres established · Improved accessibility to fish markets 	<ul style="list-style-type: none"> · Market feasibility report · Centralised fish market system in place · Number of functional fish market centres · Number of BMUs using digital marketing systems 	<ul style="list-style-type: none"> · SDF&BE · Kwale County Government · KEBS · Department of Trade and Marketing · Research Institutions

		· Number of fishers accessing the central markets	· BMUs · NGOs · Mobile service providers
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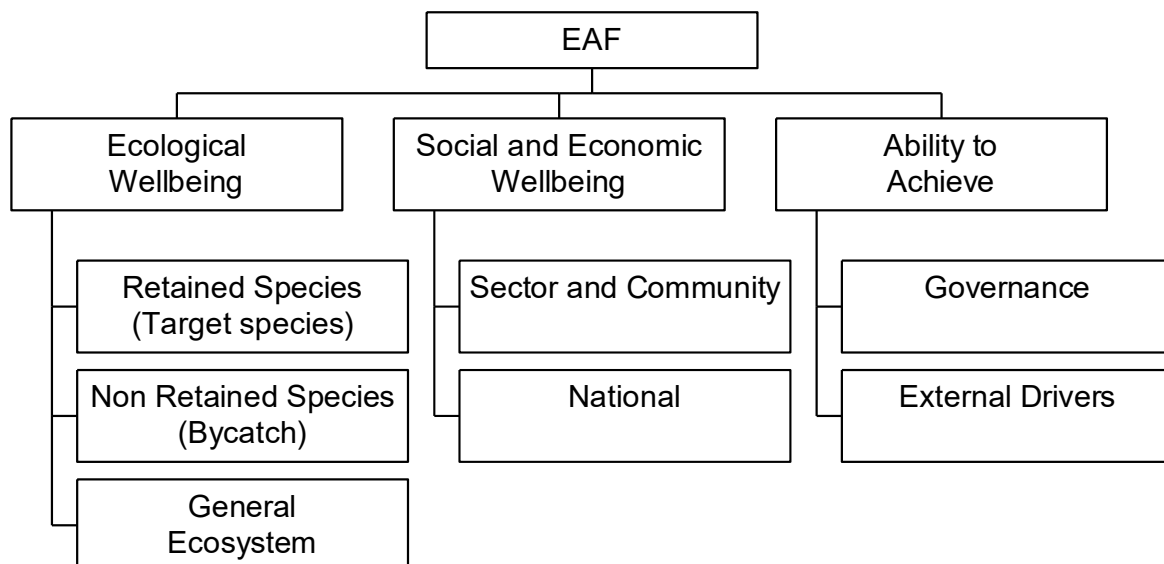
MANAGEMENT OBJECTIVE 3: To promote conservation of the fisheries resources and ecological integrity of Shimoni-Vanga area

Management Action	Expected Output	Indicators	Responsibilities
Operational Objective 1: To promote sustainable fishing technologies within Shimoni –Vanga CMA			
<ul style="list-style-type: none"> · Sensitize and create awareness on sustainable fishing technologies to all stakeholders e.g. BMUs, political leaders etc. · Train fishers on new sustainable fishing technologies · Introduce improved and new fishing technologies e.g. gated basket, drop line, FADs etc. · Promote gear exchange programs - focus on proper distribution strategies · Enforce existing fisheries regulations 	<ul style="list-style-type: none"> · Reduced use of destructive practices and illegal fishing gears · New and improved technologies · New and improved technologies adopted · Increase in compliance · Reduced use of illegal gears 	<ul style="list-style-type: none"> · Number of awareness meetings, publications etc. · Number of trainings conducted to fishers · Number of established new and improved technologies · Number of new and improved technologies adopted · Number of illegal gears confiscated · Number of prosecuted cases 	<ul style="list-style-type: none"> · Kwale County Governments · SDF&BE · BMUs · NGOs · Universities · CBOs · KMFRI
Operational Objective 2: To develop effective management measures			
<ul style="list-style-type: none"> · Identify additional use zones e.g. gear restriction zones, seasonal closures, size restriction, no-take areas etc. · Introduce measures to manage new use zones · Identify and prioritize fisheries in need for specific measures · Develop and Implement fisheries specific management measures 	<ul style="list-style-type: none"> · New use zones identified · Regulated use zones · Prioritized fisheries for management · Fishery specific management measures implemented · Mapped and gazetted critical areas 	<ul style="list-style-type: none"> · Number of new use zones · Number of prioritized fisheries resources that require management · Fisheries specific management plans developed · Number of fisheries with management measures 	<ul style="list-style-type: none"> · County Governments (Fisheries) · SDF&BE · Universities · KFS · KWS · KMFRI

<ul style="list-style-type: none"> · Identify, map and gazette critical areas · Zone fishing grounds based on indigenous and scientific knowledge · Development of co-management plans · Develop and approve BMU by-laws 	<ul style="list-style-type: none"> · Zoned fishing grounds · Effective management · BMU by-laws approved 	<ul style="list-style-type: none"> · Number of mapped and gazetted critical areas · Number of zoned fishing grounds · Number of co-management plans developed · Number of BMUs with by-laws 	<ul style="list-style-type: none"> · BMUs · NGOs
Operational Objective 3: To protect critical habitats and Endangered Threatened and Protected species (ETPs)			
<ul style="list-style-type: none"> · Create awareness on marine environmental protection and ETPs · Zone critical areas e.g. CCAs (<i>tengefu</i>) and breeding areas · Identify, map and regulate spawning aggregation areas · Develop species identification sheets · Train BMUs and collect data on the protected and threatened species · Train communities on rehabilitation of degraded habitats · Develop and implement rehabilitation programs on degraded habitats e.g. coral transplants 	<ul style="list-style-type: none"> · Reduced mortality of ETPs · Improved management of environment and ETPs · Critical habitats and species identified · Species identification sheet developed · Improved data and reporting on ETPs · Rehabilitated degraded habitats and improved cover of mangroves, coral, sea grass etc. · Reduced incidental catch of ETPs 	<ul style="list-style-type: none"> · Number of awareness programs conducted · Gazetted critical sites and species · Acreage area under the <i>tengefu</i> · Number of species identification sheets · Database of ETPs · Number of BMUs trained and involved in rehabilitation programs · acreage of rehabilitated sites 	<ul style="list-style-type: none"> · County Government of kwale · SDF&BE · BMUs · KWS · NGOs · KMFRI · KFS · CBOs
Operational Objective 4: To strengthen the integration of scientific research and fisheries traditional knowledge in sustainable resource management within Shimoni-Vanga JCMA			
<ul style="list-style-type: none"> · Train BMUs and introduce community resource participatory monitoring e.g. coral cover, sea grass, fish sizes and density · Develop and update a register for gears, fishers and boats 	<ul style="list-style-type: none"> · Increased BMUs involvement in community participatory monitoring · Updated register of fishers, gears and boats 	<ul style="list-style-type: none"> · Number of BMUs trained · Number of participatory monitoring programs in place · Number of updated registers for fishers, gears, and boats 	<ul style="list-style-type: none"> · County Government of kwale · SDF&BE · BMUs

<ul style="list-style-type: none"> · Incorporate use of indigenous knowledge in marine resource management · Conduct information and knowledge gap surveys · Carry out periodic surveys and monitoring of the fisheries based on identified gaps · Train BMUs on data collection and interpretation · Develop information feedback mechanisms 	<ul style="list-style-type: none"> · Indigenous knowledge integrated in management decisions · Inventory of research and information gaps · Feedback programs developed · Data analyzed and interpreted by BMUs 	<ul style="list-style-type: none"> · Number of Information gaps reports · Number of scientific reports · Number of information feedback programs · Number of fisheries statistical reports produced 	<ul style="list-style-type: none"> · NGOs · Universities · KMFRI · KEFRI · CBOs
<p>Operational Objective 5: To strengthen community adaptation to climate change impacts</p>			
<ul style="list-style-type: none"> · Identify knowledge gaps of the users on climate change · Assess community resilience to climate change · Conduct sensitization programs on climate change issues 	<ul style="list-style-type: none"> · Information gaps on climate change · Mapped areas vulnerable to impacts of climate change · Enlightened community on climate change impacts 	<ul style="list-style-type: none"> · Number of mapped climate change vulnerable areas 	<ul style="list-style-type: none"> · County Government of Kwale · Relevant National Government ministries · KMFRI, KWS, KFS, NEMA, BMUs, NGOs, KMA

Annex 2. EAF Process (FAO)



Annex 3: Management Rules and Penalties

MANAGEMENT RULE	PENALTY
1. No person shall fish or conduct any other extractive activity in designated closed areas and in the specific BMU CMA no take	Graduated penalty: i) Confiscation of vessel and everything therein for 1month, ii) a fine of Ksh5,000 iii) failure to pay fine leads to prosecution in a court of law.
2.No person shall fish for sardines during the closed fishing season from 1 st of April to 31 st July	Confiscation of vessel and everything therein for a period of 4 months. Note: If the vessel gets lost or damaged during time of confiscation, the BMU will not be held responsible.
3.Restrict use of specific fishing gears in designated conservation areas(e.g. tengefu)	According to the Fisheries Management and Development Act, No. 35 of 2016
4.No person shall fish using a sardine net within Nyuli-Jironi complex and Sii Island	BMUs to discuss further on what depth to be restricted
5.Use of small-scale purse seine is restricted within the designated depths as provided within the small-scale purse seine fishery management plan	According to the Small-scale purse seine fishery management plan
6.It is prohibited to fish in the following fish breeding areas using sardine net; Chanjale, Jibweni, Mwamba mkuu, Mwarembo, Sii, Baazo, Nyuli-ironi	Graduated penalty: i) Confiscation of vessel and everything therein for 3 months, ii) indefinite confiscation of of vessel and everything therein ii) acquisition of another vessel will lead to prosecution in a court of law.
7.Coral mining and sand harvesting along the beaches is prohibited	According to EMCA and Fisheries Managmeent and Development Acts
8.No person shall fish without a valid fishing license	According to the Fisheries Management and Development Act, No. 35 of 2016

9. The following fishing gears and methods are prohibited; spearguns, harpoons, beach seines, poison, dynamite, monofilament and any other prohibited fishing gear within the Fisheries Development and Management Act.	According to the Fisheries Management and Development Act, No. 35 of 2016
10. No person shall use new fishing technologies and practices without prescribed regulations and guidelines	Confiscation and surrender of the gear to the nearest Fisheries Department office
11. All fishing vessels and gears shall be clearly marked as prescribed from time to time	Confiscation of vessel and everything therein until marked
12. No person shall be issued a fishing licence without being vetted by the respective BMU	BMU shall reposes the license and verify with fisheries for cancellation of the license
13. Every licensed person shall have his/her catch inspected and data collected by the respective BMU	Graduated penalty: i) Suspension from fishing for 1 week, ii) suspension of fishing for 3 months, iii) a fine of Ksh5,000
14. No person shall participate in fishing and fishing related activities without paying the necessary fees and levies prescribed by the BMU	Graduated penalty: i) Suspension from fishing for 1 week, ii) suspension from fishing for 3 months, iii) a fine of Ksh5,000
15. No person shall harass, or engage in fishing for, catch, possess, transport, buy or sell any species of fish or their products declared endangered or threatened or protected; turtles, whales, dolphins, dugongs etc.	According to the Fisheries Management and Development and the Wildlife (Conservation and Management) Acts

Annex 4. Co-management Development Calendar

DATE	ACTIVITY	AGENDA	VENUE	No. Pax
15 th Jun 2016	CEC briefing meeting	The activity involved briefing Hon. Nyamasyo on the planned JCMA with highlights on the focal areas, engagement process of the stakeholders, and work already undertaken by other players in the past and seeking approval to undertake the exercise.	Kwale CEC office	6
9 th Jul 2016	Communit y sensitizati on	The objective of the meeting was to inform the BMU representatives consisting of the Chairman and Secretary drawn from each of the 7	Shimoni Fisheries Office	41

	planning meeting	BMUs on the planned JCMA exercise, as well as seeking their support in mobilizing the local communities to attend the sensitization meetings.		
13 th Jul 2016- 15 th	Stakeholder sensitization	The aim of this activity was to sensitize BMU members on the proposed JCMA development process and to build support and collaboration of the communities in gathering information on fisheries management issues, challenges and conflicts as well as in identifying possible solutions.	Shimoni-Vanga BMU offices	Shimoni-65 Vanga-85 Wasini-97 Kibuyuni-104 Jimbo-89 Mkwiro-139 Majoreni-41
17 th Jul 2016- 21 st	Socio-economic fisheries resource assessment and participatory mapping	Fisheries resource assessment was done to collect information on gear based fishery types and associated vessel types, gear use impacts on the ecosystem, identification of marine areas of ecological importance to fisheries productivity, challenges affecting artisanal fisheries and their solutions. This was done through FGDs with 7 representatives from each BMU. Participatory mapping was done to capture fishing areas interaction between the BMUs.	Shimoni-Vanga BMU offices	Shimoni-10(2F,8M) Wasini-8(2F,6M) Mkwiro-4M Kibuyuni-8(2F,6M) Majoreni-8(2F,6M) Vanga-8(1F,7M) Jimbo-7(2F,5M)
9 th - 24 th Aug 2016	Stakeholder Survey	Stakeholder interviews were done to collect information on current and future interests of various actors in the use and management of resources, expectations of the stakeholders and willingness to participate in and contribute to the management of the resources within the Shimoni-Vanga area.	Shimoni, Wasini, Vanga, Lunga Lunga, Mombasa	28
5 th Sep 2016- 8 th	Community feedback meetings	The meetings were held to provide feedback on the findings from the fisheries resource assessment and participatory mapping. Participants included BMU representatives, government agencies and other relevant stakeholders.	Shimoni-Vanga BMU offices	Shimoni-44 Vanga-48 Wasini-25 Jimbo-56 Mkwiro-89 Majoreni-42 Kibuyuni-60

9 th - 10 th Sep 2016	GIS ground truthing of the proposed JCMA	The purpose of GIS ground truthing was to map the extent of the 4 prior identified JCMA. 3 representatives from each BMU were selected to assist in identifying fishing sites.	Fishing grounds	25
13 th Sep 2016	Presentati on of progress to WB mission	The meeting was done to present progress of the work to the WB mission	Shimoni Hall	8
18 th - 19 th Oct 2016	ERA	The aim of the ERA was to identify and prioritize issues affecting the fisheries resources of the Shimoni-Vanga Area to ensure that the proposed JCMA Plan will be consistent with the EAF. The process involved consultative workshop which was conducted through discussion groups and presentations with representatives of the seven BMUs and other stakeholders.	Jungle Restaurant hall	59
3 rd Nov 2016	CEC briefing meeting	The purpose of the meeting was to give updates on progress of JCMA (Phase 1, 2 and 3) and receive feedback from Kwale County Government. A presentation mainly focusing on community meetings and mapping was done after which the CEC gave her feedback.	Kwale CEC office	8
7 th - 12 th Nov 2016	Joint CMA Co- managem ent draft compilatio n and drafting of by-laws	This activity involved drafting of the management plan, reviewing of the individual management plans that required completion and formulation of by-laws. The participants were consultants, SDF and CDF representatives.	UON Moana Marine Station hall	14
21 st Nov 2016	Feedback meeting	The purpose of the meeting was to present the draft and proposed joint management rules to the participants and to collect feedback.	Jungle Restaurant hall	47
16 th Dec 2016	High level stakehold	The workshop involved presentation of the 5year draft Joint Co-management	Red cross Ukunda hall	46

	ers' workshop	Area Plan to the higher level stakeholders for feedback.		
19 th -31 st Dec 2016	BMU By-law formulation	This activity involved formulation of by-laws by the BMUs alongside applicable penalties based on proposals made by consultants.	Shimoni-Vanga BMU offices	105
12 th Jan, 2017	BMU by-law harmonization meeting	This meeting involved presentation and harmonization of formulated BMU by-laws.	Shimoni community hall	39
27 th Jan and 3 rd Feb 2017	BMU assembly meetings	Objective of the meetings was presentation of key highlights of management plans and by-laws by BMU chair/secretary to the assembly for approval.	Shimoni-Vanga BMU offices	Mkwiro-107 Kibuyuni-91 Majoreni-32 Vanga-83 Jimbo-40 Shimoni-58 Wasini-96

Annex 5. Boat Management and Maintenance Plan

Justification

The Shimoni-Vanga Joint Co-Management Area (JCMA) plan has highlighted a number of management measures which are supposed to address fishing illegalities and generate information on the coastal and marine resources within Shimoni- Vanga JCMA. However, these management measures may be difficult to enforce to achieve the intended objectives and therefore requires a reliable boat for Monitoring Control and Surveillance (MCS). As a recommendation from the Shimoni-Vanga JCMA plan, the provision of a patrol boat will enhance the capacity of BMUs through the co-management arrangement in tackling these illegalities and challenges for the sustainable management of the fisheries resources.

Boat Management

Objectives

Objective 1: To improve fisheries surveillance, sea safety and security

Activities

- Conduct regular fisheries patrols including patrol budgeting and planning, briefings, patrol executions and debriefing in order to deter and eliminate illegal fishing and other crimes in the management area
- Conduct search, rescue, safety and security operations

Objective 2: To enhance MCS skills, knowledge and capacity

Activities

- Train MCS practitioners
- Conduct fisheries data collection within fishing areas

Objective 3: To support research and surveys

Activities

- Conduct periodic research

- Conduct rapid surveys and spot-checks

Boat anchorage and docking

The Boat will be kept by the Department of Agriculture, Livestock and Fisheries, Kwale County Government under the custody of the Directorate of fisheries. Factors considered under this agreement include:

- Ease of access and communication
- Security assistance from other security agencies
- Availability of boat and maintenance facilities
- Security of boat

Maintenance and repairs

County Government of Kwale will bear the cost of maintenance and repairs of the patrol boat through the county budgets.

Patrol operations

Regular programs will be developed by the County Director of Fisheries (CDF) in consultation with the Shimoni-Vanga JCMA Committee and the Beach Management Units as well as the inter-agency team whenever necessary.

The boat plan will be implemented under the coordination and harmonization of the JCMA implementation committee.

However joint patrol programs within the JCMA will be developed between the Kwale CDF under coordination and harmonization of the JCMA implementation committee. Emergency patrols and rescue services will be conducted on a need basis. The Kwale County fisheries office will be responsible for the provision of the patrol boats crew.

The boat will be available for use by other stakeholders for undertaking patrols and rescue operations within the Shimoni-Vanga JCMA with the approval of the implementation committee.

There will be three levels of patrol plans;

JCMA Patrol Plan

Joint Patrols within the Shimoni-Vanga JCMA will be facilitated by the County Government of Kwale through the CDF. The Patrols plan will be developed and coordinated by Shimoni-Vanga JCMA Implementation Committee.

BMU Patrol Plan

The BMUs will budget and facilitate for their patrol activities within their areas of jurisdiction and fishing ground. The planning of the patrols will be done by the BMU patrol sub-committee through the BMU executive. The implementation will be coordinated and harmonized by the BMU executive with close supervision by CDF.

Training and facilitation

Both the national and county governments and other stakeholders will identify needs, plan and facilitate training of both staff and BMUs. The training will cover MCS, security (firefighting, intelligence gathering), boat navigation (GPS, Compass, Eco-sounders), boat/engine maintenance, safety and rescue areas (First Aid) and any other necessary trainings.

Funding for the patrol operations

There will be four levels of funding to the patrol operations.

Government

- Kwale County Government will make budgetary allocation for the operation especially maintenance, fuel and lubricants, staff allowances, training, etc
- SDF & BE will facilitate capacity building of BMUs and staff involved in the implementation of Shimoni-Vanga JCMA, including patrols.
- Other government agencies (KMA, KWS, NEMA, KPA, Kenya Marine Police, Kenya Navy, KFS) will train and facilitate patrol operations in consultation and collaboration with fisheries agencies at both national and county levels.

BMU

The BMUs will plan, budget, source and facilitate patrols within their co-management areas.

Shimoni Vanga JCMA Committee

Shimoni-Vanga JCMA Management Committee will plan, budget, source and facilitate joint patrol operations within the JCMA. The planning will be done during annual general meeting of the Management Committee.

Other Stakeholders

Other stakeholders within the Shimoni-Vanga JCMA will be approached by the SDF & BE and Kwale County Government (through the CDF) for support in capacity building of BMUs, staff and facilitation of patrol operations. The stakeholders within the Shimoni-Vanga JCMA include: -

- Individual ring net owners
- Aquarium fishers
- NGOs and CBOs
- Sport fishers
- Hoteliers
- Fish processing companies
- Tour companies
- Individual well wishers

AMENDMENT AND REVIEW

The Shimoni-Vanga JCMA Management Committee may propose amendment to the Boat Management Plan to Kwale CDF, who will forward the same to the Director General of Fisheries for approval. Amendment may be done after two (2) months while a review will be done after four (4) years from the date of approval.

DATE OF IMPLEMENTATION

The date the plan is approved.

ACCEPTANCE/ADOPTION

The undersigned Kwale County Executive Committee Member responsible for Fisheries do herein accept and adopt this Plan for and on behalf of the BMU members within the Shimoni-Vanga JCMA.

Annex 6. A list of Stakeholder Survey and Focus Group Discussion (FGD) Participants

INSTITUTION	CONTACT PERSON	POSITION	TEL	EMAIL
GOVERNMENT OF KENYA				
State Department of Fisheries (SDF)	Ms. Mwaka Barabara	Ass. Director of Fisheries	721 900340	barabaraside@gmail.com
Kenya Fisheries Service	Mr. Barnadict Kiilu	Snr. Fisheries Officer	721 721728	kiilub@yahoo.com
Kenya Fisheries Service	Ms. Elizabeth Mueni	Snr. Fisheries Officer	722 326826	emuenibf@yahoo.com
Kenya Fisheries Service	Mr. Willey Mututa	Snr. Fisheries Officer	732 566999	willeymututa@yahoo.com
Kenya Fisheries Service	Mr. John Njuguna	Snr. Fisheries Officer	723 732934	john.njuguna4@gmail.com
Kwale County Government	Hon. Joanne Nyamasyo	CEC, Dpt. of Livestock and fisheries	720 876305	nyasyo@yahoo.com
Kwale County Government	Mr. Kiogora	County Director of Fisheries, Kwale	722 294890	fisherieskwale@gmail.com
Kwale County Government	Mr. Japheth Musila	Fisheries Officer, Kwale	711 655420	fisherieskwale@gmail.com
Kwale County Government	Mr. Ronald Deche	Snr. Ass. Fisheries Officer, Kwale	735 242421	ronald.deche@gmail.com
Kwale County Government	Ms. Riziki Mwasoza	Kwale County Ward Admin (Lunga Lunga Ward)	721 116046	rmwasozavanga@yahoo.com
Kwale County Government	Mr. Zanny Mohamed	Kwale County Ward Admin (Pongwe-Kikoneni Ward)	725 274045	zanny.mohamed@yahoo.com
County Government of Kwale		Member of County Assembly (MCA), Pongwe-Kikoneni Ward		
NEMA	Mr. George Oyoo	Director Kwale County	722 942081	kamulajm@gmail.com
Kenya Forest Service (KFS)	Ms. Nafasi Mfahaya		724 547679	nmfahaya@gmail.com

Kenya Wildlife Service	Dr. Judith Nyunja	Senior Research Scientist	721 277154	judithnyunja@gmail.com
Kenya Wildlife Service	Ms. Grace Kariuki	Warden, Shimoni	721 854365	gkariuki@kws.go.ke
Kenya Maritime Authority (KMA)	Mr. Cosmas Cherop	Managing Director	722 258690	dg@kma.go.ke
Kenya Ports Authority	Mr. Langoni		722 402143	
Kenya Marine and Fisheries Research Institute (KMFRI)	Drs. Galdys Okemwa	Research Scientist	722 488947	gokemwa2002@yahoo.com
Kenya Revenue Authority (KRA)	Mr. Mohamed Ahmed	In charge, Shimoni		
Immigration Department, Shimoni	Mr. Francis Kimani			
Kenya Navy	Mr. Mraja	In charge Navy Base, Shimoni	720 805867	
Kenya Police Service	Madam Rachel Togom	Officer Commanding Police Division (OCPD), Shimoni		
Kenya Police Service	Mr. James	In Charge, Marine Police, Shimoni	722 333180	
Local Admin	Ms. Bey	Sub-Chief Wasini		
Local Admin	Mr. Rashidi	Snr. Chief Shimoni (Shimoni-Pongwe)		
Pwani University	Dr. Joseph Tunje	Lecturer	720 596502	tunjej49@gmail.com
Technical University of Mombasa (TUM)	Dr. Cosmas Munga	Lecture	735 979383	cosmasnke2001@yahoo.com
Regional Centre for Mapping of Resources for Development (RCMRD)	Mr. Denis Macharia		725 816711	dmacharia85@gmail.com
NGOs				
Coastal and Marine Resources Development (COMRED)	Mr. Nyaga Kanyange	Coordinator	725 139003	nyagak@gmail.com
Coastal Oceans and Development-East Africa (CORDIO-EA)	Mr. Kennedy Osuka	Research Scientist	710 998208	kosuka@cordioea.net

East African Wildlife Society (EAWLS)	Ms. Agatha Ogada	Coordinator, Coast Region	720 583450	agathaogada@gmail.com
Africa Nature Organisation				
ECO-ethics	Dr. Bernard Okeyo	Director	722 208676	okeyob@yahoo.com
Wildlife Conservation Society (WCS)	Ms. Carol Abunge	Research Scientist	735 627145	cabunge@wcs.org
Community Action for Nature Conservation (CANCO)	Mr. Hardly Becha	Director	728 607519	becha@cancokenya.org
Seacology	Mr. Dishon Murage		722 270298	dishonmurage@gmail.com
The Nature Conservancy (TNC)	Mr. George Waweru	Marine Coordinator	721 872771	gwmaina@tnc.org
LOCAL CBOs				
Wasini Women Group				
Wasini Slave Caves	Mr. Hassan Juma Salim	Chairman	705 858285	
Mkwiro Ecogroup				
Kisite Community Boat Operators	Mohamed Shebwana Aly	Chairman		
Majoreni Bee Keepers Association				
Jimbo Environmental Group	Kai Mtoro Mwichambi	Chairman	724 306872	
Vanga-Jimbo-Kiwegu Forest Association (VAJIKI)				
BMUs				
Shimoni BMU	Mr. Halifa Omar	Chairman	723 235469	
Mkwiro BMU	Mr. Mohamed Ropa	Chairman	716 043148	
Wasini BMU	Mr. Abubakar	Chairman	721 432107	
Kibuyuni BMU	Mr. Mohamed Jasho	Chairman	720 215520	
Majoreni BMU	Mr. Bakari Makame	Secretary	728 716724	
Jimbo BMU	Mr. Ali Shilingi	Chairman	719 337573	
Vanga BMU	Mr. Mohamed Ndaro	Chairman	727 137925	
Shimoni BMU	Haruni Mbeta	Member	0722305884	
Shimoni BMU	Juma Makame	Member		

Shimoni BMU	Silazima Omar Alfar	Member	0705992121	
Shimoni BMU	Mwalulu Bakari	Member	0711286781	
Shimoni BMU	Rishad Iki	Member	0729264544	
Shimoni BMU	Mwanamisi Hatibu	Member	0726914168	
Shimoni BMU	Fatuma Abdu Athman	Member	0705482118	
Shimoni BMU	Said Shee Moh'd	Member		
Shimoni BMU	Juma Zaharan	Member		
Wasini BMU	Heri Hamisi Salom	Member		
Wasini BMU	Muchambi Ramah	Member	0724242035	
Wasini BMU	Hemedi Mohamed	Member		
Wasini BMU	Zaidi Athman	Member		
Wasini BMU	Muhidin Musa	Member		
Wasini BMU	Nazo Yaro	Member		
Wasini BMU	Hadia Pandu	Member		
Wasini BMU	Mtwana Makame	Member	0727421760	
Mkwiro BMU	Rashidi Mohamed	Member		
Mkwiro BMU	Hamisi Omar	Member		
Mkwiro BMU	Athman Alingonga	Member	0712947510	
Mkwiro BMU	Mshamanga Neema Abdalah	Member	0717088578	
Kibuyuni BMU	Mnyetto Kombo	Member	0703591633	
Kibuyuni BMU	Hamisi Nasoro Mwakuyeya	Member	0701754307	
Kibuyuni BMU	Mzee Bakari Mohamed	Member		
Kibuyuni BMU	Juma Bamiro Supi	Member	0718258204	
Kibuyuni BMU	Mwanaisha Ali Kassim	Member	0792359423	

Kibuyuni BMU	Mwanajumbe Mohamed Diwani	Member	0705959809	
Kibuyuni BMU	Omari Salim Mwarima	Member		
Majoreni BMU	Mohammed Mtwana	Member	0703608023	
Majoreni BMU	Bakari Tambo	Member	0702081240	
Majoreni BMU	Waziri Nassoro	Member		
Majoreni BMU	Juma Nassoro	Member	0705646781	
Majoreni BMU	Mwambikao Hatibu	Member	0728721072	
Majoreni BMU	Fatuma Omari	Member	0728518662	
Majoreni BMU	Omari Bakari	Member	0715934717	
Majoreni BMU	Rama Swalehe	Member	0725218120	
Vanga BMU	Shosi Yusuf Baishe	Member	0715105645	
Vanga BMU	Abdalla Omar	Member		
Vanga BMU	Amani Songoro	Member	0729833734	
Vanga BMU	Mwanaisha Bandika	Member		
Vanga BMU	Jube Hatibu	Member		
Vanga BMU	Jalala Mchole	Member	0715285347	
Vanga BMU	Kombo Ngole	Member		
Jimbo BMU	Mwambwiza Tuweni	Member	0718181959	
Jimbo BMU	Hassan Ali Hassan	Member		
Jimbo BMU	Mbwana Halawi	Member		
Jimbo BMU	Masika Mohammed	Member		
Jimbo BMU	Sauda Hassan	Member		
Jimbo BMU	Rama Yusuf	Member		
COMPANIES				
Pillipipa Dhows	Mr. Ham Lutjeboer		722 244694	
Diani Marine	Mr. Saidi Kapera	Manager	722 241598	