THE REVOLUTIONARY GOVERNMENT OF ZANZIBAR

THE MINISTRY OF BLUE ECONOMY AND FISHERIES

ZANZIBAR FISHERIES MASTER PLAN 2023—2038

ZANZIBAR FISHERIES MASTER PLAN 2023—2038

2022

The Zanzibar Fisheries Master Plan 2023-2038 was prepared by the Ministry of Blue Economy and Fisheries in Zanzibar. The typesetting, editing and publishing were made possible with the support of the United Nations Environment Programme (UNEP) and United Nations Development Programme (UNDP) in Tanzania

Cover photo by Ministry of Blue Economy and Fisheries in Zanzibar

FOREWORD

The Zanzibar Fisheries Master Plan 2023-2038 is a landmark document that charts a clear course for the sustainable development of the fisheries sector in Zanzibar. The fisheries sector is of critical importance to Zanzibar's economy, providing livelihoods for thousands of people and contributing significantly to food security and nutrition. However, the sector faces several challenges including overfishing, climate change, and habitat degradation. The Master Plan addresses these challenges head-on, setting out a comprehensive vision for a sustainable and prosperous fisheries sector. The Plan is based on extensive stakeholder consultations and reflects the views and concerns of fishers, fish farmers, processors, traders, and other stakeholders. The Master Plan sets out a number of key goals and objectives, including increasing fish production in a sustainable manner, improving the livelihoods of fishers and fish farmers, enhancing the value of fish products, promoting responsible fishing practices, and protecting marine and coastal ecosystems

The Master Plan also identifies a number of key interventions that will be needed to achieve these goals and objectives. These interventions include investing in fisheries research and development, improving fisheries management and enforcement, providing support for fishers and fish farmers, promoting market access for fish products and raising awareness of the importance of sustainable fishing practices The Zanzibar Fisheries Master Plan 2023-2038 is an ambitious but achievable plan. The successful implementation of the Plan will require the commitment and support of all stakeholders. I am confident that, working together, we can achieve the vision of a sustainable and prosperous fisheries sector for Zanzibar.

Hon. Suleiman Makame
Minister,
MINISTRY OF BLUE ECONOMY AND FISHERIES

ACKNOWLEDGMENT

We would like to express our sincere gratitude and appreciation to all those who contributed to the successful completion of the Zanzibar Fisheries Master Plan. This comprehensive document represents the collective efforts of several individuals and organizations committed to the sustainable development of the fisheries sector in Zanzibar. Ministry of Blue Economy and Fisheries (MoBEF) extends special appreciation and gratitude to the World Bank through its SWIOFish Programme for the financial support provided. We also extend our heartfelt thanks to the MoBEF in Zanzibar for their unwavering support and guidance throughout the entire planning process. Their valuable insights and dedication to the blue economy vision have been instrumental in shaping this Master Plan. We are grateful to the team from Bureau for Industrial Cooperation (BICO) of the College of Engineering and Technology (CoET) of University of Dar es Salaam, whose expertise and commitment played a pivotal role to prepare this Master Plan. Their dedication to excellence and tireless efforts have contributed significantly to the quality and integrity of this document. We would also like to extend our appreciation to ZUMOS Procurement and Business Consultants for their valuable contributions to the development and structuring of the Master Plan. Their insights into business practices and economic considerations have been invaluable in ensuring the feasibility and sustainability of the proposed interventions.

Moreover, we would like to recognize the active involvement of various stakeholders, including government agencies, local communities, fishing associations, NGOs, and industry experts. Their participation in workshops, consultations, and data sharing has enriched the Master Plan with practical insights and ensured its alignment with the needs and aspirations of the people of Zanzibar. Lastly, we acknowledge the financial support and trust placed in us by our partners, which allowed us to undertake this critical initiative. Without their belief in our capabilities, this Master Plan would not have come to fruition. We express our deep appreciation and gratitude to of the United Nations Environment Programme (UNEP) and the United Nations Development Programme (UNDP) in Tanzania for their generous funding and support towards the typeset, layout, and design of the Zanzibar Fisheries Masterplan 2023-2038. Their financial assistance has been instrumental in transforming this Masterplan into a visually engaging and informative document that effectively communicates its strategic vision and objectives.

As we present this document, we remain optimistic that the Zanzibar Fisheries Master Plan will serve as a blueprint for sustainable growth and development in the fisheries sector, promoting prosperity, equity, and environmental stewardship. We are committed to continuing our collaboration with stakeholders to ensure the successful implementation of the Master Plan's strategies and achieve its transformative vision. Thank you all for your contributions and support.

Dr. Aboud Jumbe

Principal Secretary,

MINISTRY OF BLUE ECONOMY AND FISHERIES

EXECUTIVE SUMMARY

The fisheries sector is strategic for the economic and social development of Zanzibar and is recognized in the Zanzibar Development Vision 2050. It is regarded as a significant contributor sector to the national economy, generating income, employment, and ensuring food security. Despite its considerable potential, the sector has not been able to make expected impact on poverty alleviation and socio-economic development. This can be attributed to various challenges, including a lack of coordinated development approaches, insufficient transformative investment, excessive exploitation of shallow inshore waters, and under-utilization of deep-water resources. Additionally, inadequate aquaculture development, weak linkages between research and practical applications in the sector, insufficient funding, environmental degradation and evolving market access issues have prevented the fisheries sector from realizing its full potential. Moreover, for many years, the sector has been operating without an up-to-date policy .

This fifteen-year Master Plan will serve as guiding blueprint for the strategic development of the fisheries sector, operating within the framework of the Zanzibar Fisheries Policy. Its primary objectives is to improve the management and the sustainable development of the fisheries resources in Zanzibar Islands, with the aim of maximizing economic growth, employment opportunities, and food security while ensuring the protection of the marine environment. The plan is driven by the need to address the crucial issues that is currently facing the sector. The Master Plan focuses on various aspects, including marine fisheries, aquaculture, as well as the post-harvest sector and industrial stages. The Master Plan is expected to enable the following:

1. Facilitating the long-term development of the fishery sector process;
2. Mobilizing resources to support the development of the sector;
3. Enhancing the profile, performance and impact of the fishery sector by ensuring the Ministry responsible for Fisheries and Aquaculture operates effectively;
4. Ensuring Zanzibar compliance with fishery related agreements and standards at the national, regional, and international level.

The development of the Master Plan followed a participatory approach, involving key stakeholders and their opinions were gathered through interviews and focus group discussions. These inclusive discussions brought together various stakeholders and allowed them to freely express their ideas regarding the critical issues and strategies for the development of fisheries sector. The insights and ideas gathered from the stakeholders served the basis for formulation of the Plan. Also, during the course of developing the plan, relevant documents pertaining to the sector were thoroughly reviewed and analysed.

The core components of the Master Plan are outlined through its Vision, Mission, Strategic Objectives, and Key Intervention Components (programmes). These components are then connected to key implementing institutions, which are responsible for incorporating the relevant strategies and interventions in their institutional plans for successful implementation.

Vision

The Government has decided to prioritize the fisheries sector as the center of Zanzibar's socio-economic development. As such, through this plan, the government is committed to implementing various transformative initiatives aimed to create a highly conducive environment that maximize the sustainable benefits derived from the abundant marine resources. This endeavor is guided by the following vision:

> ***"Sustainable fisheries development based on the blue economy that places the people of Zanzibar at the centre of the priority interventions"***

Mission

The primary purpose of the Master Plan is to provide guidance for all participants and stakeholders in the fisheries sector. Collectively, these actors are expected to be committed to the following mission:

> ***"Creating a conducive and enabling environment for the fisheries sector towards equitable social and economic development for Zanzibar"***

Strategic Objectives

In line with the Vision and Mission, the Master Plan seeks to achieve eight Strategic Objectives during the time frame of 2023-2038. These strategic objectives are as follows:

1. To improve the enabling policy, regulatory and strategic environment for sustainable fisheries and aquaculture development.
2. To improve fisheries (stocks) management.
3. To promote fisheries development.
4. To promote aquaculture/mariculture development.
5. To improve supporting infrastructure development.
6. To enhance institutional strengthening.
7. To effectively address compliance and market access issues.
8. To effectively address cross-cutting issues.

Implementation, Monitoring and Evaluation

The objectives, strategies and key interventions outlined in the Master Plan will be systematically communicated and implemented across each relevant institution or identified party. The outlined risks that are expected during the implementation of the Master Plan are identified, along with proposed strategy for risk management strategy to ensue smooth and efficient execution of the Plan. To achieve successful implementation, the Ministry of Blue Economy and Fisheries (MoBEF) will actively promote the allocation of adequate financial resources and allocations to support implementation of the Master Plan. This will be done in collaboration with the different implementing institutions indicated in the Plan. The Department of Fisheries and Aquaculture Development, under the MoBEF, will be responsible for conducting Monitoring and Evaluation activities for the Plan, following the provided framework. The Master Plan will also be reviewed, updated after every five years of implementation.

TABLE OF CONTENTS

ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
ASR	Agriculture Sector Review
AU	African Union
BOT	Bank of Tanzania
CBD	Convention on Biological Diversity
CC	Climate Change
CCA	Climate Change Adaptation
CMS	Convention on the Conservation of Migratory Species
CMT	Customary Marine Tenure
COFMAs	Community Forest Management Areas
DoFD	Department of Fisheries and Aquaculture Development
DRM	Disaster Risk Management
DSFA	Deep Sea Fishing Authority
EAC	East African Community
EEZ	Exclusive Economic Zone
EPZ	Export Processing Zone
FADs	Fish Aggregating Devices
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FTZ	Free Trade Zones
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
HR	Human Resource
IDUs	Intravenous Drug Users
IOTC	Indian Ocean Tuna Commission
IP	Industrial Parks
IPOAs	International Plans of Action
IUU	Illegal, Unreported and Unregulated fishing
IWC	International Whaling Commission
KMKM	Kikosi Maalum cha Kuzuia Magendo (Zanzibar Coast Guards)
LME	Large Marine Ecosystem
MACEMP	Marine and Coastal Environment Management Project
MoBEF	Ministry of Blue Economy and Fisheries
MCA	Marine Conservation Areas

MCD	Marine Conservation Department
MCS	Monitoring, Control & Surveillance
NAPAs	National Adaptation Plan of Action
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organization
PECCA	Pemba Channel Conservation Area
PPP	Public-Private Partnership
RECs	Regional Economic Communities
RFBs	Regional Fishery Bodies
RFMOs	Regional Fisheries Management Organizations
SADC	Southern Africa Development Community
SFCs	Shehia Fisheries Committees
SMEs	Small and Medium Enterprises
SST	Sea Surface Temperature
SWIOFC	South West Indian Ocean Fisheries Commission
TAFIRI	Tanzania Fisheries Research Institute
TURFs	Territorial Use Rights in Fishing
UNCLOS	The United Nations Convention of Law of the Sea
UNFCCC	United Nations Framework Convention on Climate Change
URT	United Republic of Tanzania
USAID	United States Agency for International Development
USD	United States Dollar
ZADEP	Zanzibar Development Plan
ZAFICO	Zanzibar Fisheries Company

CHAPTER ONE
INTRODUCTION

1.1 BACKGROUND

The United Republic of Tanzania (URT) is composed of Tanzania Mainland and Zanzibar. Zanzibar consists of two main islands of Unguja and Pemba, along with about 50 small islets that make up the Zanzibar archipelago. Under the URT framework, the Revolutionary Government of Zanzibar (RGoZ) has a full mandate over the management of the fisheries in its territorial waters, which extends 12 nautical miles, and its internal waters that extends westward to the equidistant line between Tanzania Mainland and Zanzibar. The Department of Fisheries and Aquaculture Development operating under the Ministry of Blue Economy and Fisheries (MoBEF), is responsible for overseeing the fisheries activities conducted in Zanzibar's territorial and internal waters. In contrast to the management of fisheries in the territorial and internal waters The Deep-Sea Fishing Authority (DSFA) under URT is responsible for overseeing the Exclusive Economic Zone (EEZ).

The Zanzibar fisheries is primarily composed of small-scale artisanal fishing units that operate predominantly in the inshore waters of both Unguja and Pemba Islands. The aquaculture sector mainly consists of small-scale seaweed farmers whilst the cultivation of other flora and fauna is still in early stage of development. Additionally, deep-sea fishing is conducted by licensed vessels issued by Tanzania. The primary fishing grounds for inshore fisheries are located in diverse habitats such as coral reefs, mangrove creeks, sea grass beds, and sand banks, which are known to be highly productive. Furthermore, there are significant fishery resources found further offshore including small and medium pelagic fish species, as well as tuna and tuna-like species. The fishing activities in Zanzibar are conducted along the entire coastlines of both islands, generally within a few kilometer from shore and in water depth below 200 meters. This inshore fishery is characterized by small-scale operations that employ various fishing techniques to target a wide range of species, including those found in coral reef ecosystem. In addition, there is an advanced artisanal purse seine fishery that operates further offshore in deeper waters. This fishery targets small pelagics operate within both Zanzibar's territorial waters and shared internal waters with Tanzania Mainland. Furthermore, some fishing activities occur at depths of 100 meters, particularly in the northern part of Unguja Island, where drift gill-netting and line fishing are used to target large pelagics.

In 2020, nearly one in three fishermen in Zanzibar fished on foot

As of 2020, the estimated number of fishermen in Zanzibar was 50,218, with 29% (14,566) individuals foot fishers. These fishermen rely on traditional fishing gears and vessels, which include small boats, dhows, canoes and outrigger canoes. Out of 7,919 fishing crafts recorded in 2020, only a few (15%) were fitted with outboard or inboard engines. The outrigger canoes mainly target near-shore species such as snappers, emperors, rabbit fish and groupers, while dhows and bigger boats catch the offshore larger fish such as marlin, kingfish, sailfish and tuna and the small and medium pelagics in deeper waters. It is worth noting that majority of these fishing craft lack cooling facilities to preserve the caught fish. At present, Zanzibar has a total of 30 fish landing sites dedicated to collect catch and effort information, with 12 located in Pemba and 18 in Unguja. Nevertheless, a significant number of these landing sites, which are utilized by fishing boats, lack adequate infrastructure development. For instances, where there are substantial tidal differences of about 4 meters, fishing boats have to relocate several hundred meters away from the designated anchorage area, making it challenging to access the boats during high tides.

Fishing activities in Zanzibar are not limited to inshore habitats of seagrass and coral reefs, fishers also engage in fishing along the intertidal zones during low spring tides, where they collect sea cucumbers, shells

Zanzibar has a network of 30 fish landing sites, with 12 in Pemba and 18 in Unguja, that collect data on fish catches and fishing effort.

and octopus by hand or with the assistance of a stick. The gathering of shells is an important for coastal families, as it provides both food and source of income. The majority of fish catch is immediately sold and consumed locally on the same day, with only a small portion being preserved if it is landed late. However, there is no presence of industrial fish processing activities in Zanzibar, instead,the most common methods of fish processing involve boiling, salting, smoking and sun drying. In both landing sites and markets, fish is primarily sold through an auctioning process.

Seaweed farming in Zanzibar is a major economic driver, with over 23,654 farmers producing more than 14,000 tons of seaweed annually

Zanzibar is now witnessing the emergence of aquaculture as relatively new initiative, in addition to the seaweed farming. Several species have shown potential for cultivation, including milkfish, mullets, lobsters, oysters, sea cucumbers and crabs. There are ample areas with great potential for aquaculture, both in terrestrial and intertidal areas. However, seaweed farming remains one of the most important mariculture activities in terms of economic impact for coastal communities. Remarkably, about 90% of seaweed farmers are women. Seaweed farming has become an alternative source of income, increasing socio-economic status of coastal communities. According to recent data, there are more than 23,654 seaweed farmers in Zanzibar, collectively producing over 14,000 tons of seaweed annually.

The fishery sector plays a crucial role in the economic and social development of Zanzibar and is recognized as a key contributing sector in the Zanzibar Development Vision 2050 for its contribution to the national economy, income generation, employment opportunities, and food security. In Zanzibar, fisheries constitute various important economic activities that are carried out in both urban and rural communities including artisanal fishing, deep-sea fishing, fish farming and seaweed farming. Artisanal fishing is the dominant practice operated in the inshore waters where coral reefs, mangrove creeks, sea grass beds, and sand banks are the primary fishing grounds. As of 2021, the fisheries sector contributed about 5.0% of the GDP, indicating growth from 4.9% in 2020 and 4.8% in 2019.

The fishery sector offers several employment opportunities for considerable number of people. In the 2016 frame survey, it was reported that the sector directly employed around 49,332 fishers. In addition to this, there were several thousand occasional fishers, and over 4,000 people engaged in indirect employment related to fishing such as boat construction, fish processing and marketing. Moreover, there were about 23,654 farmers actively cultivating seaweed (Department of Fisheries Development, 2015).

The majority of the coastal communities depend directly on coastal resources for their livelihood, with fishing and tourism being prominent economic activities. According to a socio-economic study, fishing emerged as primary economic activity among coastal communities, representing 28.7% of the total respondents. Crop farming followed closely at 24.2%, while seaweed farming accounted for 14.4% of the respondents. Tourism and other activities collectively constituted 32.6% of the economic activities within these communities (MACEMP, 2009).

In Zanzibar, fisheries sector plays a vital role as the primary source of animal protein in the average person diet. It is particularly crucial for the lower income groups, as it represents almost their sole animal protein source. The per capita fish consumption in Zanzibar ranges from approximately 20 kg to 23 kg, which is significantly higher compared to the African average, which stands at 9.4 kg per capita per year.

Zanzibaris eat much more fish than the average African. While the African average is 9.4 kilograms per person per year, Zanzibaris eat between 20 and 23 kilograms per person per year.

1.2 PURPOSE AND RATIONALE OF THE MASTER PLAN

This Master Plan serves as a comprehensive and strategic development framework for the fisheries sector in Zanzibar, guiding its progress from 2023 to 2038. It aims to improve both the management and the sustainable development of fisheries and marine resources in Zanzibar. The overreaching goals are to promote economic growth, create employment opportunities, ensure food security, and protect marine environment. The Master Plan's scope focuses on both marine fisheries, aquaculture and the post-harvest aspects of the value chain, including industrial stages. The Master Plan recognizes the need to address the crucial issues within the fisheries sector. The expected outcomes of the Master Plan are as follows:

i. Facilitating the long-term development process of the fishery and aquaculture sectors.;
ii. Mobilizing resources for sectoral development;
iii. Enhancing the profile, performance, and impact of the Ministry of Blue Economy and Fisheries;
iv. Ensuring compliance with national, regional and global multilateral agreements and standards focused on sustainable fisheries.

1.3 THE PLANNING PROCESS

The Master Plan was developed through participatory approach, involving interview and focus group discussion to gather the aspirations of key stakeholders. These interactions brought together various stakeholders, allowing them to freely express their ideas on important issues regarding the fisheries sector development and strategies to be implemented. The stake holder's ideas formed the basis for formulation the Plan. Additionally, during the planning process, relevant documents pertaining to the sector were carefully reviewed and analysed. Drafts of the report were presented and discussed in the ' workshops attended by internal and external stakeholders, and the feedback received was incorporated into the final version.

CHAPTER TWO
THE POLICY AND STRATEGIC FRAMEWORKS

2.1 ZANZIBAR DEVELOPMENT VISION 2050

The Zanzibar Development Vision 2050 articulates the need for Blue Economy and focuses on key priorities such as in strengthening fisheries management and protecting marine environment. The Vision acknowledges key role that the fishery sector plays in the social and economic development of the country. It also recognizes the value of promoting sustainable fish production for both domestic consumption and export, as an important strategy for diversifying the Zanzibar economy, improving the well-being of the people and increasing the fisheries' contribution to the GDP.

2.2 ZANZIBAR DEVELOPMENT PLAN 2021 – 2026

The Zanzibar Development Plan (ZADEP) is centered around sustainable growth and serves as means of realizing the objectives set forth in the Zanzibar Vision 2050. The Plan aims to leverage the unique advantages of Zanzibar as an archipelago in order to uplift livelihoods with specific focus on enhancing the development of the fishing sector.

2.3 ZANZIBAR BLUE ECONOMY POLICY (2022)

The Policy concentrates on five Strategic Priority Areas, one of which is Fisheries and Aquaculture. Its overarching goal is to promote inclusive economic growth, social development, and environmental sustainability within the framework of coastal and ocean governance. It addresses challenges in fisheries and aquaculture by promoting the sustainable use of fisheries resources while maximizing available opportunities and benefits these sectors. The Zanzibar Fisheries Policy and the Zanzibar Blue Economy Policy are interconnected as they both address key strategic areas related to fisheries and aquaculture. Their shared objectives is to ensure the efficient and sustainable use of fisheries and aquaculture resource while preserving the integrity of sensitive coastal and marine ecosystems. This is achieved through strengthened protection and conservation of Marine Conservation Areas (MCAs) and improved data management in fisheries and aquaculture for effective planning and evidence-based decision making.

2.4 FISHERIES POLICY

The Zanzibar Fisheries Policy has placed high priority on several areas for improvements within the fisheries sector. These include enhancing governance framework for fisheries, improving fisheries management services; formalizing and professionalizing fishing and related activities, managing of inshore fisheries effectively; promoting both inshore and artisanal fisheries in different locations, integrating offshore industrial; promoting artisanal fisheries further offshore; integrating offshore industrial fishing fleets more effectively into the Zanzibar economy; promoting sustainable development of aquaculture; and adding value to and promoting inclusive growth in the post-harvest sector.

2.5 ZANZIBAR CLIMATE CHANGE STRATEGY (2014)

The Strategy focuses on mitigating climate-induced risks and vulnerabilities related to the coastal and marine environment. It addresses challenges such as sea level rise, beach erosion, coral bleaching, sea surface temperature rise, and climate-related diseases. Additionally, the strategy outlines plans for adaptation to effectively respond to these climate-related issues.

2.6 OTHER RELEVANT POLICIES

2.6.1 Zanzibar Industrial Policy (2019)

The Zanzibar Industrial Policy promotes inclusive, sustainable and environmentally safe industrial development within the Fisheries sector.

2.6.2 Agriculture Sector Policy (2002)

The Policy recognize the importance of empowering local communities in sustainable agriculture, as it is a fundamental aspect of achieving sustainable fisheries development.

2.6.3 Zanzibar Water Policy (2004)

The Water Policy of 2004 recognizes the importance of incorporating environmental considerations in the planning and execution of water resources and sanitation management in the country. This recognition is important for ensuring safe and hygienic conditions, as well as for supporting initiatives related to aquaculture and fish farms.

2.6.4 Zanzibar Forestry Policy (1995)

The primary objective of this policy is to protect and conserve forest resources including wildlife, flora and fauna, while also strengthen the significance of forest resources in maintaining soil and retaining water. Additionally, the policy emphasizes the need to promote protection and restoration of mangroves, which greatly contribute to proper functioning of the aquatic ecosystems.

2.6.5 Zanzibar Land Policy (2018)

The Policy promotes sustainable land use practices that align with both the present and future needs for managing the coastal zone and marine domain effectively.

2.6.6 Zanzibar Disaster Management Policy (2011)

The Policy focuses on disaster management, with emphasis on climate change and disaster risk patterns. It address various challenges such as food shortages, marine accidents, fire outbreaks, degradation of both terrestrial and marine ecosystems, and the control of hazardous waste.

2.6.7 Zanzibar Environment Policy (2013)

The Policy focuses on environmental management through establishing appropriate governance framework for the coastal and marine environment. It particular stress on waste management, climate adaptation, integrated coastal zone management and combating marine pollution.

2.6.8 Zanzibar Education Policy (2006)

The Policy plays a significant role in integrating fisheries and ocean governance. It emphasizes the importance of fisheries education and advocates for its inclusion in curriculum development.

2.6.9 Zanzibar Trade Policy (2006)

The Policy emphasizes the importance of community-based development approach to foster social cohesion in investment. It aims to increase local involvement and promote the adoption of modern practices and systems within communities.

2.6.10 Zanzibar Investment Policy (2005)

The Policy promotes investment in fish processing industries and developments of investment opportunity in deep sea fishing. It also emphasizes on facilitation investment through one stop centre institution called Zanzibar Investment Promotion Agency (ZIPA) to streamline investment processes.

2.6.11 Small and Medium Enterprise (SME) Policy (2020)

The Policy aims to creates conducive environment for promoting small and medium enterprises (SMEs) in order to increase employment opportunities and income generation. It places particular emphasis on improving capacity in quality control and assurance in food processing, specifically for fish and fishery products.

2.6.12 Zanzibar Employment Policy (2008)

The Policy seeks to promotes employment within the Fisheries sector as a mean to alleviate poverty in local

communities. It recognizes fisheries and aquaculture as an important source of employment, particularly for women and the youth. Furthermore, the policy emphasizes the significance of private sector investment in order to increase national income and create employment opportunities within the sector

2.6.13 Zanzibar Youth Development Policy (2005)

The Policy focuses on promoting awareness, capacity development and entrepreneurship among youth, particularly in the fisheries sector. It encourages innovation and entrepreneurship, while facilitating access to capital, equipment, and markets for young individuals involved in fisheries-related activities.

2.6.14 Zanzibar Food Security and Nutrition Policy (2008)

The Policy promotes equitable access to safe and nutritious food and supports the certification of products. It acknowledges that achieving increased food and nutrition security largely depend on the sustainable development of the Fisheries sector, especially through the increased production of fish and fishery products.

2.6.15 Zanzibar Health Policy (2011)

The Policy promotes good governance at the local-level and supports the implementation of socio-economic programs initiated by f the government.

2.6.16 Zanzibar Public Private Partnership Policy (2014)

The Policy promotes investments, financing, and development of modern infrastructure and public services through Public-Private Partnership (PPP) arrangements.

2.6.17 Zanzibar Cooperative Development Policy (2014)

The Policy promotes community empowerment, gender mainstreaming and the development cooperatives.

2.6.18 Zanzibar Gender Policy (2016)

The Policy is designed to eradicate all forms of discrimination against women. It addresses gender disparities in accessing marine resources, financial services and labor markets. The policy specifically promotes women's empowerment in various sectors, including seaweed farming, fisheries, aquaculture, maritime transport, oil and gas development, and tourism.

2.7 INTERNATIONAL AND REGIONAL CONVENTIONS

The United Republic of Tanzania (URT) actively participates as a member in various international and regional fishing and fisheries-related agreements and organizations. The country's engagements in these agreements and bodies are outlined in this section of the plan, highlighting its commitment and involvement in the global and regional fisheries communities.

2.7.1 UN Convention on the Law of the Sea (UNCLOS)

UNCLOS establishes the legal structure for conservation and sustainable use of all areas of the oceans and their resources. These include the rights and obligations of nations pertaining to maritime space and resources.

2.7.2 Sustainable Development Goals (SDGs)

SDG 14 calls for the sustainable management and conservation of oceans, seas, and marine resources to promote sustainable development. It is closely linked with several other Sustainable Development Goals (SDG), including SDG 1 (End Poverty); SDG 2 (End Hunger); SDG 5 (Gender Equality); SDG 7 (Affordable and Clean Energy); SDG 8 (Decent Work and Economic growth) and SDG 13 (Climate Action).

2.7.3 AU Agenda 2063

As per Agenda 2063, the fisheries sector aligns with the Goal 6 (*Ocean Economy for accelerated economic growth)* and Goal 7 (*Environmentally sustainable climate and resilient economies and communities*) of Aspiration 1.

2.7.4 Africa Integrated Maritime Strategy 2050 (AIMS)

The overarching vision of the 2050 (AIM) Strategy is to foster increased wealth creation from Africa's oceans and seas. This is achieved through the establishment of a sustainable and thriving blue economy that prioritize security and environmentally sustainability.

2.7.5 AU Blue Economy Strategy

The Strategy promotes sustainable development across Africa's n coastal and marine sectors. It focuses on enhancing understanding and expertise in various areas including sustainable fisheries, aquaculture, tourism, energy, maritime transport, energy, minerals, marine research, environmental sustainability, climate adaptation and social inclusion.

2.7.6 SADC Protocol on Fisheries

The Protocol aims at conservation and sustainable use of living aquatic resources and aquatic ecosystems that hold significance for the members states of the Southern African Development Community (SADC) that are signatories to this Protocol.

2.7.7 Lome Charter on Maritime Security

The Charter focuses on maritime safety and security while promoting sustainable resource utilization. It accomplishes this by combating Illegal Unreported and Unregulated Fishing (IUU) fishing, marine pollution, and maritime crimes. Additionally, the Charter promotes the establishment of early warning systems, coordination mechanisms, training programs,capacity building initiatives, and the sustainable development of the coastal and marine biodiversity.

2.7.8 IORA Blue Economy Declaration

Indian Ocean Rim Association (IORA) promotes sustainable growth, job creation, environmental protection and efficient financing for the development of the Blue Economy among its member states.

2.7.9 Policy Framework on Fisheries and Aquaculture in Africa (PFRS)

The Framework focuses in enhancing livelihood opportunities associated with fisheries, recognizing that the sustainable management of these fisheries depends on improved maritime governance.

2.7.10 CEDAW Convention on Women

CEDAW requires countries to eliminate discrimination against women and girls in all areas, and promote women's and girls' equal rights.

2.8 FISHERIES RELATED MULTILATERAL ENVIRONMENTAL AGREEMENTS

The relevant global environmental instruments for fisheries management include:

2.8.1 The Convention on Trade in Endangered Species of Flora and Fauna 1973 (CITES)

Tanzania ratified CITES on November 29, 1979 and came into effect on February 27, 1980.

2.8.2 The Convention on the Conservation of Migratory Species (CMS) 1979

Tanzania's entry came into effect on July on 1, 1999. Tanzania has also signed various Memoranda of Understanding (MoU) that were developed under the auspices of CMS, such as the Indian Ocean and South East Asian and Conservation of Marine Turtles, signed on June 23, 2001, and became effective from September 1, 2002, and the Memorandum of Understanding on the Conservation and Management of Dugongs (*Dugong dugon*) and their habitats throughout their range, which was signed on October 31, 2007.

2.8.3 The Convention on the Conservation of Biological Diversity (CBD)

Tanzania signed the CBD on June 12, 1992 and ratified it on March 8, 1996.

2.8.4 The Convention on Wetlands, 1971 (Ramsar Convention)

This convention reflects the commitments of its member countries to protect the ecological character of wetlands of international importance and to promote sustainable use. Tanzania's entry into the Ramsar Convention became effect on August 13, 2000

2.9 REGIONAL/INTERNATIONAL INSTITUTIONAL FRAMEWORK

2.9.1 Indian Ocean Tuna Commission (IOTC)

Indian Ocean Tuna Commission (IOTC) is an intergovernmental organization mandated to manage tuna and tuna-like species in the Indian Ocean and adjacent seas. Its primary objective is to promote cooperation among member states to ensure the conservation and sustainable utilization of stocks covered by this agreement. The commission also promotes the sustainable development of fisheries based on these stocks.

2.9.2 The International Whaling Commission

The International Whaling Commission (IWC) accepted Tanzania's to join the commission on June 23, 2008, which also marked its entry into force for Tanzania. The purpose of the Convention is to effectively conserve whale stocks and facilitate the orderly development of the whaling industry.

2.9.3 AU-IBAR Fisheries Policy Framework and Reform Strategy

The African Union (AU), in collaboration with New Partnership for Africa's Development (NEPAD) issued the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa for *"creating a conducive and enabling environment for the fish sector to create equitable, social and economic development in Africa."* The Policy Framework and Reform Strategy has identified seven policy objectives that are considered critical to Africa's fisheries development.

2.10 VOLUNTARY INTERNATIONAL FISHERIES INSTRUMENTS

Tanzania has signed several voluntary international instruments, notably:

2.10.1 SADC Protocol on Fisheries

Tanzania signed this protocol on August 14, 2001, ratified it on March 16, 2003, and it came into force on August 8, 2003. The objective of the protocol is to promote responsible and sustainable use of the living aquatic resources and aquatic ecosystems among State Parties.

2.10.2 FAO Code of Conduct for Responsible Fisheries

This provides principles and standards that are applicable to the conservation, management, and development of various aspects of fisheries, including the capture, processing, and trade of fishery products, fishing operations, aquaculture, fisheries research, and the integration of fisheries into coastal area management.

2.10.3 FAO International Plans of Action (IPOAs)

These plans were developed to address specific issues related to implementing Code of Conduc: The IPOAs subscribed by Tanzania include:

1. **The International Plan of Action for Reducing Incidental Catch of Seabirds in long line fisheries**, which aims to minimize the incidental catch of seabirds in long line fishing operations.
2. **International Plan of Action for the Conservation and Management of Sharks**, which focus on ensuring the conservation and sustainable management of sharks and their long-term sustainable use.

2.10.4 FAO Sustainable Small-Scale Fisheries Guidelines

Zanzibar has committed to implement the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication, which was published in 2015. These guidelines recognizes the role of sustainable small-scale fisheries in alleviating poverty and ensuring food security. They emphasize the importance of responsible fisheries and sustainable development by prioritizing measures such as governance of tenure in small scale fisheries; sustainable resources management; social development, employment and decent work; effective value chains, post-harvest practices, and trade; gender equality; and disaster risks and climate change.

Moreover, the guidelines calls for the creation of conducive environments for sustainable small-scale fisheries management. This involves enhancing policy coherence, institutional coordination and

collaboration, information sharing, research and communication. Additionally, it emphasizes the need for capacity development and the implementation and monitoring of policies and plans. All these aspects are included within the Zanzibar Fisheries Master Plan, demonstrating Zanzibar's alignment with the FAO guidelines in promoting sustainable small-scale fisheries management.

2.11 URT FRAMEWORK – THE DEEP SEA FISHING AUTHORITY (DSFA)

The implementation of the Territorial Sea and Exclusive Economic Zone Act of 1989 and the Deep-Sea Fishing Authority Act of 2020 has improved regulatory mechanism for managing the Exclusive Economic Zone (EEZ) of the United Republic of Tanzania. Deep-Sea Fishing Authority (DSFA) is the government agency responsible for the management of deep-sea fishing activities in the EEZ. The key functions of the authority as outlined in the DSFA Act, are as follows:

1. To promote, regulate and control fishing in the Exclusive Economic Zone;
2. To regulate the licensing of persons and ships intending to fish in the EEZ;
3. To initiate, implement and ascertain the enforcement of policies on deep sea fishing vessels;
4. To formulate and coordinate programmes for scientific research in respect of fishing;
5. To formulate EEZ related fisheries guidance;
6. To negotiate and enter into any fishing or other contract, agreement or any kind of fishing cooperation with any government, international organisation or other institution in pursuance of the provisions of DSFA Act;
7. To do or to undertake any other act or thing required or permitted to be done in furtherance of the purpose and provisions of the DSFA Act.

CHAPTER THREE
ANALYSIS OF FISH DEMAND, STOCKS, PRODUCTION AND SUPPORT CAPACITIES

3.1 NATIONAL, REGIONAL AND INTERNATIONAL DEMAND

Zanzibar faces challenges regarding marketing channels and systems. Currently, fish is primarily sold through an auctioning process in the landing sites or markets. Additionally, there is shortage of marketing channels and limited storage facilities, which hinders the distribution of fish to consumers. As a result, the value of fish decreases, and there may be physical and economic losses during post-harvest phase. Additionally, the price of fish is steadily increasing, indicating a combination of limited supply and the increased demand, particularly from the tourism industry.

A large share of the small pelagic catch in Zanzibar is processed and packaged at landing sites for export to the Democratic Republic of Congo

A significant portion of the small pelagic catch is processed at landing sites by various groups and packaged in large sacks weighing approximately 100 kg each. The majority of this catch is exported to the Democratic Republic of Congo, where buyers and their agents directly collect the mainly dried or salt-dried fish from the beaches. Some of the catch is also consumed locally, while a portion is transported to Dar es Salaam. Efforts are being made to improve the processing quality of the of small pelagic fish, and new packaging ideas are being explored to achieve higher prices for processors.

3.2 FISHERIES MANAGEMENT: ASSESSMENT OF THE SIZE OF STOCKS OF PRIORITY FISHERIES

The fisheries sector in Zanzibar consists of small-scale fisheries, which faces challenges in effective management due to various factors, including lack of infrastructure and tools for data acquisition, inadequate institutional capacity, financial resources, and lack of skilled human resources. These limitations have hindered the Department of Fisheries and Aquaculture Development in implementing suitable management measures, thus posting greater risk to the fish resources. Currently, precautionary input controls, such as minimum size at first capture and closed areas or seasons are used for fisheries management. However, the effectiveness of these input controls remains uncertain without sufficient monitoring and surveillance. To address these issues, fish stock assessments will concentrate on the four identified priority fisheries, as well as building the research capacity of the Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI) and other academic institutions. A comprehensive fisheries research plan will be developed, with specific focus on priority fisheries, which include:

3.2.1 Small pelagic fishery

Small pelagic refers to neritic species that are not found near the sea bottom. This category include various small fish species such as *sardines*, *sardinella*, *anchovy*-type (dagaa) and the small shoaling carangid-type species such a scads and mackerels. These fish are known for their migratory behaviour, which has implications across different boundaries. The biometric information of these species will be collected at specific sites while an acoustic survey will be conducted to estimate the biomass at those sites. The data obtained will be used in spatial model and ultimately contribute to a comprehensive stock assessment both in time and across the coastal water surrounding Zanzibar.

3.2.2 Octopus fishery

Octopus is a high-priority species, which include other *cephalopod* species like cuttlefish and squid that are frequently captured by local fishermen. Research efforts will be directed towards collecting biometrics data in specific areas and conducting spatial analysis of catch, fishing effort, and distribution, all of which will contribute to a comprehensive stock assessment. Studies will also explore genetic stock discrimination, examine larval dynamics, and establish connection between ecosystems. Management measures such

as seasonal closures will be considered as part of the overall strategy.

3.2.3 Tuna and tuna-like species

In this priority group, there is diverse range species including both small pelagic and large pelagic species. The large pelagic species consist of commercial important tuna species (as listed under the Indian Ocean Tuna Commission - IOTC), large pelagic shark species. Moreover, the group consist of several neritic pelagic species such as the king and queen mackerels and kingfishes.

3.2.4 Reef fishery

Reef fish are species that dwell at the bottom of the oceans and are associated with the coral reefs, or other bottom substrate types. The reef fish species assemblage is potentially large with numerous species. However, the Fisheries Master Plan is primarily concentrates on the key species landed and which are commonly caught by coastal fishers.

3.3 FISH STOCKS TRENDS

The shortage of accurate fish stock data in Zanzibar makes it difficult to assess the status of marine stocks, except for large pelagic species that fall under the mandate of the Indian Ocean Tuna Commission (IOTC). The assessment of marine fish stocks primarily depends on methods based on observations, scientific knowledge and expert judgment. In the inshore zone, and particularly in the coral reef areas, there is a general trend of a slow decline in overall fish production and individual catch rates of artisanal fishing units. This decline is mainly attributed to a combination of factors. Firstly, the over capitalization of the sector has led to an increase in fishing capacity, including the number of fishing vessels, and the use of gear that exert substantial fishing effort. Secondly, fishing activity that is confined to inshore and shallow waters within the reef

Box 3.1: Fish Stock Assessment Methods

Several fish stock assessment techniques have been developed and the choice depends on the species being studied. These techniques include:

Length-based or FISAT
This technique has the advantage of lower data requirements and costs. It can be applied when aging of the fish is not possible. However, it has weaknesses such as lower accuracy and precision, and sampling bias due to fishing gear selectivity or fish behaviour.

Age-based
This technique provides high accuracy and precision and can be used when fish age is available. However, it requires more data, time, and costs for obtaining age information of the fish.

Black-box (biomass dynamic) models
These models are simple to apply and require catch and abundance data. They can be used when species cannot be aged and used for multi-species fisheries. However, they require long time series data, and good index of abundance with constant catchability coefficient.

Analytical models
These models are usefulness when management advice is required on technical measures such as age or size at first capture or closed seasons. They can be applied when different fleets target different age groups, and management advice can be provided with only one year's data. However, they are expensive and require data at different age or size of the targeted fish stocks.

Stock Per Recruit
This technique is easy to use and with few data. It is used to prevent growth overfishing; and uses the percentage stock per recruit (SPR ratio) as reference point.

Participatory Fisheries Stock Assessment (ParFish)
ParFish can be used as a rapid assessment tool to determine stock status. It is a participatory framework and involve stakeholders, which can provide additional benefits such as stakeholders engagement in the management process,decision-making, and responsibility for the resource. Increased participation in the data collection stages can stimulate new research initiatives and lead to more robust stock assessments.

The details of the mathematical techniques involved in these stock assessment technique are beyond the scope of this section. However, it is important for scientists to choose the appropriate stock assessment technique based on their expertise and type of fishery. The selection is often a personal decision rather than a strictly logical one, as noted by Sparre and Venema (1998).

ecosystem due to technological limitations. Lastly, poorly regulated fisheries due to weaknesses in the governance and management system.

The inshore fishery sector is experiencing over-capitalization as observed in continuous increase of fishing capacity such as the number of fishing vessels, motorization rate, the number of gears such as purse seines, seine nets and ring nets, and technological innovation such as slight increase of fishing vessels. Furthermore, open access to resources, difficulties in transferring fishing capacity and effort further offshore in deeper waters, steady increase of fish prices, and low capabilities of fishing communities to diversify income-generating activities, contribute to the over-capitalization of the inshore fishery sector.

According to the 2020 Zanzibar Fisheries Frame Survey (ZSSS) , a total of 50,218 fishers were surveyed, with 43,080 being males (86%) and 7,138 being female (14%). Among them, 35,652 were engaged in vessel fishing, while 14,566 were foot fishers . In Unguja Island, a total of 31,328 fishers were observed, with male fishers accounting for 86% (26,934) and female for 14% (4,394). In Pemba Island, there were 18,890 fisheries, out of which 85% (16,146) were male and the remaining 15% (2,744) were female. Over time, the total fish production has increased, reaching over 47,100 tons per year in 2021. However, fisheries sector in Zanzibar suffer from inadequate regulation, resulting in poor compliance with fishers with existing measures aimed at protecting the fish population and the coastal ecosystems, even within Marine Conservation Areas (MCAs).

The 2020 Zanzibar Fisheries Frame Survey found that 86% of fishers in Zanzibar are male and 14% are female.

Therefore, despite the lack of scientific evidence, it is reasonable to consider inshore fisheries in Zanzibar as vulnerable, because they are likely to be fully or over-exploited potentially operating at or above maximum sustainable levels, leading to decline in catch per unit of effort, and exhibiting poor compliance with fishing regulations. The excessive fishing capacity in coastal waters further contributes to the instability of inshore fisheries. However, the fish stocks in deeper territorial and internal waters of Zanzibar remain underexploited, primarily due to inadequacies in technological, skilled human resources, finance required for fish operations, institutional and marketing considerations.

3.4 FISH STOCKS RE-BUILDING.

In Zanzibar, the establishment of Marine Conservation Areas (MCAs) has been implemented as a strategy towards rebuilding fish stocks. The concept of MCAs as fisheries management tool aimed at restoring and re-building fish stocks has been widely promoted. Zanzibar, specifically has established five MCA – the Menai Bay Conservation Area (MBCA) in 1997, the Mnemba Island-Chwaka Bay Marine Conservation Area (MIMCA) in 2002, and the Pemba Channel Conservation Area (PECCA) in 2005. Additionally, two other MCAs have been recently established, namely Changuu-Bawe Marine Conservation Area (CHABAMCA) and Tumbatu Marine Conservation Area (TUMCA). The major difference within the MCAs, apart from specific regulations enforced through specific orders is the active involvement of both public institutions and community-based organizations such as Shehia Fisheries Committees (SFCs).

These entities are in better position to fulfill their mandates by ensuring effective monitoring, control and surveillance of the coral reef fisheries. They also support local initiatives aimed at diversifying the livelihoods of fishing communities, with a view to reducing fishing pressure on inshore stocks. This enabling environment has been further facilitated by non-governmental organizations (NGO) and more recently by government projects, including the Marine and Coastal Environmental Management Project (MACEMP) and, the Southwest Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFISH). Furthermore, each of the five MCAs has developed General Management Plans (GMPs) with the assistance of the MACEMP and SWIOFISH projects. The GMPs are currently being incorporated into Marine Conservation legislation, ensuring a comprehensive and regulated approach to the management of these areas.

3.5 SUSTAINABLE EXPLOITATION STRATEGIES

Harvest strategies involve plans to adjust management options based on fish stocks. The most common used harvest strategy is the fixed exploitation rate, which aims to consistently harvest a certain fraction of the fish stock each year. Fisheries research provides necessary data and information to determine the appropriate exploitation strategy. The fishing effort is then adjusted to produce a sustainable state, such as the maximum biomass, maximum fishing employment,

maximum sustainable yield, maximum economic yield or optimum sustainable yield. Harvest strategies are implemented through various tactics and regulatory tools such as quotas, seasons, and gear restrictions. Harvest tactics can be divided into three main types:

1. Input controls: These regulate the fishing effort by setting limits on factors such as the number of boats, vessel capacity, fishing intensity and the permissible time or fishing area per boat;
2. Output controls: These determine the permissible catch, such through total allowable catch (TAC) in a specific fishing area, quotas for individual fishers or a fishing community, or legal limits on the sizes of fish that can be caught (often the lowest permissible size); and
3. Technical measures: These establish setting limitations on where, when and how fishers can operate, such as restrictions on fishing locations, seasons, and gear.

Quotas are increasingly used in large-scale commercial fisheries, while closed seasons and closed areas are common in recreational fisheries. Management procedures represent the combination of data collection, assessment procedure, harvest strategy, and harvest tactics. The aim of a harvest strategy is to maintain commercial fish stocks at environmentally sustainable levels and to maximize the economic returns to the Zanzibar community. It provides more reliable operating environment for the fishing industry. Harvesting strategies are formulated based the objectives set, ensuring that tactical and operational aspects aligns with strategic management process and are consistent policy choices. Decision-makers, along with active participation from fishers and processors, can develop harvesting strategies. Simplest strategies based on stock size, such as constant-stock-size, constant-exploitation-rate and constant-catch, are commonly used. Key features of a harvesting strategy include information on the stock status in each spatial management unit is necessary;exploitation rates should reflect levels of knowledge about stock status; and an annual review of catch and effort data is needed to inform the appropriate fishing levels to be permitted.

3.6 ARTISANAL FISHING

The majority of Zanzibar fisheries are conducted through artisanal or small-scale methods. Fishermen operate within the 12 nautical mile territorial waters surrounding the Zanzibar islands, with most fishing taking place within 5 miles of the shoreline, primarily targeting coastal reefs. This is facilitated by the use of small traditional fishing vessels such as outrigger canoes (ngalawa), dhows (dau), dugout canoes (mtumbwi) and boats (mashua, boti). According to the Zanzibar Fisheries Frame Survey (ZFFS 2020), several fishing gears were identified. These include Gillnet (GN), Handline (HL), Longline (LL), Purse seine (PS), Ring net (RN), Stick rod (SR), Seine net (SN), Trap (TR), Cast net (CN), Beach seine (BS), Spear gun (SP), Weir (WR) and Monofilament net (MF). The survey reported a total of 39,122 fishing gears, with 24,166 gears in Unguja and 14,956 gears in Pemba. Handlines were the most common used gears, accounting for 17,841 (46%), followed by traps with 15,889 (41%), and gillnets with 841 (3%).

Handlines are the most commonly used gears, accounting for 46% , traps accounted for 41% , followed by gillnets with 3% of the total gears recorded in 2020.

It is important to mention that in Zanzibar, spear guns were widely used illegally, with 2,297 gears, accounting about 6% of the total gears. The second most commonly used illegal gear was beach seine with 310 gears, making up to 1% of the total gears. Small pelagic fishes such as *clupeids*, *scombroids* and *engraulids* comprised 14% of the marine catches landed in 2017. These species are the common fish caught off the western shores of Zanzibar, particularly in the western part of Unguja and in Chakechake and Mkoani in Pemba. Various nets such as seine nets, purse seine, gill nets, and ring/lift nets are used to catch schools of fish in open waters. However, the management of this fishery is hindered by several factors. Limited finances for enforcement, making it challenging to regulate effectively, The remoteness of certain areas also pose difficulties in monitoring and enforcement. Additionally, large and growing numbers

of fishers, along with easy fishing access, further complicating management efforts. During the heavy rain season, which begins early March and ends late May, post-harvest loss is highest, which account for almost 20% of the total catch. This phenomenon occurs because the small pelagic fishes are abundant during this period and the rain season prevent them from drying, as they rely on sun drying. Furthermore, the poor conditions of road network in rural areas makes it difficult for vehicles to access the landing sites, which leads to inefficient distribution of catches during this period, which result to their loss.

The reef fish and large pelagics play a significant role in fish artisanal fishing. As of 2017, reef fish alone accounted for 41% of the total fish production, highlighting their importance in meeting the demands. Similarly, large pelagics contributed 25% of the overall fish production. Shellfish and other invertebrates are commonly hand-collected from intertidal waters and coastal lagoons. This method of harvesting invertebrate fisheries has traditionally been carried out by women and children for both subsistence and commercial purposes. The artisanal fisheries are seasonal and depend on the monsoon periods. The Northeast monsoon season, which occurs between November to March, is relatively calm and accounts for the majority of the catch. On the other hand, the Southeast monsoon, which occurs between June and September, is characterized by strong winds.

In Zanzibar, the artisanal fish production has experienced general trend of a gradual decline in fish production and individual catch rates. This decreasing trend is contributed by various factors. Firstly, the over-capitalization of the sector, has put excessive pressure on fish stocks. Secondly, fishing activities has been confined to inshore, and shallow waters within reef ecosystems. Lastly, the fisheries have been poorly implemented due to some inadequacies in management. Fishing activities can have significant impacts on marine ecosystems, affecting not only the structure but also the functions and marine ecosystems. The removal of target species has repercussion on their prey, predators, and competitors, as well as on the habitats they inhabit. It is crucial to consider exploitation and fishery management as a integral parts of the marine ecosystem. This calls for the necessity of adopting an ecosystem-based approach to manage marine fisheries.

Artisanal inshore fisheries in Zanzibar operate under an open access regime, which has resulted in lack of control over fishing capacity and effort in these waters. As consequence, this fails to ensure adequate compliance with fishing regulations, negatively impacting the sustainability of resources and well-being of fishers and other stakeholders. The effectiveness of existing management tools is inadequate, calling for the introduction of additional measures to complement the existing ones. Moreover, the inshore fisheries heavily rely on the environment quality, highlighting the need for greater participation in national efforts and initiatives aimed at conserving the integrity of coastal ecosystems.

3.7 DEEP-SEA FISHING

Deep-sea fishing activities takes place within the Exclusive Economic Zone of the United Republic of Tanzania (URT), which cover an estimated area of 223,000 km². In comparison to the total EEZ area in the West Indian Ocean (WIO) region, which is 9,540,727 km², URT's share of 2.33%. The Deep-Sea Fishing Authority (DSFA), established in 2009, is responsible for managing the fisheries in the URT EEZ. Its jurisdiction extends to fishing activities within the EEZ, spans from 12 to 200 nm from the shore. The EEZ waters support various market-oriented fisheries , including long line and purse seine. Deep sea fishing in the EEZ is an important source of employment, food supplies, provides livelihoods for fishers and processors, foreign currency through exports of fishery products, and government revenues-generated from fisheries agreements and taxes. These contributions play a vital role in the national economy. A study conducted by The World Bank in 2012 reported that major portion of fisheries employment is concentrated in the post-harvest activities, such as fish processing and marketing. The economic value of the long-lining and purse-seining fisheries is not always known, particularly when these activities are conducted outside of markets or take place far from the EEZ areas.

The number of vessels, as of May 2016, were 6,407 authorized fish vessels operating in the Indian Ocean, representing numerous nations, many of which are from outside the region (EU, SE Asia etc.). The main fish species caught by long-liners and purse-seiners

The United Republic of Tanzania (URT) has an Exclusive Economic Zone (EEZ) of 223,000 km², accounting for 2.33% of the total EEZ area in the West Indian Ocean (WIO) region of 9,540,727 km²

include albacore, *skipjack*, *yellowfin*, *bigeye*, *swordfish*, *blue marlin, black marlin, striped marlin, sailfish* and *shark*. According to the 2015 stock status report from the IOTC Scientific Committee, some stocks are being fished below the maximum sustainable yield (MSY), while *yellowfin*, and *marlins* are being fully fished. The catch data for URT, categories by species and weight (in tonnes) over the years, as documented in the DSFA database (Table 3.1). The available reported catch data spans from 2010 to 2016, with 2009 being the year when the DSFA became operational. Since that period, there has been a significant increase in reported catches. This can be attributed by several factors including the recognition of DSFA as the main authority regulating migratory fisheries in the URT, improvements in reported catch data, improved transparency and the increased competence in licensing processes. An analysis of the catch data from 2014 to 2017 period indicates that the average annual catch data was 8,615 tones. In 2014, the catch reported by the 74 vessels licensed to fish in the Tanzanian EEZ was 12,276 tones. This represents approximately 0.71% of the total catch in the Indian Ocean EEZ as reported by the IOTC (2016).

Table 3.1: Catch of tuna and tuna like species in the Exclusive Economic Zone of the United Republic of Tanzania from 2010 to 2018

YEAR	ALB	YEF	BET	SKJ	BLM	MLS	SFA	SHARK	SWO	OTH	TOTAL
2010		870	145	1481							2496
2011		138	22	384							544
2012		2337	789	3432						3	6561
2013		4124.194	2068.679	7073.05						390.386	13656.91
2014	3.76	4,486	2244.66	4857.54					144.92	539.5	12276.38
2015	4.445	3156.598	2575.252	5173.317	220.682	14.427	5.451	114.891	214.107	75.686	11554.86
2016	12.076	651.944	485.876	5.5	121.229	25.214	10.415	22.125	616.561	63.513	2014.453

MARICULTURE/AQUACULTURE

Aquaculture activities in Zanzibar primarily focus on the coastal zone, specifically on the two major islands. The existing and potential culture systems include various methods such as land-based ponds in intertidal zone for instance milkfish ponds; land mangrove-based system for growing and fattening mud crab, culture in coastal waters including seaweed farming, pearl oyster culture, and the potential for cage culture of marine finfish. Seaweed farming has experienced a significant growth and development over the past three decades and has become one of the most important income-generating activities for coastal communities, particularly for women. On the other hand, other mariculture activities are still in their early stages of development. This primarily due to lack of conducive environment that facilitates the advancement of commercial aquaculture in region.

3.7.1 Seaweed

Seaweed farming in Zanzibar is a well-established sector that contributes to local economy by bringing in foreign currency. It offers valuable source of income for coastal people, particularly women, empowering them to support themselves and their families financially. The cultivation of seaweed in Zanzibar primarily focuses on two species of red algae – *Eucheuma denticulatum* (commercially known as *Spinosum*) and *Kappaphycus alvarezii* (commonly known as *Cottonii*). These species are sought after for their high-value extract known as *carrageenan*, which serve as stabilizer, emulsifier, or thickening agent in variety of food additives, cosmetics, and pharmaceutical products (Bueno, 2011). Currently, the majority of the seaweed produced in Zanzibar is called *spinosum*, which fetches a lower

price in the world market than the cottonii, known for its stronger gel-forming properties. The lower demand for cottonii can be attributed to its poor performance in shallow growing areas and susceptibility to the *"ice ice"* syndrome. To capitalize on resources, women-operated home industry, organized into registered associations, have emerged. These associations, located in areas such as Kidoti, Chukwani, Bweleo, Paje, Fuoni, Bumbwini in Unguja and Makangale in Pemba produce and sell range of products derived from seawed powder, including soap, oil, Vaseline, sweets and drinks .

Zanzibar began exporting seaweed since the 1930s, especially *Eucheuma* genus, was harvested from naturally wild stocks and shipped to France, the USA and Denmark (Mshigeni, 1973, 1976). In 1989, commercial farming of seaweed began in Zanzibar, and by the early 1990s, farmed seaweed was being commercially exported. Seaweed farming is the third largest foreign exchange earner for Zanzibar, after the tourism industry and cloves. In recent years, seaweed has been the largest marine export product, accounting for over 90% of Zanzibar's marine exports. Over 90% of seaweed farmers in Zanzibar's coast are women. Hence, this activity not only empowers them but also promote gender equality. This is significant because women are often marginalized and excluded from various economic activities (Batuli et al.2020; Msuya et al., 2016). However, the seaweed industry faces several challenges. Firstly, there is significant disparity between the prices paid to producers for dried seaweed and the market price for refined carrageenan. Currently, lower grade carrageenan is sold at prices ranging from 30-50$ per kg, while farmers receive less than 0.17 USD per kg for dried red seaweed. Secondly, the expansion of tourism along the coastline has restricted access to important farming areas in the intertidal zone and drying areas on the upper shoreline. Thirdly, many seaweed farmers face health issues resulting from spending extended periods in the intertidal zone tending for their seaweed farms and carrying heavy loads of seaweed harvested for drying (Fockling et al., 2012; Said et al., 2018).

Seaweed farmers receive less than $0.17 per kg for dried red seaweed, while carrageenan, a processed product from seaweed, sells for around $40 per kg

3.7.2 Finfish

Finfish farming in Zanzibar is currently limited to pond culture of milkfish (*Chanos chanos*), which was first introduced as trial at Makoba in 1996 by the Institute of Marine Sciences (Requintina et al., 2008). This initiative took place on a converted salt pond, located on land owned by the Prisons Authority, near the village of Bumbwini Mafufuni in Unguja Island. Subsequently, several milkfish ponds have been constructed in Unguja and Pemba. However, the production of milkfish in Zanzibar has not been adequately monitored, and information of this mariculture activities is limited or estimates regarding the output, number of active ponds,pond area, and people engaged in milkfish farming. Currently, fish farming is done at subsistence level in Pujini at Pemba and Bumbwini at Unguja.

3.7.3 Pearl oysters

In Zanzibar, pearl farming involves two species — the black-lip pearl oyster, *Pinctada margaritifera* and the winged oyster *Pteria penguin*. Half pearls farming, also known as Mabe (in Japanese) was introduced in Bweleo village, Zanzibar in 2006 (Jiddawi, 2008). In this farming, plastic buttons are glued to the inside of a pearl oyster shell and covered with nacre, resulting in half pearl. These pearls are harvested,sold in auctions, and used for making jewelry targeting tourists. Additionally, cottage workshops produce shell craft ornaments primarily for tourists. The sector has signs of expansion, attracting investors and farmers from other areas on the island to venture into pearl oyster culture (Jiddawi, 2011). However, the long-term sustainability of pearl farming will depend on overcoming several challenges. One such challenge is ensuring consistent and reliable supply of spat-young oysters. Attempts have been made to collect spat using underwater lines and rafts in Nyamanzi and Bweleo (Ishengoma, 2009; Jiddawi and Haws, 2018). Establishing no-take zones in Fumba peninsula and introducing hatcheries for spat production are other strategies being explored. The Institute of Marine Sciences attempted bivalve seed production hatchery in 2010, with assistance from Woods hole University (Jiddawi and Haws, 2018). Later, the government established mariculture centre to promote crab, sea cucumber and milkfish aquaculture while enhancing the development of the hatchery.

3.7.4 Sponges

Sponge farming, which involves the cultivation of sponges from the Phylum *Porifera*, is especially well-suited for remote coastal areas without access to advanced technologies and infrastructure. The farming of sponges can be carried out using simple methods, such as farms located in shallow waters and serviced from the surface using traditional fishing boats. The required equipment is also low-cost and include buoys, ropes, anchors. Moreover, the processing of sponges into final product can be done locally. As a result, micro-farms run by families or co-operatives present a possible alternative source of income for local communities, including those already engaged in seaweed farming. In Jambiani, an NGO known as Marine culture is actively involved ins sponge farming and collaborates with local communities. However, one of the main challenges faced in this sector is availability of sponge seeds (Hamad, 2018). Additionally, scaling up the project among the local community is a key aspect that required attention.

3.7.5 Crab fattening

Crab fattening, which is the practice of raising mud crab, specifically *Scylla serrata*, involves their cultivation from juveniles or fattened individuals in cages located in mangrove areas within the intertidal zone on Unguja and Pemba. The dimension of the cages can vary to suit the available space and are constructed using sticks from trees. Each cage contains compartments designed for individual crabs. The first crab fattening project was established in Kisakasaka on Unguja in 2007, with the assistance of workers from the Voluntary Services Overseas, a UK-based international NGO (Falcao, 2009). It has been shown that the returns from crab fattening are positive but unreliable and the feed mix can be relatively expensive (Falcao, 2009). Subsequently, crab fattening has been adopted in other villages across the Unguja and Pemba Islands was established. In 2015, a hatchery was established at SUZA, but it has yet to produce viable crab seeds (Sheikh et al., 2016). A new hatchery has recently been established by KOICA-FAO, focusing on priority species such as sea-cucumber, milkfish, and crabs. This hatchery was officially inaugurated in April 2018.

Despite the significant potential of mariculture to alleviate poverty and stimulate socio-economic development, the lack of business skills and limited market access pose economic constraints on crab fattening development. The private sector can play a crucial role in facilitating small-scale farming by identifying new products, exploring value adding opportunities, introducing new processing technologies and ensuring market access and shares. Improved governance systems to encourage and support prospective farmers would stimulate mariculture.

The limited availability of high-quality seed and feed, combined with the lack of technical skills and training, hinder the economic development of crab fattening.

Lack of business skills and limited market access pose economic constraints on crab fattening development

3.8 SEMI AND FULL INDUSTRIAL FISHERIES

The Revolutionary Government of Zanzibar is actively promoting of semi and full industrial fisheries to harness the potential of fisheries sector. Industrial fishing focuses on fishing activities within the internal waters, territorial waters and EEZ, involving processing of the marine products to varying degrees. Fish processing involve a wide range of activities including cleaning, filleting, icing, packing, canning, freezing, smoking, salting, drying or any other preparation of fish or fish products for the purpose of marketing. Although Zanzibar has significant potential in fisheries sector, it has not fully exploited deep sea fishing and subsequent processing of catch for exports.

The Unguja and Pemba Channels posses abundant pelagic fish species such as sardines, anchovy and other non-commercial species. Crustaceans like crabs, and lobsters are found in shallow waters, with offshore lobsters fishing being particularly popular among the artisanal fishermen due to higher prices offered by the lucrative tourism industry. Zanzibar and surrounding areas also harbor molluscs such as squids and octopuses, clams, oysters, and various bivalve species. The surrounding waters yield a wide array of products including mackerels, several types of tuna, wrasses, rays, rock cods, snappers, mullets, eels, and parrotfish, all of which possess excellent export potentials for Zanzibar apart from being sold to tourist resorts on the islands.

To capitalize on these opportunities, it would be advantageous to establish processing centres near seafood farms, facilitating the production of salted and dried seafood varieties like fish, squids to shrimps. Additionally, canned seafood products ranging from tuna and sardines to seafood pate are in high demand overseas. Zanzibar could also explore the development of seaweed processing with proper management. Processed seaweed is in high demand among East Asians, and there is great potential for exports both edible and non-edible seaweed products. Currently, Zanzibar's seaweed industry has an estimated 23,654 women seaweed farmers, but processing capabilities are limited. The priorities for attention include the following:

Zanzibar has great potential for deep sea fishing and exports, but it has not yet fully realized this potential

1. To strengthen semi and full fisheries industries include, several measures need to be taken:
2. Review and strengthen the fisheries policies and government laws and regulations to better support the development of semi and full fisheries industries;
3. Promote investment in small and medium fisheries processing centres;
4. Develop an effective information base to guide investments and decisions related to semi and full fisheries industries;
5. Construct fishing ports and related facilities in collaborating with the Zanzibar Ports Corporation (ZPC);
6. Build the capacity of the Zanzibar Fisheries Company (ZAFICO);
7. Build the capacity of the Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI)

3.9 FISHERIES AS COMPETITIVE TRADE

There is a need to transform the fisheries sector in order to ensure it's competitive as a trade. This calls for interventions to change stakeholder mindsets; promote more investments and enterprise developments in the sector; establish world class quality certification and assurance facilities; and develop local, regional and international markets and marketing systems.

3.9.1 Mind-set Change

To a large extent fishing in Zanzibar is not viewed as a competitive trade. This mindset needs to be changed along with creating an environment that supports and promotes the sector as a competitive trade. The priorities for attention include the following:

1. Wide sensitization of key stakeholders at all levels in both the public and private sector about the importance and strategies to enhance the competitiveness of the sector;
2. The absence of essential trade infrastructure, especially a fishing port and accessible air service, poses significant limitations to the growth of fisheries, especially in the offshore industrial fishing sector;
3. Capacity building is crucial for the commercialization of local markets and export marketing of fish products. Consistency in the supply of fish products that meet specific quality and quarantine standards is required.

Therefore, capacity building should be undertaken at various levels in the supply chain to ensure that products meet the necessary quality requirements. This includes raise awareness to fishermen in the appropriate use of fishing gear and technology, proper product handling during harvest, efficient use of on board

storage, on-site processing, packaging, storage; and transportation to markets.

To ensure the success of the entire marketing process, it is essential to provide quality and timely administrative and technical support services through the Department of Fisheries Aquaculture and other relevant ministries. Capacity building at the ministry level is equally important, as it involves important roles in the marketing process, data collection and analysis, assessment of stocks status, development of management plans, and timely with community, producers, and exporters.

Catch rates from inshore fisheries in Zanzibar are declining slightly, likely due to overfishing, destructive fishing practices, and limited fish stocks in coastal waters.

3.9.2 Investment attraction and enterprise development in the sector

Zanzibar has a good potential for foreign investment in offshore (EEZ) marine capture fisheries, aquaculture and in fisheries infrastructure. Effective management of Zanzibar's fisheries resources can contribute to poverty alleviation among the rural population and enhance food security. At present, Zanzibar's fisheries are predominantly consist of artisanal practices, with an annual production of over 35,057 tons caught from inshore waters, and primarily consumed locally.

To create a good environment for both local and foreign investments in Fisheries and Aquaculture, the Revolutionary Government of Zanzibar has been actively orienting policies that promote public-private partnership. However, attracting investments and fostering enterprise development in the fisheries sector require substantial effort and support.

3.9.3 Potential for investment in Aquaculture

The Zanzibar Island's long coastline presents a good opportunity for the development of brackish-water fish farming. The presence of numerous bays, lagoons, mangrove forests, freshwater reservoirs formed by dams (especially on Pemba Island), and other small water bodies create good farming environments. Unfortunately, many of these resources remain under-utilized due to the inadequate management, the use of inappropriate technologies, and lack of extension efforts.

Zanzibar has a number of freshwater, brackish water and marine species of fauna and flora for aquaculture. However, the development of aquaculture must be guided by sustainable management principles . The island has potential for seaweed, fish, mollusks, cockles, mussels, oyster, crabs, sponges and sea cucumber farming. Experience from various maritime countries have shown that mariculture can significantly contribute to animal protein and provide direct employment within the fishing industry.

Currently, aquaculture, particularly mariculture, is not well-developed in Zanzibar because of inadequate technical and financial supports. However, some local individuals have attempted farming activities. Notably, the Nungwi Mnarani aquarium has been successfully established, and generating substantial income from tourists, and demonstration farm exists in Pujini, Pemba.

Data indicates a slight decline in catch rates from inshore fisheries, which may be attributed to limited stocks in Zanzibar's coastal waters caused by increased fishing pressure,over fishing of near shore waters, and the use of destructive fishing methods. Other contributing factors include the rising cost of fishing gear and other imports, as well as changes in maritime laws and regulations for better management practices. Aquaculture has the potential to restore and increase fish production in Zanzibar. Moreover, it can provide alternative or additional employment for unemployed people, Thus curbing rural-urban migration. Aquaculture development would enhance nutrition and improve income level of rural areas.

Given the limited inland waters in Zanzibar, freshwater fish farming can be developed as a small-scale activity carried out by individuals, families or groups in areas such as Mtule, Mgenihaji, Kizimkazi, Mwera, Selem and Mangapwani. However, the potential for this type of aquaculture remains untapped due to lack of capital for research, site identification, and suitable species selection. Fish farming also requires acquisition of new skills.

3.9.4 Potential for investment in fisheries infrastructure

Investments in infrastructure are crucial to support the development of both capture fisheries and aquaculture in Zanzibar. Some key infrastructure investment needed include:

1. Ice-making plants: Currently, there is a limited number of ice-making plants in Zanzibar, which need to be increased to meet the demand of the growing industry.
2. Cold-storage services: These services are required to store excess catch to enhance marketing opportunities. Presently, there are none such services.
3. Boat-building yards – Currently, all fishing boats are built by artisanal boat builders using basic tools and local wood. However, future requirement will include better designed and larger boats to enable fishing in deeper waters and multi-day trips.
4. Plants to make fishing nets – A significant constraint in increasing catch is the shortage of fishing gear. Establishing a local plant for producing fishing nets would be highly beneficial. The produced nets could be marketed not only in the island but also on the mainland and neighboring countries.
5. Engine repair and maintenance workshops. With the increase of fishing activities and bigger motorized boats, such workshops would become a vital necessity.
6. Fish processing plants – With the increasing landings of demersal fish species and other marine products, the establishment of fish processing plants is highly desirable. These plants would cater to the growing demands of the expanding tourist industry and facilitate export opportunities.

3.9.5 Potential for investments in seaweed farming and processing

Seaweed farming has become thriving industry in Zanzibar, providing over 23,654 jobs to local population, especially women ,and enabling them to generate income for themselves and their families. Zanzibar stands as the world's third largest seaweed exporter, trailing behind the Philippines and Indonesia. In 2015, its exports of spinosum reached 16,000 tons, but due to the effects of climate change, the figure has declined to around 9000 ton in 2021. However, production levels have been steadily recovering, surpassing 12,000 tons by 2022.

Investors have promising opportunity to increase seaweed production, specifically cottonii, and capitalize on the creation of seaweed-derived products. These products include perfumes, shampoos, toothpaste, medicines, ice cream, milk shakes, and yogurt by using seaweed extracts such as carrageen, agar, and alginates as gelling substances, stabilizers and emulsifiers.

3.9.6 Potential for investment in capture fisheries

Zanzibar's coastal fishing is predominantly artisanal , and is exclusively carried out by local citizens. However, the government is actively inviting foreign investors to participate in establishing large-scale and deep-sea fishing enterprises. This strategic move aims to stimulate the islands' economy by increasing foreign exchange earnings,creating employment opportunities, and facilitate transfer knowledge and expertise to Zanzibar. The potential of deep-sea and offshore fishing is substantial, with projected annual earnings over those from the agricultural sector. Moreover, It has the potential to generate employment in many rural areas where job prospects are limited. As Zanzibar plans to the future, it is crucial to establish and maintain appropriate systems for the managing and protecting of the aquatic environment, while also developing the infrastructure for a more efficient post-harvest sector.

3.9.7 Zanzibar's efforts for investment attraction and enterprise development in the fishery sector

Zanzibar recognize fisheries as one of its priority sector for attracting investment, alongside tourism and agriculture. The sector offers substantial investment benefits as outlined in the Zanzibar Investment Guide of 2016-1207. Investors have the freedom to choose from various areas for investment, including:

1. Deep sea fishing (snappers, emperors, tuna, sword fish, marlin, king fish and sailfish)
2. Mariculture (fish, shrimps, lobsters, seaweed and bivalves e.g. Pinctada species)
3. Establishment of fish landing sites facilities
4. Establishment of cold storage facilities and ice making plant
5. Establishment of dry-dock facilities

3.9.8 Fish processing and canning

Furthermore, Zanzibar offers opportunities for free economic zones, which are designated geographical areas with more relaxed economic regulations compared to the country's domestic economic laws. These zones are purposely established to attract foreign direct investment (FDI), specifically in labour-intensive projects and increase exports. Zanzibar free economic zones encompass various zones types such as Free Trade Zones (FTZ), Export Processing Zones (EPZ), Industrial Parks (IP), Free Ports and Urban Enterprise zones. Companies that choose to establish their business within these designed areas in Zanzibar enjoy simplified customs and other administrative procedures. These and other incentives make Zanzibar an attractive destination for investments in fisheries and other industries.

3.9.9 Development of Markets and Marketing Systems

In the landing sites or markets, fish is mostly sold through an auctioning process. Despite the large local demand of fish, distribution of fish to consumers is faced with some constraints including weak marketing channels and lack of storage facilities. This decreases the value of fish and may lead to some physical and economic post-harvest losses. Meanwhile, the price of fish is steadily increasing which may reflect the scarcity of the supply and the increased demand of fish, particularly from the tourism industry (RGoZ, 2016). Contribution of the fishery sector to export is low. This results from the combination of several factors including the absorption of fish production by local markets, and the poor-quality control system that makes it difficult to meet the international export standards. Furthermore, only negligible amounts of fish are imported. Research anticipates that rising prices and local demand from the expanding tourist industry, from the export market on the mainland and growing numbers of middle income families regionally, will continue to attract entrants to the fishery.

3.10 FISHERIES GOVERNANCE, MANAGEMENT AND ADMINISTRATION

Fisheries management in Zanzibar is governed by Fishries Act No. 3 of 2010, Marine Conservation Unit Regulations of 2014, and the Fisheries Regulations of 1993. Also Fisheries Policy and Strategy, Blue Economy Policy and its associated Strategy, along with various legislations and regulations, and orders relating to fisheries and marine conservation. These include the Menai Bay Conservation Area (MBCA) in 1997, the Mnemba Island-Chwaka Bay Marine Conservation Area (MIMCA) in 2002, and the Pemba Channel Conservation Area (PECCA) in 2005. Additionally, two other MCAs have been recently established, namely Changuu-Bawe Marine Conservation Area (CHABAMCA) and Tumbatu Marine Conservation Area (TUMCA). The Fisheries legislation provides stronger provisions for the management and development of fisheries in the internal and territorial waters of Zanzibar. Previously, fisheries were primarily regulated by the Fisheries Act No. 8 (RGZ 1988), and the Fisheries Law of 1993, and the updated Fisheries Act of 2010 (RGZ 2010). Presently, the Ministry of Blue economy and Fisheries, under the Revolutionary Government of Zanzibar (RGoZ), is responsible for reg-

ulating fisheries and marine resources use, research and conservation of marine resources.

The department responsible for fisheries and marine resources in Zanzibar has been mandated with the responsibility of managing and governing fisheries. Its core functions include:

1. To promote, develop, control and monitor artisanal and semi industries and related activities in;to ensure proper management
2. To build capacity of individual involved in fishing and related activities to ensure effective management;
3. To educate the public and raise awareness about fishing activities;
4. To encourage sustainable use of marine resources, and promote value addition;
5. To administer fisheries activities and all marine products from related industries;

In order to effectively carry out these functions, the Act grants authority to the Director of the Department of Fisheries to:

1. Declare closed seasons for designated areas, fish species, or fishing ;
2. Prohibit fishing in certain areas for all fish specific or specific designated species or fishing methods;
3. Limit the methods and gear, including mesh sizes of nets or traps, that may be used for fishing;
4. Limit the quantity, size, age and other characteristics of species or composition of fish species that may be caught, landed or traded;
5. Take measure to prevent pollution in the internal and territorial waters of Zanzibar.

The Ministry of Blue Economy and Fisheries in Zanzibar prepared Fisheries Policy of 2022. This policy document provides guidance on enhancing the governance of the fishery sector in Zanzibar. The policy addresses several challenges, including the improvement of the overall governance framework, encompassing legislation, regulation, planning documents, institutions and management services. Additionally, it aims to facilitate the application of good governance principles.

The primary goal of the Fisheries Policy of 2022 is to align with the general objectives outlined in the Vision 2050, Zanzibar Development Plan 2021-2026, the Blue Economy Policy and the Intervention Plan. By detailing how the fishery sector should be governed, the Policy serves as a foundational documents to fulfill these overarching objectives. This Master Plan seeks to implement the Fisheries Policy and its objectives.

3.10.1 Fisheries co-management governance structures

Similar to other countries in the Western Indian Ocean the Integrated Coastal Zone Management regulatory system emphasizes a ***community based approach*** (Cinner et al., 2009). Effective governance of the fishery sector has shown the importance of engaging wide range of stakeholders, including fisheries managers, fishers and other relevant actors. It also brings together various public and private institutions directly or indirectly involved in sector management, such as academic research institutions, navy, maritime authority, local governments, tourism commission, Ministry of Environment, Ministry of Education, NGOs, and others.

Considering these factors, the Fisheries Governance Strategy in Zanzibar adopts a shared vision based on consensus-building. Its successful implementation requires the participation and collaboration of various public and private institutions. The Fisheries Administration, represented by fisheries and aquaculture directorates within the Ministry of Blue Economy and Fisheries (MoBEF), assumes a leadership role in this endevour. The fishery sector in Zanzibar currently faces several challenges, indicating a lack of effective co-management efforts. These challenges include;

1. **Uncoordinated development approaches**: The approaches taken for development in the sector lack coordination and coherence, leading to ineffectiveness
2. **Low investment:** Insufficient investment has hindered the sector's growth and potential for development.
3. **Over-exploitation of the shallow inshore waters**: The shallow inshore waters have been excessively exploited, resulting in resource depletion.
4. **Under-utilization of some resources**: Resources in deep waters have not been fully utilized, representing a missed opportunity for the sector.

5. **Low aquaculture development**: The development of aquaculture in the region has been limited, not fully leveraging its potential.
6. **Weak linkages between research, management and other public and private players**: Collaboration and coordination among research institutions, management bodies, and other public and private actors are weak.
7. **Inadequate funding**: Insufficient financial resources allocated to the sector have hindered its development.
8. **Environmental degradation**: Environmental degradation, including pollution and habitat destruction, has had a negative impact on the sector.
9. **Evolving market access issues**: Challenges related to accessing markets and adapting to changing market dynamics have affected the sector's performance.
10. **Lack of an overarching policy**: for many years, the sector has operated without a comprehensive policy for an extended period, leading to a lack of clear direction and guidance.

Furthermore, illegal fishing activities has been rampant due to weak Monitoring, Control and Surveillance (MCS) and enforcement. In response to these challenges, the Revolutionary Government of Zanzibar has established the Department of Marine Conservation to manage Marine Conservation Areas (MCAs) and other sensitive areas. This recognizes the importance of co-management and compliance with regulations in these critical areas. The Fisheries Administration has also encouraged participation in fisheries management through the establishment of SFCs and supports certain traditional management practices, such as local-level closed season and areas.

3.10.2 Capacity of the Fisheries Department and Related Offices at Regional, District and Pemba Offices

Despite the efforts made thus far, the capacity of the Fisheries Department, including its offices in Pemba, regions and districts, remains inadequate. Several challenges contribute to this situation, including

1. **Staffing shortage**: There is a shortage of personnel within the Fisheries Department, which limits its ability to effectively carry out its duties and responsibilities.
2. **Inadequate funding:** Insufficient financial resources allocated to the Fisheries Department restrict its capacity to address various needs and challenges adequately.
3. **Staff quality**: There may be issues related to the quality or expertise of the available staff, which can impact the overall effectiveness of the department's operations.
4. **Inadequate working facilities**: The lack of appropriate working facilities, such as offices, equipment, and infrastructure, hampers the department's ability to perform its tasks efficiently.
5. I**nsufficient training programmes**: The availability of training programs to enhance the skills and knowledge of the department's staff may be limited, hindering their professional development and capacity building.

3.11 FISHERIES MONITORING, CONTROL AND SURVEILLANCE

Monitoring, Control and Surveillance (MCS), plays a crucial role in managing Zanzibar's fisheries. This systems is essential for promoting compliance and collecting information related to the fishery and fishers. They collect data on various aspect such as fishing vessels,gear, catch types and quantities, fishing grounds,

Zanzibar needs to improve its MCS system, especially for small-scale fisheries and the EEZ, to combat IUU fishing and promote regional cooperation.

and post-capture activities. Zanzibar use these information, along with surveillance of fishing vessels, to establish and monitor fishery rules, discourage rule violators and taking actions against them when necessary.

To ensure the effective control of the fishing activities within their Exclusive Economic Zone (EEZ), Zanzibar has established enforceable national regulations under the auspices of the Deep-Sea Fishing Authority. The

Deep-Sea Fishing Authority (DSFA) Act and its Regulations provide an institutional framework for managing deep sea fishing activities in the EEZ. However, the Authority collaborates with other Government Agencies and institutions to effectively execute her duties. These include Tanzania Shipping Agency Corporation (TASAC), Zanzibar Maritime Authority (ZMA), Ports Authorities (Mainland and Zanzibar), Police Navy, Tanzania People's Defense Forces (Navy), KMKM, the private sector, and others. The Deep-Sea Fishing Authority Act and Regulations provide for the inspection of fishing vessels both at port and sea, conducting sea and air patrols to ensure that fishing vessels comply with licensing conditions. Key features of the MCS system include Vessel Monitoring System; On-board observers, sea, air and shore patrols; monitoring of fish landings; marking of vessels and gear to facilitate monitoring; reporting obligations by ships and a vessel monitoring system.

However, there is still a need to strengthen the effectiveness and sustainability of MCS systems, particularly in overseeing small-scale fisheries and within the EEZ. This can be achieved by strengthening the institutional framework for MCS for combating IUU fishing, as well as building capacities and establishing mechanisms, including cost-effective and sustainable financial arrangements, to promote efficient regional cooperation in MCS and enforcement.

3.12 FISHERIES HUMAN RESOURCES DEVELOPMENT

Human resources plays a critical role in achieving equitable and sustainable development of any organization. While the new economic reforms and other policies in Zanzibar have created an environment for rapid economic development. This trend is not matched by an increased supply of adequately trained and motivated human resources in the fisheries. It is important to stress that both material and human resources are vital for effective management of fishery sector in Zanzibar. The insufficient development of human resources hinders the enforcement of fisheries laws and related policies. To improve fisheries management in Zanzibar, it is necessary to strengthen the capacity of the fisheries departments through improved and targeted training of fisheries officers, facilitate funding and better management.

Currently, the fisheries sector in Zanzibar lack competent fisheries personnel. The islands lack well-established training institutions that focus on fisheries programs at various levels such as certificate, diploma and tertiary. While some progress has been made in capacity-building for community-based organizations like SFCs at village level, particularly in the MCAs, there is a need to continue such programs. These programs should include training activities, possibly with the support of NGOs, as well as clarification of the legal status and role of SFCs in fisheries management. Additionally, self-financing mechanisms should be developed. It is important to establish consultation mechanism among SFCs sharing a same fisheries management area (e.g. bay, islet, estuarine area), considering that village jurisdiction cannot overlap . This coordination and harmonization of local by-laws could facilitate the identification of local fisheries management areas.

At national level, there is a notable absence of associations representing fishers and other relevant stakeholders. This is a major gap in the current governance framework, and efforts should be taken to establish such institutions. The establishment would promote dialogue and facilitate improve communication between the fisheries administration and fishery stakeholders.

3.13 FISHERIES APPLIED RESEARCH AND INFORMATION MANAGEMENT

The current fisheries research and statistical system in Zanzibar is facing several weaknesses in relation to data collection, reporting , and limited information on catch and effort. Although the implementation of SWIOFISH project, which supported SAMAKIS Information System, has improved the process of collecting and analysing fisheries and aquaculture data. Insufficient human and financial resources, as well as insufficient of data collection schemes, have resulted in poor-quality information, leading to limited use of statistics for fishery management and policy development in the island. According to FAO report, 39% of African countries were unable to provide national fisheries statistics in 2009, and 22% submitted inadequate data (Garibaldi, 2012; AU 2014).

It is worth to state the need for improving science to policy nexus. Many fisheries research projects conducted in Zanzibar fail to inform the policy-making process as the information derived from these studies are not usable by decision makers. There is a need to foster collaboration between fisheries and marine resources use, conservation researchers and policy makers to maximize their synergistic potential. Furthermore, it is crucial to strengthen research institutions operating in Zanzibar, such as ZAFIRI, by fostering partnerships

with other national, regional and global research institutions. Additionally, supporting the country's fisheries research to develop a clear research agenda and programmes that address the Zanzibar's priority issues.

The Fisheries Master Plan is designed to address the identified research issues in fisheries. In alignment with SWIOFISH proposed research project aimed at enhancing fisheries management, the following research projects are being proposed.

1. **First Research project** focuses on Development and implementation of Fisheries Management Plans. Inadequate Fisheries Management Plans in Zanzibar highlight the need for their development. It is recommended to initiate efforts towards creating fisheries management plans for priority fisheries, namely octopus, neritic tuna and tuna-like species, small pelagics, mixed reef fisheries and seaweed mariculture. The focus should be on formulating comprehensive plans that encompass various aspects of these fisheries.
2. **The Second Research project** involves review and strengthening of existing data collection methods. In Zanzibar, there are three main fisheries datasets related to fisheries– catch assessment surveys (CAS), frame surveys, and export data. These datasets have been collected over an extensive period, necessitating a comprehensive review and improve frame surveys and CAS data collection system through scrutinizing the existing long-term data. This review should consider the spatial and temporal aspects and identify inadequate data collection methods, such as insufficient training, inadequate samples size; suboptimal spatial distribution, low data quality, infrastructural requirements. Based on these findings, recommendations should be provided to address these shortcomings and improve the data collection process.
3. **The Third Research project** identifies Research to strengthen the management of octopus fisheries . The octopus fishery has experienced significant growth over the years, primarily driven by export demand. However, this growth has led overfishing, particularly due to the substantial numbers of fishers,mainly shore collectors, involved in harvesting octopus. To address this issue, there is a critical need for research aimed at generating data and information that can be used to support and improve the management of octopus fisheries on spatial and temporal scales. Notably, several attempts have been made in various villages to implement closed season, which can serve as valuable example for future management strategies.
4. **Fourth Research project** examines relevant Research to strengthen the management of fisheries for tuna and tuna-like species. Tuna and tuna-like species are highly migratory and exhibit seasonal movements within the Indian Ocean region. However, there is limited information on stock status of these species in Tanzania, as such information is maintained by the Indian Ocean Tuna Commission (IOTC). There is possibility that certain species have become neritic and comprise resident populations over the continental shelf of Tanzania, making them accessible to small-scale fishers. To address these challenges and improve fisheries management, the project develop simple fish stock indicators for priority neritic tuna species; identify and map primary fishing grounds and investigate genetic stock structure of priority neritic species (regional project).

   Furthermore, the project will strengthen IOTC compliance by improving reporting standards (resolution of catch data of neritic tunas to species level). Reviewing and improving the connection between TAFIRI and ZAFIRI. Conducting trials on new fishing methods for targeting medium and large pelagics, i.e. pole-and-line, drop-line and Fish Aggregating Devices (FADs). Lessons learn from previous trials should be considered to prevent costly unsuccessful attempts. Assessing the by-catches of sharks and rays caused by pelagic long-liners.
5. **Fifth Research project** will develop Research to strengthen the management of mixed reef fisheries. The mixed reef fisheries predominantly found in near-shore areas, extending to deep reefs along most of the coast. These fisheries are characterized by multi-species composition, and are typically located in vulnerable corals habitats, including important spawning areas that are susceptible to damage from various fishing gears such as dynamiting. Additionally, multiple small scale fishing sectors (line fishers, gill nets, shore gatherers, divers etc) actively target these fisheries. However, the lack of stock status indicators for individual species has resulted in the over-exploitation or collapse of certain species such as sea cucumber. To strengthen the man-

agement of mixed reef fisheries, the following research areas can be explored. Reviewing and analyzing existing long-term datasets to assess their usefulness for fisheries management purposes. The project will also develop simple stock status indicators for the most important reef fishes at the species level and assess the health of reefs and implementing measures to conserve or restore their conditions.

6. **Sixth Research project** focuses to strengthen the management of small pelagic fisheries . Statistics reveal that Small pelagics species, including *clupeids*, *scombrids*, *engraulids* accounted for up to 14% of the marine catch recored in 2017, highlighting their significant importance. These species are primarily targeted by the artisanal fishers using various fishing methods such as seine nets, purse seine, gill nets, ring/lift nets, hook and line. Migrant fishers also track fish schools for their catch. To strengthen the management of small pelagic fisheries, the following research areas can be explored. Reviewing and analyzing of long-term datasets to assess their relevance and usefulness for fisheries management.

   Developing simple stock status indicators for the most important groups of small pelagics species. Assessing status of stocks and determine appropriate effort levels for sustainable yields. Investigating the long-term dynamics of small pelagic fishery productivity by modelling catch rates alongside oceanographic and environmental parameters. Examining spatial and seasonal trends in fishing patterns along the coast to establish a framework for spatial management of fishing effort.

7. **Seventh Research project** will strengthen seaweed mariculture in Zanzibar. The mariculture sector in Zanzibar holds a significant growth potential, however, there is a need to investigate on value-adding at the local level to increase the sector's value and overcome buyer monopolies that resulted in low prices for dried unprocessed products. To strengthen seaweed mariculture in Zanzibar, the following research areas should be explored. First, develop and implement a Seaweed Management Plan that align with the recently established Zanzibar State Seaweed Company. Second, strengthen Seaweed Unit within the Department of Fisheries and Aquaculture. Third, support local value-addition initiatives through empowerment programs, enabling the processing and development of higher-value seaweed products. Fourth, to promote the adoption of deep-water farming techniques to expand mariculture opportunities

   Other potential research areas that merit consideration include investigating seaweed diseases and developing strategies for their prevention and management and assessing the environmental impact of seaweed collection from the wild, particularly for species like *Ulva*, and exploring novel cultivation methods for these species.

3.14 PARTICIPATION IN REGIONAL AND INTERNATIONAL COOPERATION

Zanzibar, as part of the United Republic of Tanzania, is actively engaged in regional and international cooperation for the management, sustainable utilization and conservation of the aquatic resources and environment. Zanzibar is a part to several fisheries treaties, voluntary instruments, and institutional framework, including.

3.14.1 Treaties and instruments

1. The United Nations Convention on the Law of the Sea (UNCLOS), 1982 – implemented through the Territorial Sea and Exclusive Economic Zone Act, 1989, which incorporates relevant provisions of UNCLOS into Tanzanian national legislation.
2. UN Fish Stocks Agreement – facilitating the implementation of the provisions related to the conservation and management of straddling fish stocks and highly migratory fish stocks per UNCLOS.
3. FAO Code of Conduct for Responsible Fisheries – providing principles and standards applicable to the conservation, management and development of fisheries including capture, processing, and trade of fishery products, fishing operations, aquaculture, and fisheries research.
4. FAO International Plans of Action, International Plans of Action (IPOAs) – were developed to manage issues related to implementing the Code of Conduct. These IPOAs include (i) The International Plan of Action for Reducing Incidental Catch of Seabirds in Long line Fisheries, which

aims to reduce the incidental catch of seabirds in long line fishing, and (ii) International Plan of Action for the Conservation and Management of Sharks, which aims to ensure the conservation and management of sharks and their long-term sustainable use.

5. FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries – dedicated to the small-scale fisheries sector, focusing on food security and poverty eradication.
6. A Guide for the Implementation of the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa – developed under the African Union – Inter-African Bureau for Animal Resources (AU-IBAR). The mandate of the guide is to support and coordinate the use of animals (livestock, fisheries and wildlife) as a resource for human well-being in the African Member States and contribute to their economic development.
7. The Convention on Trade in Endangered Species of Flora and Fauna 1973 (CITES)
8. The Convention on the Conservation of Migratory Species (CMS) 1979
9. Indian Ocean and South East Asian Memorandum of Understanding on the Management and Conservation of Marine Turtles (2001)
10. The Memorandum of Understanding on the Conservation and Management of Dugongs (*Dugong dugon*) and their habitats throughout their range
11. The Convention on the Conservation of Biological Diversity (CBD)
12. The Convention on Wetlands, 1971 (Ramsar Convention)
13. SADC Protocol on Fisheries – promoting responsible and sustainable use of aquatic resources and aquatic ecosystems in the region.

3.15 CROSS-CUTTING ISSUES

3.15.1 Disaster Management

Zanzibar, like many other Small Island Developing States, faces similar significant risks of rising sea level due to its small land area, high population density, and heavy reliance on coastal ecosystems for food, livelihood, security. Unfortunately, the capacity for adapting these risks is often insufficient. The Government acknowledges the long-term effects of climate change and the potential impact on the frequency and intensity of natural disasters. In response, a climate change strategy was approved in 2014. However, Zanzibar encounters difficulties in allocating adequate human and financial resources to address Climate Change and disaster risk management. The Zanzibar Disaster Risk Profile was developed with support of the World Bank's ISLANDS Project in 2014. Nonetheless, resource planning and budgeting for these risk profiles have proven challenging. While implementing such measures can be costly, the benefits may be uncertain. Moreover, there are few staffs in the relevant ministries with an economics background who can assist technical staffs in making optimal decisions.

Additionally, Zanzibar has limited experience in risk-sensitive public investment planning and risk financing. The capacity within government institutions to develop risk profiles and design appropriate mitigation measures that balance costs and risks remains underdeveloped. Insurance companies only serve a small portion of the population and offer limited products, leaving the government as the primary resource for managing both minor or major disasters. Accordingly, it is crucial to expand the Zanzibar disaster loss database, like Des Inventar and CAPRA, introduced in 2014. This expansion should include historical data and, more importantly, incorporated direct economic losses. Achieving this requires close cooperation between the Disaster Management Department (DMD), which oversee the database, and the other institutions involved in disaster risk management. Furthermore, the Ministry of Finance should introduce budget codes that can help tracking of expenditures related to DRM and climate change adaptation (CCA). This will enable transparency, accountability and recognition of increased investments in risk reduction and management.

3.15.2 Poverty Alleviation

In Zanzibar, the majority of people engaged in fisheries and aquaculture belong to impoverished and marginalized groups. They have limited rights to resources that sustain their livelihoods and face limited alternatives for earning a living. These individuals lack the necessary skills to access more profitable sectors of the economy. Yet for many Zanzibaris, fishing and aquaculture, despite their importance in providing income and food security, are facing a critical challenges as fish stocks rapidly decline due to overfishing and illegal fishing practices. Therefore, effectively addressing poverty amongst the fishing communities in Zanzibar becomes crucial overarching concern. Consequently,

there is a need to strengthen the livelihood strategies of fishing communities by promoting greater integration into social and economic programmes and services. This integration should encompass various areas, including access to education and healthcare services, such as primary schools and health facilities.

3.15.3 Youth Employment

The Zanzibar Fisheries Policy (2022) acknowledge and values the active participation and respective role of men, women and youth in the fishery sector. Likewise, the Blue Economy Policy recognizes the importance of addressing gender-related issues during the analysis of the value chain, ensuring that women can also benefit from pro-poor growth. Zanzibar must persist in its efforts to effectively address the concerns and interests of women, men and youth as it strives to develop the fisheries sector.

3.15.4 Environment and Climate Change

Zanzibar recognizes the crucial role of the marine environment in supporting its economic development. However, using these areas without adequate protection and understanding of the associated consequences could lead to severe degradation of the living resources. As Zanzibar begins the concept of the '*Blue Economy*' to generate wealth, it becomes essential to ensure the sustainability and protection of pelagic and benthic marine resources as assets that can support such growth. Climate change poses a significant global phenomenon that has serious implications for Zanzibar, threatening the progress made thus far. Zanzibar's natural resources are particularly vulnerable because of the high pressure of exploitation they face, the fragility of ecosystems and limited technological innovation.

Rising ocean temperatures and ocean acidification resulting from climate change are profoundly altering aquatic ecosystems. These changes are impacting the distribution of fish and the productivity of marine species, thus affecting the sustainability of fisheries and aquaculture and subsequently impacting the livelihoods of the communities dependent on fisheries. Coral bleaching, caused by increasing sea surface temperatures, is adversely affecting coral reef systems and their populations. Additionally, certain fish species are moving to deeper waters, making them inaccessible to local small-scale fishers (McClanahan, 1988). Sea level rise is also affecting mangroves, resulting in diebacks that negatively affect mangrove habitats, which serve as a nurseries for fish.

Zanzibar needs stronger and more effective responses to environmental and climate change challenges. The Food and Agriculture Organization (FAO) of the United Nations emphasizes that *"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), taking into account the United Nations Conference on Sustainable Development (Rio+20) outcome document 'The future we want'*.

3.15.5 Alignment and Linkages with other Sectors (Oil & Gas, Tourism)

Zanzibar's economy is primarily driven by the agriculture, including fisheries and the tourism sectors, which contributes about one third of the GDP. The tourism industry is particularly important as it capitalizes on the on the richness of the reef ecosystems and the natural beauty of the environment. To address the challenge of developing fisheries while preserving the coastal ecosystems, Zanzibar has been proactive in establishing a network of Marine Conservation Areas (MCAs) in sensitive areas, with the support of various partners. These MCAs have produced some positive outcomes of preserving the richness of some vulnerable ecosystems. However, the effectiveness implementation of MCAs, particularly in terms of surveillance activities, has been heavily reliant on externally—funded projects. Without institutional and legal reforms aimed at improving the governance of MCAs, it is unlikely that their operationalization can be sustained in the long term. Recent geological studies in Zanzibar have indicated the presence of potential oil and gas reserves, attracting investor interest for further investigation and exploration. This introduces additional physical threats to coastal environments and their resources, posing new and important economic activities. The current state of poorly regulated inshore fisheries in Zanzibar, including MCAs, could gradually harm marine ecosystems and biodiversity, potentially leading to detrimental consequences on the tourism industry (as highlighted in the Fishery Governance Strategy, 2014).

3.15.6 Child Labour

Based on the 2014 Integrated Labour Force Survey, 5.6% of children were engaged in child labour, with a higher percentage of boys (6.8%) than girls (4.3%). Child labour was more prevalent. However, rural children experienced a higher incidence of child labor (

8.4%) than urban (1.3%). Both in rural and urban areas, boys were more affected by child labour than girls. The Kusini Pemba and Kaskazini Pemba faced significant challenges, with rates of 30.7 and 32.8 percent. Conversely, Kaskazini Unguja region had the lowest number of child labours of 7.1 percent. Mjini Magharibi contributed 12.3 percent of employed children and Kusini Unguja had 17.2 percent.

3.16 SUMMARY OF FISHERIES SECTOR STRATEGIC ISSUES/CONSTRAINTS

Based on the situational analysis and stakeholders consultations conducted during the preparation of this master plan, the following broad strategic issues have been identified as the main focus of the plan. The Plan aims to guide Zanzibar in addressing these issues:

1. Reviewing and strengthening fisheries policy, legal and strategic framework;
2. Strengthening fisheries governance and international cooperation Framework;
3. Enhancing effectiveness of fisheries linkages with other economic sectors;
4. Improving management of fisheries stocks.
5. Enhancing productivity and sustainability of the artisanal industry;
6. Encouraging increased investments in competitive semi and full fisheries industries;
7. Promoting the development of a viable mariculture industry;
8. Improving fisheries research and information management;
9. Enhancing institutional capacity and human resources development for the fisheries sector;
10. Strengthening monitoring, control and surveillance measures;
11. Addressing cross-cutting issues in the fisheries sector, such as poverty, youth unemployment, gender and HIV/AIDS.

The master plan is designed to provide guidance and strategies to tackle these key issues and ensure the sustainable development of the fisheries sector in Zanzibar.

CHAPTER FOUR
THE ZANZIBAR FISHERIES MASTER PLAN

The time frame of the Zanzibar Fisheries Master Plan spans from 2023 to 2038. Its core focus includes the Paradigm Shift, Vision 2038, Mission, Principles as well as Strategic Objectives and Components. The components are presented in later chapters.

4.1 THE PARADIGM SHIFT

The Revolutionary Government of Zanzibar decided to prioritize the fisheries sector as the key driver of Zanzibar socio-economic development. To achieve this, the Zanzibar Fisheries Master Plan includes several transformative initiatives designed to create a truly enabling environment to harness the sustainable benefits derived from abundant marine resources. The envisaged benefits to the peoples of Zanzibar encompass three main areas.;

1. First, ensuring food and nutrition security through fisheries and aquaculture.
2. Second, promoting economic and social development through fisheries and aquaculture, blue economy, marine and coastal tourism and shipping.
3. Last, preserving ecosystem services such as carbon sequestration, water filtration, regulation of atmospheric and temperature, protection from erosion, and mitigation of extreme weather events.

4.2 FISHERIES MASTER PLAN VISION

The Zanzibar Fisheries Master Plan envisions the development of freshwater and marine fisheries that prioritize responsible practices and the effective and

> ***"Sustainable fisheries development based on the blue economy that places the people of Zanzibar at the centre of the priority interventions"***

sustainable use of the aquatic resources. The plan places great emphasis on maintaining a sensitive balance among the various factors such as natural productive capacity, resource wealth, ecosystems, and socio-economic considerations. At its core, the vision revolves around the concept of blue economy, which seeks to enhance human well-being and social equity while minimizing environmental risks and ecological scarcities. The plan strives for optimal resource exploitation that aligns with these principles and promotes a harmonious relationship between economic development and environmental preservation.

4.3 FISHERIES MASTER PLAN MISSION

The Master Plan aims to provide guidance for all stakeholders in fisheries sector. Collectively, these actors are expected to be committed to the mission. The underlying principle of the mission is that in order to fully utilize there sources of the fisheries, there needs to be a

> ***"Creating a conducive and enabling environment for the fisheries sector towards equitable social and economic development for Zanzibar***

change in perspective (paradigm shift) towards a more responsible, multi-sectoral, multi-actor, integrated and sustainable approach that takes into account environment, social and economic factors. Further, the focus should be on promoting the development of a robust and sustainable artisanal, semi and full fisheries industries in Zanzibar.

4.4 FISHERIES MASTER PLAN PRINCIPLES

The Master Plan adheres to principles outlined in the Zanzibar Fisheries Policy, which align with the national development priorities. These principles include:

1. **Sustainability**: To prevent overexploitation of fisheries and minimize social, economic and environmental impacts. Recognizing the challenges in achieving the Maximum Sustainable Yield (MSY) in multi-species and multi-gear artisanal fisheries, sustainable over-fishing may be accepted for certain fisheries. The precautionary principle is applied in case of uncertainty, taking action to reduce the risk of serious harm to fish stocks, habitats and the environment.
2. **Conservation**: To promote sustainable and the development of Marine Conservation Areas (MCAs). MCAs ensure responsible use of fisheries resources, preserve the integrity of sensitive

coastal ecosystems, conserve marine biodiversity, and contribute to Integrated Coastal Zone Management (ICZM), Marine Spatial Planning (MSP) and the prevention of marine and coastal ecosystems pollution.

3. **Research:** To base development and management of the fishery and aquaculture sectors on demand-driven scientific research .
4. **Equity:** To establish transparent and equitable rules and frameworks for assessing and distributing conservation burdens among all fisheries stakeholders.
5. **Wealth creation:** To link wealth creation in fisheries with the improvement of fisheries management. Control of fishing capacity and effort in the inshore waters, and sustainable development of offshore fisheries in deeper waters. Consideration is given to activities promoting pro-poor growth in fishing and related activities.
6. **Gender equity:** To recognize and account for the active participation and respective role of men, women and youth in the fishery sector.
7. **Decentralization:** To involve local governments and community-based institutions such as resource based Shehia Committees in fisheries management and development initiatives.
8. **Participation:** To closely involve stakeholders in decision-making for sound development and management of fisheries and aquaculture. Encouragement of public-private partnership for delivering fisheries management and development services.
9. **Education:** To prioritize education, awareness-raising and training for private and community-based institutions, promoting the emergence of education, and more formalized economic sectors in fishing and related activities.
10. **Value for money in fisheries management:** To prioritize actions necessary for sound fisheries development and management in a context of budgetary and human resources constraints. Particular attention is given to the priority measures for Strong Enforcement (PSE) approach in fisheries monitoring, control and surveillance .
11. T**ransparency and accountability:** To uphold good governance principles, improving decision-making in fisheries development and management. Creating conducive environment to increase dialogue and partnership arrangements between the Fisheries Administration and public (e.g. Environment, Forestry, Water, and Academic Research), private and community-based institutions, as well as improving voluntary compliance with fishing regulations.

4.5 FISHERIES MASTER PLAN STRATEGIC OBJECTIVES

With the aim of achieving Vision 2038, the Master Plan is centered around eight strategic objectives, each to be executed through a dedicated component or programme. Here is a brief outline of these strategic objectives.

1. **Strategic Objective One: To improve the enabling policy, regulatory and strategic environment.** It is acknowledged that although there has been a noticeable and consistent increase in Zanzibar's fish production, the current state of fishery resources and the performance of the fishery sector hinders the achievements of the overall objectives outlined in Vision 2050, Zanzibar Development Plan 2021 – 2026, and the Blue Economy Policy. One of the major contributing factor to these challenges is in the lack of coherence in policy, legal, and strategic frameworks in Zanzibar. To address this issues, there is a need to enhance the coordination of sectoral policies related to sustainable and productive fisheries development, exercise more strategic control over access to capture fisheries and foreign exploitation of fisheries resources, promote productive and sustainable management of fisheries and aquaculture,and enhance the capacity of key agencies responsible for enforcing law in the sector.

   Furthermore, it is imperative to improve the fisheries governance framework by embracing the principles of transparency, participation (including co-management), and efficiency (ensuring value for money). This governance framework includes set of policies, institutions, laws, regulations, and services that influence exploitation, value addition and management of the fisheries. To ensure consistency, the governance framework must take into consideration specific needs and requirements for managing fishery resources, the country's international commitments and obligations regarding responsible fishing and marine conservation. Additionally, it

should also align with the policy objectives and goals set for the fishery sector in Zanzibar. The Fisheries Policy of 2022 in Zanzibar also calls for the involvement of various public and private institutions connected to fisheries, with the Fisheries Administration taking a leading role in its implementation and monitoring. Indeed, this collaborative approach should serve as the guiding spirit for the successful implementation of the Master Plan.

2. **Strategic Objective Two:** To improve fisheries (stocks) management

   The limited information about the stock or quantity of priority fisheries in Zanzibar waters poses a risk of depletion as fishing continues any control. Thus, one of the objectives of the Master Plan is to improve management of fisheries stocks.

3. **Strategic Objective Three:** To promote fisheries development

   The issue of productivity and sustainability in artisanal fishing in Zanzibar is significant. Majority of artisanal fishers operate in inshore waters, while the untapped potential of offshore, deeper territorial, and internal waters remains unexploited. Consequently, this untapped potential represent a missed opportunity for economic growth in the country. Additionally, the over-capitalization of inshore fisheries has negative impacts on the sustainability of resources and well-being of fishers and other users of these resources.

   Despite efforts to promote the development of Fish Aggregating Devices (FADs) targeting tuna and similar fish species, the current technical, economic and institutional environment does not support the development of FADs. Moreover, fishing units operating offshore face technological limitations and inadequate safety measures at sea. In contrast, , the fishing for tuna and similar fish species in the Exclusive Economic Zone (EEZ) of Tanzania is predominantly operated by foreign vessels. These foreign fishing vessels operate in the South West Indian Ocean Region but do not land their catches in Tanzania, thus depriving the nation of significant economic benefits.

4. **Strategic Objective Four**—to promote mariculture development:

   Mariculture holds significant promise in Zanzibar for both economic development and poverty alleviation. Given Zanzibar's abundant natural resources, high biodiversity, and well-preserved coastal environment, it has immense potential for mariculture. Currently, Zanzibar has successfully established a village-based seaweed farming industry and is exploring other mariculture opportunities. The growth and diversification of the mariculture are expected to occur at two levels. First, at the village level, mariculture can serve as an alternative crop production, providing income and protein source, thus helping to alleviate poverty. Second, at the national level, mariculture can contribute to economic development and generate foreign exchange.

   However, the mariculture sub-sector faces critical challenges that must be addressed. Seaweed farming confronts various constraints, including unknown diseases, market fluctuations, price variations, and difficulties in value addition. Additionally, other forms of mariculture are still in their early stages of development due to the lack of an enabling environment to promote commercial aquaculture. Overcoming these obstacles is essential to unlock the full potential of mariculture in Zanzibar.

5. **Strategic Objective Five:** To improve supporting infrastructure development

   Zanzibar currently under-utilizes deep sea fishing despite the growing global and continent demand for seafood. One of the main obstacles is the significant investments required for deep sea fishing, resulting in a lack of substantial investment in establishing productive semi and full fisheries industries. However, , exploiting deeper waters remains the primary viable option for Zanzibar. To address this issue, it is crucial to foster the development of industrial fisheries that are more integrated in the Zanzibar economy, potentially through promoting joint ventures. In tandem, efforts should be made to create an enabling environment, which include the development of fishing ports and docks.

6. **Strategic Objective Six**—to enhance institutional strengthening:

   Zanzibar has not yet full tapped into the potential synergies between the Fisheries sector and other sectors of the economy and society. Several challenges contribute to this situation including the weak capacity of the Fisheries

Administration department, the lack of integration between sectoral plans and the sustainable development of the fisheries sector, insufficient collaboration between the fisheries sector and other sectors; and inadequate appreciation of the fisheries sector actors in other sectors of the economy and society. Addressing these challenges is essential to foster holistic development and sustainability within the fisheries sector for the benefits of the country.

The existing fisheries management services are inadequate and ineffective. The current statistical system lacks comprehensive data collection, analysis and reporting mechanisms, hindering informed decision-making for fisheries management. Moreover, the research system falls short in adequately supporting decision making processes. To improve this, the vision is to establish a data and research management system at both national and local levels, employing consistent approaches to ensure evidence-based decision-making becomes an integral part of Zanzibar's fisheries management system.

Transforming the fisheries sector from artisanal to industrial or commercial, with focus on export markets, requires qualified and skilled human resources. The resulting increase in the flow of technology and complexity of the sector demand for more knowledgeable and skilled human resources. However, there is significant shortages of skilled staff in the sector, and retaining skilled personnel in the sector is challenging. Furthermore, Zanzibar lacks strong and applied training institutions at various levels (vocational, certificate, diploma and tertiary levels) for the fisheries sector, further compounding the issue.

7. **Strategic Objective Seven — to effectively address compliance and market access issues:** In Zanzibar, similar to several other countries, access to fisheries is essentially open, with no effective limits to entry, but there are some weaknesses in governance and institutional structures. The coastal resources are facing increasing fishing pressure from both mechanized and small-scale fisheries operators. These resources are in a critical state due to several factors including overcapacity, inadequately controlled use of illegal practices, over-exploitation, and environmental degradation. The weak governance system has resulted in high incidence of illegal, unreported, and unregulated (IUU) fishing, leading to loss of benefits from the marine resources.

   While the existing Monitoring, Control, and Surveillance (MCS) system is somehow functional, it is not sufficiently effective in the face of rampant illegal fishing and piracy. There are challenges such as limited community and other sectors involvement, a lack of Policy understanding of marine issues, the vastness of the monitoring area, unclear demarcation of fishing zones, and insufficient capacity of organizations like KMKM and the Police in term of equipment, skills, and information. Therefore, it is crucial to revamp the system promptly to ensure that Zanzibar fisheries sector's contribution has a significant positive impacts at both the community and national levels.

8. **Strategic Objective Eight — to address cross-cutting issues**: In Zanzibar, despite the significant potential of the fisheries and aquaculture sector, most people working in this field are poor and vulnerable. Several reasons contribute to this situation, including a lack of education regarding fisheries, low investments in innovation and technology, limited access to capital, and inadequate access to markets. Moreover, climate change and disasters are already having negative effects on fisheries resources and systems in Zanzibar. For example, rising sea surface temperatures are destroying coral reef systems and affecting the distribution of certain fish species. Unfortunately, the poor fishing communities have limited capacity to cope and adapt to these environmental challenges.

   The prevalence of HIV among the general population is very low (around 0.2%) in Zanzibar. However, among key populations, prevalence is significant high, reaching 16%. Fishermen, as part of the vulnerable groups, are not an exception to this concerning trend. It is essential to target these vulnerable populations with specific services aimed at reducing the spread of HIV/AIDS. Efforts to combat HIV/AIDS in the fisheries sector should address existing challenges, such as socio-economic and cultural factors, as well as low awareness levels within fishing communities.

4.6 COMPONENT 1: REVIEW OF THE ENABLING ENVIRONMENT

4.6.1 Review and Strengthening of the Fisheries Policy

The recently validated and approved Zanzibar fisheries Policy of 2022 has outlined key priorities to enhance fisheries sector. These priorities include improving the fisheries governance framework, enhancing fisheries management services; formalizing and professionalizing fishing and related activities, managing inshore fisheries; promoting artisanal fisheries in offshore areas, integrating offshore industrial fishing fleets into the Zanzibar economy, fostering sustainable aquaculture development, supporting marine conservation and research, fostering public-private partnership, and facilitating pro-poor growth in the post-harvest sector.

Issue: The successful implementation of the policy needs strategic interventions involving community empowerment, public-private partnership and opportunities for financing

Strategy: Engage in the Policy implementation with focus on sustainability, research, conservation, community empowerment and private sector investment to address value addition and strengthen value chains

Responsible entity: The Ministry responsible for fisheries will be accountable for overseeing and executing the policy implementation.

4.6.2 Fisheries law, regulations and standards

In anticipation of the new Blue Economy synergies, the existing Fisheries Act 2010 is replaced with an updated version. Additionally, complementary legislation such as Marine Conservation and Fisheries Research Acts, are also being developed to ensure coherence and integration;

Issue: There are still some other regulations that need to be developed to address fisheries, conservation and research

Strategy: Ensure the timely finalization and approval of the three legislations.

The Ministry responsible for fisheries will take charge of finalizing and implementing these legislations, while ensuring they align with conservation, research , and social inclusion objectives

Responsible: Establish a competent authority equipped with the necessary capacity and quality standards

4.7 COMPONENT 2: FISHERIES (STOCK) DEVELOPMENT

Effective management of the small-scale fisheries in Zanzibar faces challenges due to lack of appropriate data caused by limited resources. As a result, suitable management measures have not fully implemented. The convention approach to fisheries management involves scientists conducting stock assessments, which are then used by fishery managers to set limit on harvesting strategies, such as quotas or time-area closures, to ensure optimal and sustainable use of the targeted fish resources. Harvest strategies are plans designed to adjust management options based on the fish stock. The two common harvest strategies are a fixed exploitation rate, aiming to take a constant fraction of the fish stock each year, and constant escapement, aiming to maintain the spawning stock size near some constant level (National Research Council, 1998).

An appropriate fish stock assessment method will be selected and implemented, focusing on aspects such as available types of fish, habitats, abundance, species caught, type and number of fishers, and fishing technology. The stock assessment process will provide detailed management advice growth rates, reproduction rates, ideal size for fishing, and sustainable catch limits. The assessments will involve estimating key parameters such as growth rates, mortality rates, carrying capacity, maturity and reproduction rates, stock and recruitment rates, as well as selectivity and catchability. The Fisheries Department will develop a harvest strategy for each priority fishery, which include small pelagics, octopus, tuna and tuna-like species and reef fishery. These strategies that will be in line with the fisheries policy, act and regulations.

Issue: Deparment of Fisheries Development and Aquaculture needs crucial information about the fisheries they manage. Such as the rate of fish growth, reproduction, ideal size for harvesting, and the sustainable catch limit. These answers are obtained through stock assessment process, emphasizing the need for department to commence stock assessment for priority fisheries.

Strategy: Promote timely fish stock assessment of the priority fisheries.

Promote the adoption of harvest strategies in the fisheries management of the priority fisheries.

Responsible: Department of Fisheries and Aquaculture Development, Research Institutions, NGOs/CSO, Fisher Associations.

4.8 COMPONENT 3: FISHERIES DEVELOPMENT

4.8.1 Artisanal Fisheries Transformation

The artisanal fishing sector is facing a gradual decline in the overall fish production and individual catch rates. This decline can be attributed to various factors, including the over-capitalization of the sector, confinement of fishing activity to inshore and shallow waters within the reef ecosystem due to technological limitations, and inadequate fisheries regulation resulting from governance and management weaknesses. It is important to recognize that fishing activities have the potential to alter the structure and function of marine ecosystems, affecting not only the target species but also their prey, predators, and habitats. This calls for a holistic approach to marine fisheries management, taking into account the ecosystem-based management.

The inshore fishery sector in Zanzibar is experiencing over-capitalization, with an increasing number of fishing craft, motorization rates, and the fishing gears used that can exert a substantial fishing effort such as purse seines, seine nets and ring nets, as well as technological advancements such as slight increase in the average lengths of craft and the expansion of fishing areas also contribute to over-capitalization. Several factors have contributed to this over-capitalization. One factor is the open access to resources, which allows for unrestricted fishing and can lead to excessive fishing effort. Additionally, difficulties in transferring fishing capacity and effort to offshore and deeper waters further contribute to over-capitalization. Despite a decline in individual catch rates the steady increase in prices provide incentives for continued fishing. Furthermore, fishing communities often have limited capability to diversify their income-generating activities, which further contribute to over-capitalization of the inshore fishery sector.

The inadequate regulation of fisheries, particularly in the open access artisanal inshore fisheries of Zanzibar, has resulted in poor compliance with existing measures aimed at conserving the fishery resources and the coastal environment, even within the Marine Conservation Areas (MCAs). There is a lack of management effectiveness and the inability to develop of public initiatives aimed at preserving the integrity of coastal ecosystems, with reference in particular to the promotion of Integrated Coastal Zone Management and the control of water pollution. Therefore, even in the absence of scientific evidence, inshore fisheries are regarded as vulnerable due to the state of full or over-exploited (reaching or above maximum sustainable levels) , leading to the noticeable decline in catch rates. Additionally, the inadequate compliance to fishing regulations contributes to their vulnerability. Furthermore, the considerable fishing capacity in the inshore waters renders these fisheries unstable.

Despite several public interventions aimed at promoting fisheries using Fish Aggregating Devices (FADs) and targeting tuna and tuna-like species, fishers still find difficulty to access and exploit fishery resources in deeper waters. Consequently, the deeper territorial and internal waters of Zanzibar remain underexploited, leading to economic loss. The insufficient management of inshore fisheries and the challenge associated with expanding fishing activities to deeper offshore waters have led to a potential lack of profitability and wealth generation in the fisheries sector. Currently, existing

profits are diminishing over time. Consequently, poverty levels within fishing communities are believed to be gradually rising due to limited or stagnant growth in overall revenues, coupled with an increasing number of fishermen. This situation has resulted in heightened conflicts between fishers in certain regions, as they compete for access to dwindling resources.

In the post-harvest phase, the inadequate quality of fish is a pressing problem caused by various factors, including the lack of infrastructure and equipment, poor handling and storage practices, and the absence of fish quality control measures. Furthermore, there is currently no reliable welfare scheme in place to support fishermen. As a result, fishermen are easily displaced from their landing sites,e especially when those areas are targeted for investment or development projects. Fishermen lack insurance coverage for themselves, their boat and fishing gears. Consequently, when occur at sea, they have no means of assistance or financial support to cover the cost incurred. Fishers have insufficient skills in ocean survival and rescue techniques, and the absence of emergency and rescue infrastructure heighten their their lives , especially when engaging in deep sea fishing.

Effectively control fishing capacity and effort in inshore waters, resulting in inadequate compliance with fishing regulations. This lack of oversight undermines the sustainability of resources and negatively impacts the wellbeing of fishers and other stakeholders involved. The existing management tools have proven ineffective necessitating the implementation of additional complementary measures. Furthermore, inshore fisheries heavily depend on the quality of the environment, making it crucial to actively support national efforts and initiatives aimed at preserving the integrity of coastal ecosystems.

Strategies	Key Interventions	Key Implementing Institutions
Enable artisanal fisheries to engage in productive and sustainable fishing in deeper waters, farther offshore.	- Prepare and implement an Integrated FAD fisheries development and management program - Conduct training on various aspects of FAD fisheries, including deployment strategy, enabling environment, development, exploitation plan, maintenance, and monitoring - Provide training on fishing and navigation techniques related to FADs - Conduct experimental research on FAD fishing with fishers - Facilitate access to modernized fishing units, including craft and gears	- Department of Fisheries Development
Promote the development of alternative livelihood options for fishing communities.	- Establish financing programs to promote fishing communities with access to financing for purchasing improved fishing gear	- Ministry responsible for trade and marketing
Advocate for controlled fishing practices in inshore waters to ensure long-term sustainability.	- Improve the efficiency and safety at sea of fishing units operating further offshore in deeper waters - Conduct applied research on fishing technology - Provide training on safety and rescue at sea - Offer adequate extension services	- Ministry of Education and other academic institutions
Promote value addition initiative among artisanal fishermen to enhance the value and marketability of their catches.	- Promote the development of fishers' associations - Conduct training on sustainable management of fishers' associations - Foster collaboration with credit institutions	-MoBEF

Facilitate improved market access for artisanal fishermen to enhance their economic opportunities.	- Establish/strengthen programs to promote alternative livelihoods for fishing communities - Establish/strengthen programs to ensure controlled fishing in inshore waters for sustainability - Establish/strengthen programs to promote value addition by artisanal fishermen - Strengthen/establish mechanisms to enhance access to markets for artisanal fishermen - Enhance capacity building by integrating fisherfolks and middlemen training into secondary school, colleges, and universities' curriculum - Organize an annual Fisheries stakeholder forum, providing a platform for fishers from all over Zanzibar to share challenges and opportunities - Ensure proper control of foreign fishermen, for example from Kenya, entering Pemba or Unguja by establishing special entry points	- MoBEF

4.8.2 Development of Semi and Full Industrial Fisheries

The Zanzibar Government is committed to promoting significant and accelerated growth in both semi and full fisheries industries. The focus on industrial fishing will entail fishing activities within the internal waters, territorial waters and Exclusive Economic Zone. This includes not only harvesting marine resources but also engaging in processing or semi processing activities The processing of fish entails a wide range of activities including cleaning, filleting, icing, packing, canning, freezing, smoking, salting, drying or any other preparation that making fish or fish products market-ready.

Zanzibar posseses good potential in fisheries sector. However, the full exploitation of deep-sea fishing and the subsequent processing for exports have not been realized yet. The waters in the Unguja and Pemba Channels are abundant with pelagic fish species such as sardines, anchovy and other non-commercial species. Along the shallow waters, crustaceans such as crabs, shrimps and lobsters can be found with artisanal fishermen particularly favoring offshore lobsters fishing due to high prices offered by the lucrative tourism industry.

Mollusks such as squids and octopuses, clams, oysters, and several types of bivalve are also abundant in Zanzibar and its surrounding areas. The surrounding waters provide a diverse range of fish species including mackerels, various types of tuna, wrasses, rays, rock cods, snappers, mullets, eels, and parrotfish, all of which present e excellent export potentials for Zanzibar. Additionally, these products are highly sought-after by the numerous tourist resorts on the islands, offering further economic opportunities for the local fishing industry.

To cater to the high demand overseas, it is possible to establish processing centres near seafood farms. These centers would focus on preparing a wide array of salted and dried seafood, including fish, squids, and shrimps,as well as canned seafood varieties such as tuna, sardines, and seafood pate. Such an initiative could help meet international demand and boost the export of these products.

Given proper management, Zanzibar has the potential to explore the development of certain food processing technologies. Processed seaweed is widely consumed by East Asians and holds significant potential exports. This potential encompasses a range of processed items, both edible and non-edible products. Currently, the industry in Zanzibar includes an estimated 23,000 women seaweed farmers, but it faces limitations in terms of processing capabilities.

Strategies	Key Interventions	Responsible
To foster a thriving and sustainable semi- and full-fisheries industries in Zanzibar, the following comprehensive strategies can be implemented:	- Promote investment in small and medium fisheries processing centers.	- Department of Fisheries and Aquaculture Development - Private sector - District Councils - Ministries responsible for works, trade, industry, and finance

Strategies	Key Interventions	Responsible
To foster a thriving and sustainable semi- and full-fisheries industries in Zanzibar, the following comprehensive strategies can be implemented:	- Develop an effective information base/resource center to guide investments and decisions related to semi- and full-fisheries industries.	- Department of Fisheries and Aquaculture Development - Zanzibar Fisheries Company (ZAFICO) - Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI) - Private sector - Ministries responsible for trade, industry, and finance
	- Building capacity of the Zanzibar Fisheries Company.	- Department of Fisheries and Aquaculture Development - Zanzibar Fisheries Company (ZAFICO) - Ministries responsible for works, trade, industry, and finance
	- Building capacity of the Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI).	- Department of Fisheries and Aquaculture Development - Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI) - Ministries responsible for works, trade, industry, and finance
To foster a thriving and sustainable semi- and full-fisheries industries in Zanzibar, the following comprehensive strategies can be implemented:	- Establish Zanzibar industrial fishing fleet operating offshore.	- Department of Fisheries and Aquaculture Development - Deep Sea Fishing Authority - Private sector - Ministries responsible for works, trade, industry, and finance
	- Programme to improve the quality of fishing post-harvest activities.	- Department of Fisheries and Aquaculture Development - Zanzibar Fisheries Company (ZAFICO) - Private sector - District Councils - Ministries responsible for works, trade, industry, and finance
	- Programme for dried, frozen, and canned exports.	- Department of Fisheries and Aquaculture Development - Zanzibar Fisheries Company (ZAFICO) - Private sector - Ministries responsible for trade, industry, and finance
	- Promote the development of financing mechanisms to support the semi/full fisheries industry. Government incentives to facilitate attractive credit conditions from local and foreign financial institutions in support of the fisheries sector.	- Department of Fisheries and Aquaculture Development - Zanzibar Fisheries Company (ZAFICO) - Private sector - Ministries responsible for trade, industry, and finance
	- Develop a framework for integration of foreign offshore industrial fishing fleets in Zanzibar.	- Department of Fisheries and Aquaculture Development - Deep Sea Fishing Authority - Ministries responsible for trade, industry, and finance
	- Encourage and promote the use of GPS to assist fishers in finding potential fishing zones and rescue activities.	- Department of Fisheries and Aquaculture Development - Zanzibar Fisheries Company (ZAFICO) - Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI) - Private sector - District Councils

4.8.3 Consolidation/Development of marine Conservation Areas

Zanzibar considers marine conservation areas as valuable tool for conservation and protection. The benefits of established network of marine conservation areas are diverse and include ecological, social, economic and cultural elements. The responsibility of managing the marine conservation areas (MCAs) are within the Department of Marine Conservation, which operates under the Ministry of Blue Economy and Fisheries.

A report by Meyers (2014) made a number of recommendations in response to various challenges that hinder the effective integration of MCAs into sustainable fisheries management in Zanzibar. These challenges include lack of knowledge and understanding of MCA, lack of capacity and resources to effectively manage MCA, limited stakeholder engagement and participation, as well as absence of institutional structure and coordination among government agencies and other stakeholder involved in the management of MCAs. The these recommendations aim to improve the management of MCAs and promote sustainable fisheries management in Zanzibar.

Recommendation for Knowledge: The plan involves two main aspects. Firstly, it aims to strengthen existing Shehia Fishermen's Committee (SFC) by building its capacity. Secondly, it proposes the establishment of Fisheries Information Management System (FIMS) to monitor and analyse monthly and annual trends in fisheries catch. The summarized data from FIMS will be regularly shared with SFC and integrated into the local fisheries and Marine Conservation Area (MCA) management system. This will help demonstrate the importance of periodic and permanent no take zones to communities. Additionally, the initiatives seeks to raise awareness about the impacts of habitat destruction on fish breeding sites and biodiversity loss.

Proposed Activities:

1. Develop a feedback system for managing mixed reef fisheries and octopus fisheries at the local level, incorporating the SFC and integrating it into the FIMS.
2. Establish seasonal and permanent no-take zones in strategic areas, ensuring that the feedback system effectively measures the outcomes of these zones.
3. Implement strategy for education and awareness raising to promote harmony and understanding among stakeholders.

Recommendations for Technical Capacity:

1. Enhance the technical capacity of the Department of Marine Conservation DMC and MCA staff by providing training and resources to effectively implement participatory management approaches. This will foster greater engagement of SFCs and other village stakeholders in the proactive management of mixed reef and octopus fisheries.
2. Strengthen the MCA by recruiting new staffs to support various management and conservation tasks. This includes personnel for patrolling no take zones to ensure compliance, managing data collection and communication at the local level, facilitating community tourism activities to promote sustainable practices and generate economic benefits.

Proposed Activities:

1. Conduct long-term training programmes for DMC and MCA staff. The training should focus on community-based management approaches, and the use of temporary and permanent no-take zones. The training should also cover Monitoring, Control and Surveillance (MCS) technique and village based surveillance strategies.
2. Foster community involvement in monitoring and surveillance program
3. Employ new staff members for the various Marine Conservation Areas (MCA) as guided by general management plans (GMPs)

Recommendations for stakeholder engagement and participation:

The MCA management team will be significantly strengthened by involving community extension officers. These officers will be responsible for ensuring that the SFCs play an integral role in developing and implementing the General Management Plan (GMP). They will also ensure that SFC Bylaws align with the GMP and that the SFCs operates efficiently while maintaining effective communication with their communities, local government authorities, and the MCA management.

Proposed Activity:

1. Training and communication programs should be established to offer guidance support to SFCs, helping them comprehend the GMP and effectively integrate their respective SFC bylaws into the GMP, and vice-versa.
2. The MCD should be strengthened to become a strong and technically proficient management entity for coordinating the activities of MCA Managers across all of Zanzibar's MCAs. This enhancement will significantly assist in enforcing MCA, Fisheries, and other relevant regulations and laws.
3. Establish the Marine Legacy Fund of Zanzibar as an independent Conservation Trust Fund dedicated to managing protected areas in Zanzibar. Create an inception committee responsible for formulating the bylaws and subsequent phases, including fund raising, and the beginning of the implementation.

Recommendations on Institutional Structure and Stakeholder Engagement:

The DMC is granted increased autonomy from the Ministry Responsible for Fisheries, and a comprehensive study should be conducted to evaluate the suitability of transforming the DMC into a quasi-governmental or parastatal organization, similar to the Marine Parks and Reserves Unit (MPRU). This assessment aims to acknowledge the DMC's diverse range of stakeholders beyond fisheries production and ensure its effective representation and management.

Proposed Activity:

1. A study will be conducted to assess the suitability of transforming the DMC into a quasi-governmental or parastatal organization similar to MPRU. Once the study's recommendations are available, they will be implemented to align with DMC/s organization structure.
2. The DMC increase the engagement of stakeholders in the development, review and acceptance of GMPs by involving additional stakeholders beyond the Fisherman's Executive Committees. Alternatively, the DMC Advisory Council could be established, encompassing a diverse range of stakeholders, to ensure broader representation in the GMP process.
3. Propose the engagement of the Fisherman's Executive Committee (or existing MCA management oversight body) to include a broad range of stakeholders including representative from the Zanzibar private tourism industry.

Key Implementing Institutions:

Department of Marine Conservation, and MCAs

4.9 COMPONENT 4: AQUACULTURE/MARICULTURE DEVELOPMENT

Mariculture presents a promising opportunity for Zanzibar to foster economic development and create wealth. With its abundant natural heritage, high biodiversity, and relatively pristine coastal environment, Zanzibar holds great potential for mariculture. Currently, Zanzibar has a well established seaweed farming industry, and is beginning to explore other forms of mariculture. The growth and diversification of the mariculture are expected to occur on two fronts. At the village level, mariculture can play a vital role in poverty alleviation as alternative means of crop production, thereby providing income and source of protein for the local communities. At the national level, mariculture has the potential to drive economic development and generate foreign exchange, contributing to the overall prosperity of Zanzibar.

The mariculture sub-sector faces several critical challenges that need to be addressed. .

Strategies:

1. Promote establishment of effective extension services to support mariculture.
2. Define and target on promising aquaculture areas and suitable production systems.
3. Raise awareness on the potential benefits in mariculture.
4. Encourage the use of research findings to inform the development of mariculture.
5. Enhance capacity building initiatives for the mariculture sector.

6. Promote seaweed production and add value to the products

Intervention	Interventions	Implementing Institutions
Establish an effective and efficient extension system.	1. Implement a well-structured regulatory framework to oversee extension interventions and programmes. 2. Translate research findings into simple and plain language for easy interpretation to farmers. 3. Facilitate direct communication and engagement between extension services and farmers. 4. Encourage potential business investors to offer technical support to small-scale operators. 5. Facilitate the creation of consultation platform to promote collaboration among aquaculture stakeholders.	- Department of Fisheries Development - Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI) - Ministries, Departments, and Agencies (MDAs) - Local Government Authorities (LGAs) - Academic/Research Institutions
Using existing aquaculture inventory for potential aquaculture sites and production systems.	1. Implement aquaculture activities in the identified potential sites from the aquaculture inventory. 2. Assess and determine suitable production technologies (farming systems) for each identified potential zone. 3. Provide investors and development agents with information regarding identified potential aquaculture zones and suitable production technologies. 4. Ensure that all stakeholders' interventions are authorized, coordinated, and conducted in the designated zones. 5. Issue licenses and/or permits to commercial aquaculture farmers based on specific zone and production system. 6. Prioritize zones with high potential for promoting aquaculture activities, and delivering extension services to farmers.	- Department of Fisheries Development - Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI) - Ministries, Departments, and Agencies (MDAs) - Local Government Authorities (LGAs) - Academic/Research Institutions
Identifying suitable production technologies for high potential zones.	1. Conduct assessments to determine the availability of skilled individuals capable of managing the identified farming technologies. 2. Address capacity gaps by providing training and building the skills of individuals involved in the aquaculture sector. 3. Create an inventory of technical and financial partners who are currently contributing or interested in supporting aquaculture development efforts.	- Department of Fisheries Development - Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI) - Ministries, Departments, and Agencies (MDAs) - Academic/Research Institutions
Providing information to investors and development agents on high potential aquaculture zones and production technologies.	1. Develop a comprehensive database containing information on species, technologies, and potential aquaculture sites. 2. Establish digital accessibility to the database, making it easily available to investors and other development partners.	- Department of Fisheries Development - Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI) - Ministries, Departments, and Agencies (MDAs) - Academic/Research Institutions
Ensuring coordinated and authorized interventions in the designated zones.	1. Conduct stakeholder analysis to identify and involve relevant stakeholders in aquaculture activities within designated zones. 2. Identify and address potential conflicts pro-actively by establishing effective resolution mechanisms to ensure smooth coordination and cooperation among stakeholders.	- Department of Fisheries Development - Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI) - Local Government Authorities (LGAs) - Ministries, Departments, and Agencies (MDAs) - Academic/Research Institutions

Intervention	Interventions	Implementing Institutions
Issuing licenses and permits to commercial aquaculture farmers based on zone and production system.	1. Establish transparent and straightforward licensing and permitting procedures. 2. Ensure strict enforcement of these procedures to maintain compliance and accountability among commercial aquaculture farmers operating in specific zones and using particular production systems.	- Department of Fisheries Development - Ministries, Departments, and Agencies (MDAs) - Local Government Authorities (LGAs)
Emphasizing high potential zones in promoting aquaculture activities and extension services.	1. Introduce potential aquaculture species with commercial significance such as sponge in zones identified as having high potential for successful farming. 2. Use the existing government hatchery to support community farming activities.	- Department of Fisheries Development - Ministries, Departments, and Agencies (MDAs) - Local Government Authorities (LGAs) - Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI)
Strengthening farmers' capacities in production technologies, aquafarm and aqua-business management, post-production technologies, and marketing of aquaculture products.	1. Accelerate the establishment of a seaweed semi-processing plant dedicated to packing and extraction of carrageenan to support seaweed production. 2. Provide comprehensive training to farmers on handling, processing, and packaging of value-added products like deboning, smoked. 3. Organize efficient systems for the collection and marketing of aquaculture products, especially for small-scale producers.	- Department of Fisheries Development - Ministries, Departments, and Agencies (MDAs) - Local Government Authorities (LGAs) - Academic/Research Institutions
Ensuring the availability of good quality seed for the private sector and grow-out farmers.	1. Provide support to the private sector to produce high-quality seed for aquaculture. 2. Implement regulations to govern the seed sector, including aspects related to production, dissemination, and use. 3. Develop technical guidelines for the production of good quality seed. 4. Establish a traceability mechanism to monitor and ensure the supply of good quality seed from the private sector 5. Collaborate with producers to manage broodstock fish species. 6. Undertake or support stock improvement programmes through research and academic institutions to enhance the genetic quality of seed. 7. Regularly inform farmers about reliable sources and prices of good quality seed. 8. Encourage private seed producer to facilitate grow-out farmers' access to quality seed, promoting the growth and success of the entire aquaculture sector.	- Department of Fisheries Development - Ministries, Departments, and Agencies (MDAs) - Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI) - Academic/Research Institutions

Intervention	Interventions	Implementing Institutions
Ensuring Farmers' Use of good quality feed in sufficient quantities.	1. Develop comprehensive policies, regulations, and guidelines to promote responsible production and use of aqua feeds. 2. Facilitate the initial stage of aquaculture development by reducing or exempting taxes on feed imports. 3. Encourage local feed production initiatives by offering incentives such as tax exemption on machinery and raw materials imports for feed production. 4. Implement economic and financial incentives that enable farmers to access efficient feed options. 5. Monitor and ensure feed quality through inspections and feed certifications. 6. Require feed producers and importers to provide essential information on feed and feed ingredients, including prices and costs using appropriate information tools. 7. Enforce the application of technical guidelines on feed preparation, for example, the FAO technical guidelines. 8. Encourage feed producers to establish mechanisms that facilitate users' access to high-quality feed products.	- Department of Fisheries Development - Ministries, Departments, and Agencies (MDAs) - Local Government Authorities (LGAs) - Academic/Research Institutions
Strengthening aquaculture research and effective dissemination of results.	1. Promote and facilitate aquaculture research efforts. 2. Allocate Funding, particularly for applied research, to advance the knowledge and practices in the sector. 3. Ensure that research aligns with the actual needs of stakeholders in the aquaculture sector. 4. Engage universities, research institutions, and other relevant stakeholders to conduct meaningful research in the aquaculture sector. 5. Encourage active participation of stakeholders in defining high-level research programmes to ensure their relevance and applicability. 6. Establish effective mechanisms to ensure research results are readily accessible to users, including farmers and decision-makers. 7. Establish research institutes or programmes focused on advancing aquaculture seed varieties. 8. Establish and facilitate stakeholders' platforms, workshops, symposiums, and other forms of engagements to enhance coordination and collaboration. 9. Ensure regular feedback mechanisms that disseminate research findings to the aquaculture community, enabling continuous learning and improvement.	- Department of Fisheries Development - Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI) - Academic/Research Institutions
Promoting investments in aquaculture.	1. Create an enabling environment through investing in infrastructure that supports the growth of the aquaculture industry. 2. Promote both domestic and foreign private investments in the sector by providing attractive incentives and favorable regulatory frameworks. 3. Implement policies and strategies that enable farmers and private investors to access non-financial and financial investments, as well as operating capital. 4. Facilitate connections to financial institutions and ensure accessibility to credit for initial investment and business expansion in aquaculture. 5. Facilitate the creation of market linkages across the aquaculture value chain to enhance the commercial viability and profitability of the sector.	- Department of Fisheries Development - Ministries, Departments, and Agencies (MDAs) - Local Government Authorities (LGAs)

Intervention	Interventions	Implementing Institutions
Promoting aquaculture as a profitable business to maximize the benefits.	1. Provide support to emerging commercial farmers in developing their aquaculture activities, including assistance in business plans, offering tax incentives, facilitating access to credit, providing training, and ensuring access to vital information. 2. Assist farmers' organizations to find technical and financial partners to strengthen capacity and resources. 3. Support non-commercial farmers through effective means such as training and technical advice to improve their productivity and practices. 4. Develop and support specific programmes tailored to empower disadvantaged groups, like women and unemployed youth, by creating opportunities in the aquaculture sector. 5. Promote and facilitate the establishment of legally recognized farmers' organizations. 6. Invest in information generation and management to ensure timely and relevant data is available to stakeholders. 7. Establish regulatory and incentive frameworks that attract private investment in the aquaculture sector.	- Department of Fisheries Development - Ministries, Departments, and Agencies (MDAs) - Local Government Authorities (LGAs) - Academic/Research Institutions
Establishing an enabling environment for aquaculture through infrastructure development.	1. Upgrade and construct cold storage and processing facilities specifically tailored for finfish and other aquaculture products, enabling their export potential. 2. Facilitate linkages to financial institutions, and ensuring easy access to credit for both initial investment and expansion of aquaculture business operations. 3. Provide temporary support for seed production until the private sector can take over this activity, ensuring a continuous supply of quality seed for the aquaculture sector's growth and development.	- Department of Fisheries Development - Ministries, Departments, and Agencies (MDAs) - Local Government Authorities (LGAs)
Facilitating the market linkages in the aquaculture value chain.	1. Collaborate with potential private ventures to conduct feasibility studies on the exports of various aquaculture products, such as seaweed, milkfish, and Mabe pearls, from Zanzibar to external destinations. 2. Implement measures to ensure that product quality meets the standards and requirements of the target market.	- Department of Fisheries Development - Ministries, Departments, and Agencies (MDAs) - Local Government Authorities (LGAs)
Enhancing the promotion of aquaculture products.	1. Encourage the formation of producer organizations and groups to streamline the purchasing and marketing of aquaculture inputs and outputs, fostering efficiency in the supply chain. 2. Identify niche markets for Zanzibar seaweed products focusing on specific high-value markets to capitalize on their unique characteristics. 3. Provide producers and consumers with up-to-date information on the internal and external product market, including prices, supply and demand, enabling informed decision-making. 4. Develop and publish guidelines outlining quality criteria for aquaculture products to ensure public health safety and product acceptability. 5. Prepare regulations and guidelines to control the export and imports of live species, addressing issues related to bio-security and genetic pollutions, safeguarding both local ecosystems and international trade interests.	- Department of Fisheries Development - Ministries, Departments, and Agencies (MDAs) - Local Government Authorities (LGAs)

4.10 COMPONENT 5: SUPPORTING INFRASTRUCTURE DEVELOPMENT

4.10.1 Development of Fish Ports and Docks

Zanzibar is planning to construct fish ports and dry-dock facilities in Unguja and Pemba to support the landing and distribution of fish. The project will include the construction of fishing ports, each with a protective breakwater, dredged access channel, multiple berths for inshore fishing vessels and trawlers, a ship repair berth and yard, fish processing and cold store plants, a fish market, administrative offices, storage areas, as well as roads and utility services within the port area. To address these challenges, several Interventions are planned to

Interventions:

1. Construct fishing ports and related facilities in coordination with Zanzibar Ports Corporation;
2. Improvement and establishment of better landing sites facilities;
3. Create of dry-dock facilities

Responsible Institutions: Department of Fisheries Development, Ministry responsible for industry and trade, Ministries responsible for works and transport, ZPC, LGAs,

4.10.2 Other Support Infrastructure

The Government aims to gradually establish complimentary support infrastructure to enhance the competitive fisheries sector:

Strategies/Interventions :

1. Establish one ice-making plant in each district
2. Establish a network of cold-storage services accessible at major landing site. These facilities are required to store excess catch and enable better marketing opportunities. Presently, no such services are available.
3. Set up 20 boat-building yards to replace the current artisanal, locally-built fishing boats with better-designed and larger ones capable of fishing in deeper waters and undertake longer trips.
4. Establish a local plant to manufacture fishing nets, addressing the critical shortage of fishing gear. The produced nets could be marketed not only on the mainland but also in neighbouring countries.
5. Establish new engine repair and maintenance workshop in each district to cater to the growing number of fishing activities and bigger motorized boats, which has become an essential requirement.
6. Introduce ten new fish-processing plants to accommodate the increased landings of demersal fish species and other marine fish products. These plants would highly beneficial , especially for supporting the expanding tourism trade and for facilitating export.
7. Establish one new wholesale fish market in each district to streamline the distribution and trading of fish products, enhancing accessibility and availability across the region.

Responsible Institutions :

1. Department of Fisheries Development and Aquaculture
2. Ministry responsible for industry and trade,
3. Ministries responsible for works and transport, ZPC, LGAs,

4.10.3 Quality Certification and Control Laboratories

Zanzibar is keen to build its capacity to comply with national and international standards and ensure the quality for fish products. To achieve this goal, the plan is to establish two quality control laboratories, with one located in Unguja and the other in Pemba. These laboratories will play a crucial role in establishing a comprehensive quality management system that include various aspects such as training, standard operating procedures, internal quality control, validation of tests, and external quality assessment. To further strengthen credibility of the laboratories and assure the accreditation by an external bodies to ensure adherence to

effective procedure and acceptable international standards, providing customers with reassurance about the quality of the products. Along this initiative, efforts will be made to strengthen the capacities of government agencies responsible for product standards and food quality.

Strategies/Interventions:

1. Strengthen the capacity of ZAFIRI.
2. Establish fisheries products quality certification laboratories at ZAFIRI that meet international standards accreditation.

Responsible Institutions : ZAFIRI, ZBS, ZFDA

4.11 COMPONENT 6: INSTITUTIONAL STRENGTHENING

4.11.1 Competent Authority

The successful management and development of the fisheries sector depends on the existence of a competent authority, which will be responsible for driving the fisheries agenda in Zanzibar. However, the current competent authority currently faces several challenges that hinder its effective performance:

1. Inadequate capacity to enforce existing laws and regulations related to the fisheries sector.
2. Difficulty in attracting and retaining qualified staff within the sector.
3. Inadequate staffing levels.
4. Inadequate working facilities.
5. SFCs lacking the necessary skills, resources and institutional support structures for effective decentralized fisheries governance.

Strategies/Interventions:

1. Provide qualified fisheries experts for Fisheries Department in Unguja and Pemba Office, as well as capacity building at the Regional and District Secretariats.
2. Develop a special incentive scheme for professionals employed in the public sector of the fisheries industry to motivate and retain a skilled workforce.
3. Improve working facilities in the Fisheries Department, Pemba Office, Regional and District Secretariats, with a particular focus on improving transportation, information, and ICT facilities.
4. Empower SFCs by equipping them with the necessary skills, resources, and institutional support structures to effectively manage decentralized fisheries governance.

Responsible Institutions: ZAFIRI, DoFD, DMC, LGAs

4.11.2 Research, Extension and Information Management

Research institutes have significant roles in fisheries development including research, technologies advancement, and collaboration with industries to address social economic challenges. ZAFIRI should work together with other relevant research institutes, sharing joint responsibility for managing and development of fisheries in Zanzibar. Establishing a consultative committee DMC and DoFD may help define partnerships and actionable research projects. A forum should be created to facilitate collaboration between public and private research institutes.

The Fisheries Policy aims to make demand-driven scientific research the basis of developing and managing the fishery and aquaculture sectors in Zanzibar. ZAFIRI is tasked with supporting other institutes in capacity building, research finding, and setting the national research agenda. Additionally, ZAFIRI is responsible for facilitating the collaboration between research and fisheries industry. Further, they expect to create forums to bring research institutes and policy makers together to discuss fisheries and marine resources research issues. The existing fisheries management services are insufficient, highlighting the need for data and research management at both national and local levels. This should be supported by consistent approaches to ensure that evidence-based decision making becomes an integral and sustainable part of within the fisheries management system of Zanzibar.

Strategies	Interventions	Key Implementing Institutions
Refine the existing statistical and reporting system	- Evaluate the need for improvement in the statistical and reporting system and add necessary enhancements if required. - Begin publishing yearly statistical reports.	- ZAFIRI, DoFD, DMC, - Ministries responsible for education, vocational training, industries, trade, - Regulatory agencies linked to the fisheries sector, LGAs, - Training institutions
Strengthen the fisheries research system	- Promote the newly founded Zanzibar Fisheries and Marine Resources Research Institute (ZAFIRI). - Enhance the human and financial capacities of ZAFIRI. - Develop a Memorandum of Understanding (MoU) for data sharing and processing between ZAFIRI and other research institutes. - Identify and implement a basic and advanced research training plan for researchers. - Identify and prioritize research needs in the fisheries and aquaculture sector. - Develop a coordinated fisheries research plan involving both public and private institutions, organizing a Scientific Working Group on fisheries in Zanzibar every 4 to 5 years. - Create a scientific fisheries communication strategy. - Develop and implement strategic applied research projects/programs to support the fisheries sector.	- ZAFIRI, DoFD, DMC, - Ministries responsible for education, vocational training, industries, trade, LGAs, - Research institutions
Develop and Strengthen Fisheries Information System	- Develop a fisheries information management framework. - Develop a web-based platform to implement the information management framework. - Operate and maintain the system effectively. - Promote and publicize the system to ensure widespread awareness and usage.	- ZAFIRI, DoFD, DMC, - Ministries responsible for education, vocational training, industries, trade, - Regulatory agencies linked to the fisheries sector, LGAs, - Training institutions
Strengthen the capacity of research and extension in Zanzibar	- Strengthen mechanisms for government funding of the research institutions. - Acquire a national fisheries research vessel. - Establish and build the capacity of the fisheries research institution. - Foster stronger links between the research institution and research data consumers. - Develop a comprehensive fisheries research agenda for Zanzibar. - Implement mechanisms to facilitate fisheries extension services. - Procure a national fisheries research vessel.	- ZAFIRI, DoFD, DMC, - Ministries responsible for education, vocational training, industries, trade, and LGAs, - Training institutions, Research institutions

4.11.3 Training Institute(s)

The development and successful management of the fisheries sector heavily depends on the qualified personnel with leadership and skills. The transformation of the fisheries sector from being artisanal to commercial, with a focus on export markets, requires a workforce with necessary skills. As the sector evolves, the increasing flow of technology and complexity demand greater pool of knowledgeable and skilled human resources to meet the challenges and opportunities presented.

The Fisheries Policy (2022) emphasizes the significant of education, awareness-raising and training for private and community-based institutions. The goal is to foster the development of well-educated and formalized economic actors in fishing and related activities. Currently, the fisheries sector faces a significant shortage of skilled staff both in terms of– quantity and quality. There is noticeable lack of capacity among fisheries personnel across various sector in Zanzibar.

Strategies	Interventions	Key Implementing Institutions
Promote the establishment of new training institutions in Zanzibar.	- Develop and implement a national strategic human resource development plan/strategy for the fisheries sector. - Develop a competitive national scheme of service for fisheries cadre employed in the public sector. - Establish a Zanzibar (national) fisheries training institute to offer accredited certificate and diploma programs. - Collaborate with universities in Zanzibar to establish accredited degree and postgraduate programs in fisheries and related fields.	ZAFIRI, DoFD, DMC, - Ministries responsible for education, vocational training, industries, trade, and local government, - LGAs, - Training institutions
Provide support and strengthen capacity of existing training institutes through human resources development and research funding.	- Develop, strengthen, and promote regular in-service professional training in the fisheries sector, focusing on semi and full fisheries industries. - Develop, strengthen, and promote regular training for artisanal fishermen, members of SFCs, and Shehia leaders. - Establish and maintain a comprehensive fisheries sector human resources database.	- ZAFIRI, DoFD, DMC, - Ministries responsible for education, vocational training, industries, trade, and LGAs, - Training institutions
Facilitate and improve communication and collaboration between fisheries training institutes and the government.	- Develop and implement a communication and collaboration framework between fisheries training institutes and the government.	- ZAFIRI, DoFD, DMC, Ministries responsible for education, vocational training, industries, trade, and LGAs, - Training institutions

4.11.4 Fisheries Association(s)

At present, there are no associations representing fishers and related actors at the national level in Zanzibar. This absence highlights a significant gap in the current governance framework. To address this issue, proactive measures should be taken to encourage and promote the establishment of such institutions, which will provide platform to facilitate and enhance dialogue between the fisheries administration and fishery stakeholders.

Strategies:

1. Initiate the establishment/setting-up of national associations for fishers and related actors.
2. Develop a structure to support/facilitate collaborative management of the Fisheries Sector.
3. Promote efficiency in utilization of the existing fishing potential and ensure maintaining ecological balance through the establishment of cooperative associations relevant to the development of fishing activities.

Interventions:

1. Establish/Strengthen fisheries associations to facilitate access of fishers to institutional credit for the modernization of fishing units.
2. Promote the formation of a national representative body for the Fisheries Association in Zanzibar.
3. Support participation of fishing industry organizations and NGOs in promoting self-regulation through training participation.

4.11.5 Food Safety and Quality Control

Food safety and quality control have emerged as pressing concern, particularly in relation to fish products. Increasingly, consumers are demanding that fishermen prioritize these aspects. This demand is also reflected in institutions like the Zanzibar Food and Drug Agency (ZFDA) which holds the responsibility of ensuring that all food manufactured, imported, exported, distributed and sold in Zanzibar meets strict safety and quality standards. Additionally, the Zanzibar Bureau of Standards (ZBS) plays a similar role, ensuring that products, whether locally produced or imported, adhere to Zanzibar's established standards or other national or international recognized standards. Addressing the safety and quality control of the marine products falls under the ZAFIRI's mandate.

However, there are several factors in Zanzibar that impede effective food safety and quality control. For example, the local markets' high demand for fish can strain resources, and existing quality control system is inadequate to meet the international export standards. Addressing these issues calls to develop and execute strategies and interventions that can fully tackle these challenges.

Strategies	Interventions	Key Implementing Institutions
Create the Quality Assurance (QA) environment to support the growth of the domestic market and access to foreign markets for fish and fish products.	- Conduct product registration, pre- and post-inspections.	- ZAFIRI
	- Seize, condemn, and dispose of unfit food for human consumption.	- DMS, DoFD
Strengthen the capability of the fish industry to comply with QA requirements.	- Develop capability within processing plants for Quality Control and QA through training and technical assistance.	- Ministries responsible for health, industries, trade, and local government
	- Facilitate attendance at workshops, trade shows, and expositions for the processing and retail components of the sector.	- Local Government Authorities (LGAs)
Develop, promote, and enforce standards to ensure the health and safety of consumers and protect the environment.	- Train fishermen in on-board sanitation and fish handling techniques.	MoBEF
Build confidence of consumers and traders for their goods and services in the markets.		
Ensure that Zanzibar fishery products meet the quality, health, and safety standards required in key export markets.		
Provide policy options and recommendations for food safety and quality control agencies/units.		

4.12 COMPONENT 7: COMPLIANCE ISSUES

4.12.1 Monitoring, Control and Surveillance (MCS) (KMKM, Police)

Monitoring, Control and Surveillance (MCS) plays a crucial role in the management of Zanzibar's fisheries resources. This system is essential for improving compliance with regulations. MCS systems are used to collect information on various aspects of the fishery and fishers, including fishing vessels, gear type and quantity of catch, fishing grounds, and post-harvest activities. The information collected through MCS is used to establish and monitor fishery rules effectively. Additionally, it is combined with of fishing vessels surveillance to discourage rule violation by fishers. In cases where violations persist, the MCS data is used to apprehend and punish them if they still do so.

Tanzania has established comprehensive and enforceable national regulatory frameworks that guide the implementation of MCS in the Exclusive Economic Zone (EEZ). These frameworks are under the auspices of the Deep-Sea Fishing Authority (DSFA) and are governed by the Deep-Sea Fishing Authority Act and its accompanying regulations. These regulations provide a solid institutional framework for managing deep sea fishing activities within the EEZ. To effectively carry out its responsibility, DSFA collaborate with various government agencies and institutions, including Tanzania Shipping Agencies Corporation (TASAC), Zanzibar Maritime Authority (ZMA), Ports Authorities (Mainland and Zanzibar), Police Navy, Tanzania People's Defense Forces (Navy), KMKM, and private sector, among others. This collaborative approach ensures a comprehensive and coordinated effort in fisheries management and control.

The Deep-Sea Fishing Authority Act and Regulations enable inspection of fishing vessels at port and sea, as well as conduct sea and air patrols to ensure compliance with licensing conditions. Key features of the MCS include Vessel Monitoring System, On-board observers, sea, air and shore patrols; monitoring of fish landings, and marking of vessels and gear to facilitate monitoring. Strengthening the MCS system is necessary to oversee small-scale fisheries and in the EEZ effectively. This involves strengthening in the institutional framework to combat IUU fishing and establishing mechanisms to implement effective regional cooperation in MCS and enforcement.

Strategies	Key Interventions	Responsible Institutions
Strengthen the institutional framework/system to combat IUU fishing through MCS. Enhance sustainable fisheries management through improved regional coordination and collaboration.	Consolidate the Zanzibar MCS system.	- DoFD and DMC - MDAs - LGAs
	- Increase autonomy and efficiency of the MCS structure within the Fisheries Administration.	
	- Improve human, financial and logistical facilities for MCS operations.	
	- Develop effective collaborative mechanisms involving the Navy (KMKM), DSFA, the Police, and the Judiciary system.	
	- Strengthen the MCS intelligence information system.	
	- Establish mechanisms to involve fishers in fisheries patrols.	
	- Review and strengthen laws and regulations related to MCS.	
	- Provide training to the Police and KMKM on marine and IUU issues.	
	- Strengthen Zanzibar's mechanisms for participating in regional cooperation on fisheries.	
	Strengthen MCS Regional/District Coordination Capacity.	
	- Enhance the skills of MCS staff and increase human, financial, and logistical resources.	

Strategies	Key Interventions	Responsible Institutions
	- Develop collaborative mechanisms with the Navy (KMKM), DSFA, the Police, and the Judiciary system at the regional and local level.	
Strengthen community-level MCS capacity by strengthening capacities at landing sites	- Develop and share registers of authorized fishing and illegal fishing vessels.	- DoFD and DMC - MDAs - LGAs
	- Provide regular MCS training and sensitization to SFCs and improve communications channels.	
	- Equip SFC's with patrol equipment.	
	- Establish communication links for SFCs with centralized MCS.	
Strengthen enforcement capacities of the Police and KMKM.	- Capaciy Development Programs initiated	- Police - KMKM
Improve funding for MCS activities.	Establish/Strengthen funding mechanisms for MCS.	MoBEF

4.12.2 Fisheries Information One Stop Centre

A wide range of sources such as publications, professional meetings, market reports, other organizations, and primary data collection conducted by staff or consultants, would be used to collect and compile data. These data and information sets the purpose of addressing knowledge gap at the national level or in cases where the existing information lacks substance or specificity. To ensure accessibility, the information would be stored using filing systems and computerized database. Additionally, the data collected, stored, and made available would be disseminated through various means, including regular information bulletins, market reports, studies, and dedicated web page.

Furthermore, industry-related seminars, conferences, and training workshops could also serve as channels for sharing this information.

The data would be packaged to cater to specific needs of its clients, which could include industry, civil society or government entities. While the knowledge base would include all aspects of the value chain, its main emphasis would be customized to serve the distinct needs and interests of each client group. Detailed "market research and analysis" is needed to provide Zanzibar producers and exporters with insights into market trends and potential opportunities. Additionally, URT diplomatic missions can provide valuable information on demand, which can be evaluated for relevance to the Zanzibar industry. Furthermore, there is the possibility of recruiting trade staffs from the Zanzibar fisheries industry for some targeted embassies.

4.13 COMPONENT 8: CROSS-CUTTING ISSUES

4.13.1 Environment and Climate Change

Climate change is a major global phenomenon that poses severe implications for Zanzibar, potentially threatening its progress. The natural resources in Zanzibar are particularly susceptible because of the high exploitation, the delicate ecosystems, and limited technological innovation. The rising ocean temperatures and ocean acidification impacts are drastically reshaping aquatic ecosystems in Zanzibar. Climate change is causing changes in the distribution and productivity of marine species, significantly impacting the sustainability of fisheries and aquaculture. This , in turn, affects the livelihoods of the communities depending on fishing. The increasing sea surface temperatures are leading to coral bleaching, posing a threat to coral reef systems and their populations. Moreover, certain fish species are shifting to deeper waters, making them unavailable to local small-scale fishers. The sea level rise is also causing diebacks in mangroves, potentially disrupting their roles as essential fish nurseries. Given these challenges, Zanzibar must implement strong and effective measures to address environmental and climate change issues.

Strategies	Key Interventions	Responsible Institutions
Rehabilitate specific areas of the fisheries systems that have been damaged by climate change and environmental degradation.	Develop/strengthen/promote programmes that respond to specific climate change and environmental issues affecting the fisheries sector.	- DoFD and DMC - MDAs - LGAs
	Capacity-building program on climate-smart fisheries.	
	Review/strengthen existing policies, laws, and regulations pertaining to climate change and the environment to include more specific measures to protect the fisheries ecosystems.	
Rehabilitate specific areas of the fisheries systems that have been damaged by climate change and environmental degradation.	Develop/strengthen existing solid waste management arrangements in landed sites and areas close to fisheries resources.	- MoBEF, PORALG, MoH, Line Ministries
	Develop/strengthen Zanzibar climate change/ environmental disasters' early warning system.	- MoBEF, FVPO, Line Ministries

4.13.2 Youth Development and Gender

The Zanzibar Fisheries Policy (2022) acknowledges and values the active participation and respective roles of men, women and youth in the fishery sector. It recognizes that youth and women are the vulnerable groups both socially and economically, making their involvement in the sector crucially important. To support their inclusion, Zanzibar must continue its efforts to address the concerns and interests of women, men and youth, ensuring that their needs are adequately met as part of ongoing development the fisheries sector. By doing so, the policy aims to create a more equitable and sustainable fishery industry in the region.

Strategy	Intervention	Responsible Institutions
Identify and tackle key obstacles and limitations that hinder the involvement of women and youth in the fisheries sector.	Conduct a comprehensive examination and documentation study of the challenges that impede women and youth from entering and benefiting from the fisheries sector.	- DoFD and DMC - MDAs
	Develop and strengthen policies, programs, and projects aimed to promote profitable participation of women and youth in the fisheries sector.	

4.13.3 Disaster Management

Small Island Developing States (SIDS) such as Zanzibar, are vulnerable to sea level rise owing to their small land masses, dense populations, and high reliance on the coastal ecosystems for food, livelihood, and protection against extreme events. However, several challenges hinders their ability to adapt effectively to these changing conditions, such as the lack of sufficient capacity for adaptation; well-documented and accepted risk profiles across various sectors, adequately staff within Disaster Management Department (DMD), and the integration of DRM into public policy planning.

Strategies	Interventions	Responsible Institutions
Increase awareness and support for disaster risk management (DRM) planning and budgetary issues.	Advocate for the creation of a specific budget code dedicated to disaster risk management within the Ministry's budget.	- DoFD and DMC - MDAs - LGAs
Strengthen institutional capacity for effective DRM implementation.	Recruit and train personnel with expertise in disaster risk management to enhance the department capabilities.	
	Conduct a comprehensive risk assessment and prepare a risk profile specifically for the fishery sector to better understand and address its vulnerabilities to potential disasters.	

4.13.4 Poverty Alleviation

In regard to alleviating poverty, data from HBS 2019/2020 shows significant progress. Basic needs poverty decreased from 34.9 percent to 25.7 percent between 2009/10 and 2019/20, while food poverty (extreme poverty) decreased from 11.7 percent to 9.3 percent over the same period. This means that about 9.3 percent of the population still faces extremely poverty and struggles to afford basic foodstuffs to meet their minimum daily nutritional requirements of 2,200 kilocalories (Kcal). These poverty figures were estimated using the national basic needs poverty line of TZS 66,313 per adult per month and the national food poverty line of TZS 47,541 per adult per month. Given this situation, it is crucial to prioritize the welfare of fishermen, particularly within this context of poverty reduction efforts.

Strategies	Key Interventions	Responsible Institutions
Strengthen organization and representation of fishing communities, including women, to empower and include them in decision-making processes.	Establish or strengthen fishers' associations to facilitate access for institutional credit for modernizing fishing units.	- DoFD and DMC - MDAs - LGAs
Promote alternative employment opportunities for coastal fishing communities.	Develop programs that support alternative employment opportunities for the coastal fishing communities.	- MoBEF
Foster a business mindset within the fishing communities by encouraging the development of fishing as a profitable and sustainable business.	Support and expand community-based training programs in fishing technology, quality assurance, and fisheries-based entrepreneurship.	

Strategies	Key Interventions	Responsible Institutions
Develop human resources of the fisheries sector.	Develop and establish essential infrastructure such as fish markets, access roads, water supply, energy supply in fish landing sites targeting poor fishing communities.	- MoBEF and Line Ministries
	Train fishers, fish processors, and fish marketing operators working with poor fishing communities on improved practices in fish handling, storage, and processing.	- MoBEF

4.13.5 Alignment and Linkages with other Sectors (Oil & Gas and Tourism)

Zanzibar's economy primarily relies on agriculture, including fisheries, and the tourism sector, contributes about one-third of the GDP. Tourism is vital in the current economic structure, as it largely relies on the richness of the reef ecosystems and the natural beauty of the environment. Recent geological investigations in Zanzibar have indicated the existence of potential oil and gas reserves, attracting the interest of investors for exploration.

While this presents new economic opportunities, it also brings additional environmental risks to coastal environments and their resources due to activities related to oil and gas exploration and extraction. Zanzibar has already carried out a Strategic Environmental Assessment of Oil and Gas Resources which provides strategic recommendations for co-existence and integrated development planning. These recommendations should be address and harmonized effectively. If not addressed and harmonized effectively, this situation could lead to conflicts among the three key sectors, tourism, fishery and oil and gas, as they compete for resources and face overlapping challenges.

Strategies	Interventions	Responsible Institutions
Ensure coherence among the tourism, fishery, and oil and gas sectors.	Form a collaborative cross-sectoral committee.	- DoFD and DMC - Tourism Authority
	Review and harmonize sector-specific laws, regulations, and procedures.	- Ministry of Tourism
	Develop a plan for the development of fisheries-tourism.	- Ministry of Energy and Mining - Ministry of Fisheries - Tourism Authority
	Generate promotional tools for fisheries-tourism.	- Ministry of Fisheries

4.13.6 Child Labour

In Zanzibar, child labor affects a relatively small percentage of children, with only 5.6% of those aged 5-17 involved in such activities. However, it remains crucial to strengthen institutional capacities at all levels of government and civil society to effectively eliminate child labour.

Strategies	Interventions	Responsible Institutions
Ensure compliance with laws, regulations, and procedures related to child labour.	Review and update laws and regulations concerning child labor issues.	- DoFD and DMC
	Conduct sensitization programs on child labor issues for fishing communities.	- LGAs
	Include child labor information within the fisheries ministry's monitoring and evaluation system.	
	Mainstream child labor factors into regular surveys and census.	
Develop the Ministry's capacity to address child labor-related issues effectively.	Invest in education and skill development to provide alternatives to child labor.	- MoBEF, MoWSW

CHAPTER FIVE
COMPREHENSIVE AND COSTED IMPLEMENTATION ACTION PLAN AND FINANCING STRATEGY

5.1 IMPLEMENTATION ACTION PLANS

During the implementation phase, the Ministry of Blue Economy and Fisheries (MoBEF) will work with relevant institutions to develop implementation plans and budgets for various components and interventions proposed in the Master Plan. However, the Master Plan only provides a rough outline of the action to be taken and their estimated costs. The actions plan presented in Annex 1 will include the following:

Goal and Objective to be achieved: Clearly define the overall goal and specific objectives to be achieved through the implementation of the Zanzibar Fisheries Master Plan.

Key Interventions: Specify the interventions and strategies to be undertaken to achieve the stated goals and objectives

Priority Activities and Targets: Identify priority activities and set specific targets for each intervention to guide the implementation process.

Costs: Provide a comprehensive cost estimate for each intervention, taking into account the required resources, materials, and manpower.

Resource Needed: Outline the necessary resources, both financial and non-financial, needed to carry out each activity effectively.

Monitoring the Activities: Establish a robust monitoring and evaluation framework to track the progress of each activity and ensure its successful implementation.

5.2 FINANCING STRATEGY

The estimated budget for the implementation of the Zanzibar Fisheries Master Plan over the 15-year period is TZS 316,853,000 million, as broken down in the table below. The majority of the funding (about 69%) is allocated to support infrastructure development, which is crucial for the successful execution of the plan. The financing strategy will encompass various funding sources and mechanisms, including government allocations, donor support, public-private partnerships, and other sources to secure the necessary funds for the plan's execution. By adopting a comprehensive financing approach, Zanzibar can ensure the sustainable implementation of the Fisheries Master Plan and achieve its goals in promoting the development and management of its fisheries sector.

Sn	Component	TZS (000,000)
1	Review of the enabling environment	61,000
2	Fisheries Stock Development	1,459,000
3	Fisheries Development	23,610,000
4	Support infrastructure development	168,030,000
5	Aquaculture/Mariculture Development	9,280,000
6	Institutional strengthening	91,018,000
7	Compliance issues	2,280,000
8	Cross-cutting issues	21,115,000
	Total	**316,853,000**

The MoBEF will advocate for sufficient financial resources mobilization and allocations to support implementation of the Master Plan. This will be done in collaboration with the relevant implementing institutions specified in the plan. To achieve this, a diverse combination of funding sources will be pursued, including government allocations, support from development partners, contributions from private sector, community involvement, and other stakeholders. The main approach will involve preparing project and programme proposals based of the Master Plan and using them to approach the appropriate funding sources for support.

Level	**Mobilization Activities**
National Level	- The government will dedicate and allocate adequate resources to the ministries responsible for implementing aspects of the Master Plan.
	- The local government will receive dedicated funding to support their respective initiatives within the Master Plan.
	- The government will seek additional resources from the donor community, international, national institutions, NGOs, and FBOs.
	- Resources mobilized by the government will be integrated into the mainframe budgetary system.
District Level	- Local governments will allocate adequate funds from their revenue to support interventions related to their roles in the Master Plan.
	- Seek support from other organizations and individuals willing to donate their time, resources, and staff.
Community – Village/ Shehia Level	- Shehia governments will allocate more funds from their revenues to support interventions outlined in the Master Plan assigned to the Small Fishers' Communities (SFCs)
	- Mobilize resources from the private sector, community-based organizations (CBOs), and FBOs in the local community.

5.3 IMPLEMENTATION PHASES AND MILESTONES

Detailed information on the implementation phases and milestones of the planned interventions are presented in Annexes 1.1 through 1.6 of the Master Plan. These annexes outline the step-by-step process and timelines for executing the various activities to achieve the goals and objectives of the Fisheries Master Plan.

CHAPTER SIX
MONITORING AND EVALUATION PLAN

6.1 INTRODUCTION

The MoBEF holds the responsibility for implementing, monitoring and evaluating the Fisheries Master Plan through its various departments including DoFD, DMC, DPPR, DoBED, ZAFICO and ZAFIRI. The Departments shall coordinate plan's implementation, monitor its progress, and regularly reports to both the Ministry and Government.

6.2 CASCADING OF MASTER PLAN ACTIVITIES

The Department of Fisheries and Aquaculture Development will be responsible for distributing the objectives, strategies and key interventions outline in the Master Plan to each implementing institutions or party. Once these are cascaded, the respective implementing institution, working closely with the MoBEF, will develop detailed plans for implementation and mobilise the necessary resources. Some interventions in the Master Plan will be implemented through country level projects or programmes, which will define the responsibilities of the various implementing institutions. All implementers will need to have Annual Work Plans aligned with ZFMP.

6.3 OBJECTIVES OF THE MASTER PLAN M&E SYSTEM

The primary purpose of Monitoring and Evaluation (M&E) system is to track progress of key indicators and will be partially guided by the Results Framework of the Master Plan. The M&E system aims to achieve the following:

1. Support the monitoring of progress towards attaining the Master Plan's objectives;
2. Provide a framework for assessing the outputs and outcomes of the Master Plan's activities;
3. Identify implementation challenges faced by the Master Plan and facilitate the early solutions;
4. Strengthen the capacity of key institutions to systematically collect, collate, analyse and share disaggregated data related to promoting the Master Plan's objectives;
5. Develop M&E strategies that enable the systematic collection of data to detect changes in the interventions process and its effects, allowing for appropriate adjustments in the implementers' responses.

6.4 IMPLEMENTERS' PROGRESS REPORTS

All institutions responsible for implementing Master Plan will be required to prepare and submit annual implementation and monitoring reports to the MoBEF and other relevant authorities. The narrative reports will include, but not limited to:

1. The approved component goals and their targets, as outlined in the annual work plan;
2. Achievements in terms of output, highlighting any deviation from planned activities and output. The achievement should be reported qualitatively and quantitatively;
3. Constraints faced during the implementation of annual work plan, including internal and external factors that affected the implementation;
4. Proposed remedial actions and way forward for resolving challenges, clearly outlining planned activities for next reporting period (one year).

The reporting period shall be from July to June. When reporting on implementation of their respective work plans, the reporting implementers will also provide information on the achievements and constraints for the entire implementation period up to the time of reporting.

All reports will be subject to approval by the relevant participatory organs of the implementing institution . The Department will then compile the progress reports into an Annual Monitoring Report for the entire Master Plan and present it for discussion and sharing at an annual stakeholders' consultative conference, to be held in early July of the following financial year.

6.5 RISK MONITORING

The Master Plan acknowledges the major risks that are anticipated during its implementation, as outlined in Table 6.1. The monitoring of these will be conducted closely and appropriate mitigation strategies will be identified and put into actions. By closely observing and addressing potential challenges, the implementation process can be better managed to ensure the successful achievement of the Master Plan's objectives. Continuous risk monitoring and proactive mitigation will help to safeguard the plan's progress and increase the likelihood of its overall success.

Table 6.1: Risk Management Strategies.

Risk	Expected Impact	Planned response
Uncertainty in Government commitment to finance implementation.	Apart from creating undue uncertainties, it makes it difficult to implement some of the activities of the Master Plan.	The MoBEF will ensure full implementation to enable the country to gain the enormous benefits resulting from the effective implementation of the Master Plan. The Government will be advised that allocating adequate resources to the plan's implementation will significantly benefit the nation.
Inadequate leadership commitment to implementation of the Master Plan.	This will certainly have negative effects on the Plan's implementation	The Master Plan was prepared with extensive involvement of stakeholders in government, making it well-owned by the leadership and key stakeholders. Cascading the Plan's activities and include them in the implementing institution's plans will provide the necessary push for effective implementation of the Master Plan.
Inability to provide attractive remuneration and motivation for staff.	This will seriously limit implementation of the planned activities.	The Zanzibar Government is committed to gradually providing an attractive remuneration and benefit package to ensure the retention of quality and motivated staff, meeting the challenges of ensuring their effectiveness.
Inadequate staff and stakeholder competencies to handle the complex issues and tasks facing the fisheries sector.	This will seriously limit implementation of the planned activities.	The Master Plan has included measures to sensitise and enhance the capacities of all key stakeholders and actors in the fisheries sector, ensuring they are well-equipped to address complex challenges effectively
Failure to adequately monitor and evaluate implementation of the Master Plan.	It will be difficult to know conclusively whether the plan is achieving its objectives.	The Master Plan has included arrangements for monitoring and evaluation. More detailed monitoring and evaluation guidelines will be prepared and provided to all key implementers of the Plan to enable comprehensive assessment of the Plan's progress towards achieving its objectives.
Key stakeholders might fail to give the expected level of cooperation.	Without this cooperation, many of the components will fail to achieve their desired outputs impacting the overall outcomes.	The MoBEF will actively promote stakeholders cooperation through clear cooperation arrangements (MoUs), improved information sharing, and active involvement in meetings and events designed to foster strong commitment among partners. The cascading of interventions to implement Master Plan to the various institutions will also serve to enhance cooperation.

6.6 SCHEDULED REVIEWS

During each five-year cycle of the Master Plan implementation, a total of five formal annual reviews are scheduled to track progress in the implementation of the key interventions. The review will determine whether the planned activities are moving towards achieving desired targets and assess whether they are on track, off track, unknown or at risk. In addition, the review will monitor any changes in the realized outputs over the period and evaluate issues, challenges, and lessons learn over the year. The extent to which the outputs delivered contribute to achieving the strategic objectives of the Plan will also be evaluated. The findings from the reviews will be used to make necessary adjustments to implementation strategies.

6.7 EVALUATIONS

At the end of every fifth year of implementation, MoBEF will collaborate with an external consultant to conduct an independent evaluation of the Master Plan. This evaluation aims to assess progress made towards achieving the planned outcomes of the Master Plan. Critical and performance measurement will be conducted annually using Master Plan indicators outlined in Table 6.2.

The evaluation team will have the mandate to identify and include other relevant issues for assessment, subject to prior agreement with the Ministry. After discussion at all levels, the adopted recommendations from the evaluation reports will be implemented and integrated into subsequent plan. This ensures that valuable insights and improvements identified during the evaluation process are effectively incorporated into the ongoing implementation of the Master Plan.

Table 6.2: Key performance indicators for the master plan monitoring evaluation and learning

	Performance Indicators
1.	Percentage of stakeholders satisfied with the fisheries policy and legal framework.
2.	Percentage of international organisations connected with the fisheries sector in which Zanzibar is actively represented.
3.	Proportion of SFCs considered to be functional.
4.	Percentage of the AU-NEPA Policy Framework and Reform Strategy Objectives effectively integrated in Zanzibar fisheries policy and legal framework.
5.	Amount of annual funding directed at the development of the fisheries sector.
6.	Percentage of stakeholders satisfied with the performance of the Fisheries department.
7.	Percentage of stakeholders satisfied with the priority accorded to the fisheries sector by politicians/ government.
8.	Percentage of sectoral policies and laws in Zanzibar aligned well with the vision of productive and sustainable development of the fisheries sector.
9.	Average stock levels disaggregated per main species.
10.	Percentage of fishers engaged in deep sea fishing.
11.	The annual value of fish catch in monetary terms from artisanal fisheries.
12.	Average annual household income of fishing communities.
13.	Percentage of revenues from fisheries attributed to processing activities.
14.	Percentage of annual revenues from the fisheries sector coming from semi/full fisheries industries activities.
15.	Number of investors in semi/full fisheries industries activities disaggregated by local versus foreign.
16.	Percentage of fishermen viewing fishing as trade (or with business mindedness).
17.	Percentage of formal SMEs operating in the fishing sector.

	Performance Indicators
18.	Number of skilled people joining the fisheries sector.
19.	Percentage of small business operating in the fishing sector able to export fish products.
20.	Percentage of fishermen engaged in mariculture.
21.	Percentage of annual national fisheries sector revenue from mariculture.
22.	Number of people engaged in mariculture.
23.	Amount of funding directed to fisheries research in Zanzibar.
24.	Number of new research projects implemented each year.
25.	Extent of planning and decision making in the fisheries informed by research evidence.
26.	Number of uses of the web-based fisheries information system.
27.	Amount of funding directed to fisheries training in Zanzibar – disaggregated by academic versus practical.
28.	Number of fisheries experts trained disaggregated by field/specialisation.
29.	Number of artisans and technicians produced for the fisheries sector.
30.	Number of participants in in-service fisheries training programmes.
31.	Total number of fisheries experts in Zanzibar (working in the sector).
32.	Total number of fisheries artisans and technicians in Zanzibar (working in the sector).
33.	Amount of funding directed to MCS activities.
34.	Extent of IUU in each major fishing area as perceived by members of SFCs.
35.	Extent of annual losses to IUU activities.
36.	Number of active association of fishers in Zanzibar.
37.	Percentage of active association of fishers with financing arrangements for members with the financial institutions.
38.	Percentage of active association of fishers with joint ownership of fishing gears (boats, etc.).
39.	Percentage of people of working age in fishing communities engaged in non-fishing activities.
40.	Number of operating fishing-related businesses in Zanzibar – disaggregated by district.
41.	Percentage of women participating in the fisheries sector – disaggregated by value chain activities.
42.	Percentage of the youth participating in the fisheries sector – disaggregated by value chain activities.
43.	Extent of impacts of climate change and environment disasters on Zanzibar fisheries ecosystems.
44.	Extent of adaptive capacity in the fishing communities to respond to climate change and environmental disasters.
45.	HIV prevalence in fishing communities – disaggregated by district, gender and age.
46.	Percentage of NGOs/CBOs engaged in fishing related activities.
47.	One fisheries research institute established and operationalised.

The evaluations will follow detailed Terms of References (ToR), which will be prepared and approved by the Ministry responsible for fisheries. The focus of the evaluations will be on the following aspects:

1. Assessing the reasons for successes or failure of specific aspects of the Plan;
2. Evaluating whether the Plan is achieving its goals, objectives and targets;
3. Examining whether the effects of the Plan contribute to a better fulfillment of its mission and vision;
4. Assessing the adequacy of the resources mobilised to plan implement;
5. Determining whether available resources are being efficiently utilised to achieving the strategic goals of the Plan;
6. Identifying any in the strategic planning and implementation process that need immediate or long-term solutions.

Additionally, the evaluations of the ToR will cover the following aspects (but not limited to):

1. Subject of the evaluation;
2. Methodology to be adopted, including data collection procedures, sampling procedures, indicators to be used, and basis for comparison, etc;
3. Analysis of the findings;
4. Evaluation of the achievements;
5. Feedback of the evaluation of findings.

6.8 REPORTS AND REPORTING

The primary purpose of the Monitoring and Evaluation (M&E) System for the Master Plan is to provide the fisheries actors and stakeholders with valuable data to support their planning and decision-making processes. In line with this, the MoBEF will be responsible for producing and disseminating Annual Implementation Reports and Five-year Evaluation Reports, which will be widely shared.

6.9 THE MASTER PLAN REVIEW AND UPDATE

The Master Plan will undergo a review, update, and renewal process after every five years of its implementation. The review team will consist of experts familiar with contemporary issues related to the fisheries sector. This periodic assessment and revision aim to ensure that the Master Plan remains relevant and effective in addressing current challenges and opportunities in the fisheries industry.


sports

REFERENCES

AU, 2014. A Pan-African Strategy on the Improvement of Fisheries and Aquaculture Data Collection, Analysis and Dissemination. NEPAD/FAO/AU-IBAR Publication.

Bank of Tanzania (BOT), 2017. Monthly Economic Review, January 2017. BOT, Dar es Salaam.

Bank of Tanzania (BOT), 2006. Problems and prospects of the fishing industry in Zanzibar. Department of Economics, Bank of Tanzania, Dar es Salaam.

Batuli M Yahya,M.B, Yahya AS, Mmochi A. J and Jiddawi N.S. 2020 Comparison of Seaweed Growth, Fish Abundance and Diversity in Deep Water Floating Raft with Tubular Nets and Shallow Water Off-bottom lines Seaweed Farms. Tanzania Journal of Science Volume 46 Issue No. 3,11pp

Breuil, C. and Grima, D., 2014. Baseline Report Tanzania. SmartFish Programme of the Indian Ocean Commission, Fisheries Management FAO component, Ebene, Mauritius. 43 pp.

Bryceson, I., 2002. Coastal developments in Tanzania: Lessons in sustainable an non-sustainable experiences. Western Indian Ocean Journal of Marine Science, 1(1): 1-10.

Bueno, P., 2011. Strategic guide to expanding aquaculture production and promoting development in Zanzibar.Report of an FAO Mission, Rome. 54 pp.

Centre for Development Cooperation in Fisheries, Institute of Marine Research, Norway, 2011. Assessment of potential and strategy for developing fish farming in sea cages in Zanzibar'.

DFMR, 2006. Statistics information on fisheries. Internal Reports, Department of Fisheries and Natural Resources, Zanzibar Town.

Falcao, J., 2009. Crab fattening in Kisakasaka, Unguja. George Washington University School for International Training and Coastal Ecology and Natural Resources Management Course, Tanzania. 52 pp.

Frockling S., dela Torecastro M., Lindstrom L., Jiddawi. N.S, Msuya F., 2012. Seaweed mariculture as a development project in Zanzibar East Africa. A price too high to pay. Aquaculture. 356-357:30-39. Doi:10.1016/j.aquaculture. 2012.05.039

FAO, 2015. Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication. 18 pp.

FAO, 2007. Disaster response and risk management in the fisheries sector. Food and Agriculture Organization of the United Nations (FAO). Rome, Italy.

Food and Agriculture Organization of the United Nations (FAO)/RAF, 2011. Aide Memoire Zanzibar Aquaculture.

Garibaldi, L., 2012. The FAO global capture production database: A six-decade effort to catch the trend. Marine Policy, 36: 760-768.

Groeneveld, J.C., Fennessy, S.T., Everett, B.I and Robey, J., 2014. Rapid Assessment of the State of Comercial Fisheries and Main Species Exploited in Tanzania. Final Report. SWIOFish Project, Tanzania.

Davies, H and Jiddawi, N.S., 2006. The Impact of the MENAI Bay Marine Protected Area on the Livelihoods of Small Scale Fishing Communities on Zanzibar, Tanzania.IIFET 2006 Portsmouth Proceedings.

Hoggarth, D.D., Abeyasekera, S., Arthur, R.I., Beddington, J.R., Burn, R.W., Halls, A.S., Kirkwood, G.P., McAllister, M., Medley, P., Mees, C.C., Parkes, G.B., Pilling, G.M., Wakeford, R.C., and Welcomme, R.L., 2006. Stock assessment for fishery management – A framework guide to the stock assessment tools of the Fisheries Management Science Programme (FMSP). FAO Fisheries Technical Paper. No. 487. Rome, FAO. 261 pp.

House of Representatives of Zanzibar, 2010.The Fisheries Act No. 7 of 2010. An Act to Repeal the Fisheries Act, 1988 and to Enact Better Provisions Related to the Management and Development of Fisheries in The Internal and Territorial Waters of Zanzibar and Matters Connected Therewith and Incidental Thereto.

Indian Ocean Commission: Concept Note: Case for an Island-wise two-month annual closure of the Octopus Fishery in Zanzibar.

Indian Ocean Commission (2016), Tanzania National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2016

Ishengoma, E.B., Jiddawi, N.S., Tamatamah, R.A. and Mmochi, A.J., 2011. Wild black-lip pearl oyster (Pinctada margaritifera) spat collection in Tanzania. Western Indian Ocean Journal of Marine Science 10: 49-57.

Jiddawi N.S. and Öhman, M.C., 2002. Marine fisheries in Tanzania. AMBIO, 31: 518-527.

Jiddawi, N.S., 2012. Artisanal fisheries and other marine resources in Chwaka Bay. In: People, Nature and Research in Chwaka Bay, Zanzibar, Tanzania (M. de la Torre-Castro and T.J. Lyimo, eds.), pp. 193-212. Zanzibar Town: WIOMSA. ISBN: 978-9987-9559-1-6.

Jiddawi, N.S., 2011. The prospects of pearl farming in Tanzania. In: Troell, M., Hecht, T., Beveridge, M., Stead, S., Bryceson, I., Kautsky, N., Mmochi, A., Ollevier, F. (eds.), Mariculture in the WIO Region -Challenges and Prospects. WIOMSA Book Series No. 11, pp. 53-54.

MACEMP, 2009. The Status of Zanzibar Coastal Resources Towards the Development of Integrated Coastal Management Strategies and Action Plan.

Meyers, D., 2012. The Marine Legacy Funds of Tanzania. MACEMP, Dar es Salaam.

The Ministry of Agriculture, Natural Resources, Livestock and Fisheries Zanzibar & The Food and Agriculture Organization of the United Nations (FAO), 2016. Zanzibar Aquaculture Development Strategy (ZADS).

Mmochi, A.J., Mozes, N., Kite-Powell, H.L., Dubi, A.M., Gordin, H. Jiddawi, N., Kissil, G., Msuya, F. and Mwangamilo, J., 2001. Design and preliminary results of an integrated mariculture pond system (IMPS) at Makoba, Zanzibar, Tanzania. In: Richmond, M.D. and Francis, J. (eds.), Marine Sciences Development in Tanzania and Eastern Africa: Proceedings of the 20th Anniversary Conference on Advances in Marine Sciences in Tanzania. WIOMSA Book Series No. 1. WIOMSA, pp. 431-450.

Mshigeni, K.E. 1976. Seaweed farming: A possibility for Tanzania's coastal Ujamaa villages. Tanzania Notes and Records, No. 79 and 80: pp. 99-105.

Mshigeni, K.E. 1973. Exploitation of seaweeds in Tanzania. The genus Eucheuma and other algae. Tanzania Notes and Records, No. 72: pp. 19-36.

Msuya, E.F. 2012. A Study of Working Conditions inthe Zanzibar Seaweed Farming Industry. Cambridge, WIEGO. Available at: http://wiego.org/sites/wiego.org/files/publications/files/Msuya-Zanzibar-Seaweed-Farming-OHS-2012.pdf.

Msuya, E.F, Hamed, S. and Muumin, H., 2016. Status of Aquaculture in Zanzibar, Tanzania. Meeting presentation. Available at: https://www.was.org/documents/MeetingPresentations/AQ2016/AQ2016_0204.pdf.

Msuya F.E., Brugere, C., Jiddawi. N., Nyonje B and Maly R. (2018). Sea PoWer Improved seaweed farming technology for livelihoods, women's empowerment and environmental protection. Final Report for Sweedbio. 33pp

Moksnes, P.O., Mirera, D., Razack, L., Jacob, O., Mahundi, H., Jiddawi, N., Hamad, M. and Troell, M. 2015. Feasibility of extensive, small-scale mud crab farming (Scylla serrata) in East Africa, Western Indian Ocean Journal of Marine Science 14: 23-38

Vaterlaus, C. and F. Bumbak. 2011. Sponge garming in Zanzibar, Tanzania. Pages 55-56 In M., Troell, T. Hecht, M. Beveridge, S. Stead, I. Bryceson, N. Kautsky, F. Ollevier, and A. Mmochi, editors. Mariculture in the WIO Region "Challenges and Prospects" No 11. WIOMSA Book Series

Mwambao Coastal Community Network, Interim Octopus Catch Results PECCA, PEMBA, 2026.

MLYWCD/ILO,, 2009-2015. National Action Plan for the elimination of Child labour: 2009-2015.

Progress Report of Dagaa Training and Packaging second Phase in Unguja.

Requintina, E.D., Mmochi A.J. and Msuya, F.E., 2008. A Guide to Milkfish Culture in the Western Indian Ocean. Western Indian Ocean Marine Science Association, Institute of Marine Sciences, University of Hawaii, Hilo, and the Coastal Resources Center, University of Rhode Island. 36 pp.

Revolutionary Government of Zanzibar (RGZ), 2010. Zanzibar Strategy for Growth and Reduction of Poverty (ZSGRP II) 2010–2015, MKUZA II. A successor to the Zanzibar Strategy for Growth and Reduction of Poverty 2007–2010.

Revolutionary Government of Zanzibar (RGZ), Agriculture Sector Review, 2015. Planning Commission

Revolutionary Government of Zanzibar (RGZ), Fisheries Act, 2010.

Revolutionary Government of Zanzibar (RGZ), Strategy for Improved Fisheries Governance and Management in Zanzibar.

Revolutionary Government of Zanzibar (RGZ), Zanzibar Revisited Development Vision 2020.

Revolutionary Government of Zanzibar (RGZ), Fisheries Policy (Draft), 2016.

Said H.A., Msuya, F., Kewalyanga, M., Mmochi, A., Mwihia W., Skjerve, E., Ngowi, H and Lyche, Y., 2018. Health problems related to algal blooms among seaweed farmers in coastal areas of Tanzania. Journal of Public Health and Epidomology, 10(8): 302-312.

Training Report in Fish Quality and Handling and Hygiene.

The Revolutionary Government of Zanzibar, 2010. The Fisheries Act No. 7 of 2010. Marine Conservation Unit Regulations.

The Revolutionary Government of Zanzibar, 2011. Zanzibar Disaster Communication Strategy (ZDCS).

The Revolutionary Government of Zanzibar, 2011. Zanzibar Disaster Management Policy.

The Revolutionary Government of Zanzibar, 2014. Zanzibar Fisheries Draft Policy.

The Revolutionary Government of Zanzibar, 2014. Strategy for Improved Fisheries Governance and Management in Zanzibar.

The Revolutionary Government of Zanzibar, 2015. 1st South West Indian Ocean Fisheries Governance and Shared Growth Project – SWIOFish-1 Project Implementation Manual'. 'Project Objectives, Components and Activities.

The Revolutionary Government of Zanzibar, 2015. 1st South West Indian Ocean Fisheries Governance and Shared Growth Project – SWIOFish-1 Project Implementation Manual'. 'Finance and Procurement.

The Revolutionary Government of Zanzibar, 2015. 1st South West Indian Ocean Fisheries Governance and Shared Growth Project – SWIOFish-1 Project Implementation Manual'. 'Monitoring and Evaluation.

The Revolutionary Government of Zanzibar, 2016. Zanzibar Strategy for Economic and Social Transformation (ZSEST) Report.

UNISOR/IOC, 2015. Building capacities for increased public investment in integrated climate change adaptation and disaster risk reduction: Report on Zanzibar.

United Nations, 2015. Sendai Framework for Disaster Risk Reduction 2015-2030.

USAID, 2016.Tanzania HIV/AIDS Fact Sheet.

World Bank, 2012. Hidden Harvest: The Global Contribution of Capture Fisheries. Washington DC. 92 pp.

World Bank, 2015. Project Appraisal Document for a First South West Indian Ocean Fisheries Governance and Shared Growth Project – SWIOFish.

Zanzibar Commission for Lands, Finnish Environment Institute and National Land Survey of Finland. Institutional Cooperation Instrument of the Ministry for Foreign Affairs of Finland Project Document.National Spatial Data Infrastructure for Integrated Coastal and Marine Spatial Planning in Zanzibar ZAN-SDI.

ZIPA, Zanzibar Investment Guide: 2016-17.

ANNEXES

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
Annex 1.1 Review of the Enabling Environment							
1.1	Review of policies	Ensure the new Fisheries Policy is revised and approved.	Sensitize key stakeholders on the new policy.	Key stakeholders are sensitized on new policy	15,000	High	MoBEF, DPs.
			Lead efforts to have sectoral policies harmonized.	Sectoral policies are harmonized.	10,000	High	
			Engage public dissemination on fisheries policy and masterplan	Public dissemination achieved.	11,000	High	
			Operationalize the new policy.	The new policy is operationalized	10,000	High	
1.2	Review of Acts and Regulation	Address key barriers existing in Zanzibar Fisheries, Marine Conservation and ZAFIRI Acts and Regulations.	Undertake efforts to harmonize sectoral guidelines.	Sectoral guidelines affecting fisheries are harmonized.	15,000	High	MoBEF, DPs.
			Update and improve the Acts and Regulations.	Updated Acts and all its Regulations.	14,000	High	
			Undertake a comprehensive review of Acts and Regulations.	Acts and all Regulations are reviewed.	15,000	High	
Sub total					**90,000**		
Annex 1.2. Fisheries (Stock) Development							
2.1	Fisheries stock management	Promote Fish Stock Assessment of the priority fisheries	Identify stakeholders and agree on objectives of management of fisheries stocks/resources	Key stakeholders identified and sensitized by 2023/24.	9,000	High	MoBEF, DPs, Research Institutions, NGOs/CSOs, Private Sector.
			Conduct context analysis of the fisheries resources.	Comprehensive study done by 2024/25.	600,000	High	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
2.1	Fisheries stock management	Promote adoption of harvest strategies of the priority fisheries.	Conduct a stock assessment	Comprehensive Stock assessment done by 2025/26.	600,000	High	MoBEF, DPs, Research Institutions, NGOs/CSOs, Private Sector.
			Develop management plans.	Management planning framework developed and implemented by 2025/26.	200,000	High	
			Evaluate fish stock assessment process and models.	Evaluation of stock assessment process undertaken periodically by 2026/27.	50,000	Medium	
Sub total					**1,459,000**		
Annex 1.3. Fisheries Development							
3.1	Artisanal Fisheries transformation	a. Facilitate artisanal fisheries to undertake productive and sustainable fishing further offshore in deeper waters. b. Promote alternative livelihoods for fishing communities. c. Promote controlled fishing in inshore waters for sustainability.	Preparation and implementation of an Integrated FAD fisheries development and management programme.	FAD fisheries developed.	500,000	Medium	MoBEF, DSFA, ZAFICO, ZIPA, Private Sector, NGOs/CSOs, DPs, MoTI, MoFP.
			Establish programmes to promote alternative fishing communities with access to financing mechanism	60% of fishers are linked with financial services.	20,000	High	
			Improve the efficiency and safety at sea of fishing units operating further offshore in deeper waters.	Efficiency and safety plan developed and implemented.	30,000	High	
			Establish/strengthen programmes to promote alternative livelihoods for fishing communities.	At least 5 comprehensive programmes are established.	35,000	Medium	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
3.1	Artisanal Fisheries transformation		Establish/strengthen programmes to ensure controlled fishing in inshore waters for sustainability	At least 3 programmes for controlling inshore water fishing are developed.	15,000	High	MoBEF, DSFA, ZAFICO, ZIPA, Private Sector, NGOs/CSOs, DPs, MoTI, MoFP.
3.1	Artisanal Fisheries transformation	d. Promote value addition by artisanal fishermen.	Promote the development of wider fishers' committees.	Twenty (22) wider fishers committees are in place - 2 per district.	45,000	Medium	MoBEF, DSFA, ZAFICO, ZIPA, Private Sector, NGOs/CSOs, DPs, MoTI, MoFP.
			Establish/strengthen programmes to promote value addition by artisanal fishermen.	At least 3 value addition programmes are established and implemented.	20,000	High	
		e. Facilitate better access to markets for artisanal fishermen.	Strengthen/establish mechanisms to enhance access to markets for artisanal fishermen.	Marketing system for artisanal fishermen is in place.	70,000	High	
		Promote knowledge sharing on fishing practices and experience	b. To conduct annual Fisheries stakeholder forum where fisher from all over Zanzibar will get the chance to meet and present their challenges and opportunities	Knowledge Sharing Platforms Developed	100,000	High	
		Strengthening MCS within national boundaries	c. Proper control of cross border entry by foreign fisherman	Cross Boundary Patrols Strengthened	120,000	High	
3.2	Development of Semi & Industrial Fisheries	a. Promote investments in small and medium fisheries processing centres.	Mainstream PPP model in productive and sustainable semi & full fisheries industries.	PPP and Private Sector Financing in fisheries industries engaged.	20,000	High	MoBEF, DSFA, ZAFICO, ZIPA, Private Sector, NGOs/CSOs, DPs, MoTI, MoFP, LGA.

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
3.2	Development of Semi & Industrial Fisheries	b. Develop an effective information base/resource centre to guide investments and decisions related to semi- and full- fisheries industries.	Establishment of semi and industrial fisheries information centers	Two Information centers established	5,000,000	High	MoBEF, DSFA, ZAFICO, ZIPA, Private Sector, NGOs/CSOs, DPs, MoTI, MoFP, LGA.
		d. Establish Zanzibar industrial fishing fleet operating offshore	c. Strengthening and Building capacity of ZAFICO.	ZAFICO fully transformed and Profitable	100,000	Medium	
			Promote local industrial fishing fleet operating offshore	Local fishing fleet developed	350,000	High	
		e. Programme to improve the quality of (fish) post-harvest activities.	Support handling and processing facilities for fisheries stakeholders	Post Harvest Loss Reduction achieved.	400,000	Low	
		f. Programme for value addition	f. Promote industries for dried, frozen and canned exports.	Processing industries established	5,000,000	Medium	
		g. Promote the development of financing mechanisms to support semi/full fisheries industries. Government incentives to facilitate attractive credit conditions from local and foreign financial institutions in support of the fisheries sector.	Strengthen the capacity of the Department of Fisheries & Aquaculture to support the development of semi/full fisheries industries. .	Department of Fisheries is strengthened.	900,000	Medium	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
3.2	Development of Semi & Industrial Fisheries	h. Develop a framework for integration of foreign offshore Industrial fishing fleets in Zanzibar.	Develop an enabling environment for investors in the fisheries sector	Investment package for fisheries sector established	8,000,000	Medium	MoBEF, DSFA, ZAFICO, ZIPA, Private Sector, NGOs/CSOs, DPs, MoTI, MoFP, LGA.
			Develop collaboration with DSFA in order to ensure adequate MCS of industrial fisheries involving Zanzibar interests.	Collaboration plan with DSFA developed	60,000	High	
			Develop reliable local and export markets.	Local and export market systems for fisheries products developed.	130,000	High	
			Technical support for the development of semi/full fisheries industries.	Technical assistance identified and engaged.	30,000	Medium	
			Promote the development of complementary fishing infrastructure.	Complementary fishing infrastructure developed.	1,000,000	High	
			Promote the development of financing mechanisms to support semi/full fisheries industries.	Financing mechanism for semi/full fisheries industries developed.	70,000	Low	
3.2	Development of Semi & Industrial Fisheries	a. Encourage and promote the use of navigation and fish detecting devices to assist fishers in finding potential	Training of fishers on use of GPS, Fish Finder, Maps	Fishers fully equipped with innovtive technology	85,000	High	MoBEF, DSFA, ZAFICO, ZIPA, Private Sector, NGOs/CSOs, DPs, MoTI, MoFP,
			Support fish detecting and navigation devices to fishers	Fishers equipped with innvoative technologies	700,000	High	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
3.3	Consolidation/ Development of Marine Conservation Areas	Promote development of Marine Conservation Areas	Review/update existing policy and guidelines for establishing and managing marine protected areas.	All MCAs policies and guidelines reviewed and updated.	60,000	High	Department of Marine Conservation
			Establish at least 2 marine protected areas on the East part of Pemba during the 15-year period of the Plan	2 MCAs established.	750,000	Medium	
		Total - Fisheries Development			23,610,000		
Annex 1.4. Support Infrastructure Development							
4.1	Fish Ports, Landing Sites and Dry Dock facilities.	Ensure establishment of Fish ports, landing sites, drydocks and other support infrastructure.	Construction of dedicated fish ports	Fish ports are constructed in Zanzibar	30,000,000	High	MoBEF, DPs, Private Sector, ZPC, MoTI, MoFP, LGAs, etc.
		Ensure establishment of Fish ports, landing sites, drydocks and other support infrastructure.	Establishment/ improvement of landing sites facilities.	Landing sites are developed and improved in Zanzibar	9,000,000	High	MoBEF, DPs, Private Sector, ZPC, MoTI, MoFP, LGAs, etc.
			Establishment of dry-dock facilities.	Dry-dock facilities are developed	60,000,000	High	
			Development Other Support Infrastructure	At least one ice-making unit in each district is establishd	1,800,000	High	
				A network of cold-storage services accessible in each major landing site.	300,000	High	
				Boat-building yards are established	180,000	Medium	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
4.1	Fish Ports, Landing Sites and Dry Dock facilities.	Ensure establishment of Fish ports, landing sites, drydocks and other support infrastructure.	Development Other Support Infrastructure	One plant to make fishing nets.	600,000	Medium	MoBEF, DPs, Private Sector, ZPC, MoTI, MoFP, LGAs, etc.
				One new engine repair and maintenance workshop in each district.	150,000	Medium	
				Fish and seaweed processing plants are established	65,000,000	High	
4.2	Quality Certification & Control Labs	Improve competence and quality improvement and certification capacity of ZAFIRI	Strengthen the capacity of ZAFIRI	ZAFIRI complies with national/international standards and quality for fisheries products.	500,000	High	ZAFIRI, DPs, Research Institutions, ZBS, ZFDA
			Strengthen the capacity and functions of ZAFIRI to coordinate with other certification institutions	ZAFIRI complies with national/international standards and quality for fisheries products	500,000	Medium	
		Total - Support infrastructure development			168,030,000		
Annex 1.5 Aquaculture/Mariculture Development							
5.1	Aquaculture/ mariculture promotion	1. Promote establishment of effective extension services for mariculture.	Put in place an effective and efficient extension program.	Exetnsion program put in place by 2023/24	150,000	High	MoBEF, DPs, MoTI,
		2. Define and target high potential aquaculture zones and appropriate production systems.	Carry out an inventory of high potential aquaculture zones and appropriate production systems.	Inventory study conducted by 2023/24	130,000	High	LGAs
5.1	Aquaculture/ mariculture promotion	3. Promote the opportunities available in mariculture.	Determine production technologies (farming systems) that are most suitable to each high potential zone.	At least 80% of high potential zones are supported with appropriate technologies by 2024/25.	2,000,000	High	Academic/ Research Institutions

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
5.1	Aquaculture/ mariculture promotion	4. Promote the use of research to inform the development of mariculture.	Make available to investors and other development agents information on high potential aquaculture zones and appropriate production technologies.	Introduce Public Information system by 2024/25.	300,000	Medium	Academic/ Research Institutions
			Ensure that interventions of all stakeholders are conducted only in the designed zones and are authorized and coordinated.	Stakeholders' coordination mechanism established by 2023/24.	150,000	Medium	
			Grant licenses and/or permits to commercial aquaculture farmers by zone and production system.	At least 80% of commercial aquaculture famers are granted with license on timely basis by 2025/26.	1,200,000	Medium	
5.1	Aquaculture/ mariculture promotion	Promote seaweed production and value addition	Focus on zones with high potential when promoting aquaculture activities, and / or providing extension services to farmers.	At least 80% of farmers are provided with effective extension services by 2025/26.	120,000	High	Academic/ Research Institutions
			Innovation of new seaweed farming techniques	% of farmers engaged in new farming techniques	250,000		
		5. Capacity building	Empower farmers with adequate skills in production technologies, aqua-farm and aqua-business management, post-production technologies, and marketing of aquaculture products.	80% of farmers are empowered with adequate skills by 2031/32.	150,000	High	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
5.1	Aquaculture/ mariculture promotion	5. Capacity building	The government to ensure that the private sector produces and grow-out farmers use good quality seed in sufficient quantities.	80% of farmers use quality seeds by 2031/32.	150,000	High	Academic/ Research Institutions
5.1	Aquaculture/ mariculture promotion	5. Capacity building	Strengthen aquaculture research and disseminate results to farmers and decision-makers in a simple and effective way.	Research agenda for aquaculture established by 2024/25.	780,000	High	Academic/ Research Institutions
			Promote investments into aquaculture.	At least 15 Major Strategic PPP Investors by 2024/25.	150,000	High	
			Promote aquaculture as a business to maximize the benefits from its development.	At least 65% of aquaculture products is exported by 2026/27.	300,000	High	
			Create an enabling environment through infrastructure development to support aquaculture.	At least 80% of all zones are provided with adequate infrastructure by 2031/32.	1,800,000	High	
			Facilitate the creation of market linkages across the aquaculture value chain.	At least 80% of all farmers are linked to reliable markets nationally and internationally by 2031/32.	1,500,000	High	
5.1	Aquaculture/ mariculture promotion	5. Capacity building	Enhance the promotion of aquaculture products.	Promotion and marketing plan for aquaculture products is developed by 2024/25.	150,000	High	Academic/ Research Institutions
	Total - Aquaculture/ Mariculture promotion				9,280,000		

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
Annex 1.6 Institutional Strengthening							
6.1	Competent Authority	Promote establishment of Competent authority and provide awareness to stakeholders	Provide capacity building and adequate knowledge about competent authority to fisheries experts and stakeholders in Unguja and Pemba	Capacity building and knowledge requirements are met.	450,000	High	ZAFIRI, MoBE
			Develop a special incentive scheme for professionals working in quality control and certification sector.	Incentive structure for quality control and certiifcation professionals is developed and implemented.	150,000	Medium	
			Improve working facilities for professionals working in quality control and certification sector in Unguja and Pemba	The right workspace and environment requirements are met.	5,000,000	High	
6.1	Competent Authority	Promote establishment of Competent authority and provide awareness to stakeholders	Provide SFCs with the necessary skills, resources and institutional support structures to support quality control and standards	SFCs are empowered to address quality control and standards	1,000,000	High	ZAFIRI, MoBE
6.2	Research, Extension & Information Management	Strengthening fisheries research and disseminate results to stakeholders and decision makers	Conduct assessment on fisheries research and disseminate results to stakeholders and decision makers	Assessment report and implementation of recommendations produced.	600,000	High	MoBEF, MoEVT, MoTI, LGAs, DPs, NGOs/ CSOs, Research Institutions, MoFP, OCGS, Private Sector
			Initiate the publication of the annual statistics reports.	Annual fisheries statistical reports produced.	300,000	High	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
6.2	Research, Extension & Information Management	Strengthening fisheries research and disseminate results to stakeholders and decision makers	Enhance the human and financial capacities of the Fisheries Research Institute.	Capacity development plan of fisheries unit developed and implemented.	900,000	High	MoBEF, MoEVT, MoTI, LGAs, DPs, NGOs/ CSOs, Research Institutions, MoFP, OCGS, Private Sector
			Develop an MoU for data sharing and processing between the Research Institute and the Fisheries Administration	MoU developed and signed.	120,000	High	
6.2	Research, Extension & Information Management	Strengthening fisheries research and disseminate results to stakeholders and decision makers	Identify and implement a basic and advanced research training plan for researchers.	Researchers' training plan for fisheries developed.	120,000	Medium	MoBEF, MoEVT, MoTI, LGAs, DPs, NGOs/ CSOs, Research Institutions, MoFP, OCGS, Private Sector
			Identify a list of priority research needs.	Research needs priorities identified.	130,000	High	
			Develop a coordinated fisheries research plan involving both public and private institutions, organizing a Scientific Working Group on fisheries in Zanzibar every 4 to 5 years.	Fisheries research plan with key stakeholders developed.	130,000	Medium	
			Develop a scientific fisheries communication strategy.	Scientific fisheries communication strategy developed.	140,000	Medium	
			Develop and implement strategic applied research projects/programmes to support the fisheries sector.	At least 45 applied research projects/ programmes (3 in each year) developed and implemented.	3,000,000	Medium	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
6.2	Research, Extension & Information Management	Strengthening fisheries research and disseminate results to stakeholders and decision makers	Develop a fisheries information management framework.	Fisheries Information management framework developed.	300,000	Low	MoBEF, MoEVT, MoTI, LGAs, DPs, NGOs/ CSOs, Research Institutions, MoFP, OCGS, Private Sector
			Develop web-based platform to implement the framework.	Web-based platform for fisheries information Mgt framework developed.	200,000	Low	
			Operate and maintain the system.	The system (Fisheries Information management framework) is fully functional.	28,000	Low	
			Publicize the system.	System publication plan is developed and implemented.	90,000	Low	
			Strengthen mechanisms for Government funding of research institutions.	Resource mobilisation strategy for research institution is developed.	200,000	High	
			Acquire a national fisheries research vessel.	National fisheries research vessel is procured.	9,000,000	Medium	
6.2	Research, Extension & Information Management	Strengthening fisheries research and disseminate results to stakeholders and decision makers	Establishment/Capacity building of fisheries research institutions.	Research capacity development plan for fisheries research institution developed and implemented.	200,000	High	MoBEF, MoEVT, MoTI, LGAs, DPs, NGOs/ CSOs, Research Institutions, MoFP, OCGS, Private Sector

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
6.2	Research, Extension & Information Management	Strengthening fisheries research and disseminate results to stakeholders and decision makers	Establish more functional links between the research institutions and research data consumers.	Linkage mechanism between research institutions and research data consumers is developed.	80,000	High	MoBEF, MoEVT, MoTI, LGAs, DPs, NGOs/ CSOs, Research Institutions, MoFP, OCGS, Private Sector
			Establish a comprehensive fisheries research agenda for Zanzibar.	Fisheries research agenda is established.	120,000	High	
			Establish mechanisms for facilitating fisheries extension services.	Mechanism for fisheries extension services is developed.	200,000	High	
6.3	Training Institute(s)	a. Promote the setting-up of fisheries training institutions in Zanzibar.	Develop and implement a national strategic human resource development plan/strategy for the fisheries sector.	National strategic human resource development plan/strategy developed.	250,000	High	MoBEF, MoEVT, MoTI, LGAs, DPs, NGOs/ CSOs, Research Institutions, MoFP, OCGS, Private Sector
6.3	Research, Extension & Information Management	a. Strengthening fisheries research and disseminate results to stakeholders and decision makers	Develop a competitive national scheme of service for fisheries cadre working in the public sector.	Competitive scheme of service for fisheries cadre developed	250,000	High	MoBEF, MoEVT, MoTI, LGAs, DPs, NGOs/ CSOs, Research Institutions, MoFP, OCGS, Private Sector
			Establish a Zanzibar (national) fisheries training institute (for accredited certificate and diploma programmes).	Zanzibar Fisheries Training Institute established	64,500,000	High	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
6.3	Research, Extension & Information Management	b. Support and strengthening capacity of training institutes through human resources development and research funding.	Work with universities in Zanzibar to establish accredited degree and postgraduate programmes in fisheries and related fields.	MoU with Universities on fisheries accredited degrees and postgraduate programmes established.	30,000	High	MoBEF, MoEVT, MoTI, LGAs, DPs, NGOs/ CSOs, Research Institutions, MoFP, OCGS, Private Sector
			Develop/strengthen/ promote regular in-service professional training in the fisheries sector (with a focus on semi/full fisheries industrial needs)	SSF industrial transformation achieved.	200,000	High	
		Develop/strengthen/ promote regular in-service professional training in the fisheries sector (with a focus on semi/full fisheries industrial needs)	Develop/strengthen/ promote regular training for artisanal fishermen, members of SFCs and Shehia leaders.	Regular training plan for artisanal fishermen, members of SFCs and Shehia leaders developed.	200,000		
			Establish and maintain a fisheries sector human resources database.	Fisheries sector resource database developed and maintained.	400,000	Medium	
		c. Facilitate and improve dialogue between the fisheries training institutes and the government.	Facilitate fisheries training and government institutions dialogues	Number of dialogues conducted	80000		
6.4	Fisheries Cooperatives.	a. Initiate the setting-up of national fisheries cooperatives and related actors.	Establish/Strengthen fisheries cooperatives to facilitate access to institutional credit and markets	80% of fisheries associations have formal governance and organisational structure	600,000	High	MoBEF, LGAs, MoTI, NGO/CSOs, etc.
		b. Develop the structure to support collaborative management of the Fisheries Sector.	Promote the formation of a national fisheries cooperatives in Zanzibar.	Representative body established and empowered	260,000	High	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
6.4	Fisheries Cooperatives.	c. Promote efficiency in utilization of the existing fishing potential and ensure ecological balance through establishment of cooperatives relevant to the development of fishing activities.	Promote the formation of a national representative body for the Fisheries cooperatives in Zanzibar	A national representative body for fisheries in Zanzibar is formed	260,000	High	MoBEF, LGAs, MoTI, NGO/CSOs, etc.
			Support participation of fishing industry organizations and NGOs in promoting self-regulation through training participation.	80% of fisheries associations in Zanzibar are compliant with laws and regulations.	300,000	High	
6.5	Food Safety and Quality Control	Create the Quality Assurance (QA) environment to support growth of the domestic market and access to foreign markets for fish and fish products.	Conduct product registration, pre-and post-inspections, seize, condemn and dispose unfit food for human consumption.	Quality compliance standards is implemented by 100%	200,000	High	ZAFIRI, ZBS, ZFDA, MoTI, MoBEF, ZAFICO
		Strengthen capability of the fish industry to comply with QA requirements.	Develop capability within processing plants for Quality Control and QA through training and technical assistance.	Quality compliance standards achieved	200,000	High	
6.5	Food Safety and Quality Control	Develop, promote and enforce standards in order to ensure health and safety of the consumers as well as protecting the environment.	Train fishermen in on-board sanitation and fish handling techniques.	80% of fishermen are trained on on-board sanitation and fish handling techniques.	200,000	High	ZAFIRI, ZBS, ZFDA, MoTI, MoBEF, ZAFICO

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
6.5	Food Safety and Quality Control	d. Build confidence of consumers and traders for their goods and services in the markets.	Facilitate attendance at workshops, trade shows and expositions for the processing and retail components of the sector.	80% of fisheries associations are represented in workshops, trade shows and expositions for the processing and retail components of the sector	200,000	Medium	ZAFIRI, ZBS, ZFDA, MoTI, MoBEF, ZAFICO
		e. Ensure that Zanzibar fishery products are of the quality, health and safety standards required in key export markets.	Develop capability within plants/industries for Quality Control and QA through training and technical assistance.	National quality assurance plan developed.	300,000	High	
		f. Provide policy options and recommendations for food safety and quality control agencies/units.	Incorporate quality assurance in National policy	% of recommendation of QA are incooperated in national policy	130,000	High	
Total - Institutional strengthening					**91,018,000**		
Annex 1.7 Compliance Issues							
7.1	MCS (KMKM, Zanzibar Maritime Authority, Police)	a. Strengthen institutional framework/system for MCS for combating IUU fishing.	Consolidate the Zanzibar MCS system.	Zanzibar MCS system developed.	300,000	High	MoBEF, ZMA, KMKM, Police, Navy, DSFA
		b. Improve regional cooperation and collaboration for sustainable fisheries management.	Strengthen MCS Regional/ District Coordination Capacity.	The MCS Regional/district coordination mechanism established.	500,000	High	
		c. Strengthen MCS capacity	Strengthen community-level MCS capacity.	Community level MCS capacity development plan developed and implemented.	500,000	High	
			d. Strengthen DFD, DMC, Police & KMKM enforcement capacities.	Resource mobilisation strategy for MCS developed and implemented	300,000	High	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
7.1	MCS (KMKM, Zanzibar Maritime Authority, Police)	Improve funding for MCS activities.	Establish/Strengthen funding mechanisms for MCS.	Funding mechanism established	300,000	Medium	MoBEF, ZMA, KMKM, Police, Navy, DSFA
7.2	Fisheries Information Stop Centre	Enhance availability of fisheries information.	Establish Fisheries Information centre (one stop centre).	Fisheries information centre established.	300,000	High	
7.3	Links with DSFA	a. Promote linkages with DSFA.	Establish linkage mechanism with DSFA.	Linkage mechanism with DSFA established.	80,000	Medium	
Total - Compliance issues					**2,280,000**		
Annex 1.8 Cross-Cutting Issues							
8.1	Environment & Climate Change	1. Strengthen the capacities of poor fishing communities to adapt to and mitigate against climate change and disasters	Develop/strengthen/ promote programmes that respond to specific climate change and environmental issues affecting the fisheries sector.	At least 20 programmes developed by 2031/32.	150,000	High	MoBEF, FVPO, SVPO, LGAs, TMA
		2. Rehabilitate specific areas of the fisheries systems that have been damaged by climate change and environmental degradation.	Capacity building programme on climate smart fisheries.	80% of fishers trained on smart fisheries by 2025/2026.	300,000	High	
			Review/strengthen existing policies, laws and regulations pertaining to climate change and the environment to include more specific measures to protect the fisheries. ecosystems	100% of existing laws pertaining to climate and environmental issues reviewed and revised.	300,000	High	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
8.1	Environment & Climate Change	2. Rehabilitate specific areas of the fisheries systems that have been damaged by climate change and environmental degradation.	Develop/strengthen existing solid waste management arrangements in landed sites and areas close to fisheries resources.	Solid waste management plans developed for all 30 official fish landing sites.	600,000	High	MoBEF, FVPO, SVPO, LGAs, TMA
			Develop/strengthen Zanzibar climate change/ environmental disasters' early warning system.	Early warning system installed/strengthened in 12 districts in Zanzibar.	2,500,000	High	
			Integration of smart climate measures in fisheries programmes and projects.	Integration strategy developed and implemented.	150,000	High	
8.2	Youth Development & Gender	Address key barriers and constraints that limit women and the youth to participate in and benefit from the fisheries sector.	Study and document the barriers facing women and the youth in entering and benefiting from the fisheries sector.	One assessment study conducted by 2025.	120,000	High	MoBEF, Min resp for Gender, LGAs
			Establish/strengthen policies, programmes and projects aimed at profitable participation of women and youth into the fisheries sector.	10 Youth and women programmes/projects developed & implemented.	1,000,000	High	
8.3	Disaster risk management	1. Promote advocacy on DRM planning and budgetary issues	Develop and undertake advocacy on government to demand for developing budget code for DRM on Ministry's budget.	Advocacy plan developed and implemented.	900,000	High	Ministry responsible for DRM, Fisheries, Disaster, Environment

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
8.3	Disaster risk management	2. Ensure institutional capacity development on DRM.	Employ staff with knowledge and exposure on DRM.	At least 3 staff competent in DRM employed.	350,000	High	Ministry responsible for DRM, Fisheries, Disaster, Environment
			Prepare fishery sector's risk profile.	Fishery risk profile developed.	120,000	High	
8.4	Poverty alleviation	1. Strengthen fishing community organization and representation.	Establish/Strengthen fishers associations to facilitate access of fishers to institutional credit for the modernization of fishing units	80% of fisheries associations are linked with financial institutions	500,000	High	Ministries responsible for Fisheries, Cooperatives, LGAs,Trade, Human resources
		2. Promote alternative employment opportunities for the coastal fishing communities.	Develop programmes to support alternative employment opportunities for the coastal fishing communities	At least 12 big programmes for alternative employment opportunities in coastal societies are established	1,200,000	High	
		3. Promote the development of fishing as business mind-set.	Support and expand community based training programmes in fishing technology and quality assurance and fisheries-based entrepreneurship.	Comprehensive capacity building plan on fishing technology and quality assurance is prepared and implemented.	600,000	High	
		4. Develop the human resource of the sector.	Develop and establish fish market, access roads, water supply, energy supply in fish landing sites targeting poor fishing communities.	70% of fish landing sites improved with reliable services.	9,500,000	High	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
8.4	Poverty alleviation	4. Develop the human resource of the sector.	Train fishers, fish processors and fish marketing operators working with poor fishing communities on improved practices in fish handling, storage and processing.	70% of fishers, fish processors and fish marketing operators are trained on fishing communities on improved practices in fish handling, storage and processing.	1,200,000	High	Ministries responsible for Fisheries, Cooperatives, LGAs,Trade, Human resources
8.5	Alignment & Linkages with other sectors (Oil & Gas, Tourism)	1. Promote strategic alignment with sectors -tourism, fishery and oil & gas.	Form a cross-sectoral joint committee to spearhead the alignment process	Cross-sectoral joint committee is formed.	60,000	High	Ministries responsible for Fisheries, Tourism
		2. Promote fisheries tourism.	Review and harmonize sectoral laws, regulation and procedures.	60% of relevant sectoral laws, regulations and procedures are reviewed and harmonized.	80,000	High	
			Develop fisheries tourism plan.	Fisheries-tourism plan is developed.	55,000	Medium	
			Develop promotional tools for fisheries-tourism.	Promotional tools for fisheries tourism are developed and tested.	80,000	Medium	
8.6	Child Labour	1. Promote compliance of laws, regulations and procedures related to child labour.	Review of laws and regulations on child labour issues.	60% of laws and regulations on child labour issues are reviewed.	30,000	High	Ministries responsible for Fisheries, Labour, Attoney General, NGOs,
		2. Develop the capacity of the Ministry on child labour related issues.	Undertake sensitization programmes to fishing communities on child labour issues.	80% of fishing communities are sensitized on child labour issues.	1,200,000	High	
			Ministry responsible for fisheries to include child labour information within their M&E system.	Child labour issues are integrated into the Ministry's M&E Framework.	60,000	High	

Action Code	Broad Issue	Strategies	Key Interventions	KPIs/Target	Indicative Budget (TShs ,000)	Priority	Responsible
8.6	Child Labour	2. Develop the capacity of the Ministry on child labour related issues.	Mainstream child labour factors into regular surveys and census.	100% of Ministry's regular surveys and census includes the child labour factors.	60,000	High	Ministries responsible for Fisheries, Labour, Attoney General, NGOs,
Sub total cross					**21,115,000**		

THE MINISTRY OF BLUE ECONOMY AND FISHERIES, ZANZIBAR

Maisara Area, ZURA Building
Ground Floor, Room No.06
P.O.Box 149

+2550242941195

info@blueeconomysmz.go.tz