



# **ASSESSMENT OF REGIONAL/NATIONAL FISHERIES MANAGEMENT PLANS AND RELATED ACTIVITIES THE COASTAL MARINE FISHERIES OF THE CLUSTER 1 OF THE EA, SA, AND IO REGION (ACT 1.2.1.1) - VOLUME 2 - Annexures**

David Russell

6<sup>th</sup> April 2022

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These SWIO consultants in turn worked as a team in developing their reports, looking at how to address issues going forward, both nationally and regionally, given that each country has their own areas of expertise. By combining this expertise, there was the realisation that regular regional collaboration could help in promoting better fisheries management across the SWIO region, potentially through greater formalization of instruments such as fisheries management plans, particularly in the small-scale fisheries where financial resources and human capacity are an issue.

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**David Russell**

# Annexures

## 1. Baseline Data compiled from SWIO Country Stakeholder Questionnaire Responses and Stakeholder Contributions

### 1.1 Co-Management Leveraging Synergy Potential through Regional Development Cooperation, Governments, and Fishery Stakeholders, for National Priority Fisheries by SWIO Partner Countries, as a means to Overcoming Past Policy and Governance Failures

#### 1.1.1 Joint capacity building

SWIO country stakeholders surveyed, had the following ideas on who should be part of a **collaborative team to build better co-management capacity**:

ACCORDING TO:	THE SUGGESTED TEAM SHOULD COMPRISE:
<b>Comoros:</b>	<ul style="list-style-type: none"> <li>▪ SWIO countries in collaborative exchange</li> <li>▪ the CNSCP on MCS</li> <li>▪ Marine parks, community associations (fishermen) and fisher associations.</li> </ul>
<b>Kenya:</b>	<ul style="list-style-type: none"> <li>▪ the Training College under the Kenya Management Authority, working on pollution control with:</li> </ul>

- 
- Kenya Ports Authority; State Dept for Shipping; Ministry of Environment
  - Regional bodies in Indian Ocean, NGOs – WWF supporting legislative development
  - National and County Government offices of interest:
    - NGOs working in target communities, including on research
    - Local resource users and other stakeholders of interest
    - In TBCA, relevant government representatives.
    - National fisheries management and research agencies e.g., KMFRI
    - non-state actors including CBOs, private investors, FBOs and international development partners.
- 

- Madagascar:**
- all stakeholders, participating synergistically in management, including:
    - Administration involved in SSF (fisheries administration, research, universities, environment administration, etc.)
    - fisheries associations, local fisheries NGOs, civil society
    - technical and financial partners
    - traditional and local authorities.
- 

- Mauritius:**
- stakeholders including the fishers' community, government, private sector and the Economic Development Board, so as to add value to production and have a better market value.
- 

- Mozambique:**
- stakeholder engagement plan to be tailored to the target community / fishery:
    - fisheries experts, including fisheries regional and international bodies that can support this process
    - government, NGOs, fishing communities; donor community
    - at national level a team among the institutions of the sector.
- 

- Tanzania:**
- Central government
  - Local Government Authorities (LGAs)
  - Village governments, fishers' organization such as BMUs
  - NGOs, CBOs, and development partners
  - IOC can be part of building capacity jointly to participants at regional level.
- 

- Seychelles:**
- all relevant stakeholders
  - political leaders should show greater political commitment to take unpopular decisions to ensure sustainability of resources.
- 

## 1.1.2 Sharing Lessons Learnt and Good Practices

Bilateral co-operation amongst SWIO countries, enables them to share on-the-ground lessons learnt and good practices they have identified, such as:



SWIO partner	LESSONS LEARNT AND GOOD PRACTICES IDENTIFIED ON CO-MANAGEMENT
Comoros	<ul style="list-style-type: none"> <li>• <u>Sensitization</u> of fisheries communities on the importance of a fisheries management plan (through existing co-management).</li> <li>• Co-management plans take <u>time</u> to be assessed with the development of new tools but results from current project (SWIOFISH1) are positive.</li> <li>• Establishment of no-take zones and closed fishing periods for specific species helps to <u>educate</u> fishermen on the benefits of this new management tool.</li> <li>• Co-management goes well with <u>Marine Park management</u>.</li> <li>• Responsible management is promoted by concrete <u>collaboration</u> between fisheries communities and government fisheries management administration.</li> <li>• Co-management promotes common thinking on <u>sustainability</u> and improves <u>knowledge</u> on the importance of fisheries management.</li> </ul>
Kenya	<ul style="list-style-type: none"> <li>• Co-management in East Africa helps put in place <u>controlled access</u> to small-scale fisheries, where fishers vetted through Beach Management Unit (BMU).</li> <li>• <u>Allowing access rights to gradually move towards quota allocations, as a 'transition to create wealth'</u> for both industrial and semi-industrial fisheries in the Indian Ocean.</li> <li>• Models such as <u>Individual Quotas</u> and application of <u>proper Management Plans</u>.</li> <li>• Management through <u>BMUs</u>.</li> <li>• <u>Participatory and multi-disciplinary</u> approaches in management.</li> <li>• Community co-management/ <u>bottom-up approach</u> – empowering BMUs.</li> <li>• <u>Fish size- and gear restrictions</u>, especially small-mesh sized gillnets.</li> <li>• <u>Fisheries closures and gear restrictions</u> are most effective when <u>implemented concurrently</u>.</li> <li>• <u>Community Conserved Areas</u> (CCAs), aka Locally Managed Marine Areas (LMMAs).</li> <li>• Participation and <u>diversity of stakeholders</u> creates ownership and its more sustainable.</li> <li>• Stakeholder participation, community cohesion and long-term programs of change monitoring data</li> <li>• Annual Fishers Forum where <u>fishers network and learn</u> about fisheries and coral reef conservation.</li> <li>• Communities taking <u>responsibility</u> for fisheries management.</li> <li>• Increased <u>capacity and awareness</u> for local communities from interacting with managers and practitioners.</li> <li>• Development of regulations and mechanisms to <u>enhance enforcement and compliance</u> for ecosystem management.</li> </ul>

## Madagascar

- Compliance of communities with management measures and by-laws that are jointly agreed on at the co-management level - men, women, youth participating.
- Co-management community provides strong and effective leadership.
- Technical and financial support from a donor (e.g., World Bank).
- Solidarity and motivation among the co-management association towards better management of resources and better socio-economic conditions for families of fishers.
- Depending on the scale of fisheries, co-management is a great fit for small scale fisheries, e.g., local managed marine protected areas (LMMA) a recent and quite successful model.
- Bilateral agreements on industrial fisheries also successful as long as they consider stock recruitment of resources: stock assessment studies should be implemented first, and involvement of all stakeholders should ensure sustainable fisheries.
- Effective models have been area based; input based (effort control); output-based management (quota regulation) and allocation of fishing rights.
- Octopus management in Southwest Madagascar needs a win-win collaboration with Private Sector willing to invest in sustainable resource management.
- Madagascar is improving on past failures of a top-down approach with co-management of natural resources.
- All stakeholders, including government, should be actively engaged in the co-management system – government should put in place necessary related mechanisms and processes, not negating the contribution the fishers can make. Those in the supply chain must also be considered.
- Fishers should particularly be included in each aspect of the management, such as monitoring and surveillance; their fishing rights and secured tenure should be considered.
- Legal formalization of decision-making and power should be recognized by the Ministry.
- Provide opportunities for mid-term and end-of-implementation evaluation and restructuring.
- Co-management of coastal shrimp fisheries through Concerted Development Zone (ZAC) was effective, with all stakeholders involved in data sharing (researchers, fishermen) and decision making (fishermen, administrative authorities, etc.).
- Marine protected areas (MPAs) are considered to be effective conservation (protecting marine biodiversity) and fisheries management tools, that generate various ecological and socio-economic benefits. Findings in Madagascar suggest that international initiatives and funding have played a key role in the early days of MPA emergence. Key stakeholders who played a role in actually selecting and subsequently managing Malagasy MPAs include NGOs, local communities, and the government. Currently co-management between governmental and non-governmental actors shows mixed results regarding conservation effectiveness. Surveyed experts advocate better coordination of efforts among various stakeholders, particularly local communities and government entities, with significant local community responsibility. For example, in the successfully locally managed marine areas (LMMAs), there has been integration of the official marine conservation regulations and laws, and the traditional customary law known as "Dina". LMMAs in Madagascar are advanced, likely due to the MIHARI

	Platform (Madagascar's locally managed marine areas network), that allows LMMAs to learn from each other, with different stakeholder exchange in a forum that is perceived to be neutral and effective. This concept has the potential to be applied across SWIO country collaboration (Ratsimbazafy, H. et. al., 2019).
Mauritius	<ul style="list-style-type: none"> <li>In order to reduce fishing pressure in the lagoon, the Government has progressively formulated, reviewed and executed several strategies regarding proclamation and management of marine protected areas, promoting Fish Aggregating Devices – FAD fishery, closed seasons for net and octopus' fisheries, ban on sea cucumber extraction among others. Also, the ban on sand mining, prohibition on coral removal and trade, ban on jet ski activities in Mauritian waters, have been essential regulations and policies towards effective coral reef management.</li> </ul>
Mozambique	<ul style="list-style-type: none"> <li><u>Co-management is the most successful management model for both industrial and small-scale fisheries</u>: involvement of fishers and all relevant stakeholders is key for the efficiency of fisheries management.</li> <li><u>Cross-sectoral approach</u>, including EAF, also important, because many factors external to the fishing activity can affect management of fisheries resources, including reducing pressure on the fish stocks by providing alternative livelihoods.</li> <li>Recent management models were <u>unable to fulfil proposed goals, due to poor monitoring and evaluation process during the course of implementing the plans</u>.</li> <li>Key lesson is – not possible to develop a successful plan without <u>fulfilment of surveillance and oversight</u> component.</li> <li>Previous plan <u>failed because</u>: <ul style="list-style-type: none"> <li>weight of artisanal sector on the resource was not taken into consideration</li> <li>control measures were only applied to the industrial sector, which is responsible for just 1/3 of total captures.</li> </ul> </li> <li>Measures must be applied to <u>all sub-sectors</u>, as that they all use the same resource.</li> <li>Models which transfer management to fishers could be <u>tested</u> particularly for commercial fisheries, whereas co-management model may work with small-scale fisheries' support in the value chain.</li> <li><u>Voluntary octopus' closures as a management measure worked</u> in North Mozambique and is currently being tested in Inhambane Province with very good results.</li> <li>Strengthen the participatory co-management model where operators and communities have <u>clear duties</u>, obligations and benefits in the exploitation of fisheries resources.</li> <li>Measures for sustainable fisheries resources must be <u>defined</u>.</li> <li><u>Ecological approach</u> to fisheries must be taken into consideration.</li> <li>Community-managed access with no-take reserves implemented by Rare in Indonesia and Philippines have <u>proven effective</u>.</li> <li><u>Investment in community social cohesion through social marketing and training</u> is effective.</li> <li>Important to have <u>acceptance</u> by communities to join Fisheries Community Councils.</li> <li>Important to draft laws and regulations that hold the fisheries sector <u>accountable</u>.</li> </ul>

Seychelles	<ul style="list-style-type: none"> <li>• Successful management models include a participatory approach - decision taken with inclusion of stakeholders (e.g., Seychelles sea cucumber fishery).</li> <li>• Top-down approach found not to be the most effective fisheries management strategy.</li> <li>• Opinions of all relevant stakeholders are important.</li> </ul>
Tanzania	<ul style="list-style-type: none"> <li>• Fisheries co-management model used in Rufiji-Mafia-Kilwa (RUMAKI) Seascape programme has proved to be most successful, where <u>fishers have strong say</u> in the management of mostly reef fishery resource:             <ul style="list-style-type: none"> <li>○ success ascribed to strategic selection of an ideal <u>location</u> for early action</li> <li>○ near-shore marine and coastal habitats of Rufiji, Mafia and Kilwa Districts (central Tanzanian coast) are amongst <u>most species-rich</u>, abundant and economically important marine resources on the Eastern African coast, e.g., Mafia Island alone supplies estimated 60+ % of fish sold at Dar es Salaam's main Ferry Fish Market.</li> </ul> </li> <li>• Combining resourcefulness and commitment of the NGO (WWF) made it possible for fishers from different <u>neighbouring villages together</u>, to develop area specific management plans that were respected.</li> <li>• in addition, WWF introduced <u>Village Community Banks to meet micro-credit accessibility</u> challenge, with overwhelming results i.e., octopus' closures being adopted in other parts of the country and even beyond.</li> <li>• Tanzania's multiplicity of fish species, fishing gears and methods, fishing boats, numerous fishing grounds and landing sites among many other factors make management of the resource <u>complex and hard for government</u> to manage alone.</li> <li>• Recognition that <u>engaging resource users in collaborative resource management is best option to complement government efforts</u>, therefore, most lessons in resource management are associated with user participation – specifically:             <ul style="list-style-type: none"> <li>○ <u>strong Beach Management Units</u> (BMU) are crucial in engaging resource users in co-management</li> <li>○ important to <u>ensure fishers are regularly updated</u> on research findings, policy and regulatory guidelines – consultation with fishing communities the best way to build constituencies</li> <li>○ co-management arrangement requires <u>clarity on roles and responsibilities</u> and to be understood at community level; and for a <u>monitoring plan to be prepared so as to assess implementation of various agreed-upon activities</u></li> <li>○ cost of fisheries management is high, but other sectors in the Blue Economy, e.g., tourism investors, can be mobilized to <u>contribute towards implementation</u> of management plans in general, and enforcement in particular</li> <li>○ promoting <u>institutional partnerships</u> between public and private Institutions, including NGOs, is an effective tool for management planning and implementation</li> <li>○ <u>research of new, emerging techniques in fishing important</u> to understand their effects</li> <li>○ provision of <u>micro-credit</u> schemes tends to <u>accelerate socio-economic development</u> of people in fishing communities</li> <li>○ use of Community-Based Trainers (CBT) is a sustainable and cost-effective means to <u>mitigate</u> fisheries extension officers <u>staff shortages</u></li> <li>○ Area Specific Management Plan (ASMP) model has great potential for promoting user participation under co-management regime.</li> </ul> </li> </ul>

### 1.1.3 Zanzibar Marine Conservation Areas

The general management plan behind marine conservation areas (MCAs), when designed well and effectively implemented, can restore fisheries and ecosystems both within and beyond MCA boundaries, as well as alleviate poverty among coastal communities. The World Bank SWIOFish Project has been operating in the SWIO region to enhance fisheries management. Zanzibar off the Tanzania coast, through the help of SWIOFish, is in the process of establishing and implementing a number of MCAs, utilising good practices.

As an example, the Changuu-Bawe Marine Conservation Area (CHABAMCA) General Management Plan (GMP), is amongst a number established for the period 2021 to 2031 (Richmond, M., 1 January 2022), and should be read in detail to understand all the components. These plans contain guiding principles, management objectives and actions aimed at achieving the purposes for which the MCA is established under the Fisheries Act No. 7 of 2010 Marine Conservation Unit Regulations. Furthermore, as stated in the MCU Regulations Part III 8. C. "In collaboration with the Managers, the coordinator shall prepare long-term management plans for controlled areas including management measures, annual implementation plans and their budgets."

As background perspective, the current status of MCAs of Zanzibar is one where virtually nothing is actually taking place with respect to marine resource management or ecological conservation, with resultant low resource user confidence in management authorities. The no-take and other zones, together with community participation initiatives in managing selected areas and other actions that are proposed in this GMP, can be seen as piloting interventions that need to be tested and assessed, adapted and modified or abandoned, as the case may be, as part of the 'roadmap' approach toward reaching the desired objectives within ten years.

The GMP has five thematic components: ecological management; tourism development and management; fisheries resource management; mariculture development; community support. Included in the fifth component is a Monitoring, Control and Surveillance (MCS) Strategy, designed to ensure and support the implementation of the above programmes. As well as pro-active enforcement, this MCS strategy considers measures to improve voluntary compliance through education and outreach and by generating incentives through management that benefits the general community. Through its implementation, it will contribute to the three pillars of sustainable marine conservation: environmental, economic and social.

The CHABAMCA is an important fishing ground for the 2,000 fishers who use it regularly. The most important fishery resource in CHABAMCA is for finfish, both pelagic and demersal, other resources including sharks, rays, skates. The fishery for the small pelagic species (collectively known as dagaa) is a major activity in the CHABAMCA, with 2 ring nets and 50



purse-seines reported. Key stakeholders involved include small-scale fishers, porters from the boat to selling or processing areas, traders, processors (boiling, drying and packaging), wood suppliers, and food vendors. Other actors include restaurant owners, suppliers of inputs such as salt and packaging bags.

Fisheries Resource Management Programme Monitoring Framework below, has been designed to provide guidance for assessment of the potential impacts resulting from implementation, so that timely changes to the management approach are made, when the situation demands.

Objective	Potential Impacts (positive and negative)	Verifiable Indicator	Sources and means of verification
<b>Objective 1: Enforcement and surveillance of fishing activities strengthened</b>	State and non-state actors collaborate to facilitate effective enforcement of fisheries legal provisions	No. and nature of management and enforcement collaborations	CHABAMCA management and enforcement records
	Reduced illegal natural resource use in the CHABAMCA	No. of illegal natural resource use incidents in the CHABAMCA	CHABAMCA enforcement records
	Sustainable utilisation of fisheries resources	Adherence to zoning scheme and recommended fishing methods	Fisheries utilisation records and CHABAMCA enforcement record
	Increased unemployment, reduced short-term catches, political interference.	No. of fishers actively fishing and village population data	CHABAMCA enforcement records and village data
<b>Objective 2: Improved research on fishery management</b>	Marine research well-coordinated and findings disseminated to stakeholders to support decision making	No. of research dissemination meetings held Use of research in identifying and implementing mitigation measures	CHABAMCA management and research reports
	Increased community awareness of and importance of the CHABAMCA and willingness to adhere to regulations	No. of local community members arrested for illegal activities in the CHABAMCA Use of incidence of illegal fishing as a proxy for importance of	CHABAMCA enforcement Records
		CHABAMCA	
<b>Objective 3: Stakeholder participation in fishery management enhanced</b>	Working relations between stakeholders strengthened and coordinated to generate synergy and strengthen unity of purpose	Number of functional collaborative agreements between CHABAMCA stakeholders	CHABAMCA records
	Increased value and importance of the CHABAMCA to surrounding communities	Income from diverse activities linked to conservation of CHABAMCA	CHABAMCA records
<b>Objective 4: Alternative livelihoods developed for fishers</b>	Communities have alternative sources of livelihood reducing pressure on fisheries	No. of non-fishing IGAs initiated and successful No. of fishers (potential or former) as participants in IGAs	CHABAMCA records
<b>Objective 5: Impacts on emerging issues in fisheries assessed</b>	Negative environmental impacts of marine activities are understood and mitigated	No. of ESIs and audits Mitigation actions included in appropriate plans and implemented	ESIs and Audit reports

Detailed in the plan, is an implementation schedule covering the activities, responsibilities, timeframe and milestones necessary for the delivery of each management action.

With regards monitoring, control and surveillance, up till now, non-compliance with the law has been extensive and effective MCS in Zanzibar's MCA network is weak. The regulatory conditions under which fishery resources can be exploited are generally considered appropriate to manage the fishery, yet several factors are limiting implementation:

- Increased fishing pressure over the last decade under an open access system has made it difficult to control fishing effort and significantly hinders MCS. The existing 'top-down' management regime from the Department of Fisheries Development (DFD) also lacks the required financial and human capacity to plan and implement effective MCS measures.
- There is not enough strategic monitoring of resource use and non-compliance to be able to make informed management decisions. The results is a limited surveillance presence in MCAs and a general lack of awareness and/or respect for the law.
- Co-management in Zanzibar, represented by the Shehia Fishermen Committees (SFC), has great potential to assist but the system is currently unable to function effectively given that SFC members essentially serve on a volunteer basis and similarly to DFD, lack essential training and resources to carry out surveillance and enforcement.
- A clear set of guidelines is required that are understood and can be continually referred to by MCA users and stakeholder groups. All responsibilities ought to be clearly defined and each involved should have the necessary capacity to carry out these responsibilities.
- As well as pro-active enforcement, the MCS strategy considers measures to improve voluntary compliance through education and outreach and incentives to fishers. Where available, best practice guidelines and case studies in enforcement and surveillance of MPAs have been utilised to suggest the most practical and impactful interventions. The application of alternative modern technologies for both surveillance and monitoring have also been included.

**Table providing MCS Strategy objectives and associated actions.**

<b>Objective 1. Define and formalise the MCS responsibilities of relevant entities.</b>
Action 1.1. Re-define the MCS focus and responsibility for each entity.
Action 1.2. Make informal/formal partnership agreements with other government agencies, NGOs or private entities to facilitate outsourcing and coordinated MCS of the MCA.
Action 1.3. Produce and regularly update an MCS Guidance Document for MCA.
<b>Objective 2. Strengthen human resource capacity.</b>
Action 2.1. Improve staff skills in MCS.

Action 2.2. Set up MCS SFC sub-committee.
<b>Objective 3. Improve communication within the MCA.</b>
Action 3.1. Establish a Marine VHF radio network.
Action 3.2. Set up a surveillance co-ordination centre and define lines of communication.
<b>Objective 4. Strengthen the enforcement of MCA user activities via a decentralised and risk-based surveillance programme.</b>
Action 4.1. Increase fisheries surveillance responsibility and resources to SFCs.
Action 4.2. MCA surveillance team take on a more reactive role in surveillance complemented by targeted patrols of known violation hot spots.
Action 4.3. DFOs to focus on land based MCS, specifically verification of fishing licenses camping permits.
Action 4.4. Increased land-based surveillance coverage using rangers on foot, or lookouts at strategic posts.
Action 4.5. Increase the number of joint patrols as part of a co-ordinated joint patrol plan.
Action 4.6. Utilise the tourist boat sector as a surveillance platform.
Action 4.7. Increase surveillance and enforcement of tourist and tourist operator activities.
Action 4.8. Apply best practise patrolling principles.
Action 4.9. implement the detailed surveillance plan.
Action 4.10. Deploy key staff to implement the surveillance programme.
Action 4.11. Review compliance on a regular basis to ensure risk-based planning.
Action 4.12. Consider implementing alternative technologies for surveillance.
<b>Objective 5. Promote voluntary compliance and prioritise a "soft" approach to enforcement where possible.</b>
Action 5.1. Incorporate "soft" enforcement into training.
Action 5.2. Develop and launch a Zanzibar wide regulations awareness campaign.
Action 5.3. Provide incentives to fishers that will improve respect for MCA management.
<b>Objective 6. Phase out the most damaging fishing gears.</b>
Action 6.1. Set up task forces to control the most destructive fisheries in the MCA.



<b>Objective 7. Equipment to support implementation of MCS is provided and maintained.</b>
Action 7.1. Procure equipment needs for MCS in the MCA.
Action 7.2. Maintain equipment.
<b>Objective 8. Infrastructure to support implementation of MCS is developed and maintained.</b>
Action 8.1. Install and maintain demarcation for identified priority areas.
Action 8.2. Review the state of MCA building and upgrade if necessary, according to needs and best practise.
Action 8.3. Review the need for SFC offices/resources centres.
Action 8.4. Review the state of fisheries landing sites and upgrade priority sites.
Action 8.5. Install basic infrastructure for surveillance posts at key locations.
<b>Objective 9. Develop more enforceable prosecution and sanction systems.</b>
Action 9.1. Develop more meaningful sanctions related to MCA user activities.
Action 9.2. Establish a simple reporting tool and practical database that allows for case monitoring and recording repeat offenders.
Action 9.3. Define a clear process for the implementation of by-laws for management at the local level.
Action 9.4. Carry out training for judges, prosecutors, local police, and other enforcement/legal authorities.
<b>Objective 10. Modernise current fisheries catch and effort monitoring systems to phase out the current open access regime.</b>
Action 10.1. Pilot modernised licensing and registration systems in the migrant fishery.
Action 10.2. Pilot electric catch data collection systems.

#### 1.1.4 Sharing Scientific and Socio-Economic Knowledge along Value chains

A study undertaken in a remote region in Madagascar's west coast known as Velondriake (Barnes-Mauthe, M., et.al. 2013), showed that the small-scale fisheries sector employed 87% of the adult population, generating an average of 82% of all household income, and provided the sole protein source in 99% of all household meals with protein. In 2010 an estimated 5524 metric tonnes of fish and invertebrates was extracted annually by SSF in the region, primarily from coral reef ecosystems, of which 83% was sold commercially,

generating fishing revenues of nearly US\$6 million. Including subsistence catch, annual landings had an estimated value of US\$6.9 million. However, high export prices for sea cucumber have been incentivizing over exploitation, and most small-scale fisheries are currently experiencing high levels of unsustainable fishing and increased incidental catch rates from nearby shrimp trawlers (Le Manach et.al., 2012). Madagascar is also ranked amongst other tropical countries with the lowest adaptive capacity and very high vulnerability to climate change and other external shocks (Harris, 2011). The Velondriake study concluded that the establishment of locally managed marine areas aimed at increasing the benefits provided by SSF, highlight the need for long-term management strategies that aim to enhance their ecological and economic sustainability. While policy is often driven by a sector's contribution to GDP or export earnings, the study emphasized that there is a need to catalyze national and regional policy makers to promote proper management of the SSF sector, and better research is required to effectively quantify the sector (Barnes-Mauthe, M., et.al. 2013), so it can be developed more effectively.

#### 1.1.4.1 Scientific Working Groups

Through effective data gathering and analysis, scientific reports on the performance of each fishery should be produced, including recommendations, supported by continuous scientific research, so as to enable implementation of management plans and effectively updating fisheries strategies and policies.

#### 1.1.4.2 Improving the Socio-economic Status of Fish Communities

SWIO countries widely bemoan the generally poor socio-economic status of fishing communities, and stakeholders gave the following **ideas on how to improve** it:

- Comoros:**
- Through social responsibility: education, training, technical and financial support
  - improve their capacity; then regulate the fisheries sector
  - training on different fishing practices
  - implement effective fisheries management laws
  - control and reinforce the security of fisherman
  - adopt a registration and licensing system.

**Kenya**

- A levy to invest back into fisheries - through training and procurement
- training and capacity building on diversifying livelihoods e.g., mariculture
- support business start-ups, including grants and low interest loans for fishing gear and vessels
- linking with markets, improve the marketing of the fish
- enacting laws that promote and safeguard fisher community livelihoods
- support for the protection of the mangrove ecosystem e.g., carbon credits
- better management of fisheries
- direct processing of fish
- more targeted research to identify issues affecting the community
- recognition by SWIO governments of fisheries' contribution to ecosystems
- government commitment to improved management
- empowerment for local fishers to access more fishing grounds (better vessels and gear)
- awareness creation for fishers on management of income
- improved fisheries data collection for decision making
- invest in fish farming to expand fish production
- provide capacity building for fisher communities in production technologies.

**Madagascar**

- Ensure a better return on fishing (fairer fish price between fisher, collector, and consumer)
- support fishers along the SSF value chain with capacity building and local development
- provide equipment and materials for fish conservation, commercialization, etc.
- improve the EAF and co-management approach
- less exportation of halieutic resources and more fish for the national population
- combat IUU fishing
- reduce post-harvest losses: physical loss, quality loss, loss from market forces
- increase target species biomass and reduce use of destructive fishing gears and juveniles
- capacity building (product processing and conservation)
- improvement of the value chain to avoid losses
- alternative activities for fishermen during periods of closed fishing.

**Mauriti**

- Provide incentives, empower them, provide training, upgrade fishing techniques and fish preservation for better market.

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Mozambique	<ul style="list-style-type: none"> <li>• Value addition to fisheries products and direct access to better markets</li> <li>• alternative sources of income from agriculture, mangrove aquaculture, poultry</li> <li>• more investments and training in the coastal areas, especially labour-intensive activities</li> <li>• financial grants to strengthen the value chain, and local capacity building</li> <li>• value retention initiatives to promote income from fish staying in the community</li> <li>• strategy for social and attitude change must be designed and implemented.</li> </ul>
Tanzania	<ul style="list-style-type: none"> <li>• Creation of microcredit schemes, based on Grameen Bank model (e.g. Village Community Banks (VICOBA)</li> <li>• part of the resource rent can be used as seed money for establishing the schemes</li> <li>• provision of effective extension service through Community-Based Trainers/change agents</li> <li>• assistance in establishing marketing-based cooperatives.</li> </ul>
Seychelles	<ul style="list-style-type: none"> <li>• Improved infrastructure</li> <li>• sustainable financing mechanisms (soft loans)</li> <li>• capacity building, including business management for fishers.</li> </ul>

## 1.2 Open Access Socio-economic Fish Species easily subject to Management Plans / Co-management

There are **key fish species that are still open access**, but with potential to be managed through structured management plans or co-management. Key stakeholder views were:

- **Comoros** species should be those with the best socio-economic potential such as small pelagic fish, octopus, lobster, sea cucumber, barracuda, parrot fish, trevally, grouper, triggerfish, tunas.
- **Kenya's** open access species include pelagic sharks, billfishes, small tunas & bonitos, small pelagics (small mackerels, scads, sardines and round herrings), octopus, rabbitfish and crabs – including threatened shark and ray species as well as red line trigger fish, and the triple tail wrasse.
- **Madagascar** wants its entire open access coastal fish species to be managed by an ecosystem-based, rights-based and co-management approach, aligned with FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (2015), in the context of food security and poverty eradication. Multi-species, small-scale fishing using multi-fishing gear should be co-managed; with local communities developing fisheries resources

for industrial and semi-industrial fisheries use. It was recommended that whereas key species fall under a regulatory framework, a management structure at the community level should exist to cover all of them. Open access species include giant clams, Elasmobranchs, sea cucumber, tuna, octopus, demersal fish, crabs, lobsters, eels.

- In **Mauritius** seven main species generally caught in the artisanal fishery are the *Lethrinus nebulosus* (capitaine), *Siganus sutor* (cordonnier), *Naso unicornis* (licorne), *Scarus spp* (cateau), *Acanthurus spp* (chirurgien), *Mugil cephalus* (mulet voile) and *Epinephelus spp* (vielle). The catch of artisanal fishermen can also comprise octopus, shellfish (lobsters, crabs and shrimps) and tuna and tuna-like species. The octopus' fishery has been successfully managed.
- **Mozambique's** small pelagics (locally known as "magumba" / Hilsa kelle, and "papahi"/ *Thryssa vitrirostris*, are open access and important for food security and livelihoods. Structured management of these species can be done through area-based co-management in the bays, especially small-scale shrimp fisheries and line fisheries. Government intends to promote offshore tuna investment and coastal tuna fishing – considered currently under-exploited with potential to develop a SSF fishing and processing industry. Tuna and tuna like species could be structured into a management plan, such as the Strategic Plan for development of the tuna fishery, which provides for a total 130 industrial vessels, while the national fleet currently only exploits 10%. The tuna fishery has been dominated by the European Union, Japan and others, although since implementing fishing rights under Mozambique's new Fisheries Law, nationals are prioritized as fishing rights holders, and foreign fleets have stopped fishing in Mozambican waters (although some international players are in negotiations to return).  
  
The Strategic Plan also highlights development of artisanal fishing infrastructure to support fisheries across the value chain. Though open access, these should be managed through implementation of community managed access fishing areas. Currently, besides a division of the fishing zone between industrial fishing (fishing for prawn) and the fishing community, they share other fishing zones.
- In the **Seychelles**, most fin-fish species are still open access, although a move towards a rights-based fishery has been initiated and will be phased in.
- **Tanzania** operates all its inshore marine fisheries, except in areas under MPA jurisdiction, on an open access basis, and stresses the reinforced implementation of existing management plans while introducing new ones. Priority is to be placed on the introduction of area specific management plans, in an ecosystem approach to protect habitat.

## **1.3 Wealth Management Approach - Fisheries Ability to Achieve Financial Sustainability and generate Resource Rents, including a Sustainable Modernisation and Financing Strategy empowering Small-Scale Fisheries, Fishers and Fish Workers across its Multiple Value Chains**

### **1.3.1 Creating a Wealth Management Approach**

Shifting the emphasis in fisheries management towards a wealth management approach, creates the potential for effective financial sustainability in terms of covering management costs.

A wealth creation strategy is critical to the ongoing sustainable development of SSF across the SWIO region, and must involve in-depth regional and national co-operation, including key developmental stakeholders along the fisheries value chain.

#### Sustainability:

Small-scale fisheries have primarily been encouraged to meet basic employment and food security needs – the sector has been a safety net for the poor in developing countries. With increasing populations, and migration to the coast being common, greater controls are essential if overfishing and increased poverty are not to set in.

Sustainable strategies for wealth management requires the ability to cover management costs, which can be done from generating resource rents in fisheries.

A lasting modernization and financing strategy could help achieve financial sustainability and generate resource rents, through empowering small-scale fisheries, fishers and fish workers across multiple value chains.

Achieving better catches is only sustainable if the fish stocks are large enough to support it. Management controls that provide specific access rights, with fishing effort managed ultimately on the basis of scientific assessment of the fish stocks, are aimed at achieving maximum sustainable yield. Given that certain SSF stocks are currently overfished, some fishers will have to find alternative livelihoods, involving possible facilitation through Government programmes focused on optimizing fisheries and overall socio-economic development. Part of this also involves minimizing fish waste due to deterioration because

of limited fish preservation infrastructure, which currently is a large problem in small-scale fisheries.

**Influencing policy:** A key requirement to increase the adoption of economically rational fisheries management, is to convince policymakers to focus on the wealth-generating potential of fish resources. This then provides a general policy framework within which other approaches, such as rights, incentives, and ecosystem-based fisheries management can be effectively applied. This approach is likely to prove more effective in influencing policy, providing flexibility especially in situations where rights-based systems either will not work or are politically unacceptable (Cunningham, S., et. al., 2009).

Economically efficient management systems increase value addition and the sector's contribution to the gross domestic product (GDP) and growth. However, economics currently have relatively little influence on fisheries policy, with this lack of influence particularly notable in developing countries, where effectively managed fish resources as a contribution to the GDP, are most urgently needed.

Value-addition to a valuable resource such as fisheries has been shown to be a necessity for wealth creation. SWIO partner countries offer the following advice on value-addition and effective utilization of fisheries management money:

<b>Comoros</b>	<p><b>Wealth creation and value addition strategies in FMP</b></p>
	<ul style="list-style-type: none"> <li>• need contribution of fishing communities and fishermen, as well as levies and taxes.</li> </ul> <p><b>Advice for effective utilization of fisheries management money</b></p> <ul style="list-style-type: none"> <li>• dependent on planned and budgeted annual activities, much of which are currently provided through donor project money</li> <li>• creation of a budget line from the Finance Ministry (annual national budget)</li> <li>• proper management of taxes and levies</li> <li>• government should establish a budget line for CNCSP (that is monitoring, control and surveillance)</li> <li>• raise awareness among the most involved fishing stakeholders</li> <li>• invest in fisheries actions for the benefit of local communities while creating monitoring and control structure system</li> <li>• for effective use of funds in fisheries management, funds must arrive in the Fisheries Department account signed by the Ministry, with rigorous monitoring and with results plan assessed each quarter.</li> </ul>

Kenya	<p><b>Wealth creation and value addition strategies in FMP</b></p> <ul style="list-style-type: none"> <li>• Requires more study through surveys.</li> <li>• Check catch amount coming in, and how it is being marketed.</li> <li>• Value is often based on “beach value” of fish, whereas more information required along the value chain.</li> <li>• Create career paths along the value chain, which requires infrastructure facilities.</li> </ul> <p><b>Advice for effective utilization of fisheries management money</b></p> <ul style="list-style-type: none"> <li>• Engage stakeholders to reduce implementation costs.</li> <li>• Planning should involve resource users and enforcement agencies; this makes it more cost effective.</li> <li>• Involve key stakeholders in the budgeting process so that funds are channelled to proper use.</li> <li>• Project audits and participatory monitoring and evaluation should be encouraged.</li> <li>• Have active stakeholder participation in fisheries management so stakeholders understand how much is available for management and have more realistic idea of possibilities and responsibilities.</li> <li>• Money to be used for the intended activities.</li> <li>• Strengthen co-management structures through the BMUs, increase funding for MCS.</li> <li>• Strengthen national fisheries management fund (Fish Levy Trust Fund, Research and Management Funds) that support implementation of the plan.</li> </ul>
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Madagascar	<p><b>Wealth creation and value addition strategies in FMP</b></p> <ul style="list-style-type: none"> <li>• Create a more participatory approach at local level.</li> <li>• Clear improvement of resources availability in heavily exploited waterbodies already visible.</li> <li>• Economic value of the fishery is preserved, which lead will lead to economically beneficial but demographically sustainable, harvest of desired species.</li> <li>• Offers alternative livelihoods for some local communities (octopus value chain, carbon credit, etc.).</li> <li>• Without effective implementation, no added value observed except environmental destruction and reduction of the resource.</li> </ul> <p><b>Advice for effective utilization of fisheries management money</b></p> <ul style="list-style-type: none"> <li>• Focus on local management plans and their effective implementation.</li> <li>• Allocate sufficient and consistent funds for fisheries management.</li> <li>• Involve all stakeholder in the management of fisheries.</li> <li>• Transparency essential.</li> <li>• Small-scale fishers should be represented in the steering committees.</li> <li>• Money collected through fisheries sector fees must be used for management of the fishery.</li> </ul>
Mauritius	<p><b>Wealth creation and value addition strategies in FMP</b></p> <ul style="list-style-type: none"> <li>• The focus has been on the development of a one-stop shop, i.e., the seafood hub which has been successful. The seafood industry is progressing towards becoming one of the pillars of the Mauritian economy. Fisheries do not only play a prominent role in food consumption in Mauritius but also contribute significantly to sustain the economic development of the country through processing fish caught by other countries.</li> </ul> <p><b>Advice for effective utilization of fisheries management money</b></p> <ul style="list-style-type: none"> <li>• In capacity building and educating the fishing industry on sustainability and ecological integrity.</li> </ul>

Mozambique	<p><b>Wealth creation and value addition strategies in FMP</b></p> <ul style="list-style-type: none"> <li>• In past decades the extractive fishing sector contributed more to GDP, but with expansion of aluminium industry and other mineral resources and gas exploration, fisheries decreased to 2% of GDP.</li> <li>• Agreed management rules amongst all stakeholders, resulting in transparency to all.</li> </ul> <p><b>Advice for effective utilization of fisheries management money</b></p> <ul style="list-style-type: none"> <li>• Previous plan resulted in reduction of industrial capture in Mozambique and withdrawal of vessels, both resulting in reduction of fish capture and negative impact on income and exports.</li> <li>• Increase in artisanal capture did not bring gains to government, as most fish landings are unreported, and government has no fiscal gain from that production.</li> <li>• Much of production also goes wasted, due to lack of infrastructure to handle and process production.</li> <li>• With establishment of Management Plans, fisheries were ordered to provide maximum benefits without compromising environmental sustainability, and this objective has been achieved over time.</li> </ul>
Seychelles	<p><b>Wealth creation and value addition strategies in FMP</b></p> <ul style="list-style-type: none"> <li>• No Seychelles studies so far conducted in wealth creation strategies, though one scheduled for the Mahe Plateau Trap and Line Fishery Co-management Plan, expected to be completed in 2022.</li> </ul> <p><b>Advice for effective utilization of fisheries management money</b></p> <ul style="list-style-type: none"> <li>• Invest more in fisheries research, capacity enhancement and monitoring control and surveillance.</li> <li>• Adopt a performance indicator approach.</li> </ul>

Tanzania	<p><b>Wealth creation and value addition strategies in FMP</b></p> <ul style="list-style-type: none"> <li>• Wealth creation has been evident in some places, especially the Rumaki-Mafia-Kilwa (RUMAKI) Seascape, including the closure management regime applied in various octopus fishing areas, implying that NGOs' role is crucial for resource management to be effective.</li> <li>• With the prawn fishery plan now operational, fishers benefit by getting prawns for sale, and government through licensing.</li> </ul> <p><b>Advice for effective utilization of fisheries management money</b></p> <ul style="list-style-type: none"> <li>• MCS take up large costs of fisheries management, and no cost-effective MCS plan in place – therefore, must change the outlook from enforcing in the absence of a MCS plan, to adoption of an MCS management planning process.</li> <li>• Plan in discussion must uphold the interplay between research, compliance and capacity building mechanisms, and must provide for ploughing back part of the resource rent to meet cost of fisheries resource management in fishing communities, by purchasing fuel, maintenance of boats and vehicles for field work for extension services, and enforcement activities.</li> </ul>
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### 1.3.2 SWIO Government Spending on Fisheries Management / Plans

Ideally, governments would contribute towards funding of the operational sectors of resource management, research, capacity building and compliance, etc. However, the reality varies:

#### **Comoros:**

- Fisheries budget line from government limited, and in a way does not exist.
- All activities done through project money (from donors).
- After the current co-management project is completed, there will be no funds for continued activities.
- No government budget for implementation of management plans.

- Funds are available for salaries of the Directorate's officials, but any money for monitoring, control, and training would be scraped from any recent activity that was financed and accounted for in the state budget.

### **Kenya:**

- Allocated in annual budget.
- Blue economy is improving things, but government allocated funding also disappears in emergencies.
- Integrated financial management exists, but procurement processes are generally long.
- Limited funding for implementation: monitoring, capacity building, stock assessment, observer deployments.

### **KENYA PROGRAMME BASED BUDGET – FISHERIES IN US DOLLARS:**

<b>Programme/Financial Year</b>	<b>2018/19</b>	<b>2019/20</b>	<b>2020/21</b>	<b>2021/22</b>
Fisheries Policy, Strategy and Capacity Building	4,414,407	405,000	1,128,000	5,426,337
Management & Development of Capture Fisheries	4,342,120	10,055,224.34	7,470,872.76	3,432,057
Marine and Fisheries Research	4,680,000	14,981,000	20,577,400	50,610,000

### **Madagascar:**

- Budget allocated by the Ministry of Fisheries and Blue Economy to fisheries around 1,300,000 USD p.a.
- Each sector has its own budget (research, compliance, resource management).
- Information on the budget of each sector is not available.

### **Mauritius**

- There is a low budget for monitoring, research and capacity building, relying mainly on regional and international fisheries organization funds for major research and capacity building.

### **Mozambique**

- Not clear as financial management is not transparent.
- License fees are sent to Finance Department to re-finance sectoral activities including implementation, i.e., monitoring, control, surveillance, co-management.
- No specific fund allocated to fishery sub-sectors, and fisheries operators do not fund government activities.

- No apparent dedicated budget for implementation of management plans.
- Government spending on resource management operations not shared with the fishing communities.

### **Tanzania**

- No precise data on sharing of resource rent associated with fisheries resource management.
- An important study area in order to inform policy making processes.

### **Seychelles**

- Rough budget of around USD 750,000 – USD 1 million, mostly from government and donor funds.

## **1.3.3 Fisheries Stakeholder Funding of Fisheries Management**

So, what will it take for **fisheries stakeholders to achieve funding for fisheries management?**

### **Comoros:**

- Government, through the fisheries Ministry, should take this issue seriously.
- Taxes and levies, and license system – e.g., during opening period and season, tax 1% of harvested product for selling and put money in an account for fisher association – worked well with SWIOFish.
- Should have some activities that generate money, e.g., through contribution of foreigner visitors to Marine Parks.
- Fishermen's associations often claim to have the funds to manage themselves but lack management skills – they require training and support to be ready, as past experience in association management was negative.

<b>Kenya:</b>	<ul style="list-style-type: none"> <li>• Fish Levy Trust Fund generated from fish farmers, partners and Government, must be ploughed back to fishers and fish farmers: now in law to “operationalise” institutions.</li> <li>• Levy fund should be well managed and effectively ploughed back, through Board of Trustees with representatives to create trust, and semi-autonomously managed fund with Ministry giving guidance- only 15% allocated to admin, including: <ul style="list-style-type: none"> <li>○ marine fisheries</li> <li>○ inland fisheries</li> <li>○ fish processors</li> <li>○ fish farmers</li> <li>○ aquatic environment.</li> </ul> </li> <li>• Require proper planning after undertaking a baseline survey of the needs of fishing stakeholders to determine their major requirements.</li> <li>• Engage stakeholders in resource mobilization.</li> <li>• Lobby government to set aside sufficient resources for fisheries management.</li> <li>• Consolidate impacts of fisheries management and disseminate widely.</li> <li>• Actively involve non-state actors in resource mobilization.</li> <li>• Capacity building of fishing stakeholders on fundraising.</li> <li>• Information sharing between fishing stakeholders to target fundraising opportunities.</li> <li>• Better understanding of the fishery and stock so that unrealistic expectations are reduced. Sometimes a fishery is just not profitable, then the nation needs to exit the fishery.</li> <li>• This will increase ownership of resources by stakeholders.</li> </ul>
<b>Madagascar:</b>	<ul style="list-style-type: none"> <li>• Implementing effective co-management plan including development of local income generating activities, and improvement of fish trade strategies for communities.</li> <li>• Make returning funds to the Ministry in charge of regulating fisheries more consistent – besides taxes being increased each year on fisheries activities.</li> <li>• Promote private sector engagement.</li> <li>• All stakeholders should be involved and consulted during fisheries management plan development - participatory process must be conducted in a transparent way.</li> <li>• Establish a parafiscal tax for the management of fishery resources.</li> <li>• Political determination.</li> </ul>

<b>Mauritius</b>	<ul style="list-style-type: none"> <li>• The Fishermen Investment Trust constantly aimed at democratizing access to the fishery resources of Mauritius and giving due recognition to the fishing community. The Trust targeted amongst others, artisanal fishermen and banks fishermen, in order to promote the development and diversification of fishing operations.</li> </ul>
<b>Seychelles:</b>	<ul style="list-style-type: none"> <li>• Using funds is not an issue, however obtaining funds is the issue: end users of resources should contribute towards their sustainable management.</li> <li>• Fair and transparent mechanism must be put in place.</li> </ul>
<b>Mozambique:</b>	<ul style="list-style-type: none"> <li>• Cost-recovery measures have to be applied, where applicable.</li> <li>• A good and well-structured strategy must be in place, based on a strong local authority.</li> <li>• Improve availability of information on management costs with all parties involved and have a clear and transparent strategy on the use of funds.</li> </ul>
<b>Tanzania:</b>	<ul style="list-style-type: none"> <li>• Re-organization essential: ensure that fishing communities get clearly defined tenure rights, to reorganize effectively in terms of area specific management plans, including generation of funds, financial management and effective management of resources.</li> <li>• Without reorganization, chances for achieving funding are very slim.</li> <li>• Advocate for ploughing back at least 20% of revenue generated as resource rent, to be used in management of respective fisheries.</li> <li>• Should have legally codified consensus with regard to percentage of resource rent to be ploughed back for fisheries management and support of sustainable livelihoods.</li> </ul>

### 1.3.4 SSF Sustainable Modernisation and Financing Strategy

When fishing operations show profit, the country benefits through taxes. Therefore, for profits to increase, fishers' efficiency should improve so they can pay resource rents and finance resource management. For this, an SSF modernisation strategy is useful – such as that developed by the FAO (table below) to categorise SSF from an individual to a corporate business in terms of commercial modernization, including the vessel and its:

- fishing gear
- operational capability

- fish storage ability
- crewing organisation
- use of the catch through to end market requirement, along the value chain
- assessment of integration into the economy and management system.

Formal integration occurs when the fisher is licensed and can pay a catch landing fee and capture resource rent to help finance effective fisheries management.

Fishing factors	Characteristics	Scoring values			
		0	1	2	3
Indicative gears	Fishing gear	Labour intensive gear	Passive gear	Gear with aggregating devices	Highly active gear
	mechanization	No mechanization	Small power winch/hauler powered off engine	Independently powered gear deployment/hauling	Fully mechanized gear deployment & hauling
Vessel	Size of fishing vessel	No vessel	<12m, <10GT	24m, <50GT	>24m, >50GT
	Motorization	No engine	Outboard engine/inboard engine ≤100hp	inboard engine <400hp	inboard >400hp
Operations	Daily trip / multi-day	< 6 hours	day trip (< 24 hours)	< 4 days	> 4 days
	Fishing grounds / zone / distance from shore	< 100 m from shoreline/baseline/high-water mark	< 10 km from shoreline	< 20 km	> 20 km from shoreline/baselines
Storage / Preservation	Refrigeration / storage	No storage	Ice box (i.e., on deck)	Ice hold (i.e., below deck)	Refrigerated hold
Employment / Labour	Labour / crew	Individual and/or family members	Cooperative group	≤ 2 paid crew	> 2 paid crew
	Ownership	Owner / operator	Leased arrangement	Owner	Corporate business



	Time commitment	Occasional	Full-time, but seasonal	Part-time all year	Full-time
<b>Use of catch</b>	Disposal of catch	Household consumption / barter (exchange for payment in goods or services)	Local direct sale at landing site (exchange for monetary payment)	Sale to traders	Onboard processing and/or delivery to processors
	Utilization of catch, value adding / preservation	For direct human consumption	Chilled/locally processed/cured	Frozen	Frozen/chilled for factory processing (for human consumption or fishmeal)
	Integration into economy and/or management system	Informal not integrated (no fees required)	Integrated (registered, un-taxed)	Formal, integrated (licensed fisher, payment of landing fees)	Formal, integrated (licensed, taxed)

Table on *FAO small-scale fisheries commercial modernisation categorisation: characteristics and scoring values defined in the matrix.*

Financial/modernization strategies that are under development for the small-scale sector, to empower fishers and fish workers across multiple value chains, include:

<b>Comoros:</b>	<ul style="list-style-type: none"> <li>• Training, though time consuming, to empower associations: monitoring; accounting; fundraising etc.</li> <li>• Donor funding for projects to continue because government unable to take care of this.</li> </ul>
<b>Kenya:</b>	<ul style="list-style-type: none"> <li>• Maritime institutions train fishers to transition from artisanal to semi-industrial.</li> <li>• Piloting modern boats for investors, aiming at "transition".</li> <li>• Provision of modern fishing equipment to empower fishers go into the deep sea.</li> <li>• Infrastructure development to reduce post-harvest losses.</li> <li>• Fishers training on value addition and good marketing strategies.</li> <li>• Provision of fishing gear and equipment.</li> <li>• Mobile apps for information sharing.</li> <li>• Infrastructure for cold storage and mobility.</li> <li>• By registering as members of Beach Management Units (BMUs).</li> <li>• Operationalization of Fish Levy Trust Fund for sustainable funding mechanism.</li> </ul>

<b>Madagascar:</b>	<ul style="list-style-type: none"> <li>• Access to finance grants, savings, and loans</li> <li>• The Village Savings and Loan Association (VSLA) model</li> <li>• High reliance on Internationally funded projects or NGOs, to empower small-scale fisheries all along the value chains.</li> <li>• Capacity development and professionalization.</li> </ul>
<b>Mauritius:</b>	<ul style="list-style-type: none"> <li>• Training is provided to artisanal fishermen at the Fisheries Training and Extension Centre (among subjects taught fish handling, preservation and marketing, small business development, safety and security at sea, first aid, maintenance of boat and motors, fish cage culture project, use of sails). In addition, fishermen attending such courses are paid a daily stipend.</li> <li>• Demonstration of new fishing techniques on board research vessels e.g., use of collapsible traps and longline fishing techniques are carried out. Other training programmes include: Training of skippers/mechanics (boats of less than 24m length).</li> <li>• “General course for Fisher” for aspiring fishermen. Provide the basic knowledge and skills to operate safely and efficiently in the outer lagoon fishery.</li> <li>• The Fish Aggregating Devices (FADs) Training Course dispensed to artisanal fishermen with the aim to relocate them from the heavily fished lagoon areas, into the open sea targeting pelagic species where catch rates are higher. The fishermen are provided with the knowledge and skills to fish around FADs safely and efficiently.</li> </ul>
<b>Seychelles</b>	<ul style="list-style-type: none"> <li>• Funds for sectoral support under the Sustainable Fisheries Partnership Agreement with EU.</li> <li>• Donor funds (grants) for soft loans for investment in better fishing vessels to target more distant fishing grounds and to relieve pressure on coastal resources.</li> </ul>
<b>Tanzania</b>	<ul style="list-style-type: none"> <li>• Focus on introduction and strengthening of microcredit schemes, especially the Village Community Bank model coupled with capacity building efforts by using Community-Based Trainers as change agents.</li> <li>• Trained and employed over 700 fisheries extension officers for fisheries administration in different districts for management and capacity building.</li> <li>• Ongoing efforts towards formation of cooperatives for linking small holders to rewarding markets.</li> <li>• Occasional subsidies such as waiving import duties on fishing gears and other inputs.</li> <li>• Supply of subsidized inputs such as outboard engines and small cold storage facilities.</li> <li>• Industrial-scale fishing in inshore waters is restricted, with the exception of a small fleet of shrimp trawlers - a policy intervention to protect small holders from being excluded.</li> <li>• Tanzania Agriculture Development Bank provides to small-scale fishers by providing loans to those meeting set requirements.</li> <li>• Government encourages fishers to form cooperatives for recognition by banks to obtain loans.</li> </ul>

**Mozambique:**

- Strategic thinking; good policy; identifying costs for management; stakeholder mobilization.  
Support for fishers, fish buyers, saving clubs and value chain players to identify value addition opportunities, and supporting them in developing business plans.
- Seed money from stakeholders complemented by donor funding.
- Small-scale fishing development projects (Artisanal Fisheries Project in the Sofala Bank, Propesca, PPNACD, etc.) aiming to improve livelihood conditions for artisanal fishing communities: better health, education and drinking water supply.
- Practice of fishing activities based on traditional fishing gears and methods.
- Expansion of networks for the sale of fishery products.
- Some pilot projects supported by ProBlue.
- Transfer of competence is required.
- Several strategies e.g., REPMAR bring innovations for empowerment of communities, including establishment of APGC; return of 15% of fishing license fees to artisanal fishermen; accreditation of community members to support inspections.

### **Suggestions for achieving a Marine Small-scale Sustainable and Inclusive Rehabilitation Strategy:**

SWIO partners ask for improved stakeholder empowerment through district Integrated Coastal Management Working Groups, to address current challenges of limited engagement, high dependence on donor funding, and enablement in the small-scale fishery sector.

The following **main strategies** have been identified **for modernization of the small-scale fisheries sector**:

- information research
- promote and support FAO SSF guidelines implementation
- promote regional co-operation improved surveillance and control
- capacity building, including financial and technical support
- more (public, private) stakeholder engagement and capacity for ownership: e.g. involvement in EAF, rights-based management and co-management approaches
- involvement of all stakeholders from strategy to its implementation
- tools to maintain small-scale marine fisheries, e.g., marine parks; Community Conservation Areas / Plans e.g., breeding grounds
- development of various fishery management plans to guide resource exploitation
- involvement of all key stakeholders in design and implementation of the strategy
- securement of funding
- capacity building of the target communities, and direct support to fishers
- capacity building for BMUs to strengthen their participation in co-management
- opening of new markets
- stakeholder participation and involvement

- free, prior and informed consent
- establishment of fisheries co-management areas and of Locally Managed Marine Areas
- establishment of joint monitoring, control and surveillance (MCS)
- training on monitoring, MCS, data collection and analysis.
- review or updating of stock status for target species/fishery to review the management plans.
- agreement on fisheries goals and a specific strategy to achieve adopted fisheries goals
- consultation with stakeholders around strategy to achieve fisheries goals
- participatory development of Area Specific Management Plans
- ecosystem-based zoning
- Mozambique requests community managed fishing access areas
- strengthening of fisher-based organizations to enable sustainable and inclusive rehabilitation strategy for small-scale marine fisheries, starting with profiling of fishers for effective proportional representation so as to ensure inclusiveness in policy making, planning and implementation of resource management plans
- operationalization of management plans
- monitoring and evaluation of strategy implementation, in partnership with stakeholders
- regular reports to governments and stakeholders, re condition of fisheries
- recognition and empowerment of small-scale artisanal fishers, fish farmers and fish workers' responsible
- paradigm shift where required: change of attitude of some fishers effected through sensitization/extension services.

### 1.3.5 Requirements to Facilitate the SSF Sector properly entering the Commercial Private Sector

**In order to properly enter the commercial private sector, small-scale fishers would have to put in place a few measures**, such as:

**Comoros:** a progressive plan, over 30 years. And to have points of sale for product, or regional or international bilateral cooperation.

**Kenya:** Closing of gaps to build capacity building and move to semi-industrial fishing. Nationals have licenses but use Chinese vessels. Also:

- They should form cooperative societies to enable bargaining for recognition and access loans and incentives.
- Invest in training on management and financial literacy.
- Invest in gears and vessels to venture into offshore fisheries.
- Value addition and quality control.

- All these should be done after evaluation of the stocks to ensure fishing intensification does not lead to fisheries collapse.
- Strengthen BMUs membership.
- Trained on Small and Medium Enterprises.

**Madagascar:** Better organization through the co-management approach:

- improved quality of fish products from capture through post-capture activities
- improvement of commercialization strategy among co-management associations
- formal registration with the Ministries of Fisheries and of Commerce
- legally created structure (co-op), allowing fishers to structure at all levels (local, national and regional)
- training on value chain & transformation, sea safety, business, seafood safety, sanitation
- promotion of collectors who work in isolated areas with small-scale fishers
- well-organized structure at each link of the value chain
- socio-economic research including business cost study, study of family needs (health, retirement, children's education)
- renewal of fishing equipment.

**Mauritius**

- Cooperatives.

**Mozambique:**

- Reduce post-harvest losses
- improve productivity of fishing gear
- reduce fishing effort on some species
- invest in businesses as cooperatives
- enable fishing communities to be professionally managed
- provide points of sale for product or have regional /international bilateral cooperation.

**Tanzania:**

- Re-organization by small-scale fishers to commercialise their enterprises
- negotiating as united group, through strong Fisher-Based Organizations (FBOs) with government agencies, local and international traders for marketing linkages, and potential financiers.

**Seychelles:**

- They need reliable sources of finance.

### 1.3.6 Achieving a win-win for national governments and the fishing industry

SWIO countries had these ideas on leveraging a winning platform for both government and industry:

<ul style="list-style-type: none"> <li>• Very important, but we don't currently have it. – Comoros</li> </ul>
<p>Encourage better dialogue, invest in economic empowerment of fishermen, tax them without jeopardizing the income base. Create awareness and build capacity of relevant stakeholders, including of national authorities to negotiate agreements for national benefits – and be more transparent in fisheries agreements. Support fisheries management for improved production and attract direct and indirect employment.</p> <p>– Kenya</p>
<ul style="list-style-type: none"> <li>• Implement co-management dialogue, engaging all stakeholders at the national level (government and fishing industry) on taxes, corporate social responsibility, employment, capacity building. There should be transparency every step of the way. Be aware that countries in the region have disparate levels of development and advance differently according to the political will. Basic infrastructures are absent for some (roads, hospitals, schools) and quality of work delivered is also inconsistent. – Madagascar</li> </ul>
<ul style="list-style-type: none"> <li>• Lots of investment facilities, tax rebates, infrastructural, port, airline facilities are provided to fishing industries facilitating job creation, income through exports, CSR - companies should reinvest 2% of their financial book profit towards societal development. - Mauritius</li> </ul>
<ul style="list-style-type: none"> <li>• Promote in-person engagement with fishers and other stakeholders. Implement a sustainable development programme. Fishery policy should be consistent, and fishery enterprises should be supported. – Mozambique</li> </ul>
<ul style="list-style-type: none"> <li>• Promote responsible fisheries resource management and sustainable livelihoods. Introduce collaborative fisheries management plans, orientating around sustainable livelihoods for economic, profit motive (for the fishing industry) and ensuring fair representation and legitimacy of management plans. Diversify to alternative sources of livelihoods to deal with overcapacity and rapid population growth in coastal communities. – Tanzania</li> </ul>
<ul style="list-style-type: none"> <li>• Improve transparency. – Seychelles</li> </ul>

### 1.3.7 Strengthening value chain to reduce post-harvest losses

**Root causes of major post-harvest losses** should be recognized and addressed, as they represent unnecessary waste, some of which is very significant, threatening fisheries sustainability and income. SWIO country stakeholder respondents identified losses as mostly due to lack of infrastructures, training and capacity, in three main categories:

- **Lack of processing inputs, infrastructure & technology:**

- scattered fish landing sites away from vessel offloading points, washing stations and ice
- lack of ice, lack of clean water, and lack of electricity in remote places
- poor road networks
- poor accommodation conditions on board fishing vessels
- lack of storage facilities & post-harvest infrastructure
- limited finances
- generally, a high reliance on fresh fish on ice with limited cold storage freezing capacity.
- Kenya specifies the need for open air boats, and cooperatives - which in the past collapsed and need reviving
- Kenya is now investing in ice-making machines at landing sites and markets e.g., a complex in Mombasa
- Tanzania specifies a need for technology to preserve and store fish, and for drying anchovy during the rainy season.

- **Social issues & Training:**

- use of non-selective fishing gears or gears targeting juveniles, negatively impacts on landings and price
- inappropriate techniques for storage, transport, and transformation of fish
- poor fish handling practices, including hygiene
- Weak technical capacity and knowledge for post-harvest activities (women), e.g., for fish processing
- social issues among women e.g., mobility and low level of education
- lack of training.

- **Economical:**

- insufficient market access
- poor market linkages and support
- unfavorable marketing environment
- poor packaging
- inadequate market infrastructure
- inadequate capital to access high value markets e.g., hotels
- unaffordable electricity bills
- bulk production of e.g., small pelagic (sardines) – without adequate storage facilities or sales planning, leads to oversupply of the market, and low profit compared to tuna or Nile perch with ready markets through fish processing industries.

## 1.4 Chart of National Priority and Transboundary Fisheries most effectively manageable through Bilateral/Regional Cooperation

Most SWIO partner countries share prevalent resource species / areas with bordering countries and already have a level of co-operation with them. Below **chart** shows national and transboundary fisheries that could potentially be effectively managed through Bilateral/Regional Cooperation, with SWIO countries have specific conditions, as follows:

Species	Partner countries	Conditions for cooperation
Tuna and tuna like Octopus Sea cucumber Lobster fisheries	Comoros	<ul style="list-style-type: none"> <li>• Need regional or international buyers for octopus, sea cucumber and lobster products.</li> <li>• Bilateral cooperation with foreign nation / company for export and sale of seafood.</li> <li>• Stakeholders should be surveyed for a more comprehensive list of fish species.</li> </ul>
Large pelagic (tuna, bill fishes) Medium pelagic (Carangids - trevally, threadfin, amberjack, rainbow runner) Small tunas & bonitos Lobster Prawns Sea Cucumber Octopus Crabs Sharks and rays Aquarium fish	Kenya	<ul style="list-style-type: none"> <li>• Now developing bilateral MOU with Tanzania, and work at the regional level.</li> <li>• Pelagics: can be co-managed through bilateral cooperation, agreements and memoranda of understanding between the neighbouring countries.</li> <li>• Small pelagics e.g., sardines between south coast Kenya and north coast Tanzania through establishment of a proposed Transboundary Conservation Area between Kenya and Tanzania.</li> <li>• Sea cucumber and octopus work, through advocating for closures.</li> <li>• Crabs through cage culture.</li> <li>• Sharks and rays, tuna, billfish and sailfish, aquarium fisheries, through establishing transboundary conservation areas.</li> </ul>



<p>Particularly:</p> <p>Shallow water shrimp</p> <p>Sea cucumber</p> <p>Octopus</p> <p>Migratory species, e.g., tuna</p>	Madagascar	<ul style="list-style-type: none"> <li>• Potentially all fisheries through consideration of the interests of all stakeholders (direct and indirect).</li> <li>• Through reinforcement of collaboration among coastal countries in the region</li> <li>• Aspects of data collection &amp; processing, sharing of best practice and lessons learnt in fisheries management.</li> <li>• Exchange and sharing of technical expertise to improve fisheries management.</li> <li>• Exchange of information on number of licenses issued, catch per unit effort, detail of catches.</li> <li>• Addressing IUU fishing.</li> <li>• SWIO countries giving access to foreign fleets through agreement to fish transboundary fisheries, particularly tuna.</li> <li>• Transboundary seascapes e.g., North Mozambique Channel seascape need regional collaboration.</li> <li>• Regional governance and management for tuna.</li> <li>• For other species, generally want to keep species management under control of national government and local partners, although they could be managed by bilateral or regional co-operation, but with clear transparency on management and governance.</li> <li>• Want to avoid threats to SWIO country fishers and their fishing activities.</li> </ul>
Tuna and tuna-like species	Mauritius	<ul style="list-style-type: none"> <li>• Under the IOTC the tuna fisheries are effectively managed despite being a migratory species, as a result of a consultative and collaborative approach. The tuna fishing and processing industry are effective and efficient since international management measures and export requirements were effectively applied.</li> </ul>
Tuna and tuna-like species	Seychelles	<ul style="list-style-type: none"> <li>• managed by Indian Ocean Tuna Commission (IOTC)</li> </ul>
<p>Octopus</p> <p>Tuna</p>	Mozambique	<ul style="list-style-type: none"> <li>• Transboundary fisheries: through regional level.</li> <li>• Tuna can be managed through regional and bilateral cooperation, in particular with Madagascar and Comoros, through joint management schemes.</li> <li>• Octopus fishery in the northern province of Cabo Delgado, might have interactions in the border with the United Republic of Tanzania. WWF have already initiated an exercise of adopting management measures for this fishery</li> </ul>

Octopus	Tanzania	<ul style="list-style-type: none"> <li>• Requires good bilateral or regional collaboration in managing high-value species, also occurring in other countries in the region.</li> <li>• Effective sharing of experience and management strategies</li> <li>• E.g., successful closure of octopus fishery has triggered intervention across the SWIO region.</li> <li>• Recognition of exported fishery products to international markets is by country and zones – mishaps affect branding of products, thus need for bilateral or regional cooperation.</li> <li>• Regional collaboration needed for trans-boundary stocks, e.g., tuna and tuna-like species</li> <li>• Transboundary stocks of octopus in Mtwara Tanzania and Cabo Delgado in Mozambique; prawns off Tanga, Tanzania and Mombasa in Kenya, require joint resource management efforts / strategies to help ensure sustainability.</li> <li>• Sea cucumber regional trade has damaged resource sustainability, e.g., in mainland Tanzania, government-imposed moratorium on sea cucumber fishing, though ongoing in Zanzibar. Urgent need for bilateral or regional joint efforts toward rational management and trade of sea cucumber.</li> </ul>
Shrimp		
Sea cucumber		
Sharks and rays		
Small-pelagic fish		
Tuna and tuna-like fish		

## 1.5 Regional Fisheries Management Bodies Assistance and SWIO Country Co-operative Synergies

Across SWIO countries there are several **common management issues** in marine small-scale fisheries that can be tackled and regulated by regional fisheries bodies.

The South-West Indian Ocean Fisheries Commission (SWIOFC) has a Scientific Committee and recently approved setting up of a Socio-economic Committee where Ecofish can provide input.

Indian Ocean Tuna Commission (IOTC) purely covers migratory species in the high seas and SWIO country EEZs. IOTC rules are legally binding in terms of MCS. Of IOTC total catch, about 50% is by SSF. There are challenges of implementation and reporting by the SSF sector - while IOTC cannot monitor SSF, SWIO governments must do what is required. Good catch data is obtained from industrial fishing fleets, but data from the small-scale sector is poor. Mandatory IOTC requirements are in place and the IOTC is constantly engaged in monitoring and providing assistance. With advances in technology, electronic monitoring is required and the SSF sector is gradually being included in this. IOTC identifies

individual capacity of members and provide training, including new techniques on conservation and management measures. There are over 50 Conservation and Management Measures, including a working committee on data and statistics.

The Southern Indian Ocean Fisheries Agreement (SIOFA), works to develop fisheries and protect the ecosystem, and is operational in high seas, covering demersal (not migratory) species. The Scientific Committee, with funding from Australia and the EU, has good data on resources in the region. Catching oil fish is a developing opportunity. SIOFA vessels landing their fish into SWIO harbours also create positive socio-economic benefits. SIOFA involves contracting parties e.g., Mauritius and Seychelles, and non-contracting parties e.g., Comoros, supporting least developed parties and small island developing states. SWIO countries including Madagascar, Tanzania, Mozambique and Kenya are encouraged to join. Countries that are currently developing their harbours and fleets might benefit from the quite active SIOFA Scientific Committee. Non-contracting parties do not have decision-making powers in meetings, but benefit from outputs of the scientific committee, including SIOFA species data management and advice. Comoros as a non-contracting party catch snapper-like species on the banks north of Mauritius, and SIOFA manages catch effort and biological data under strict confidentiality rules.

To the **Comoros**, the most helpful would be sharing IUU fishing vessel data in the region through collaboration (for example: PRSP). Also, data collection and stock assessment, and general sharing of information with one another.

**Kenya's** prawn management plan has been successful, but Kenya requires more knowledge exchange between countries and local communities, to tackle common and overlapping problems such as:

- Illegal, unreported and unregulated fishing.
- Transboundary regulations.
- Monitoring, surveillance and enforcement.
- Migrant fishing.
- Open access nature.
- Overfishing in one nation and exporting to another e.g., sea cucumbers and shark fins.
- Gear size, gear type and restrictions to curb illegal/destructive fishing gears.
- Licenses to limit entry.
- Temporary closures of some areas for specific purpose (e.g., spawning aggregations).
- Stakeholder involvement.
- Buy-in from fishers.
- Funding for implementing plans.

**Mauritius** needs assistance with development of its fisheries information system, including providing technical assistance in improving small-scale fisheries management.

**Madagascar** asks for collaborative focus on combating resources over-exploitation and destruction of the coastal and marine ecosystem on which fisheries productivity depends. It needs help in implementation of fisheries management plans, where lack of funds and problems with disbursement procedure hamper implementation of planned activities. It would support activities aimed at moving away from open access, promote respect for fishing closures, tackle IUU fishing, regulate fishing areas and fishing gear, and focus on developing good markets and marketing.

Several challenges have already been identified by **Mozambique's** SWIOFC Scientific Committee, such as management of sea cucumber, octopus, shallow water shrimp, small pelagic and a demersal working group. However, as an advisory body, SWIOFC prioritizes information and knowledge sharing, but not regulations. Fishing rights; management measures including regulations; fish markets; incentives /subsidies; and improving communication connections between stakeholders are also important issues.

**Tanzania** would appreciate tackling of common management issues across SWIO countries including collection of data and information flow systems, and strengthening of fisheries monitoring, control and surveillance (MCS). It is further concerned about illegal fishing gears and harvesting and processing of undersized fish. Also, institutionalization and operationalization of management plans, cost-effective MCS Plans, and financing mechanisms for resource management.

**Seychelles** is concerned about limited resources and capacity for research and MCS, as well as stakeholder lack of empowerment, resulting in limited engagement.

SWIO partners also envisaged the **positive impacts that the introduction of a Regional Plan for Fisheries Surveillance could have for coastal fisheries:**

- Regional plan for fisheries surveillance essential to fight IUU fishing with regional cooperation - would reduce loss from fish capture considerably.
- Important to facilitate coordination of MCS activities, particularly in the EEZs of member countries in the IO, for bilateral/regional collaboration leading to reduction and control of illegal fishing.
- Collaboration among fisheries inspectors, and co-operation between countries, e.g., monitoring of fishing vessels.
- Deployment of fishing patrols to fight IUU fishing and surveillance and patrolling of the EEZ.
- Standard operating procedures for surveillance: regional surveillance plan for better fisheries inspection.
- Strengthening MCS Training and Operation for security in distant areas where illegal fishing occurs.

- Successful Regional Coastal Surveillance Plan depends on efficiency at national level - requires effective national capacity, followed by roll-out for the region.
- Assistance in implementation of regulations and laws, and licensing control.
- Need for money to realize positive impacts.
- Better protection for highly migratory and sedentary fish species; improved conservation efforts  
increased sustainability of fish stocks.
- Reduced inter-country conflicts on shared stocks resource utilization.
- More reliable and transparent data on fishing in national waters.
- Harmonized approach to addressing trans-boundary fisheries management challenges and information sharing.
- Cost reduction, technical and technological exchanges, exchanges of reliable information.

### 1.5.1 SWIO Countries Building Co-operative Synergies

SWIO countries have already been building complementary and subsidiary relationships, and have achieved some synergies in the region, as is evident in key fisheries management achievements and **programmes in progress**:

- The **Comoros** encourages co-management at the national level, while promoting regional collaboration, e.g., Regional Plan for Control and Surveillance (PRSP) as very important to support.
- **Kenya's** transboundary tuna strategies guide the exploitation of tuna. Good fisheries co-management areas and plans have been formulated and financed, and enhance discussions on management of shared stocks and regional integration, e.g., Kenya-Tanzania transboundary conservation area. Improved fisheries regulation compliance and data collection are also achievements.
- **Madagascar** already has the TGRH, TGRN and PAP guide in place, and invites a comparison of results of the SWIOFC, IOC and IOTC programmes, SWIOFish (The World Bank), and the Nansen-Programme (FAO). Coastal fisheries management plans are in process for all coastal regions and the "Plan Directeur de la Pêche et de l'Aquaculture", policy plan has been developed – a collaboration between Fisheries and Aquaculture.

- In **Mozambique**, the SWIOFC - Nairobi Convention Partnership Project aims to address areas of common concern for fisheries and environment, with mutual reinforcement interventions and targeting small scale fisheries. SWIOFC also works on MCS activities through its guidelines.
- **Tanzania** lists as major achievement the non-decline of fish production in the past four decades, indicating effective fisheries resource management, through actions such as:
  - Establishment of Beach Management Units (BMUs) in most fishing villages, with fishers involved.
  - although improved institutional capacity of the BMUs is needed
  - Joint Fisheries Management Areas (CFMA), and steps for Integrated Coastal Zone Management
  - high-value fisheries (e.g., prawn and octopus) are closely managed with management planning; setting rules and regulations; data and information flow; MCS - and most importantly, the BMUs
  - introduction of a closure regime on certain reef fisheries to enable collaborating stakeholders to internalize benefits of responsible fisheries management
  - effective management has led to improved stock profiling of prawns / shrimp and lifting of a semi-industrial prawn fishing ban with small-scale and semi-industrial prawn fishers adhering to the FMP
  - a policy of restricting primary fishing activities of small-scale fishing practices has helped curb overcapacity and overfishing, benefiting small-scale fishers
  - coordinated management efforts at national, local and village government levels, and collaboration with regional programmes (e.g., SmartFish) have enabled eradication of dynamite fishing in coastal fisheries, thus helping to protect coral reefs and species diversity
  - incorporating communities/stakeholders in fisheries data collection using mobile phones
  - community involvement and awareness in plan implementation (school environmental education/environmental Clubs) especially in Marine Parks
  - Civil Society Organizations (CSOs) and NGOs improved service delivery in fishing communities
  - tuna management collaboration in the IO region (regional).
- **Seychelles** advises building capacities at regional and national level, rather than heavy reliance on external consultants.

## 1.6 Ecosystem Approach to Fisheries and Creating an Enabling Environment following the UNEP-Nairobi Convention, UN Agenda 2030, Transforming Africa 2063, and the Blue Economy Paradigm of Economic Efficiency, Social Justice and Environmental Integrity

### 1.6.1 Using an Ecosystem Approach to Fisheries to create an enabling environment

SWIO countries have access to instruments such as the UNEP-Nairobi Convention, UN Agenda 2030, Transforming Africa 2063, and the Blue Economy Paradigm to help shape an enabling environment based on economic efficiency, social justice and environmental integrity. To what extent are SWIO governments **moving towards rights-based/ecosystem-based management**, to secure sustainable access for small-scale and artisanal fishers? They also list any **other enabling fisheries management architecture required**:

- |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comoros    | <p>At national policy and legal level, updated policies will have to consider the environment, biodiversity loss, and Blue Economy approach. A pilot project is suggested at operational management, research and compliance level; while at governance level, capacity building and training, sharing and collaboration.</p> <p><b>Rights/ecosystem-based:</b> Not yet in place but should reinforce the CNCSP for effective implementation of regulations. <b>Other:</b> Co-management, better control and surveillance (evaluation activities).</p> |
| Madagascar | <p>Ensure local fishers rights are respected: Build and enhance inter-sectorial policy dialogue for stakeholders on application and implementation, understanding the different interactions.</p> <p><b>Rights/ecosystem-based:</b> Right-based management is progressing. A major step was proclaiming 2-nautical miles-EEZ for small-scale fishing. SWIOFish 2 Project plans to incorporate small-scale fisheries management plan in all coastal regions of Madagascar. Locally Managed Marine Areas</p>                                             |

(LMMA) and Marine Protected Areas (MPAs) are in place; and PAP Fisheries Management Plan is ecosystem-based and rights-based.

**Other:** Core model of Blue Ventures NGO includes securing fishers' right to fisheries; community fisheries management; finance - grants, saving and loans; better financial return on fishing. Also required are marine spatial planning; collection of basic data (quantity per species) per fisherman in an area; and climate change mitigation. Need an instrument to measure effectiveness of fisheries management.

**Mauritius** Through a consultative and collaborative approach, by creating awareness on a balance between resource exploitation and ecological importance. Having all the conventions, policy papers will not be positively impacting, unless people at top level understand the essence, and transform the recommendations into actions.

Most of the anthropogenic-induced impacts are gradually being addressed at the national level through Environmental Impact Assessment, inter-ministerial committees, policies, regulations and sensitisation campaigns. Since the 1990's, in order to reduce fishing pressure in the lagoon, the Government has progressively formulated, reviewed and executed several strategies like the proclamation and management of marine protected areas, promoting Fish Aggregating Devices, closed seasons for net and octopus' fisheries. Sensitisation and capacity building of coastal communities in maintenance of coral nurseries and coral plantation, are being promoted for a potential workforce in the reef restoration, protection and conservation programme.

**Mozambique** Participation and engagement of all stakeholders relevant for fisheries management a key principle of EAF approach. International and regional policy instruments, e.g., SDGs and Agenda 2063, provide guidance and show commitment of Governments to work together to achieve goals, which the EAF can help achieve.

**Rights/ecosystem-based:** Recently adopted Maritime Fisheries Regulations (REPMAR) brings innovation for improving management. Community management of fisheries areas were established by law and ensures involvement and participations of all stakeholders.

**Other:** Fisheries management does not succeed with beautiful policy and strategy documents but implemented on the ground with good practices and strong, participatory and empowered fishing authority, applying fisheries extension programs.



Kenya	<p>Consider non-state actors as key in implementing government policies and provide funding,</p> <p>e.g., Ocean Decade of Marine Science.</p> <p>Investing in coastal ecosystem restoration of poorly managed ecosystem.</p> <p>Reduced land to sea pollution, reduced sea-based pollution.</p> <p><b>Rights/ecosystem-based:</b> Regulations are being implemented to uplift the small-scale sector, by introducing rights-based fisheries management and capacity building, and moving away from foreign domination of commercial fishing industry. Government in consultation with stakeholders are developing Marine Access Rights Regulations intended to promote rights-based access and sustainable utilization of fisheries resources, including through advocating an ecosystem approach to small scale fishery in establishing devolved management frameworks (e.g., BMUs with co-management plans to be endorsed and supported with financing to ensure monitoring and other management activities. Stakeholders should strategize to create an enabling environment to maintain sustainable fish stocks, good fishing methods, and safeguard fish breeding through diversification of fisher community livelihoods, marine protected areas, enclosures and mangrove restoration practices.</p>
Tanzania	<p>Should be coordinated at regional level, focusing on establishment of proper network for information sharing and utilization of available opportunities in member countries. Include joint working groups for each major thematic area. Develop collaborative regional projects to enhance sharing of knowledge and skills, while enabling learning from each other.</p> <p><b>Rights/ecosystem based:</b> Efforts are being made towards ecosystem-based management, including through Integrated Coastal Resource Management (ICRM) and establishment of Collaborative Fisheries Management Areas (CFMAs) for improved resource use.</p> <p><b>Other:</b> Establishment of a Fisheries Management Fund to meet costs of resource management would improve implementation of resource management plans – should go concurrently with solid data and information flow system, legitimate rules and regulations, and cost-effective Monitoring, Control and Surveillance (MCS) system.</p>
Seychelles	<p>An enabling environment for greater stakeholder engagement, and a sustainable financing mechanism should be developed and implemented.</p> <p><b>Rights/ecosystem based:</b> An ecosystem-based approach to fisheries management already exists, and right-based fisheries management will be implemented in a phased approach.</p>

## 1.6.2 UNEP Nairobi Convention – Climate Change and Biodiversity Loss

**Environmental targets** are the focus of organisations such as the UNEP Nairobi Convention, covering **climate change and bio-diversity loss**. They receive recognition to some extent, in SWIO countries:

	Recognition of international environmental targets
Comoros	<ul style="list-style-type: none"> <li>• No environmental consideration in co-management plans – e.g., of climate change and biodiversity loss</li> <li>• High consideration for Marine Parks</li> <li>• Much effort needed for effective environmental management.</li> </ul>
Kenya	<ul style="list-style-type: none"> <li>• Kenya Marine and Fisheries Research Institute focuses on mangrove rehabilitation: villages get US\$2,000 /month to invest for benefit of conservation.</li> <li>• Highly focused, but limited understanding of reality of biodiversity loss and climate change by fisher and other key community stakeholders - need for regional and local programs to benefit fisher communities.</li> <li>• Insufficient focus on environment targets, besides protection of critical habitats such as coral reefs, mangroves and seagrasses. Across the region less than 8% of coastal and marine areas are protected. However, studies have shown areas e.g., TBCA between Kenya and Tanzania, and between northern Tanzania and Southern Mozambique are climate refugia and recommended for protection.</li> <li>• Beach erosion becoming a problem in Kipini and Ngomeni north coast of Kenya, with little intervention.</li> </ul>
Madagascar	<ul style="list-style-type: none"> <li>• Depends on where funding is applied.</li> <li>• Need local Climate Adaptation and restoration plans for degraded and critical areas.</li> <li>• UNEP Nairobi Convention and recent WIO SAP as yet little impact and recognition in the fishery sector.</li> <li>• Ministry of Fisheries promotes preservation of marine resources but lacks clear implementation plan.</li> <li>• Ministry of Environment policy for sustainable development focus more on preservation of biodiversity.</li> <li>• Recommend inclusion in basic education programme of conservation of biodiversity, restoration of mangroves, and prohibitions related to use of natural wood (charcoal, construction, etc.).</li> </ul>
Mauritius	<ul style="list-style-type: none"> <li>• The main objective of the Climate Change Act 2020 is to mitigate and address the adverse effects of climate change and developing Mauritius into a greener economy, whilst respecting the obligations of Mauritius under the United Nations Framework Convention on Climate Change, the Kyoto Protocol, the Paris Agreement and any other related conventions.</li> </ul>

<b>Mozambique</b>	<ul style="list-style-type: none"> <li>• Shown commitment to rehabilitation of critical habitats by Government and civil society for restoration of mangrove forests along the coastline.</li> <li>• Habitat conservation and restoration: no-take reserves and other MPAs are being planned (including a mangrove strategy and other initiatives).</li> </ul>
<b>Tanzania</b>	<ul style="list-style-type: none"> <li>• Mitigation of climate change and biodiversity now a major government concern.</li> <li>• President of Tanzania speech at COP26 (2021 United Nations Climate Change Conference) shows determination to participate in global initiatives on environmental protection and climate change – efforts aimed at fulfilling global environmental targets and national objectives include: <ul style="list-style-type: none"> <li>◦ government training for more marine and fisheries scientists, to build capacity of institutions responsible for training and research.</li> <li>◦ purpose - to improve data and information flow systems for improved ocean health, and enhancement of marine biodiversity.</li> <li>◦ Government has banned importation and use of plastic bags to reduce waste generation and promotes use of recyclable materials.</li> </ul> </li> </ul>
<b>Seychelles</b>	<ul style="list-style-type: none"> <li>• Will be accepted if provides alternative livelihood to address overcapacity in the fisheries sector.</li> </ul>

### 1.6.3 Blue Economy – Potential benefits for SWIO Countries

The Blue Economy regime promotes sustainable development targets of economic efficiency, social justice and environmental integrity. SWIO country stakeholders are both hesitant and hopeful that their fisheries sectors will also benefit:

- Blue Economy is an attractive concept for WIO nations and they see potential for national development, so that some have started marine spatial planning (MSP) - an inclusive planning approach supposed to allow all relevant stakeholders adequate involvement.
- The Ministry of Fisheries (Madagascar) has integrated the Blue Economy in its structure, now being the Ministry of Fisheries and Blue Economy, though the policy is not yet clear, and stakeholders are uncertain how it could benefit the fisheries sector.
- Blue Economy principles would help prevent activities that erode sustainable development.

- Communities participating will commit to rehabilitation of coral reefs and actions to stop destructive fishing practices and promote the 3 elements of economic efficiency, social justice and environmental integrity.
- There is need for awareness raising initiatives on the new concept of Blue Economy (BE), although the campaign is gaining momentum, with sectors of gas and oil exploration; marine transportation; tourism; mining; energy; and biotechnology; exerting much pressure on the fisheries sector.
- May provide alternative livelihood to address overcapacity in the fisheries sector.
- There is an urgent need for involving the fishing industry more among policy makers.
- It has potential to benefit the fisheries sector, but so far, the common fisherman and the natural environment are yet to experience those intended benefits.
- For now, the blue economy is just a slogan, there is no yet concrete recognition of benefits.
- It is too early to assess the benefits of a Blue Economy Strategy for the fisheries sector.
- What is meant by social justice? Because the community suffers in poverty with damaged roads, no hospitals, no security, no schools – which is why the concepts of health, retirement, education, and renewal of equipment, should be calculated into the selling price of fish.
- Interplay between economics, social and environmental integrity will only be understood once more decision-makers understand the impacts of external factors (pollution, environmental degradation) on marine productivity.
- Urgent need for re-organization and consolidation of data and information (e.g., Ocean Health Index – OHI) to inform the integrated policy-making process.

#### **1.6.4 Establishment of a Sustainable Development Reference System at national and regional levels through building intra-and interagency linkages**

Establishment of a Sustainable Development Reference System (SDRS) is a key Ecofish strategic proposal:

- ▶ Marine fisheries partner countries of the EA-SA-IO region accept to establish an SDRS for their fisheries at national and regional levels in collaboration with a Regional Fisheries Body, e.g., South-West Indian Ocean Fisheries Commission (SWIOFC).
- ▶ The proposed SDRS should develop a strong link with the Nairobi Convention as part of UNEP's Regional Seas Programme. Besides championing the regional Blue Economy, the platform is to address the issue of climate change and biodiversity loss in the region.

- ▶ To develop and operationalise a useful SDRS, a consistent fisheries policy and management framework, as well as a wide range of interdisciplinary expertise and multiple data sources will need to be harnessed. Generally, a fisheries SDRS needs to be established at the parent ministry with formal linkage with other fisheries related public and private organisations.
- ▶ Should SDRS be adopted by countries in the SWIO region, most of the datasets needed to create the fisheries SDRS exist in the partner countries but are scattered because of the prevailing silo approach of administrative organisations. The proposed intervention would create synergies and value-added by building intra and interagency linkages at various geographic scales in the best interest of the region (Sweenarain. S. 25 March 2021).

Emphasis will be placed on developing a SDRS, as a follow-on from this assignment.

SWIO country stakeholder responses to using inter-disciplinary expertise and multiple data sources to build a Sustainable Development Reference System (SDRS) at national and regional levels were:

Country	Benefits & challenges of a Sustainable Development Reference System (SDRS)
<b>Comoros</b>	<p><b>BENEFITS</b></p> <ul style="list-style-type: none"> <li>• Nationally: though SDRS could generate effective fisheries data together with analysis (stock assessment data, coral reef degradation data statistics etc.).</li> <li>Also, the possibility of assessment of fisheries policy and management plans.</li> <li>• Regionally: exchange of information with countries with better data collection.</li> </ul>
<b>Kenya</b>	<p><b>BENEFITS</b></p> <ul style="list-style-type: none"> <li>• Nationally: ability to build links with key relevant institutions e.g., National Planning and Kenya Bureau of Statistics.</li> <li>• Assistance to determine the value of fisheries beyond beach price - value chain benefits and GDP.</li> <li>• Regionally: IUU fishing regulation.</li> </ul>
<b>Madagascar</b>	<p><b>BENEFITS:</b></p> <ul style="list-style-type: none"> <li>• Nationally: availability of expertise and data from different sectors and sources to be sustainably utilised (management plans formulation etc.).</li> <li>• Regionally: Madagascar has joined the Fisheries Transparency Initiative (FiTI) for better identification of objectives and indicators (baseline data), and more synergy in the implementation of data collection and sharing.</li> </ul>

**CHALLENGES:**

- Gathering of the data from different sources.
- Difficult to work as an inter-disciplinary team on documents, though output likely to be good quality.
- Finding common ground on which sector/field/agenda to prioritise.
- How to achieve transdisciplinary expertise.
- How to use data effectively: can be indicative, decision-making, part of policy ability to integrate into economic and environmental objectives.

**Mauritius****BENEFITS**

- Obtain guidance through science driven information to the policy makers.
- Government has set up a National Coral Reef Network to come up with the most appropriate remedial actions to better protect and conserve marine biodiversity.

**CHALLENGES**

- Inadequate fisheries information along with a lack of proper Fisheries Information System.
- Capacity building required.

**Mozambique****BENEFITS**

- Nationally: ideal where no strong fisheries administration in place locally.
- Offers a structured system for collecting statistical information on the ground.
- Will boost inter-disciplinarity approach at the national level

**CHALLENGES:**

- An intersectoral approach is key for sustainable development, especially for fisheries and environmental management.
- Formal and informal platforms / networks important to bring fisheries and environment experts to work together.

**Tanzania****BENEFITS**

- Nationally: assistance to identify signs of and mitigate resource over-exploitation, modifications of ecosystems, economic losses, and conflicts in resource management and fish trade – current trends threaten long-term sustainability of fisheries and the contribution of fisheries to food supply.
- Need for SDRS to enhance interplay between ecology, economics, and social dimensions in resource management and sustainable livelihood.
- Major benefit of SDRS is its ecosystem rather than sector-based approach.

**CHALLENGES:**

- New approaches to fisheries management should embrace conservation, environmental, as well as social and economic considerations.
- Establishing multi-task working groups is timewise and financially demanding.
- Operationalization could be complex - best to start at the national level.

**Seychelles****CHALLENGES**

- Nationally: lack of coherence and collaboration amongst local agencies.
- Regionally: duplication of effort and lack of continuity from one project to another.
- Brain drains as personnel move to greener pastures at international level.

### **1.6.5 Monitoring tool for implementation of Ecosystem Approach to Fisheries and FMPs**

The FAO has a potentially comprehensive tool for assessing monitoring and implementation of Fisheries Management Plans. This tool, in the FAO manual introduced in 2021, uses an ecosystem approach to fisheries management, based on the three EAF components:

- Ability to achieve
- Ecological well-being
- Human well-being.

Ability to achieve represents the management and institutional systems in place to deliver wanted outcomes (e.g., access and tenure systems, compliance, democratic processes, conflict resolution, stakeholder participation), along with external drivers (not controlled by the fishery). This component contains 2 subcomponents: governance and external drivers, where governance contains 12 elements:

1. Policies and objectives
2. Legislation
3. Enabling regulation
4. Consultation and participation during the management plan elaboration process
5. Consultation and participation during the implementation and review

6. Management plan development
7. Management plan implementation and review
8. Compliance
9. Monitoring and review
10. Reporting and communication
11. Environmental drivers
12. Economic, social and other external drivers.

“Ecological wellbeing” concerns all ecological assets (e.g., stocks, habitats, ecosystems) relevant to the fishery and ecosystem in which it occurs; and impacts being generated by the fishery that may be affecting them. This component has three subcomponents and 6 elements to evaluate:

1. retained species: target species, bycatch species
2. non-retained species: discards and endangered, threatened and protected (ETP) species
3. general ecosystem: benthic habitats, ecosystem structure and function.

“Human well-being” is a key driver in an EAF - defined by FAO as: “a condition in which all members of society are able to determine and meet their needs and have a range of choices to meet their potential” (Garcia et al., 2003). Thus, ecosystem health is essential for human health and well-being; and it is essential to maintain the capacity of aquatic resources to produce food and employment. Elements of human well-being are grouped into 4 categories: livelihood; food and nutrition security; health and safety; gender and equity. Each element is scored at 3 levels: national level; at the scale of directly dependent fishing communities; and at the scale of indirectly dependent fishing communities (FAO, 2021).



## 2. PowerPoint Presentation ahead of the Validation Workshop

# ECOFISH: ASSESSMENT OF REGIONAL/NATIONAL FISHERIES MANAGEMENT PLANS ACROSS THE SWIO COUNTRIES, KEY PRIORITY FISHERIES AND RELATED LEGAL FRAMEWORK POLICIES

By David Russell  
25 November 2021

**ECOFISH**  
Enhancing equitable economic growth by promoting sustainable fisheries in the EA-SAD region

Promoted and Funded by

Implementing partners

## STUDY AIMS:

- ▶ Undertake an inventory of existing national and regional fisheries management plans.
- ▶ Assess the capacity needs and gaps as well as constraints and barriers for effective operationalisation of these management plans at national and local levels.
- ▶ Identify potential national priority fisheries that could be managed more synergistically by "sharing" scientific and socio-economic knowledge, lessons learned and good practices,
- ▶ Joint capacity building – based on principle of complementarity and subsidiarity among the partner countries.



## CHALLENGES

- ▶ SWIO countries have marine ecosystems that contain a large number of fish species in small quantities that render the development of industrial/large scale fisheries difficult. This is a major constraint to transposing external fisheries management experiences in the EA-SA-IO region.
- ▶ So many different fisheries spread management resources within SWIO countries too thin to be properly effective.
- ▶ The low productivity and economic inefficiency of the sub-sector are attributed to policy and governance failures as a result of a lack of reliable scientific and economic information, basic socio-economic enabling environment, fisheries infrastructures and market logistics.

Small-scale fisheries are characterised by a large number of fish species in small-quantities, that make development of industrial/large scale fishing difficult. It consequently also puts a strain on Government's fisheries management capacity, resulting in the need for SWIO countries to cooperatively combine their individual capacity and knowledge regionally, to maximise limited human and financial resources. This in an effort to achieve effective implementation of fisheries management, and small-scale fisheries efficiencies across the full value chain, so that fish stocks are managed well, quality fish products are produced in a sector known for quick deterioration in product quality, and markets developed to maximise income, both for fisheries stakeholders, fisheries management control, and country GDP.

## EXPLORE

- ▶ Explore challenges and opportunities to promote "co-management", leveraging national and regional expertise by reducing the fisheries management burden through joint co-operation. This through teaming up stakeholders such as: Government national fisheries agencies; industry (both industrial and small-scale); NGO's involved in the sector; regional fisheries management bodies, and donor agencies.
- ▶ For priority fisheries that are not yet controlled through fisheries management plans, start the process of moving the fisheries away from open access, towards a framework of workable management controls involving joint accountability and ownership of both the Government fisheries administration, fisher association/community and other involved stakeholders including potentially those who can leverage capacity and resources such as regional fisheries management organisations, and donor agencies.



## IMPLEMENTATION & MOMENTUM

- ▶ to provide essential fisheries management perspective on the key fisheries for each of the SWIO nations.
- ▶ develop joint ownership in future strategies
- ▶ questionnaires and interviews: to introduce good stakeholder dialogue at the grass-roots fisher community/association level including NGO's that may be assisting fishers, as well as talking to national fisheries management administration and scientific research staff, and regional fisheries management organisations to leverage ideas, resources, and co-operation. This to create momentum for co-management, harnessing the different strengths of the involved stakeholders.
- ▶ Step-by-step, as a result of the research from this consultancy, this will provide the opportunities to deal with resource access issues, and move to introduced controls that can be policed, improving the socio-economic status of the fish communities, and allowing over time introduction of resource management tools such as resource rents that can help fund essential elements of fisheries administration.
- ▶ The assignment will be synchronised with Result 2 intervention – Assessment of capacity needs and gaps for strengthening Monitoring, Control and Surveillance activities in the SWIO partner countries. These assignments will be coordinated by the IPMU to avoid potential overlaps i.e., to build synergies between them.

## GOAL ORIENTATED APPROACH

- ▶ Involving collaboration between partner countries, and related regional organisations, to avoid duplication of effort and wastage of scarce resources.
- ▶ Broaden traditional concept of shared fisheries which focuses mainly on bio-ecological sustainability factors, to also include socio-economic features that are prevalent in the region, through a **co-management team approach**, moving fisheries away from open access.
- ▶ Become more commercially orientated, considering the whole fisheries value chain, and developing a **wealth management approach**. Aim at commercial efficiency resulting in the opportunity to charge a fair economic rent including funding fisheries management, promoting better resource utilization to the long-term betterment of all stakeholders including SWIO national economies.



This can occur through developing a wealth management approach, focusing on both environmental and socio-economic aspects of fisheries management, aiming at modernising the small-scale sector so that it can stand more effectively on its own feet. Co-management by relevant stakeholders is at the heart of effectively managing small-scale fisheries, a bottom-up approach assisting Government fisheries managers top-down approach, through better utilisation of local resources and knowledge. Step-by-step this will provide the opportunities to deal with resource access issues, and move to introduced controls that can

be policed, improving the socio-economic status of the fish communities, and allowing over time introduction of resource management tools such as resource rents that can help fund essential elements of fisheries administration.

## SWIO FISHERIES AND MANAGEMENT PLANS

Country	Number of fisheries	Those with Management Plans	Approved Plan	Implemented Plan
Comoros	25	6	6	6
Kenya	36	6	3	4
Madagascar	22	12	5	10
Mauritius	24	3	2	2
Mozambique	32	9	7	8
Seychelles	43	20	0	3
Tanzania	34	5	1	3
<b>TOTAL</b>	<b>216</b>	<b>61</b>	<b>24</b>	<b>36</b>
Source: WIOFish Database 14 September 2021				

Of these, approximately 78% are small-scale fisheries; 9% are industrial fisheries; and 13% are recreational and sports fisheries.

## THEORY OF CHANGE TO ACHIEVE SUCCESS

- ▶ Dialogue with key stakeholders is essential to obtain information and views on how best to achieve effective fisheries management, and also to leverage outputs through co-operative co-management.
- ▶ Theory of Change needs to be "operationally focused".
  - ▶ Leverage regional co-operation, sharing common aspects.
  - ▶ Reconnection to political and national policies – are governments walking the talk.
  - ▶ Potentially move away from business as usual, and focus on transformation.
  - ▶ Understand fisheries and management plans, and how effective they are in terms of earning money for the country.
  - ▶ Start moving towards a "wealth management approach" to reach financial sustainability, including a modernisation and financing strategy for the small-scale sector.
  - ▶ Develop an "enabling environment" architecture with necessary data to monitor progress.

## COMOROS

### ► KEY FISHERIES MANAGEMENT PLANS (FMPS)

1. Moheli Marine Park (MMP), created in 2001, under the Ministry of Environment – promoting biodiversity conservation and achieving ecological sustainable development through enhancement of economic activities. Includes 10 villages and a coastline of 100 kilometres. Follows a co-management approach with destructive fishing methods forbidden. Note: no agreement signed between the MMP managers and fisher association.
2. In 2015 the World Bank funded SWIOFish 1 project, implemented over 6 years, utilising the co-management approach, involving 6 villages and signed between the fisheries managers, local mayor, and representatives of the fisher associations.

No.	Fisheries Management Plan and year developed	Plan approved and implemented	Year implemented
1	Small nets, cast net, anchovies & sardinellas, 2013	Yes	2017
2	Small nets, beach seine, fish, 2013	Yes	2017
3	Diving, speargun, fish, 2016	Yes	2016
4	Hook & line, trolling, fish, 2013	Yes	2017
5	Small nets, drift nets, fish, 2013	Yes	2017
6	Hook & line, vertical lines, fish, 2013	Yes	2017
TOTAL	6	6	6

## COMOROS

### ► PRIORITY FISHERIES REQUIRING INTRODUCTION OF MANAGEMENT PLANS

1. Rock Lobster under co-management due to its high potential socio-economic benefits. Before deciding, undertake a socio-economic study along the whole value chain, and also conduct a stock and ecological risk assessment analysis.
2. Keep the fisheries species that are under current co-management, but as a priority, strengthen management activities for these fisheries.
3. Once the above are operating effectively, consider the small-scale fisheries (pelagic and demersal) that are still open access, conducting stock assessment studies to assess the health of each of these fisheries before deciding which to prioritise, and also identify the ideal species in terms of their socio-economic contribution.





## COMOROS

### ► SUCCESSES

1. Small-scale fishing provides a vital safety net for the disadvantaged groups in the Comoros, as it is a source of employment and food security for many poor people.
2. Small-scale fisheries operate around the coastal zone, with familiar and effective fishing techniques, and involves only national fleets.
3. Many associations and professional cooperatives have been formed.



## COMOROS

### ► GAPS

1. Comoros implemented 6 management plans in 2017, but since this took place there has not been any assessment done so far.
2. Despite the efforts for co-management formulation, the level of enforcement of the few regulations in place is very low, and catch control and inputs control as management measures are limited.
3. Research and data collection are poor. Hardly any ecological risk assessment has been done, and stock assessment is poor.
4. No intensive scientific research prior to the formulation of the co-management plan was done.
5. Hardly any performance indicators are developed. Harvest strategy, and rules, including monitoring, review and evaluation of the harvest strategy are poor and insufficient.
6. No long-term sustainable financial mechanism is developed. Almost hundred percent of the co-management plan budget come from project money.
7. Poor communication of co-management activities in the local media, conferences, reports.
8. Conflicts between villages. Lack of training for fisheries communities and fishermen.

## COMOROS

### KEY CHALLENGES TO FISHERIES MANAGEMENT PLAN (FMP) IMPLEMENTATION

1. The budget of the fisheries sector in Comoros depends strictly on fisheries agreements, either private or with the European Union. Meaning there is no or limited fund lines coming from government through the national budget.
2. All of the fisheries co-management plans that exist are supported financially and technically by projects. Going forward implementation of a management plan should develop a sustainable financial mechanism.
3. Serious lack of higher level fisheries experts at the General Directorate of Fisheries Resources level. Consequently, it is very important that any co-management plans should be followed with capacity building package at different level: fisheries managers, fishermen and fisheries communities.
4. Fishers require: life saving security (50 loose their lives each year); training capacity; exchange within the SWIO Region, so benefit from other countries experience.

The budget of the fisheries sector in Comoros depends strictly on fisheries agreements, either private or with the European Union. Meaning there is no or limited fund lines coming from government through the national budget. With the decision by Comoros, to end the fisheries agreement with the EU, the state support from the national budget to the fisheries sector is financially very limited, despite the existence of various sector institutions. Prior to ending the agreement, Comoros was earning USD 1.3million every year from foreign vessels that paid to access the country's fishing grounds. This was 0.7 percent of the country's total national revenues in 2017.

## COMOROS

### KEY OPPORTUNITIES FOR IMPLEMENTATION OF FISHERIES MANAGEMENT PLANS

1. Comoros is an archipelago country located in a tuna-rich area at the mouth of the Mozambique Channel. The fisheries sector is potentially very important as a means to contributing to the long-term goals of Comoros becoming an "emerging country by 2030".
2. Improve fisheries management structures, contributing to resource sustainability.
3. Guide the fisheries communities, reduce the human pressures on the resources and habitat and promote multi-stakeholder consultation and dialogue.
4. Promote biologically sustainable and financially viable integrated fisheries as a growth engine for shared prosperity at the local and national levels.
5. Promote effective collaboration: top down and bottom up.
6. Inclusion of fisheries extension services, cross-sector approach - life-long learning and socio-ecological transformation.
7. Incorporate Integrated Coastal Zone Management components, the role of Marine Protected Areas as a fisheries management tool, Marine Spatial Planning, Blue Economy perspective, Sustainable Development Reference System etc. to improve fisheries and create growth in the fishery and its sub-sectors.
8. Complement this FMP study with the separate Monitoring, Control and Surveillance study also being undertaken through Ecofish, to address the open-access issue with proper access rights regulation.
9. Reconnect national and regional policies.
10. Modernisation of the Small-Scale Fisheries sector.
11. Having a standard management plan such as co-management would play an important role and is needed – a real opportunity to address overfishing and destructive fishing practices.

## KENYA

### KEY FISHERIES MANAGEMENT PLANS (FMPs)

1. Prawn Fishery Management Plan – Gazetted in 2010. **The only FMP officially implemented so far.**
2. Small and Medium Pelagic Purse Seine Net Fishery Management Plan
3. Lobster Fishery Management Plan
4. Marine Aquarium Fishery Management Plan
5. Malindi-Ungwana Bay Fishery Joint Co-Management Plan approved
6. Shimoni-Vanga Fishery Co-Management Plan
7. Pate Island Joint Co-Management Plan.
8. Tuna Fishery Management and Development Strategy



Photo of ring net/purse seine fishing. Operated by 40 fishermen, locating a school of fish before releasing the net into the sea. It does not have a Management Plan yet, and its landings are very high, leading to conflicts with artisanal fishers, industrial fishers targeting similar species, and sport or recreational fishers.



## KENYA

### MAJOR ISSUES

1. Long bureaucratic approval processes for the management plans. Lobster and Small Pelagic Management Plans, needing outside capacity assistance.
2. Lack of adequate funds for implementation due to unrealistic budgetary allocation by the government.
3. Overcapacity in the artisanal fishery because of high dependency on fishing as a livelihood. The situation complicates implementation of management plans.
4. User conflicts in the fishing grounds.
5. Limited stakeholder involvement in formulating and executing management plans. There is lack of synergy between the National and County (devolved) governments, and other relevant stakeholders such as NGOs.
6. Unclear framework for implementing, including feasibility and resources needed to actualise the plans. **Plans are not costed to attract financial support from potential funders.**
7. Mechanisms to enhance responsible exploitation of fish stocks are weak. There are increased fishing malpractices putting pressure on fish stocks, weak enforcement of rules.
8. Limited investments (capacity) in fishing equipment that doesn't allow artisanal fishers to venture into deep waters to improve on fish catches.
9. Limited scientific information to review and update existing plans.
10. Weak inter-agency law enforcement team.

## KENYA

### OPPORTUNITIES

1. 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-industrial fishing" through the Fisheries Management and Development Act, 2016. Reforms will also enhance compliance with fisheries regulations.
2. Reforms in the sector have created new institutions: Kenya Fisheries Service and Kenya Coast Guard Service to address issues related to IUU fishing. 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 management of marine fisheries in the country.
  - Establishment of **"Fish Levy Trust Fund"** to provide for sustainable funding mechanisms in the sector.

## KENYA

### WAY FORWARD

1. Increased participation and diversity of stakeholders to create ownership in the processes of managing the fisheries, and encourage fisheries to move away from fisheries under open access pressure e.g., reef fisheries.
2. Strengthening co-management at the grassroots level for sustainability.
3. Exploring opportunities for alternative livelihoods to reduce pressure on the artisanal fisheries.
4. Regular data generation and "**analysis**", to inform policy and management decisions.



Coral reef fishery is under intense pressure due to over-relying on fishing as a source of livelihood.

## MADAGASCAR

### ► KEY CONCERNED FISHERIES MANAGEMENT PLANS (FCMP)

- A significant decrease in average daily catch production observed in the majority of Madagascar fishing areas due to fishing overcapacity around villages. Imposition of periodic fishing closures aimed at turning around depletion trend.
  - Promotion of a concerted approach to consolidation of efforts for the sustainable management of fisheries resources by involving those most impacted, the small-scale fishermen.
1. FCMP Antogil Bay or PACP BA (supported by NGO Wildlife Conservation Society (WCS))
  2. FCMP Ambaro, Tsimipaika Bay and Nosy Be Archipelago or PACP BATAN (supported by NGOs WCS and World Wide Fund for Nature)
  3. FCMP Melaky Region or PAP Region Melaki (supported by NGO Blue Ventures).
  4. Demersal Fishery Management Plan.





## MADAGASCAR

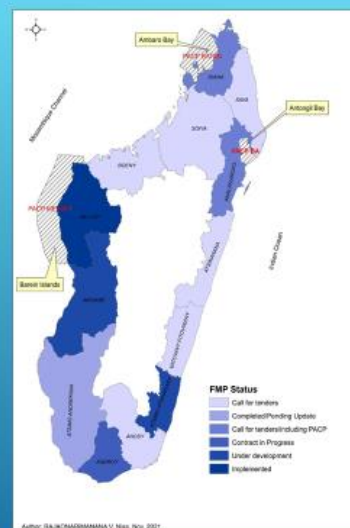
► **PRIORITY FISHERIES REQUIRING INTRODUCTION OF MANAGEMENT PLANS**

Government is aiming at covering all (13) coastal regions under management plans.

Will address management of all flagship species covering high commercial value species; species that contribute to local, regional and wider socio-economic development.

Prioritise the development of the exploitation of products that bring in foreign income, namely shrimps, lobster, sea cucumber and crabs.

Rational is that collection of data and resource management fund raising is easier through geographic intervention rather than by species.



## MADAGASCAR

## ▶ MAJOR ISSUES

1. Realisation of importance of fisher communities at centre of management models (co-management) to ensure local fisheries governance.
2. Co-management requires sustainable commitment of fishermen. To promote more inclusive management approach, Ministry of Fisheries advocating FCMPs as a guide for better supervision of the regulatory framework.
3. Establishment of marine protected areas including local temporary closures suggested by NGO's.
4. FCMPs developed by Ministry of Fisheries with support of NGOs.
5. The FCMPs are framed by existing laws and policies, including from FAO fisheries management guidelines.
6. The project SWIOFish-2 has been launched to strength the implementation of activities of these FCMPs and support the development of new FCMPs in fisheries not yet covered.

## MADAGASCAR

### ► SUCCESSES

1. FMPs are living documents, and updates and development of new plans are scheduled.
2. The authors relied on international standards and principles, as well as existing national legal and regulatory frameworks.
3. They were developed on the basis of effective consultation.
4. Implementation, communication of data and actions, facilitated by a network of key actors.
5. Several activities of the ongoing FMPs are shared, enabling adoption of common methodologies for implementation and monitoring/evaluation, comparing progress and sharing solutions to similar problems.

The authors relied on international standards and principles, including FAO Standards/Guidelines for Sustainable Management of Fisheries including the Code of Conduct for Responsible Fisheries (CCRF), the Ecosystem Approach to Fisheries, as well as existing national legal and regulatory frameworks including the law enabling decentralization of resource management.

They were developed on the basis of effective consultation in the successive phases from their conception to their validation. Each FMP highlights the participation of various stakeholders involved in its implementation, which include fishermen communities, community-based organizations, decentralized territorial authorities, and non-governmental organizations.

Implementation, communication of data and actions, and events is facilitated by a network of key actors organized around each of the FMPs. This situation partly bridges the gap in resources at the administrative level.

Based on the principles of ecological well-being, human well-being and capacity to achieve, several activities of the ongoing FMPs are shared despite the specificities of each fishing area. These similarities enable the adoption of common methodologies for implementation and monitoring / evaluation by comparing the progress of all the FMPs and sharing experiences and solutions to similar problems.

## MADAGASCAR

### ► GAPS

1. The updates of the first three FMPs and the development of new FMPs are overdue.
2. Differences in understanding of the FMPs persist between actors from local communities, on-site project promoters, and representatives of decentralized government entities.
3. The objectives are not sufficiently reflected in indicators that would make it possible to measure their impact.
4. The quality of the information does not allow for informed decisions for sustainable management of the sector's resources. Improvements through planned updates of FMPs should be made.
5. Need for a common and shared dashboard for the monitoring / evaluation of each FMP.
6. Adoption of the "project approach" (actions limited in time, budget and according to the objectives agreed with the donors) - poor impact on the global and sectoral plan.
7. Small number and limited qualification of Government employees for intensive field work (extension, sensitization, monitoring) as well as low financial capacity.
8. Plan implementation support structures not in place. Conflict of responsibility between field actors, partly solved by intervention of SWIOFish-2 project.

Plan implementation support structures have not been put in place and are therefore not operational as foreseen in the FMPs. Conflicts of responsibilities between field actors (e.g., decentralized government entities, NGOs). Problem partly solved thanks to the intervention of the SWIOFISH-2 project, which mainly plays the role of coordinating the implementation and development of FMPs.

## MADAGASCAR

### KEY CHALLENGES TO FISHERIES MANAGEMENT PLAN (FMP) IMPLEMENTATION

1. The goals of fisheries in Madagascar are clear but the strategy to achieve them is not clear and changes often.
2. Fisheries sector institutional and political anchoring needs more stability.
3. Fishermen are overwhelmed by the financial needs of the moment.
4. Complexity and inefficiency of resources management mechanism to enable the fisheries sector to be self-financing.
5. Implementation is not harmonized and each stakeholder has its own approach to implementation.
6. Some key stakeholders need capacity building.
7. Interference of politicians or political authorities during violations.
8. Insufficient material and human resources in charge of MCS.
9. Lack of precision in the regulatory frameworks.
10. Limited scientific data or inadequate data, to make informed decisions.
11. There is no periodic information available on the condition of each type of fishery.
12. Significant pressure on fisheries resources due to high population growth.
13. The sector's sustainable development objectives are giving way to purely economic considerations to meet urgent daily needs.
14. Lack of: information on the market; skills and infrastructure to preserve and process fisheries products.



There is a need to better understand the markets, and work backwards down the value chain, strengthening weak links, and thereby empowering the fishermen.

## MADAGASCAR

### KEY OPPORTUNITIES FOR IMPLEMENTATION OF FISHERIES MANAGEMENT PLANS

1. The Master Plan of the Fisheries and Aquaculture Sector for the period 2019- 2023 should be validated and adopted as soon as possible.
2. A fisheries management plan elaboration guide was developed in 2019.
3. A renewed dynamism for the blue economy in Madagascar materialized.
4. Ongoing consultations to redefine/define areas dedicated to small-scale fisheries.
5. Small-scale fisheries external assistance prioritization including World Bank SWIOFISH-2 project, and new FAO project aimed at an enabling environment.
6. Madagascar has formally applied to participate in the Fisheries Transparency Initiative (FITI).

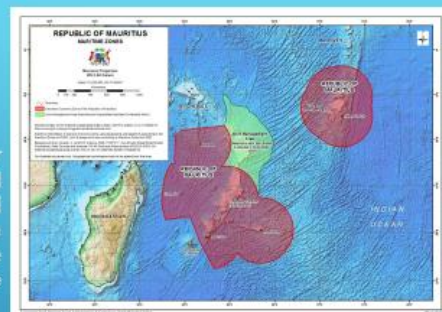
5. Convergence of external assistance to support the small-scale fisheries sector including: World Bank funded SWIOFISH-2 project and launch of the project "Creating an enabling environment aimed at ensuring the sustainability of artisanal (small-scale) fisheries", funded by FAO this November 2021.

6. The Government of Madagascar has announced its formal application to participate in the Fisheries Transparency Initiative (FITI). This international mechanism aims to help coastal countries increase the credibility and quality of national fisheries information, and is part of Madagascar's efforts to fight corruption.

## MAURITIUS

### ► KEY FISHERIES MANAGEMENT PLANS (FMPS)

1. Fisheries Management Plan for shallow water demersal species of the Saya de Malha and Nazareth Banks, and also the St. Brandon and Chagos Banks. The Banks fisheries are found 250 to 1200 nautical miles north of Mauritius, and are the traditional supplier of fresh and frozen fish to the local market.
  1. Hook and line semi-industrial chilled fish fishery.
  2. Hook and line vessels involving small dories fishing to a large mother ship – industrial fishery.
2. Aquaculture Development Plan 2007, projecting in lagoon and ocean ranching with 39,000 tonnes long-term projection. One company, Ferme Marine de Mahebourg a success farming red drum and European seabass, with 750 tonne production in 2012, and nearly 5,000 tonnes in 2020.

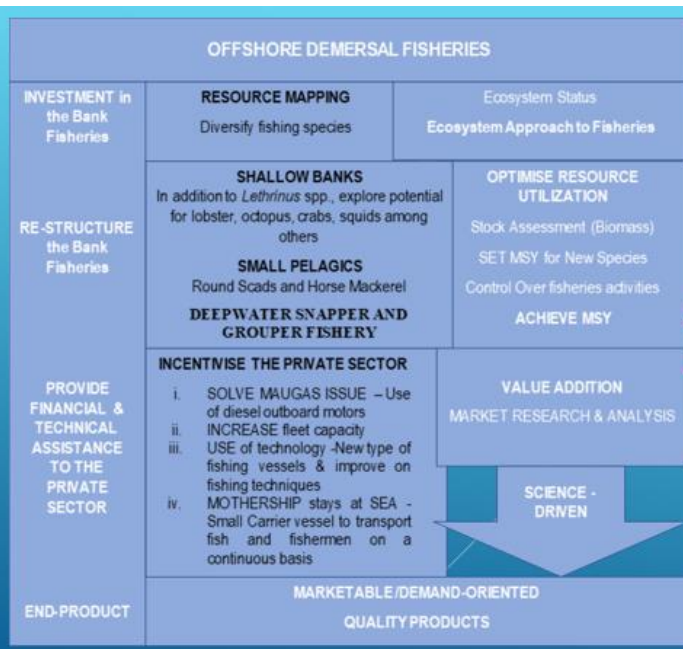


## MAURITIUS

### ► BANKS FISHERIES FMP

#### ► GAPS

1. Partly implemented with no follow-up since 2012.
2. Reduced fishing effort mainly due to long distance to fishing grounds – catching well below MSY.
3. Sector needs modernizing, both technologically and scientifically.
4. Despite available catch data, no scientific reports have elaborated on trends.
5. FMP lacks data on economics of fishery, including capturing economic rent.
6. Better consultation among operators, Ministry and fisher community.
7. Need to study markets, and develop good marketability of products, locally, regionally and internationally.



## MAURITIUS

### ► PRIORITY FISHERIES REQUIRING INTRODUCTION OF MANAGEMENT PLANS

- Tuna Fish Aggregation Device (FAD) Fishery – 21 FADs in operation, with catch rates better than lagoon fishing (Govt. assisting fishers with enhanced knowledge in exploiting fishery resources around FADs and in the open sea), providing more income to fish communities, reductions in time searching for fish and fuel consumption, and more pelagic fish in the local market. However, no statistically compliant data being collected at national level.
- Artisanal fisheries, including high priced octopus, shellfish, lobsters, squid, crab and shrimps, but no proper fisheries information (with new database required), with no management measures for lobster, squid, crabs or shrimp.

## MAURITIUS

### ► POLICIES

1. Coral reefs harbour over 30% of all marine biodiversity. Estimated that only about 20% of Mauritius coral reefs structurally functional. Pivotal to have a reef conservation plan, with coastal communities playing a key restorative role, in a Marine Spatial Plan.
2. To reduce fishing pressure in the lagoon, since the 1990's Government has executed strategies including: marine protected area development; promoting tuna FAD fishery; closed seasons for net and octopus fisheries; ban on sea cucumber extraction.
3. Vital to reinforce marine ecosystems management and come up with new adaptive climate-resilient strategies so all the marine ecosystems continue to play their ecological and socio-economic role.
4. Any policy that discriminates against **unregistered fishers** in Mauritius, inadvertently discriminates against women, such as those that glean the reefs. A study by Naggea et al. 2021, highlighted that a gender lens should be applied to policy-making, and decision-making should be inclusive of both women and men. It is therefore **essential that the Ministry recognizes the contribution and efforts of these women fishers and supports them under the Women Empowerment Programme.**



## MAURITIUS

### ► MANAGEMENT MEASURES GEARED TO PROTECT MARINE ECOSYSTEMS

1. Habitat/Ecosystem Protection, Conservation and Restoration, with six Fishing Reserves and two Marine Parks proclaimed.
2. Coral Reef Network of key stakeholders to address reef remedial actions.
3. Mangrove Propagation Programme, with over 500,000 seedlings planted since 1995.
4. Assessment of Blue Carbon Ecosystem (Seagrass).
5. Community based coral culture project, promoting coral culture as an alternative livelihood for fishers and coastal communities for conservation of marine biodiversity.
6. Action against Crown of Thorns – Coral Predation – national protocol developed to control population.
7. Closed season on seine net fishing and octopus's fishery to protect spawners and new recruits.
8. Marine Ranching Programme of selected under pressure lagoon fish, crab and shrimp species.
9. Promote FAD Fishery (off-lagoon).
10. Marine Spatial Planning.

9. Shift from lagoon to off-lagoon fishing around the government-deployed FAD has allowed increased in the catch per fisherman day (CPFD) with better incomes. The Ministry provides several incentives to fishermen such as training on fishing techniques and incentives such as low interest loan facilities for boat and out-board engine purchase. Furthermore, the Ministry aims to train and empower 500 fishers in the off-lagoon FAD fishery. The Ministry also intends to deploy new generation FADs fitted with satellite buoys to enable fisherman to easily locate the FADs as they would be fitted with GPS, and also provide baseline information such as biomass of fish around each FAD.

10. Mauritius is engaged in the Marine Spatial Planning (MSP) process. The approach taken is to avoid or minimise conflicting usage of the marine space, while engaging all stakeholders in the sustainable development of resources. The Department for Continental Shelf, Maritime Zones Administration and Exploration of the Prime Minister's Office (CSMZAE) has been focusing on the scientific, socio-economic and environmental issues through the establishment of dedicated working groups.

## MAURITIUS

### ► RECOMMENDATIONS

1. Seek assistance of Fisheries Information and Stats Branch of FAO for capacity building in statistical analysis and assessing fish stocks.
2. Encourage research, scientific reports and publications, including socio-economic as well as biological aspects, **allowing policy makers to strategise on proper policy formulation and take appropriate decisions.**
3. To harness untapped fisheries resources, need a proper investment mechanism, such as a **National Plan of Action in Fisheries Development/Fisheries Investment Plan** (under Ministry Fisheries, including Ministry Finance, Economic Development Board, and Private Sector) with clear TORs. Requires both financial and technical assistance, including production / marketing, and how we implement.
4. Banks Fisheries: improve fleet capacity and marketing; incentivise fishermen through proper engagement; diversify target species by exploring lobster, octopus, crabs and squids in the shallow banks, as well as pelagic fishes and deep-water snappers and grouper.
5. Mauritius strategically positioned to further develop tuna fishery through vessel and processing development, expanding regional and international markets.
6. Aquaculture – with one successful commercial marine farm with current annual production of around 5,000 tonnes fish, there is the opportunity to repeat this investment into industrialization, through a "collaborative approach" involving key stakeholders.
7. Mauritius is working on Marine Spatial Planning, and this should also be used as a lever to help develop aquaculture and new fisheries.
8. An ecological socio-economic assessment be conducted to evaluate the benefits derived from the small-scale fisheries, and whether the benefits are equally shared among all stakeholders across the value chain including the main actors from fishing to middle man and consumers. Also the socio-economic study should take into consideration **gender equality** in the fisheries sector, especially in the small-scale fisheries whereby the fisher's community is provided with both technical and financial support to ensure a better livelihood.

1. Seek the assistance of the Statistics and Information Branch (FIAS) of the Food and Agriculture Organization of the United Nations to provide technical assistance in improving the Small-Scale Fisheries Management by supporting in:
  - i. Reviewing the existing Fisheries Information System and recommends accordingly including an appropriate alternative fisheries data management system, more reliable and sustainable.
  - ii. Developing a similar software or alternative to estimate catch from the artisanal fishery from 61 Fish Landing Stations - multi-specific and multi-gear fishery as well as data develop modern data capture techniques for both artisanal and FAD fisheries
  - iii. Offering capacity building in assessing the state of different fishery resources and their stock
  - iv. Training on sampling design, stock assessments and hands-on application of the appropriate tools for assessing fish stocks.
2. Most of the data collected are compiled and stored but hardly any scientific report on the status of the fisheries has been published with strong recommendations. A Scientific Working Group (SWG) should be set up to review all the fisheries sectors both from a biological, technical, economic and social point of view so as to keep up with and achieve the ecological and socio-economic sustainability as per the Sustainable Development Goal 14 – Life below water. Furthermore, the SWG shall come up with scientific reports on the performance of each fishery including recommendations as well as encourage continuous scientific research with publications so as to enable the implementation of the management plans and updating the fisheries strategies and policies accordingly.

5. Mauritius is strategically positioned to further develop tuna fishery through regional and international markets. Consideration should be given to:

- (i) an increase in the size of the national fleet to sustain the local demand in tuna; as well as
- (ii) to consider increasing tuna production through the emergence of a third state-of-the-art tuna processing plants through proper investment.

## MOZAMBIQUE



### ► KEY FISHERIES MANAGEMENT PLANS (FMP) & DRAFT PLANS FOR ARTISANAL FISHERIES

1. FMP for Shallow Water Shrimps
2. FMP for Deep Sea Crustaceans
3. FMP for Demersal Line Caught Fish
4. Draft FMP for artisanal fisheries in several coastal districts, e.g.: Pebane; Moma; Machangulo-Matutuine; Inhassoro; Memba

## MOZAMBIQUE

### ► MAJOR ISSUES

1. Fishing community management plans are being developed to help ensure participation by the first beneficiaries of the fishing resource.
2. Community fishing councils are legally recognised, and are entitled to receive a percentage of the income from participation in co-management activities.
3. Electronic registration of small-scale fishers initiated, a system to formally organize – can get a license with this card, social benefits and security, such as claiming insurance if assets are lost.
4. In 2013 the Mozambique Government approved the Strategic Plan for the Development of Tuna Fisheries, to reverse the scenario where foreign fleets with little or no connection to the national economy exploit tuna like species. The objectives are: food safety; improved balance of payments; sustainable resource management.
5. Currently the foreign fleets are not present in Mozambique waters due to high fishing license fees. And while the tuna fishery continues to be promoted, national operators do not have the financial capacity or vessels to develop this activity.

## MOZAMBIQUE

### ► KEY CHALLENGES TO FISHERIES MANAGEMENT PLAN (FMP) IMPLEMENTATION

1. A lot of technical and financial support in the preparation and development of FMP's, but little effort in implementation due to inadequate human resources and financial support.
2. All FMP's point to the need to reduce fishing effort due to overexploitation.
3. Artisanal fishing dispersed along Mozambique's entire coast, resulting in management control and monitoring difficulties:
  - i. Illegal fishing, most artisanal fishers operating without licenses/permits.
  - ii. Use of illegal fishing gear and mesh sizes.
  - iii. Fishing in prohibited zones such as marine protected areas, and in closed seasons.
  - iv. Environmental degradation – mangrove cutting for wood fuel and building houses.
  - v. A major challenge trying to manage and monitor, and at the same time promoting livelihood alternatives for fishing communities.



## TANZANIA

### ► FISHERIES MANAGEMENT PLANS OF TANZANIA/ZANZIBAR

1. Artisanal Small and Medium Pelagic Management Plan
2. Octopus Fishery Management Plan
3. Prawn Fishery Management Plan
4. General Management Plans (GMPs) for: Mafia Island Marine Park; Tanga Coelacanth Marine Park; Ruvuma Estuary Marine Park; Dar es Salaam Marine Reserves (Bongoyo; Pangavini; Fungu Yasin and Mbudya located north of Dar es Salaam harbour
5. Area Specific Management Plans in some districts, especially within Rufiji-Mafia-Kilwa (RUMAKI) area
6. On Zanzibar, GMPs for: Menai Bay; Tunka; Pemba Channel Conservation Area (PECCA); CHABAMKA.
7. Tanzania Tuna Management Strategy (not a plan).



## TANZANIA

### ► PRIORITY FISHERIES REQUIRING INTRODUCTION OF MANAGEMENT PLANS

1. Local Area Specific Management Plans within the community-based management approach framework
2. Integrated Coastal Resources Management Plans including habitat consideration
3. Reef fishery
4. Ornamental fishery
5. Sardine fishery (separate the existing Pelagic Management Plan into two: - sardine fishery; medium size pelagic fishery.
6. Sea cucumber (to be developed once the moratorium is lifted)
7. Sharks and rays (consideration should be provided for endangered shark species)
8. Lobster
9. Squid
10. Crab

## TANZANIA: MAJOR ISSUES

1. Overcapacity, overfishing, illegal fishing and environmental degradation endemic.
2. Due to complex situation surrounding small-scale fisheries, user participation in resource management is essential.
3. Inadequate resources to build resource management institutional capacity / linkages to key institutions to achieve effective FMP development and implementation.
4. High cost of financing resource management and no effective measurement for plowing back part of resource rent to cover cost.
5. Few Government extension workers while community based agents yet to take root.
6. MCS costly, and not sustainable due to lack of funds and inadequate co-management.
7. Inadequate data flow systems to inform decision making.
8. Lack of critical data and info on markets.
9. Low involvement of NGOs, CBOs and constituencies in resource management advocacy.
10. Most management plans in place are fisheries based, with minimal consideration for other aspects of the ecosystem.
11. All management plans with the exception of the marine parks, are **not costed**. Cost of implementation is very important, because **management decisions are based on cost. This information is needed for the FMP to work, and the fishery to make money.**

1. Overcapacity, overfishing, illegal fishing practices and environmental degradation have become endemic threatening resource sustainability and sustainable livelihoods in fishing communities. Hence, there is an urgent need for mitigation of trade-offs between responsible resource management and promotion of sustainable livelihood.

2. Given the complex situation surrounding small-scale fisheries, made worse by factors such as a multitude of different fish species, large number of fishers, dispersed fishing grounds, and numerous landing sites, it is evident that effective user participation in resource management is essential. This reality is recognized by the Tanzanian government, shown by its determination in establishing Beach Management Units (BMUs) across the country. However, the performance of most of these BMUs is below expectation raising the question which is yet to be answered effectively; what are the basic requirements for successful introduction of fisheries co-management?

3. Inadequate resources for building institutional capacity and linkages of key institutions to meet resource management, including development and implementation of fisheries management plans.

4. High cost of financing fisheries resource management, in the absence of an effective mechanism for ploughing back part of the resource rent to cover the cost.

5. Small number of government-employed fisheries extension workers to meet the demand, while the use of Community-Based change agents or social carriers of innovation is yet to gain root.

6. Fisheries Monitoring, Control and Surveillance (MCS) function consumes large amount of fund for resource management, but this system is not sustainable partly because of lack of funds availability, and inadequate participation of community and other stakeholders in resource management. Also, MCS on its own does not work unless effective fisheries management controls are in place.
7. An inadequate data and information flow system to inform the decision-making process for rational resource management and sustainable livelihood regime.
8. Lack of data and information regarding marketing environment and potential marketing strategies that can enable fishers to access rewarding markets, and thus secure greater benefits from the industry. Knowing this will help prioritise what marketing infrastructure weak links need resolving so that the end buyers are satisfied with the product they receive and pay properly for it.
9. The low involvement of NGOs and CBOs in advocacy and constituencies building for effective resource management planning and implementation.
10. Most of the management plans in place are fisheries-based with minimal consideration for other aspects of the ecosystem. In addition, development of area specific integrated coastal resource management plans has yet to take root.
11. All management plans with the exception of the marine parks, are not costed. Cost of implementation is very important, because management decisions are based on cost. This information is needed as a basis for the FMP to work, and the fishery to make money.

## TANZANIA

### ► KEY CHALLENGES TO FISHERIES MANAGEMENT PLAN (FMP) IMPLEMENTATION

1. Limited financial as well as human resources for effective development and implementation of FMPs, and inadequate financing mechanism
2. Conflicts among different resource users, mainly from lack of tenure rights, and inadequate "proportional representation" in developing FMPs
3. Need to **find the right mechanism to involve fisher community involvement**. With octopus, including women in discussions. More scientific research and analysis backup is required, so fishers can be fully engaged and supporting.
4. Local government officials not fully involved in developing FMPs, but they are expected to ensure implementation
5. Lack of training in resource management amongst key practitioners
6. Institutional capacity, including that of BMUs, lacking skills knowledge
7. Political interest/interference to rational implementation
8. Institutions responsible for resource management lack capacity regarding fisheries co-management. Also majority of experienced government agents are ageing, with no arrangement for involving volunteers.



## TANZANIA

### ► KEY RECOMMENDATIONS FOR EFFECTIVE FMP IMPLEMENTATION

1. Build institutional capacity of different actors along various fisheries sub-chains including strengthening linkages.
2. The synergistic team to build better capacity should include Central Government, Local Government Authorities (LGAs), village governments, fishers' organisations such as BMUs, NGOs, CBO's, and development partners.
3. Education and training, especially on co-management should be provided to policy makers, fisheries managers, and fisheries actors.
4. Involve fisheries actors in all stages of management planning and implementation.
5. Monitoring, control and surveillance (MCS) is the fundamental support structure for effective fisheries management.
6. Due to the high cost of funding FMP resource management implementation, an effective funding mechanism has to be established, while addressing the basic requirements for successful introduction of a fisheries co-management system.

## REGIONAL FISHERIES MANAGEMENT ORGANISATIONS

### ► KEY POINTS

1. Capacity in Ecofish, IOC, and regional organisations including SWIOFC, IOTC, and SIOFA, as well as donor projects across the region, should be leveraged to assist SWIO national country fisheries management agencies, to create a win-win for national and fishing industry interests.
2. SWIOFC has a Scientific Committee, and recently approved the setting up of Socio-Economic Committee, where Ecofish can give input.
3. SIOFA operational in the high seas, covering demersal, not migratory species. Involves contracting (e.g. Mauritius and Seychelles) and non-contracting parties e.g. Comoros). Includes focus on supporting least developed parties and small-island developing states. SWIO countries such as Madagascar, Tanzania, Mozambique and Kenya encouraged to join. SIOFA realise some of these countries are developing their harbours and fleets, and would benefit from the SIOFA Scientific Committee which is very active.





## REGIONAL FISHERIES MANAGEMENT ORGANISATIONS

### ► KEY POINTS *continued*

4. Indian Ocean Tuna Commission purely covers migratory species, working both in the high seas, and SWIO country EEZ's, IOTC rules being legally binding in terms of MCS.
5. Of IOTC total catch, approximately 50% is by SSF. There are challenges in terms of implementation and reporting by the SSF sector. The IOTC cannot monitor SSF, however. SWIO Governments must do what is required.
6. IOTC identify individual member capacity, and provide training, including new techniques on their conservation and management measures (CMMs) of which there are over 50, including a working Committee on data collection and statistics.
7. SWIO states have desires to increase their industrial fleets but must do so strategically as most fisheries at MSY.
8. IOTC want to work with Ecofish to maximise capacity building and avoid duplicating work.

5. Regarding catch data, there is good information from the industrial fishing fleets, but from the small-scale sector it is poor. The Working Committee is well aware of the SSF requirements to deliver data, and this knowledge is trickling down to other fisheries. Mandatory IOTC requirements are in place and countries must comply. The IOTC is constantly engaged, monitoring and providing assistance. This can also be applied to other fisheries.

7. A lot of the SWIO coastal states have desires to increase their industrial fleets but must do so strategically as there is not much of the pie to develop, due to all the fisheries being around maximum sustainable yield (MSY). Countries can lease large fishing vessels or give access to their EEZs via fishing access agreements. Oman is interested in rapidly developing its fleet, so there are opportunities for SWIO countries to work with industrial fishing nations like Oman. However, there is currently more fishing effort available in the SWIO region, than there is fish. The status of fish stocks is a constraint to future development.

## GOING FORWARD

1. Obtaining feedback and validation from fishing operations sector today.
2. Regional Capacity Development Strategy and Action Plan
3. Identify building blocks to effectively improve fisheries management implementation, through regional co-operation across SWIO countries, to the benefit of developing commercial small-scale fisheries.



THANK YOU

2. The study will come up with a Regional Capacity Development Strategy and Action Plan, specific recommendations and way forward to address the identified capacity needs and gaps, as well as constraints and barriers for advancing cost-effective management to thrive sustainable management of coastal marine fisheries in the SWIO region. The outcomes of this consultancy need to feed into informed management strategies and plans.

3. The outcome will help in positively impacting national fisheries policies and legal frameworks, aiming at the critical issue of not just having good policy documents and fisheries management plans, but also identifying building blocks to effectively improve fisheries management implementation, through regional cooperation by countries combining and utilising their different strengths and capacities, thereby maximising use of limited resources, to the benefit of developing commercial small-scale fisheries across the SWIO Region.

## 3. Notes of Multi-Stakeholder Consultative and Validation Workshops

### 3.1 Workshop with Industry Operators and Associated Stakeholders



#### **NOTES OF MEETING – VIRTUAL WORKSHOP WITH INDUSTRY OPERATORS AND ASSOCIATED STAKEHOLDERS**

**TUESDAY 23<sup>rd</sup> NOVEMBER 2021**

Assessment of the Regional/National Fisheries Management Plans across the SWIO Countries, Key Priority Fisheries and Related Legal Framework Policies

Present:

Satish Hanoomanjee	Fisheries Management Specialist, Ecofish
Kim Lau You Hin	TAT Assistant, Ecofish
David Russell	Regional Fisheries Management Consultant, Ecofish
Julius Mairi	National Consultant – Tanzania, Ecofish
Yahya Mgawe	Co-Consultant – Tanzania, Ecofish
Tumaini Chambua	Senior Fisheries Officer, Ministry of Fisheries, Tanzania
Merisia Sebastian	Assistant Director Fisheries Resources Development, Tanzania
Vikash Munbodhe	National Consultant – Mauritius, Ecofish
Josheena Naggeah	Fisheries Social Scientist – Stanford University, Mauritius

Samuel Siteo	National Consultant – Mozambique, Ecofish - National Fisheries Administration
Zainabo Masquine	Provincial Delegate (Beira – Sofala), National Fisheries Administration, Mozambique
Eurico Morais	Provincial Delegate Quelimane-Zambezia, Mozambique
Baptista Magamba	Technician Provincial Delegation (Beira – Sofala), Mozambique
Rodrick Kundu	National Focal Point, Ecofish, and National Consultant – Kenya, Ecofish.
Isaac Barasa	Assistant Director Fisheries, Kenya Fisheries Service
Dishon Murage	East Africa Field Representative, Seacology Foundation, Kenya
Brendan Muli	Centre Manager, Kwetu Training Centre for Sustainable Development, Kenya
Shadrack Machua	Assistant Director Fisheries, Kenya Fisheries Service
Sheila Oboge	Fisheries Officer, Kenya Fisheries Service
Nisa Rajaonarimanana,	National Consultant – Madagascar, Ecofish
Naly Rakotoarivony	Head of Policy and Partnership, Blue Ventures, Madagascar
Lalaina Rakotonaivo	Small-scale Fisheries Officer, WWF Madagascar
Rado Ioniarilala,	National Project Coordinator (Fisheries Programme), FAO Madagascar
Diary Rahombanjanahary,	Technical Manager for Sustainable Coastal Fisheries, WWF Madagascar
Herimalala Andriamihaja,	Research and Development Director, Peche export, Madagascar
Kamal Thabiti Soudjay,	Ecofish Focal Point and National Consultant – Comoros, Ecofish
Badrouline Ahamada,	President, National Fishers Association, Comoros
Amil Affane	Nounou, Regional Director for Fisheries of Anjouan, Comoros
Said Mmadi Ali	IT Officer, Ecofish
Bessy Rogers	
Julio	

Welcome by Satish Hanoomanjee, Ecofish Fisheries Management Specialist, and Chair of the Workshop. Satish also presented a brief introduction about Ecofish and this assignment.

David Russell, Regional Fisheries Management Specialist, presentation on the background and main findings of the consultancy, across all represented SWIO countries, comprising: Comoros, Kenya, Madagascar, Mauritius, Mozambique, and Tanzania.

David provided a 45-minute detailed presentation, appended to these workshop notes.

Feedback from the floor, and discussion.

Vikash Munbodhe of Mauritius stated that a key finding was the need for gender equality. Fisher women are hardly recognised. Their roles include being gleaners on the reefs; they also promote entrepreneurship, but with little or no community-based involvement. There is a need for socio-economic assessment in this area.

Josheena Naggeah, Fisheries Social Scientist, supported this, stating that gleaners are often unregistered, and this was made obvious when an oil spill occurred in Mauritius, damaging the reefs where the women gleaned. Where women weren't registered, they weren't supported. At the time, out of 1900 registered fishers, only 35 were women. There is a need to understand and promote the role of women in the fisheries value chain, both in the subsistence and commercial sectors. She also stated that there are more women involved in the fisheries sector on the island of Rodrigues, than on the island of Mauritius.

Satish Hanoomanje stated that while it is known that women work along the value chain, they need to be given more visibility, a key requirement to leverage development of the fisheries sector.

Kamal Thabiti Soudjay of Comoros stated there is a need to look at social responsibility along the value chain, and the FAO is developing a guide to this.

Samuel Siteo of Mozambique stated that they are starting to undertake electronic registration of small-scale fishers to help organize them, making it a more formal system. The result is a license can be obtained with this card, as well as social benefits and security, for example being able to gain access to insurance incase assets are lost.

Isaac Barasa of the Kenya Fisheries Service said that a key problem is the delays of finalizing fisheries management plans, and whether Ecofish could help? The lobster and small pelagic management plans are currently stuck in this predicament. Satish Hanoomanje stated that Ecofish want to help leverage, and get the help of other consultants, as well as find ways of raising money.

Tumaini Chambua, working with fisheries resource development in Tanzania, stated that they were working at finding the right mechanism to improve fisher community involvement. With the octopus's fishery, women were also being included in the discussions. What is needed is more scientific backup through data gathering and analysis, so fishers can become more fully engaged and supporting.

Badroutine Ahamada, President of the National Fishers Association, Comoros, said that from their perspective there were three key priorities:

1. Security of fishers – 50 get lost at sea on an annual basis. It is becoming a job of risk rather than a job for life.
2. Training capacity.
3. Exchange within the SWIO region, resulting in benefits of experience from other countries, including other fishers.

Summation of discussion by Satish Hanoomanjee, Chair of Workshop.

Satish explained that the presentation is a summary for six SWIO countries, and hopefully the Seychelles will be included in the future.

He summarised that key regional issues as they relate to fisheries management plans, and the need to include other priority development fisheries, include:

- overcapacity, where numbers of fishers need to be reduced through management mechanisms, so the fisheries remain sustainable.
- capacity building, so those involved in the fisheries, as well as those that manage the fisheries obtain training so that those along the fisheries value chain are better prepared, as well as those managing the fisheries.
- in addition to biological sustainability, the emphasis now needs to also focus on economic efficiency, so that those involved in the fisheries make a profit, and the fisheries become economically sustainable, both from the fisher's perspective, and from a management perspective, so that necessary resources for effective management can be financially afforded.
- the problem of funding and costs of co-management and finding a financial mechanism to cover this financial gap.
- the need to fill the gap of data collection and proper analysis so that policy makers and fisheries managers have the necessary information to make effective decisions.
- look at the environmental ecosystem as a whole through an ecosystem approach to fisheries management.
- focus on good research, establishing effective tenure rights for fishers, and overcoming bureaucratic delays.
- co-operation and collaboration at a regional level, so that countries individually do not have to struggle on their own, but more and more there should be regional collaboration resulting in more effective fisheries development across SWIO countries.
- addressing the gender issue.

This was only the first time the commercial stakeholders were meeting, and there are opportunities ahead as the Ecofish programme develops.

The meeting ended at 12h20.



## 3.2 Workshop with Fisheries Administration and Associated Stakeholders



### **NOTES OF MEETING – VIRTUAL WORKSHOP WITH MULTI-STAKEHOLDERS THURSDAY 25<sup>TH</sup> NOVEMBER 2021**

Assessment of Regional/National Fisheries Management Plans across the SWIO Countries,  
Key Priority Fisheries and Related Legal Framework Policies

Present:

Satish Hanoomanjee, Fisheries Management Specialist, Ecofish

Kim Lau You Hin, TAT Assistant, Ecofish

Claudia Laguet, Administrative Assistant, Ecofish

David Russell, Regional Fisheries Management Consultant, Ecofish

Julius Mairi, National Consultant – Tanzania, Ecofish

Yahya Mgawe, Co-Consultant – Tanzania, Ecofish

Lydia Mgimwa, Fisheries Consultant and past SWIO Small-scale Fisheries Manager, WWF, Tanzania

John Komakoma, Manager – Marine Parks and Reserves Unit, Tanzania

Merisia Sebastian Mparazo - Assistant Director Fisheries Resources Development, Tanzania

Vikash Munbodhe, National Consultant – Mauritius, Ecofish

Manisha Curpen Mahadoo, Technical Officer, Albion Fisheries Research Centre, Ministry of Blue Economy, Marine Resources and Fisheries, Mauritius

Ms. Archana Audit, Lead Professional, ICT & Digital Services of Mauritius, Economics Board, Mauritius

Gerard Manuel, French Translator, Mauritius

Samuel Siteo, National Consultant – Mozambique, Ecofish, Head of Fisheries Monitoring Department - National Fisheries Administration, Mozambique

Avelino Munwane, Technician of Fisheries Monitoring Department - National Fisheries Administration, Mozambique

Nhatsave Muzila ., Secretary General of AMAPIC – Association of Industrial Prawns Fishery, Mozambique

Rodrick Kundu, National Focal Point, Ecofish, and National Consultant – Kenya, Ecofish.

Evelyn Ndiritu, Research Assistant, Coastal Oceans Research and Development Indian Ocean (CORDIO) East Africa, Kenya

Patrick Kimani, Director, Coastal and Marine Resources Development (COMRED), Kenya

Rashid Imam, Project Coordinator, FAO Coral Reef Project, Kenya

Betty Akunga, Ag. Chief Executive Officer, Kenya Fish Levy Trust Fund

Shadrack Machua, Assistant Director Fisheries, Kenya Fisheries Service

Isaac Barasa, Fisheries Manager, Kenya Fisheries Service

Elizabeth Mueni, Assistant Director of Fisheries, Kenya Marine and Fisheries Socio-Economic Development Project, Kenya

Nisa Rajaonarimanana, National Consultant – Madagascar, Ecofish

Herimamy Razafindrakoto, Researcher – Fish Stock Assessment, Fisheries Research and Development Centre, Madagascar

Sedera Ramahefalala, Chief Legal Officer, CSP Madagascar (Fisheries Monitoring Centre), Madagascar

Tantely Andriamaharo Nyaina, Small-scale Fisheries Department Officer, Ministry of Fisheries and Blue Economy, Madagascar

Mahefa Randriamiharisoa, Tuna Fisheries officer, Ministry of Fisheries and Blue Economy, Madagascar

Niasy Randrianarijaona, Freshwater Fisheries Department Officer, Ministry of Fisheries and Blue Economy, Madagascar

Kamal Thabiti Soudjay, Ecofish Focal Point and National Consultant – Comoros, Ecofish

Erudito Malate, South West Indian Ocean Fisheries Commission (SWIOFC) Secretariat

Helga Josupeit, Consultant on definition of Small-scale Fisheries, Ecofish

Bessy Rogers, Nashalo,

Ashwin Hulman, Translator, Mauritius

Welcome by Satish Hanoomanjee, Ecofish Fisheries Management Specialist, and Chair of the Workshop. He also presented a brief introduction about Ecofish and this assignment.



**David Russell, Regional Fisheries Management Specialist**, presented the background and main findings of the consultancy, across all represented SWIO countries, comprising of the Comoros, Kenya, Madagascar, Mauritius, Mozambique, and Tanzania.

David provided a 45-minute detailed presentation, appended to these workshop notes.

Feedback from the floor, and discussion.

Julius Mairi, Tanzania, stated that:

- A key priority is the need to move away from open access fishing to help ensure sustainable fishing in the future. To achieve this, fishing community participation in fisheries management is vital, and this requires good representation.
- Tenure rights to the fisheries resource are essential for fishers that actively rely on fishing for their income, so that they can have peace of mind going forward.
- Capacity building is required at all levels.
- What are the basic requirements of co-management? For example, Beach Management Units (BMUs) have been in place for 10 years, but generally they are not running well.
- A sustainable finance mechanism needs to be effectively in place.
- development of alternative livelihoods for fishers is essential, to reduce the pressure on fisheries resources.
- Markets need to be more effectively developed, not just promotion of catch volume. Post-harvest losses are very high for small pelagic fish species in the rainy season.
- Area Specific Management Plans work very well where there is effective community involvement, as well as general management plans in Marine Protected Areas.

Satish Hanoomanjee stated that as much as 30-70% of fish catches are lost due to post-harvest losses. This has been documented in the past European Union (EU) funded SmartFish Programme reports. Ecofish is now working with the Duly Mandated Regional Organisations (DMROs) to focus on resolving problem areas including the post-harvest losses issues.

Lydia Mгимwa of Tanzania pointed out that:

- The absence of a Fisheries Development Fund for financing effective fisheries management and development of fisheries is challenging, as currently countries cannot just rely on Government fisheries budgets to resolve the fisheries development challenges the region is currently experiencing, particularly with regards small-scale fisheries.
- The involvement of fishers in BMUs is poor. Currently, representation is voluntary. Awareness has been created amongst fishers, so there is a need to find out the root causes why competent fishers are not joining BMU's to ensure their interests are properly represented? In Tanzania there are BMU guidelines, but there is a need to motivate fishers to effectively represent themselves.

Erudito Malate, SWIOFC Secretariat:

- Asked about the project methodology and field work. (This was based on initial desktop research including the WIOFish database on fisheries across the SWIO region. And then developing an extensive questionnaire based on guidelines including the FAO Code of Conduct for Responsible Fisheries, Small-scale Fisheries Guidelines, and the Ecosystem Approach to Fisheries (EAF). This the regional consultant as well as all Ecofish national consultants representing the different SWIO countries utilised, in connecting with relevant fisheries sector stakeholders along the fisheries value chain, as well as Government officials, SWIO regional fisheries organisations, NGOs, and fisheries donor projects. All of this including an understanding of the big picture of the Ecofish mandate).
- With regards assessing Fisheries Management Plans, he stated that the FAO have developed and recently adopted an EAF monitoring tool, which is being promoted to assess implementation.

Betty Akunga of the Kenya Fish Levy Trust Fund stated that:

- Countries in developing fisheries management plans, can borrow from other management plans to help refine them. Marine Spatial Planning (MSP) is also being developed as a management tool, which has useful elements.
- It is becoming very expensive to adapt Management Plans due to the Constitution requiring consultation first.
- As CEO for the Kenya Fisheries Financing Fund, currently regulations are being developed for the fund.

Yahya Mgawe of Tanzania stated that:

- Management Plans should not be a stand-alone function. There is a need for solid supporting data, and an information flow system. In support of this, as well as fisheries biological data, socio-economic data is also required.
- Rules and regulations are mostly top down, and as a result lack legitimacy, so it can be very difficult to get cooperation from all key stakeholders.
- Often Monitoring, Control and Surveillance (MCS) Plans are not included, leading to high-cost implications. MCS will help make the plans more effective, but to achieve overall success, 20% of the income from a fishery should be ploughed back into management.
- NGOs also need to be involved. 16,000 extension officers are required, but currently there are only 700. Consequently, community-based trainers need to be groomed.

Samuel Siteo of Mozambique stated that:

- feedback he has received, is that without Fisheries Management Plans, fisheries management goals cannot be met;

- Mozambique is trying to develop local management plans, and details on these can be shared both with regional fisheries management organisations, and stakeholders across the different countries;
- a key challenge is implementation: because the main established measures, e.g., fishing effort reduction, was not followed by alternative compensation for the operators affected; with regards banning beach trawls, provided for in the marine fisheries regulation, established alternatives for those affected, are still not in place;
- inadequate human resources (this reference was not directed at human inadequacy), but because there is a need for training and capacity building, and sufficient numbers of technicians.

Merisia Sebastian Mparazo (Assistant Director Fisheries Resources Development, Tanzania), stated that:

- Local Government are fully involved in developing Management Plans; however, the challenge is with implementation where they are not involved.
- the lead is Central Government, where the Ministry of Livestock and Fisheries work with Local Government in setting up fisheries management plans. The real problem is “implementation” and resources are needed to fix this.
- Much of the resources so far have been aimed at the community level. At the regional level there is the need to strengthen prioritizing research and analysis, with consequent prioritization of fisheries management plans at the country level.
- Need a database at the regional level to guide on whether/how to continue with fisheries management plans given the problem of implementation.
- Can have 4-5 NGOs not knowing how the other works, so there is a real need to “strengthen coordination” between various actors, leading to a joint team approach.
- There are also “political issues”. Management plans should reflect political will, to achieve positive implications at the community level.

Satish Hanoomanjee stated that Ecofish have an activity in 2022 on a Fisheries Management Information System for all SWIO countries.

Mrs Manisha Curpen Mahadoo (Mauritius) stated that:

- In the presentation it was said there were no management measures in place for lobster, squid, crab or shrimp, correcting this by saying there were regulations in place for all the species on catch size limits, and that they may not be caught in a berried state.
- Regarding the Banks Fishery Management Plan, a survey was undertaken in 2015 and 2016 for alternative modes of fishing, so work is being undertaken. Also, the Banks Fishery Management Plan is being implemented in a phase manner and many of the recommendations are being addressed.

Rashid Imam, Project Coordinator of the FAO Coral Reef Project, Kenya, thanked Ecofish for an informative workshop, stating:

- The Kenya Marine Fishery and Socio-economic Project in the next 2-3 years should result in better responses on fisheries management plans;
- Enhancing livelihoods and food security, and improvement of coral reef fisheries through Japan funding, including improving markets for fish products, reducing IUU fishing, improving maritime safety, and looking at fish aggregation devices (FADs) to improve fishing efficiency.

Summation of discussion by Satish Hanoomanjee, Chair of Workshop.

Satish, in summing up, stated that the main focus of this Ecofish project is on regional cooperation, and the collaborative work undertaken in this workshop was very encouraging. Validation of the Regional Plan is expected in February, through a bigger meeting, and the final report will then be sent to all concerned countries

The meeting ended at 1.00pm.

## 4. Inventory of Existing Transboundary and National Management Plans, and their Implementation Status based on WIOFish Database

No.	Country	Fisheries Management Plan and year developed	Plan approved	Plan implemented and year	FAO status
1	Comoros	Small nets, cast net, anchovies & sardinellas, 2013	Yes	Yes, 2017	Moderately exploited
2	Comoros	Small nets, beach seine, fish, 2013	Yes	Yes, 2017	Moderately exploited
3	Comoros	Diving, speargun, fish, 2016	Yes	Yes, 2016	Moderately exploited
4	Comoros	Hook & line, trolling, fish, 2013	Yes	Yes, 2017	Fully exploited
5	Comoros	Small nets, drift nets, fish, 2013	Yes	Yes, 2017	Moderately exploited
6	Comoros	Hook & line, vertical lines, fish, 2013	Yes	Yes, 2017	Moderately exploited
TOTAL	Comoros	6	6	6	

No.	Country	Fisheries Management Plan and year developed	Plan approved	Plan implemented and year	FAO status
1	Kenya	Industrial nets, offshore, crustaceans	No	Yes, 2011	Unknown
2	Kenya	Diving, hand/hoop net, ornamental fish, 2016	No	No	Unknown
3	Kenya	Hook & line, trolling, fish/sharks/rays, 2013	No	No	Fully exploited
4	Kenya	Industrial nets, inshore, prawns, 2010	Yes	Yes, 2011	Unknown

5	Kenya	Small nets, seine nets, fish and prawns, 2010	Yes	Yes, 2010	Unknown
6	Kenya	Diving, snorkeling, lobsters, 2001	Yes	Yes	Unknown
TOTAL	Kenya	6	3	4	

No.	Country	Fisheries Management Plan and year developed	Plan approved	Plan implemented and year	FAO status
1	Madagascar	Industrial nets, inshore, shrimps	No	Yes, 1978	Fully exploited
2	Madagascar	Hook & line, longline, artisanal (demersal fish)	No	Yes, 2013	Moderately exploited
3	Madagascar	Diving, no SCUBA, sea cucumbers	No	No, 2004	Fully exploited
4	Madagascar	Traps, pots, lobsters, 1962	Yes	Yes, 1962	Fully exploited
5	Madagascar	Small nets, gillnets, fish	Yes	Yes, 2000	Moderately exploited
6	Madagascar	Mixed gears, mangroves, crabs	No	Yes, 2006	Moderately exploited
7	Madagascar	Traps, barrages, shrimps	No	Yes, 2007	Fully exploited
8	Madagascar	Harpoon, by hand, octopus, 2005	Yes	Yes, 2005	Fully exploited
9	Madagascar	Small nets, gillnets surface, fish, 2014	Yes	Yes, 2014	Moderately exploited
10	Madagascar	Hook & line, small boat, fish	No	Yes, 2009	Fully exploited
11	Madagascar	Traps, fence traps, Valakira (Barrage cã'tier), Sihitra, Horoba, shrimps	Yes	No, 2009	Fully exploited
12	Madagascar	Industrial nets, purse seine, tuna	No	Yes, 2010	Fully exploited
TOTAL	Madagascar	12	5	10	

No.	Country	Fisheries Management Plan and year developed	Plan approved	Plan implemented and year	FAO status
1	Mauritius	Hook & line, semi-Industrial, chilled fish, 2012	Yes	Yes, 2014	Moderately exploited
2	Mauritius	Traps, Basket, Artisanal	No	No	Unknown



3	Mauritius	Hook & line, vessel, shallow water banks, 2012	Yes	2014	Under-exploited
TOTAL	Mauritius	3	2	2	

No.	Country	Fisheries Management Plan and year developed	Plan approved	Plan implemented and year	FAO status
1	Mozambique	Hook & line, longline, tuna, 1996	Yes	Yes, 1996	Unknown
2	Mozambique	Diving, artisanal, lobster	No	No	Unknown
3	Mozambique	Industrial nets, offshore, crustaceans, 2018	Yes	Yes, 2021	Fully exploited
4	Mozambique	Hook & line, large vessel, commercial, 2014	Yes	Yes, 2014	Fully exploited
5	Mozambique	Industrial nets, trawl, shrimps, Sofala Bank, 2013	Yes	Yes, 2014	Fully exploited
6	Mozambique	Small nets, gillnet, shrimp	No	Yes	Unknown
7	Mozambique	Industrial nets, purse seine, tuna, 1996	Yes	Yes	Unknown
8	Mozambique	Semi-industrial freezer, Trawler, Shrimp, Sofala Bank, 2013	Yes	Yes, 2014	Fully exploited
9	Mozambique	Semi-industrial ice, Trawler, Shrimp, Sofala Bank, 2013	Yes	Yes, 2014	Fully exploited
TOTAL	Mozambique	9	7	8	

No.	Country	Fisheries Management Plan and year developed	Plan approved	Plan implemented and year	FAO status
1	Seychelles	Shore gathering, wading and snorkel, octopus, 2016	No	No	Unknown
2	Seychelles	Traps, small boats, static, 2016	No	No	Unknown
3	Seychelles	Hook & line, longline - pelagic, tuna	No	Yes, 1984	Unknown
4	Seychelles	Industrial nets, purse seine, tuna	No	No	Unknown
5	Seychelles	Traps, small boats, active, 2016	No	No	Unknown
6	Seychelles	Hook & line, small boat & motor, fish (art), 2016	No	No	Unknown
7	Seychelles	Traps, whaler, static trap, 2016	No	No	Unknown
8	Seychelles	Hook & line, large vessel, schooner – handline, 2016	No	No	Unknown
9	Seychelles	Hook & line, large vessel, schooner – dropline, 2016	No	No	Unknown

10	Seychelles	Small nets, hoop net, kona crab (Ranina ranina), 2016	No	No	Unknown
11	Seychelles	Hook & line, Inboard, Artisanal, 2016	No	No	Unknown
12	Seychelles	Hook & line, longline, sharks (art), 2016	No	No	Unknown
13	Seychelles	Hook & line, longline, sharks (si), 2007	No	No	Unknown
14	Seychelles	Diving, gathering, sea cucumber	No	Yes, 2001	Over-exploited
15	Seychelles	Traps, small trap, lobster	No	No	Unknown
16	Seychelles	Traps, schooner, offshore, 2016	No	No	Unknown
17	Seychelles	Hook & line, longline, swordfish & tuna (si), 1995	No	Yes, 1995	Unknown
18	Seychelles	Small nets, gill net, humphead parrot fish (Filanbaz), 2016	No	No	Unknown
19	Seychelles	Mixed gears, pirogue & small motor, 2016	No	No	Unknown
20	Seychelles	Traps, on foot, fish, 2016	No	No	Unknown
TOTAL	Seychelles	20	0	3	

No.	Country	Fisheries Management Plan and year developed	Plan approved	Plan implemented and year	FAO status
1	Tanzania	Diving, gathering, sea cucumber	No	Yes, 2008	Over-exploited
2	Tanzania	Industrial nets, offshore, tuna, 2015	Yes	Yes, 2015	Moderately exploited
3	Tanzania	Small nets, purse seine, 2015	No	No	Moderately exploited
4	Tanzania	Traps, basket (dema and towe), fish	No	No	Moderately exploited
5	Tanzania	Shore gathering, intertidal, octopus	No	Yes, 2009	Fully exploited
TOTAL	Tanzania	5	1	3	

## 5. Keynotes for Policy Dialogue and Advocacies, Awareness-Raising and Sensitisation, and Communication, based on questions to SWIO country stakeholders

### 5.1 Priority open access fisheries requiring better management

#### 1. Which key fish species are still open access, but which you think should be most easily subject to structured management plans or co-management?

##### Comoros

“Higher commercial value species (firstly, it is important to conduct an assessment to identify the best ones to prioritise in terms of higher socio-economic importance).

Species mentioned by stakeholders included most of the small pelagic fish, octopus, lobster, sea cucumber, barracuda, parrot fish, trevally, grouper, triggerfish, tuna and tuna like.”

##### Kenya

- “Pelagic sharks, Billfishes, Small tunas & bonitos, Small Pelagics (Small mackerels, Scads, Sardines and round herrings), Octopus, Rabbitfish and crabs.
- Threatened shark and rays species  
(<https://www.iucnredlist.org/search?permalink=51050679-e450-43e3-852c-9bc5194bb7fa>)
- Red line trigger fish, Triple tail wrasse.
- Species listed in Buckley et al. 2019.  
(<https://doi.org/10.1371/journal.pone.0211224.t001>).”

##### Madagascar

“All the coastal fish species are still open access, they should be managed under the Ecosystem Approach to Fisheries, rights-based management approach, co-management

approach, and aligned with the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries, 2015, in the context of food security and poverty eradication.”

“Small-scale fishing, which is multi-species, and multi-fishing gear, should be co-management with local communities, as the fisheries administration doesn't have enough resources to manage this fishing activity. However, it is different for industrial and semi-industrial fisheries.”

“Key species generally fall under a regulatory framework but a management structure, specifically at the community level, should exist to cover all of them.”

“Specific species mentioned for Madagascar include: giant clams, Elasmobranchs, sea cucumber, tuna, octopus, demersal fish, crabs, lobsters, eels.”

### **Mauritius**

Seven main species generally caught in the artisanal fishery are the *Lethrinus nebulosus* (capitaine), *Siganus sutor* (cordonnier), *Naso unicornis* (licorne), *Scarus spp* (cateau), *Acanthurus spp* (chirurgien), *Mugil cephalus* (mulet voile) and *Epinephelus spp* (vielle). The catch of artisanal fishermen can also comprise octopus, shellfish (lobsters, crabs and shrimps) and tuna and tuna-like species. The octopus' fishery has been successfully managed.

The Government introduced two closed seasons in one-calendar year for fishing of octopus under the Fisheries and Marine Resources (Fishing of Octopus) (Amendment) Regulations 2020 (GN No. 138 of 2020) starting on 15 January and ending on 15 March and the period starting on 15 August to 15 October in a year. Since, the closure, monitoring of catch before and after the closed seasons have revealed that the post-closure individual weight of octopus has been higher as compared to pre-closure. Overall, the aim of the closure is to allow female octopi to lay eggs at the peak season, hence, increase the opportunity for recruitment as well as to allow maturation of adult octopi.

### **Mozambique**

“Small pelagics, locally known as “magumba” – (Hilsa kelle) and “papahi” –(Thryssa vitirostris) are still open access and considering its importance to the food security and livelihoods. As this occurs in some of the bays along the coast, structured management of these species can be successful through area based management approaches.”

“At moment offshore tuna are the species where government is promoting investment. Government should also pay attention and promote coastal tuna fishing , an under exploited resource with great potential to develop a small-scale sector fishing and processing industry.”

“Taking in consideration the Mozambique coastline, nearly all fisheries are still open access. But the small-scale shrimp fisheries and line fisheries is easily subject to structured co-management”

"The tuna fishery comprising tuna and tuna like species are still open access, and could be structured into a management plan. Mozambique developed a Strategic Plan for development of the tuna fishery to provide a total number of 130 industrial vessels, however to date the national fleet is only exploiting 10%. Traditionally, this fishery has been dominated by the tuna fleet from the European Union, Japan, and others. However, since implementing fishing rights under Mozambique's new Fisheries Law, prioritizing the nationals as holders of fishing rights, all foreign fleets stopped fishing in Mozambique waters. It must be noted, that negotiation with these organizations and association are ongoing.

On other hand the Strategic Plan also highlights the artisanal fishing component that needs to be developed in terms of infrastructure to support fisheries across the value chain."

"Species caught by artisanal fishers are open access. They should be managed through implementation of fishing areas managed by the community (managed-access areas)."

"It would be interesting to have a crab management plan...although there are currently specific management measures for this species."

"The majority of industrialized ships fish for prawns.

Except for the division of fishing zone between industrial fishing and fishing community, they share other fishing zones."

### **Seychelles**

"Most finfish species are still open access, however a move towards right based fishery has already been initiated and will be implemented in the short-term in a phased-approach."

### **Tanzania**

"Essentially all inshore marine fisheries, with the exception of areas under MPA jurisdiction, are operating based on an open access reference point. Therefore, it would be helpful to reinforce implementation of existing management plans while introducing new ones. The priority should be placed on successful introduction of area specific management plans, taking note of the ecosystem approach to fisheries management with habitat aspects taken on board."

## **2. Which national fisheries (e.g., sea cucumber and octopus) and transboundary fisheries (tuna and any others) can be managed more effectively through bilateral or regional co-operation, and how?**

### **Comoros**

"Tuna and tuna like, as well as octopus, sea cucumber and lobster fisheries."

“For octopus, sea cucumber and lobster fisheries, there must be regional or international buyers for the products, and bilateral cooperation with a foreign nation or a foreign company for the export and sale of seafood”.

“Other species may also be relevant, for which stakeholders should be properly surveyed to produce a more comprehensive list.”

## **Kenya**

“Tuna and lobster. Some fisheries between Tanzania and Kenya are developing MOUs on a bilateral level, and work at the regional level.”

- “Large pelagic e.g., (tuna, bill fishes). Medium pelagic e.g., large & medium Carangids (trevally, threadfin, amberjack, rainbow runner), small tunas & bonitos. This can be managed through bilateral cooperation through joint agreements and memorandum of understanding between the neighbouring countries.
- Sea cucumber and octopus through advocating for closures.
- Crabs through cage culture.
- Sharks and rays, tuna, billfish and sailfish, aquarium fisheries, through establishing transboundary conservation areas.
- Small pelagic e.g., sardines between south coast Kenya and north coast Tanzania through the establishment of the proposed Transboundary Conservation Area between Kenya and Tanzania.”

## **Madagascar**

“Potentially all fisheries, through consideration of the interests of all stakeholders (direct and indirect)”.

“The shallow-water shrimp, sea cucumber, octopus, and tuna fisheries can be managed more effectively through regional co-operation. This can be done through the reinforcement of collaboration of the coastal countries in the region on different aspects of the fisheries management, such as data collection and processing, sharing of knowledge (best practices and lessons learnt) on national fisheries management, exchange and sharing of technical expertise to improve fisheries management, and fighting against IUU fishing.”

“They are managed by exchanging information on the number of licenses issued, the catch per unit effort, detail of the catches.”

“SWIO countries are mostly giving access to foreign fleets through fishing agreement to fish transboundary fisheries, particularly tuna. Apart from this, there are transboundary seascapes that need regional collaboration, like the North Mozambique Channel seascape. For other species, it is better to keep management under the control of the national Government and its local partners.”



"This is mainly for migratory species, such tuna. There should be regional governance and management. Other resource could be managed through bilateral or regional co-operation with clear transparency on management and governance. And this must not put in danger SWIO country fishers and their fishing activities."

### **Mauritius**

Under the IOTC the tuna fisheries are effectively managed despite being a migratory species, as a result of a consultative and collaborative approach. The tuna fishing and processing industry are effective and efficient since international management measures and export requirements were effectively applied.

### **Mozambique**

"Octopus fishery in the northern province of Cabo Delgado, might have interactions in the border with the United Republic of Tanzania. WWF have already initiated an exercise of adopting management measures for this fishery.

Tuna fisheries can be managed through regional and bilateral cooperation, in particular with Madagascar and Comoros, through joint management schemes."

"Transboundary fisheries: through regional level.

Others at the national level."

### **Seychelles**

"Only Tuna and tuna-like species currently fall in this criterion, with management via Indian Ocean Tuna Commission (IOTC)."

### **Tanzania**

"The majority of Tanzania respondents, 75%, have pointed out that most of the high-value species found in the country are also available in other countries in the region. These include: octopus; shrimp; sea cucumber; sharks and rays; and even small-pelagic fish. Therefore, the importance of bilateral or regional collaboration in managing these fisheries, cannot be over-emphasized, especially through sharing of experience and management strategies. The successful closure of the octopus fishery, for example, has triggered the adoption of the intervention across the region. Moreover, fishery products being exported to international markets are recognized by country and zones. If something goes wrong in one country it can affect branding of products from other countries, and thus the need for bilateral or regional cooperation.

In relation to trans-boundary stocks, the quest for regional collaboration has always been there, unfortunately the move has been sluggish. The highly migratory tuna and tuna-like species across the region, and scenarios such as trans-boundary stocks of octopus in Mtwara Tanzania and Cabo Delgado in Mozambique, or prawns off Tanga, Tanzania, and Mombasa

in Kenya, are stocks that require joint resource management efforts / strategies to help ensure sustainability. On the other hand, interactive sea cucumber trade in the region has had an impact on resource sustainability. In mainland Tanzania, the government imposed a moratorium on fishing for sea cucumber, though in Zanzibar harvesting of this high-value species goes on, as is the case with some other countries in the region. Nevertheless, there is an urgent need for joint efforts, bilateral or regional, toward rational management and trade of sea cucumber.”

### **3. What are the root causes of ineffective management of fisheries?**

#### **Comoros**

“Very small budget for fisheries management from the government.”

“Lack of means for the fisheries managers (finance, materials, human resources and higher qualified technicians).”

“Mis-understandings between the National Centre for Control and Surveillance of Fisheries (CNCSP) and the co-management administrator. Conflict of competence between the fishing communities and the CNCSP. The non-consideration of the CNCSP during the setting up of co-management. Signed agreements between the communities and the co-management administrator should be sent to the CNCSP.”

“Co-management is a new term and needs time to be well understood. For example, where no-take zones and closed periods were established, without proper explanation, were confusing to the fishermen. A training package needs to be established for the capacity development for the fisheries communities. Intensive monitoring, control and surveillance also needs to be established.”

“Lack of expertise by fisheries managers.”

“Many things from resource management formulation, to administration, to monitoring.”

“Problems of: limited financial budget; capacity; lack of adequate monitoring system; lack of effective indicators systems (including regular data assessment of fishing effort, catch and landings); lack of stock data; lack of social responsibility.”

#### **Kenya**

- “1. Long approval process for management plans.
2. Enforcement is weak because of financial constraints.
3. Politics – National Government, and Counties, and Semi-autonomous Government.
4. Open access.

5. Poverty and unemployment.
6. Kenya Coastguard Services, Military and Police and Fisheries Blue Economy.
7. Remedial measures – capacity building to create diversification into tourism, maritime vessels employment, i.e., sustainable.”
  - “Lack of Fishery Management Plans.
  - Lack of mechanisms to enhance responsible exploitation of fish stocks.
  - Weak Institutional and legal frame work.
  - Limited financial and human resources to implement plans.
  - Limited stakeholder involvement in formulating and executing management plans.
  - Lack of buy-in by fishers.
  - The unclear framework of implementation including feasibility and resources needed.
  - Lack of marketing support.
  - Inadequate resources (infrastructure, money and people) for monitoring and surveillance).
  - Political interference in management especially in the use of illegal gears such as beach seines, spears guns and illegal meshed-sized nets.
  - Corruption.
  - Lack of understanding of the consequences of overfishing on food security and livelihoods.
  - Insufficient capacity and skills of BMU managers.
  - Lack of adequate funds for implementation due to unrealistic budgetary allocation.”

### **Madagascar**

“(1) The lack of rules and regulations implementation; (2) The lack of government participation; (3) Inter-sectorial conflict (e.g., with regard to mangroves).”

“Continuing high level of fishing effort with negative environmental effects on fish recruitment; weak implementation of EAF and co-management approaches, with all the necessary fisheries policy and legal framework; low level of compliance with the fisheries law and established management measures, as well as lack of means for local and national fisheries monitoring and surveillance; high levels of migration of population (young) from the continent to the coastal areas and in the small-scale fisheries sector and lack of alternative livelihoods; poverty and weak resilience of the coastal communities to the effects of climate change.”

“Ineffective management can be rooted in lack of communication between stakeholders. Nevertheless, capacity building and transfer of technology between countries in bilateral and/or regional cooperation are much needed to achieve the sustainable use of fisheries resources.”

“Lack of information about the species that are the object of management, and lack of statistical data on catches (especially catches from small scale fisheries).”

"Open-access to the sea; lack of marine spatial planning; ineffective management transfer to local community / lack of community authority to impose the rule of management to all."

- "1. The goals of fisheries in Madagascar are clear but the strategy to achieve them is not clear and has changed often.
2. The process to elaborate this strategy is not clear, and all stakeholders were not consulted.
3. Monitoring and evaluation are not conducted, which should be done with the partnership of all stakeholders.
4. There is periodic information available for the condition of each type of fisheries. Monitoring is most of the time conducted by partners of the Ministry in charge of fisheries.
5. The surveillance of fishing activities are rather weak, which is more exacerbated for small-scale fisheries".

"The existence of open access; no declaration of catches; lack of clarity in the regulations in force".

"No respect of the law with regards specific fisheries."

"Lack of government continuity; lack of effective implementation, monitoring and evaluation of management plans; lack of autonomy of the administration (dependence on donors, lack of profitability and financial sustainability of the sector); the majority of the management plans have very ambitious objectives that cannot be achieved within the planned implementation period."

### **Mauritius**

Ongoing consultation and collaboration are required; maintain focus on the recommendations and implement the action needed.

### **Mozambique**

"Poverty is a wicked problem in most developing states, affecting the ability of Governments to ensure sustainable management of natural resources, including marine and fisheries resources. Poverty also affects the choices of coastal communities, and the fisheries sector represents, in most of the cases, the alternative livelihood for the youth, men and women affected by high unemployment rates.

Hence, the lack of capacity (human resources and financial) by the government and the increasing number of fishers, using inappropriate fishing gear resulting in increasing pressure on fisheries resources."

"Low licensing & illegal fishing gear, low surveillance and low monitoring."

“Weak ability to implement defined management measures. Recommendation to ensure effective decentralization process on going, which is expected to bring new governance modalities. Principally, the transfer of decision- making (and financial resources) from the central government to subnational authorities would enable the participation of local residents and rural communities in decision-making processes.”

“Tragedy of the commons; lack of investment in behaviour change and enforcement.”

“Weak enforcement capacity and lack of transparency”.

“Lack of knowledge of direct users (fishermen), as well as availability of devices in a language not understood by the target group.”

### **Seychelles**

“Policies or decisions (political) which goes against sustainable and responsible fishing practices.

Lack of capacity in research, enforcement, as well as financial capabilities.

Education and awareness limited, together with stakeholder disengagement.”

### **Tanzania**

“There are several factors that make it difficult to exercise effective fisheries resource management in Tanzania. Factors raised by stakeholders include:

- i) The open access nature of fisheries, where the fisheries resource is perhaps the only natural resource which is being exploited, while at the same time being conserved / protected.
- ii) Inadequate data and information flow system, including lack of marketing, economic and social information on the different fishery sectors to guide policy and decision-making processes. The situation is aggravated by inadequate funds for conducting research as per the national research agenda.
- iii) Weak institutional linkages among resource management institutions, both public and private.
- iv) Institutional capacity of Beach Management Units (BMUs) is still weak to meet the resource management challenges. The situation is further aggravated by fear of social reprisal (muhali) once one stands against legally unacceptable fishing practices in the community.
- v) High cost of Fisheries Monitoring, Control and Surveillance (MCS) System
- vi) Lack of environmental education and awareness regarding consequences of environmental degradation on sustainable livelihoods amongst the majority of actors.

- vii) Over dependence on fishery resources for livelihoods in coastal communities, coupled with inadequate alternative sources of livelihoods
  - viii) Poverty and profit motive attracts increasing numbers of people into fisheries, catalysing over-capacity, overfishing and environmental degradation, and thus impairing sustainability of fishery resources.
  - ix) Insufficient number of fisheries staff in the midst of a weak co-management regime. It is estimated that currently there are about 700 fisheries extension officers as opposed to the required 16,000 officers. A possible option is to train a batch of Community-Based Trainers (CBTs) also known as Social Carriers of Innovations (SCI), to complement efforts made by the government officers.
  - x) High cost of fisheries resource management in the midst of inadequate financial resources to meet those costs. An option is to strengthen fisheries co-management, as well as bilateral and regional cooperation, including sharing of knowledge, skills and experience.
  - xi) The licensing regime is not very effective for resource management, with several Local Government Authorities treating it as revenue collection tool, rather than resource management tool. Issuance of fishery specific licenses for priority fisheries could somehow mitigate the pitfall. Moreover, fishery specific licenses may even help in addressing the challenge of by-catch in small-scale fisheries such as ring-net (purse seine) fishers catching large quantities of prawns during the prawn closure, with the excuse of it being bycatch. On this aspect, respondents, mostly small-scale fishers, recommended that bycatch should not exceed 10% of one's total catch of target species.
  - xii) High transport cost to numerous dispersed fishing grounds. Fishing areas are large, and transport infrastructure to reach some areas is poor. It is difficult for managers to reach all areas. This contributes to weaken management plans."
- "For prawn fishery, it is possible with industrial fishers to abide with the management plan. But artisanal fishers do not due to remote nature of fishing ground, as well as ignorance of some fishers not to comply. Also, absence of political will by some leaders.
  - For Octopus fishery, it is due to high demand, population increase, ignorance, and again absence of political will by some leaders.
  - Actionable remedial measures: convince people (better price of octopus for the value chain after a closure period implemented, with a good chance of success.
  - The critical role of Fisheries Management Plans, as an indispensable tool for effective resource management, is yet to be internalized by technocrats, as could be authenticated by the small number of FMPs in place.
  - Institutional alignment, with the under-resourced Local Government Authority (LGA) being given responsibility of governing SSF.



- Weak co-management framework; fisheries technocrats consider fishers to be ignorant of the science behind fishing, whereas fishers consider the technocrats be ignorant of practical reality on the ground.”

#### **4. What kind of fisheries management models have you seen as successful, and what key lessons and best practices were learnt?**

##### **Comoros**

“Co-Management. Key lessons include:

-the sensitization of the fisheries communities on the importance of a fisheries management plan (through existing co-management);

- co-management plan in Comoros need time to be assessed with the development of new tools, but the results from the current project (SWIOFISH1) are positive.”

“Set up no-take zones and closed fishing periods for specific species, educating fishermen on the benefits of this new management tool.”

“Co-management coupled with Marine Park management;

- responsible management through concrete collaboration between fisheries communities and government fisheries management administration;

-sharing same thinking on sustainability, improving knowledge on the importance of the fisheries management.”

##### **Kenya**

“Co-management in East Africa has been put in place to control access to small-scale fisheries. Fisher person vetted through Beach Management Unit (BMU). In law, decide who is in or out.

Right based (both industrial and semi-industrial capacity) fisheries regulations in Indian Ocean. Access rights gradually moving towards quota allocations. A “transition to create wealth.”

- “Models such as Individual Quotas and application of proper Management Plans.
- Management through BMUs.
- Participatory approaches in management.
- Multidisciplinary approaches in management.
- Community co-management/ bottom-up approach – empowering BMUs.
- Gear restrictions, especially small-mesh sized gillnets.
- Fish size restrictions.

- Fisheries closures and gear restrictions are most effective when implemented concurrently.
- Community Conserved Areas (CCAs) also known as Locally Managed Marine Areas (LMMAs)."

"Key lessons and best practise include:

- Participation and diversity of stakeholders creates ownership and its more sustainable.
- Fisheries closures and gear restrictions are most effective when implemented concurrently.
- Stakeholder participation, community cohesion and long-term monitoring programs that provide data on changes.
- Annual Fishers Forum where fishers network and are educated about their fisheries and coral reef conservation.
- Communities take responsibility in fisheries management.
- Higher compliance in fisheries regulations.
- Increased capacity and awareness for local communities by interacting with managers and practitioners.
- Develop regulations and mechanisms to enhance enforcement and compliance for ecosystem management."

## **Madagascar**

"The fisheries co-management of demersal fisheries in Ngaparou, Senegal:

- The formulation and implementation of a very good, inclusive and participative local co-management plan.
- Compliance of the members of the communities with the management measures and by-laws jointly agreed among the co-management association (men, women, young).
- Strong and effective leadership and management of the co-management community.
- Technical and financial support from a donor (e.g., the World Bank).
- Strong solidarity and motivation among the co-management association towards a much better management of the resources and for better socio-economic conditions for the families of fishers."

"Depending on the scale of fisheries, co-management is a great fit for small scale fisheries. LMMA or local managed marine protected areas are a recent but quite successful model. Bilateral agreements on industrial fisheries are also successful as long as they consider the stock recruitment of the given resources.

Stock assessment studies should be implemented first, and then the involvement of all stakeholders is key to ensure sustainable fisheries."

"Fisheries management models such as: area based; input based (effort control); output-based management (quota regulation) and allocation of fishing rights."

"Octopus management in South West Madagascar. There needs to be a win-win collaboration with the Private Sector who is willing to invest in the sustainable management of resources."

"The management model of natural resources in Madagascar tends to co-management following the past failure of a top-down approach. However, Madagascar is still improving this co-management."

1. There should be active engagement of the government in the co-management system. This institution should put in place with all stakeholders, all necessary related mechanisms and processes."
2. All stakeholders should be involved and engaged. They shouldn't be neglected and seen as just fishers. Those in the supply chain must also be taken into account.
3. Fishers should be included in each aspect of the management, particularly the monitoring, the surveillance; their right should be considered. This right could include fishing rights and secured tenure.
4. There is a legal formalization of the decision-making and power, which should be recognized by the Ministry."

"Concerted Development Zone (ZAC) of the coastal shrimp fisheries.

All stakeholders were involved in data sharing (researchers, fishermen) and decision making (fishermen, administrative authorities...)."

"Provide opportunities for mid-term and end-of-implementation evaluation and restructuring."

## **Mauritius**

In order to reduce fishing pressure in the lagoon, the Government has progressively formulated, reviewed and executing several strategies regarding proclamation and management of marine protected areas, promoting Fish Aggregating Devices – FAD fishery, closed seasons for net and octopus' fisheries, ban on sea cucumber extraction among others. Also, the ban on sand mining, prohibition on coral removal and trade, ban on jet ski activities in Mauritian waters, have been essential regulations and policies towards effective coral reef management.

## **Mozambique**

"Co-management is the most successful management model, both for industrial and small-scale fisheries. The involvement of fishers and all relevant stakeholders is key for the efficiency of fisheries management. A cross-sectoral approach, including EAF, is also quite

important, because many other factors external to the fishing activity can also affect the management of fisheries resources. Other sectors can play a role as well in reducing the pressure on the fish stocks, by providing alternative livelihoods. Still work in progress and lessons learnt will be shared by 2023.”

“None of the recent management models were able to fulfil their proposed goals, due very poor monitoring and evaluation process during the course of implementing the plans.

A key lesson is that we cannot develop a plan without fulfillment of the surveillance and oversight component. The previous plan failed because the weight of artisanal sector on the resource was not taken into consideration. The control measures were made only to the industrial sector, which is responsible for just 1/3 of total captures. Measures must be applied to all sub sectors, due the fact that they all share the same resource.”

“Models which devolve management to the fishers could be tested in particular for commercial fisheries, while with small scale fisheries the co-management model may work where it supports the value chain.

Voluntary octopus’ closures are a management measures which worked in North Mozambique, and currently is being tested in Inhambane Province with very good results.”

“Strengthen the participatory co-management model, where operators and communities have clear duties, obligations and benefits in the exploitation of fisheries resources.”

1. Participatory process, involving all interested and affected parties as stakeholders.
2. Defined measures for sustainable fisheries resources.
3. Take into consideration the ecological approach to fisheries.”

“Community managed access with no-take reserves implemented by Rare in Indonesia and Philippines have proven to work effectively.”

“Key lessons learnt include investing in community social cohesion through social marketing, training.”

“Co-management, from a perspective where users own 50% or less, but that their share is well implemented (being disseminated in time to all). Lessons learnt include acceptance by communities to join Fisheries Community Councils. Drafting of laws, and regulations that hold the fisheries sector accountable.”

## **Tanzania**

“The Rufiji-Mafia-Kilwa (RUMAKI) Seascope programme, initiated one of the most successful fisheries co-management models, where fishers have a strong say in the management of mostly reef fishery resource. The success could be partly because of their strategic selection of an ideal location for early action. The near-shore marine and coastal habitats of Rufiji, Mafia and Kilwa Districts on the central Tanzanian coast are amongst the most species-rich,

abundant and economically important marine resources on the Eastern African coast. For example, it is estimated that Mafia Island alone supplies over 60% of fish sold at Dar es Salaam's main Ferry Fish Market.

The combination of resourcefulness and commitment of the NGO (WWF), made it possible for fishers from different neighboring villages to come together to develop area specific management plans that were respected. To add to it, WWF introduced Village Community Banks to meet micro-credit accessibility challenge. The result is overwhelming, today exemplary cases such as octopus' closures, are being adopted in other parts of the country and even beyond.

Fisheries in Tanzania are characterised by multiplicity of fish species, fishing gears and methods, fishing boats, numerous fishing grounds and landing sites among many other factors. Consequently, management of the resource is complex, and it is hard for the government to manage single-handed. In this context, it was recognized that engaging resource users in collaborative resource management is the best option to complement government efforts. Therefore, much of the lessons learnt with regard to resource management are associated with user participation. Specifically, the following lessons are highlighted.

- i) Strong Beach Management Units (BMU) is crucial in engaging resource users in co-management.
- ii) It is important to ensure that fishers are regularly updated with regard to research findings, policy and regulatory guidelines. Consultations with fishing communities is the best way to build constituencies.
- iii) The co-management arrangement requires roles and responsibilities to be clear, and understood at community level. Also, a monitoring plan should be prepared to assess implementation of various agreed upon activities.
- iv) The cost of fisheries management is high. However, other sectors in the Blue Economy, such as those invested in tourist hotels, can be mobilized to contribute towards implementation of management plans in general, and enforcement in particular.
- v) Promoting institutional partnerships between public and private Institutions, including NGOs, is a effective tool for management planning and implementation.
- vi) Researching new emerging techniques in fishing to understand their effects.
- vii) Provision of micro-credit schemes tend to accelerate socio-economic development of people in fishing communities.
- i) The use of Community-Based Trainers (CBT) is a sustainable and cost-effective means of mitigating inadequate number of fisheries extension officers."

“Area Specific Management Plan (ASMP). The ASMP model has great potential for promoting user participation under co-management regime.”

### **Seychelles**

“Successful management models include a participatory approach, whereby decision are taken with engagement of stakeholders (e.g., Seychelles sea cucumber fishery).

Top-down approach is not always the right way to go about fisheries management. The opinion of relevant stakeholders is important.”

## **5.2 Co-management**

### **5. What fisheries resources/areas are co-managed?**

#### **Comoros**

Co-management can work if certain conditions are satisfied (the major condition is the consideration of the National Centre for Control and Surveillance for Fisheries in the whole process of co-management).

If the implementation of management plans went through co-management, it would be effective.

“All the Comorian fisheries, being artisanal are co-managed, except the traditional. The coverage zone of co-management has so far only touched 10 villages in the last decade, where co-management agreement has been signed. 6 villages have initiated concrete small-scale fisheries co-management activities.”

#### **Kenya**

- “Reef fisheries.
- Community conservation areas.
- marine national reserves.
- Fish landing sites through beach management units.
- Tuna, prawns, Small pelagic fisheries, and small-scale fisheries.
- Pate Island Joint Fisheries Co-Management Area.
- Malindi-Ungwana Bay Joint Fisheries Co-Management Area.
- Shimoni-Vanga Joint Fisheries Co-Management Area.”

#### **Madagascar**

“All that are at the level of local community that work in partnership with NGOs.”



"Many fisheries/areas of the associations of SSF under the MIHARI network are managed as LMMA."

"Resources within the scopes of small-scale fisheries are co-managed, including resources within marine protected areas."

"Industrial coastal shrimp fisheries in Madagascar had been co-managed between the Ministry of Fisheries and the association of boat owners. This may change after the change in the legislation of industrial shrimp fishery."

For the small-scale fisheries, the Ministry is focusing to move toward co-management used by these fishers. Some fisheries resources in some areas are under local management such as the case of the Locally Management Marine Areas (LMMA)."

### **Mauritius**

The fisheries resources are governed under the Fisheries and Marine Resources Act 2007, and associated regulations and policies.

### **Mozambique**

"Fisheries Management Plan (FMP) for shallow water shrimp on the Sofala Bank; FMP for line fish for the entire coast of Mozambique; FMP from deep-water crustaceans; Draft FMP for artisanal fisheries in several coastal districts e.g., Pebane, Moma, Machangulo - Matutuine, Inhassoro, Memba."

"In Mozambique, Rare is in the process to support the local communities of 7 districts: Memba and Ilha de Mocambique (in Nampula Province); Dondo District in Sofala Province; Inhassoro, Massinga and Inharrime in Inhambane Province; Machangulo in Matutuine district (Maputo Province). Implementation to start with approval of management plans submitted for approval of national government."

"Potentially work with recently identified Community Managed Fisheries Areas. Note that these are not operational yet."

### **Tanzania**

"Generally, all fisheries in the country are managed under the co-management regime, except that effectiveness tends to vary from one fishery to another as well as from one area to another. The co-management arrangement for the octopus fishery is by far the best example of co-management efforts made in the country."

### **Seychelles**

"No fisheries resources in the Seychelles are officially co-managed at the moment. Some level in the sea cucumber fishery, however, limited to stakeholder's engagement in the decision-making process."

## **6. If implementation of management plans occurs via co-management, what are the strengths/opportunities and weaknesses/challenges?**

### **Comoros**

#### **"Opportunities:**

- Creating understanding by the communities of the importance of co-management, as this will help fisheries managers.
- Training of some of the fisher communities and fisherman, as well as fisheries managers, on means to support co-management.
- Win-win collaboration (priority of each country).
- Increase of octopus's capture, setting up the opening and closure no-take periods for octopus' fisheries during breeding season, resulting in increased earning.
- Awareness raising and sensitisation on new concepts and tools (takes time).
- Help the control and surveillance of the fisheries zones, regulating fishing practices and harvest means.
- Help also the security of the fisherman and fisheries communities.
- Improved environmental protection.

Through fishing stakeholders, with regards the coral reef zone, exchange information on the degradation status of the reefs, and means to combat this.

- Extend co-management to other areas.

#### **Challenges:**

- Co-management is very new approach in the fisheries sector in Comoros.
- Requires capacity building for all stakeholders (managers, communities and fisherman).
- Absence of any mechanism to sustain the activities initiated, including financial sustainability, where financial support to local communities is critical and currently absent.
- Very limited expertise on how to effectively implement co-management.
- Lack of human, material, and financial resources for a sustainable co-management plan.
- Very limited expertise on conservation methods.
- Fisheries communities are not well organized.
- Co-management should follow a standard guide, like the one developed by the FAO.
- High consideration of all the stakeholders is required.
- Fisher associations are not well organized, and don't have any financial budget means.

"If the implementation of management plans occurs through co-management, this would promote effective implementation. People are willing to comply with the measures with a

little effort on the part of the administration, which could not be done in the context of the application of the Fisheries Code, for example. The weakness would be that the community partners hesitate to fund certain fisheries investments. They identify certain investments to be made exclusively by the administration.”

“Through Regional Development Cooperation agencies – share experience and lessons learnt.

Through Government agencies – promote awareness for improvement.

Through Environmental agencies – promote environmental consideration opportunities, through ecological risk assessment.

Through Fishing stakeholders – avoid overfishing and promote opportunities for capacity training.”

### **Kenya**

“There is willingness from the community. The BMU’s have become “entry points” for any development with regards the sea, so there are opportunities for collaboration with other sectors to strengthen the work of BMU’s. There are challenges of being politicised, and also of not raising enough cash funding.

Work with other sectors. Improved security of landing sites of small vessels and gear. Get potable water, access roads, schools, health centres.

1. Through regional development cooperation, assist in capacity building, assist Government to create an enabling environment, and assist management of transboundary fisheries without conflict due to regional collaboration.

2. Government is regulatory – provides services e.g., pollution regulation, supporting services at landing site.

3. Environmental agencies - undertake capacity building and sensitisation on conservation.

4. Fishing stakeholders – create infrastructure for marketing and value addition and advocacy. Through public participation they understand status of stocks and dangers of using wrong gear.”

“Strengths:

- All stakeholders involved, therefore easy to implement.
- Less costly since locals are involved.
- Level of success is high.
- Sustainable due to assured buy-in by fishermen.
- Reduced cost of enforcement by governments.
- Reduced hostility by resource users to perceived enforcers.
- Local ownership and participation.
- Reduced conflict between neighbouring BMUs.
- Community cohesion.

- Communities take responsibility in fisheries management.
- Higher compliance in fisheries regulations.
- Increased capacity and awareness for local communities by interacting with managers and practitioners.

#### Weaknesses:

- Stakeholders think they own resources; therefore, everyone will endeavour to exploit.
- In case of disagreement implementation won't succeed.
- Requires investment both in personnel and finances.
- Requires proper training of fisher community to get buy in, hence time and resources.
- Some fishermen who are anti-management may create hostility with their peers who are supporting the plans.
- Differing management preferences and priorities, increased conflict within BMUs.
- Difficulty in getting consensus among local communities in establishing a co-management area.
- It requires a lot funds to establish a functional fisheries co-management area."

#### **Madagascar**

"Strength: it is more or less accepted by the community. Weaknesses: partly due to island culture, rules implementation is very difficult."

"- Strengths: improvement of resource management; better compliance with fisheries co-management measures; reduction of IUU fishing; improvement of social solidarity; increase of local revenue from SSF activities.

- Weaknesses: "practical implementation" of fisheries co-management is insufficiently taken into consideration in fisheries policy and law at the national level."

"One major advantage with co-management is the involvement of main stakeholders. It secures the appropriation of the responsibility and the rights regarding the resources. Co-management implies shared duties on all parties involved. However, the lack of communication in terms of reporting and regular workshops on the co-managed resources, may impede endeavors."

"Strengths: involvement of all stakeholders in the process; lead to transparency and accountability

Weaknesses: Cost and time involved in preparing documents are considerable."

"Strength: participatory approach between promoter and community. Weakness: lack of accountability of the effectiveness of the management by the local community."

"1. Weaknesses:

1.1. If the power between the involved stakeholders is not identified (including the type of co-management model), there will be a problem in decision-making.

2. Strengths:

2.1. All stakeholders are involved.

2.2. The objectives of co-management are identified in a participatory way, resulting in clear implementation in terms of role and responsibilities of each stakeholders. This way all stakeholders will promote the existing management and governance structures".

2.3. As all stakeholders have their own roles and responsibilities, it will promote ownership and engagement from them, and therefore their rights. The rights for resource management are identified.

2.4. Creating platforms and venues for discussion, debate and planning, can help resolve conflicts and enable pluralistic decision-making. For the implementation, all stakeholders will contribute to the decision making which imply the implementation of a corresponding structure.

2.5. This will promote social cohesion and inclusion, encouraging the creation of a federation of marginalized groups and/or communities."

"Strengths: common economic interests; common decisions; shared resources.

Weaknesses: economic weight of each stakeholder in decision making; non-compatible objectives".

## **Mozambique**

"Strengths – participation of all stakeholders, including fishers through associations.

Weakness – representation of small-scale fishers. In most cases they are not well represented in the decision-making process, and consequently their voices and concerns might be neglected."

"The weakness is the previous refusal to see the whole picture. The issues were addressed politically rather than scientifically, and as a result today, the government has no control of artisanal fishing, although we recognise the efforts that are being made to correct this by improvements in statistics on this sub sector. In the new management plan, finally we can see the recognition by the government of the weight of artisanal fishing on the resource, and proposed measures to be undertaken in near future, in order to control and manage the resource through oversight of all players."

"Voluntary compliance is one of the strengths, but it is important to support market identification and focusing on uplifting the value supply chain as well."

"Strengths: community involvement; local engagement of fisheries administration authority.

Weakness: low expertise; low knowledge of co-management; lack of means (human, financial & equipment)."

"Strengths:

The co-management system is under the fishing law and fishing regulations, and currently the communities are being empowered. There's political will, establishment of community management areas, recognition of community fishing councils at local level, and official regulation of community councils at local level.

Co-management agreement between public and private sector, civil society, non-government organizations, and fishing council community. Amounts of 15% charged in the jurisdictional area for the benefit of community fisheries councils.

The ongoing co-management agreement system establishes principles of responsibility of all actors in exploitation of fishery resources. And this agreement is signed by the fisheries administration with knowledge of the local government in order to ensure the decentralization of fisheries management system.

Challenges:

At rural level the population live under the poverty line, and without alternatives for subsistence, sometime this leads to destructive fishing practices.

The rural community is uncertain of the benefits of co-management.

Ensuring the sustainability of fisheries resources managed by local communities."

"Participatory implementation of management plans is more effective. It ensures ownership of decisions by resource users but required constant monitoring and support from authorities and other partners."

"Weak: I believe it would have negative impacts on resource management. I suggest that the management model for national plans is very good."

## **Seychelles**

"Difficult to implement. Need a lot of education and awareness, however it is the way for the future. Stakeholders require more empowerment for greater engagement.

All participants must understand clearly what are their responsibilities and must be committed to deliver on those responsibilities."

## **Tanzania**

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>It improves legitimacy of rules and regulations, and fishers easily comply to what they have participated in enacting, and thus reducing enforcement costs.</li> </ul>	<ul style="list-style-type: none"> <li>Some of the key stakeholders are not being represented.</li> <li>In some areas, benefits of the co-management regime are yet to be obvious.</li> </ul>



<ul style="list-style-type: none"> <li>• It allows local ecological knowledge to be utilized.</li> <li>• Covers all areas, despite the absence of fisheries officers in several rural fishing communities.</li> <li>• Builds constituencies, creating a sense of ownership among fisher communities.</li> <li>• Reducing of cost for management of fisheries resources through communities (BMUs).</li> <li>• Increased efficiency of management of resources.</li> </ul>	<ul style="list-style-type: none"> <li>• Inadequate financial resource to support implementation of FMPs.</li> <li>• Unpredictable fisher communities behaviour.</li> </ul>
<b>Opportunities</b>	<b>Threats / Challenges</b>
<ul style="list-style-type: none"> <li>• With time, the majority of stakeholders will get to understand the need for co-management.</li> <li>• The establishment of Beach Management Units (BMUs) in several fishing communities coupled with gradual awareness raising amongst key practitioners, is an opportunity for co-management to work.</li> </ul>	<ul style="list-style-type: none"> <li>• Time consuming process.</li> <li>• Conflicts among the resource users.</li> <li>• Failure to have meaningful collaborative management plans in place is a formidable challenge facing a co-management regime.</li> </ul>

## 5.3 Creating a wealth management approach

### **7. Since management plan implementation, what has been their wealth creation added value/strategies?**

#### **Comoros**

"It is a new approach here in Comoros (co-management is very new). Therefore, it requires time before we could answer this question."

"Need contribution of fisheries communities and fisherman, and also levies and taxes".

#### **Kenya**

"Requires more study through surveys. Check amount of catch coming in, and how it is being marketed. Value often based on "beach value" of fish, but need more information along the value chain. Create career paths along the value chain, but to do that need the infrastructure facilities."

- “Beach management units have benefited from by catch distribution from prawn trawling management plan. This has boosted their income. Previously by catch were discarded.
- Through management plan, fishermen have increased their level of consciousness on resource stewardship.
- Prawn management plan reduced pressure on reef fisheries and improved wellbeing of artisanal fishers.
- Co-management plans leads to livelihood diversification, reduced conflict between BMUs.
- No systematic monitoring or evaluation is done to track social or ecological impacts after implementation of plans.
- Improved fisheries catch in well co-managed fisheries areas.
- Improved fisheries data for decision making.
- Reduced fisheries conflicts among resource users.”

### **Madagascar**

“A more participatory approach at the local level.”

“It might be too early to state, but we can suggest a clear improvement of resources availability in heavily exploited waterbodies.”

“Economic value of the fishery is preserved, which lead will lead to an economically beneficial, but demographically sustainable, harvest of desired species.”

“Alternative livelihoods for some local communities (octopus value chain, carbon credit ...).”

“Without effective implementation, no added value observed except the destruction of the environment, and decrease in the resource.”

### **Mauritius**

The focus has been on the development of one-stop shop, i.e., the seafood hub which has been successful. The seafood industry is progressing towards becoming **one of the pillars of the Mauritian economy**. Fisheries do not only play a prominent role in food consumption in Mauritius but also contribute significantly to sustain the economic development of the country.

### **Mozambique**

“The result of the previous plan was the reduction of industrial capture in Mozambique, and withdraw of vessels, resulting in the reduction of fish capture in this sub sector, negatively impacting income and exports.

The increase in artisanal capture did not bring gains to the government. Most of the fish landings are unreported, and the government has no fiscal gain from that production. In addition, much of production is wasted, due to lack of infrastructure to handle and process the production.”

“With the establishment of Management Plans, fisheries were ordered to provide maximum benefits, without compromising environmental sustainability, and this objective is achieved over the time. In past decades the extractive fishing sector had a greater contribute in GDP,

but with expansion of the aluminum industry and other mineral resources, as well as exploitation of gas, fisheries decreased to 2% of GDP.”

“Agreed management rules amongst all stakeholders, resulting in no surprises to anyone.”

### **Tanzania**

“Wealth creation has been evident in some places, especially the Rumaki-Mafia-Kilwa (RUMAKI) Seascape, including the closure management regime applied in various octopus fishing areas. This implies that the role of NGOs is crucial, if resource management is to be effective.”

“With the prawn fishery plan which is operational, it benefits fishers (by getting prawns for sale) and government (through licensing) on re opening.”

### **Seychelles**

“No Seychelles studies have so far been conducted in wealth creation strategies. One is scheduled for the Mahe plateau trap and line fishery co-management plan, expected to be completed in 2022.”

## **8. How much does Government spend on fisheries management / plans every year, and how is this shared between the operational sectors of Resource Management, Research, Capacity Building and Compliance etc.?**

### **Comoros**

“Comoros fisheries budget line from the government is very limited (in a way that does not exist). All our activities are done through project money (from donors). The big issue at the moment, is that after the current co-management project is completed, there will be no funds for continued activities.”

“Difficult to put a figure because there is not a government budget made for the implementation of management plans. We can calculate the salaries of the officials of the Directorate; but the funds for monitoring and control, as well as training, we look everywhere in the ministry or an activity that has been financed and accounted for in the state budget in the implementation of the plan, and therefore is very variable.”

### **Kenya**

“Annual budgets; recurrent activities; developing infrastructure; the blue economy aspect is changing things; but government allocated funding also disappears due to emergencies. There is Integrated Financial Management. The procurement processes are also generally long.”

“There is low funding towards implementation: monitoring, capacity building and stock assessment and observer deployments.”

**“KENYA PROGRAMME BASED BUDGET – FISHERIES IN US DOLLARS.”**

<b>Programme/Financial Year</b>	<b>2018/19</b>	<b>2019/20</b>	<b>2020/21</b>	<b>2021/22</b>
Fisheries Policy, Strategy and capacity building	4,414,407	405,000	1,128,000	5,426,337
Management and Development of Capture Fisheries	4,342,120	10,055,224.34	7,470,872.76	3,432,057
Marine and Fisheries Research	4,680,000	14,981,000	20,577,400	50,610,000

**Madagascar**

“It largely depends on the budget at hand.”

“In Madagascar, the budget allocated by the Ministry of Fisheries and Blue Economy, to fisheries every year is around 1,300,000 USD. Each sector has its own budget (research, compliance, resource management) information on the budget of each sector is not available.”

**Mauritius**

There is a low budget for monitoring, research and capacity building, relying mainly on regional and international fisheries organization funds for major research and capacity building.

**Mozambique**

“Not clear as financial management is not transparent.”

“In general, the government allocates a budget at the beginning of the year for all government sectors. In the case of the fishery sector, license fees are collected and the amount sent to the Financial Department, which re-finances the sectors activities including implementation through aspects such as: monitoring, control, surveillance; and co-management.

However, there is no specific fund allocated to each fishery subsector. Fisheries operators do not fund government activities.”

“There does not appear to be a dedicated budget for implementation of management plans.”

“Government spending on resource management operations are not shared with the fishing communities.”

**Tanzania**

“Currently, there is no precise data on sharing of resource rent associated with fisheries resource management in Tanzania. Certainly, this is one of important study areas that are worth to be conducted in order to inform policy making processes.”

**Seychelles**

"Rough estimate is around USD 750,000 – 1 million, mostly government and donors funds."

**9. What advice do you have to utilise fisheries management money effectively?****Comoros**

"Through planned and budgeted annual activities, much of which is currently provided through donor project money."

"Create a budget line from the Finance Ministry (the annual budget of the country)."

"Management of taxes and levies could help, but also the government should put a budget line for the CNCSP."

"Raise awareness among the most involved fishing stakeholders Invest in fisheries actions for the benefit of local communities while creating a monitoring and control structure."

"To have an effective use of funds in fisheries management, the funds must arrive in an account of the Fisheries Department signed by the Ministry and with results plan to be expected each quarter, with rigorous monitoring."

**Kenya**

"Collaboration – team identifying priorities."

- "Engage the stakeholders to reduce implementation costs. Planning should involve resource users and enforcement agencies; this makes it more cost effective.
- Involve key stakeholders in the budgeting process so that funds are channelled to proper use.
- Project audits and participatory monitoring and evaluation should be encouraged.
- Have active stakeholder participation in fisheries management so stakeholders understand how much is available for management and have a more realistic picture of what is possible and their share of responsibility.
- Money to be used for the intended activities.
- Strengthen co-management structures through the BMUs, increase funding for MCS.
- Strengthen national fisheries management fund (Fish Levy Trust Fund, Research and Management Funds) that support for the implementation of the plan."

**Madagascar**

"Focus on the local management plans and their effective implementation at the local level."

"Allocate sufficient and consistent funds for fisheries management."

"Involvement of all stakeholder in the management of fisheries."

"Just transparency."

"The small-scale fishers should be represented in the steering committees."

"The money collected through fisheries sector fees must be used for the management of the fishery."

**Mauritius**

In capacity building and educating the fishing industry on sustainability and ecological integrity.

**Mozambique**

"There is a need to invest in more environmentally friendly fishing gear, to preserve fisheries resources, particularly during their juvenile stage of development. There also needs to be investment in knowledge and fish processing facilities, to accrue value to production, enabling the small-scale fisheries sector to penetrate more sophisticated and profitable markets."

"Transparency is required."

"Setting up a strong local fisheries administration authority, including a local surveillance system, all of which is locally managed (decentralization)."

"There is a need to firstly identify the source of the money, and then budget that money for management plan implementation."

**Seychelles**

"Invest more in fisheries research, capacity enhancement and in monitoring control and surveillance. Adopt a performance indicator approach."

**Tanzania**

"Large chunks of the cost of fisheries management in Tanzania goes to MCS, unfortunately there isn't a cost-effective MCS plan in place. Therefore, it is important to change the outlook from enforcing in the absence of a MCS plan, to adoption of MCS management planning processes. Also, the plan in discussion must uphold the interplay between research, compliance and capacity building mechanisms. The plan must provide for ploughing back part of resource rent to meet the cost of fisheries resource management in fishing communities."

"By purchasing fuel, maintenance of boats and vehicles for field work for both extension services and enforcement activities."

## **10. What will it take to achieve funding of fisheries management by the fishing stakeholders?**

**Comoros**

"The Comorian government through the fisheries Ministry should take this issue seriously."

"Taxes and levies, and license system."

"For example, during the opening period and season, we could collect 1 percent of the harvested product for selling and put the money in an account for the fisher association."

"Making money through contribution of Foreigner visitor to Marine Park."

"Should have some activities that generate money."

"Introduce a payment system for the fisher association (like give one kg of the harvest product for the fisher association). This mechanism was working under the SWIOFISH era."

"Set up relevant projects with a sustainable vision, and aim at the conservation of exploited species."



"It is often the claim of fishermen's associations to have their funds to manage themselves, but they do not have the management skills - it will take good training and support before they are ready, as past experience in association management is negative."

### **Kenya**

"Fish Levy Trust Fund – generated from fishery and fish farmers, partners and Government – must be ploughed back to fishers and fish farmers. Now in law to "operationalise" institutions.

Levies should be well managed and effectively ploughed back. Fund will have Board of Trustees. Representatives include: 1. marine fisheries; 2. inland fisheries; 3. fish processors; 4. fish farmers; 5. aquatic environment. All represented to create trust and semi-autonomously managed fund with relevant Ministry giving guidance – only 15% allocated to admin."

- "It will take proper planning after undertaking the baseline survey of the needs of the fishing stakeholders to determine their major requirements.
- Engage stakeholders in resource mobilization.
- Lobby government to set aside sufficient resources for fisheries management.
- Consolidate impacts of fisheries management and disseminate widely.
- Actively involve non-state actors in resource mobilization.
- Capacity building of fishing stakeholders on fundraising.
- Information sharing between fishing stakeholders to target fundraising opportunities.
- Better understanding of the fishery and stock so that unrealistic expectations are reduced. Sometimes a fishery is just not profitable, in that case the nation needs to explore paths to exiting the fishery.
- This will increase ownership of resources by stakeholders.
- Increased compliance in fisheries co-management.
- The stakeholders need to be involved in the funding of a sustainable fishery. They probably need to plough back some of the money they make to subsidize and conserve the fishery resource."

### **Madagascar**

"Implementing an effective co-management plan including the development of local income generating activities, and the improvement of fish trade strategies for the communities."

Even though taxes are increased each year on fisheries activities, the returning fund to the Ministry in charge of regulating fisheries are less than consistent."

"Private sector engagement."

"All stakeholders should be involved and consulted during the process of elaboration of the fisheries management plan document. This participatory process must be conducted in a transparent way."

"Establish a parafiscal tax for the management of fishery resources."

"Political determination."

**Mauritius**

Fishermen Investment Trust. The FIT constantly aims at democratizing access to the fishery resources of Mauritius and giving due recognition to the fishing community. The Trust targets amongst others, artisanal fishermen and banks fishermen, in order to promote the development and diversification of fishing operations.

**Mozambique**

"Cost-recovery measures have to be applied, where applicable."

"To have a good structured strategy based on a strong local authority."

"Improve the availability of information regarding management costs, with all parties involved, and have a clear and transparent strategy in the use of funds."

**Tanzania**

"The most important thing which is needed is re-organization. In this context, efforts should be made to ensure that fishing communities get tenure rights. With clearly defined tenure rights, it would be easy for them to reorganize effectively in terms of institution of area specific management plans, including generation of funds, financial management and effective management of the resource. Without reorganization, chances for achieving funding are very slim."

"Advocacy for ploughing back, at least 20% of revenue generated as resource rent, to be used in management of respective fisheries."

"There must be a legally codified consensus with regard to percentage of resource rent that has to be ploughed back for fisheries management and to support sustainable livelihood undertakings."

**Seychelles**

"Using funds is not an issue, however obtaining funds is the issue. The end users of the resources should contribute towards sustainable management of those resources that they are obtaining their livelihood from. A fair and transparent mechanism must be put in place."

## **11. What financial/modernisation strategies are being developed for the small-scale sector, empowering fishers and fish workers across multiple value chains?**

**Comoros**

"With co-management, training has started, but to be effective, it is a long process. Training to: empower associations; their monitoring; accounting; fundraising etc. This is still initial training, and there have to be projects funded by donors to continue this kind of activity, because the government is currently unable to take care of this component."

**Kenya**

"Maritime institutions train fishers to transition from artisanal to semi-industrial. Piloting modern boats for investors, aiming at "transition."

- "Provision of modern fishing equipment to empower fishers go into the deep sea.
- Infrastructure development to reduce post-harvest losses.
- Fishers training on value addition and good marketing strategies.

- Provision of fishing gear and equipment.
- Mobile apps for information sharing.
- Infrastructure for cold storage and mobility.
- By registering as members of Beach Management Units (BMUs).
- Operationalization of Fish Levy Trust Fund for sustainable funding mechanism."

### **Madagascar**

"Access to finance grants, savings, and loans."

"The Village Savings and Loan Association (VSLA) model."

"High reliance on Internationally funded projects or NGOs, to empower small-scale fisheries all along the value chains."

"Without capacity development and professionalization of the actors, modernisation is unlikely to occur."

### **Mauritius**

Training is provided to artisanal fishermen at the Fisheries Training and Extension Centre (among subjects taught: fish handling, preservation and marketing, small business development, safety and security at sea, first aid, maintenance of boat and motors, fish cage culture project, use of sails). In addition, fishermen attending such courses are paid a daily stipend.

Demonstration of new fishing techniques on board research vessels e.g., use of collapsible traps and longline fishing techniques are carried out. Other training programmes include:

- Training of skippers/mechanics (boats of less than 24m length).
- "General course for Fisher" for aspiring fishermen. Provide the basic knowledge and skills to operate safely and efficiently in the outer lagoon fishery.
- The Fish Aggregating Devices (FADs) Training Course dispensed to artisanal fishermen with the aim to relocate them from the heavily fished lagoon areas, into the open sea targeting pelagic species where catch rates are higher. The fishermen are provided with the knowledge and skills to fish around FADs safely and efficiently.

### **Mozambique**

"Some pilot projects supported by ProBlue. Devolution of competence is required."

"Small-scale fishing is mainly supported through fisheries development projects (Artisanal Fisheries Project in the Sofala Bank, Propesca, PPNACD,...) that aim to improve the livelihood conditions for artisanal fishing communities, in terms of providing: better health, education and drinking water supply; practice of fishing activities based on traditional fishing gears and methods; expansion of networks for the sale of fishery products."

"Strategic thinking; good policy; identifying costs for management; and mobilization of stakeholders."

"Supporting fishers, fish buyers, financial saving clubs and other actors of the value chain to identify value addition opportunities, and supporting them in developing business plans. Seed money from stakeholders is complemented by donor funding."

"There are several strategies that are being used, as an example the new REPMAR brings several innovations with a view to the empowerment of communities, to name a few:

- institution establishment of APGC;
- return of 15% of the fishing license fees to artisanal fishermen;
- accreditation of community members to support inspections.”

### **Tanzania**

“In Tanzania, the focus is placed on introduction and strengthening of microcredit schemes, especially the Village Community Bank model coupled with capacity building efforts by using Community-Based Trainers as change agents. With regard to modernization, the country has trained and employed over 700 fisheries extension officers who are placed in different districts for fisheries administration, management and capacity building. Moreover, there are efforts going on with regard to formation of cooperatives for linking small holders to rewarding markets. Sometimes, subsidies such as waiving import duties on fishing gears and other inputs, as well as supply of subsidized inputs such as outboard engines and small cold storage facilities. On the other hand, industrial-scale fishing in inshore waters is restricted, with the exception of a small fleet of shrimp trawlers. This has been a policy intervention to protect small holders from being excluded.”

The Tanzania Agriculture Development Bank takes onboard small-scale fishers by providing loans to whoever meets the set requirement. The government encourages fishers to form cooperatives for easy recognition by banks and therefore obtain loans.”

### **Seychelles**

“Funds for sectoral support under the Sustainable Fisheries Partnership Agreement with EU, and donor funds (grants) are used to provide soft loans for investment in better fishing vessels to target more distant fishing grounds, and relieve pressure on coastal resources.”

## **5.4 Capacity**

### **12. Share with us some of the challenges and barriers you have observed with regards to capacity to implement fisheries management plans?**

#### **Comoros**

“Capacity needs and gaps:

- Revenue management for the fisherman and the fish sellers.
- Improve the capacity of the communities in order to fully control the co-management activities.

Constraints and barriers:

- Lack of adequate capacity for good management.
- Absence of improvement assessment indicators.
- Sustainable financing not in place.

Recommendations:

- Search for sustainable finance mechanism.

- Package of training and capacity building for fishermen, communities and fisheries managers, including fisheries inspectors (CNSCP)."

"-Understanding of the fisheries communities is very important."

### **Kenya**

"Management Plan development is not a problem, but the approval process is long. The Kenya Constitution demands public participation at Parliament and grass-roots level so that the plan is accepted. This has to be approved through Parliament. Get regional agencies to "promote" to Permanent Secretaries. Capacity building of stakeholders is required."

- "Lack of stakeholder engagement.
- Too many stakeholders in the fisheries sector causing confusing and wrangles.
- Some NGO`s incite fishers to reject all new management measures proposed.
- Lack of synergy between the national and other governments policies on fisheries management.
- Limited management capacity of targeted fisher community.
- Lack of gears, vessels for effective logistical support in management.
- Limited livelihood options by the fisher community involvement in management to enhance their incomes.
- Reluctance in enforcing management plans, not enough enforcement capacity.
- The sectorial approach in the management of plans.
- Lack of continuity of management plans driven by donor funding.
- Disconnect between community needs and management plan objectives.
- Inadequate community participation in fisheries management plan activities.
- Lack of political goodwill.
- No funds invested in implementing the management plans.
- Low capacity and skills of fishers and managers to implement management plans.
- Difficulty in getting consensus among local communities in implementing a plan.
- It requires a lot funds to establish a functional fisheries co-management plan.
- Appropriate baseline information to support fisheries management plans."

### **Madagascar**

"- Lack of sufficient financial resources to implement the plans.

- Ineffective or lack of implementation strategy for the management plans.

- Lack of ownership of the plans by the coastal communities (lack of co-management approach)."

"In addition to lack of funds to implement the plans, no involvement of actors at the small-scale level."

"- Fishermen cannot see the real benefit of the implementation of fisheries management plan

- The communities of fishermen are not fully aware of the measures taken in the development of the plan."

"Securing space and law enforcement capacity."

"1. The implementation is not harmonized and each stakeholder has its own approach to the implementation.

2. Some key stakeholders need capacity building for the implementation.

3. The implementation plan doesn't include the governance of the management plan."

"-Intervention of politicians or political authorities during infringements.

-Insufficient number of people in charge of control and surveillance.

-Lack of precision in regulatory texts."

### **Mauritius**

Changes/transfer of staff make implementation and monitoring of the management plans difficult, and there also should qualified technicians for research and development for appropriate implementation.

### **Mozambique**

"Financing and effective participation of fishers represents some of the major bottlenecks in the implementation of FMP. In most cases, funding is only available for the development of the FMP, but when it comes to implementation, monitoring and evaluation, there are challenges, especially on funding for research and alternative measures to reduce fishing effort. To engage fisher folks is also a challenge, due to multiple factors, including literacy, awareness, poverty, etc."

"Lack of continued studies to evaluate the state and dynamics of the resources. The climate change issue is not be taking seriously in the decision-making process. The monitoring and evaluation process is also weak, leading to biased conclusions."

"Political interference; lack of commitment; lack of training."

"Lack of capacity to implement; low monitoring and statistics data; low surveillance."

"External drivers (that we can't manage), currently have negative impacts for efficient implementation of fisheries Management Plans (e.g., cyclones destroying vessels and fishing infrastructures).

Also, weak control, monitoring and surveillance due lack of human and financial resources allowing for poor fisherman behaviour, as they are not accountable, are the main constraints."

"Illiteracy amongst resource users; local management bodies (CCPs) often demanding compensation for their support; Government fisheries licensing with support from CCP is entitled to receive 15% cashback to support fisheries management but this mechanism is not working. What are bottlenecks?"

"Poor access to information for all interested parties. Also, the plans that exist are not easy to understand in terms of language for all users."

### **Tanzania**

"Some of the challenges and barriers in relation to capacity to implement fisheries management plans in Tanzania are:

- i) Inadequate financial resources and financing funding mechanisms, to meet the cost of fisheries resource management.



- ii) Conflicts among different resource users, mainly emanating from lack of tenure rights and inadequate proportional representation in developing management plans.
- iii) Lack of training on resource management among key practitioners.
- iv) Exclusion of some key stakeholders during development and implementation of management plans. Likewise, local government officials are not fully involved in development of FMPs, while they are the ones expected to ensure the plans are implemented.
- v) Lack of stakeholders' awareness regarding the sustainable resource management paradigm.
- vi) Political interest and interference to rational implementation of resource management plans.
- vii) The institution capacity of BMU and other local institutions is rather low, lacking skills, knowledge and technical know-how, regarding development and implementation of management plans.
- ii) Institutions responsible for resource management lack capacity regarding fisheries co-management. To make matters worse, the majority of experienced government-employed change agents are either retired or are ageing, and there is no arrangement for involving volunteers."

### **Seychelles**

"Human resource capacity is limited at the national level (fisheries managers).

Financial capacity is limited (assets, enforcement).

Stakeholders are disorganised, lack awareness and are currently unwilling to engage.

There is great reliance on donor funding, and a lack of national financing mechanism."

### **13. Do you have ideas on how to solve some of these problems?**

#### **Comoros**

"Learning is the powerful means for better fisheries management."

"Capacity development in conservation methods and fishing techniques."

"Training, awareness raising, and improving the understanding of the co-management approach."

#### **Kenya**

"Have political goodwill and resources. An opportune time to push."

- "Only relevant NGO`s and stakeholders should be involved in the implementation of fisheries management plans.
- National and SWIO county governments should have uniform approach on dealing with fisheries stakeholders.
- Involve all relevant stakeholders in developing fisheries management plans.
- Train and capacity build stakeholders involved in the implementation of the management plans.

- Diversify livelihoods of fisher community to reduce the pressure exerted on the resource.
- Provide marketing support.
- Management should provide for adequate resources to implement management plans.
- Awareness creation across all levels of governance.
- Sustainable, long-term funding and investment strategies.
- Consideration of exit strategies to reduce effort.
- Incorporation of plans into country national government annual planning processes so that solutions are sought at all levels.
- Continued awareness creation among local stakeholders on co-management principles.
- Fisheries Departments of county governments to embrace and allocate funds for co-management implementation.
- Local communities to partner with other stakeholders for both financial and technical support.
- Management should provide for adequate resources to implement management plans.

### **Madagascar**

"- Improve the implementation of the EAF and co-management approach with the relevant fisheries policy/law framework.

- Improve regional co-operation for the funding of these management plans.

- Develop the capacity of local actors and stakeholders to be able to finance themselves and the implementation of these plans (VSLA, income generating activities)".

"Capacity building including: allocating sufficient budget to the Ministry in charge of fisheries; maintaining regular on-site control and support to fish workers; develop the negotiation skills of executive staff in order to gain a win-win fishing agreement within the framework of industrial fisheries."

"Involve fishing communities during the development of the management plan and maintain frequent awareness of the plan during implementation."

"1. There should be an implementation plan taking into account all the ongoing activities of each stakeholder.

2. The stakeholders should think about the funding system."

"Community Monitoring.

More precision in the terms used."

### **Mauritius**

There should be a roadmap, plan of action and frequent consultation to assess progress, and identify gaps and to come up with appropriate solutions.

### **Tanzania**

"The most important thing, at the moment, is to build institutional capacity of different actors along various fisheries sub chains, including strengthening linkages between Central,

Local Government Authorities (LGAs), and Village governments including Beach Management Units (BMUs). Also, efforts must continue to involve all fisheries actors at all stages of management planning and implementation. Education and training, especially on co-management should be provided to policy makers, fisheries managers and fisheries actors.”

### **Seychelles**

“Empowerment of stakeholders. Sustainable financial mechanism. Capacity enhancement. Political commitments.”

## **14. Who should be a part of the synergistic team to build better capacity?**

### **Comoros**

“Create collaborative exchange between SWIO countries.”

“The CNSCP”.

“Marine parks, community associations (fishermen) and fisher associations.”

### **Kenya**

“The Training College is under the Kenya Management Authority. Working with the Kenya Ports Authority and State Department for shipping, and Ministry of Environment on pollution control. Regional bodies in Indian Ocean, NGOs – WWF supporting legislative development.”

- “National and County Government offices of interest.
- NGOs working in target communities.
- Local resource users and other stakeholders of interest.
- In TBCA, relevant government representatives.
- National fisheries management and research agencies e.g., KMFRI
- Research NGOs working with communities on the ground.
- Other non-state actors including CBOS, private investors, FBOs and international development partners.

### **Madagascar**

“All stakeholders, including the Administration involved in SSF (fisheries administration, research and universities, environment administration...), fisheries associations, local fisheries NGOs, civil society, technical and financial partners, traditional and local authorities. The actors must participate synergistically in the management to build better capacity.”

### **Mauritius**

There should a synergy among the different stakeholders, the fishers’ community, government, private sector and the Economic Development Board, so as to add value to production and have a better market value.

### **Mozambique**

“A stakeholder engagement plan needs to be developed, tailored to the target community / fishery.”

“Fisheries experts”

"Fisheries experts including fisheries regional and international bodies, and other organizations that can support this process."

"Government, NGOs, fishing communities; donor community."

"At the national level there must be a team among the institutions of the sector."

#### **Tanzania**

"The team should include the Central government, Local Government Authorities (LGAs), Village governments, fishers' organization such as BMUs, as well as NGOs, CBOs' and development partners."

"IOC can be part of building capacity jointly to participants at regional level".

#### **Seychelles**

"All relevant stakeholders. Political leaders should be willing to show greater political commitment to take unpopular decisions that take into consideration sustainability of resources."

## **5.5 Socio-economic management**

### **15. What is the socio-economic contribution of coastal marine fisheries in your local and national economy?**

#### **Comoros**

"The livelihood of all the coastal and non-coast people are impacted (fisherman, and fisheries communities)".

"This is very important question, as the fisheries sector in Comoros contributes a lot to the socio-economics of the country, as well as cultural aspect.

Firstly, in terms of food, fish are eaten every day; secondly, in terms job creation, many fisherman, and fisheries communities directly or indirectly obtain work from the sea; thirdly, in terms of earning money, many people - from boat builder, to fish sellers and ice makers, are getting their daily livelihood from the fishing sector."

"Fishing contributes a large part to the Comoros economy, even if the figures are not known, but it is also a source of subsistence for the majority of coastal towns and villages."

#### **Kenya**

"The challenge is investment tools to move into deeper waters due to limited resources and equipment. The inland fisheries annual catch in Kenya is 123,000 tonnes, while coastal catch is currently 27,000 tonnes."

- "Employment opportunities.
- Increased Gross Domestic Product.
- Increased livelihoods, nutrition and food security.
- Improve wellbeing of resource users if fisheries are well managed.
- Source of income to fishers.
- Source of government revenue from exported fisheries products."

**Madagascar**

"It depends on the location. In Madagascar in some coastal areas, it is near 100%, in other coastal areas it can be around 80%, in the center part it can be less than 5%."

"Contribution comes in the form of food security and nutrition, poverty reduction, job creation, and increase in the revenue of the local population."

"1. Direct employment: 85,000 in small-scale fishing in Madagascar.

2. Fishing is a means of subsistence for 1 million people.

3. Fisheries and aquaculture contribute 7% to GDP, 35% of which are from small-scale fisheries.

4. Total fisheries and aquaculture production (inland and marine) in 2017: 163,500 tonnes, 59% of which come from small-scale fishing."

**Mauritius**

The coastal fisheries contribution is low for Mauritius, but is important for fresh fish in the local market.

**Mozambique**

"Contribution to employment. An average of 2% to the GDP."

"The importance is high: including being the primary source of animal protein in our communities; and is also the main source of income and way of life for millions of Mozambicans. It is a very sensitive issue for the government, which is potentially why there is this lenience when comes to enforcing heavy regulatory measures against the people living in these areas. There is no jobs, and the authorities most of the time prefer to look other way."

"Fisheries often supports economically over 50% of the local population."

"Contributes to: jobs, survival base for millions of inhabitants (fishermen, merchant processors, transporters), especially those with low incomes, food security."

**Tanzania**

"The socio-economic contribution in Tanzania is huge, especially in terms of food fish supply, employment, and income generation in fishing communities. Fish is the cheap source of animal protein available to the majority of people in the country, providing over 30% of animal protein needs. Similarly, fish is a highly nutritive food with Omega-3 fatty acids, Vitamins, protein and minerals, and thus plays a significant role in keeping malnutrition at bay. With regard to employment, the fishing industry has become a safety net for the majority of coastal people who could have been on the streets begging."

**16. What can be done to improve the socio-economic status of fish communities?****Comoros**

"Though social responsibility (education, and training, technical and financial support)."

"Firstly, it important improve their capacity, and then regulate the fisheries sector."

"-Training on different fishing practices; implement effective fisheries management laws; control and reinforce the security of fisherman; matriculation and licensing system."

## Kenya

"A levy to invest back into fisheries through training and procurement, to move into deeper waters."

- "Training and capacity building on diversifying livelihoods e.g., mariculture.
- Support with business start-ups including grants and low interest loans.
- Support with fishing gears and vessels.
- Enacting laws that promote and safeguard fisher community livelihoods.
- Provide support for the protection of the mangrove ecosystem e.g., carbon credits.
- Link with markets.
- Direct processing of fish.
- Better management of fisheries, currently poor management is causing not only the fishers but also the country to lose revenue.
- More targeted research to identify issues affecting the community.
- Recognition by SWIO county governments of the contribution of fisheries to ecosystems and people, and commit to improved management.
- Empower local fishers to access more fishing grounds through better vessels and fishing gear.
- Awareness creation to fishers on management of income.
- Improved fisheries data collection for decision making.
- Invest in fish farming to expand fish production, improve the marketing of the fish, provide capacity building for fisher communities in production technologies."

## Madagascar

"To ensure a better return on fishing (a fairer fish price between fisher, collector, and consumer)."

"To support the fisheries actors along the SSF value chain in terms of capacity building and more local development, through provision of equipment and materials for their respective activities, of small-infrastructure (for fish conservation, commercialization...), improvement of the EAF and co-management approach."

"Less exportation of halieutic resources and more fish for the national population."

"Combat IUU fishing."

"1. Reduce post-harvest loss: reduction of physical loss, reduction of quality loss, reduction of loss from market forces.

2. Increase of biomass of target species by reducing the use of destructive fishing gears, and reducing the landing of juveniles."

"Capacity building (product processing and conservation)."

"The value chain must be improved and developed to avoid losses; fishermen must have alternative activities during periods of closed fishing."

## Mauritius

Provide incentives, empower them, provide training, upgrade fishing techniques and fish preservation for better market.

## Mozambique



"Value addition to fisheries products, and direct access to better markets is key to improve the living conditions of fisher folks."

"To reduce pressure on the resources, other alternatives such as agriculture, mangrove aquaculture, poultry and others, can be the solution to diversity the source of income of people. Investments and training must be made in the coastal areas, especially in intensive labour activities."

"Financial grants to strengthen the value chain, and local capacity building."

"Value retention of income. Often times fish sold out of the community does not mean the money stays in the community; this needs to be changed by promoting value retention initiatives."

"A strategy for social and attitude change must be designed and implemented."

### **Tanzania**

"Currently, the socio-economic situation of small-scale fishers in fishing communities in Tanzania is negatively impacted by factors including: inadequate capital associated with lack of credit schemes; low levels of technology; flaws in marketing linkages; and high post-harvest loss especially for those targeting small pelagic fish such as the anchovy. Therefore, rational intervention should include: creation of microcredit schemes; provision of effective extension service through Community-Based Trainers / change agents; and assisting them in establishing marketing-based cooperatives for effective market linkages and accessibility."

"The socio-economic status can be improved through provision of micro-credit schemes based on Grameen Bank model such as Village Community Banks (VICOBA). So part of the resource rent can be used as seed money for establishing the schemes."

### **Seychelles**

"Improved infrastructure; sustainable financing mechanisms (soft loans); capacity building, including business management for fishers."

## **5.6 Small-scale fisheries**

### **17. What interactions do industrial and small-scale fisheries have with one another?**

#### **Comoros**

"Very limited interaction. Because industrial fisheries are foreign fleets operating in the EEZ of Comoros. And currently the agreement between European Union and Comoros fisheries sector is stopped."

#### **Kenya**

"Some conflicts over crustacea fishing gear from industrial fishing vessels damaging the seabed for other small-scale fisheries resource users."

- “They have overlapping areas of operation/ interest.
- They are managed by the same governance bodies.
- Targeting similar species.
- Sharing of fishing grounds.
- Interaction in Kenya is minimal.”

### **Madagascar**

“They both impact on the sustainability of the resource.”

“Sometimes they target the same fishing areas and the same fish species and stock (e.g., shallow-water shrimp).”

“Industrial fisheries are programming the funding of socio economical activities for the benefits of the local small-scale fisheries sector.”

“Conflict due to the overlap of fishing zones; collaboration to share some by-catch and discard catch from industrial fishers.”

“While they can overlap through exploiting the same zones, and consequently the same marine resources, the management and the governance are completely different.”

“Respect for fishing zones, respect for working conditions (authorized fishing gear, sanitary measures, security measures, fishing quota, etc.).”

### **Mauritius**

Fishing grounds and market, but in the Mauritian case the small-scale fishery is limited to FAD fishery which is within 10 nautical miles from the mainland, while the industrial fisheries takes place in the high seas beyond the mentioned area.

### **Mozambique**

“Some of the important fish stocks are shared among the different sub-sectors (industrial and small scale) – e.g., shallow water shrimp, demersal and large pelagic fish.”

“Currently there are conflicts resulting in competition for space and fisheries resources. Artisanal fishermen have no limits on where they can go. They reduce the space for the industrial fleet to work normally, and they also abandon their fishing gears in the sea causing vessel breakdowns.”

“They fish in the same areas and on the same resources.”

“There are different fishing zones reserved for small-scale fisheries and for industrial. Beyond 3 nautical mile for small-scale, with the industrial tuna fishery beyond 12 nautical miles. Subsistence fishing can occur out to ½ nautical mile, with simple gillnets, maximum of 2 traps and maximum of 3 hooks on hand lines, with a maximum capture 5 kg/day.

In general, the private sector complains about low fishing yields, difficulties in accessing markets, high production costs, and high fishing license fees.”

“With regards the fisheries law of Mozambique, sea fishing regulations, fishing rights, and fishing licensing regulations, the industrial fishing sector consciously implement these. But management of fishing communities needs to be standardized - their way of fishing will damage the resource, especially due to the use of illegal nets.

Products and fishing zones are different, complementary, and make full use of resources.”

**Tanzania**

"Tanzania is essentially a small-scale fisheries country, with the sub-sector generating over 98% of fish production in the country. This figure excludes industrial fishing in the Exclusive Economic Zone whose fish is transshipped to international markets. At the moment, a small fleet of about 10 shrimp trawlers is the only industrial or semi-industrial-scale fishery in the country. There is some conflict between these trawlers and small-scale shrimp fishers, but the situation is being harmonized through the involvement of both parties in developing the shrimp fishery management plan. On the other hand, much of high value fishery products such as octopus, shrimp, lobster and others, are harvested by small-scale fishers and sold to industrial processing plants for processing and exportation, and thus creating a symbiotic relationship."

**Seychelles**

"Moderate. Different fishing zones."

**18. What should small-scale fishers put in place to properly enter the commercial private sector?**

**Comoros**

"Need a progressive plan, over 30 years."

"Have points of sale for their products or have regional or international bilateral cooperation."

**Kenya**

"With capacity building want to close gaps to move to semi-industrial fishing.

Moving slowly. Nationals have licenses, but use Chinese vessels."

- "They should form cooperative societies to enable them to bargain for recognition and access loans and incentives.
- Invest in training on management and financial literacy.
- Invest in gears and vessels to venture into offshore fisheries.
- Value addition and quality control.
- All these should be done after evaluation of the stocks to ensure fishing intensification does not lead to fisheries collapse.
- Strengthen BMUs membership.
- Trained on Small and Medium Enterprises."

**Madagascar**

"Better organization through the co-management approach.

Improvement of the quality of the fish products from the capture through the post-capture activities.

Improvement of the commercialization strategy among the co-management associations."

"Formal registration with the Ministry in charge of Fisheries and that of Commerce."

"Legally-created structure (co-op)."

"1. Clear process and mechanism allowing fishers to structure at all levels (local, regional and national) by taking into account the context."

2. Training on value chain and transformation."

3. As small-scale fishers are mostly located in isolated areas, collectors working in such area should be promoted."

"A well-organized structure at each link of the value chain."

Capacity development training including at sea safety, running a business, and seafood safety sanitary requirements; and socio-economic research including: business cost study, study of family needs (health, retirement, children's education ...), and renewal of fishing equipment."

#### **Mauritius**

Cooperatives, group together.

#### **Mozambique**

"Decrease post-harvest losses, improve the productivity of fishing gear, decrease the fishing effort on some species."

"Investment in businesses as cooperatives."

"Technically there is no problem, mainly fishing communities must be professionally managed."

"Have points of sale for their products or have regional or international bilateral cooperation."

#### **Tanzania**

"Re-organization is the single most important thing which small-scale fishers have to do in order to commercialise their enterprises. United, through strong Fisher-Based Organizations (FBOs), they would be able to negotiate with those who matter in their business sphere, such as government agencies, local and international traders for marketing linkages, and potential financiers. To get there they would need to be assisted, especially in building their business / entrepreneurial skills to meet the challenges of engaging key players in the industry."

#### **Seychelles**

"Proper financing sources."

### **19. Is sustainable development important to the small-scale sector, and if yes, how can this be encouraged?**

#### **Comoros**

"Sustainable development in fisheries means that we should fish and our coming generation also. But for the small-scale fisheries in Comoros, the fisherman apply many unsuitable practices (method for capture the fish) and will undermine the value of sustainability."

"Sustainable development is a very important aspect, but need time to be understood."

"Through support of the fisheries communities (training and knowledge on the sustainability)."

**Kenya**

"Can be improved through training and investment."

"It is important since it is a major employer in developing countries:

- This can be achieved through well organised and structured associations by small-scale fishers.
- Train community on conservation approaches in resource extraction.
- Train fisheries on an ecosystem approach to fisheries.
- Avail funding for additional livelihood options.
- Use of subsidies such as gear exchange programs. This can be encouraged by highlighting the benefits and sharing information from early adaptors of sustainable development initiatives.
- Care must be taken in providing gears that does not lead to overfishing and that the target fishers are actually the ones using the gears.
- Development of co-management initiatives.
- It can be encouraged through introduction of access control such as TAC, IAQ, MSY, MER and advocating for sustainable development as opposed to economic growth."

**Madagascar**

"Sustainable development is very important to the small-scale fisheries sector, as they rely heavily on this activity:

- "They are somewhat aware of the need for sustainable management of natural resources. A campaign of sensitization would be of great use to encourage this matter."
- "Bring in more political willingness."
- "Implementation of the voluntary guidelines for securing sustainable small-scale fisheries in the context of food security and poverty eradication (FAO SSF Guidelines)."
- "By modernisation of activity of small-scale fishery (fishing gear, fishing boats, ...)."
- "Positively impacting on their incomes."
- "Show concrete examples of success obtained elsewhere (sharing of good practices, exchange visits, ....)."
- Sustainable development should be known and understood by all stakeholders, especially professional fishermen; to encourage them, model fishing areas should be created which will serve as a laboratory."

**Mauritius**

By encouraging responsible fisheries through training and sensitization and educating new fishers by using the veterans' experiences. Provide eco-friendly fishing gear and reduce destructive fishing techniques.

**Mozambique**

"Sustainable development is particularly important for small scale fisheries, as communities are the ones affected by poor management. Industrial fisheries / operators can easily move

to other fisheries and/or sectors, if a fishery collapses, while coastal communities, in most cases don't have many alternatives. Good management = better sustainability."

"The commercial industry as well as artisanal fisherman looks for immediate benefits, and when restrictive measures such as closed seasons are implemented, they complain about the lack of alternatives for survival."

"Co-management in terms of encouraging sustainability is very important; making sure the resource users are part of the process, and they receive much-needed capacity development."

"Sustainable development can come through the implementation of projects with actions aimed at the development of the country, where they must also include local management plans focused on the management of resources in small-scale fisheries."

### **Tanzania**

"The importance of sustainable development to the small-scale fisheries sector cannot be overemphasized. This can be achieved only when the fisheries resources that they rely on are harvested sustainably. Hence, the former can be encouraged through provision of environmental education for fishers and other fishing community members. The main objective should be to impart knowledge, skills and values regarding the interplay between ecology, economics and social dimensions."

"The sustainable development concept is understood except that the majority of small-scale operators have a high discount rate, they need something today to survive, and thus it becomes rather difficult to think of tomorrow in the absence of an alternative source of livelihood."

### **Seychelles**

"Sustainable development is very important to the small-scale fisheries sector, and consequently there is the need to encourage responsible and sustainable practices."

## **20. What place does small-scale fishing occupy in Government's fisheries management plans / structures?**

### **Comoros**

"The Comorian fisheries sector is totally small-scale fishing; therefore, it has a very important place."

### **Kenya**

"Most plans cater for the small-scale sector, but with the fisheries review and new Act, Government is now focusing on commercialisation of fisheries, and shifting towards fishing rights."

- "They are the core stakeholders (Beach Management Units).
- Small-scale fishing is yet to receive full support from the Government in terms of developing fisheries management plans. Most of the initiatives have been donor funded.



- The co-management structures mainly address the needs of small-scale fishing. Capacity building programs are aimed at strengthen small-scale fishing. "

### **Madagascar**

"SSF is taken into consideration in the Madagascar Government's fisheries management plans, and the Ministry in charge of fisheries has a Department specifically in charge of SSF in the country."

"The SWIOFish 2 Project, funded by the World Bank, aims at strengthening the small-scale fishing sector in several zones."

"SSF holds a very important place as it represents a huge part of total fisheries."

"Fisheries management plans are mainly structured to manage small-scale fishing. In Madagascar legislation, the management transfer of marine resources to fisher associations depends on this management plan. Besides, there is a clear division between the management of small-scale fisheries and that of industrial fisheries. For instance, small-scale fishers are not members of the steering committee in charge of the management of industrial fisheries; however, there is a representative of industrial fisheries in the steering committee of the Fisheries Management Plan."

### **Mauritius**

In Mauritius small-scale fisheries is important, and the fishers community form an integral part in the development of the fisheries sector.

### **Mozambique**

"With regards small-scale fisheries, the government is trying to do something by building markets and other infrastructures, but is failing because they are implementing it from a top down approach. What they should do is listen to the communities on what and how they want this kind of investment. They must respect local dynamics, culture and social organization of each particular zone, if they want to succeed."

"Small-scale fisheries are top priority, Government focusing on co-management."

### **Tanzania**

"The Tanzania government places small-scale fisheries as a high priority, recognising the sector to be the main source of cheap animal protein to the rapidly growing human population in the country. The government has always been devising different programmes and projects aimed at developing small-scale fisheries in the country. With regard to fisheries management plans, great effort has been made, including assisting fishers to get organized through establishment of Beach Management Units (BMUs). Also, involvement and consultation between central, local and village governments have become the order of the day when it comes to policy formulation, setting of rules and regulations, as well as developing fisheries management plans. For example, one cannot get a fishing license if he has not been approved by the local BMU."

"Small-scale fishers are involved in the process of developing management plans and participating in committees responsible for monitoring progress during implementation. However, the question of representation is yet to be perfected.

## **Seychelles**

"Small-scale fisheries hold a very important place, as it is essential for guaranteed food security and socio-economic development in the Seychelles."

### **21. Is Government moving towards rights-based/ecosystem-based management to secure sustainable access for small-scale and artisanal fishers?**

## **Comoros**

"Very good point. This needs to be put in place to reinforce the CNCSP in order to effectively implement the laws and regulations."

## **Kenya**

"Regulations are being implemented to uplift the small-scale sector from where they are - introducing rights-based fisheries management, provision for capacity building, aimed at moving away from foreign domination of the commercial fishing industry."

- "The government in consultation with the stakeholders is currently developing Marine Access Rights Regulations intended to promote rights-based access and sustainable utilization of fisheries resources.
- Establishing devolved management frameworks such as BMUs which need to be supported to be fully functional.
- Advocating an ecosystem approach to small scale fishery; but impact not yet felt.
- Establishment of the BMU regulations, the next step is to ensure that all BMU have co-management plans that are endorsed and supported via financing to ensure monitoring and other management activities. Fishers will not have the funds up front to start management of their BMUs."

## **Madagascar**

"Not sufficiently yet."

"The SWIOFish 2 Project is planning to elaborate the fishing management plan of small-scale fisheries in all coastal regions of Madagascar".

"Locally Managed Marine Areas (LMMA) and Marine Protected Areas (MPAs) are in place for the small-scale fisheries sector".

"In Madagascar the PAP Fisheries Management Plan is ecosystem-based and a rights-based approach".

"Right-based management is progressing. For the Ministry of fisheries in Madagascar, the rights of small-scale fishers are summarized through the fishing card. However, this card is not specifically associated to management measures. One main progress is that the 2-nautical miles-exclusive zone for small-scale fishing was adopted this year by the Ministry of fisheries".

### **Mauritius**

The Government has taken and is implementing several management measures gearing towards the protection and conservation of the marine ecosystems. Most of the anthropogenic-induced impacts are gradually being addressed at the national level through Environmental Impact Assessment, inter-ministerial committees, policies, regulations and sensitisation campaigns. Furthermore, since the 1990's, in order to reduce fishing pressure in the lagoon, the Government has progressively formulated, reviewed and executing several strategies like the proclamation and management of marine protected areas, promoting Fish Aggregating Devices – FAD fishery, closed seasons for net and octopus' fisheries. Sensitisation and capacity building of coastal communities in maintenance of coral nurseries and coral plantation, are being promoted for a potential workforce in the reef restoration, protection and conservation programme.

### **Mozambique**

"The recent adopted Maritime Fisheries Regulations (REPMAR) which brings some innovation with a view to improving management."

"Community management fisheries areas have been established by law, and ensure the involvement and participations of all stakeholders."

### **Tanzania**

"There are efforts being made towards ecosystem-based management in Tanzania. Initiatives such as Integrated Coastal Resource Management (ICRM) and establishment of Collaborative Fisheries Management Areas (CFMAs) illustrates government zeal towards ecosystem-based management for improved resource use."

### **Seychelles**

"The ecosystem-based approach to fisheries management has already been implemented. Right-based fisheries management will be implemented in a phased approach."

## **22. Across SWIO countries, what common management issues in marine small-scale fisheries can be tackled and regulated?**

### **Comoros**

"-Sharing IUU fishing vessels data in the region through collaboration (for example: PRSP)."

"-Data collection and stock assessment."

"Sharing information with each other."

### **Kenya**

"Prawns is the only management plan that has been successful in Kenya. Knowledge exchange between countries and local communities is required."

- “Gear size, gear type and restrictions.
- Licenses to limit entry.
- Temporary closures of some areas for specific purpose (e.g., spawning aggregations).
- Stakeholder involvement.
- Funding for implementing plans.
- Buy in from fishers.
- Transboundary regulations.
- Illegal, unreported and unregulated fishing.
- Monitoring, surveillance and enforcement.
- Migrant fishing.
- Illegal/destructive fishing gears.
- Open access nature.
- Overfishing in one nation and exporting in another e.g., sea cucumbers and shark fins.”

### **Madagascar**

“All can, if all stakeholders are willing to do so.”

“Need to focus on:

- High level of fishing effort leading to resources overexploitation.
- Destruction of the coastal and marine ecosystem on which the fisheries productivity depends.
- Weak level of implementation of fisheries management plans.”

“Even though funds from the World Bank are available, issues regarding the disbursement procedure heavily impede the implementation of planned activities.”

“Move away from open access, respect fishing closures, tackle IUU fishing, regulate fishing areas and fishing gear, and focus on developing good markets and marketing.”

### **Mauritius**

Data collection and catch estimation for trend analysis and small-scale fisheries sustainability. Gear control and reduction in destructive fishing methods.

### **Mozambique**

“Several challenges have already been identified by the SWIOFC Scientific Committee over the years i.e., management of sea cucumber, octopus, shallow water shrimp, small pelagic and demersal working group. However, as an advisory body SWIOFC prioritizes information and knowledge sharing, but not regulations.”

“Fishing rights; management measures including regulations; fish markets; incentives /subsidies; improving communication connections between stakeholders.”

### **Tanzania**

“Common management issues that can be tackled across SWIO countries are: collection of data and information flow systems; and strengthening of fisheries Monitoring, Control and Surveillance (MCS).”

“Prohibition of use of illegal fishing gears, and methods and harvesting and processing of immature fish.

Institution and operationalization of management plans, cost-effective MCS Plans, and financing mechanisms for resource management.”

### **Seychelles**

“Limited resources and capacity for research and MCS.

Stakeholder lack of empowerment resulting in limited engagement.

High dependence on donor funding.”

## **23. What suggestions do you have for achieving a marine small-scale sustainable and inclusive rehabilitation strategy?**

### **Comoros**

“Higher consideration of the surveillance and control aspect.”

“Capacity building, including financial and technical support”.

### **Kenya**

1. Information research to give status.
2. Stakeholder engagement for ownership of process.
3. Tools to maintain small-scale marine fisheries – marine parks; Kenya Wildlife Service; Community Conservation Areas / Plans e.g., breeding grounds.”

- “Development of various fishery management plans to guide resource exploitation.
- Involve all key stakeholders in the design and implementation of the strategy.
- Secure funding.
- Capacity building the target community; direct support to fishers.
- Open new markets.
- Stakeholder participation and involvement.
- Free, prior and informed consent.
- Establishment of fisheries co-management areas.
- Establishment of Locally Managed Marine Areas.

- Establishment of joint Monitoring, Control and Surveillance (MCS).
- Capacity building for BMUs to strengthen their participation in co-management.
- Training on monitoring, MCS, data collection.
- Review or update stock status for target species/fishery to review the management plans.

For sustainability research has recommended the following management measures:

- Fish biomass targets for various management types are recommended as follows; unfished reefs 1,200 kg/ha and between 600 kg/ha to 300 kg/ha in fished reefs.
- At the current fish stock biomass of 20 tons/km<sup>2</sup> the fishers can fish 17 kg/km<sup>2</sup> in a day. However, if fish stocks are 50 tons/km<sup>2</sup> fishers can fish 27 kg/km<sup>2</sup> per day.
- At the current fish stocks of 20 tons/km<sup>2</sup> only 5 fishers per square kilometer are recommended. However, if stocks are at 50 tons/km<sup>2</sup> up to 10 fishers per square kilometer are recommended.
- In order to have co-existence between fishers using different fishing gears, 10cm (~3.5 inch) mesh size nets are recommended.
- Gated traps are recommended to reduce bycatch and increase catch value."

## **Madagascar**

- "- Build the capacity of all stakeholders (public, private) involved in the SSF in terms of EAF, rights-based management and co-management approaches
- Promote and support the implementation of the FAO SSF guidelines
- Promote regional co-operation."

"The involvement of all stakeholders from elaboration of the strategy to its implementation."

"1. Management based on the following points: (a) define fisheries goals; (b) identify a strategy to achieve fisheries goals; (c) consult with stakeholders around the strategy to achieve fisheries goals; (d) monitor and evaluate the implementation of the defined strategy in partnership with stakeholders; and (e) convey reports to the government and stakeholders about the condition of fisheries.

2. Co-Management. There should be co-management based on the following principles: inclusive of an active government; holistic approach; empowerment of fishers in the supply chain; rights-based management; democratic and inclusive in co-management; monitoring control and surveillance authority; collective, focused, and clear decision-making process and structure.

3. Governance based on the following principles: transparency (clear governing system with effective mechanism to share information); coordinated and participatory; defined and legitimate governance structures and institutions; effective compliance-building mechanisms; governance system able to respond to adaptive management processes; equal distribution of the benefits of management."



"Draw up an inventory: typology of actors; typology of exploited resources; and identify exploitable resources."

"The local management is very effective like the MIHARI network in Madagascar, where the recognition by the State of this approach must be effective and legal texts must be established by zone."

### **Mauritius**

There should be more dialogue, and a consultative approach, make the fishers community feel they are an important part of the economy, and that their contributions must be valued. Provide incentives to relinquish destructive modes of fishing, by educating them on the negative impacts on the ecosystem and long-term fish production. Sensitise them and reward them for good fishing practice.

### **Mozambique**

"Community managed fishing access areas."

### **Tanzania**

"A sustainable and inclusive rehabilitation strategy for small-scale marine fisheries will only be successful if fisher-based organizations are strengthened. The starting point should be placed on profiling fishers for effective proportional representation of the different fisher groups. This approach would ensure inclusiveness of all key players in policy making as well as in planning and implementation of resource management plans."

- "1. Recognizing and empowering small-scale artisanal fishers, fish farmers and fish workers through responsible and sustainable use of fisheries resources.
2. Sensitization/extension services for change of attitude of some fishers.
3. Involvement of stakeholders in formulation of legislation and presence of enforceable legislation.
  - a) Constituencies building for paradigm shift.
  - b) Establishment of district Integrated Coastal Management working groups.
  - c) Profiling of fishers for proportional representation.
  - d) Capacity building including training.
  - e) Ecosystem-based zoning.
  - f) Participatory development of Area Specific Management Plans.
  - g) Operationalization of management plans.

### **Seychelles**

"Address the issues of: limited resources and capacity for research and MCS; lack of stakeholder empowerment resulting in limited engagement; high dependence on donor funding; and address overcapacity in the small-scale fishery sector through an alternative livelihood programme, and buyback mechanism."

## 5.7 Value chain strengthening

### **24. What are the causes of most post-harvest losses?**

#### **Comoros**

"Lack of adequate infrastructures for conservation (from energy to materials), and lack of training and capacity building on how to conserve the fish."

#### **Kenya**

"Lack of basic infrastructure, including open air boats. Weather also contributes. Limited finances. Lack of cooperatives due to them collapsing many years back. Government now investing in infrastructure at landing sites and at markets e.g., complex in Mombasa including ice-making machines."

- "Poor fish handling practices, including hygiene.
- Lack of readily available fish preservation facilities by most small-scale fisheries.
- Poor market linkages and support.
- Scattered fish landing sites away from the facility or potential consumers.
- Poor road network.
- Low capacity on post-harvest processing and value addition.
- Inadequate capital to access high value markets e.g., hotels.
- Social issues among women e.g., mobility and low level of education
- Lack of storage facilities & post-harvest infrastructure
- Unaffordable electricity bills.
- Lack of trainings."

#### **Madagascar**

"- Weak technical capacity of the actors of the post-harvest activities (women).  
- Lack of relevant knowledge, technical skills and training in fish processing and equipment including small infrastructure (cold infrastructure etc.) to avoid post-harvest losses."

"Lack of electricity power in remote places, and lack of ice."

- "1. The use of non-selective fishing gears or gears targeting juveniles. This will have an impact on the price or on the landings.
2. High post-harvest mortality rate due to inappropriate techniques on storage, transport.
3. Inappropriate techniques for the transformation of the fish.
4. Problem of market access.
5. Lack of infrastructure to keep the cold-chain."

“Bad catches (no respect of commercial sizes), bad preservation, bad transport and packaging.”

### **Mauritius**

Given the fact that the artisanal fish catch is limited, there is hardly any post-harvest loss due to high demand for fresh fish - the demand exceeds local production.

### **Mozambique**

“Lack of infrastructures, i.e., electricity, clean water, roads, processing inputs (salt, ice, etc.)”

“As I said before, lack of infrastructures and knowledge of how to handle and process their products.”

“Lack of ice; lack of accommodation conditions on board fishing vessels with ice; lack of locations close to the vessel offloading points, of washing stations and ice accommodation.”

### **Tanzania**

“There are several major causes of post-harvest fish losses, it includes the following:

- i) perishable nature of fish in the midst of inefficient preservation and storage technology;
- ii) low level of technology, for example the challenge of drying anchovies during rainy season;
- iii) unfavourable marketing environment;
- iv) inadequate market infrastructure; and
- v) bulk production, especially of small pelagic fish, which leads to oversupplying the market.”

“The root cause is knowledge, which goes together with markets and profits to be incurred when one has to invest a lot in targeting high quality fisheries products. This depends on the type of fishery. For small pelagic (sardines) catches, profits are low, as compared to tuna or Nile perch which has a ready market in fish processing industries.”

### **Seychelles**

“Lack of proper preservations facilities. High reliance of fresh fish on ice. More facilities required closer to fishing grounds.”

## 5.8 Blue Economy

### **25. How effectively are environmental targets being focused on such as the UNEP Nairobi Convention covering climate change and bio-diversity loss?**

#### **Comoros**

"Lack of environmental consideration in co-management plans – do not consider the climate change issue and biodiversity loss."

"For the Marine Parks, there is high consideration".

"-Many efforts are needed for effective environmental management."

#### **Kenya**

"Kenya Marine and Fisheries Research Institute is focusing on mangrove rehabilitation, villages getting US\$2,000 per month to invest, for communities to benefit through investing in conservation."

- "Highly focused, however, there is a limited understanding on the reality of biodiversity loss and climate change by the fisher community and other key stakeholders at the community level. There is need of designing programs that address such on a regional and local scale, benefiting fisher communities directly.
- There is not much focus on environment targets except protection of some critical habitats such as coral reefs, mangroves and seagrasses. However, across the region less than 8% of coastal and marine areas are protected. Studies have shown some areas including the TBCA between Kenya and Tanzania, and the area between northern Tanzania and Southern Mozambique are climate refugia and these areas are recommended for protection.
- Beach erosion is becoming a problem in Kipini and Ngomeni north coast Kenya, with little intervention.
- Perennial floods and droughts in the lower Tana River Delta occur without a permanent solution. Drying of some lakes e.g., Lake Kenyatta in Lamu County.

#### **Madagascar**

"It depends on where the funding is going."

"Through the formulation and implementation of local Climate adaptation plan, and the formulation and implementation of degraded and critical areas restoration plans."

"The UNEP Nairobi Convention and the recently formed programme WIO SAP do not yet have much impact or recognition in the Fishery sector."

"- In its letter of blue policy, the Ministry in charge of fisheries in Madagascar promotes the preservation of marine resources with regards to their use. The problem of this document is that there is no clear implementation plan.

- For the Ministry of Environment, there is the national policy of environment for the sustainable development. This document focuses more on the preservation of biodiversity."

Include in the basic education programme, the conservation of biodiversity, the restoration of mangroves, all prohibitions related to the use of natural wood (charcoal, construction, etc.)."

### **Mauritius**

The Climate Change Act 2020 (Act No. 11 of 2020). The main object of this ACT is to implement, with a view to addressing the adverse effects of climate change and developing Mauritius into a greener economy, the obligations of Mauritius under the United Nations Framework Convention on Climate Change, the Kyoto Protocol, the Paris Agreement and any other related conventions.

### **Mozambique**

"Mozambique have shown commitment to rehabilitation of critical habitats, especially mangroves. Several initiatives are being led by the Government and civil society to restore mangrove forests along the coastline of Mozambique."

"Habitat conservation and restoration; no-take reserves and other MPAs are being planned (including a mangrove strategy and other initiatives)."

### **Tanzania**

"Mitigation of climate change and the issue of biodiversity have become a major preoccupation of the Tanzania government. The speech made by H.E the President of Tanzania to the COP26 (2021 United Nations Climate Change Conference) is a clear testimony of the determination to play a part in global initiatives on environmental protection and climate change. Similarly, the government has trained increased number of marine and fisheries scientists, in order to build capacity of institutions responsible for training and research. This, in order to improve data and information flow systems for improved ocean health, and to enhance the contribution of marine biodiversity to the development of the country. For example, the Government has banned importation and use of plastic bags as part of efforts to reduce waste generation and promotion of the use of materials that can be recycled. All these efforts and many others, are aimed at fulfilling global environmental targets and national objectives."

### **Seychelles**

"May provide alternative livelihood to address overcapacity in the fisheries sector."

**26. The Blue Economy has sustainable development targets of: economic efficiency; social justice; and environmental integrity. Is this benefiting the fisheries sector?**

**Comoros**

“The blue economy in Comoros still a slogan, there is no yet concrete realisation”.

“Yes, the fisheries sector will benefit.”

**Kenya**

“Avoiding activities that erode the bottom line of sustainable development. Communities participating in rehabilitation of coral reefs, stopping destructive fishing practices, taking into account the three elements of economic efficiency; social justice; and environmental integrity.”

- “It would potentially benefit the fisheries sector but the common fisherman as well as the natural environment are yet to experience the targets.
- Blue Economy is a very attractive concept for WIO nations, as they see potential for national development. Some countries have started marine spatial planning (MSP), an inclusive planning approach that is supposed to allow all relevant stakeholders to be adequately involved, that will hopefully guide Blue Economy growth.”

**Madagascar**

“If truly implemented, yes, it is benefitting the fisheries sector.”

“The Ministry in charge of fisheries in Madagascar has recently integrated the notion of Blue Economy inside its structure, now being the Ministry of Fisheries and Blue Economy. The policy is not yet clear, and therefore, stakeholders are yet to witness how it could benefit the fisheries sector.”

“It depends on what we mean by social justice because as soon as the community is in a state of increased poverty how can one speak of social justice? The roads are damaged, no hospital, no security, no school ... this is why, as mentioned above, there is the need to integrate the concepts of health, retirement, education, renewal of equipment, in the calculation of selling price of fish ....”

**Mauritius**

Mauritius is on the verge of diversifying its oceanic resource utilization with due focus in ecological socio-economic benefits which include the fisheries sector.

**Mozambique**

“Mozambique is still in an early stage of development of the Blue Economy Strategy. Hence, it’s still premature to assess the benefits for the fisheries sector.”



**Tanzania**

"The Blue Economy (BE) is still new to the majority of people in Tanzania, and thus there is the need for awareness raising initiatives. Nevertheless, the campaign for BE is gaining momentum, with sectors such as: gas and oil exploration; marine transportation; tourism; mining; energy; and biotechnology; exerting much pressure on the fisheries sector. Hence, there is an urgent need for taking initiatives to make the fishing industry become more visible among policy makers. In other words, the interplay between economics, social and environmental integrity will only work in favour of the fisheries sector once increased numbers of decision-makers get to internalize the impacts of externalities exerted by the other sectors. Otherwise, developments such as pollution, environmental degradation and other such externalities will most likely affect marine productivity including fisheries production, and thus an urgent need for re-organization and consolidation of data and information (e.g., Ocean Health Index – OHI) to inform the integrated policy – making process."

**Seychelles**

"Yes. May provide alternative livelihood to address overcapacity in the fisheries sector."

## **5.9 Sustainable Development Reference System (SDRS)**

**27. A fisheries policy and management framework, needs inter-disciplinary expertise and multiple data sources through building intra and inter-agency linkages. What are the benefits and challenges of establishing a Sustainable Development Reference System (SDRS) at national and regional levels?**

**Comoros**

"National level: will help Comoros to identify the way to sustainable fisheries development, through stock assessment. For example, fisheries data, statistic and other data are very rare, so, through the SDRS the country could initiate on this issue.

Regional: many countries in the region are well placed in term of data collection, so the exchange among those country will have a positive aspect."

"This will be very beneficial for Comoros, because data collection has not been effectively undertaken and though SDRS we could generate effective fisheries data together with analysis (stock assessment data, coral reef degradation data...)."

"Possibility of assessment the fisheries policy and management plan."

## Kenya

"Key relevant institutions include: National Planning and Kenya Bureau of Statistics – building these links slowly.

The value of fisheries has not been determined. Need to look beyond the beach price to value chain benefits and ultimately the GDP.

Also take into consideration IUU fishing."

### "Benefits

- Validity of data is assured.
- Key for sustainable fisheries management.
- Key formulation and design of cross-border projects.
- Issues can be captured at regional and national level.
- Provides a platform for cross referencing and knowledge transfer at national and regional levels.
- Creates a sense of ownership for all involved parties.

### Challenges

- Financial resource constraints.
- Lack of coordination strategy by experts.
- Inconsistency primary data collection.
- High cost and time intensive.
- Skills and capacity are lacking."

## Madagascar

"Benefits: availability of expertise and data from different sectors and sources that can be exploited for the sustainability of the fisheries sector (management plans formulation etc.)

Challenges: Gathering of the data from different sources".

As an inter-disciplinary team will work on the documents, it is expected to reach a highly rich output. On the other hand, finding a common ground on which element to emphasize or which sector/field/agenda to be on top of the others, could be highly problematic."

"Madagascar has joined the Fisheries Transparency Initiative (FiTI)."

"Benefits: Better identification of objectives and indicators (baseline data).

There will be more synergy in the implementation of data collection and sharing.

Challenges: How to achieve transdisciplinary expertise."

"You have to know how to use data effectively: can be indicative, decision-making, but above all in the overall policy of a country. You have to be able to integrate them into economic and environmental objectives."

## **Mauritius**

Through a consultative and collaborative approach, the Government has set up a National Coral Reef Network which is an integral platform to the scientific, technical and fishermen communities,' academia, Non-Government Organisations (NGOs) and private sector to discuss reef related issues and challenges, and to come up with the most appropriate remedial actions to better protect and conserve marine biodiversity.

## **Mozambique**

"An intersectoral approach is key for sustainable development, especially for fisheries and environmental management. Formal and informal platforms / networks are important to bring both fisheries and environment experts to work together."

"It's a dream without a strong fisheries administration in place locally, and a structured system for collecting statistical information on the ground. Boosting inter-disciplinarity at the national level is the priority"

## **Tanzania**

"The signs of resource overexploitation, especially of important fish stocks, modifications of ecosystems, significant economic losses, and conflicts in resource management and fish trade are very clear. The trend is threatening the long-term sustainability of fisheries and the contribution of fisheries to food supply. Therefore, it is recommended that new approaches to fisheries management embracing conservation and environmental, as well as social and economic considerations, are urgently needed. Hence, the need for establishing the Sustainable Development Reference System (SDRS) to enhance application of the interplay between ecology, economics, and the social dimension in resource management and sustainable livelihood. The major benefit of SDRS is its ecosystem rather than sector-based approach. On the other hand, establishing multi-task working groups is both a time and financially demanding process.

Its operationalization could be complex. Perhaps, the best thing would be to start at the national level, before expansion to the regional level."

## **Seychelles**

"A lack of coherence and collaboration amongst agencies at national level.

At international level, duplication of effort and lack of continuity from one project to another, or even brain drained as personnel move to greener pastures."

## **5.10 Building synergies and complementarity and subsidiarity of partner countries through regional co-operation**

### **28. What are the key fisheries management achievements and works in progress of different regional and national programmes?**

#### **Comoros**

"For national programmes, co-management should be encouraged."

For regional programmes, projects such as PRSP should be strengthen."

"The Regional Plan for Control and Surveillance (PRSP) of fisheries resources in the region is a very important achievement and needs support."

"Regional collaboration".

#### **Kenya**

"Tuna national strategy. Transboundary strategies guide the exploitation of transboundary fisheries."

- "Good fisheries management plans have been formulated and financed.
- Conscious of transboundary management of resources.
- Regional integration has been enhanced.
- Development of the Kenya-Tanzania transboundary conservation area.
- Discussions on fisheries management of shared stocks (Kenya & Tanzania).
- Improved fisheries regulation compliance.
- Improved fisheries data collection for management decisions.
- Establishment of fisheries co-management areas and plans."

#### **Madagascar**

"TGRH and TGRN in Madagascar, as well as the PAP guide."

"Compare the results of the SWIOFC, IOC and IOTC programmes, SWIOFish (The World Bank), and the Nansen-Programme (FAO)."

"Coastal fisheries management plans are in process for all coastal regions of Madagascar, The "Plan Directeur de la Pêche et de l'Aquaculture", a policy plan on which Fisheries and Aquaculture should rely upon will be also elaborated soon."

## **Mauritius**

The Government has taken and is implementing several management measures geared towards the protection and conservation of the marine ecosystems. Most of the anthropogenic-induced impacts are gradually being addressed at the national level through Environmental Impact Assessment, inter-ministerial committees, policies, regulations and sensitisation campaigns. Furthermore, since the 1990's, in order to reduce fishing pressure in the lagoon, the Government has progressively formulated, reviewed and executing several strategies like the proclamation and management of marine protected areas, promoting Fish Aggregating Devices – FAD fishery, closed seasons for net and octopus' fisheries. Sensitisation and capacity building of coastal communities in maintenance of coral nurseries and coral plantation are being promoted for a potential workforce involved in reef restoration, protection and conservation programme.

In 2020, in order to further strengthen the protection and conservation of octopus, and to make the octopus fishery sustainable, the Government introduced two closed seasons in one-calendar year for fishing of octopus under the Fisheries and Marine Resources (Fishing of Octopus) (Amendment) Regulations 2020 (GN No. 138 of 2020) starting on 15 January and ending on 15 March and the period starting on 15 August to 15 October in a year.

## **Mozambique**

"The SWIOFC - Nairobi Convention Partnership Project focus is to address areas of common concern for both fisheries and environment that can benefit directly from coordinated and mutually reinforcing interventions beyond what could be achieved by isolated interventions within each field. The project is targeting small scale fisheries. SWIOFC is also working on MCS activities through its adopted MTC guidelines."

## **Tanzania**

"Key fisheries management achievements and works in progress of different regional and national programmes are as follows:

- 1) The fact that total fish production has not declined over the past four decades suggest that the fisheries resource management regime is reasonably effective. However, this does not preclude the fact that there is a lot to be done to perfect the system.
- 2) The establishment of Beach Management Units in almost all fishing villages / communities is perhaps the single most important fisheries management achievement that has occurred in the country. Certainly, there is a strong need for building institutional capacity of the BMUs including reviewing organizational structure.
- 3) Initiatives that have been made towards establishment of Collaborative Fisheries Management Areas (CFMA) is a big step forward. This includes initiatives made towards Integrated Coastal Zone Management (ICZM) practices. However, there is much to be done to perfect the management systems.

- 4) High-value fisheries such as the prawn fishery and octopus fishery is closely managed with all management functions exercised such as: management planning; setting rules and regulations for the fisheries; data and information flow; MCS; and most importantly, involvement of fishers through Beach Management Units (BMUs). The introduction of a closure regime on certain reef fisheries is something that gives hope that going forward, stakeholders will easily internalize the benefits of responsible fisheries management practice, and thus make it easier for them to collaborate.
- 5) Effective management interventions have led to improved stock profiling of prawns / shrimp, which in turn allowed for lifting of a ban which was previously imposed on semi-industrial prawn fishing. Today, both small-scale prawn fishers and those that are semi-industrial, are accustomed to adhering to the management plan, including closed season management regime.
- 6) The policy of restricting much of the primary fishing activities to small-scale fishing practices, has helped to keep overcapacity and overfishing slightly at bay, and thus enable small-scale fishers to continue benefiting from available resources.
- 7) Coordinated management efforts at national, local and village government levels, including collaboration with regional programmes such as SmartFish, have enabled the country to eradicate dynamite fishing in coastal fisheries, and thus help to protect coral reefs and species abundance and diversity.
- 8) Collection of fisheries data through mobile phones by incorporating communities/ stakeholders in data collection.
- 9) Involvement of communities in plan implementation through representatives/ committees in Marine Park areas.
- 10) Involvement of communities in awareness raising (school environmental education/ environmental Clubs) especially in Marine Park areas.
- 11) Involvement of Civil Society Organizations (CSO) including NGOs has proved to be one of the most useful techniques for improved service delivery in fishing communities, and thus the approach of engaging NGOs is one of the many achievements.
- 12) Tuna management in the IO region (regional)."

### **Seychelles**

"Building capacities at regional and national level rather than relying heavily on external consultants."

### **29. What types of collaboration by partner country organisations, will avoid duplication of effort and wastage of resources, resulting in a Regional Capacity Development Strategy and Action Plan?**

### **Comoros**

"Bilateral collaboration through talking to each other through workshops, in order to get the planned activities of all the countries".



“-Exchange data and information and programme will play a good role in order to avoid duplication. SWIOFC is helping us in many ways, through data collection and pilot activities”.

“-Sincere collaboration and sharing information.”

### **Kenya**

“Will involve Kenya coming up with a strategy with the IGAD block. Strategy can guide and minimise waste of scarce resources, exchanging information and visiting success stories, bilateral between Kenya and Tanzania conservation areas.

Through a regional co-operation study, complimentary organisations can be incorporated such as: International NGOs – WWF working with Ecofish; Regional Transboundary Conservancies; Nature Conservancy international NGO.”

- “Formation of consortia in designing and implementing projects.
- Funding organizations with grassroots networks with community.
- Government to document initiatives within their area operations by creating MOUs with implementing partners.
- Adoption and harmonisation of common field protocols for similar programmes across countries.
- Building on existing knowledge rather than starting afresh.
- Data sharing agreements.
- Joint co-management initiatives across neighbouring countries for management of shared stocks.
- Joint planning and problems identification.
- Cross-border strategies for addressing common fisheries management challenges such as IUU fishing.

### **Madagascar**

“This has to be identified through more discussion and exchange with regard to communication and information sharing in terms of projects/programme formulation and implementation.”

“Madagascar is vast and the way of communication are derisory (road), it would be necessary to work by zone dedicated to a financing program, direct collaboration with the regions ... Resources are often wasted in 4x4s, fuels, per diems, and the heart of the problem is never solved.”

### **Mauritius**

Consultative approach - there should be a mutual understanding among countries in the region. Countries with similar fisheries activities should be grouped and understand their

partners and work on their weaknesses, strengths and gaps. Come up with lesson learnt and successes and have transfer of skills, and capability building.

### **Mozambique**

“To avoid overlapping, communication is key. It is important that the programmes and workplans are communicated among the organizations and synergies are developed, including cost-sharing.”

“Note that management of tuna and tuna like species fisheries is in development, and resolving issues of open access in Mozambique, can be an area to cooperate. Also, the sea cucumber fishery is complete exploited, where getting regional experience in stock recovering would be of great benefit. The shallow water shrimp fishery can also be included, an export fishery where it is critical to maintain sustainable stock levels, avoiding overexploitation.”

“Potential areas for collaboration under -

ECOFISH project: Small-scale tuna fisheries (modernisation strategy); Review/update Management Plans; availability of SSF registration & licensing framework; capacity building / training needs; Sustainable Development Reference System (SDRS) statistics & data collection.

SWIOFC: Environmental Management, Ecosystem Approach to Fisheries; Coordination, Knowledge Management.”

“National governments need to increase their coordination role of partners organizations, by sharing planning and reporting.”

### **Tanzania**

“Potential types of collaboration by partner country organisations include:

- i) capacity building including Regional Training Programmes;
- ii) establish collaborative technical working groups;
- iii) sharing of data and information between partners, such as catch trends, marketing, MCS issues, safety at sea, and fish quality and seafood safety standards;
- iv) establishing a regional website, and online training on various fisheries management aspects.”

### **Seychelles**

“Greater collaborations amongst different donors and built on past works rather than trying to re-invent the wheel.”

### **30. What policy dialogue, awareness raising and communication is required to ensure partner countries services are focused on common goals?**

#### **Comoros**

"Fisheries agencies working in synergy and complementarity."

"Need strong collaboration between ECOFISH and SWIOFC."

"At national policy and legal level, ensure an effective policy and legal framework is in place. At the operational management, research and compliance level, reinforce research and put strong management plans in place.

At the governance level there is a need for more education."

"Raise awareness."

#### **Kenya**

"Communities vote for politicians meaning fishing communities have bargaining power, so focus on Members of Parliament, Regional Governors, and resource users. As bring stakeholders together, build consensus."

- "Ecosystems approach to small-scale fisheries and aquaculture.
- Inter and intra country workshops, common publications, structured dialogue forums, etc; exchange visits to successful sites.
- Establish an entity that liaises with different country organisations to streamline activities.
- Many discussions and commitments are at high government level, so the managers on the ground need to be made aware of these and given the resources and training to implement agreements."

#### **Madagascar**

"Regional workshops to be organized with the effected, and high participation of partner countries."

"Transparency and collaboration is required."

"Political dialogue exists but effective implementation is lacking. Then a real synergy must be in place between all the entities (all the ministries working in rural development)."

#### **Mauritius**

There should be a strong and active network and ongoing consultation. With many regional fisheries organisations, there is lots of duplication, and discussions become repetitive.

There should be specialized regional working groups, each focusing on a particular issue and it should be objective oriented, conversely to having meeting on various issues and none get solved.

### **Tanzania**

“Start by building constituencies at regional level regarding prevailing major cross-cutting issues in coastal fisheries resource management, and an urgent need for collaborative intervention. Well-designed and effectively implemented regional training, would be a very helpful cornerstone for empowering constituencies building at national level of respective participating countries. The training should focus on sharing experience and exemplary case studies, illustrating techniques that have worked in similar situations as experienced in the region. Also, the training should be used to establish a network of Community Practitioners for strengthening policy dialogue and awareness raising towards common goals in respective countries and at regional level.”

## **5.11 Transformation**

### **31. What past policy and governance failures should be overcome to achieve effective fisheries management transformation?**

#### **Comoros**

“Overcome through capacity building training.”

“Take responsibility”.

“Through assessment of past policy and governance, in order to understand the different constraints.”

“Co-management coupled with Marine Park management.”

#### **Kenya**

“Transformation requires a mentality. Moving to semi-industrial fishing slowly at local, national, and regional trade level.

You can have a good policy documents or Fisheries Management Plans, but the question is, is it being “implemented effectively”. One can only identify management gaps when it is being implemented, and with that there is the need for effective governance. Lack of political goodwill has resulted in failures. Thinking at the top will give direction. Things related to the environment are always sensitive.

1. Must sensitise the politicians.
  2. Need friendly documents which are publicised. e.g., don't fish the young fish.
  3. Both top down and bottom-up consensus required.
  4. If we improve trade, provides high value returns.
  5. Learning from others and reducing costs through co-operation. Remove barriers that hinder trade resulting in free movement – harmonise taxes in such a way to make trade easier.
  6. What can we contribute? E.g., promoting trade to a large country such as the Democratic Republic of the Congo (DRC).”
- “Open-access regimes should be gradually removed.
  - A top-down approach to management where resource users are not considered key stakeholders in the management, needs to be resolved by including a bottom-up approach.
  - Limited stakeholder involvement in policy formulation.
  - Sectorial way of government doing things.
  - Individual country policy which did take into consideration transboundary resources.”

## **Madagascar**

“Top-down approach should be replaced by a bottom-up approach.”

“Lack of consideration of EAF, rights-based management, Marine spatial planning, co-management in the management plans implementation....”

“A lot of strategical documents has been elaborated. However, no budget has been allocated to implement these well written documents”.

“Lack of transparency.”

“A governance and development policy must be maintained over a long period to see results (at least 15 years). A child before being an adult will take this minimum of time and his activity towards the environment, including natural resources will be just beneficial for him and for society. If the policy changes every five years, what will happen?”

## **Mauritius**

Most of the policies, regulations and strategies become obsolete with time, and this should be flexible enough to be reviewed accordingly.

A management strategy to limit the negative impact of seine netting in the lagoon are:

- Impose closed season *to prohibit fishing by seine netting from 1st October up to the last day of February* so as to allow the fish species caught in the net fishery to spawn.
- Reduce the number of seine net licences operating in the lagoon - *in 1996, Government introduced a buy-back scheme for large nets and gill nets, whereby fishermen/cooperatives were compensated accordingly.*

### **Mozambique**

“Politicians should reduce interference on technical issues of fisheries management and must define policies, and control their application. Fisheries administration should be strong and well-structured at the local level with adequate institutional capacity and qualified staff.”

### **Tanzania**

“Past policy and governance failures that should be overcome include focusing on: socio - economic behaviour of communities resulting in data utilised for understanding communities’ interests; and fishing behaviour. Also issues of conservation should be given more attention. Collaborative management in fisheries needs much emphasis, as well as avoiding politics in fisheries resource management matters. User rights aspects need to be regulated. In addition, conducting research to identify management gaps for composition of policy briefs and constituencies building. Also strengthening the institutional capacity of key civil society organizations to effectively participate in this endeavour, would add value.”

“A collaborative fisheries management approach, would help achieve effective fisheries management transformation, through incorporating the following:

- Zoning of the water body / bodies for effective development of management plans.
- Establish inclusive data and information flow system, which incorporates data and information on: biological, catch and effort, environmental, socio-economic, marketing, licensing, and surveillance to inform operationalization of management plans.
- Profiling of key stakeholders for proportional representation.
- Collaborative review of standing rules and regulations in order to have legitimate legal framework for gradual ascending to cost effective voluntary compliance.
- Through building institutional capacity of NGOs and CSOs to meet Constituencies building challenge.”

### **Seychelles**

“Top-down approach bypassing stakeholders is a problem. Great reliance on external expertise.

Lack of capacity at national and regional level. Lack of sustainable financing mechanism.”

### **32. What positive impact should introducing a Regional Plan for Fisheries Surveillance have for coastal fisheries?**

#### **Comoros**

"Many advantages (surveillance of our EEZ, creation of the CNCSP, collaboration with other fisheries inspectors, and deployment of fishing patrols to fight IUU fishing)."

"It helped Comoros to control and undertake surveillance of its EEZ for the first time. So, that is very helpful cooperation."

"Many positive impacts in Comoros. Without PRSP, we could not have the CNSCP. So, you could understand the importance."

"In term of visibility, many activities have been done effectively during the PRSP."

"Helps the security of the fisherman; helps fight IUU fishing and patrolling of the EEZ; helps in implementing regulations and laws; and licensing control."

#### **Kenya**

"Standard operating procedures for surveillance. Co-operation between countries, e.g., monitoring of fishing vessels."

- "The resource will be utilized sustainably.
- It will reduce inter-country conflicts on shared stocks resource utilization.
- Reduced illegal, unreported and unregulated fishing.
- Better protection for highly migratory and sedentary fish species.
- More reliable and transparent data on fishing in national waters
- Harmonized approach to addressing trans-boundary fisheries management challenges and information sharing."

#### **Madagascar**

"The positive impacts are many, the issue is how it should be done, and where should the money to do so come from?"

"Fighting IUU fishing needs regional cooperation, so a regional plan for fisheries surveillance is very welcome and should be implemented as it will reduce considerably the loss from fish capture."

"Less pressure on coastal resources, awareness of fisheries actors on the need of sustainable management."



**Mauritius**

Collaborative work in terms of control, monitoring and surveillance, cost reduction, technical and technological exchanges, exchange of reliable information.

**Mozambique**

“Based on current conditions, no positive impact. A Regional Coastal Surveillance Plan can only be successful if such activity at the national level is effective. What is required is firstly a solidified and effective national capacity, and then a regional plan that appropriates that national capacity for the region.”

“A regional surveillance plan can bring better results in the context of fisheries inspection.”

**Tanzania**

“It is important in facilitating coordination of MCS activities, particularly in the EEZ of member countries in the IO area. Furthermore, the plan would most likely make the surveillance regime more effective in the region for improved management and sustainable livelihoods. The viable impact, among many others, include: bilateral/regional collaboration leading to reduction and control of illegal fishing; enhanced knowledge sharing within the region; increased conservation efforts; and increased sustainability of fish stocks. Strengthening MCS Training and Operation in the region is recommended.”

**Seychelles**

“It will bring a sense of security particularly in Seychelles whereby distant areas are being fished illegally by vessels from neighbouring countries.”

**33. How is COVID impacting on your operations?****Comoros**

“The impacts are large from administration to the value chain of the fisheries sector.”

“Many activities planned by the Ecofish could not be done. So, moving people from country to another was impossible in the IOC region.”

“Covid has impacted seriously the fisheries sector of Comoros, but unfortunately no study has been done yet to quantify those impacts.”

“During Covid, fishermen could not even go to sea, and that was bad for our families as we don't have any other job. That is a food insecurity problem.”

## Kenya

"Become strategic. At the local level, Covid has affected trade due to restrictions in movement and enforcement/monitoring irregularities, loss of jobs."

- "Due to Covid, livelihoods have been impacted, putting a lot of pressure on limited natural resources e.g., mangrove cutting for burning charcoal hence affecting fishery resources within creeks and bays.
- Limited funding opportunities for fisheries projects.
- No alternative livelihood options e.g., crab farming, apiculture in mangrove forests.
- Limited engagement with communities.
- Increased cost of project implementation due to implementation of safety protocols.
- Delays in project implementation.
- Reduced fieldwork activities.
- Less monitoring, especially for observer programme.
- Reduced budgets occasioned by negative impacts on the economy."

## Madagascar

"Financially (due to the emerging new activities and the necessary materials) and operationally (due to the restrictions)."

"- Reduce the movement to the field of the project team.

- Due to the COVID, the national trade of fish products was negatively impacted (restrictions for the products transport to market places)

- Slow implementation of activities in the field."

"No field trips, meaning less knowledge on the situation on site, just paper work which means less effectivity achieving our mandates."

"Delay on executing activities".

"Lack of data collection at the small-scale fishery level".

## Mauritius

Since the outbreak of COVID-19 pandemic, Mauritius was in lockdown for around three months (from 20 March 2020 to 1 June 2020). During the above-mentioned period, all the Mauritian Flagged vessels (purse seiners and longliners) were able to continue with their fishing activities - except for the artisanal fishery including those fishing around Fish Aggregating Devices (FADs). Fishermen were not allowed to be at sea during the COVID-19 pandemic lockdown situation in respect to the sanitary curfew. Fishing within the lagoon and off-lagoon for FAD fishery were allowed as from 15 May 2020. As per the communiqué

dated 19 March 2020 from the IOTC, the Regional Observer Programme was suspended, as the deployment and repatriation of observers go against all health and safety actions taken to reduce the spread of the virus. Therefore, no observers were deployed on the Mauritius flagged vessels for the Regional Observer Programme 2020.

### **Mozambique**

"From the point of view of fishing activity, COVID has had a negative impact on the fish trade chain, with the decline in purchasing power, restrictions on exports, etc."

"Impact of personnel rotation, material supply and export container availability, etc."

### **Tanzania**

"Covid 19 has resulted in foreign markets collapsed, with limited airline transportation, and reduction in enforcement, all resulting in the fishery industry declining. Fisheries supply chains of fresh fish have been hit hard as seafood products are among the most highly traded foods globally, with 38% of total fish production entering international trade. This has particularly impacted the export trade of high-value fishery product such as octopus and prawn. Consequently, it difficult for primary producers to break-even. On the other hand, globalization is opening up markets, something which has potential economic gains through high fish prices, but with trade-offs in terms of increased IUU fishing practices driven by economic and profit motives."

### **Seychelles**

"Reduced all monitoring and enforcement activities. Impacted data collection. Impacted crew change and disrupted fishing activities. Reduced level of production."

## **34. How do we leverage a win-win for national governments and fishing industry interests (e.g., employment, taxes etc.)?**

### **Comoros**

"Very important aspect – and at this stage we don't have it in Comoros."

### **Kenya**

"Encourage better dialogue."

- "Invest in fisheries in order to empower fishermen economically, thus in turn tax them without jeopardizing the income base.
- By creating awareness and building capacity of relevant stakeholders.
- Higher level of transparency in fisheries agreements.

- Develop capacity of national authorities to negotiate agreements for national benefits.
- Support fisheries management for improved production and attract employment directly and indirectly.”

### **Madagascar**

“This has to be discussed with all stakeholders involved in the discussion through a Dialogue Platform.”

“Implementation of co-management dialogue at the national level between the government and the fishing industry.”

“Taxes, corporate social responsibility, employment, capacity building.”

“Transparency at every step of the way.”

“It goes without saying that the countries within the region have disparate levels of development (poor, rich, less rich ...) and advance differently according to the political will of their respective countries. The basic infrastructures are absent for some (roads, hospitals, schools) and the quality of work delivered is inconsistent as well.”

### **Mauritius**

Lots of investment facilities, tax rebates, infrastructural, port, airline facilities are provided to fishing industries facilitating job creation, income through exports, Corporate Social Responsibility (CSR) - companies should reinvest 2% of their financial book profit towards societal development.

### **Mozambique**

“Has limited in-person engagement with fishers and other stakeholders, which needs promotion.”

“By implementing a sustainable development programme.”

“The changeable fishery policy is difficult to achieve a win-win situation, and fishery enterprises should be supported.”

### **Tanzania**

“The Tanzania government interest hinges on both responsible fisheries resource management and sustainable livelihood. However, due to difficulties in instituting rational resource management, much of government time and other resources are spent on resource management aspects. On the other hand, the interest of the fishing industry is highly oriented around

sustainable livelihoods for economic and profit motive. In view of this situation, leveraging a win-win scenario would highly depend on introduction of collaborative fisheries management plans. The issue of who represents, and who is represented, has to be addressed through proportional representation. Otherwise, the management plan would lose legitimacy. In addition, diversification of alternative sources of livelihoods is required to deal with the overcapacity challenge, which is fueled by rapid population growth in coastal communities.”

### **Seychelles**

“Improve transparency.”

### **35. Utilising the Ecosystem Approach to Fisheries, how can we best create an enabling environment utilising instrument such as the UNEP-Nairobi Convention, UN Agenda 2030, Transforming Africa 2063, and the Blue Economy Paradigm of economic efficiency, social justice and environmental integrity?**

### **Comoros**

1. At the national policy and legal level, update the policy in order to have well designed policy considering the all the aspects of environment, biodiversity loss, and blue economy approach.
2. At an operational management, research and compliance level, undertake a pilot project.
3. At a governance level undertake capacity building and training, sharing and collaboration.

### **Kenya**

- By bringing stakeholders together, strategizing how to create enabling environment.
- Sustainable fishing methods.
- Marine fisheries assessment in order to establish the quantity of resources requiring utilization.
- Safeguarding breeding of fish through marine protected areas and enclosures and mangrove restoration practises.
- Diversification of fisher community livelihoods basis.
- Investing in coastal ecosystem restoration, negatively impacted by adjacent poorly managed ecosystem.
- Reduced land to sea pollution, reduced sea-based pollution.”

### **Madagascar**

“All those have good intentions, but make sure that the local fishers rights are respected!”

“Build and enhance inter-sectorial policy dialogue for the actors and stakeholders.”

“Work on both application and implementation of these instruments, understanding the different scales and the possible and probable interactions”.

### **Mauritius**

Through a consultative and collaborative approach, by creating awareness on a balance between resource exploitation and ecological importance. Having all the conventions, policy papers will not be positively impacting, unless people at top level understand the essence, and transform the recommendations into actions.

### **Mozambique**

"One of the key principles of the EAF approach is the participation and engagement of all stakeholders relevant for fisheries management. The international and regional policy instruments, such as the SDGs and Agenda 2063 provide the guidance and show the commitment of Governments to work together to achieve certain goals. Then the EAF can be seen as the tools and means to achieve these goals."

### **Tanzania**

"The initiative should be coordinated at regional level, focusing on establishment of a proper network for information sharing and utilization of available opportunities in member countries. This has to include formation of joint working groups for each major thematic area. Likewise, it is important to develop collaborative regional projects and programmes in order to enhance sharing of knowledge and skills, while enabling learning from each other, across SWIO countries."

### **Seychelles**

"An enabling environment for greater stakeholder engagement is necessary moving forward.

Sustainable financing mechanism should be developed and implemented."

## **36. Any other enabling fisheries management architecture required?**

### **Comoros**

"as well as co-management, higher consideration of the control and surveillance activities (evaluation activities)".

### **Kenya**

- "Consider non state actors as key in implementing government policies.
- Provide financing for non-state actors.
- Ocean Decade of Marine Science."

### **Madagascar**

"Securing fishers' right to fisheries; Community fisheries management; Finance - grants, saving and loans; and Better return on fishing — These are the Core Model of Blue Ventures NGO in Madagascar."

"Marine spatial planning."

“The collection of basic data (quantity per species) per fisherman in an area is necessary. A major problem is the effects of climate change which blur the efforts. Should be put in place to measure the effectiveness of fisheries management.”

### **Mauritius**

Need to focus in the existing management plan and work on the gaps and weaknesses, and integrate the potentials and opportunities – then there will be no need for a new management structure.

### **Mozambique**

“Fisheries management is not only done with beautiful policy and strategy documents. It is carried out on the ground with good practices and with a strong, participatory and empowered fishing authority, implementing fisheries extension programs.”

### **Tanzania**

“The establishment of a Fisheries Management Fund to meet the costs of resource management would enable improved implementation of resource management plans.”

“Awareness raising with regard to the need for concurrent application of all functions of fisheries management rather than picking a few. The point is that, reinforcement of fisheries management plans has to go concurrently with institution of a solid data and information flow system, setting up of legitimate rules and regulations, as well as putting in place a cost-effective Monitoring, Control and Surveillance (MCS) system. (A chain is no stronger than its weakest link).”



## 6. Stakeholder Questionnaire for Focal Discussion Interviews

The international consultant coordinating this assignment designed the following stakeholder questionnaire for focal group discussions, also used by the SWIO country national consultants when interviewing stakeholders in their respective countries, based on the assignment terms of reference:

- ▶ The questionnaire was designed on the basis that the assignment TOR requires the consultant to tease apart the feasibility and acceptability of the concept of effective regional cooperation and collaboration as leverage to enhance sustainable management of shared as well as similar sedentary fisheries resources of the partner countries.
- ▶ To obtain information on, and understand the significance of the socio-economic contribution of the coastal marine fisheries in local and national economies. This as a means to also shed light on the administrative and development capacities of national fisheries management architecture, including government' spending, and result in useful outputs which will be important to feed informed management strategies and plans.
- ▶ To identifies issues that stakeholders claim as their own, and that this ownership generates ongoing fisheries management development momentum, because the stakeholders see it as beneficial to them.



## STAKEHOLDER QUESTIONNAIRE

On assessment of Regional/National Management Plans and related activities in the coastal marine fisheries of cluster 1 of the EA, SA, & IO region.

Looking at ways of effective regional collaboration as leverage to enhance sustainable management of shared, and similar sedentary (bottom) coastal fish resources of partner countries, through lessons learnt and best practises, to enhance capacity and reduce wastage of resources.

Respondent: \_\_\_\_\_

Organisation: \_\_\_\_\_

Partner country: \_\_\_\_\_

	Question	Responds
	Management plans/priority fisheries	
1	Which existing Government fisheries management plans are working?	
2	Are there any additional existing plans that you would like to see work/implemented?	
3	Which key fish species are still open access, but which you think should be most easily subject to structured management plans or co-management?	
4	Which national fisheries (e.g., sea cucumber and octopus) and transboundary fisheries (tuna and any others) can be managed more effectively through bilateral or regional co-operation, and how?	
5	What are the root causes of ineffective management of fisheries?	
6	What kind of fisheries management models have you seen as successful?	
7	In your experience, what key lessons and best practises were learnt?	

	Co-management	
8	What fisheries resources/areas are co-managed?	
9	If implementation of management plans occurs via co-management, what are the strengths and weaknesses?	
	Creating a wealth management approach	
10	Since management plan implementation, what has been their wealth creation added value/strategies.	
11	How much does Government spend on fisheries management / plans every year, and how is this shared between the operational sectors of Resource Management, Research, Capacity Building and Compliance etc.?	
12	What advice do you have to utilise fisheries management money effectively?	
13	What will it take to achieve funding of fisheries management by the fishing stakeholders?	
14	What financial/modernisation strategies are being developed for the small-scale sector, empowering fishers and fish workers across multiple value chains?	
	Capacity	
15	Share with us some of the problems and barriers you have observed with regards to capacity to implement fisheries management plans?	
16	Do you have ideas on how to solve some of these problems?	
17	Who should be a part of the synergistic team to build better capacity?	
	Socio-economic management	
18	What is the socio-economic contribution of coastal marine fisheries in your local & national economy?	
19	What can be done to improve the socio-economic status of fish communities?	
	Small-scale fisheries	
20	What interactions do industrial and small-scale fisheries have with one another?	

21	What should small-scale fishers put in place to properly enter the commercial private sector?	
22	Is sustainable development important to the small-scale sector, and if yes, how can this be encouraged?	
23	What place does small-scale fishing occupy in Government's fisheries management plans / structures?	
24	Is Government moving towards rights-based/ecosystem-based management to secure sustainable access for small-scale and artisanal fishers?	
25	Across SWIO countries, what common management issues in marine small-scale fisheries can be tackled and regulated?	
26	What suggestions do you have for achieving a marine small-scale sustainable and inclusive rehabilitation strategy?	
	Value chain strengthening	
27	What are the causes of most post-harvest losses?	
	Blue Economy	
28	How effectively are environmental targets being focused on such as the UNEP Nairobi Convention covering climate change and bio-diversity loss?	
29	The Blue Economy has sustainable development targets of: economic efficiency; social justice; and environmental integrity. Is this benefiting the fisheries sector?	
	Sustainable Development Reference System (SDRS)	
30	A fisheries policy and management framework, need inter-disciplinary expertise and multiple data sources through building intra and inter-agency linkages. What are the benefits and challenges of establishing a SDRS at national and regional levels?	
	Building synergies and complementarity and subsidiarity of partner countries through regional co-operation	
31	What are the key fisheries management achievements and works in progress of different regional and national programmes?	
32	What types of collaboration by partner country organisations, will avoid duplication of effort and wastage of resources, resulting in a Regional Capacity Development Strategy and Action Plan?	

33	What policy dialogue, awareness raising and communication is required to ensure partner countries services are focused on common goals?	
	Transformation	
34	What past policy and governance failures should be overcome to achieve effective fisheries management transformation?	
35	What positive impact should introducing a Regional Plan for Fisheries Surveillance have for coastal fisheries?	
36	How is COVID impacting on your operations?	
37	How do we leverage a win-win for national governments and fishing industry interests (e.g., employment, taxes etc.)?	
38	From a Regional Capacity Development Strategy and Action Plan for SWIO coastal marine fisheries, through short comments, what is required to:	
1.	Enhance regional cooperation?	
2.	Update fisheries policies and management plans?	
3.	Promote proper functioning of small-scale fisheries registration and licensing frameworks?	
4.	Build capacity of Regional Fisheries Bodies?	
5.	Facilitate collaboration for natural resource management?	
6.	Improve data collection to monitor fisheries management progress through tools such as a Sustainable Development Reference System?	
7.	Establish a network for climate adaptation?	
8.	Support small-scale fisheries biodiversity conservation activities?	
39	Utilising the Ecosystem Approach to Fisheries, how can we best create an enabling environment utilising instruments such as the UNEP-Nairobi Convention, UN Agenda 2030, Transforming Africa 2063, and the Blue Economy Paradigm of economic efficiency, social justice and environmental integrity?	
40	Any other enabling fisheries management architecture required?	

## 7. “Key Principles” from FAO Standards/ Guidelines, as a basis to assess the adequacy of Fisheries Management Plans, on: the Code of Conduct for Responsible Fisheries (CCRF); the Ecosystem Approach to Fisheries implementing the CCRF; and the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries.

### **Main principles of the FAO Code of Conduct for Responsible Fisheries (CCRF) relating to fisheries resources and management**

Article 6.2. Fisheries management should maintain fishery resources for present and future generations in the context of food security, poverty alleviation, and sustainable development.

Article 6.3. States should prevent overfishing and excess fishing capacity and implement management measures to ensure fishing effort is commensurate with the productive capacity of the resources, including rehabilitation.

Article 6.4. Conservation and management decisions should be based on the best scientific evidence, also taking into account traditional knowledge, as well as relevant environmental, economic and social issues, including research (bilateral and multilateral cooperation as appropriate) and data collection.

Article 6.5. Apply a precautionary approach, where the absence of adequate scientific information should not be used as a reason to postpone actions.

Article 6.6. Selective and environmentally safe fishing gear and practices should be applied to maintain biodiversity and conserve the population structure and aquatic ecosystems, and protect fish quality, minimizing waste, catch of non-target species, and impacts on associated or dependent species.

Article 6.10. States should ensure compliance with and enforcement of conservation measures, to monitor and control fishing vessels.

Article 6.12. States should cooperate at subregional, regional, and global levels through fisheries management organisations and international agreements, ensuring responsible fishing and effective conservation, taking into account the need for compatible measures in areas within and beyond national jurisdiction.

Article 6.16. States, recognizing the paramount importance of fishers understanding the conservation and management of fishery resources, should promote awareness of responsible fisheries through education and training, as well as involvement in policy formulation and implementation.

Article 6.18. The rights of fishers and fish workers, particularly those engaged in subsistence, small-scale and artisanal fisheries should be protected. The right to a just livelihood, as well as preferential access, where appropriate to traditional fishing grounds should be respected.

### **Main principles of the CCRF relating to the ecosystem approach to fisheries**

Article. 6.2. Management measures should not only ensure the conservation of target species, but also species belonging to the same ecosystem.

Article 6.13. States should facilitate consultation and effective participation of all stakeholders in decision making.

Article 6.8. All critical habitats such as wetlands, mangroves, reefs, lagoons, nursery and spawning areas, should be protected and rehabilitated, so as not to threaten the health and viability of fishery resources.

Article 6.9. States should ensure their fishery interests are taken into account in the multiple uses of the coastal zones, and are integrated into coastal area management.

Articles Implication. States should establish effective procedures to undertake appropriate environmental assessment and monitoring, with the aim of minimizing adverse ecological changes and related economic and social consequences.



## **Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries: Part 2 on Responsible Fisheries and Sustainable Development**

### **Governance of tenure**

Article 5.1. Small-scale fishing communities need to have secure tenure rights to the resources that form the basis for their social and cultural well-being, their livelihoods and their sustainable development.

Article 5.7. Taking due account of Article 6.18 of the CCRF, States should where appropriate grant preferential access of small-scale fisheries to fish in waters under national jurisdiction, with a view to achieving equitable outcomes for different groups of people, in particular vulnerable groups. Where appropriate, the creation and enforcement of exclusive zones for small-scale fisheries, should be considered.

### **Sustainable resource management**

Article 5.13. States should promote and implement appropriate management systems, consistent with their existing obligations under national and international law and voluntary commitments, including the CCRF, that give due recognition to the requirements and opportunities of small-scale fisheries.

Article 5.14. Rights and responsibilities come together; tenure rights are balanced by duties, and support the long-term conservation and sustainable use of resources and the maintenance of the ecological foundation for food production. Small-scale fisheries should utilize fishing practices that minimize harm to the aquatic environment and associated species and support the sustainability of the resource.

Article 5.15. States should facilitate, train and support small-scale fishing communities to participate in and take responsibility for, taking into consideration their legitimate tenure rights and systems, the management of the resources on which they depend for their well-being and that are traditionally used for their livelihoods. Accordingly, States should involve small-scale fishing communities – with special attention to equitable participation of women, vulnerable and marginalized groups – in the design, planning and, as appropriate, implementation of management measures, including protected areas, affecting their livelihood options. Participatory management systems, such as co-management, should be promoted in accordance with national law.

Article 5.16. States should ensure the establishment of monitoring, control and surveillance (MCS) systems. They should provide support to such systems, involving small-scale fisheries actors as appropriate and promoting participatory arrangements within the context of co-management. Small-scale fishers should support the MCS systems and provide to the State fisheries authorities the information required for the management of the activity.

Article 5.17. States should ensure that the roles and responsibilities within the context of co-management arrangements of concerned parties and stakeholders are clarified and

agreed through a participatory and legally supported process. All endeavours should be made so that small-scale fisheries are represented in relevant local and national professional associations and fisheries bodies and actively take part in relevant decision-making and fisheries policy-making processes.

Article 5.18. States and small-scale fisheries actors should encourage and support the role and equitable involvement of both men and women, whether engaged in pre-harvest, harvest or post-harvest operations, in the context of co-management and in the promotion of responsible fisheries, contributing their particular knowledge, perspectives and needs.

Article 5.19. Where transboundary and other similar issues exist, States should work together to ensure that the tenure rights of small-scale fishing communities that are granted are protected.

Article 5.20. States should avoid policies and financial measures that may contribute to fishing overcapacity and, hence, overexploitation of resources that have an adverse impact on small-scale fisheries.

### **Social development, employment and decent work**

Article 6.1. All parties should consider integrated, ecosystem and holistic approaches to small-scale fisheries management and development that take the complexity of livelihoods into account.

Article 6.5. States should recognize as economic and professional operations the full range of activities along the small-scale fisheries value chain – both pre- and post-harvest. All activities should be considered: part-time, occasional and/or for subsistence. Professional and organizational development opportunities should be promoted, in particular for more vulnerable groups of post-harvest fish workers and women in small-scale fisheries.

Article 6.12. All parties should strive to ensure that occupational health and safety is an integral part of fisheries management and development initiatives.

Article 6.14. States should provide and enable access to schools and education facilities that meet the needs of small-scale fishing communities and that facilitate gainful and decent employment of youth, respecting their career choices and providing equal opportunities for all boys and girls and young men and women.

Article 6.16. All parties should recognize the complexity that surrounds safety-at-sea issues and the multiple causes behind deficient safety. This applies to all fishing activities. States should ensure the development, enactment and implementation of appropriate national laws and regulations that are consistent with international guidelines of FAO, the ILO and the International Maritime Organization (IMO) for work in fishing and sea safety in small-scale fisheries.

## **Value chains, post-harvest and trade**

Article 7.1. All parties should recognize the central role that the small-scale fisheries post-harvest subsector and its actors play in the value chain. All parties should ensure that post-harvest actors are part of relevant decision-making processes.

Article 7.2. All parties should recognize the role women often play in the post-harvest subsector and support improvements to facilitate women's participation in such work.

Article 7.3. States should foster, provide and enable investments in appropriate infrastructures, organizational structures and capacity development to support the small-scale fisheries post-harvest subsector in producing good quality and safe fish and fishery products, for both export and domestic markets, in a responsible and sustainable manner.

Article 7.4. States and development partners should recognize the traditional forms of associations of fishers and fish workers and promote their adequate organizational and capacity development in all stages of the value chain in order to enhance their income and livelihood security in accordance with national legislation.

Article 7.5. All parties should avoid post-harvest losses and waste and seek ways to create value addition.

Article 7.6. States should facilitate access to local, national, regional and international markets and promote equitable and non-discriminatory trade for small-scale fisheries products.

Article 7.7. States should give due consideration to the impact of international trade in fish and fishery products and of vertical integration on local small-scale fishers, fish workers and their communities, including potential negative impacts on their food supply.

Article 7.8. States should ensure that effective fisheries management systems are in place to prevent overexploitation driven by market demand that can threaten the sustainability of fisheries resources, food security and nutrition. Such fisheries management systems should include responsible post-harvest practices, policies and actions to enable export income to benefit small-scale fishers and others in an equitable manner throughout the value chain.

Article 7.9. States should adopt policies and procedures, including environmental, social and other relevant assessments, to ensure that adverse impacts by international trade on the environment, small-scale fisheries culture, livelihoods and special needs related to food security are equitably addressed. Consultation with concerned stakeholders should be part of these policies and procedures.

Article 7.10. Small-scale fisheries stakeholders must be able to access timely and accurate market information to help them adjust to changing market conditions. Capacity development is also required.

## **Gender equality**

Article 8.1. All parties should recognize that achieving gender equality requires concerted efforts by all and that gender mainstreaming should be an integral part of all small-scale fisheries development strategies.

Article 8.4. All parties should encourage the development of better technologies of importance and appropriate to women's work in small-scale fisheries.

## **Disaster risks and climate change**

Article 9.1. States should recognize that combating climate change, including in the context of

sustainable small-scale fisheries, requires urgent and ambitious action, in accordance with the objectives, principles and provisions of the United Nations Framework Convention on Climate Change (UNFCCC).

Article 9.2. States should develop policies and plans to address climate change in fisheries, in particular strategies for adaptation and mitigation, where applicable, as well as for building resilience, in full and effective consultation with fishing communities including indigenous peoples, men and women, paying particular attention to vulnerable and marginalized groups.

Article 9.3. All parties should recognize the need for integrated and holistic approaches, including cross-sectoral collaboration, in order to address disaster risks and climate change in small-scale fisheries.

## **Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries: Part 3 on Ensuring an Enabling Environment and Supporting Implementation**

### **Policy coherence, institutional coordination and collaboration**

Article 10.1. States should recognize the need for and work towards policy coherence with regard to, inter alia: national legislation; international human rights law; other international instruments, including those related to indigenous peoples; economic development policies; energy, education, health and rural policies; environmental protection; food security and nutrition policies; labour and employment policies; trade policies; disaster risk management (DRM) and climate change adaptation (CCA) policies; fisheries access arrangements; and other fisheries sector policies, plans, actions and investments in order to promote holistic development in small-scale fishing communities. Special attention should be paid to ensuring gender equity and equality.

Article 10.4. The overall policy framework for fisheries should be coherent with the long-term vision and policy framework for small-scale fisheries and human rights, paying particular attention to vulnerable and marginalized people.

Article 10.5. States should establish and promote institutional structures and linkages – including local, national, regional, global linkages and networks - there is a need for clear responsibilities and there should be well-defined points of contact in government authorities and agencies for small-scale fishing communities.

Article 10.6. Small-scale fisheries stakeholders should promote collaboration among their professional associations, including fisheries cooperatives and Civil Society Organisations, to facilitate their involvement in policy and decision-making processes.

Article 10.8. States, as well as international, regional and subregional organizations, as appropriate, should support capacity development to enhance the understanding of small-scale fisheries and assist the subsector.

### **Information, research and communication**

Article 11.1. States should establish systems of collecting fisheries data, including bioecological, social, cultural and economic data relevant for decision-making on sustainable management of small-scale

fisheries.

Article 11.2. All stakeholders should recognize the importance of communication and information, which are necessary for effective decision-making.

Article 11.3. States should endeavour to prevent corruption, particularly through increasing transparency, holding decision-makers accountable, with appropriate participation and communication with small-scale fishing communities.

Article 11.6. All parties should ensure that the knowledge, culture, traditions and practices of small-scale fishing communities, including indigenous peoples, are recognized and, as appropriate, supported, and that they inform responsible local governance and sustainable development processes.

Article 11.7. States and other relevant parties should provide support to small-scale fishing communities, including, as appropriate, the technical and financial assistance to organize, maintain, exchange and improve traditional knowledge of aquatic living resources and fishing techniques, and upgrade knowledge on aquatic ecosystems.

Article 11.8. All parties should promote the availability, flow and exchange of information, through the establishment or use of appropriate existing platforms and networks at community, national, subregional and regional level. Taking into account that social and

cultural dimensions, appropriate approaches, tools and media should be used for communication with and capacity development for small-scale fishing communities.

Article 11.9. States and other parties should, to the extent possible, ensure that funds are available for small-scale fisheries research, and collaborative and participatory data collection. Research organizations and institutions should support capacity development to allow small-scale fishing communities to participate in research and in the utilization of research findings. Research priorities should be agreed upon through a consultative process focusing on the role of small-scale fisheries in sustainable resource utilization, food security and nutrition, poverty eradication, and equitable development, including also Disaster Risk Management and Climate Change Adaptation considerations.

### **Capacity development**

Article 12.1. States and other parties should enhance the capacity development of small-scale fishing communities in order to enable them to participate in decision-making processes. Ensure the range and diversity along the entire value chain is appropriately represented through the creation of legitimate, democratic and representative structures.

Article 12.2. States and other stakeholders should provide capacity building, for example through development programmes, to allow small-scale fisheries to benefit from market opportunities.

Article 12.3. All parties should recognize that capacity development should build on existing knowledge and skills and be a two-way process of knowledge transfer. Capacity development should include building the resilience and adaptive capacity of small-scale fishing communities in relation to Disaster Risk Management and Climate Change Adaptation.

Article 12.4. Government authorities and agencies at all levels should work to develop knowledge and skills to support sustainable small-scale fisheries development and successful co-management arrangements. Particular attention should be given to decentralized and local government structures directly involved in governance and development processes together with small-scale fishing communities, including the area of research.

Article 13.1. All parties are encouraged to implement the Small-scale Fisheries Guidelines in accordance with national priorities and circumstances.

Article 13.2. States and all other parties should promote aid effectiveness and responsible use of financial resources. Development partners, and regional organisations are encouraged to support technical cooperation, financial assistance, institutional capacity development, knowledge sharing and exchange of experiences, assistance in developing national small-scale fisheries policies and transfer of technology.

Article 13.4. States and all other parties should create awareness by disseminating simplified and translated guidelines for the benefit of those working in small-scale fisheries.

Article 13.4. States should recognize the importance of monitoring systems that allow their institutions to assess progress towards implementation. Mechanisms allowing the results of monitoring to feed back into policy formulation and implementation should be included. States and all parties should elaborate participatory assessment methodologies.

Article 13.5. States should facilitate the formation of national-level platforms, with cross-sectoral representation and with strong representation of Civil Society Organisations, to oversee implementation of guidelines. Legitimate small-scale fishing representation should be involved both in the development and application of implementation and monitoring strategies.



## 8. Database of SWIO National and Regional Focal Persons and Experts

### Comoros

List of key National Country Stakeholders and people met during the study

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