

**REPUBLIC OF KENYA**  
**COUNTY GOVERNMENT OF KWALE**  
**DEPARTMENT OF AGRICULTURE, LIVESTOCK AND FISHERIES**



**FISHERIES DIVISION**  
**MKUNGUNI BMU CO-MANAGEMENT**  
**PLAN**

**A 5 – YEAR MANAGEMENT PLAN TO GUIDE THE  
DEVELOPMENT OF THE MKUNGUNI CO-MANAGEMENT  
AREA**

**2015 - 2019**



**CORDIO**  
*East Africa*





## **APPROVAL PAGE**

### **ENDORSEMENT OF MKUNGUNI BMU CO-MANAGEMENT PLAN (2015-2019)**

**WHEREAS** the fishery resources within the Mkunguni BMU co-management area is important for the maintenance of coastal livelihoods

**WHEREAS** the Fisheries Act Cap 378, Part II, Clause 5, provides for the Director of Fisheries with approval of the Minister by notice in the gazette to impose fisheries management measures necessary for the proper management of any fishery

**WHEREAS** the Beach Management Unit Regulations of 2007, Part II, Clause 7 provide the authority of the Director of Fisheries to designate co-Management areas and develop co-Management Plans

**THEREFORE, I hereby**

**DESIGNATE** Mkunguni co-management area as an area in which the Mkunguni Beach Management Unit shall undertake fisheries management activities jointly with the Director of fisheries,

**DECLARE** the Mkunguni BMU co-management plan as a plan specifying the fisheries management measures that are to be taken to ensure the sustainable utilization of fisheries within the Mkunguni co-management area,

**DELEGATE** authority for the responsible and sustainable management and conservation of fisheries resources to Mkunguni BMU.

**Signed:**

**Date:**

**DIRECTOR OF FISHERIES**

**Signed:**

**Date:**

**COUNTY DIRECTOR OF FISHERIES**

**(KWALE COUNTY GOVERNMENT, KENYA)**



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(Cover photo: - Tsarika 200m from mawezani landing site, Mkunguni CMA)

**Citation:** This document may be cited as *Tondwe H. S., et al (2015): Mkunguni co-management plan: Mkunguni co-management area. (Murunga, M., Ed.), CORDIO East Africa, State Department of Fisheries Kenya, United Nations Development Programme – Small Grants Programme, Nairobi, Kenya.*





## EXECUTIVE SUMMARY

In compliance with the national Fisheries Act (Cap 378, Rev. 2012, Laws of Kenya) Mkunguni BMU is required to develop a co-management plan for its designate co-management area (CMA). In developing the co-management plan for the Mkunguni co-management area, the Mkunguni BMU strives to establish biodiversity conservation, fisheries sustainability and improved livelihoods as foundation of a sustainable local economy, creating access, benefits, and opportunities for all and to further strengthen the management of fisheries and aquatic resources.

The purpose of this co-management plan is to ensure that Mkunguni co-management area has clearly defined objectives and activities to direct the protection and sustainable use of its natural and cultural resources over a five year period. The co-management plan indicates where the Mkunguni BMU executive committee intends to focus its efforts in the next five years (2015 – 2019). The co-management plan thus provides the working structure for the prioritized allocation of resources and capacity in the management and development of the co-management area.

It must be noted that the co-management plan focuses on planned priorities rather than detailing all operational and potential reactive causes of action in the next five years. A general stakeholder participation process was adopted in the development of this co-management plan (figure 4). The objectives of the co-management plan were additionally developed in accordance with those stipulated in the Mkunguni BMU by-laws. Furthermore the vision was used to guide the development of the objectives.

Five objectives were developed for the Mkunguni co-management area and they are **1)** to protect integrity of natural resources for the benefit of the community and future generations, **2)** to improve fisheries sustainability for enhanced food security, **3)** to reduce poverty among the community through enhanced income generation activities, **4)** to enhance unity in the community for development and compliance to the CMA guidelines, **5)** to promote and enhance access of information for scientific research, education and awareness.

Mkunguni is a fishing village located in Msambweni sub-county, Kwale County, Kenya. It's bordered to the north with Mwandamo and Gazi villages; to the south with Mwaembe and Munje villages. The Mkunguni co-management area covers an area of 10.71 sq. km (1071.23 Ha) (figure 1) supporting high diversity of plants and animals. Mkunguni BMU has a unique local responsibility with regards to fisheries and marine resources management. Their co-management area forms as an important habitat for Rabbitfish (*Siganus sutor* – tafi in Swahili) spawning aggregations, a locally important fishery.

The co-management area zonation (figure 2) goes beyond the natural resource protection by providing appropriate visitor experience; environmental education; and commercial activities where appropriate. The implementation framework (appendix 3) guides the implementation of the co-management plan over five years to ensure it achieves its management objectives.



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## ABBREVIATIONS

BMU	Beach Management Unit
CCA	Community Conservation Area
CMA	Co-Management Area
CMP	Co-Management Plan
CORDIO	Coastal Oceans Research and Development Indian Ocean
GEF	Global Environment Facility
KFS	Kenya Forest Services
KMA	Kenya Maritime Authority
KMFRI	Kenya Marine and Fisheries Research Institute
KWS	Kenya Wildlife Services
LMMA	Locally Managed Marine Area
NEMA	National Environment Management Authority
NGO	Non-Governmental Organization
OECD	Organization for Economic Cooperation and Development
SDF	State Department of Fisheries
SGP	Small Grants Programme
UNDP	United Nations Development Programme



## ACKNOWLEDGEMENT

The Authors would like to express their gratitude to all those who contributed both formally and informally to this co-management plan, including the members of the Mkunguni BMU assembly, members of public, the community as well as the following individuals and groups:

Mr. John Kiarie Njuguna, Dr. Melita Samoilys, Ms. Joan Kawaka, Mr. Christopher Mwanzia, Ms. Jennifer Ndunge, Mr. Michael Murunga and Mr. Mzee Athman Rengwa for their internal technical review, guidance and support during the drafting and consultation process. The Kwale BMU Network, Munje BMU, Mwandamo BMU, Gazi BMU, Mwaembe BMU and Other stakeholders groups are also thanked for facilitating their representatives to attend the consultation forums.

Special gratitude goes to the UNDP Small Grants Programme, Global Environmental Facility for facilitating the whole process through their generous financial support, without whom this work would not be possible.

Thank you.





## SECTION 1: MANAGEMENT FRAMEWORK

### 1.0. INTRODUCTION

Marine Community Conservation Areas (CCA) also known as Locally Marine Managed Areas (LMMA), *are areas of near shore waters and coastal resources that are largely or wholly managed at a local level by the coastal communities, partner organizations and collaborative representatives.*

Hence a co-management plan may be defined *as a document that leads and guides an organized conservation and management process in order to achieve desired goals and objectives.* The overall mission of CCAs is to conserve and manage the extraordinary variety of the marine and coastal biodiversity for the benefit of present and future generations.

These area (Mkunguni BMU) five year management plan (2015/16 - 2019/20) has been produced by the Mkunguni BMU, Division of Fisheries (Kwale), CORDIO East Africa and in collaboration with other Key stakeholders through a consultative and participatory process that has taken into account the interest and concerns of interest groups.

**Co-management (also called participatory, collaborative, joint or round table management)** is a process of management in which the government shares power with resources users, with each given specific rights and responsibilities relating to information and decision making (OECD, 1998).

It's also defined as a situation where **two or more social players** define, negotiate and guarantee amongst themselves a fair sharing of the management functions, entitlements and responsibilities for a given territory, area or natural resources (Borrini F.G et. al. 2007).

Production of the co-management plan has been undertaken through the sponsorship of the Global Environmental Facility, United Nations Development Programme (UNDP), Small Grants Programme (SGP) funded project on *mainstreaming biodiversity conservation into marine ecosystems and fisheries management in Kenya.* The co-management plan component was a shared objective of the Division of Fisheries (Kwale) and CORDIO East Africa.

This co-management plan is a statutory document, which implements fisheries management strategies of the Mkunguni CMA with Mkunguni BMU taking the lead in consultation with Division of Fisheries (Kwale) and other partners. The plan set clear goals and objectives of the co-management area within the framework of previously defined BMU boundaries by SDF and their geographical location along the Kenya coast.



The plan also describes the biophysical characteristics including the biological, ecological, economic, social and cultural values, and attributes of the resources within the co-managed area (CMA). It further highlights on the management authorities and collaborating institutions spelling out duties of the stakeholders concerned in order to shun duplication of energies and also to promote incorporation of the management process. It provides a guide for day to day management of the CMA providing strategic direction for management.

The Mkunguni BMU co-management plan provides an avenue for implementation of sustainable development principles by establishing standards for monitoring and evaluation. It provides criteria for zoning and implementation of standardized activities within and around the CMA, identification of vulnerable, threatened species, fragile habitats and defining sustainable resource use limits to avoid over exploitation of marine resources and environmental degradation. Furthermore, it provides a mechanism for identifying threats that affect the CMA and conflict resolution strategies involving stakeholders and resource users.

The Mkunguni BMU co-management plans provides the framework for developing concise annual work plans which are focused to meet the mission of both the BMU. It is believed that the CMA plan will be revised within a five year time frame to accommodate changing circumstances. Further, these being the first co-management plan to be developed, the next stages are envisaged to be an improvement of these plan.

The Mkunguni CMA is established in accordance with the Fisheries Act (Cap 378, Rev 2012 Laws of Kenya) that are being administered by the Division of Fisheries (Kwale) for the purpose of strengthening the management of Kenya's fisheries resources.

The Mkunguni CMA and CMP is in response to growing concerns by local fishers on depletion of the marine environment and fishing grounds by migrant fishers through overfishing and use of destructive fishing gears; further it's also a requirement under the fisheries BMU regulation of 2007. The CMP is geared to address conservation and management issues by governing activities which possibly will undesirably affect the marine environments. The plan also seeks to improve community livelihoods through alternative sources of income such as tourism and recreational fishing.



## 1.1. MANAGEMENT OBJECTIVES

### VISION

A secure and productive Mkunguni co-management area

### GOALS AND OBJECTIVES

The goal of the Mkunguni CMA is to ensure conservation and sustainable use of biodiversity and ecological processes of the Mkunguni CMA; including the cultural and historical features through partnerships, research and awareness.

**Objectives 1:** - To protect integrity of natural resources for the benefit of the community

**Objectives 2:** - To improve fisheries sustainability for enhanced food security.

**Objective 3:** - To reduce poverty among the community through enhanced income generation activities

**Objective 4:** - To enhance unity in the community for development and compliance to the CMA guidelines

**Objective 5:** - To promote and enhance access of information for scientific research, education and awareness

## 1.2. PLAN PERIOD AND PREPARATION

The Mkunguni co-management plan will cover a period of five years, between 2015 and 2019. The plan was developed through a consultative process between November 2014 and February 2015. The process was advocated for by the Mkunguni BMU and co-facilitated by the Division of Fisheries (Kwale) and CORDIO East Africa through the UNDP SGP funded project on “*mainstreaming biodiversity conservation into marine ecosystem and fisheries management in Kenya*”.

Primary data collection involved focus group discussions, consultation meetings, ecological and social economic surveys and participatory mapping. Different stakeholder’s including county government officials, residents, hoteliers and neighboring BMUs were involved in consultations.



## **REVISION OF THE MANAGEMENT PLAN**

The Plan will be reviewed on need basis upon approval by the BMU assembly and in consultation with the Division of Fisheries (Kwale). These draft will be reviewed overly after 5 years of constitution, approval and operationalization.





## SECTION 2: MKUNGUNI CO-MANAGEMENT AREA

### 2.0. OVERVIEW AND BACKGROUND OF MKUNGUNI

Mkunguni is a fishing village located in Ramisi ward; Msambweni sub-county; Kwale County, Kenya. It is bordered to the north with Mwandamo and Gazi villages; to the south with Mwaembe and Munje villages. It has latitude 04.47325 SE and longitude 39.49094 SE. The Mkunguni co-management area (CMA) is located at the seafront of Mkunguni at Sawasawa, Tumbe and Kisima Chande villages. It has two landing sites Mkunguni at coordinate lat: 04.47325 SE; long: 39.49094 SE and mawezani at coordinate's lat: 04.47546 SE; long: 39.48944 SE.

The CMA covers an area of **10.71** sq. km (1071.23 ha) see figure 1 below; supporting several clearly defined plant and animal communities. Its spans from Tsarika (Gome Simba) to the south and Mgoshi to the North. Its further extends seaward to inner jamba kuu (above Kwale fishing site) to the south to Madzivwike fishing site in the north.

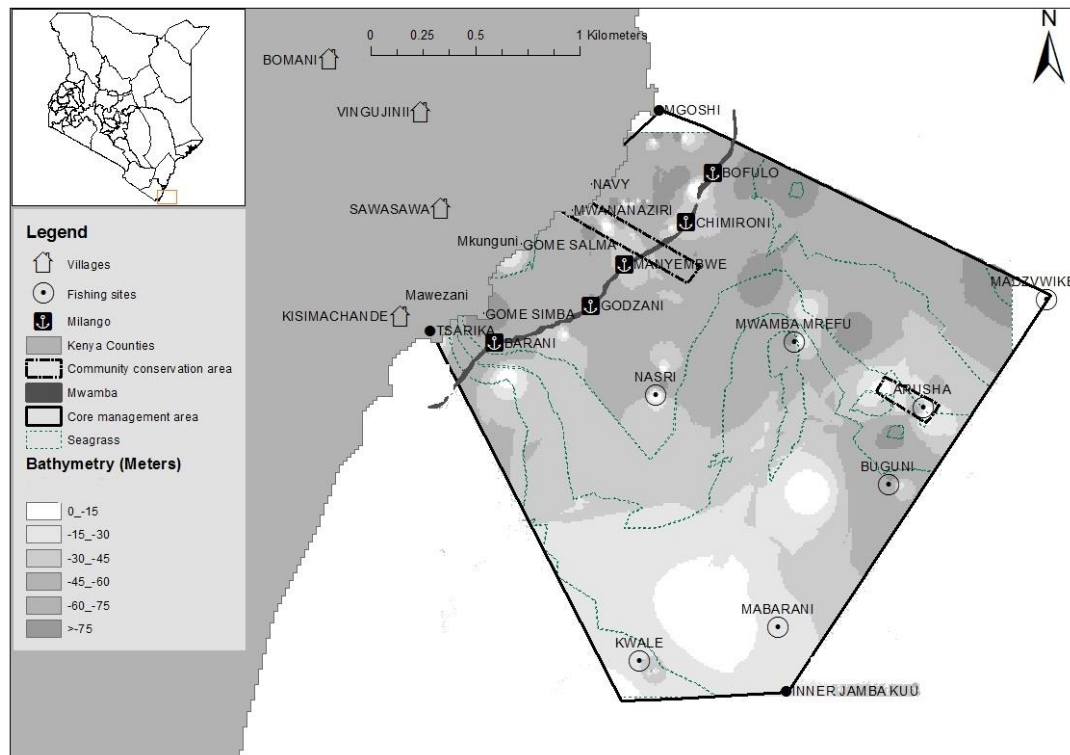


Figure 1: Mkunguni BMU co-management area

*\* The Mapping of the Mkunguni CMA was done with approval of the designated Fisheries Officer in Msambweni sub-county according to the fisheries BMU regulations of 2007.*



The Main habitats in the CMA are sea grass beds and coral reefs whose distribution is predominantly determined by physical conditions such as tides, currents and substrate types. In addition the area also contains sand beaches, lagoons and algal beds supporting extensive biodiversity.

## CLIMATE

The area receives an annual rainfall of 1397mm. The climate is influenced by two alternating and distinct seasons, the northern and southern monsoons, having effect on air and water temperatures, winds and rainfall. The North East monsoon (Kaskazi) wind is usually steady and light it occurs during the months of November and March; while the South East monsoon (Kusi) winds is usually stronger. Occurs during June to September. The Wind seasonality influences fishing activities at sea.

## HYDROLOGY

The CMA has one seasonal river (river mwamrundi) located 50m south of mawezani landing site emptying its waters into the sea.

## MARINE SYSTEMS

### Flora (Sea grass beds)

The Mkunguni CMA has 5 species of sea grass observed to date. The main species of sea grasses includes *Thalassodendron ciliatum*, *Cymodocea serrulata*, *Cymodocea rotundata*, *Thalassia hemprichii* and *Halophila ovalis*. These seagrass beds are important feeding and habitats for most fishes.

### Fauna (Fish)

The most common fish species recorded during a fish survey within the CMA are emperors (Lethrinidae), and rabbitfish (Siganidae), other species of fish observed during the surveys include snappers (Lutjanidae), sweetlips (Haemulidae), parrotfish (Scaridae), surgeonfish (Acanthuridae), and goatfish (Mullidae). The fish species diversity has not been recorded, but over 130 species and 37 families have been recorded during different surveys (George W Maina, 2013).

### Other Marine fauna

Several species of birds have been observed in the Mkunguni CMA however their diversity has not been determined. They include: Pied kingfisher, Black heron, Lizzard Buzzard, and the malachite kingfisher which might be attributed to nearby coastal forest.



Coral reefs and seagrass beds support large variety of echinoderms and mollusks. The most important include: Sea urchins – vishimba (*Diadema setosum*, *Echinothrix diadema* and *Diadema savigyi*); Holothuroidea (sea cucumbers); and Asteroidea (brittle stars). Cowries, Helmet shells and clams are also observed.

The area also forms as breeding ground for sea turtles. Kenya has 5 species of turtles namely: Green turtle (*Chelonia mydas*); Hawksbill (*Eretmochelys imbricate*); Olive ridley (*Lepidochelys olivacea*); Loggerhead (*Caretta caretta*) and Leatherback (*Dermochelys coriacea*). The key species known to frequent the Mkunguni CMA are the Green turtles and Hawksbill turtles; while others have limited observations in the area.

## **SOCIAL, CULTURAL AND ECONOMIC CONTEXT**

Mkunguni CMA fishers come from five villages in Sawasawa, Tumbe, Vingujini, Kisima chande and Bomani. The area has approximately 11,000 households with majority of the inhabitants coming from the Digo community. Chidigo is the common language; they form part of the Bantu groups of coastal Kenya commonly referred to as the Mijikenda. Their historical interaction with the Arabs has given them the privilege to enjoy a high living standards.

They are self-sufficient economically hence less dependent on the neighbor tribes. They are mostly involved in trading, farming and fishing. Over time their large fortified villages have been reduced to small concentration with some indicators on the house (hut) design showing who lives there; round shaped are for elders while others occupies rectangular shaped huts.

### **2.1. ZONATION**

The Mkunguni CMA zoning scheme divides the multiple use area into zones that have different levels of protection depending on their respective conservation, economic and cultural importance. The aim of the zoning scheme is to:

1. Protect critical habitat for spawning aggregations especially the rabbitfish (*Siganus sutor* – in Swahili, - tafi) and species rich habitats including sub-tidal areas and turtle breeding grounds.
2. Recognize traditional/local community fishing grounds and provide a means for sustainable utilization.
3. Provide a geographical basis against which to evaluate resource use and to monitor and review the effectiveness of the management plan.
4. Provide a framework for surveillance and patrolling activities by focusing enforcement in zones with higher levels of protection.





There are three types of zones within the Mkunguni CMA:

- a. Gear restricted fishing zones
- b. No-take zone used mainly as a breeding area
- c. Multiple use zone

Gear restricted fishing zone allows the use of specific less destructive gears such as the basket traps, certain gillnets and hand lines. Habitat destructive gears and high impact gears will not be allowed such as the illegal beach seine and other gears to be specified through subsequent addendum. The BMU in consultation with Division of Fisheries (Kwale) and the BMU assembly will communicate and effect such restrictions through a consultative process.

A No-take zone have is proposed (see figure 2) and will be effected upon approval of the plan; this will see the closure of a rabbitfish spawning aggregation site/ habitat from all forms of fishing. Recreational activities in the area will be managed through provision of buoys for anchoring.

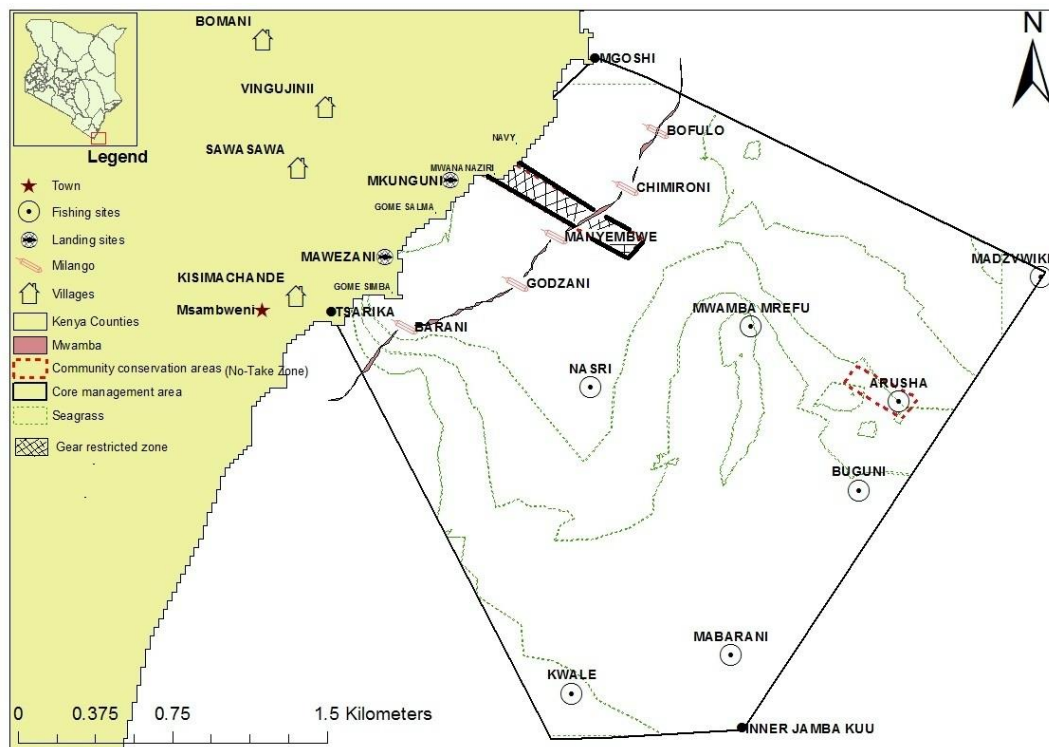


Figure 2: Map showing no-take zone, gear restricted zone and multiple use zone

The BMU in consultation with relevant stakeholders will develop codes of conduct and regulations including those of tourism and visitor management and this will form an integral part of this management plan when approved by the County Director of Fisheries.





## SECTION 3: FISHERIES IN MKUNGUNI ORGANIZATION OF FISHERIES

### 3.0. DIVISION OF FISHERIES AND ITS ACTIVITIES

The Division of Fisheries, Kwale are one of the main partners for fisheries management within the Mkunguni CMA. The relationship between the fisheries officers and the Mkunguni BMU is critical to the successful management of the CMA. There are two fish landing sites in the Mkunguni BMU; <sup>1</sup> Mawezani and <sup>2</sup> Mkunguni. The site management activities are being coordinated by the BMU executive in collaboration with County fisheries officer.

#### 3.1. ARTISANAL FISHERS

Artisanal fishing is the main economic activity for the fishers of Mkunguni. It's carried out for both small scale commercial and subsistence use. The Mkunguni BMU acknowledges presence of approximately 150 fishers portioned into two faction of fishers; <sup>1</sup> 'dominant local' and <sup>2</sup> 'resident migrants'. The principal fishing area is at the Mkunguni CMA containing around 8 fishing areas (Kwale, Fingoni, Chimironi, Nasri, Buguni, Arusha, Mwamba Mrefu, Maktubu and Madzivwike) as described on the participatory community sketched map (figure 3).

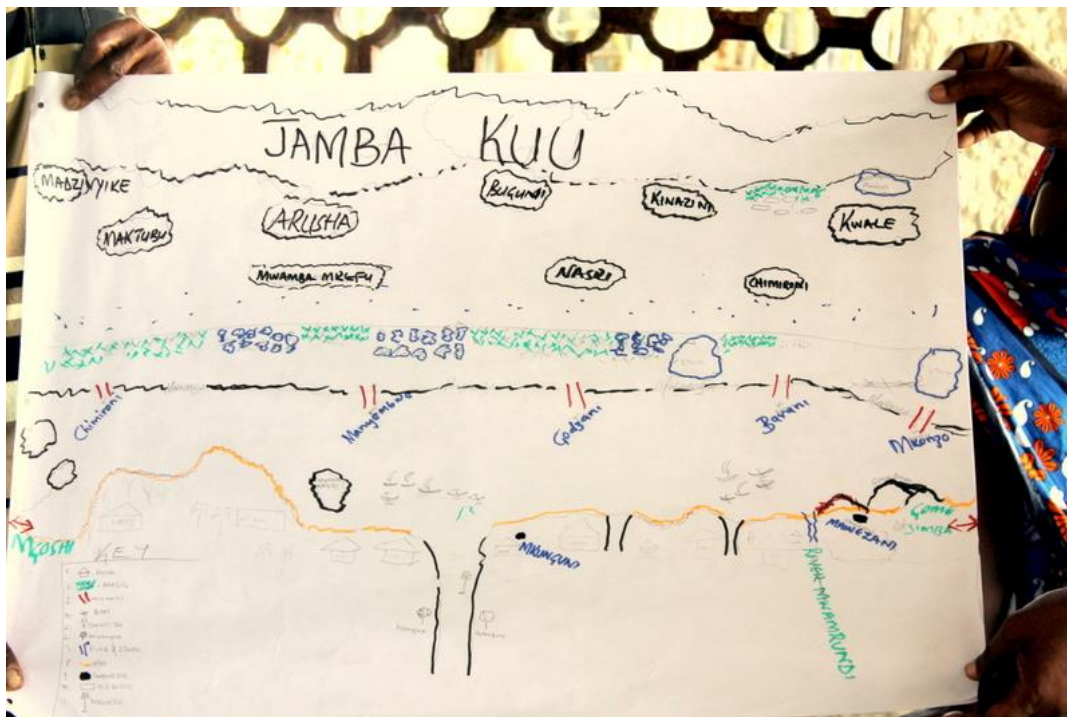


Figure 3: community drawn map showing different fishing sites and basic physical features.



Mkunguni fishers are largely engaged in mixed fishing of both demersal fish, pelagic fish and other marine invertebrates such as the octopus and squids. The Mkunguni fisheries also presents an important habitat for fish spawning aggregation in particular the rabbit fish (*Siganus sutor*).

The season for all fishing activities is dependent on demand and weather patterns. The northeast monsoon (Kaskazi) is the main season for fishing activities within the Mkunguni CMA, when the waters are calm and demand increases. The southeast monsoon (Kusi) affects easy access to the northern section of the Mkunguni CMA resulting to reduced fishing activities. In addition the rough seas during this period, results to activities being restricted to the inner shore areas (lagoons).

### 3.2. FISHING GEAR AND TECHNIQUES

There are a number of fishing gears used to catch fish in the Mkunguni CMA and can be engaged from the shore to the outer reef edge. The main gear types used are summarized below.

#### FISHING VESSELS

The community fisher's uses two types of traditional fishing boats; Dau (dugout canoe) and Ngalawa (sailing outrigger canoe).

**DAU (ALSO CALLED MTUMBWI, HORI)** – Lengths to 3m; draft to 50cm. It's noted as most basic and probably oldest water craft in the region. The hull is carved out of a single tree trunk and a basic paddle or punting pole is used for propulsion. The load usually don't exceed four persons and some small cargo typically fish and nets.

**NGALAWA (Outrigger canoe)** – Length to 6m; draft to 0.5m. The hull is basically a dugout canoe, often with an upwardly – curved and fanned bow and a pointed stern where the rudder is fixed. Two stabilizing outriggers are attached to poles fixed inside the hull. The short mast, supported by movable stays, carries a spar (often a bamboo) and a lantern sail. It's used in near shore and inshore reef area, with a carrying capacity of 10 persons.



## **FISHING GEARS**

### **BASKET TRAP (MALEMA)**

They are handmade baited traps with a split of bamboo frame and interwoven with split bamboo reeds to form a hexagon-shaped basket with regular hexagon mesh. Bait (algae, sea urchin, mollusks) attracts the fish inside through a cone-shaped entrance on one side of the trap. Pieces of rock or dead coral are tied onto the sides to weigh the traps down. This method of fishing tends to be relatively non-destructive as the traps are usually kept away from corals to avoid being damaged.

### **SPEAR GUN (BUNDUKI YA KUVULIA)**

A long handgun made of wood (sometimes tubular metal) with a separate steel harpoon with sharpened tip which is propelled by rubber strips. Used mainly by snorkelers.

### **SCOOP NET (KIMIA)**

Small, hand-operated net held open by a metal frame, with an extended metallic or wooden handle. Mainly used to scoop fish near the surface of the water, also used for lobsters.

### **GILLNET (JARIFE)**

Gillnets fall into two broad categories based on how they are used; drifting or stationery. The net is made up of multifilament nylon string of varying thickness and mesh size. Gillnets are suspended by floats and held vertically in the water column with lead or stone weights. Fish become entangled in the netting by their operculum and further entrap themselves as they struggle to escape. Stationery gillnets are deployed by at least two (2) fishers from a boat or canoe. They are set at the bottom, mid water or at the surface largely depending on target species.

### **LONG LINE (DHULUMATI)**

Single mainline of monofilament nylon which is buoyed in a horizontal position and often anchored. A series of vertical short nylon snoods (leaders, sidelines or traces) with baited hooks are attached at intervals. They are deployed offshore from a motorized or sailing boat.

### **HAND LINE (MSHIPI)**

Single monofilament nylon line with one with one or more steel hooks onto which baits are fixed. Sometimes a thin wire (or 'trace') is added between the hook and the mainline to prevent fish from biting through the nylon when hooked. Lead weights or stones are attached to sink the line. The fishers are highly mobile.





### **MSHOMO (STICK FOR OCTOPUS FISHING)**

These are sets of three sticks used to catch octopuses. Nails can also be used instead of sticks though they catch small octopus sizes. Traditionally, sticks are used cut off from trees. These trees are used to poke the octopus and pull them out of their holes. Octopus hide behind stones, thus one must remove with care and put one stick inside the hole. The octopus will respond by holding the stick with its arms. If the octopus is too big the second stick is poked at this so that it grabs that one too. The third stick is then used to hook the octopus and pull it out.

In Kenya fishing activities are governed by the Fisheries Act (Cap 378) and other subsidiary legislations as the fisheries BMU regulations. This legislations provide guidance on the legality of fishing gear and what management measure can be taken for resource conservation.





## SECTION 4: STAKEHOLDER PARTICIPATION

Mkunguni BMU recognizing the significance of collaboration, coordination and involvement of different players for natural resource management. Identified key stakeholders (individuals, organizations, institutes/ state agencies) that would be essential for enhanced implementation of the co-management plan and management of the area. Acknowledging that the stakeholder engagement process will facilitate involvement of many players in management they developed a stakeholder participations strategy towards the management plan (figure 4). Mkunguni BMU defined proposed activities that the stakeholders might be engaged in whilst implementing the plan.

### 4.1. STAKEHOLDER ANALYSIS

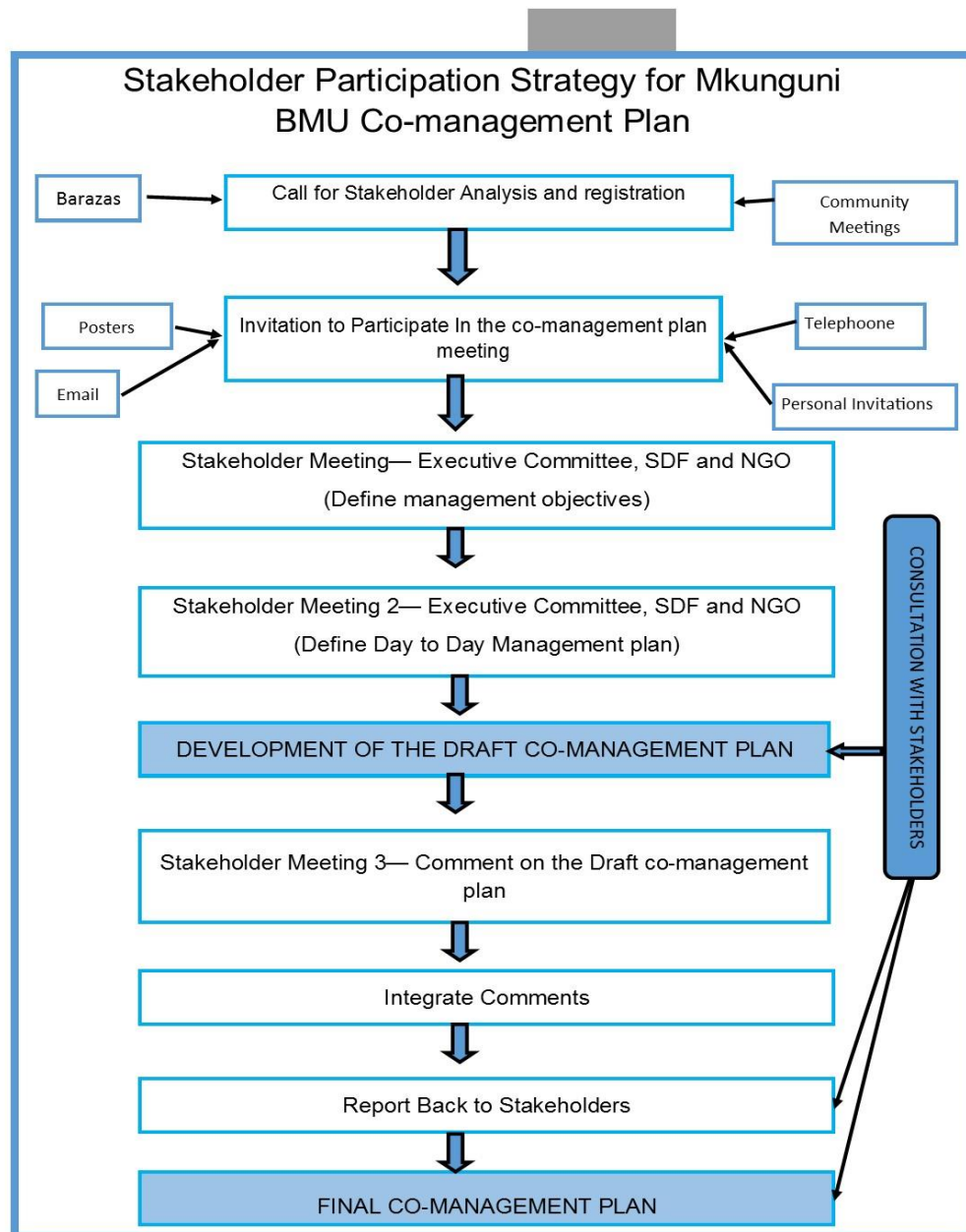
- A. **Mkunguni BMU Assembly and Local Community** – Being the main custodians and implementers of the CMA plan; they are noted to have a unique role of ensuring effective management of the CMA. Tasked with providing leadership and awareness to the other community members.
- B. **Division of Fisheries, Kwale** – Lead government agency with legal mandate on development and management of marine fisheries in Kenya. The Mkunguni CMA will have legal recognition through the fisheries BMU regulations. Their specific roles towards implementation of the CMA plan is attached under appendix 2.
- C. **National Environment Management Authority (NEMA)** - Lead government agency with mandate to monitor, evaluate and assess environmental activities including those carried out by other agencies. NEMA has a role to ensure that activities within the CMA doesn't heavily affect the environment.
- D. **Kenya Wildlife Service (KWS)** – A state agencies with key responsibility of managing Kenya's protected areas; is acknowledge as an important agency to offer timely technical inputs in running the CMA. They have been associated with developing effective patrolling and compliance procedure.
- E. **Kenya Forest Service (KFS)** – Noted for their legal mandate of forest protection including mangroves. They have been noted as significant partners especially because fishers obtain building materials from forests managed by them.
- F. **Kenya Maritime Authority (KMA)** – Identified as leaders in marine safety and standards in Kenya, will play a crucial role in education and training of Mkunguni fishers on maritime safety.
- G. **County Government** – The devolved system of governance offers a great chance and opportunity for local community engagement with leaders. It has been noted worthy that the Mkunguni CMA to achieve sustainability the county government needs to be integrated in planning and implementation.



- H. **Administration** (Police, Local Chiefs, District Officers, County Commissioners) – Being a lead institution in Kenya that enhances internal security they are tasked in maintaining law and order. For the Mkunguni CMA they have responsibility and roles of intervening during rescue operations, enforcement and in resolving conflicts.
- I. **Kenya Marine and Fisheries Research Institute (KMFRI)** – Being a state agency with mandate to conduct aquatic research; their role has been elaborately defined by the Mkunguni BMU in this plan. They have been collecting fisheries catch data.
- J. **NGOs and The Private Sector**
  - a. **CORDIO East Africa** – The lead organization that supported the establishment of the Mkunguni BMU co-management area. Tasked with conducting marine research, education and providing technical advice.
  - b. **Wildlife Conservation Society (WCS)** – noted to be involved in marine research and conservation. Will contribute to technical advice for management of the Mkunguni CMA.
  - c. **East African Wildlife Society (EAWLS)** – involved in community sensitization and conservation have a role of enhancing education towards management of the CMA and alternative source of funding.
  - d. **Coastal and Marine Resources Development (COMRED)** – involved in CCA establishment and livelihood enhancement initiatives, they are tasked with providing support to technical needs, research and education.
  - e. **Hoteliers and Beach Operators** – acknowledged for their role in the tourism industry and potential donors they serve a great role of providing inputs to management and activities within the CMA.
- K. **Kenya Navy** – A state protection agency will assist the Mkunguni BMU with monitoring training and patrolling procedures on request.
- L. **Residents** – Mkunguni CMA having great recreational potential will see the inclusion of residents in day to day management and also fund raising for activities.
- M. **Kenya Red Cross** – They provide health and safety advice and other training in relations to health.



Figure 4: Stakeholder Engagement Strategy







## SECTION 5: LEGAL FRAMEWORK

### 5.0. LEGAL AND POLICY PROVISIONS

There are several national legislations that relates widely to community conservation areas in Kenya. These legislations have been used to either establish, constitute, contribute or develop marine community conservation areas along the Kenya coast. The Government of Kenya has proved very fundamental through adopting a bottom up approach to natural resources management where by community based approaches are used to inform and effect natural resources protection in the decision making process and empowering local people.

#### **A. Constitution of Kenya (2010)**

The Constitution of Kenya article 42 on the bill of rights notes that every person has a right to a clean and healthy environment which include the right: (a) to have the environment protected for the benefit of present and future generations through legislations and other measures as contemplated under article 69 in chapter 5 on land and environment.

#### **B. Fisheries Act (Cap 378, Rev 2012)**

The fisheries legislations (Fisheries Act, Cap 378,) and the fisheries BMU regulations of 2007 provides the legal basis for co-management of artisanal fisheries. Section 5 of the Act gives power to the director of fisheries upon approval by the minister through a gazette notice to effect fisheries management measures that are necessary for proper management of any fishery. The Act list management options that could be explored including gear restrictions, limitation on species and size catches and closed areas. The fisheries BMU regulations under section 7 on co-management authorizes the fisheries officer through a consultative process to designate a co-management area for each BMU.

#### **C. Environmental Management and Coordination Act (1999)**

EMCA, 1999 under section 3 highlights that every person is entitled to clean and healthy environment and has the duty to safeguard and enhance the environment. It further notes under article 42 (2) that areas of near shore, rivers and coastal zones may be designated as protected areas through a gazette notice by the minister to protect it from environmental degradation; the act notes that regulations and standards may be gazette on coastal zones and may include management, protection or conservation measures. Article 42 (3 a, b, c) acknowledges that the act can be used to develop an overall environmental management plan for prevention of coastal erosion, conservation of mangroves and coral reef ecosystems.





#### **D. Wildlife Management and Coordination Act 2013**

The wildlife management and coordination Act (WMCA) 2013 under part IV on conservation, protection and management acknowledges that communities have a responsibility to safeguard areas inhabited by wildlife through establishment of community owned conservancies and sanctuaries; section 44 highlights on needs for drafting management plan whose guidelines are highlighted on the fifth schedule of the act.

#### **E. Forest Act, 2005**

The Forest Act under part IV on community participation acknowledges that community groups or person residents in the same area may register a community forest association for resource protection and it further provides avenue for communities to draft their management plan.

#### **F. National Environment Policy, 2013**

The policy provides a framework towards integrated approach to planning and sustainable management of resources and further enhance cooperation among stakeholders through either establishment of community or private conservation areas; community participation in tourism industry and strengthening community capacity to carry out monitoring, control and surveillance.

#### **G. National Wildlife Conservation and Management Policy, 2012**

The Policy encourages participatory management through its goals and mandate by allowing formations of community based wildlife resource management outside parks and reserves allowing them to reap accruing benefits.

#### **H. National Oceans and Fisheries Policy, 2008**

The policy highlights on the need to enhance the fisheries sector's contribution to wealth creation, increased employment and food security through private, public and community partnerships. The policy promotes the co-management concept by involving communities and ensuring BMUs are integrated in management of fisheries resources.



## SECTION 6: MANAGEMENT PROGRAMMES

The Mkunguni co-management plan has five management programmes designed to make the co-management area effective and successful. The management activities have been derived from key management issues that were identified during the development of the plan and are described below:

### **Programme 1: Natural Resources Conservation**

Management Objectives: - To protect integrity of natural resources for the benefit of the community and future generations.

Activities:

- a) To enhance awareness of existing natural resources on the CMA
- b) To create regulations, guidelines and amend by-laws for natural resources protection
- c) To setup effective strategies for patrolling and monitoring of the CMA

### **Programme 2: Fisheries Sustainability**

Management Objectives: - To improve fisheries sustainability for enhanced food security.

Activities:

- a) To remove illegal and destructive fishing practices
- b) To promote alternative fishing practices
- c) To ensure compliance of fisheries regulations in the co-management area
- d) To establish best practice strategies for fish production

### **Programme 3: Alternative Livelihood (reduce poverty)**

Management Objective: - To reduce poverty among the community through enhanced income generation activities

Activities:

- a) To set up strategies for joint community activities
- b) To ensure community takes responsibility for effective CMA management
- c) To establish alternative livelihood sources



#### **Programme 4: Promotion of Unity**

Management Objectives: - To enhance unity in the community for development and compliance with the CMA guidelines

Activities:

- a) To organize community meetings for development planning
- b) To promote recreational activities for instance dhow and swimming competitions
- c) To promote annual cultural festivals.

#### **Programme 5: Research and Education**

Management Objectives: - To promote and enhance access of information for scientific research, education and awareness

Activities:

- a) To enhance access to knowledge and information to the community for informed decision making

*\* Detailed co-management plan implementation matrix/schedule is attached under appendix 3 containing sub-activities, indicators, and time frame.*





## SECTION 7: MONITORING AND EVALUATION

Monitoring and Evaluation of the activities of the Mkunguni co-management plan is essential; providing a basis for improvements and adaptive management. It will seek to address problems encountered during implementation of planned activities by proposing strategies that seek to address them. Monitoring will ensure that overlapping issues are brought out and streamlined to enhance cost efficiency. Monitoring will also test specific management options such as no-take zones and restricted fishing to measure their impacts and thus assess how beneficial they are.

### Methods

Monitoring (ecological and socio-economic) will be done continuously while evaluation will be done yearly and after the five (5) years. Monitoring will be maintained throughout the implementation period by preparations of quarterly and annual progress reports. This will help to address problems as they arise on a timely manner and ensure effective management. Monitoring and evaluation will provide essential information in the revision and review of the management plan.

### Responsibilities

Monitoring and Evaluation will be done with the Mkunguni BMU in consultation with the Division of Fisheries (Kwale) and CORDIO East Africa. This will be conducted on a regular interval. The BMU will be responsible in the preparation on annual work plans, monthly and weekly schedules. They are further responsible to submit relevant annual, quarterly and monthly reports to stakeholders.

### Success Indicators

Indicators are meant to provide a measure of whether set targets have/ are being achieved. They are quantifiable measurements agreed to beforehand that reflects the critical success factor for the Mkunguni BMU and its five year co-management plan.



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## APPENDICES

### APPENDIX 1: DAY TO DAY MANAGEMENT PLAN

#### DAY TO DAY MANAGEMENT PLAN/ SCHEDULE

##### (Mpangilio wa kila siku ya Usimamizi)

#### **Administrative Procedures**

*This refers to procedures recognized by the national fisheries BMU Regulations of 2007 part IV and V on administration of the BMU and Responsibilities of BMU organ and Officers.*

##### **A. Annual Work Plan**

The Mkunguni BMU executive, in corporation with Division of fisheries, Kwale County. Will prepare an annual work plan each year to cover the next financial year. The work plan will be driven by the co-management plan and subsequent planning's. Partners and other stakeholders will complement the work plan with activities that are beneficial to the effective management of the co-management plan.

The plan will be reviewed at least six-monthly or quarterly if needed. Day to day, weekly and monthly plans will be derived from the annual work plan.

##### **B. Meetings**

###### **a. BMU Executive Level**

Administrative meetings will be held every first week of the month, this shall be called for by the BMU Secretary, Vice Secretary and the Chairperson and in accordance with the BMU regulations.

###### **b. BMU Assembly (Members)**

The meeting will be called for by the BMU executive committee after every three months following a 30 day notice as provided by the BMU regulations.

###### **c. Community**

The meeting shall be called on by the BMU executive committee; twice a year. After every six months.

##### **C. Record Keeping**

Records, Files and data shall be maintained by the BMU Secretary, but day to day issues are filed in the Mkunguni BMU Office. Copies of useful management documents shall be available at the Mkunguni BMU office. The system of filing and storing information shall include a small library and a computer facility for storing and managing following information:



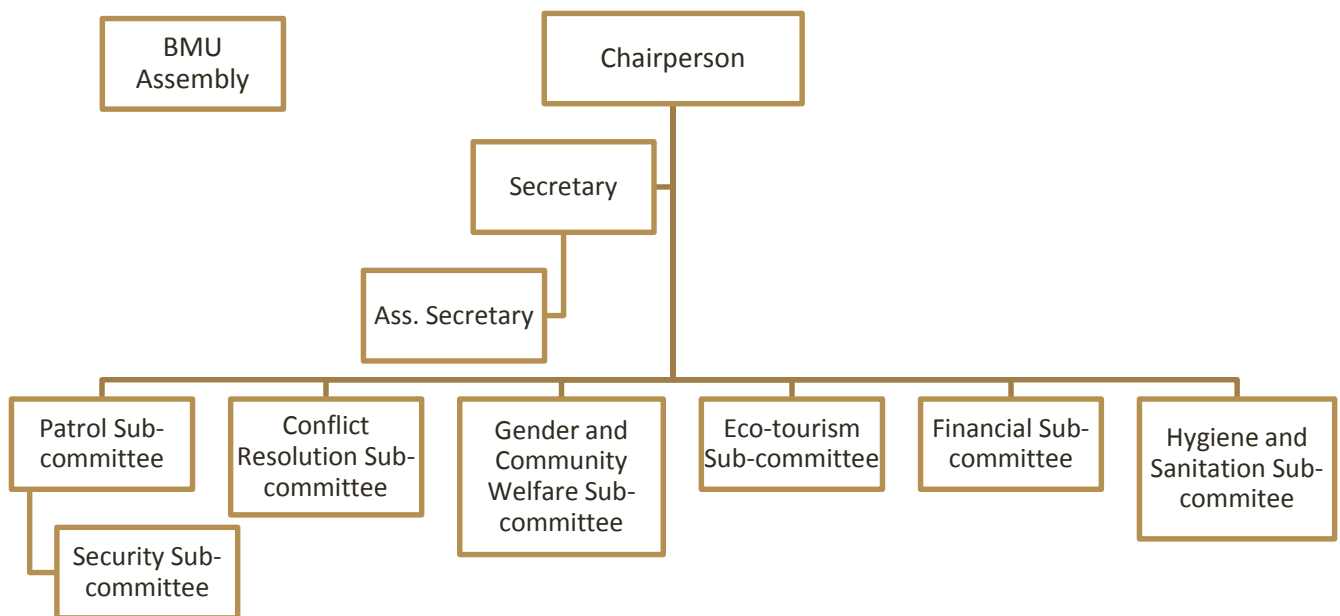


- Financial Records
- Visitor statistics
- Monitoring and Patrol results
- Development and Impacts on Mkunguni CMA

The secretary will be responsible for updating the files in liaison with relevant sub-committee heads.

#### D. Reporting

Reporting shall be overseen by the chairperson and the secretary. This will be done on a regular basis (monthly, quarterly, annually) as illustrated below.



#### E. Financial Procedures

Financial management matters are being overseen by the finance committee. They are currently collecting funds through catch landings and licenses. Which follows basic accounting procedures involving a Clerk – Secretary – approval by the – Chairperson – Treasurer, this follows provisions provided by the BMU regulations.



### **i. Budgeting**

Budgets will be prepared in December of each year by the finance committee and the BMU treasurer. The financial year closes in December. Currently they are no budgets, but daily expenditures.

### **F. Management Plan**

The BMU executive is held responsible for implementing the management plan. The management plan shall be reviewed on an annual basis to ascertain its progress.

### **G. Patrolling**

Patrols within the co-management area should be carried out, where possible, on a random but frequent basis. The aim of the patrols will be to deter poaching and ensure the protection and conservation of CMA natural resources, including visitors, and community welfare. Patrols will be coordinated by the Patrol Committee following guidance of the patrol plan.

Patrol will be conducted: During the Day, at night and in some cases joint patrols with other friendly forces will be carried out. The patrol plan is attached as appendix 4. The Patrol leader will designate the patrol plan timing on a weekly basis and this will be kept confidential for obvious reasons.

### **H. Education and Research**

The BMU executive shall offer additional support and authorization to organizations, persons or institutes wishing to conduct research in the CMA. The Executive shall in addition review and document ongoing and past research activities.

The Executives shall organize two annual dissemination meetings to the community to be able to raise their level of awareness on resources protection. The programme for education will be designed in consultation with other partners and will include:

- Seminars and Workshops
- Video Presentations
- Involvement of Community in research and monitoring
- Distribution of posters, brochures, pamphlets and t-shirts.



### I. Maintenance of Equipment

The BMU currently has no person in-charge of equipment's custodianship. However, every executive member is responsible for the assets of the BMU. Some of the equipment's that they or are planning to have are:

- Building (Landing Site)
- Boat Engine (Outbound) and Fuel tanks
- Monitoring (Dive and Snorkel) equipment's





## APPENDIX 2: STAKEHOLDER ANALYSIS

STAKE HOLDERS (Washikadau)	PROPOSED ROLE OR RESPONSIBILITY (Pendekezo la sehemu za ushikiano; Jukumu na Wajibu)
1. NGOs(CORDIO, KESCOM)	<ul style="list-style-type: none"> <li>• Utafiti (<i>Research</i>); Elimu (<i>Education</i>); Ufadhili (<i>Funding</i>)</li> </ul>
2. County Government	<ul style="list-style-type: none"> <li>• Ufadhili (<i>Funding</i>); Kuchukua rekodi za data, kuripoti na kutengeneza malengo ya mbeleni (<i>Data collection and Planning for development</i>); Kutatua mizozo (<i>Conflict resolution</i>).</li> </ul>
3. NEMA	<ul style="list-style-type: none"> <li>• Kulinda mazingira (<i>Environmental Protection</i>); Elimu (<i>training and education</i>)</li> </ul>
4. KFS	<ul style="list-style-type: none"> <li>• Kulinda Mikoko (<i>Mangrove protection</i>); Kupeana leseni (za kukata miti) (<i>issuing logging licenses</i>); Elimu (<i>Education</i>).</li> </ul>
5. KMA <sup>1</sup>	<ul style="list-style-type: none"> <li>• Elimu ya usalama baharini – kuhamasisha (<i>Awareness on maritime safety</i>); Kulinda usalama (<i>Maritime security</i>).</li> </ul>
6. Hoteliers/beach operators	<ul style="list-style-type: none"> <li>• Utalii (<i>Tourism</i>); Ufadhili (<i>funding</i>); Kulinda mazingira (<i>Environmental protection</i>).</li> </ul>
7. Administration (police, chief, County Commissioner)	<ul style="list-style-type: none"> <li>• Usalama (<i>Security</i>); Kutatua mizozo (<i>conflict management</i>)</li> </ul>
8. Fisheries	<ul style="list-style-type: none"> <li>• Elimu ya BMU (<i>BMU Trainings</i>); Usimamizi wa BMU (<i>support for BMU management</i>); Kutengeneza sheria (<i>Developing regulations</i>); Kupeana leseni (<i>issuing licenses</i>).</li> </ul>
9. KWS	<ul style="list-style-type: none"> <li>• Kupeana elimu (<i>Education and Training</i>); Ulinzi na Doria (<i>Security and patrol</i>); Compensation (<i>Fidia</i>).</li> </ul>
10. KMFRI	<ul style="list-style-type: none"> <li>• Utafiti wa samaki (<i>Fisheries research</i>); Utafiti wa mazingira (<i>environmental research</i>); Utafiti wa eneo la mazalio ya samaki (<i>research on spawning areas</i>); Elimu (<i>training</i>).</li> </ul>
11. BMU	<ul style="list-style-type: none"> <li>• Kusimamia kwa rasilimali za baharini (<i>Marine resources management</i>); Kuelimisha jamii (<i>Community awareness and sensitization</i>).</li> </ul>
12. Community	<ul style="list-style-type: none"> <li>• Kuchangia maendeleo (<i>Contribute to development</i>).</li> </ul>
13. Kenya Navy	<ul style="list-style-type: none"> <li>• Kupeana ulinzi wa baharini (<i>Maritime security</i>); Kupeana uokozi kama umezama baharini (<i>Marine rescue missions</i>).</li> </ul>
14. Kenya Red Cross	<ul style="list-style-type: none"> <li>• Kupeana elimu ya first aid (First Aid training); Usaidizi wa wakati wa majanga (<i>Disaster response and management</i>);</li> </ul>
15. Residents	<ul style="list-style-type: none"> <li>• Ufadhili (<i>Funding</i>) and Ushauri (<i>technical advice</i>).</li> </ul>



### APPENDIX 3: MANAGEMENT PLAN IMPLEMENTATION MATRIX/ SCHEDULE

OBJECTIVE 1 PROTECT INTEGRITY OF NATURAL RESOURCES FOR THE BENEFIT OF THE COMMUNITY				SAA(TIME)				
LENGO NDOGO (ACTIVITIES)	VITENDO (ACTION)		ISHARA (INDICATORS)	2015	2016	2017	2018	2019
<b>1.1) Enhance awareness of existing natural resources on the CMA.</b>	1.1.1)	Organise Community Meetings	Meeting Reports					
	1.1.2)	Educate and Train the BMU Members	Community Conservation Area					
	1.1.3)	Establish a community managed Conservation area						
<b>1.2) Create regulations, guidelines and amend by-laws for natural resources protection</b>	1.1.4)	Hold BMU Assembly meeting to amend By-laws	Meeting Minutes and Ammendments					
	1.1.5)	Establish guidelines that highlight on sustainable gears and fishing practices						
<b>1.3) Set-up effective strategies for patrolling and monitoring of the CMA</b>	1.1.6)	Empower the Patrol sub-committee	Patrol Plan					
	1.1.7)	Obtain patrol equipment's and resources i.e. boat and fuels	Occurrence Book and Patrol Reports					
	1.1.8)	Setup meeting on patrolling procedures						
OBJECTIVE 2 IMPROVE FISHERIES SUSTAINABILITY FOR ENHANCED FOOD SECURITY								
<b>2.1) Remove illegal and destructive fishing practices</b>	2.1.1)	Awareness on illegal fishing practices and its drawback	Report on Fishing practices					
	2.1.2)	Monitoring fishing gears and practices						
<b>2.2) Promote Alternative fishing practices</b>	2.2.1)	Awareness on acceptable and legal fishing gears and practices	No. of People who have benefited in such initiatives					



<b>2.3) Ensure Compliance on co-management area</b>	2.3.1) Establish Joint patrol mechanisms with fisheries	Joint Patrol Plan Guidelines					
	2.3.2) Formulate guidelines for CMA protections						
<b>2.4) Establish best strategies for fish production</b>	2.4.1) Establish and Protect fish spawning area	Fish spawning area established					
<b>OBJECTIVE 3 REDUCE POVERTY AMONG THE COMMUNITY THROUGH ENHANCED INCOME GENERATION ACTIVITIES</b>							
<b>3.1) Set-up strategies for Joint community activities</b>	3.1.1) Establish fisher welfare groups	Welfare Groups Posters, Brochures					
	3.1.2) Advertisement through the print and non-print media (Posters, Brochures)						
<b>3.2) Ensure community takes responsibility for effective CMA management</b>	3.2.1) Formulate and use existing procedures to ensure compliance for instance (fines and fees).  3.2.2) Awareness to community on taking responsibility						
<b>3.3) Establish Alternative livelihood sources</b>	3.3.1) Set-up small-medium enterprises  3.3.2) Source for Donors  3.3.3) Seeking better fish market	No. of donations and funding					
<b>OBJECTIVE 4 ENHANCE UNITY IN THE COMMUNITY FOR DEVELOPMENT AND COMPLIANCE TO THE CMA GUIDELINES</b>							
<b>4.1) Organize community development planning meetings</b>	4.1.1) Hold Joint development planning meetings						





	4.1.2) Set-up community meetings once in a three months					
<b>4.2) Promote recreational activities (Dhow and Swimming competition)</b>	4.2.1) Organize annual dhow and swimming competitions 4.2.2) Formulate strategies for visitor management	Annual events reports				
<b>4.3) Promote annual cultural festivals</b>	4.3.1) Organize annual traditional dances and music 4.3.2) Slaughtering and Offering annual sacrifices (offerings)	Number of cultural festivals and offerings. Report on attendance				
<b>OBJECTIVE 5 PROMOTE AND ENHANCE ACCESS OF INFORMATION FOR SCIENTIFIC RESEARCH AND EDUCATION</b>						
<b>5.1) Enhance access to knowledge and information to the community for informed decision making</b>	5.1.1) Community awareness on importance of research 5.2.2) Community involvement in research activities	Awareness Report				



#### APPENDIX 4: PATROL PLAN

### PATROL PLAN MPANGILIO WA DORIA

Patrol Team	Mkunguni BMU Scouts	
Equipment	<b>Boats</b> <i>Procedures</i> <ul style="list-style-type: none"> <li>Local Patrolling</li> <li>Request Fisheries</li> <li>Private Hiring (MMTCG, Kassim and Dominique)</li> </ul>	<ul style="list-style-type: none"> <li>Binoculars and GPS</li> <li>Raincoats</li> <li>Torch</li> <li>Life Jackets and Life Rings</li> <li>First Aid Kit</li> <li>Patrol Shoes/ Tanga</li> <li>Fuel and Machine</li> </ul>
When	Kaskazi (3 times a week)	Kusi (1 or 2 times a week)
Recording	Team shall maintain an <b>Occurrence Book (OB)</b>	
Reporting	Team shall <b>report</b> to the BMU executive twice ( <b>2 times</b> ) a month	
Duties	<ul style="list-style-type: none"> <li>Monitor illegal fishing practices. (<i>Uvuvi haramu</i>)</li> <li>Monitor traffic along the CCA and CMA (<i>Idadi ya watu katika tengefu na sehemu zingine</i>)</li> <li>Fish catch monitoring (<i>Idadi ya samaki</i>)</li> <li>Monitor populations of migrant fishers and vessels (<i>Idadi ya vyombo na wavuvi wageni</i>).</li> <li>Weather patterns (<i>Hali ya Hewa</i>).</li> </ul>	



## APPENDIX 5: MANAGEMENT ISSUES

Problem (Suala)	Proposed solution (Pendekezo la suluhisho)	stake holder (washikadau)
<p>Uvuvi haramu (Illegal Fishing)</p> <ul style="list-style-type: none"> <li>a. Bunduki (Speargun)</li> <li>b. Beach seines (Juya)</li> <li>c. Monofilament (Nyavu ya Mkano)</li> <li>d. Poison (Sumu)</li> <li>e. Bomu/baruti (Bomb/Dynamites)</li> </ul> <p>Mbinu mbaya za uvuvi<sup>1</sup></p> <p><i>“Involves use of legal fishing methods destructively, for example, use of ring nets in shallow waters”</i></p>	<ul style="list-style-type: none"> <li>• Wavue sehemu inayostahili<sup>2</sup></li> <li>• “Applies to ring net fishers. They should only fish in deep waters”</li> <li>• Elimu ya uvuvi; mbinu za uvuvi mbaya au mzuri (Training on sustainable gears and fishing practices)</li> <li>• Ulinzi wa pamoja (bandari) (Hold Joint Patrol)</li> <li>• Uvuvi mbadala</li> <li>• (Explore alternative fishing practices)</li> </ul>	<ul style="list-style-type: none"> <li>• BMU</li> <li>• Fisheries</li> <li>• KWS</li> <li>• County Government</li> <li>• Administration</li> </ul>
<p>Doria (Patrol)</p>	<ul style="list-style-type: none"> <li>• Patrol boat</li> <li>• Kuwajibika<sup>1</sup> (responsibility) “Some BMU members were reported to go fishing during patrol times using the patrol boat”</li> <li>• Kuhusisha washika dau wengine, eg. Fisheries, BMU and administration (Establish Joint Patrol procedures).</li> </ul>	<ul style="list-style-type: none"> <li>• KWS</li> <li>• Fisheries department</li> <li>• Administration</li> <li>• BMU</li> </ul>
<p>Ukosefu wa elimu/ujuzi wa kutosha (Lack of proper formal education and skills)</p>	<ul style="list-style-type: none"> <li>• Tupate walimu husika<sup>1</sup> (Refers to obtaining experts in related field)</li> </ul>	<ul style="list-style-type: none"> <li>• County government</li> <li>• NGOs</li> <li>• Fisheries department</li> <li>• KWS</li> <li>• Kenya red Cross</li> <li>• KMA</li> </ul>
<p>Mizozo<sup>1</sup> (Conflict)</p> <p><i>“Disagreements that arise from theft and spoilage of fishing gear (resource use conflict).”</i></p>	<ul style="list-style-type: none"> <li>• Kuboresha sub-committee ya Mizozo (Strengthen conflict management sub-committee).</li> <li>• Kutengeneza sheria<sup>2</sup> na kufatilia sheria zilizopo (To make penalties and procedures for dealing with offenders)</li> <li>• Elimu/mbinu za kutatua mizozo (Gain Education on conflict management)</li> </ul>	<ul style="list-style-type: none"> <li>• BMU</li> <li>• Fisheries department</li> <li>• Administration</li> <li>• County government</li> <li>• BMU network</li> <li>• Residents</li> </ul>
<p>Wizi wa mitego (Theft of Fishing traps)</p>	<ul style="list-style-type: none"> <li>• Atachukuliwa hatua ya sharia (State/National law on theft will be used)</li> </ul>	<ul style="list-style-type: none"> <li>• Administration</li> <li>• BMU</li> <li>• Fisheries department</li> </ul>





<p>Kutowajibika (irresponsibility)</p>	<ul style="list-style-type: none"> <li>• Kutilia mkazo sheria za kusimamia (<i>Place emphasis on management rules</i>)</li> <li>• Motivation<sup>1</sup> (<i>Involves awards and presents for most hard working members of BMU</i>)</li> <li>• Kupata elimu kuhusu uwajibikaji na sheria ya usimamizi (<i>Sensitization on management rules</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• BMU</li> <li>• Fisheries department</li> <li>• County government</li> <li>• NGOs</li> </ul>
<p>Uharibifu wa vifaa nya uvuvi<sup>1</sup> (Destruction of Fishing gears)  "Refers to resource use conflict."</p>	<ul style="list-style-type: none"> <li>• Tuwe na vikao vya bandari (<i>Set-up community meetings</i>)</li> <li>• Tuwe na mikakati ya doria (<i>Set-up patrol plans</i>)</li> <li>• BMU network kufatilia mizozo (<i>Use the BMU network for conflict management</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• BMU network</li> <li>• Fisheries department</li> <li>• Administration</li> <li>• County government</li> <li>• BMU – Conflict Committee</li> </ul>
<p>Ukosefu wa kupasua samaki<sup>1</sup> (Lack of Shredding Fish)  "Involves cutting open the fish to remove its innards to ensure it doesn't rot too early."</p>	<ul style="list-style-type: none"> <li>• Kuelimishwa umuhimu wa kupasua samaki (<i>Awareness on importance of shredding fish</i>).</li> <li>• Kufanya marekebisho kuongeza kifungu hiki cha sheria (by-law) (<i>Amend the BMU by-laws</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Fisheries department</li> <li>• BMU – conflict committee</li> <li>• Public health</li> </ul>
<p>Ukosefu wa fedha (lack of Funds and Funding)</p>	<ul style="list-style-type: none"> <li>• Kutafuta ufadhili ( <i>Looking for Donors</i>)</li> <li>• Kuanzisha utalii (<i>Establish tourism venture</i>)</li> <li>• Kuboresha mapato, eg, landing fee, parking fees, tourism fee, and research fee.</li> <li>• Kupata elimu ya jinsi ya kupata na kusimamia fedha<sup>1</sup></li> <li>• (<i>sourcing of funds and obtain financial management training</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• NGOs</li> <li>• County government</li> <li>• Fisheries department</li> <li>• Residents</li> <li>• Hoteliers/beach operators</li> <li>• KMFRI</li> <li>• BMU</li> </ul>
<p>Uhifadhi<sup>1</sup> wa samaki (Fish Preservation)</p>	<ul style="list-style-type: none"> <li>• Kukausha – jua (<i>Sun drying</i>)</li> <li>• Kupata vifaa vya kuhifadhi (fridge/cold store) (<i>Obtain freezing chests</i>)</li> <li>• Kuboresha usafi wa samaki – kupata maji<sup>2</sup> (<i>Pipe fresh water to the landing site</i>)</li> <li>• Kuelimisha kuhusu usafi na uhifadhi wa samaki. (<i>Awareness on Fish preservation and handling techniques</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Public health</li> <li>• County government</li> <li>• BMU</li> <li>• KMFRI</li> </ul>
<p>Ukosefu wa vifaa vya usalama</p>	<ul style="list-style-type: none"> <li>• Kutafuta ufadhili<sup>1</sup>, eg, life jackets, buoys, rescue boat, and first aid kits</li> </ul>	<ul style="list-style-type: none"> <li>• KMA</li> </ul>



(Lack of Safety Equipments)	<p>(Search for funding to purchase above)</p> <ul style="list-style-type: none"> <li>• Training (mafunzo ya kitengo husika)</li> <li>(Obtain training on safety procedures)</li> </ul>	<ul style="list-style-type: none"> <li>• County government</li> <li>• NGOs</li> <li>• Hoteliers/beach operators</li> <li>• BMU</li> <li>• Fisheries</li> </ul>
Marketing	<ul style="list-style-type: none"> <li>• Kutumia mitandao kujitangaza (Use of Internet for marketing).</li> <li>• Value addition</li> <li>• Bei nzuri<sup>1</sup> (Good Pricing) “Setting good but realistic prices”</li> <li>• Kuhudhuria kongamano (attending seminars/fairs/ workshops)</li> <li>• Kutumia Mabango (use of Flyers and brochures)</li> </ul>	<ul style="list-style-type: none"> <li>• Community</li> <li>• Hoteliers</li> <li>• Residents</li> <li>• Ecotourism Kenya</li> <li>• BMU</li> </ul>
Ujenzi wa holela <sup>1</sup> ( Uncontrolled shoreline development)	<ul style="list-style-type: none"> <li>• Tutaita kikao na washika dau wote wa bahari (Hold a community and stakeholder sensitization meeting)</li> </ul>	<ul style="list-style-type: none"> <li>• NEMA</li> <li>• BMU</li> <li>• Ministry of Lands</li> <li>• County government</li> <li>• Administration</li> </ul>
Mabadiliko ya hali ya anga <sup>1</sup> (Climate and Weather Variability)  „ Refers to changes in climatic seasons and turbidity of the ocean”	<ul style="list-style-type: none"> <li>• Kupata habari ya hali ya anga (receive regular information on weather patterns and changes).</li> </ul>	<ul style="list-style-type: none"> <li>• Kenya meteorology</li> <li>• Administration.</li> <li>• KMA</li> </ul>

