



FISHERIES MANAGEMENT PLANS AND POLICY FRAMEWORK FOR SMALL SCALE FISHERIES IN KENYA

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Promoted and Funded by



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INDIAN OCEAN
COMMISSION



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Fisheries Management Plans and Policy Framework for Small Scale Fisheries in Kenya

by

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December 2021

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1 BACKGROUND

1.1 Introduction

The existing management plans in coastal marine fisheries in the SWIO region, particularly small-scale fishing is limited to biological factors whereas the socio-economic dimensions are mostly ignored. This report is an assessment of the effectiveness of the governance systems and management plan and national policy and legal frameworks as well as the available standards and guidelines. The analysis includes identifying of challenges, gaps and opportunities which are key for future interventions towards effective and sustainable management of the small-scale fisheries in Kenya.

1.2 Overview of Fisheries in Kenya

Fisheries and Aquaculture potential in Kenya includes inland water resources (rivers, lakes and dams-18,029km and marine water area including the Exclusive Economic Zone (EEZ) of about 142,400 km², the deepest section being 4,000 m, Continental coastline of 640 km and aquaculture potential 1.14 million hectares (according to the Aquaculture suitability Assessment of 2009). Production from marine resources stands at 27,000MT (18% of national fish production) against a potential of 150,000 - 350,000 MT per year (FAO Stock Assessment 1981). Recent estimates by Kenya Marine and Fisheries Research Institute indicate a total of 243,941 tonnes in the territorial waters.

The Kenya's continental shelf is relatively narrow, about 5 to 10km wide- with depths dropping to below 200m in under 4km of the shoreline, except at the bay where the two major rivers join the sea, where the shelf is wide with 15km off the northern end of Ungwana Bay. The shelf is sedimentary dominated by fine sands, silt and mud and has an area of about 19,120km², of which 10,994km² is considered trawlable. Most artisanal fishing grounds are within the continental shelf and their fishing patterns are depended on the monsoon winds. The coastal climate of Kenya is influenced mainly by large-scale pressure systems of the Western Indian Ocean and Monsoon Winds, with northeast between December and March (Kaskazi) and from the southeast from May to October (Kusi), with the 1-to 2-month transition periods characterized by variable and weaker winds (GoK, 2017).

There is overcapacity in the nearshore reef fisheries and increased use of illegal and destructive fishing practices is a clear indication of overfishing. Other factors such as coastal and port developments, as well as climate related factors have played a great role in the low fish catches experienced in some areas.

1.3 Policy, Legal and Institutional Framework

The government developed the National Oceans and Fisheries Policy, 2008 to guide the management and development of the sector. The Policy has been in operation since its launch in 2009 and gave birth to the development of The Fisheries Management and Development Act 2016 (FMDA) 2016. Currently, the process of developing Fisheries and Aquaculture Regulations to operationalize the Law is on-going.

The key policy documents developed by the Government to guide the sector include:

The Constitution 2010, that established two levels of Government (National and County Governments) with distinct functions as provided in the Fourth Schedule and focused on Chapter 5 that places management and control of public land including natural resources and fishing under national government. In this case the government commits sustainable exploitation, utilization, management and conservation of the environment and natural resources and to eliminate activities with negative or adverse impacts on the environment.

The National Aquaculture Policy, 2011 and National Aquaculture Strategy and Development Plan, 2010 -2015 foster the development of aquaculture in the country to increase fish production that counters the declining catches from the wild fish stocks. Aquaculture provides the opportunity to engage more people in the sub sector to reduce pressure on the capture fishery.

The Kenya Tuna Fisheries Development and Management Strategy, 2013-2018 supports sustainable management and development of the tuna and tuna like species. The strategy provides blueprint for the sustainable development of the Kenya's tuna fisheries resources occurring in the Exclusive Economic Zone (EEZ). No harvest control rule is defined for this fishery.

The FMDA, 2016, further supports regulations and standards to ensure structured community participation in fisheries management as well as protection of species endangered or threatened with extinction and marine mammals Fisheries. Communities' participation and engagement framework is supported by the Act, and the co-management approach in fisheries management since 2007.

The Beach Management Units (BMUS) Regulations 2007, provides effective engagement and participation of fishers and other stakeholders in fisheries co-management. The regulations provide for the establishment of co-management or joint management area and plans.

The fishing communities through the BMU regulations 2007 give exclusive rights to co-manage resources and here the communities are empowered to:

- designate closed areas to manage fishing activities or specified fishing

- designate fish breeding and nursery areas.
- designate closed seasons either throughout the co-management area or in respect of specified areas.
- mark of fishing vessels.
- demarcate and mark the boundaries of fish breeding and nursery grounds.
- restrict on the type of nets or other fishing gears that may be used; and
- restrict on the number of fishing vessel licenses or fishing licenses.

Fisheries specific management measures exist for the management of the lobster fisheries drawn from the Fisheries Act 378. These management measures apply to all fisheries in Kenya while the Fisheries Regulations apply to specific species and fishery types. The overall management measures in place provide for closed seasons, prohibitions, gear limitation, size or age limitation and landing of the catch. Presently, prawn fishery (artisanal and semi-industrial) are governed by various Acts of parliament and regulations:

The FMDA 2016 established several institutions with specific mandates to support development and ensure sustainability of the resources and include:

- The Kenya Fisheries Service (KeFS).
- The Kenya Fish Marketing Authority (KFMA).
- The Kenya Fish Levy Trust Fund (KFLTF).
- The Kenya Fisheries Advisory Council (KFAC).
- Kenya Fishing Industries Corporation (KFIC) was established by the Kenya Fishing Industries Corporation Order, 2018.

The Kenya Fisheries Service is the national institution mandated to manage the fisheries sector and implementation especially in the marine sector is faced with challenges due to lack of species-specific management actions and gear regulations for most of the fisheries. The act also provides for interagency MCS units, and an interagency MOU has been prepared to operationalise the collaboration between the different groups.

2 Existing Fisheries Management Plans

Several management plans have been prepared since the year 2010 that include Malindi Ungwana Bays Prawn fishery, small and medium pelagic fishery, small purse seine net fishery, marine aquarium, and the shallow water lobster fishery). The small and medium pelagic fishery is transboundary in nature, with the target fishers

mostly migrants. The various fisheries with management plans are summarized in Table 1.

Table 1: Summary of Fisheries Management Plans in Kenya

No.	Fisheries Management Plan	Plan approved, year	Target/area fishery	Status
1	The prawn fishery management plan (Malindi –Ungwana Bays)	Yes, 2010	Industrial area based	Due for revision
2	Small and medium pelagic fishery management plan	Yes, 2014	Small scale and transboundary	No gear-based regulation to support the fishery
3	Small purse seine net fishery (<i>Ringnet</i>) management plan	No	Small scale - gear based	Yet to be gazetted
4	Shallow water Lobster fishery management plan	No	Small scale fishery	Yet to be gazetted
5	Marine Aquarium fishery management plan	No	Small scale fishery	Yet to be gazetted
6	Malindi-Ungwana Bay co management area plan	Yes, 2014	Area based, small scale	Lack defined zones and measures
7	Shimoni –Vanga joint co-management plan	No	Area based, transboundary	Implementation ongoing
8	Pate Island joint co-management plan	No	Area based, small scale	No take zones and seasonal closures
9	Kuruwitu Beach management unit co-management plan	Yes. 2021	Area based, small scale	No take zones, gear restrictions
10	Tuna management and Development strategy (2014-2018)	Yes, 2014	Artisanal, Industrial	Due for revision

2.1 The Prawn Fishery management plan 2010

Prawn fishing in Kenya has been practiced for several years; earliest records indicate an active fishery from the mid-1970s. User conflicts existed but intensified to serious levels in 1990s.

The capacity of the vessels ranged from 25 to 36 meters in length with an engine capacity of 624 - 970 HP. The catches effort was changing as in the 90s, only 9

vessels were left in the fishery reducing further to only four vessels being allowed to fish inside 8 nautical miles (nm).

The continued use conflicts led to a ban on trawling in 2006 until the plan was in place. The issues that were addressed by the plan include:

- i. Resource use conflicts: high levels of artisanal gears destruction by the trawlers, dwindling fish stocks.
- ii. Conservation concerns: high levels of by-catch caught and discards, habitat degradation by bottom trawlers, ecosystem disturbance/imbalance, pollution.
- iii. Management: ineffective Monitoring, Control and Surveillance (MCS), with infringement into Contravention of the Fisheries Act Cap 378 by prawn trawlers and artisanal prawn fishers.
- iv. Deficiency in fundamental data/information: The stock dynamics, biomass estimates, and fluctuations were less understood scientifically. This posed a constraint in management measures and sustainable exploitation of the resource.

Before the management plan in 2010, some measures were in existence including a closed season for prawn trawling from 1st November to 31st March through a Gazette Notice 7565 of October 2001 to safeguard the breeding stock. Other measures include:

- i. Fitting all prawn trawling vessels with a Vessel Monitoring System (VMS).
- ii. Use Turtle Excluder Devices (TEDs).
- iii. Trawling activities restricted to daylight hours from 6:00am to 6:00pm.

The management approach adopted was consistent with regional and international management principles and instruments, with precautionary approaches applied in implementation. In 2010 the prawn fishery plan for Malindi - Ungwana Bay was established with measures including:

- i. Zoning of the prawn fishing ground subject to amendment of Regulation 43(1)(d) of the Fisheries General Regulations 2001, amended with gazettelement of the plan and prawn trawling permitted from three nautical miles zone but for only 4 vessels of not more than 300(GRHP) allowed beyond three nautical miles limit, and the 0-3 nautical miles left for artisanal fishing only.
- ii. Setting of total allowable catch (TAC) at 400 metric tonnes annually and making provisions for administration of Individual Transferable Quotas (ITQs).
- iii. The closed season increased from 1st November to 1st April every year.
- iv. To manage by catch in the prawn trawling fishery, measures adopted were mandatory use of TEDs, regulation on mesh size, area closures and trawling time restriction.

The plan implemented through a committee including communities from eight (8) beach management units (BMU) with an agreed bycatch utilization arrangement to date. Table 2 summarises the management actions and current status on implementation.

Table 2: Current status on Prawn fishery management plan implementation

Management Measures	Actions	Implementation	Status
Zoning	< 3 nm: no trawling is permitted	Compliance on trawling enhanced and monitored through VMS	Zone not fully utilized by artisanal fishers
	3 nm to 5 nm: up to 300GRHP; maximum of 4 trawlers	Engine capacity and four vessel licensed annually	No violation on zoning
	5nm: Above 300GRHP	No licenses issued for this zone	
Setting TAC TAC should not exceed 400 mt for 4 vessels between 3nm and 5nm	Allocation of Annual Total Allowable Catch	Not implemented	
Extension of closed season by one month	<ul style="list-style-type: none"> Closed season 1st November to 1st April every year 	Shallow water prawn fishing closed from 1 st November to 31 st March	Fully implemented
Establishment of a conflict resolution mechanism	<ul style="list-style-type: none"> Establishment of a Fisheries Community Trust Fund. 	By-catch management and sharing mechanism agreed between the BMUs and the industry	The Fisheries Management and Development Act 2016 established the Fish Levy Trust. Community trust fund not yet implemented
	<ul style="list-style-type: none"> Fishing time is 6 am to 6 pm 	Fishing only during the day	Fully implemented but a few cases of

			net entanglements
Use of BRDs/TEDs	<ul style="list-style-type: none"> • Use of TED 	Use of TED is low and ineffective	TED trials conducted and different designs for implementation Use of TEDs not fully adopted
Marking of official passages to anchorage	<ul style="list-style-type: none"> • Demarcation of anchorage 	Sensitization meetings to artisanal fishers on areas of anchorage	Not implemented
Private Mark regulation be implemented as per the Fisheries regulations	<ul style="list-style-type: none"> • Marking of artisanal gears 	Gear registers for some landings sites Tags for marking provided by BMUs	No marking of gears
Management Measures Agreed Requirements for Licensing	<ul style="list-style-type: none"> • Use of VMS 	<ul style="list-style-type: none"> • Compulsory VMS installation and use 	Fully implemented
	<ul style="list-style-type: none"> • Observer programmes 	Deployment of observers on prawn trawl vessels (100% observer coverage)	Fully implemented

2.2 Small and medium pelagic purse seine net fishery

The small-scale purse seine, commonly referred to as the ring net fishery, that target the small and medium pelagic species, was introduced in Kenya by fishers from Tanzania in the 1990s.

The plans recognize 14 families of fish species captured by ringnets. These target medium pelagics dominated by three families namely *Carangidae*, *Scombridae*, *Sphyraenidae*. Other species landed include *sradibes* reef associated species including *Lutjanidae*, *Siganidae*, *Lethrinidae*, *Acanthuridae*, *Haemulidae*, *Clupeidae*, *Drepanidae*, *Apogonidae*, *Hemiramphide*, *Mullidae*, *Gerridae*. Landing of demersal

reef species is an indication that fishing does take place within the restricted fishing zone of the co-management area plans and the zones of the plan.

The areas of concern in the management of the gear-based fishery were to;

- i. Regulate the number and size of fishing boats used in the ringnet fishery.
- ii. Reduce the capture of juvenile or undersized fish.
- iii. Minimize capture of non-targeted or endangered species.
- iv. Minimize ringnet fishing impacts on marine habitats e.g., coral reef habitats.
- v. Improve the net income of fishers targeting small pelagic fish stocks and benefits from the fishery.

The management measures proposed management of the small and medium fishery include:

- i. Control small scale purse seine fishing effort subject to scientific research.
- ii. Specify Total Allowable Catch (TAC) for small scale purse seine fishing operations.
- iii. make provisions and develop guidelines for allocating catch quotas including Individual

Transferable Quotas (ITQs) based on the best available scientific evidence.

Minimize impacts of small-scale purse seine fishing on juvenile fish, endangered species and marine habitats.

- iv. Zone critical fish habitats including nearshore coral reef areas, fish spawning and breeding sites where use of small-scale purse seine net will be restricted.
- v. Restrict small scale purse seining depth to designated zones as prescribed provided that the distance is not less than 1 nautical mile from the coral reef.
- vi. a minimum depth of 50 metres northwards from Funzi Island and depth of 30 metres southwards from Funzi Island.

There are gaps and the plan requires monitoring reference limits for the fishery that have been identified to include:

- Total allowable catch (TAC).
- number of registered small scale purse seine fishers and vessels, and this should be based on research findings and amendments.
- Temporal and spatial dynamics of the small and medium pelagic fishery in terms of species composition, population structure.
- Temporal and spatial variation of bycatch including endangered species.
- Experimental fishing to determine and recommend optimum mesh sizes, net dimensions (Length and depth), construction and mode of deployment of small purse seine.

- Estimation of biological data including growth rates, maturity and spawning seasonality of key species harvested by small scale purse seines.
- Spatial mapping of fishing grounds and effort.
- Ecological Risk Assessment of the small and medium pelagic fishery.

The use of the seine net is regulated at 45 mm (2 inches) as provided by the Fisheries Management and Development Act (FMDA) 2016, but most of the nets measure ≤ 2 mm. The plan is yet to be gazetted for implementation, but communities implement through the co-management areas plans. Current challenges include the use of ringnet gears interchangeably to fish for small and medium pelagic species and the sardine fishery.

2.3 Small and medium pelagic fishery management plan

The open access system for capture of small and medium pelagic fish species and concomitant lack of adequate management measure for the management of the fishery has been a challenge in the overall management. The fishery is multi-species, multi-gear, with no clear mesh or hook sizes, and no limitation on the sizes. This challenge hampers the long-term sustainability of the fishery. A management plan was developed to manage Small and Medium Pelagic Fishery under the support of the FAO EAF Nansen Project, SWIOFP and World Bank funded Kenya Coastal Development Project (KCDP). The plan identifies the need to conduct an inventory of the small and medium pelagic species as one of the gaps necessary to ensure long-term biological sustainability and ecological integrity of the pelagic fishery, and the development of a suite of management measures to regulate fishing operations.

2.4 Lobster fishery management plan-LFMP

The Lobster fishery is small scale and based on five spiny lobster's species: *Panulirus ornatus*, *P. longipes*, *P. penicillatus*, *P. versicolor*, *P. homarus*. The management plan for this fishery was as a response to the Marine Stewardship Council pre-assessment of the fishery and was to support the three assessment principles; stock status, ecosystem impacts and management effectiveness. The plan was later revised to adopt the ecosystem approach to fisheries and to manage the whole stock. A harvest strategy was prepared whose objective was to enhance and maintain lobster spawning stock biomass above the limit reference point of 20% of un-fished virgin biomass, with a 70% probability.

Management measures proposed in accordance with the LFMP's objectives for a biological, economic and socially sustainable lobster fishery and proposed

management measures, have been incorporated in the marine fisheries regulations awaiting gazettelement (Draft Marine Fisheries Access Regulations).

However, the fishery is still managed, and the prohibitions provided in the Fisheries Act Cap 378 revised 2021, are currently in force and include:

- i) Minimum landing size of lobster at 250g
- ii) Harvesting of berried lobsters is not allowed
- iii) Restriction in use of scuba diving gear and spear-guns
- iv) Closed season and closed areas within marine protected areas and community management no take zones as per the BMU bylaws

The management plan provides for size restriction for the different lobster species by carapace length. The size limits by length was proposed based on stock assessment recommendations and on estimation size at maturity (Lobster Fishery Technical Report 2016) . The different species will be managed under different size limits when the plan is gazetted for implementation. There are some initial attempts to implement the harvest strategy, although the plan is yet to be gazetted.

2.5 Marine aquarium fishery management plan

Marine aquarium species currently traded are abundant, occur over wide geographic areas and are generally not endemic or 'rare'. An estimated 40 fish families are harvested in Kenya with the most dominant being *wrasses* and *damselfish*

Key management concerns that the plan tried to address include:

- i. Use of destructive collection methods.
- ii. Poor handling and husbandry practices.
- iii. High fish mortality.
- iv. Collection of unwanted and/or unsuitable species.
- v. Potential for stock depletion.
- vi. Ecosystem effect of live coral and live rock exports.
- vii. Lack of reliable catch data.
- viii. Limited government capacity for reef management and enforcement.
- ix. Lack of a comprehensive socio-economic assessment of the fishery and value chain analysis.

In addition, the marine aquaria trade also includes live rocks and elasmobranch species. Some stock assessment has been conducted using qualitative risk-based framework/methods. A harvest strategy was prepared with input and output controls proposed and application of total allowable catch-TAC but does not include harvest control rules in most of the measures. The plan is yet to be implemented.

2.6 Beach Management Unit Co-Management Area Plans

According to the Fisheries (Beach Management Units) regulations 2007, each BMU should define a co-management area and apply measures as guided by the FMDA 2016. Several BMUs have established their areas of co-management as either individual or joint areas and plans. Recently, co-management area guidelines have been prepared to support defining areas and planning process. The key examples of co-management areas and plans include:

- Joint co-management plans: Malindi –Ungwana Bays, Himoni – Vanga and Patte joint co-management areas.
- Co-management area plans: Kuruwitu Co-management Area Plan 2021, recently approved and endorsed for implementation. There are other draft plans for individual Beach Management Units yet to be finalized and approved.

Most common measures applied in the co-management areas include zoning and gear restrictions and seasonal closures. Implementation of the measures and fisheries specific measures applied in these plans especially in joint co-management area plans where the communities have adopted seasonal closures for the octopus fishery. The Malindi –Ungwana Bay Plan requires specific zones and measures in order to implement at the county level and co-management area level.

3 Other priority fisheries not currently under management plans

The marine fish are categorized into demersal and pelagic species, sharks and rays, crustaceans, mollusks. Demersal, coral reef and sea grass-associated fish species are more dominant in inshore waters. The demersal species account for over 50%, pelagic species over 20%, molluscs 8% , crustaceans 8%, and sharks , rays and sardines 9%. Fishing is also carried out on the North Kenya bank and other offshore banks and in vicinity of drop offs along edge of continental shelf and slope in Kenya's EEZ.

The key species groups include the demersal fish families, scavengers (Lethrinidae) and rabbit fish (Siganidae) each make up about 20% of the total fish catch production. Parrotfish (Scaridae) and snapper (Lutjanidae) form between 6% and

8%. Sharks and rays make up around 20% of the landings, while pelagic species account for less than 15%. Crustaceans, which account for less than 10% of the total catch, are mostly prawns. Molluscs (squid, octopus, and oysters) and bêche-de-mer account for only 2.5% of the total catch. Most of these fisheries are generally managed through the Fisheries regulations and no specific plans. Six (6) of these fisheries are prioritized for further assessment to guide specific management measures. Some of the priority fisheries that have been targeted for specific or under area management regime and that require proper management and of key concern is the:

- The Snapper fisheries in the North Kenya Banks (based online fisheries).
- Small scale tuna fisheries.
- Octopus fishery.
- The basket trap fishery – mostly demersal reef fisheries.
- Revise the prawn fishery management plan to include the artisanal prawn fishery.
- Small and medium pelagic fishery- a multi –gear multi species that require gear regulations.
- Sea cucumber fishery currently over exploited and the need to prepare recovery plans for the fishery.

The government of Kenya has realized the need for formulation and effective implementation of fishery management plans including recovery plan for the sea cucumber fishery. Key area to be addressed while formulating the plans and for effective management include:

- adequate information of the stock status of the fisheries.
- limited regulations for the fishery.
- no existence of a specific management plan for the fishery.
- Need to increase efforts to fill data gaps for the fisheries hence more research.

Streamline of data monitoring: data collection is fairly good but not well streamlined for the entire coast, hence the need to enhance monitoring for the fisheries, and especially assessment of the catches of the target species using other gears or fisheries.

Weak enforcement on gear restrictions that are capable of protecting a significant portion of the catch up to maturity, but optimization of yield requires gear mesh size regulations.

4 Key challenges for the implementation of the management plans and other priority fisheries

- Long bureaucratic processes during formulation and approvals for the management plans.
- Lack of adequate funds for implementation due to unrealistic budgetary allocation by the government.
- There is overcapacity in the artisanal fishery because of high dependency on fishing as a livelihood. Many youths after school are entering the fishery for economic reasons, complicating implementation of management plans.
- User conflicts due to shared grounds and gear interactions.
- There is an unclear framework of implementing including feasibility and resources needed to actualise the plans. The plans are not costed to attract financial support from potential funders.
- Mechanisms to enhance responsible exploitation of fish stocks are weak. There are increased fishing malpractices putting pressure on fish stocks, weak enforcement of rules.
- Limited investments (capacity) in fishing equipment that don't allow artisanal fishers to venture into deep waters to improve on fish catches.
- Limited scientific information to review and update existing plans.
- Weak inter agency law enforcement team.
- Lack of cost benefit analysis of the implementation of the management actions.
- Economic analysis and evaluation for the fisheries is lacking.
- Ecosystem approach requires management consideration on biological, social and management and in many cases little information is available on the stocks, ecosystems, interactions.
- Community participation in implementation of fishery management action through the co-management areas and bylaws is weak.
- Limited knowledge in developing harvest strategy, reference points and indicators.
- Conflicting mandates especially wildlife, forests, and in registration of fishing boats also undertaken by Kenya Maritime Authority.
- The institutional arrangements do not sufficiently address conflict over fisheries and the respective review process of conflict management.
- Weak market linkages.

5 Key opportunities for the implementation of the management plans and other priority fisheries

- Policy legal and institutional frameworks that support development of the plans and provide for establishment and implementation of co-management structures and fishery specific management plans
- On-going reforms in the sector to introduce rights based fishing. Provides opportunities for joint ventures to enable artisanal fishers' to transition their fishing business to semi-commercial fishing. Reforms will also enhance compliance in fisheries regulations.
- Reforms in the sector have created new institutions: Kenya Fisheries Service and Kenya Coast Guard Service, to address issues related to IUU. They are also part of the multi-agency unit being established to undertake fisheries law enforcement activities
- There is potential for strong collaborations with NGOs and development partners to strengthen co-management of marine fisheries in the country. The Coral Reef Project supported by FAO is focusing on sustainable coral reef based fisheries, selected protected areas, training on sustainable coral reef based fisheries, improved fish processing, value addition and marketing, as well as increase in youth employment in this sector and increased coastal community resilience from external factors. Engagement of the youth along the fish value chain will reduce pressure on the capture fishery. World Bank funded Kenya Marine and Fisheries Social Economic Development Project has provision for financing development of new management plans and reviewing existing ones.
- Establishment of Fish Levy Trust fund to provide for sustainable funding mechanisms in the sector. This will complement the low funding from the government.
- Processes of developing a marine spatial plan, and establishment of the stock assessment for the priority fisheries, and support review of existing plan.

6 Conclusion

1. The analysis provides important information on the management plans, either fishery specific or area management. Most of the plans were developed using the FAO EAF process while others were prepared to solve resource user conflicts
2. Each plan has implementation strategy but none of the plans have any estimated cost of implementation and have been adequately implemented. This means implementation is a challenge for these plans.
3. In this regards, there is need for cost benefit analysis before instituting management measures and to ensure implementation
4. Capacity building for technical officers and the beach management unit leadership and sensitization of the fisher folk community to enable their effective participation in in implementation of the management measures

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