THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF LIVESTOCK AND FISHERIES

PROPOSAL FOR THE ESTABLISHMENT OF THE TANZANIA FISHERIES AND AQUACULTURE AUTHORITY (TFAA)

2024

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Abbreviations

ADCs	Aquaculture Development Centres
AIGAs	Alternative Income Generating Activities
AU-NEPAD	African Union New Partnership for Africa's Development
BFAR	Bureau of Fisheries and Aquatic Resources, the Philippines
CCM	Chama cha Mapinduzi
CITES	Convention on International Trade of Endangered Species of Wild Fauna and Flora
DSFA	Deep Sea Fishing Authority, Tanzania
EEZ	Exclusive Economic Zone
ECF	Extended Credit Facility
EIA	Environmental Impact Assessment
FAO	Food and Agriculture Organization of the United Nations
FETA	Fisheries Education and Training Agency, Tanzania
GAFRD	General Authority in Fish Resources Development, Egypt
GDP	Gross Domestic Product
IMF	International Monetary Fund
LGAs	Local Government Authorities
MLF	Ministry of Livestock and Fisheries
NMATT	National Multi-Sectoral Task Team
NaFAA	National Fisheries and Aquaculture Authority, Liberia
PO-RALG	The President's Office-Regional Administrations, and Local Government
PPP	Public Private Partnership
SADC	Southern African Development Community
SEA	Strategic Environmental Assessment
SDGs	Sustainable Development Goals
SFA	Seychelles Fishing Authority
SWICA	Special Wildlife Investment Concession Areas
TADB	Tanzania Agricultural Development Bank
TAFICO	Tanzania Fisheries Corporation
TANAPA	Tanzania National Parks
TAFIRI	Tanzania Fisheries Research Institute
TAWA	Tanzania Wildlife Management Authority
TFS	Tanzania Forest Services
TTSA	Tanzania Tree Seed Agency
TFAA	Tanzania Fisheries and Aquaculture Authority
TFDA	Tanzania Food and Drugs Authority
TBS	Tanzania Bureau of Standards
TPA	Tanzania Ports Authority
TZS	Tanzanian Shilling
WMAs	Wildlife Management Areas

1.0 Executive Summary

1.1 Study Objectives

The main objective of this study is to assess the feasibility of establishing a Fisheries and Aquaculture Authority (TFAA) as an autonomous Authority aimed at improving fish and aquaculture production and productivity.

1.2 Background to the Fishery Sector

Tanzania ranks number six in fish production and number eight in aquaculture production in Africa. However, productivity remains comparatively low and the sector contributes only 1.8% of the national GDP.

1.3 Sector Challenges

The sector faces several challenges which to some extent contribute to its low production and productivity. These challenges include; illegal fisheries through use of illegal fishing gears and illegal fishing methods such as blast fishing, illegal cross border trading of fisheries products, poor storage and processing infrastructure leading to high post-harvest losses of fisheries products, inadequate availability of inputs and extension services, and limited capital investment in fisheries and aquaculture subsectors.

Intentional policy decisions and investments have been made by the Ministry of Livestock and Fisheries (MLF) to address these challenges and positive results are being realized, but still there is more room for improvements to optimize the sector potential.

1.4 Field Study

A field survey has been conducted partly aimed at validating information and data obtained from desk study while collecting more information and data from stakeholders and key informants. It also attempted to establish the status of key infrastructures used in production, processing for value addition and marketing of capture fish and aquaculture value chains. Visited areas include production settings (cage fish farming), hatcheries, Mariculture Development Centres and seaweed production and processing, where 16 lake, sea and dam sites were visited covering 7 regions of the Tanzania Mainland. Visited regions included Mwanza, Kigoma, Rukwa, Iringa, Tanga, Dar Es salaam and Lindi. The survey reached out to eighteen stakeholders both in public and private sectors covering fish markets, landing sites, fish processors, drying facilities (racks, electric drier), aquaculture development centre (mariculture), seaweed farmers, seaweed processors, vessel owners and fish traders. The survey documents details of findings and observations from the field and equally provide recommendations on how registered gaps and challenges are to be addressed.

1.5 Tanzania Fisheries and Aquaculture Authority

The management of fisheries and aquaculture including promotion, development and management of the fisheries sector is vested under the Ministry of Livestock and Fisheries through the Notice on Assignment of Ministerial Functions (Instrument) No. 534 of July 2, 2021. To this end, the Ministry has been developing, coordinating, managing and implementing policy and legal tools to enable conservation, management, development and utilization of fisheries and aquaculture resources.

1.6 Establishment of Tanzania Fisheries and Aquaculture Authority

There are various challenges facing the fisheries and aquaculture sector. In order to mitigate these challenges, there is a need to set up a dedicated Authority which will solely focus on the development, promotion, management and oversight of the fisheries and aquaculture in Tanzania. Key sources of revenue for the proposed Authority will come from license fees, royalties on fishing products, continental services and permits to export fishing products, charges resulting from various sales of fish products and charges resulting from fines for various offences (compounding fee), charges and various taxes from the markets of fishing products, sales of fish fingerlings and royalty for exporting seaweed, charges arising from various activities related to the protected areas and port service charges.

1.7 Legal Framework for Establishing the Authority

An Authority is an independent body created by legislation with a specific mandate or purpose and is often established to manage public services or facilities that require specialized expertise or dedicated administration. Authorities operate with a level of autonomy from the ministry or government department to which they are affiliated and have the power to make regulations, collect fees or charges, and oversee the implementation of policies related to their area of responsibility. It is recommended that the proposed fisheries and aquaculture organization be established as an Authority.

1.8 Relationship between TFAA with other Ministry Institutions Involved in Fisheries and Aquaculture

It is obvious that the establishment of TFAA will bring about changes that call for a need to harmonize the affected legal and operational instruments, including the affected legislations that empowered those institutions to undertake their impacted areas of operations.

The following section highlights potential areas of collaboration between TFAA and TAFIRI, FETA, LGA, TPA (Port Services Charges Act 2019 and Deep-Sea Fishing Authority).

1.9 The Organizational Structure of TFAA

The recommended organizational structure for TFAA is designed to be mean and lean with the aim of delivering efficient and cost-effective operations and shall be comprised of the Director General, supported by unit heads who will be supported by department directors and zonal managers. The Director General will report to the Board of Directors upon which the governance mandate of the Authority will be entrusted.

1.10 Expected Outcomes and Impact of TFAA

Establishment of TFAA is anticipated to have several impacts within the fisheries and aquaculture sector value chain including increased income from fishing activities and aquaculture development, improved sector contribution to the national GDP, reduction of post harvest losses, improvement of the management and protection of fishing resources, reduction and control of illegal fishing activities, strengthening of fisheries and aquaculture extension services, improvement of the management and operation of fisheries and aquaculture infrastructure, increased investment and use of modern technologies in the fishing sector, improved farmers' income and profitability and leveraging the private sector investment, among other benefits.

1.11 The Road Map and Work Plan Towards Establishing TFAA

The road map for establishing TFAA will involve a number of steps, namely; preparation of the feasibility study, stakeholder workshops with key stakeholders including the Ministry's management team, the Parliamentary Committee and the general stakeholders within the fisheries sector, establishment of the legal framework and securing necessary approvals and mobilization of financial resources and human resources for TFAA.

2.0 Introduction

Tanzania is among the top ten major producers of inland fisheries and top ten major producers of aquaculture in Africa. This is due to natural endowment of abundant water bodies with rich biodiversity of aquatic organisms which forms a resource base for capture fisheries and aquaculture activities. Inland water bodies cover an area of 59,280 km2 and are composed of lakes, rivers, dams and wetlands. These include a share of the Great Lakes of Africa, namely; lakes Victoria, Tanganyika and Nyasa.

> ***The sector contributes 1.8 percent to the GDP, with an average annual growth rate of 2.5 percent***

Marine water resources include 1,424 km coastline, 64,000 km^2 of territorial sea and 223,000 km^2 of the Exclusive Economic Zone (EEZ). Parts of these areas are protected to provide breeding and nursing areas for aquatic organisms as well as other ecosystem services to support the fisheries. These areas include marine parks and reserves in the Indian Ocean and breeding areas in freshwaters.

The Sustainable Development Goal (SDG) 14 recognizes the role of marine and coastal ecosystems and the need to conserve and promote their sustainable use. The SDG 14.4 states the need for regulation on overfishing while the SDG 14.6 suggests to eliminate subsidies contributing to illegal and unreported fishing.

Tables 1-2 demonstrate the ranking of major fish and aquaculture producers in Africa.

Table 1: Africa: Capture Fisheries Production – Top Ten Producers

SN	Country	Aquaculture Production ('000' tonnes)	Africa's Total share (%)
1	Morocco	1,375	14
2	Nigeria	783	8
3	Mauritania	678	6.9
4	South Africa	596	6.1
5	Uganda	566	5.8
6	Tanzania	468	4.8
7	Senegal	452	4.6
8	Egypt	419	4.3
9	Mozambique	400	4,1
10	Angola	377	3.9
	Total 10 Major Producers	**6,115**	**62.4**
	Total all other Producers	**3,679**	**37.6**
	Africa's Total	**9,794**	**100**

Source: FAO. 2022 FishStat. Global Fisheries and Aquaculture production 1950-2020

Table 2: Africa: Aquaculture Production of Aquatic Organisms - Top Ten Producers

SN	Country	Aquaculture Production ('000' tonnes)	Africa's Total share (%)
1	Egypt	1,592	70.7
2	Nigeria	262	11.6
3	Uganda	124	5.5
4	Ghana	64	2.8
5	Zambia	46	2.0
6	Tunisia	23	1.0
7	Kenya	20	0.9
8	Tanzania	17	0.8
9	Zimbabwe	15	0.7
10	Sudan	10	0.4
	Total 10 Major Producers	**2,173**	**96.6**
	Total all other Producers	**77**	**3.4**
	Africa's Total	**2,250**	**100**

Source: FAO, 2022 FishStat. Global, Fisheries and aquaculture production 1950-2020

2.1 The Ministry of Livestock and Fisheries

The Ministry of Livestock and Fisheries through the Notice on Assignment of Ministerial Functions (Instrument) No. 534 of July 2, 2021 is responsible for the overall function of promoting, developing and managing the Fisheries Sector. The Ministry has been developing, coordinating, managing and implementing policy and legal tools to enable conservation, management, development and utilization of fisheries and aquaculture resources. These include the Fisheries Policy of 2015; the Fisheries Act, 2003 (Cap. 279); Marine Parks and Protected Areas Act,1994 (Chapter No. 146); the Deep-Sea Fisheries Management and Development Act, 2020 (Chapter No. 388); and the Tanzania Fisheries Research Institute Act, 2016 (Chapter No. 280).

2.2 Problem Statement and Rationale for Establishing a Dedicated Fisheries and Aquaculture Authority

2.2.1 Problem Statement

Tanzania has not been able to fully exploit the economic opportunity associated with fisheries and aquaculture value chain activities due to major challenges, including the following:

- Illegal fisheries through use of illegal fishing gears and illegal fishing methods such as blast fishing
- Illegal cross border trading of fisheries products
- High post-harvest losses (30-40%)[1] of fisheries products due to poor storage and processing infrastructure
- Low contribution of aquaculture due to such limiting factors as inadequate availability of inputs and extension services
- Limited capital investment in fisheries and aquaculture
- Inefficient revenue collection (for example, for the financial year 2020/21, the Ministry of Livestock and Fisheries was expected to collect TZS 33 billion but managed to collect TZS 23 billion, about 70% of the target. Also, for the fiscal year 2021/22 the Ministry was expected to collect TZS 40 billion but managed to collect TZS 22.5 billion, 56% of the target)
- Unavailability of quality fish seeds and feeds; low adoption of appropriate technologies including biotechnology and biosafety; low capacity in fish disease surveillance, diagnosis and control; and inadequate sensitization to aqua-farmer investors on the opportunities for commercial aquaculture
- Fisheries infrastructure is already established by the Ministry and operated by the Local Government Authorities (LGAs) with no maintenance budget by LGAs
- Absence of spatial planning

These challenges are attributable to systemic administrative and operational challenges. To overcome these hurdles and unlock the full potential of Tanzania's fisheries sector, it is proposed to establish the Tanzania Fisheries and Aquaculture Authority (TFAA). This independent authority will be tasked with the responsibilities of management, protection, conservation, and development of fishing resources, as well as the promotion of aquaculture in both marine and cold-waters. This step will ensure a sustainable and prosperous future for Tanzania's fisheries sector and its contribution to improvement of the livelihoods in the fishery sector value chain and GDP at large.

[1] MLF Budget Speech 2023/24

2.2.2 Rationale for the Establishment of the Fisheries Authority

The establishment of the Fisheries and Aquaculture Authority is based on the following motivations:

a) Implementing the 2015 National Fisheries Policy, Chapter Three (3), Item 3.2, (vi) which states: **"The Government shall establish an Authority to deal with conservation and protection of fisheries resources and environment in marine and fresh water areas** to ensure effective management of fisheries resources through proper conservation, protection and rational utilization for sustainable development".

b) The manifesto of the ruling party, Chama cha Mapinduzi (CCM) for the 2020 General Election as stated in Article 43 that emphasizes strengthening the fisheries sector to achieve sustainable fishing, withstand competition and make the country self-sufficient in fish while reducing imports.

c) The Parliament's Permanent Committee for Industry, Trade, Agriculture and Livestock in its meetings on March 24 and 27, 2023 directives while receiving the report on the implementation of the budget for the financial year 2022/23 and the estimated revenue and expenditure for the financial year 2023/24. The Committee directed the Ministry to fast track the establishment of the authority to manage fisheries resources as one of the ways of addressing challenges facing the sector.

d) The Parliamentary Budget Committee in its meeting on April 14, 2023 while receiving and discussing the implementation of development projects funded by the Extended Credit Facility (ECF) loan from the International Monetary Fund (IMF) for the ministries responsible for agriculture, energy, livestock and fisheries urged the Ministry to establish a tool for managing and protecting fishing resources; also, the Parliament of the United Republic of Tanzania while receiving and discussing the estimated revenue and expenditure report of the Ministry of Livestock and Fisheries on 2-3 May, 2023, emphasized the need to establish the Authority responsible for managing the fisheries sector.

The establishment further adheres to directives from various authorities and taking into account the views of stakeholders.

The Authority will serve as a catalyst for positive change in the fisheries sector and it will enhance the protection, conservation, and management of fishing resources, and promote the development of aquaculture. This will enable Tanzania to fully harness the potential of its blue economy.

By curbing illegal fishing activities and smuggling of fish and fish products, the Authority will ensure the availability of industrial raw materials for spearheading the contribution of the sector for industrialization. This will also contribute to food security and creation of employment opportunities. The Authority will also facilitate the availability of quality inputs necessary for the development of aquaculture.

Furthermore, the establishment of the Authority will lead to improved efficiency in revenue collection, an increased contribution to the GDP, and a boost in foreign exchange earnings. The overall objectives of the Authority shall be to

i oversee and develop fishery resources and their environment by improving their management, conservation and protection as well as their rational utilization for sustainable development

ii minimize or eradicate fishery sector development challenges including illegal fishing and smuggling of fishery products

iii oversee the management and protection of territorial sea water boundaries, marine conservation area and fresh water bodies

The rationale behind the MLF decision to establish the TFAA, therefore, is to efficiently address the fisheries sub-sector challenges outlined above, in order to unleash its huge potential towards achieving the ***National Development Vision 2025***, which earmarks effective ***utilization of natural resources***, including the fisheries sector. To complement and facilitate realization of the development agenda statement, the 2015 sector's policy statement envisioned to build "a progressive fisheries sector contributing significantly to socio-economic development through sustainable utilization of fisheries resources while conserving the environment". In view of envisaged 2025 National Development Agenda and the National Fisheries Policy of 2015 statement, the TFAA establishment is timely and long overdue. The resolution was adopted by legislators (Members of Parliaments) for action during the 2023/ 2024 budget session.

2.2.3 Sources of Fund for TFAA

Key sources of revenue for TFAA `shall comprise of the following (Table 3):

Table 3: Recommended Sources of Revenue for TFAA

No.	Revenue Source
1	License fees
2	Royalties on fishing products
3	Continental services and permits to export fishing products
4	Charges resulting from various sales of fish products
5	Charges resulting from fines for various offences (compounding fee)
6	Part of the fisheries and aquaculture budget will be moved from the MLF to TFAA as Government subvention
7	Fees, charges and various taxes from the markets of fishing products
8	Sales of fish fingerlings
9	Royalty for exporting seaweed
10	Charges arising from various activities related to the protected areas
11	Port services charges

Fees currently collected by LGA will be shared on a 60:40 ratio where LGA will retain 60% of the fee and the remaining 40% be retained by the Authority (TFAA).

Detailed fee items are provided under **Appendix 1** to this report.

3.0 Fisheries Sector Analysis

3.1 The Role of the Ministry

According to the Government Gazette No. 384 issued on July 2, 2021, the Ministry's responsibilities are to prepare, supervise and monitor the implementation of the livestock and fisheries policies in order to strengthen and develop the livestock and fisheries sector. The Ministry also has the role of developing, coordinating, managing and implementing the policies including championing the operational responsibilities such as protection, conservation, management and development of fishing resources.

The Ministry collaborates with the President's Office-Regional Administration and Local Government (PO-RALG), which has the mandate to protect, manage, and develop fisheries resources through its local councils. The Ministry oversees the protection of fisheries resources across 44 centers located nationwide. Additionally, the Division of Marine Reserves and Protected Areas manages three marine parks and 15 protected areas. These centers are tasked with controlling illegal fishing, preventing the smuggling of fish and fish products, prohibiting the importation of illegal fishing gear, and preserving the ecology of the isolated areas.

Given the Ministry's broad mandate and the challenges faced by the sector, it is clear that there is an urgent need for a more focused approach to managing the fisheries sector for both the present and future generations. Thus, the need for establishing the Tanzania Fisheries and Aquaculture Authority (TFAA) stems from several key factors, including the implementation of the National Fisheries Policy of 2015 Chapter Three, item 3.2 (vi); the implementation of the rulling party's (Chama cha Mapinduzi) election manifesto for the 2020 General Election as stated in Article 43; implementing the directives of the Parliamentary Permanent Committee for Industries, Trade, Agriculture and Livestock in its meetings of March 24 and 27, 2023 directing the fast tracking the establishment of the authority to manage fisheries resources, among others.

> The rationale behind MLF decision to establish the TFAA therefore is to efficiently address the fisheries sector challenges outlined above, in order to unleash its huge potential towards achieving the ***National Development Vision 2025***, which earmarked ***effective utilization of natural resources,*** fisheries sub-sector included. To complement and facilitate realization of the development agenda statement, the 2015 sector's Policy statement envisioned to build "a progressive fisheries sector contributing significantly to socio-economic development through sustainable utilization of fisheries resources while conserving the environment". In view of envisaged 2025 National Development Agenda and 2015 National Fishery Policy statement, TFAA establishment is timely and long overdue. The resolution was adopted by legislators (Members of Parliaments) for action during 2023/ 2024.

3.2 Legal and Policy Framework Governing Fisheries Sector

In a bid to improve the fisheries sector, a number of legislations and policies have been put in place by the Ministry to foster the development, management and efficiency of this vital sector. The sector is regulated under several areas:

Fisheries Act No. 22 of 2003

The changing dynamics within the micro- and macro-economic policy, new challenges and opportunities in the aquaculture have necessitated review of the Fisheries Act No. 22 of 2003 and its principal Regulations of 2009 where the law regulates the development of fisheries, with a few clauses that regulate aquaculture.

Tanzania Fisheries Research Institute (TAFIRI) Act No. 11 of 2016

The Tanzania Fisheries Research Institute Act No. 11 of 2016 authorises the Tanzania Fisheries Research Institute to carry out research on fisheries and aquaculture in all the water bodies and aims to obtain scientific information and research findings which will inform and guide the management of fisheries resources and aquaculture.

M**arine Parks and Reserves Act No. 29 of 1994**

The Marine Parks and Reserves Act No. 29 of 1994 is aimed at integrating conservation, management and sustainable use of fisheries resources, taking into consideration that wild fish are potential sources of broodstock for aquaculture. The law contains provisions on the protection, productivity and biological diversity of coastal and aquatic ecosystems through prevention of the destruction of habitats, protection of the fragile ecosystems, pollution prevention and control, and controlling over- exploitation.

Tanzania Bureau of Standards Act No. 2 of 2009

The Tanzania Bureau of Standards (TBS) was established to strengthen the support to institutional infrastructure for the industrial and commercial sectors of the economy. Specifically, TBS is mandated to take measures to control the quality of products of all types and to promote standardization in the industrial and commercial sectors. The law was amended in 2019 so that the Bureau could regulate food and cosmetics, which previously fell within the mandate of the former Tanzania Foods and Drugs Authority (TFDA).

National Environmental Management Act No. 20 of 2004

The National Environmental Management Act has provisions on environmental management and planning, environmental impact assessment (EIA), strategic environmental assessment (SEA), pollution prevention and control, waste management, as well as the compliance with the Act and its enforcement.

Tanzania Revenue Authority Act of 2006
The Tanzania Revenue Authority is the Government body responsible for the assessment and collection of revenues, enforcing the laws relating to revenues and to provide for related matters.

Regional Institutional Frameworks
Apart from the national institutional frameworks, there are regional and international institutions responsible for providing framework guidance and identifying the strategic steps to be taken by member states to unlock the full potential of fisheries and aquaculture for food security, livelihoods and wealth creation. These include the Southern African Development Community (SADC), the African Union New Partnership for Africa's Development (AU-NEPAD) and the Food and Agriculture Organization (FAO) of the United Nations.

3.3 Sector Situation Analysis

3.3.1 Background
The Fisheries Sector has a significant socio-economic role in Tanzania. During 2023/24, a total of 513,802.47 metric tonnes of fisheries products with a value of TZS 3.5 trillion were produced comprising 479,976.62 metric tonnes from capture fisheries and 33,825.85 metric tonnes from aquaculture. On the other hand, the annual fish landings, fresh water bodies contribute about 85% while marine waters contributed the remaining 15%.

The sector provides direct employment to 231,820 people, including 197,763 fishers and 34,057 aquafarmers; besides, the sector provides indirect employment to about 4.5 million people.

Due to its importance, the fisheries sector is one of the priorities included in the Five-Year National Development Plan 2021/22–2025/26 with a broad objective of transforming and modernizing it through intensification of the Blue Economy potentials in both marine and fresh waters.

3.3.2 Fish Stock and Production System Sector Situation Analysis
The fisheries production system in Tanzania is predominantly traditional characterized by small-scale players who account for over 95% of fishers and aquafarmers; it also contributes to about 1.8% of GDP and 30% of daily animal protein intake.

Fish Stock
According to the Fisheries Sector Master Plan 2021/22-2036/37, the data from TAFIRI (2019) on the fish stock assessment surveys conducted in different water bodies and in different years 1970s, 1994, 1998 and 2019), the abundance of fish in terms of biomass demonstrated Lake Victoria is leading at 1,109,932 tonnes, Lake Tanganyika

at 295,000 tonnes, Lake Nyasa at 168,000 tonnes and marine territorial waters at 100,000 tonnes.

Production capacities

The current total annual fish production in Tanzania (freshwater and marine) is around 473,592 metric tonnes/year with an estimated value of shillings 2.38 trillion (USD 1.03 billion) while aquaculture contributes 18,717 metric tonnes/year with a value of shillings 149.7 billion shillings (USD 642,820.18), representing 3.95% of total fish production (URT, 2020/21).

3.3.3 Capture Fisheries

Capture fisheries comprises inland fisheries and marine fisheries in both territorial waters and the exclusive economic zone (EEZ). Inland fisheries is dominated by artisanal/small-scale fishery with major commercial species including the Nile perch (*Lates niloticus*), the Nile tilapia (*Oreochromis niloticus*) and the Lake Victoria sardines (also known as Silver cyprinid - *Rastrineobola argentea*). Marine fisheries involves both artisanal and industrial fisheries. Artisanal fisheries take place in the territorial waters (a 12-nautical miles stretch) and dominated by traditional small craft (3-11 m long) and traditional fishing methods. The catch mostly consists of finfish and, to a small extent, shrimps. Semi-industrial/industrial fisheries are done in both territorial waters and the EEZ. In territorial waters target species include shellfish: prawns/shrimps - white prawns (*Fenneropenaeus indicus*), giant black prawns (*Penaeus monodon*), tiger prawns (*P. semisulcatus*) and brown shrimp (*Metapenaeus monoceros*). Also, lobsters, cephalopods and crabs; and finfish species belonging to the families of Lutjanidae, Lethrinidae, Pomacentridae, Scombridae, Flatfishes, etc. The EEZ fisheries targets tuna, tuna-like species, marlin, swordfish, yellowfin tuna, skipjack tuna, bigeye tuna and sharks. The annual fish production between 2015/16 and 2021/22 is shown in Figure 1. The current total annual fish production in Tanzania (freshwater and marine) is around 479,976.62 metric tonnes/year with an estimated value of shillings 2.38 trillion (USD 1.03 billion).

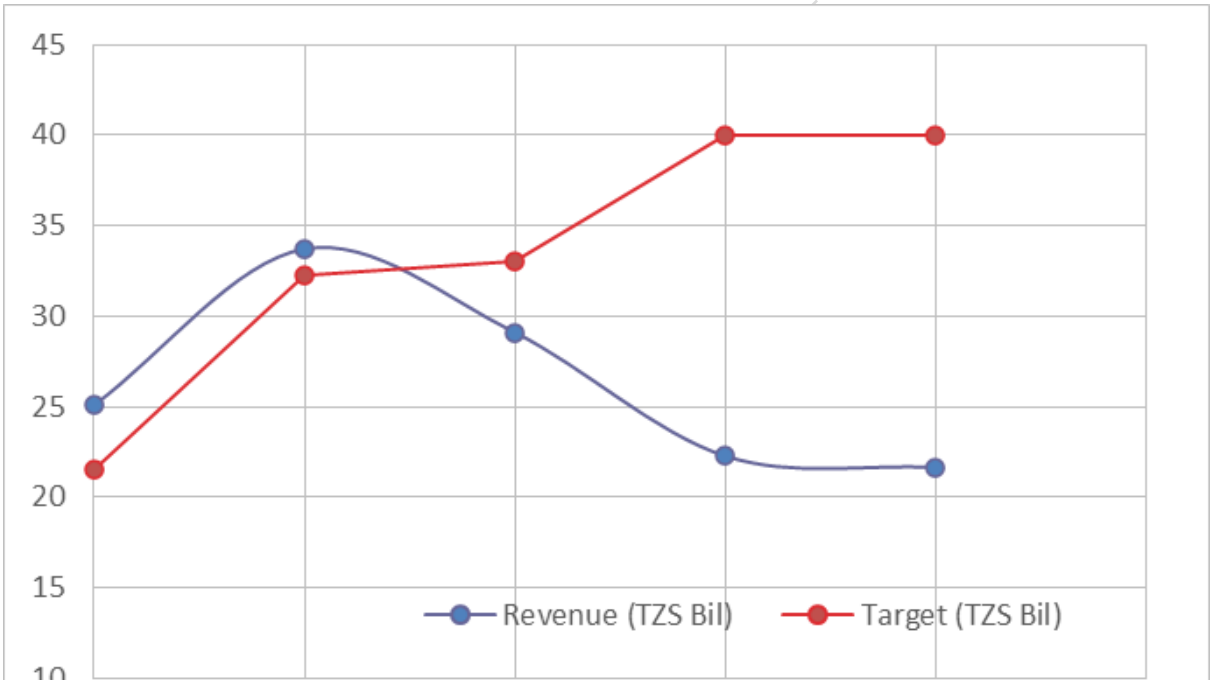

Figure 1: Capture fisheries production in Tanzania (2015/16 to 2021/22)

3.3.4 Aquaculture

Aquaculture is currently dominated by freshwater finfish culture mostly Nile tilapia (*Oreochromis niloticus*) and to a lesser extent African catfish (*Clarias gariepinus*). Mariculture is dominated by seaweed farming (*Eucheuma denticulatum* and *Kappaphycus alvarezii*) and to a lesser extent finfish (Milk fish, Chanos chanos), Crustaceans (Shrimps, *Pennaus spp*, Mud crabs, *Scyla spp*), Molluscs (Pearl Oysters) and Echinoderms (Sea cucumber, *Holothuria spp*). Aquaculture is a rapidly growing industry in Tanzania, responding to the growing demand for fish in the country as shown in Figure 2. Aquaculture production in 2022/23 was 33,794.39 tonnes including 29,114.9 metric tonnes of finfish, 4,677.8 metric tonnes of seaweed, 30 metric tonnes of fattened lobsters, 1.69 metric tonnes of shrimps, 0.6 metric tonnes of fattened mud crabs, 0.86 metric tonnes of sea cucumbers, and 550 tonnes of half pearls. The increase in aquaculture production is shown in Figure 2.

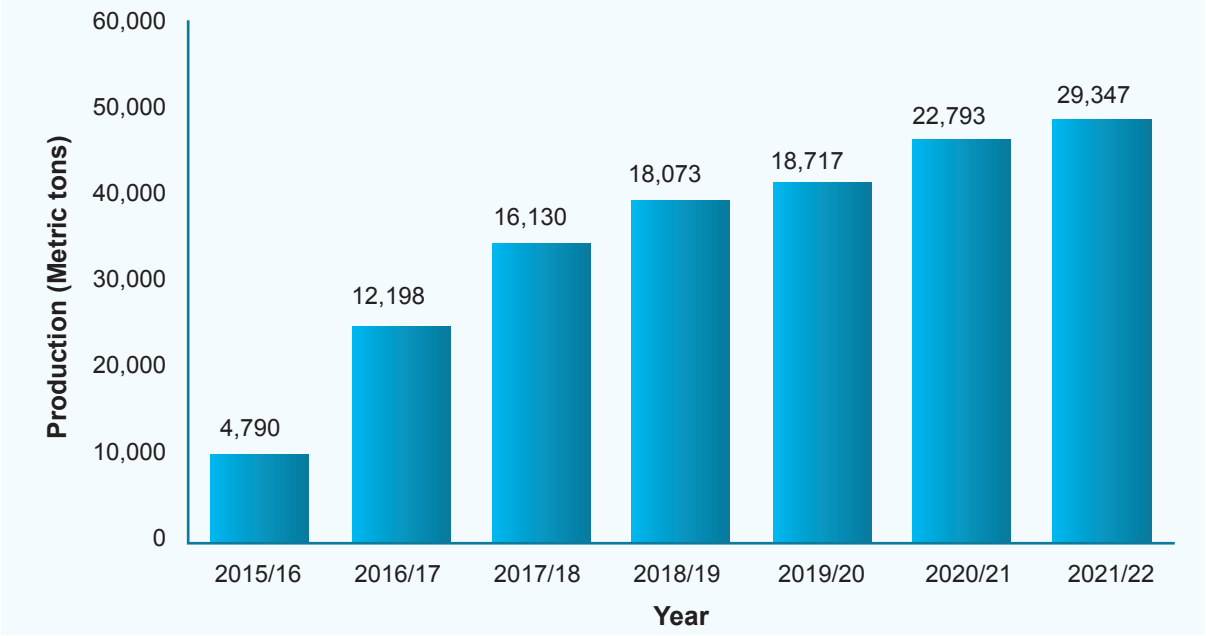

Figure 2: Aquaculture production in Tanzania (2015/16–2021/22)

The emergence of commercial aquaculture in large water bodies (cage fish farming) and in urban and peri-urban areas (intensive pond/tank culture, recirculation aquaculture systems and in-pond raceways) is in response to the growing demand for fish due to rapid population growth. The aquaculture industry in Tanzania is private sector driven and the Ministry has a facilitating role where it has taken various initiatives. It has established Aquaculture Development Centres (ADCs) to provide extension services for facilitating adoption of best management practices as well as production of broodstock and fingerlings. During 2022/2023, aquaculture accounted for 7% of total aquaculture and fisheries production while on a global scale aquaculture accounted for 49.2% in 2020. Performance of the industry is shown in Figure 3.

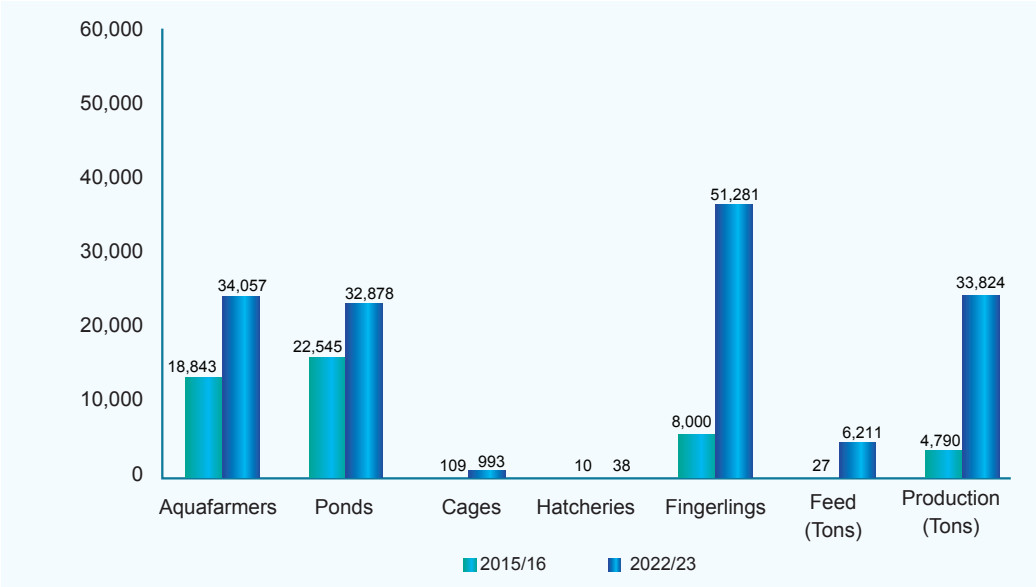

Figure 3: Performance of aquaculture industry in Tanzania

Despite these milestones, the growth of aquaculture is still constrained by a number of challenges including inadequate extension services to facilitate adoption of best management practices for increased production; limited availability of key inputs; low capacity in fish disease surveillance, diagnosis and control; inadequate sensitization to aqua-farmer investors on the opportunities for commercial aquaculture and limited ability to ensure compliance to best management practices.

3.3.5 Sector Management Structure

At present, the Ministry, through its directorates, shoulders all operational responsibilities for the protection, management, and development of fisheries resources, as well as the development of aquaculture. The execution of these duties is as follows:

i. Conservation and protection of fishing resources and the environment

The Ministry collaborates with the PO-RALG, which has the mandate to protect, manage, and develop fisheries resources through its councils. The Ministry oversees the protection of fisheries resources across 44 centers located nationwide. Additionally, the Division of Marine Reserves and Protected Areas manages three marine parks and 15 protected areas. These centers are tasked with controlling illegal fishing, preventing the smuggling of fish and fish products, prohibiting the importation of illegal fishing gear, and preserving the ecology of the isolated areas. However, these centers face various challenges in executing their fundamental duties.

> ***All operational responsibilities for the protection, management and development of fisheries resources and the development of aquaculture are carried out by the Ministry through its directorates***

In executing its objectives, the Ministry periodically conducts special patrols in collaboration with other Government entities through the National Multi-Sectoral Task Team (NMATT).

However, the protection of fisheries resources through NMATT is typically carried out at specific times and incurs high costs. This approach provides a window for the recurrence of criminal incidents and therefore need for a sustainable system of protection and conservation, including regular patrolling, to ensure the long-term sustainability of the fisheries sector.

ii. Illegal fishing

Illegal fishing remains a major challenge. It involves fishing activities that violate policies, laws, rules and regulations, and various fishing procedures. It also includes the use of explosives, illegal nets, poisons and other inappropriate methods that involve catching parent fish, immature fish, over fishing, death of fish and other aquatic creatures and the destruction of fish breeding areas.

The rise in illegal fishing incidents has led to various economic, social and security repercussions, including a decrease in fish stock, destruction of corals reefs which serve as breeding areas for fish and other aquatic creatures, threats to the health and safety of fishermen and instilling fear for tourists and visitors.

Studies indicate that Tanzania ranks among the 40 countries worldwide with a high incidence of fishing using explosives/bombs[2]. This practice leads to numerous harms, including deaths and injuries to fishermen and ecological damage in the Tanzanian marine water zone[3]. In addition, research in Lake Victoria reveals that illegal fishing has resulted in a 33% decrease in Nile Perch fish from 499,398 tonnes in 2021 to 334,341 tonnes in 2022. Alarmingly, 99.8 % of the existing Nile Perch are juveniles less than 50 centimeters long, posing a risk to the survival of the parent Nile Perch[4]. This situation has led to a decline in revenues and raw materials for fish processing industries, a decrease in employment opportunities and a threat to food security and nutrition.

Lake Victoria plays a crucial role in the country as it accounts for more than 80% of the fish produced and exported. The sale of Nile Perch fillets is the leading source of foreign exchange and employment in the fishing sector. However, due to the diminishing trend in fisheries resources in Lake Victoria, the availability of raw materials for processing factories have significantly dropped where actual daily production has decreased from 1,025 tonnes in 2000 to 290 tonnes recorded in 2022. Similarly, the number of factories processing fishery products around the Lake Victoria has decreased from 16 factories recorded in 2016 to 10 in 2022. These facts underscore the urgent need for effective measures to combat illegal fishing and ensure the sustainable development of the fisheries sector.

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1 In Tanzania, a Horrific Fishing Tactic Destroys All Sea Life (nationalgeographic.com)

2 Technical Report on Controlling blast-fishing in Tanzania marine waters, 2016-18: history, achievements &lesson

3 TAFIRI Technical report 2022

iii. Open-access fishery

In Tanzania, fishing activities are open to anyone who has been granted a fishing license. This open-access approach allows for the harvesting of more fishery products than what is sustainable for the preservation of fishery resources..This situation is often attributed to failures in implementing the Fisheries and Aquaculture Management and Development Plans. These plans which are a requirement of the Food and Agriculture Organization of the United Nations (FAO), define specific management areas and set goals, responsibilities, and implementation strategies by involving stakeholders and reflecting national, regional, and international policies and goals.

iv. Aquaculture development

Aquaculture is a rapidly growing industry in Tanzania aimed at meeting the demand for fish and aquaculture products. From 2015/16 to 2021/22 there has been an increase in the number of people engaged in aquaculture from 20,370 to 31,988; number of fish ponds from 22,702 to 31,407, cages from 150 to 780, hatcheries for fingerlings from 10 to 35, production of fish fingerlings from 14,119 to 31,434 pcs, production of fish feed from 27 tonnes to 2,156 tonnes and production of aquaculture products from 12,197 tonnes to 29,346 tonnes.

> ***Aquaculture farmers increased from 20,370 in 2015 to about 32,000 in 2021***

Development of the aquaculture industry is constrained by unavailability of quality fish seeds and feeds; low adoption of appropriate technologies including biotechnology and bio-safety; low capacity in fish disease surveillance, diagnosis and control; and inadequate sensitization to aqua-farmer investors on the opportunities for commercial aquaculture. Figure 4 demonstrates the growth potential for aquaculture in Tanzania.

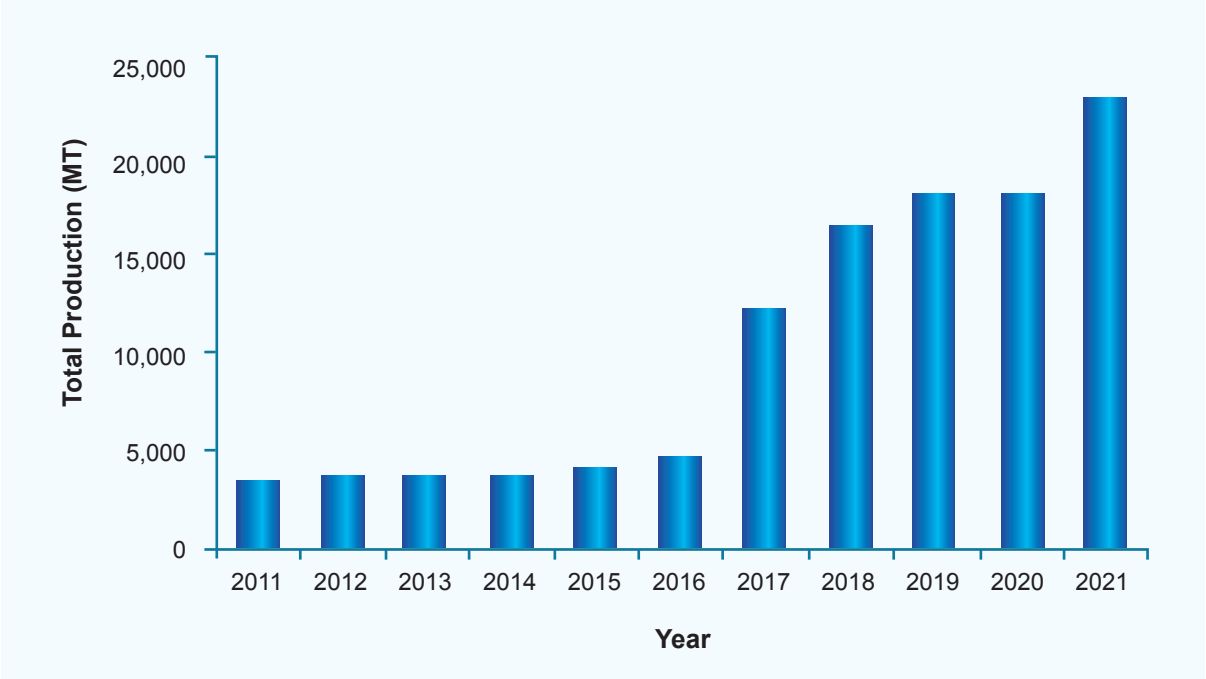

Figure 4: Aquaculture production trends in Tanzania (2011-2021)

The development of aquaculture in Tanzania will not only bridge the existing gap for fish demand but will also improve socio-economic aspects, including income, food and nutrition security, and employment; It will also, reduce fishing pressure to natural water bodies. However, this growth necessitates effective value chain management to ensure that aquaculture products meet quality and safety standards. Currently, the aquaculture sub-sector is directly managed by the Ministry through its Aquaculture Directorate with five dedicated centers for the development of aquaculture. The centres play a facilitative role including fingerling supply and extension services to aqua-farmers. Despite these initiatives, much more needs to be done to ensure sustainability. These include addressing other production issues such as feed availability and affordability since these consume over 60% of operational cost.

Other major bottlenecks include inadequate infrastructure including cold chain facilities, limited access to finance and the absence of classification of suitable areas for aquaculture development to mitigate potential conflict with other users.

v. Investments

There are several and attractive investment opportunities in the fisheries sector. They include fishing activities, fish vessels and gear manufacturing, fish processing, aquatic tourism (marine parks and tourism), fish marketing and aquaculture. Nevertheless, investment development from both the government and private ventures has been inadequate.

While the Fisheries Policy encourages commercial investment in the fishing sector, currently, 95% of production comes from small-scale subsistence fishing. This situation is exacerbated by an investment environment that does not attract financial institutions to provide loans due to uncertainties in fish availability and quality inputs. This low level of investment contrasts with the focus of the National Development Policy and Vision, 2025, which promotes large investments in the Fishing and Aquaculture Sector.

The establishment of the Authority with a clear focus on the sector's development including the development of key infrastructure plus cold storage facilities, standards, access to feed and market, among others, will to a great extent mitigate the financial risks and allow more access to financial inclusion.

vi. Illegal Cross Border Trade

Smuggling and illegal fishing is a complex issue that requires multifaceted responses. If left to continue unabated, the nation will continue to lose both in foreign and local earnings as well as creating shortage of fish resources which are essential for food and nutrition security.

The Ministry has been assigned with the responsibility of coordinating and managing the fishing business. The implementation is carried out through 44 centers located in four (4) zones including Lake Victoria, Lake Tanganyika, Southern Highlands, the Indian Ocean and Northeast region. However, due to the geographical dispersion of these areas compared to the available resources, the existing management system contributes to the illegal trade of fishing resources in areas that are not accessible by officials for inspection. In addition, lack of traceability of the fisheries and aquaculture products provides a loophole for inaccurate and untimely information. This highlights the need for improved management and oversight in the fishing industry.

vii. Fisheries and Aquaculture Infrastructure

Fisheries infrastructure is very important for proper handling of fish and fishery products so that quality standards are maintained in the interest of consumers at domestic and international markets. The availability of fisheries infrastructure reduces post-harvest losses, which are estimated at 5–20% in the case of physical losses and as high as 70% in terms of quality losses. It also reduces illegal fishing and illegal fish trade, increases revenue and improves the collection of data. The quantity and quality of infrastructure base are essential components of the fisheries sector development agenda. Important infrastructure for fisheries and aquaculture development includes hatcheries, boat yards, fish harbour, fish landing sites, fish markets, fish handling and processing, fisheries laboratories, distribution, storage and cold chain facilities. Other supportive infrastructure include transport, communication, water and electricity supply.

a) Fish landing sites

Fish landing sites are the most important form of infrastructure when it comes to unloading of catches from fishing vessels. The country has a total of 1,375 fish landing sites – 293 along the coastal beaches and 1,082 on the shores of inland waters.

b) Fish markets

There are two modern and international fish markets in the country, namely the Ferry/Magogoni Fish Market in Dar es Salaam and the Kirumba Fish Market in Mwanza. Three markets are currently being upgraded, namely, the Kasenda Fish Market in Chato-Geita, the Nyakaliro Fish Market in Sengerema-Mwanza and the Kasanga Fish Market in Kalambo-Rukwa. These infrastructures, established by the Central Government through the Ministry, are operated by the Local Government Authorities (LGAs). This leads to increased losses and a decrease in the value of fishery products. The establishment of the Authority will enhance the management and operation of the infrastructure in collaboration with the private sector, ensuring that these infrastructures are commercially self-sustaining.

viii. Extension Services in Fisheries and Aquaculture

The extension services play a critical role of transferring technologies and innovations to fishers and aquafarmers for increased production and productivity. Fisheries and aquaculture extension services have remained the responsibility of the Ministry and local government authorities.

To facilitate this, the Tanzania Fisheries Research Institute (TAFIRI) is mandated to coordinate and undertake aquaculture research while the Fisheries Education and Training Agency (FETA) is mandated to provide training and accreditation in aquaculture. In addition, four higher learning institutions in the country offer undergraduate and postgraduate studies in aquaculture and related fields.

ix. Revenue Collection

Revenues are collected through the existing centers under the Department and its units in the Ministry. However, the effectiveness of revenue collection has been challenged by the lack of a stable monitoring system and the scarcity of financial and human resources. The existing system has resulted in improper collection of Government revenue. For example, for the financial year 2020/21, the Ministry was expected to collect TZS 33 billion but managed to collect TZS 23 billion, about 70% of the target (Fig. 5). Also for the fiscal year 2021/22 the Ministry was expected to collect TZS 40 billion but managed to collect TZS 22.5 billion, 56% of the target. This underscores the need for an improved system for the collection of government revenues.

For a period of five years from 2018/19 to 2021/22, there has been a continued decline in the collection of the fishing industry's revenue except in 2018/19, where a special operation was carried out across the country involving various ministries and Government departments (Figure 5)

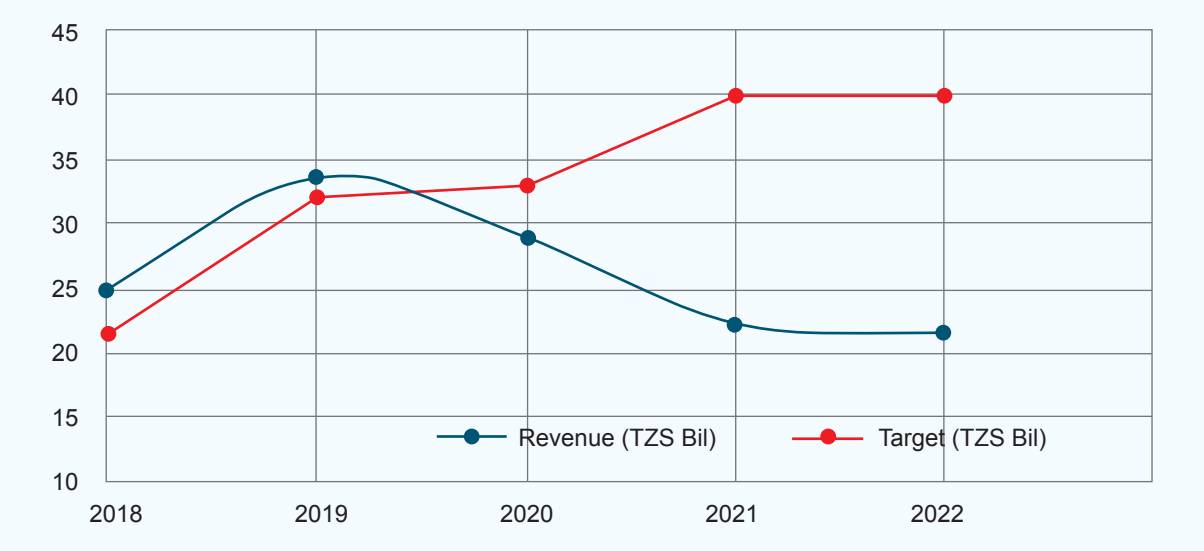

Figure 5: Trends in revenue collection from aquatic resources

3.4 Achievements and Challenges

The fisheries sector has experienced a range of successes and challenges worthy of noting to inform its future.

3.4.1 Achievements

The the fisheries sector in Tanzania has realized the following achievements:

i. Contributes an average to 1.8% of the GDP, with the growth rate of 2.5%
ii. Contributes to foreign exchange revenues through exports of fish and fisheries products and tourism
iii. It provides direct employment to 231,820 people (197,763 fishers and 34,057 aqua-farmers)
iv. It provides indirect employment for approximately 4.5 million Tanzanians engaged in various fisheries-related activities
v. The Building a Better Tomorrow (BBT) initiative has accommodated 200 youths that are engaged in the fisheries sector so far and the number is expected to increase
vi. Food security and Nutrition: The per capita fish consumption has reached 8.5 kg per year, and provides about 30% of animal protein consumed in Tanzania
vii. The aquaculture production has been growing consistently since 2017

viii. The decision to establish TFAA has received an endorsement from related parliamentary committee
ix. The construction of Kilwa Masoko-Lindi Fishing Port which is expected to be completed in 2025. It will be the first national fishing port and the construction will cost TZS 280 billion
x. Empowering small fishermen with 160 boats and fishing equipment by giving them soft loans with zero interest through the Tanzania Agricultural Development Bank (TADB)
xi. Strengthening the Tanzania Fisheries Corporation (TAFICO) and running the corporation commercially
xii. Preparation and implementation of the National Fisheries and Aquaculture Research Agenda (2020-2025). The agenda has placed responsibility on researchers to conduct research based on the priorities stipulated in the agenda

3.4.2 Challenges

The fisheries sector has also experienced some challenges that need attention in order to unleash its full potential.

i. A prevailing gap and the need to create a specific, specialized body to oversee, develop and manage the national fishery resources efficiently in order to unleash the sector's full socio-economic potential
ii. The increase in illegal fishing activities in seas and lakes, including the use of explosives and explosions (dynamites), the use of poisons, (industrial & local herbs) and the use of unregistered and unlicensed vessels. These heinous activities affect investment negatively in the fisheries sector, tourism and ecology
iii. Illegal fishing fuels crime events which promote illegal trade of explosives/bombs, human trafficking, weapons, drugs, other illegal businesses and endanger national and economic security
iv. Decline in fish stock. A study conducted in 2022 by the Tanzania Fisheries Research Institute (TAFIRI) in Lake Victoria showed that Nile Perch fish have decreased by 33% from 499,398 tonnes in 2021 to 334,341 tonnes in 2022
v. Decrease in the number of factories processing fishing products. For example, in the Lake Victoria Zone, factories have decreased from 16 in 2016 to 10 in 2022. Among them, 2 factories are in Kagera Region, 1 in Mara Region and 7 factories in Mwanza Region
vi. Decrease in government revenue from the fish trade and fisheries products
vii. The absence of a fishing port and thus the loss of revenue that would have been obtained from licensing and fees for ships fishing in the Ocean Economic Zone
viii. The post-harvest losses of fishery products is estimated to reach 40% due to poor storage methods and the lack of storage and processing facilities
ix. Scarcity of fish fingerlings and quality feed as well as the shortage of extension officers compared to the needs

x. Low production of aquaculture products that does not reflect the available opportunities for fish farming and seaweed farming
xi. Lack of financial services to enable fishermen and aquaculture farmers to use modern technologies

Tanzania has not been able to fully exploit the economic opportunity associated with the fisheries and aquaculture value chain activities due major challenges including the following:

i. Illegal fisheries through use of illegal fishing gears and illegal fishing methods such as blast fishing
ii. Illegal cross border trading of fisheries products
iii. High post-harvest losses (30-40%)[5] of fisheries products due to poor storage and processing infrastructure
iv. Low contribution of aquaculture due to limiting factors such as inadequate availability of inputs and extension services
v. Limited capital investment in fisheries and aquaculture
vi. Inefficient revenue collection (for example, for the financial year 2020/21, the Ministry was expected to collect TZS 33 billion but managed to collect TZS 23 billion, about 70% of the target. Also, during for the fiscal year 2021/22 the Ministry was expected to collect TZS 40 billion but managed to collect TZS 22.5 billion, 56% of the target)
vii. Unavailability of quality fish seeds and feeds; low adoption of appropriate technologies including biotechnology and bio-safety; low capacity in fish disease surveillance, diagnosis and control; and inadequate sensitization to aqua-farmer investors on the available opportunities for commercial aquaculture
viii. The fisheries infrastructures are established by the Ministry and operated by the Local Government Authorities (LGAs) with no maintenance budget by LGA
ix. Absence of spatial planning

[5] MLF Budget Speech 2023/24

3.5 Study Findings

During the study, a total of sixteen (16) sites were visited, of which ten (10) were public and six (6) were private facilities. The visit covered seven (7) regions of the Tanzania Mainland, covering lakes, sea and dams, aimed at reviewing of production settings (cage fish farming), hatcheries, Mariculture Development Centres and seaweed (production and processing). Regions covered were Mwanza, Kigoma, Rukwa, Iringa, Tanga, Dar Es salaam and Lindi to create a balance both capture, aquaculture and seaweed farming.

Although there are numerous observed challenges relating to the fisheries sector both on the capture and aquaculture, it is imperative to appreciate major efforts made by the Government of Tanzania through the Ministry of Livestock and Fisheries towards the development and improvement of the fisheries sector.

Figure 3: Fish and fish products drying racks - Kirumba Fish Market, Lake Victoria, Mwanza

3.5.1 Specific Findings

Apart from the general challenges recorded that faces the fisheries sector and highlighted in the preceding chapters, it is important that specific findings observed during the study and specifically during the field visit are articulated clearly and specific recommendations made on how the noted bottlenecks are to be addressed to allow a focused and to informed objectives of the proposed Authority.

The following are specific observations are noted to be facing the sector:

i. Sporadic cases of illegal fishing exist. Reported cases of prohibited fishing methods include gizagiza (in Lake Victoria where fishermen pretend to be fishing sardines, but actually fishing Nile perch), kokoro, beach seine and mideke.[1]

[1] Iron bar made as a catapult/spear like and used for stabbing fish

ii. Multiple and sometimes duplicate licenses, taxes, fee and levies which reduces competitiveness of the local products in the global market featured out as a major concern to the growth and survival of the industry echoed mostly by the private sector. Sighted charges include fishing boat fees, charged by both the district council (LGA) and Tanzania Shipping Agencies Corporation (TASAC), considerably high fish export royalty on processed fish with a case in example being $1.20 per kg charged on prawns and $0.80 per kg for other products. Others are multiple licenses on fishing; fishing license, vessel license, prawn fishing license.

iii. Bureaucratic fishing licensing process where the process starts at the local government with a requirement to submit tax clearance for the current application year (Tax clearance is only issued based on the previous year audited financials). The purpose of going through the LGA is for the LGA to introduce the Processor to the MLF. This process is logical for the new processors, but unrealistic for the processor who are already known at the Ministry from previous licenses and through Ministry's quarterly inspections.

iv. High cost of fish feeds, fingerling and cages which limits the investment and growth of aquaculture subsector.

v. Notable submerged landing sites in Lake Victoria, Tanganyika and Rukwa, causing incontinences to fishermen and traders. The submerging of the landing site is the result of poor judgement in site selection and construction

Figure 4: Submerged landing site at Kibirizi, Lake Tanganyika, Kigoma

vi. Fish market infrastructures are characterized by inadequate space, dilapidated or lack of cold storage and drying facilities, lack of amenities such as utilities (electricity, clean running water) and toilets.
vii. Low prices of raw seaweed which discourages investments and young people to engage in seaweed farming endangering the future sustainability of the crop.
viii. High post-harvest loses (estimated at 45%)[2] due to inadequate or non-existence of cold storage facilities and processing facilities.
ix. Poor design and or wrong location of infrastructure development leading to unusable facilities/infrastructure. Notable cases include structures in Mtera Dam built for refrigerators/cold room that were too small to fit the refrigerators or to be used as cold room, landing sites. A drying plant at Kipumbwi in Pangani whose design does not fit the type of fish and its capacity also being too small to accommodate the volume. At Masoko Pwani (Kilwa masoko), market facility built by the MLF and handled over to LGA, equipped with an ice plant, auction building, standby generator and other key amenities remain out of operation since its completion and hand over in 2013.
x. Completed infrastructure but either incompatible for the designed use, not in use or abandoned.

Figure 5: Fish cleaning and processing facility at Migoli Fish Market, Mtera dam, Iringa

xi. Lack of credit facilities for acquisition of improved fishing gears and inputs such as motorized boats, seaweed farming inputs.

[2] FAO: Food Loss and Waste in Fish Value Chains Report, 2024 (https://www.fao.org/flw-in-fish-value-chains/projects/united-republic-of-tanzania/fish-loss-assessment/en/)

xii. Lack of established quality standards by Tanzania Bureau of Standards (TBS) on various seaweed products hindering both local and export sales. TBS only have standards for raw seaweed.

xiii. Lack of best practice knowledge for fishermen, processors and Seaweed farmers, including value addition.

xiv. Beach Management Units (BMU) are not well informed of their responsibilities and conflicts within the BMU members that leads to poor functioning of the units and impact revenues where BMU is the collector on behalf of LGA (Case in example is Kipumbwi in Pangani where collection had to be entrusted the village council due to such conflicts).

3.5.2 General recommendations on the findings and challenges

Based on the findings of the study from the desk study and observations made during the field visits, general recommendations on how the observed challenges and gaps can be addressed. The table below provides general recommendations.

Table 4: General Recommendations on Findings and Observation

S/N	Observations/findings	Recommendations
1	Sporadic cases of illegal fishing	• A need for reliable mechanism to control illegal fishing, including strengthening the capacity of BMU and reliable patrol boats in our water bodies for monitoring and controlling illegal fishing activities. • Establishment of TFAA: TFAA structure is designed with a Directorate of Monitoring and Evaluation whose main function among others will be controlling of illegal fishing.
2	Multiple and sometimes duplicate licenses, taxes, fee and levies.	• Harmonize the regulations and streamline multiple licenses, taxes, charges, fees in order to create a fair business environment • and address bureaucracy issues that increase cost of doing business, impair sector growth and competitiveness.
3	Bureaucratic fishing licensing process	“DITTO”
4	High cost of fish feeds, fingerling and cages.	Reduce import duty and other taxes on fish feeds, raw materials for compounding fish feeds locally, and machineries to attract privates sector investment in fish feed production.

S/N	Observations/findings	Recommendations
5	Submerged landing sites in Lake Victoria, Tanganyika and Rukwa.	Future infrastructure development to conduct thorough environment impact assessment to determine any future potential environmental risk to allow appropriate mitigation, including choosing appropriate site.
6	The impact on fish stock depletion in our water bodies.	Fisheries resources are renewable. The Ministry of Livestock and Fisheries to continue and intensify her efforts on: • Improved control on illegal fishing and overfishing • Improved capacity in terms of human and financial resources, use technologies and involvement of community in fisheries resources management and protection.
7	Fish market infrastructures are characterized by inadequate space, dilapidated or lack of cold storage and drying facilities, lack of amenities such as utilities (electricity, clean running water) and toilets.	The establishment of TFAA is aimed and designed to address these challenges.
8	High post-harvest loses (30-40%)	The establishment of TFAA is aimed to address this challenge by: • Optimization of idle infrastructure • Ensure proper maintenance of infrastructure. • Development of new infrastructure.
9	Poor design and or wrong location of infrastructure development and complete infrastructure but either incompatible for the designed use, not in use or abandoned	• One of the main purposes of establishing the Authority (TFAA) is to ensure optimal management of fisheries infrastructure, including appropriate design and maintenance. • TFAA organization structure is designed with Infrastructure Development & Management which is expected to deal with this challenge head on.
10	Lack of credit facilities for acquisition of improved fishing gears and inputs such as motorized boats, seaweed farming inputs.	The government through the Bank of Tanzania is currently in a process of establishing Agriculture Lending Policy which is expected to provide guidance on agriculture lending and improve on credit access to agribusiness (agriculture, fisheries and livestock sectors).

S/N	Observations/findings	Recommendations
11	Lack of established quality standards by Tanzania Bureau of Standards (TBS) on seaweed products. TBS only have standards for raw seaweed.	MLF to engage with the Ministry of Industry and Trade (whose portfolio TBS falls under) to fast-track standardization of processed seaweed products.
12	Bureaucratic fishing licensing process where the process starts at LGA.	MLF inspects these premises every three months (quarterly) and therefore September inspections can be used to issue a Provisional License that will avoid business disruption and ensure business continuity.
13	Lack of best practice knowledge for fishermen, processors and Seaweed farmers, including value addition.	MLF to develop capacity building programs that will equip seaweed farmers with requisite knowledge on best farming practise and value addition.
14	Loss of seaweed where fishermen drag their boats across seaweed farms as they return from fishing	• BMU to be empowered to provide control as is the case with illegal fishing. • LGAs establish spatial planning to accommodate various marine water users.
15	Low seaweed prices which at the time of the study stood at TZS 700/kg.	• Encourage input loan schemes such as nylon ropes • Enhance marketing linkages and search • Encourage seaweed processing and promotion.
16	Beach Management Units (BMU) are not well informed of their responsibilities and conflicts within the BMU members makes things worse. It leads to poor functioning of the units and impact revenues where BMU is the collector on behalf of LGA.	• Capacity building to BMU on their roles • Clear guidelines on conflict resolution
17	Absence of spatial planning	Marine Spatial Plan (MSP) processes were initiated in 2019 and completed the scoping phase of the MSP in June 2023. Guidelines for the development of Marine Spatial Plan issued in the same year (2023). The MSP however is yet to be developed and it is important that MLF finalise is development to facilitate management of fisheries resources.

S/N	Observations/findings	Recommendations
18	Illegal cross border trading of fisheries products.	Establishment of TFAA is expected to address this challenge, where its structure accommodates Resource management Directorate with a Protection and Enforcement Unit that will be responsible for such activities.

A detailed table of observations and finding categorising the area (Lake, Sea, Dam, etc), observations and recommendations is provided in the field report which makes part of this report.

3.6 Benchmarking of Experience of Institutions Involved in Managing Natural Resources in Tanzania

The review on the experience by other institutions involved in the management of natural resources is aimed at providing an insight on the success stories and experiences from these institutions that can provide a learning experience for the proposed Fisheries and Aquaculture Authority.

3.6.1 Tanzania Wildlife Management Authority (TAWA)

The Tanzania Wildlife Management Authority (TAWA) was established in accordance with Article 8 of the Wildlife Conservation Act No. 5 of 2009 and the announcement of the Government Order published in the Government Gazette No.135 dated 9 May 2014, with amendments published in the Government Gazette No. 20 of 23 January 2015. Officially, TAWA started to operate on 1 July 2016 by taking over the operational responsibilities of the Department of Wildlife regarding the management of wildlife resources outside the national parks and Ngorongoro Conservation Area.

The responsibilities of TAWA involve managing wildlife resources outside the National Parks and the Ngorongoro Conservation Area by performing the following tasks: -

i. Managing reserve forests, wetlands and ancient areas: Managing areas with a total size of 136,287.06 square kilometers including 27 reserve forests (97,187.06 km^2), 25 wetlands (39,100 km^2) and five archaeological areas, namely, Kunduchi, Kilwa-Kisiwani, Songomnara, Central Sanje and Majoma
ii. To enforce the law and prevent wildlife poaching: The role involves patrolling forests and wetlands, controlling resources smuggling at border areas (airports, ports and customs), protection of the National Treasure Warehouse and providing conservation education to citizens and other stakeholders
iii. Managing state wildlife parks:This involves six parks (gardens) including the Chamwino-Dodoma and Dar es Salaam state houses, the Vice President's Office, the Prime Minister's Office, Tabora and Ruhila-Songea
iv. Monitoring of wildlife conservation activities in 63 private livestock companies including farms (5), wildlife parks (24), ranches (5) and production/breeding sites (29)

v. Monitoring of community wildlife sanctuaries: Collaborating with other conservation organizations in monitoring wildlife in community wildlife sanctuaries. There are 21 Wildlife Management Areas (WMAs) in total with an area of 28,223.13 km2
vi. Resolving conflicts and controlling aggressive and dangerous destructive animals The implementation of this role involves conducting quick response patrols in challenging areas to save people's lives and their property against destructive wildlife such as elephants, lions, hyenas, crocodiles and hippopotamuses.
vii. Implementing regional and international agreements, especially the Convention on International Trade of Endangered Species of wild Fauna and Flora (CITES)
viii. Building and strengthening TAWA's capacity in wildlife management: Improving working environment by purchasing working tools and equipment including vehicles, weapons and tents; training for employees; construction and repair of road infrastructure, offices and staff houses

3.6.1.1 Achievements

In the period of six (6) years since its establishment, TAWA has been successful in various fields according to the main objectives of its establishment; these include to increase the government's revenues, to improve conservation and to build and strengthen the capacity of the Authority in resource management. Its achievements include the following:

a) Conservation and Protection of Wildlife Resources

Wildlife censuses carried out in the Mikumi-Selous ecosystem between 2014 and 2018 show an increase in wildlife population. Some wild animals that increased in that area include elephants from 15,217 in 2014 to 15,501 in 2018 (2%), hippos from 23,243 in 2014 to 31,086 in 2018 (34%), mules from 17,099 in 2014 to 22,740 in 2018 (33%), zebras from 16,500 in 2014 to 22,690 in 2018 (38%), wild boar from 7,977 in 2014 to 17,475 in 2018 (119%). Also, the incidents of elephant killings have decreased from 18 elephants in 2016/17 to three elephants in 2018/19 and in 2021/22 there was no incident of elephant killing reported.

In addition, the Authority is in the final stages of setting boundaries on protected areas where, prior to that, the challenge of not having boundaries resulted into conflicts between the conservation department and the communities surrounding the protected areas.

The procedure of the Authority to retain collected funds (retention scheme) for the Authority's activities from 2016/17 to 2019/20 led to success in implementing the work plans and achieving the current positive situation.

b) Formation of the Reserve Force

In 2018, TAWA began to carry out its duties using the system of the Reserve Force known as Jeshi Usu (JU). A total of 1,538 out of 1,921 employees, equivalent to 80%,

have been trained. The aim of this system is to increase the efficiency in the protection and management of wildlife resources and the implementation of daily duties effectively.

The use of the Reserve Force has improved the performance of the Authority by strengthening the discipline of the employees. For example, the presence of the Rapid Response Team (RRT) where the work tools have increased, the morale of the employees increase due to various incentives. This has led to stability and strengthening of conservation areas in the areas managed by the Authority.

c) Infrastructure Improvement

The authority has been successful in setting up an enabling infrastructure to support its mission; this includes the construction of staff houses, adding 21 ranger posts, 16 weapons warehouses, 6 offices and 1 hostel, the purchase of work tools including 124 cars, 1,579 tents, 10 boats, one vehicle/drilling plant, one lowbed truck and grader, the purchase of four boats for tourism and patrol activities, special boats for patrolling activities in areas with shallow land (amphibious boats) and one modern boat (glass-bottomed boat) with the capacity to carry 60 people for tourism activities in the Indian Ocean.

In recognition of the community's contribution to conservation including its participation in conservation activities and contributing to social activities, TAWA has paid a total of TZS 37.8 billion to stakeholders as key beneficiaries from tourism income. Some other TAWA's contributions for community development include providing conservation education, participating in the construction of classrooms, purchasing desks for schools, offering scholarships, construction of a fish market in Kilombero District at TZS 66 million (FY 2021/22), construction and renovation of hospitals, purchasing equipment (bicycles) for disabled persons, construction of wells for water supply, laying pipes and supplying water to the community, financing the development of livestock by building ponds and providing tree seedlings to the people living on the edges of the reserves to improve the environment.

d) Increase in Tourism Revenues and Management

The Tanzania Wildlife Management Authority has two main sources of revenues from the use of wildlife resources; these are trophy hunting tourism and photographic tourism. The major task that TAWA did when became operational was to strengthen the management and data collection systems, including the electronic hunting blocks allocation system and the use of the Ministry's data collection system (MNRT-Portal). Along with the Selous, Burigi, Biharamulo, Kimisi and Ibanda/Lumanyika forest reserve areas which were contributing to the Authority's revenue by about 43% being upgraded to national parks (under TANAPA), TAWA has continued to have large collections of revenue compared with the highest revenue ever collected by the Department of Wildlife amounting to TZS 38,364,304,227 in the fiscal year 2015/16. With the challenges that TAWA went through in the tourism business due to the COVID-19 pandemic, the

Authority has continued to improve in the management and collection of revenues, where in the financial year 2021/22, the Authority collected TZS 49,500,000,000 from various sources.

As a result of efforts to improve tourism, including the improvement of tourism infrastructure and promotion on local and international markets, a total of 158,108 photographic tourists visited the areas managed by TAWA in 2021/22. This is a fourfold increase compared to 37,684 tourists who visited the areas managed by the Department of Wildlife in 2015/16.

In an effort to strengthen the block allocation system, TAWA introduced a procedure for allocating tourist hunting blocks through an electronic auction in 2019. Allocation of hunting blocks through auctions has been successful in contrast to the procedures undertaken by the Wildlife Department in increasing revenue as follows:

- Grade I plot fee from USD 60,000 and rented between USD 151,000 and USD 285,000
- Grade II plot fee from USD 30,000 and sold between USD 81,000 and USD 250,000
- Grade III plot fee from USD 18,000 and sold between USD 31,000 and USD 255,000

Block rental through auctions brought USD 9,798,000 as revenue to the Government. That amount is greater by 196% than the money that would be obtained by selling all 79 blocks in an administrative way where there would be the revenue amounting USD 3,306,000.

In addition, the Authority in expanding the scope of revenue from wildlife resources and tourism products, in 2021 introduced a new Smart Investment module known as Special Wildlife Investment Concession Areas (SWICA). This module is aimed at major investments in special designated areas that have begun to increase the Authority's funds for such investments.

The Authority has been giving dividends to district councils, villages and areas of Wildlife Reserve Communities (WMAs) as contributions from tourism activities (photo tourism and hunting). Between the fiscal years 2016/17 and 2021/22, the Authority has given a total of TZS 37.79 billion to beneficiaries.

3.6.1.2 Challenges

Despite the achievements in carrying out its duties, the TAWA faces various challenges including the following:

- Commercial instability in the tourist hunting industry due to the increase in anti-tourist hunting campaigns
- TAWA not having its own law
- Tourism business affected by epidemics in the country and in the region

- Increased incidents of aggressive and destructive wild animals
- The improvement in the protection of wildlife resources has led to a great increase in the roaming of animals in many areas of the country, thus increasing the interaction with humans. Between the fiscal years 2016/17 and 2020/21 there were 6,472 incidents of wild and destructive animals in 85 districts which caused people to lose their lives, injuries, livestock being killed and the farmers' fields being destroyed. In 2020/21 alone a total of 12,491 patrols were deployed to respond to 1,706 incidents in 85 districts in protected areas
- The wave of invasion for human activities including housing, agriculture, fishing in Kilombero wetland area which is the main source of water for the Rufiji River whose water is used in the Mwalimu Nyerere Dam to generate electricity

3.6.2 Tanzania Forest Services Agency (TFS)

The Tanzania Forest Services Agency (TFS) was established in accordance with the Agency Law; The Executive Agencies Act Cap. 245 (Revised Edition 2009) and announced in the Government Gazette (GN 269) of July 30, 2010 and launched on July 18, 2011. The establishment of TFS has also taken into account the National Forestry and Beekeeping Policies of 1998, and the Forestry and Beekeeping Laws Chapters 323 and 224 of 2002. In July 2018 the Government merged TFS with the former Tanzania Tree Seed Agency (TTSA) to increase efficiency in the production of tree seeds in the country.

In practice, the Tanzania Forestry Services Agency carries out the duties of the former Department of Forestry and Beekeeping except for the formulation of policies, laws and programs for the forestry and beekeeping sector and managing the forestry and beekeeping colleges. The agency carries out its duties in seven (7) administrative zones as follows:

i. Eastern Zone - Morogoro, Pwani and Dar es Salaam
ii. Southern Zone -Mtwara, Lindi and Ruvuma
iii. Southern Highlands Zone - Mbeya, Iringa, Njombe, Songwe and Rukwa
iv. Northern Zone - Arusha, Kilimanjaro and Tanga
v. Western Zone - Shinyanga, Tabora, Katavi and Kigoma
vi. Lake Zone – Mwanza, Mara, Geita, Kagera and Simiyu
vii. Central Zone - Manyara, Singida and Dodoma.

3.6.2.1 Achievements

The successes achieved due to the establishment of TFS have resulted from the implementation of strategic plans prepared by the institution in accordance with the responsibilities assigned in accordance with the law. The first strategic plan was for three years (2011-2014) followed by the second five-year strategic plan (2014-2019) and the third strategic plan (2020/21-2024/25).

The main achievements of the Agency for the period of ten years 2011/12-2021/22 include the following:

a) Improving Conservation of Resources

Due to the improved collection of revenues and the availability of funds on time (due to revenue retention) TFS has been able to increase its operational capacity and achieved:

i. Increased tree plantations from 16 tree plantations covering 80,444 hectares to 23 plantations covering 117,532 hectares.
ii. The number of biodiversity nature reserves has also increased from 5 reserves with 197,264 hectares to 19 reserves with 881,504 hectares.
iii. The change of the system from a civilian system to a military system has improved the protection of forests as more than 80% of the staff have received military training.
iv. The protection of forest reserves has improved by patrolling the borders of 256,209 km long and cleaning the borders of 15,500 km long, as well as setting up 10,455 stakes and 5,286 posters with various messages about forest conservation.
v. Overall, 691 Village Natural Resources Committees were formed and given training in forest management as part of efforts to restore natural vegetation in the affected areas.

b) Improvement of Revenue Collection Systems

Activities for the sale and transportation of forest products are clearly defined in the Guidelines for Sustainable Harvesting and Business of Forest Products Harvested in Natural Forests. The guideline has specified the procedure for issuing permits and licenses for harvesting forest products. The control of harvesting and transporting forest products is based on the conditions of having documents for transporting forest products; these specify the information of the license holder, the products transported and the type of transport/vessel allowed. This guideline has also explained the duties of forest guards and the force against forest destruction to ensure that harvesting and transportation comply with forest laws and regulations. In addition, TFS has developed various systems to monitor the trend of forest products trading (tracking information systems) and established forest products inspection centers (checkpoints) in various areas based on available resources; currently, there are a total of 161 barriers that have met the requirements. The duties of the forest prevention officers include the following:

i. Inspecting forest products and relevant documents
ii. Verifying the legality of forest products being exported
iii. Filling in and maintaining a register of records and all documents related to forest products passing through the barriers
iv. Ensuring that all parties who violate the conditions for transporting forest products are prevented from continuing their journey
v. Providing information to the police force for the preparation of prosecutions for those who refuse to admit wrongdoing and pay fines, and for other offenses that deserve to be taken to court by law

vi. Prepare weekly and monthly information and submit it to the District Manager, who will also submit it to the Regional Manager
vii. To write the forest prevention officer's name, signature and title in the document related to the transportation of forest products and stamp it after checking the load and the load documents

c) Increase in Revenues

The strengthening of revenue collection systems of forest and bee resources has enabled an increase in revenue from TZS 39 billion in 2010/11 (before becoming an Agency) to TZS 63.7 billion (163% increase) in just one year and has continued to increase every year up to TZS 157 billion in 2021/22. This increase has also been contributed to the increase in the sources of income including the sale of some forest products through auctions. For example, the production of honey and beewax has increased by 26.59 tonnes from 3.49 tonnes to 30.08 tonnes. In addition, five centers for producing queen bees have been established in five regions of the Agency. Also, a total of 22,232 beehives were distributed to the community as one of the ways to sensitize the community about better beekeeping. Besides, three factories for processing bee products have been built to increase the value of honey produced by the Agency, but it also provides these services to the nearby communities. These factories have been built in Mafinga, Manyoni and Nzega.

d) Improvement of Enabling Infrastructure and Tools

The infrastructure to enable the Agency to carry out its activities in reserve forests has been improved. A total of 594.5 kilometers of forest roads have been constructed and 15,773 kilometers have been repaired in reserve forests. In addition, the construction of tourism infrastructure has enabled an increase in tourism by 70%per year where an average of 2,300 tourists have been visiting the forests of the natural environment reserve every year.

The working environment in the office, housing for station staff and work tools have been improved where TFS has managed to build 58 new buildings as well as renovating 654 old buildings, procuring 164 cars, 535 motorcycles, 3 big boats and 5 new road construction machines.

e) Human Resources

Amendments to the law have changed the operational system of the TFS from a civilian system to a military one, so its resources are managed by using the Defense Force; as such, its leaders have administrative and military positions. Administratively, TFS is managed by a chief executive officer (Conservation Commissioner) who is assisted by four directors (Deputy Commissioners). In order to simplify its operations, TFS is divided into seven administrative zones; these are the Northern, Southern, Western, Eastern, Southern Highlands and Central which are managed by regional managers. Currently, TFS has 2154 permanent employees and 1224 contract employees. Moreover, due to the Agency's type of responsibilities, many of levels of contract employees depend on

the season. For instance, for planting and caring for the trees TFS hires many workers every year for these tasks, whereby approximately 3,000 workers are hired annually.

f) Contributions Towards the Improvement of Community Services

The TFS does not have an official system for sharing revenues with district councils from the sale of forest products since the councils collect their income from the forests under their jurisdictions. However, the Agency has prepared a special procedure (community support program) to contribute to the development activities of the communities living near the forest resources. Major projects that TFS has contributed to include participating in programs to strengthen teaching/learning environments by building classrooms and hostels in some secondary schools. In addition, TFS has provided timber and money for making school desks, distributing beehives and repairing roads in some villages using TFS equipment. Some of the major projects that TFS has implemented include financing the construction of a water project that costs TZS 482,000,000 in Ifinga Village, Madaba District in the Ruvuma Region. In the past 10 years, TFS has spent more than TZS 40 billion to finance public projects in various areas around its reserves.

3.6.2.2 Challenges

Despite well-registered successes, there are various challenges that affect the Agency in managing forest and bee resources effectively. The challenges include the following:

i. Invasion and destruction of forest resources and bees by poachers and other intruders due to insufficient human and financial resources, coupled with limited tools for managing those areas.
ii. Different institutional systems that manage forest resources and bees between the Central and local governments where licensing and management of forest products business is not done without the existence of an agreed procedure among all parties. This situation leads to weak institutional relations and confusion of responsibility at the levels of both the Central Government and Local Government Authorities,
iii. The loss of Government revenue from forest products and bees caused by the presence of different systems for charging licenses and revenue collection.

3.7 Benchmarking of other Countries in Managing Fisheries and Aquaculture

3.7.1 Background

The establishment of specific institutions for coordinating and managing national strategic projects is something that has been implemented in various countries around the world. In the process of preparing proposals to establish an Authority to manage fisheries resources in the sea and cold-water areas in Tanzania, efforts have been made to gain experience in some countries that successfully managed and developed the fisheries and aquaculture resources. Some of those countries are described hereunder:

3.7.2 Kenya

In Kenya, the management and development of fisheries resources is carried out under the Authority known as Kenya Fisheries Services under the Ministry of Agriculture, Livestock and Fisheries. The role of this Authority is to preserve, manage and develop fishing resources and aquaculture development. The presence of this authority has increased the control of illegal fishing activities and stimulated investment in the development of aquaculture due to the improvement of extension services. In addition, the Law governing fisheries in Kenya has established the Fish Market Authority as well as having fisheries and aquaculture management and development plans which are legally empowered as regulations.

3.7.3 Egypt

In Egypt, fishing activities are managed by an Authority under the Ministry of Agriculture and Land Reclaimation called the General Authority for Fish Resources Development (GAFRD). This authority was established by Resolution No. 190 of 1983 for the purpose of increasing the contribution of the fishing sector in the economy. The authority was given the responsibility of overseeing the implementation of the Fisheries Law, conducting research, providing training, establishing production projects, and overseeing the quality and safety of fishery products. Although fishing and aquaculture began as early as 2,500 BC, production of fish and aquaculture products was low. In 1980 production was 140,400 tonnes (fishing: 121,400 tonnes; Aquaculture: 19,000 tonnes). After the establishment of the authority, production began to increase where in 2019, it reached 2,000,000 tonnes (fishing: 600,000 tonnes; aquaculture: 1,600,000 tonnes) per year.

3.7.4 Seychelles

The Republic of Seychelles created the Seychelles Fishing Authority (SFA) in 1984 under the Seychelles Fishing Authority Act. The authority is under the Ministry of Fisheries and Agriculture. The SFA was created to be the executive body of the Government for the development of the fishing sector so that it reaches its full potential and to protect the base of fishing resources so that they are sustainable. One of the

key achievements of the establishment of the SFA is the increase in the contribution of the fishing industry in exports whereby fishing products contribute more than 90% of all exports and 20% of the GDP. In addition, the law that governs fishing issues and the development of aquaculture has set the requirement to have management and development plans for fisheries and aquaculture as well as the assessment of the quantity and distribution of fishery resources. These are important in the development and management of fishing resources and aquaculture.

3.7.5 Liberia

In Liberia, the fishing industry is managed by the National Fisheries and Aquaculture Authority (NaFAA). This authority was established in 2017 by an Act of Parliament (National Fisheries and Aquaculture Authority Act 2017) under the Ministry of Agriculture. The purpose of the establishment of this Authority is to preserve, protect, manage and develop fishing and aquaculture development activities in accordance with national and international laws and agreements. The Authority operates by collecting various fees, charges and fines and retains 60% of all collections thus making it financially independent. In addition, the presence of this Authority has largely controlled illegal fishing activities that had taken place on the coast of the Atlantic Ocean that borders the country.

3.7.6 Ghana

In Ghana, the Fisheries Commission has been established through the Fisheries Act (2002) under the Ministry of Fisheries and Aquaculture Development. The objective of the establishment of the Commission is to control and manage the use of fisheries resources and coordinate policy related to fishing in the country. The chief executive of the Commission is appointed by the President. The presence of the Commission has triggered the fishing industry in the country to significantly contribute to national economic development goals related to employment, improved livelihoods, poverty reduction, food security, foreign currency income and the sustainability of the country's resources. This industry is estimated to contribute 3 percent of the national GDP. About 10% of all residents in the country are engaged in the fisheries value chain.

3.7.7 Jamaica

In Jamaica, fisheries resources management activities are carried out by the National Fisheries Authority established by the Fisheries Act of 2018 under the Ministry of Agriculture and Fisheries after the repeal of the Fishing Industry Act (1975). The chief executive of the Authority is appointed by the Minister in charge of the Ministry of Agriculture and Fisheries. The responsibilities of the Authority include preserving fishing areas, conducting fisheries assessment and fish farming, monitoring, control, and management of any activity related to fishing and fish farming. The presence of the Authority has enabled the fishing Industry in Jamaica provide direct and informal employment to about 40,000 fishermen and contributed to the living income of life of about 200,000 citizens of Jamaica (PCCR, 2015).

3.7.8 The Philippines

The Philippines has an institution called the 'Bureau of Fisheries and Aquatic Resources (BFAR)' established by the 'Philippines Fisheries Code of 1998' under the Department of Agriculture in the country. The basic responsibilities of the institution are to develop, improve and manage the reserves of fishing areas and fishing products. The aim of the 'Bureau' is to ensure the quality of fish and fishing products and they are available at affordable prices for public needs; also, to obtain additional income for strengthening the country's economy. In accordance with the existing law, the Bureau carries out its duties by monitoring, controlling and managing fishing activities and fishing products, including border management for 24 hours (24/7) using existing inspection stations.

4.0 Functions and Structure of the Proposed Authority

The duties and structure of the proposed Tanzania Fisheries and Aquaculture Authority will differ slightly from other countries and this is due to the fact that Tanzania has large seas, lakes and rivers suitable for fishing activities and aquaculture development. In addition, the Authority will have the responsibility to protect sea reserves, lakes and large rivers as well as remote areas that are important for growth, breeding of fish and other water creatures.

The structure and functions of the proposed Authority will vary slightly from other countries

4.1 Functions of TFAA

The responsibilities of the proposed authority will be carried out by the employees of the Ministry of Livestock and Fisheries and those who will be availed through the procedure of transfer or secondment within the Central and local governments, and new employees to fill new vacancies as created in the organogram. The main responsibilities of the Authority are as follows:

i. To develop, manage, preserve and protect fishery resources
ii. To manage fishing and development of aquaculture and other matters related to fishing
iii. To prepare guidelines for development and management plans related to fisheries and aquaculture development
iv. In collaboration with LGAs, to ensure deployment of adequate and qualified extension staff for fishers and aquaculture farmers and their supervision
v. To collect and analyze data on the assessment of fisheries resources in collaboration with research institutions
vi. To implement the results of research related to fisheries and aquaculture development
vii. To conduct monitoring and surveillance related to fishing and take measures to prevent and eliminate illegal fishing
viii. To manage and ensure the quality of fisheries resources and their safety
ix. To issuing and manage licenses, approvals, permits and to allocate quotas for harvested fish
x. To establish, monitor, control and manage the areas of cold-water reserves and remote areas
xi. To develop and manage the infrastructure of fisheries and aquaculture development
xii. To participate and implement the Government's commitments in accordance with national, regional and international agreements related to fishing and aquaculture development
xiii. To collaborate with other institutions on issues related to the management of fisheries and aquaculture resources
xiv. To prepare the quality standards of fishing products and the development of aquaculture to meet the demands of domestic and international markets

xv. To promote business and investment in the fishery industry and aquaculture development
xvi. To design and develop information and communication technologies related to fisheries and aquaculture
xvii. To undertake fund raising/resource mobilization for fishery and aquaculture development
xviii. To establish a solid public-private-partnership (PPP) for fisheries and aquaculture development
xix. In collaboration with FETA, to participate in capacity building needs assessment of fisheries and aquaculture extensionists for product quality assurance

The Authority will be under the Ministry of Livestock and Fisheries responsible for fisheries issues and led by the Board of Directors where the daily duties will be managed by the Director General. The Director General will be supported by unit heads who will be supported by department directors and zonal managers.

4.2 Monitoring and Surveillance

In order to allow the Authority to carry out its duties effectively, the organizational structure has accommodated a monitoring and surveillance unit which will be responsible for the improvements and efficiency in the protection and management of fisheries resources. The Fisheries Act 2003, Section VIII, 31 (i) makes such provision where it states "*The Minister shall, after consultation with the Minister responsible for Home Affairs, establish a Surveillance Unit"*.

Experience from other natural resources agencies in Tanzania including TAWA has demonstrated that the use of dedicated unit in surveillance and protection has improved the activities of these agencies by strengthening the protection and conservation of natural resources in the areas where such units have been incorporated into the organization.

4.3 Organizational Structure

The Authority will be under the Ministry of Livestock and Fisheries responsible for fisheries issues and led by the Board of Directors where the daily duties will be managed by the Director General. The Director General will be supported by unit heads who will be supported by departmental directors, section managers and zonal managers. The structure of the Authority has incorporated a monitoring and surveillance unit to reinforce the Authority's protection and conservation objectives, control of illegal fishing and cross boarder smuggling of fish and fish products. The Authority is estimated to have a total of 638 employees who will perform duties in the directorates and various units. The initial TFAA's seven zones distribution is provided in **Table 4** while Figure 6 shows the Authority's proposed organizational structure.

Table 4: Proposed Zones for the Tanzania Fisheries and Aquaculture Authority

S/N	Zone	Regions
1	Eastern	Morogoro, Pwani and Dar es Salaam
2	Southern	Mtwara, Lindi and Ruvuma
3	Southern Highlands	Mbeya, Iringa, Njombe, Songwe and Rukwa
4	Northern	Tanga, Arusha and Kilimanjaro
5	Western	Shinyanga, Tabora, Katavi and Kigoma
6	Lake	Mwanza, Mara, Geita, Kagera and Simiyu
7	Central	Manyara, Singida and Dodoma

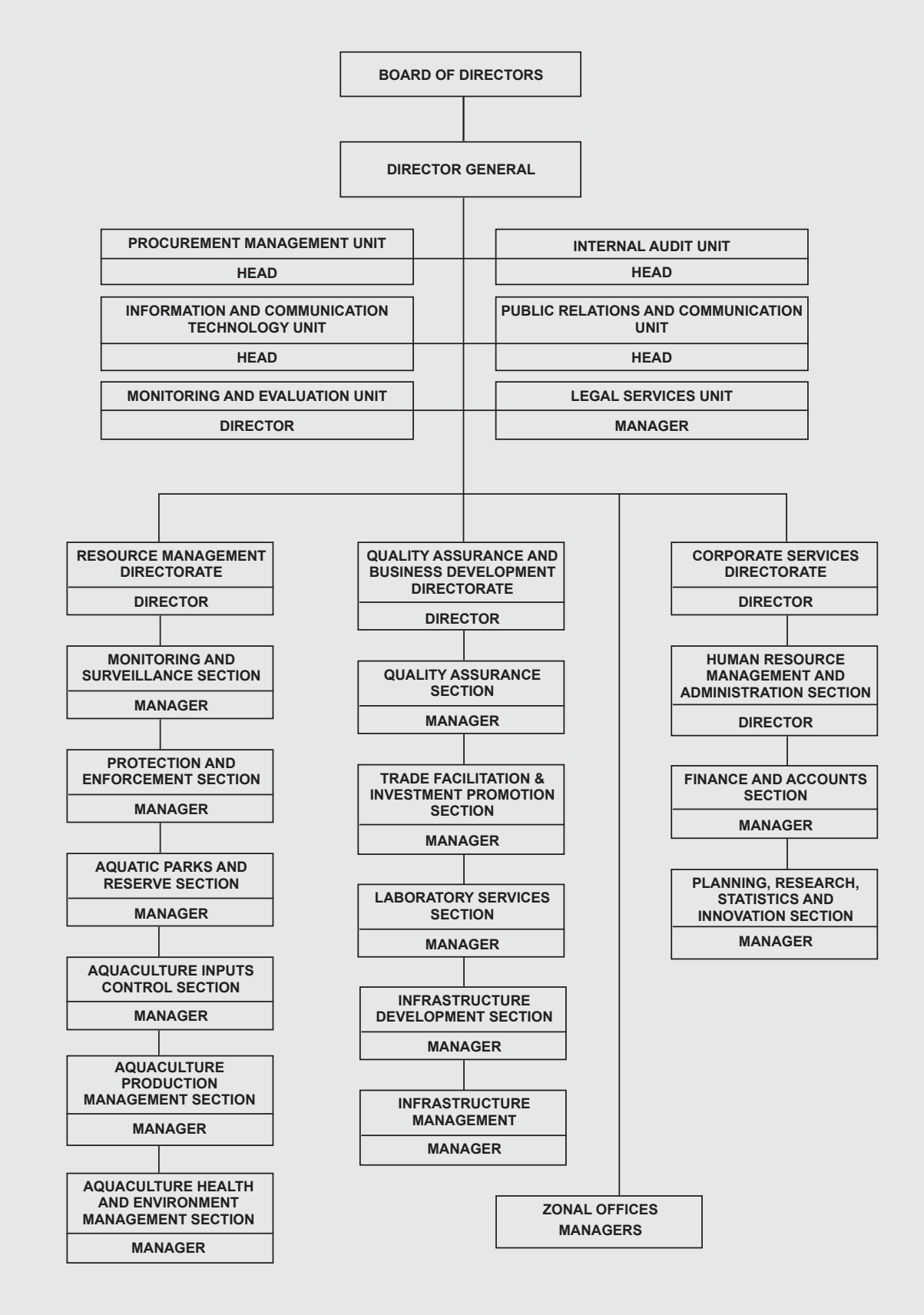

Figure 6: Proposed TFAA's organizational structure

4.4 Working Relationships between TFAA and other Ministries and Agencies

The fisheries and aquaculture sector has multiple actors and institutions performing different functions along the value chain. This fact could be a recipe for conflicts between actors if there will be no intentional harmonization and coordination of responsibilities. The following section highlights potential areas of collaboration between TFAA and TAFIRI, FETA, LGAs, TPA and the Deep-Sea Fishing Authority.

a) Local Government (LGA)

Since the adoption of decentralisation by devolution (D by D) policy in 1998, the agricultural extension services in Tanzania have been vested into Local Government Authorities (LGAs) to ensure effective participation of beneficiaries in program planning, implementation, monitoring and supervision of extension workers. Master plans are most successful when local government participation and authority are sought right from the onset.

It is worth noting that the fisheries extension activities are implemented by LGAs in collaboration with the Ministry. Equally, the LGAs are involved in collecting revenues related to fisheries services plus issuance of some licences. Considering the existing linkages between extension services, research and training, the Authority will have to closely work with LGAs to effectively pursue its mandate and deliver the Fisheries Master plan 2021/22-2036/37.

b) Tanzania Fisheries Research Institute (TAFIRI)

The research-guided management and utilization is of paramount importance for Tanzania to benefit from the huge base of biodiversity of aquatic resources, both fauna and flora found in its water bodies. Cognizant of this fact, TAFIRI was established in 1980 to be a source of scientific information and advice to the Government, management authorities and the general public with regards to fisheries and aquaculture development issues. Some of the key issues of mutual functions and benefits between TAFIRI and the proposed TFAA include the following:

- Maintain a fisheries and aquaculture database to help monitor fisheries resources on a regular basis to avoid over exploitation of such resources
- In view of demand driven research approach, TAFIRI will need TFAA to establish priority areas for research and investigations in fisheries and aquaculture within the United Republic of Tanzania, and to advise the Government, public Institutions and other persons or bodies of persons engaged in the fishing industry in Tanzania on the practical application of the research findings
- To establish and operate a system of documentation and dissemination of research findings for use by the Government, public institutions and other persons engaged in the fishing industry in the united

c) Fisheries and Education Training Agency (FETA)

The fisheries enterprise requires well trained staff and practitioners along the value chain. This would be attained through training and awareness raising campaigns. Fisheries and Education Training Agency (FETA) was basically established to provide competence-based training aimed at imparting fisheries knowledge and hands-on skills to fisheries staff and stakeholders. Issues of mutual interest between TFAA and FETA include training needs assessment to identify gaps and develop training programmes for the fisheries sector.

d) Tanzania Ports Authority (TPA)

The Ports Act, 2004, entrusts the development and management of port facilities under Tanzania Ports Authority (TPA).

e) Deep Sea Fishing Authority (DSFA)

The Deep Sea Fishing Authority (DSFA) was established under Section 5 of the Deep Sea Fisheries Management and Development Act No. 5. 2020 with the overall objectives of managing and developing fisheries conservation and related activities in the Exclusive Economic Zone and all areas in which the United Republic of Tanzania exercises jurisdiction for the exercise of effective control of fishing and related activities of nationals of the United Republic in areas beyond national jurisdiction.

4.4.1 Potential Areas for Legal and Operational Harmonization

It is obvious that since the legal establishment of TFAA will assume some of the responsibilities and fees from various institutions, ministries and MLF departments, including the LGAs, MLF, MoF, Ministry of Transport, among others. The realignment of these objectives/mandates will create a necessity for harmonization of legislations establishing and empowering these institutions and/or ministries to carry out the reassigned obligations and will therefore require the amendments of the affected legislations and or instruments.

4.4.2 Conflict in regulatory functions

The fisheries sector regulatory function of the proposed Authority will assume functions that are currently undertaken by other institutions, including LGAs and therefore likely to create conflicts with existing institutions. Hence, there is a need to identify those conflicting functions and suggest how best they can be harmonized to ensure smooth operation of the Authority and co-existence with such institutions identified in the preceding chapters.

4.4.3 Conflict in revenue collections

Revenue collection in fisheries sector is undertaken by the Ministry (MLF) and LGAs. One of the mandates for the proposed Authority is to increase revenue collection from fisheries activities. This is likely to conflict with LGAs and other institutions such as the Ports Authorities that are currently collecting revenue from fisheries activities. Since

revenue is a sensitive issue and especially when it comes to the local governments, it needs to be clearly articulated. Therefore, types of revenues collected by the different institutions need to be identified together with respective contentious areas. This should form a basis for harmonization, streamlining and sharing of the revenue collected with the purpose of creating conducive payment system with minimal multiplicity and unfriendly payments, while abating any potential conflict within different government ministries/departments. Table 5 highlights potential areas of conflicts requiring harmonization.

Table 5: Acts and Laws that could be affected by Establishing TFAA

S/N	Targeted Area and Institution	Current Responsible Institution	Affected area	Affected Law/ Regulation or Establishing Act	Comments
1	Ministry of Livestock and Fisheries (which will remain with policy functions)		Need to be identified		The Ministry of Livestock and Fisheries to remain with policy functions
2	Ministry of Finance				Part of the fisheries and aquaculture budget related to the functions of the Authority be moved from the MLF to TFAA
3	Tanzania Revenue Authority				
4	Treasury Registrar				
5	Local Government Authorities (LGAs)	Collection of landing ground charges/fees			LGA to retain 60% of the current revenues collected and 40% be retained by TFAA
6	Tanzania Ports Authority	TPA/Ministry of Transport		Tanzania Ports Authority (Port Act, 2004, Port Service Charge Act, 2019)	

7	Deep Sea Fishing Authority (DSFA)				
8	Tanzania Fisheries Research Institute (TAFIRI)				
9	Fisheries Education and Training Authority (FETA)				

4.5 Critical Issues for Consideration in Establishing TFAA

In establishing the Tanzania Fisheries and Aquaculture Authority, the following factors will be considered:

i. Strengthening revenue collection systems
ii. Strengthening the management of fishing and aquaculture development activities to ensure that they are carried out in compliance with the laws and guidelines for the use of best fisheries and aquaculture development methods.
iii. Strengthening the safety management system, the quality of products and inputs for fisheries and the development of aquaculture.
iv. Allocating specific water use areas for fishing and aquaculture development (aquatic spatial planning and zonation).
v. Establishing, developing and managing fishing infrastructure and aquaculture development.
vi. Establishing and strengthening conservation systems in the sea and cold water.
vii. Put in place management and development plans that will establish a procedure for the management, conservation, control and development of fishing resources in seas, lakes, ponds, rivers and remote areas.
viii. Investment and participation of the private sector in the fishing industry
ix. Control the loss of fishery products and increase the quality after harvest
x. Establish effective system for the protection and preservation of fishing resources through a special protection force.
xi. To ensure the safety of fishing activities.

5.0 Expected Outcomes and Impact of Establishing the Authority

5.1 Outcomes and Impact

The establishment of the Tanzania Fisheries and Aquaculture Authority is expected to have critical outcomes and impacts to the sector and these include the following:

i. Facilitate the implementation of the National Fisheries Policy of 2015 and corresponding Fisheries Sector Master Plan 2021/22-2036/37
ii. Improved the fisheries' sector contribution to the national GDP
iii. Improved government revenues: Improved collections
iv. Reduced post harvest losses
v. Reduced illegal fishing activities in order to protect and preserve fisheries resources and protect the environment
vi. Improved management of the business of fishing products within and outside the country
vii. Improved management of aquaculture development activities
viii. Increased accessibility and affordability of inputs and products/raw materials for fisheries and aquaculture development
ix. Improved management and quality of fisheries and aquaculture infrastructure.
x. Increased per capita consumption of fish hence improving food and nutrition security through increasing daily intake of animal protein
xi. Enforcement of the right use of resources in areas with fisheries resources
xii. Increased amount of consumed protein and its contribution to better health for citizens
xiii. Improved use of resources in areas with fisheries resources
xiv. Reduced loss of fishing resources and environmental damage
xv. Existence of fisheries management and aquaculture development plans that will provide a vision for the development of the fishing industry in the country
xvi. Established system for registering and coordinating the number of fishermen entering the fishery sector
xvii. Increased investment and use of modern technologies in the fishing sector
xviii. Leverage private sector investment for increasing productivity through the fisheries sector
xix. More domestic and export markets identified and established for fish and fishery products
xx. Alternative income generating activities (AIGAs) to diversify sources of livelihoods for fishing communities identified
xxi. Improved the fisheries sector annual growth rate
xxii. Increased community altitude toward conservation and protection of fisheries resources
xxiii. Increased fisheries production
xxiv. Increased direct employment of full time fishers and indirect employment for fisheries related employments

5.2 The TFAA Road Map

The road map for establishing TFAA will involves the following steps:

i. A feasibility study
ii. Presentation of the feasibility study to the Ministerial Technical Team
iii. Field validation
iv. Stakeholder workshops
    a. MLF management
    b. Parliamentary Committee - Industries, Trade, Agriculture and Livestock Committee
v. Establishment of the legal framework and approvals
vi. Mobilization of resources for TFAA

5.3 The Work Plan Towards TFAA

The implementation workplan will involve the following activities:

i. A feasibility study
ii. Presentation of the feasibility study findings to the MLF management
iii. Stakeholder workshops:
    a. MLF management
    b. General stakeholders/validation workshop
    c. Parliamentary Committee - Industries, Trade, Agriculture and Livestock Committee
iv. Establishment of the legal framework and approvals
v. Organizational structure review and approval by the President's Office, Public Service Management
vi. Secure approvals from the Treasury Registrar on the establishment of the Authority
vii. Consultation with the Ministry of Home Affairs on surveillance unit as per the Fisheries Act 2003, Section VIII, 31 (i) requirements
viii. Parliament enactment and Gazetting
ix. Mobilization of resources for TFAA
x. Recruitment and selection of TFAA human resources
xi. Procurement of key office and field equipment
xii. Setting up of the TFAA offices (head office and zonal offices).
xiii. Commencement of operations

Table 6 demonstrates a chronological work plan and activities that will be required for the establishment of TFAA with estimated implementation timelines.

Table 6: Implementation timelines for establishing TFAA

S/N	ACTIVITIES AND DELIVERABLES	TIMELINES										
		2024									2025	
		April	May	June	July	Aug	Sept	Oct	Nov	Dec	Q1 2025	Q2 2025
1	A feasibility study											
2	Presentation of the Feasibility Study to the Technical Team											
3	Stakeholders Validation:											
	a. Field Visit/validation											
	b. MLFD management											
	c. General stakeholders/Validation Workshop											
	d. Parliamentary Committee											
4	Establishment of the legal framework and approval											
5	Organizational structure review by President's Office, Public Service management											
6	Secure approvals from the Treasury Registrar											
7	Parliament enactment and Gazetting											
8	Mobilization of resources for TFAA											
9	Recruitment and Selection of TFAA staff											
10	Procurement of key office and working equipment											
11	Setting up of Office (HQ and Zonal)											
12	Commencement of Operations											

6.0 Revenue and Estimate Budget

6.1 Potential Revenue Sources and Estimated Budget for TFAA

Financial sustainability of the Authority is critical in enabling it to implement its functions and objectives so as to achieve the desired impacts. The projected revenue derived from the outlined sources demonstrates that the sources will generate adequate resources to sustain the Authority.

The Authority's revenue will be derived from the following sources of which have been used as a source of revenue projections:

- License fees
- Royalties on fishing products
- Continental services and permits to export fishing products
- Charges resulting from various sales of fish products and charges resulting from fines for various offences (compounding fee)
- Fees, charges and various taxes from the markets of fishing products
- Sales of fish fingerlings and royalty for exporting seaweed
- Charges arising from various activities related to the protected areas
- Port services when the Authority operations start

Estimated TFAA revenue projections from various sources for five years are shown in Table 7.

Table 7: Estimated TFAA Revenue Projections (in TZS) for five years

Description	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue Projections	152,657,611,280	162,478,002,754.40	175,777,462,947	188,081,885,354	201,247,617,328

Detailed and itemized sources of fund for the Authority are provided under **Appendix 1.**

6.2 Budget Estimates for TFAA

Provisional summary budget for the start-up capital and operating costs for the first year of TFAA has been developed detailing estimated start-up capital cost and salaries for year one of operational costs. **Table 8** provides the budget summary estimates.

Table 8: Budget Estimates for TFAA's Initial Capital and Operational Costs

I. ESTIMAGED ANNUAL REVENUE - Year 1				**152,657,611,280**
II. STARTUP CAPITAL	**Type**	**Qty**	**Cost**	**Amount (TZS)**
Office Rents - Office Accomodation				172,800,000
Tents and Camp Equipment				25,000,000
Houses, cottages and condos				25,000,000
Town houses and apartments				72,000,000
House boats and barges				40,000,000
Mobile homes and caravans				200,000,000
Metal barriers				20,000,000
Protective and other clothing				174,000,000
Aquisition of land				250,000,000
Motor vehicles				20,000,000,000
Ships, boats and ferries				12,500,000,000
Motorbikes and bicycles				150,000,000
Furniture and Fitting	HQ and Zones	Estimates		150,000,000
Computers - Desktop		30	2,500,000.00	75,000,000
Laptops		20		70,000,000
Savers				3,500,000
Other ICT Accessories	Estimate			10,000,000
Contingencies (5% of total costs)				***1,692,690,000***
TOTAL START UP CAPITAL				**35,629,990,000**
III. OPERATING EXPENSES				
1. Operating Expenses - Resource management				6,672,580,000
2. Salaries - Year 1				14,454,217,920
TOTAL OPERATING EXPENSES				**21,126,797,920**

Conclusion

Establishing the Tanzania Fisheries and Aquaculture Authority (TFAA) will ensure the effective and efficient implementation of the 2015 National Fisheries Policy. It will change the management, conservation, and development system of the fisheries and aquaculture sub-sector.

The Authority will have long-term benefits for the sector, creating both tangible and intangible benefits that outweigh the cost of its establishment. The TFAA can potentially improve the fisheries and aquaculture value chain and contribute to the livelihoods of farmers and other value chain actors.

Both the financial and technical feasibility arguments have been strongly supported.

This document, therefore, proposes the establishment of the Tanzania Fisheries and Aquaculture Authority, which will be responsible for managing, preserving, and developing the country's fisheries resources.

Appendix I: Sources of Funds for TFAA

Na.	Chanzo	Maelezo ya Chanzo	Nyakati za malipo	Malipo kwa kipimo (TZS)
	ADA			
1	Ada za leseni za chombo cha uvuvi	Hulipwa na mwenye chombo cha uvuvi kwa chombo hadi mita 11	Mara moja kwa mwaka	30,000
2	Ada za leseni za chombo cha uvuvi	Hulipwa na mwenye chombo cha uvuvi kwa chombo chenye urefu wa mita 11.1 hadi 15	Mara moja kwa mwaka	120,000
3	Ada za leseni za chombo cha uvuvi	Hulipwa na mwenye chombo cha uvuvi kwa chombo chenye urefu wa mita 15.1 hadi 20	Mara moja kwa mwaka	250,000
4	Ada za leseni za kujishughulisha na uvuvi	Hulipwa na anayejishughulisha na uvuvi	Mara moja kwa mwaka	50,000
5	Ada za leseni za kuuza nje ya nchi mazao ya uvuvi	Hulipwa na mfanyabiashara; Leseni hutolewa kwa aina ya zao la uvuvi	Mara moja kwa mwaka	2,500,000
6	Ada za leseni za kuingiza mazao ya uvuvi nchini	Leseni hutolewa kwa aina ya zao la uvuvi	Mara moja kwa mwaka	11,500,000
7	Ada za leseni za uvuvi wa burudani (Sports Fishing)	Hulipwa na mvuvi/ mfanyabiashara kulingana na ukubwa/urefu wa chombo	Mara moja kwa mwaka	1,000,000
8	Ada za leseni za uvuvi wa kambamiti	Hulipwa na mvuvi/ mfanyabiashara kutokana na ujazo/uwezo wa chombo (GT)	Mara moja kwa msimu	5,000,000
9	Tozo ya mazao ya uvuvi yanayouzwa nje ya nchi (royality)	Hulipwa na mfanyabiashara kulingana na aina ya zao katika dola za Kimarekani kwa kilo	Kila anaposafirisha mzigo	1,500
10	Tozo ya mazao ya uvuvi yanayoingizwa nchini	Hulipwa na mfanyabiashara kwa kiwango cha dola za kimarekani 2.5$ kwa kilo	Kila anapoingiza mzigo nchini	5,790

Na.	Chanzo	Maelezo ya Chanzo	Nyakati za malipo	Malipo kwa kipimo (TZS)
11	Tozo ya huduma mbalimbali zinazotolewa na Maabara ya Taifa ya Uvuvi	Hulipwa na mfanyabiashara kila anaposafirisha mzigo		76,174,837
12	Tozo ya kusafirisha mazao ya uvuvi ndani ya nchi (movement permit)	Hulipwa sh. 100 kwa kilo anaposafirisha mzigo unaozidi kg 30.	Kila anaposafirisha mzigo.	950,000
13	Tozo zinazotokana na mauzo mbalimbali ya mazao ya uvuvi (miscellenous receipts)	Hutozwa kwa mazao ambayo hayapo kwenye mfumo wa tozo na kwa wafanyabiashara wasio na leseni au vibali	Kila anaposafirisha mzigo.	TBD
14	Tozo zinazotokana na faini za adhabu kutokana na makosa mbalimbali (compounding fee)	Hulipwa na mfanyabiashara/mdau pale inapobainika kuwa sheria na au kanuni imevunjwa	Mara kwa mara	55,000,000
	MASOKO			
16	Ushuru wa soko	Hutozwa kwa wafanyabiashara sokoni	Kila siku	TBD
17	Kodi ya vizimba vya soko	Hutozwa kwa wachuuzi wanaofanya biashara kwenye vizimba	Kila mwezi	12,000,000
18	Tozo ya 3% ya thamani ya samaki wanaouzwa	Hutozwa kwa mvuvi kulingana na samaki waliovuliwa	Kila siku; tani 200,000 kwa mwaka wa kwanza	TBD
19	Ada ya kuhifadhi mazao ya uvuvi (Cold storage)	Hutozwa kulingana na wingi wa samaki/siku	Mara kwa mara	4,000,000
20	Mauzo ya vifaranga vya samaki	Hutegemea mahitaji	Kila mwezi	10,000

21	Tozo ya usafirishaji wa zao la mwani nje ya nchi	Hulipwa na mfanyabiashara/mdau	Mara kwa mara	75,000,000
Na.	**Chanzo**	**Maelezo ya Chanzo**	**Nyakati za malipo**	**Malipo kwa kipimo (TZS)**
22	Ukusanyaji wa maduhuli yatokanayo na viingilio katika Hifadhi na Maeneo Tengefu (Maboti na Watalii)	Hutozwa kila mgeni na vyombo vya usafiri vinavyoingia kwenye hifadhi	Mara kwa mara	119,950,167
23	Malipo ya huduma za utafiti katika kituo cha Hifadhi ya Bahari ya Kisiwa cha Mafia (Accommodation and Research Center)		Mara kwa mara	100,000
24	Ada za uwekezaji katika Hifadhi za Bahari na Maeneo Tengefu (Concession Fee)		Mara kwa mara	4,071,000
25	Huduma za Kukodisha (Hire of service)		Mara kwa mara	141,667
26	Huduma za malazi katika maeneo ya Hifadhi ya maji na Maeneo Tengefu (Kambi za Kitalii, Hosteli, Hoteli)		Mara kwa mara	41,666,667
27	Mrabaha katika uwekezaji ndani ya Hifadhi za kwenye maji na maeneo Tengefu		Mara kwa mara	166,666,667
28	Malipo kutoka uwekezaji katika ufugaji wa samaki (vizimba)		Mara kwa mara	416,667

29	Ada za leseni za uvuvi wa burudani (sport fishing) katika maeneo hifadhi za maji		Mara kwa mara	833,333
Na.	**Chanzo**	**Maelezo ya Chanzo**	**Nyakati za malipo**	**Malipo kwa kipimo (TZS)**
30	Kuwekeza katika biashara ya gesi ukaa (ikiwemo mikoko) iliyopo katika maeneo ya Hifadhi ya maji na Maeneo Tengefu (Carbon Credit)		Mara kwa mara	16,666,667
31	Huduma za kuhifadhi mazao ya uvuvi (cold room facilities) katika maeneo ya Hifadhi		Mara kwa mara	8,333,333
32	Uwekezaji katika miradi ya utalii ikolojia kwa utaratibu wa Public Private Partnerships (PPP)		Mara kwa mara	41,666,667
33	Tozo za kurekebisha madhara kwa mazingira kwenye rasilimali za Pwani, Bahari na maji baridi		Mara kwa mara	41,666,667
34	Tozo na faini zinazotokana na uvuvi haramu (destructive fishing)	Hulipwa na Mfanyabiashara/Mdau	Kila anapobaini kukiuka Kanuni na Sheria za Uvuvi.	TBD
35	Tozo na faini kwa uharibufu na uchafuzi wa mazingira	Hulipwa na Mfanyabiashara/Mdau.	Kila anapobaini kukiuka Kanuni na Sheria za hifadhi ya mazingira	TBD

36	kwenye rasilimali za Pwani, Bahari na maji baridi (pollution)	Hulipwa na Mfanyabiashara/Mdau	Mara kwa mara	TBD
37	Tozo za uchimbaji, na uvunaji madini Pwani na Baharini (sand mining, sea salt extraction, oil & gas extraction)		Kila mwezi	TBD
Na.	**Chanzo**	**Maelezo ya Chanzo**	**Nyakati za malipo**	**Malipo kwa kipimo (TZS)**
38	Mapato kutoka kwa waongoza watalii, safari za kuogelea n.k.		Kila mwezi	TBD
39	Ada zitokanazo na kutia nanga, na kuegesha boti kwenye Hifadhi		Mara moja kwa mwaka	TBD
40	Miradi ya Maendeleo (wafadhili wa kimataifa)		Kila mwezi	TBD
41	Malipo mengine kwa huduma za mfumo ikolojia (Payment for Ecosystem Services)		Kila mwezi	TBD
42	Kodi ya uvuvi/ Ushuru wa Serikali kwa uvuvi (kwa kulinda na kutunza, na kuwezesha mazingira chanya ya rasilimali za kuongeza mazao ya uvuvi)			TBD
43	Hati-fungani za rasilimali za buluu (Blue Bonds)		Mara kwa mara	TBD
44	Mapato mengineyo			TBD
	BANDARI			

45	Tozo ya kuingiza na kutoa Meli Bandarini (Pilotage fee)	Italipwa na mmiliki wa meli ya uvuvi	Meli kumi zitahudumiwa na bandari kwa wakati mmoja, kila meli itaingia na kutoka bandarini mara 10 kwa mwaka	350,000
Na.	**Chanzo**	**Maelezo ya Chanzo**	**Nyakati za malipo**	**Malipo kwa kipimo (TZS)**
46	Tozo ya kuchelewa kupatiwa huduma ya kuingiza na kutoa meli bandarini (Pilotage detention fee)	Italipwa na mmiliki wa meli pale ambapo meli iliomba huduma na huduma lakini meli haijapatiwa huduma kwa zaidi ya dakika 30 (Pilotage detention fee)	Mara kwa mara	231,600
47	Tozo ya kuahirisha kupatiwa huduma ya kuingiza na kutoa meli ya uvuvi bandarini (Cancelation fee for pilotage service ordered)	Italipwa na mmiliki wa meli akiahirisha kupatiwa huduma aliyoomba baada ya dakika 30 ya muda alioomba kupatiwa huduma	Mara kwa mara	270,000
48	Tozo ya kuegesha Meli za uvuvi (Dockage)	Italipwa na mmiliki wa meli ya uvuvi	Meli kumi zitahudumiwa na bandari kwa wakati mmoja, kila meli itaingia na kutoka bandarini mara 10 kwa mwaka	30,000
49	Tozo ya kuegesha boti za uvuvi (Dockage)	Italipwa na mmiliki wa boti	Bandari itaweza kuhudumia boti 60 za uvuvi	-
50	Tozo ya huduma ya kuongoza meli (Navigational dues)	Italipwa na mmiliki wa boti	Mara kwa mara	65,000
51	Tozo ya huduma ya kuvuta/ kuongoza meli (Tug services)	Italipwa na mmiliki wa meli ya uvuvi	Mara kwa mara	45,000

52	Tozo ya huduma ya kuvuta/ kuongoza meli ambayo iliombwa na haikutumiwa (Tugs ordered but remaning or kept idle)	Hutozwa kwa kila tukio	Mara kwa mara	465,000
53	Tozo za huduma za kuegesha meli katika usawa halisi (Mooring and unmooring)	Hutozwa kwa kila tukio	Mara kwa mara	231,600
Na.	**Chanzo**	**Maelezo ya Chanzo**	**Nyakati za malipo**	**Malipo kwa kipimo (TZS)**
54		Italipwa na mmiliki wa meli ya uvuvi	Mara kwa mara	1,000,000
55	Tozo ya matumizi ya miundombinu ya bandari	Hulipwa kwa lita 1,000	Mara kwa mara	-
56	Ada ya huduma ya maji safi	Hulipwa na mmiliki wa meli kwa kila kibarua atakayefanya kazi kwa muda wa kawida na muda wa ziada	Mara kwa mara	-
57	Ada ya huduma za watumishi na vibarua (Kazi za kawaida)	Hulipwa na mmiliki wa meli kwa kila kibarua atakayefanya kazi kwa muda wa kawida na muda wa ziada	Mara kwa mara	-
58	Ada ya huduma za watumishi na vibarua (Kazi za kuendesha mitambo ya kunyenyulia mizigo)	Hulipwa na mmiliki wa meli kwa kila kibarua atakayefanya kazi kwa muda wa kawida na muda wa ziada	Mara kwa mara	-
59	Ada ya huduma za watumishi na vibarua (huduma ya zimamoto na uokoaji)	Hutozwa kwa kila tukio	Mara kwa mara	-
60	Ada ya huduma ya kutumia/ kukodisha vifaa na mitambo (Mobile cargo handling)	Hutozwa kwa kila tukio	Mara kwa mara	-

61	Ada ya huduma ya kutumia/ kukodisha vifaa na mitambo ya kupakia mizigo inayozidi tani 16 (Front/side loader)	Hutozwa kwa kila tukio	Mara kwa mara	-
Na.	**Chanzo**	**Maelezo ya Chanzo**	**Nyakati za malipo**	**Malipo kwa kipimo (TZS)**
62	Ada ya huduma ya kutumia/ kukodisha vifaa na mitambo inayohamishika ya kupakia/ kupakua mizigo hadi tani 40	Hutozwa kwa kila tukio	Mara kwa mara	-
63	Ada ya huduma ya kutumia/ kukodisha vifaa na mitambo ya kupakua mizigo kwenye vyombo vidogo	Hutozwa kwa kila tukio	Mara kwa mara	-
64	Ada ya huduma ya kutumia/ kukodisha vifaa na mitambo inayoelea ya kupakua mizigo	Hutozwa kwa kila mtambo	Mara kwa mara	-
65	Nyongeza ya ada kwa kukodisha mitambo kwa kila awamu	Hutozwa kwa kila trip	Mara kwa mara	-
66	Tozo ya kukodisha boti ya kuongoza meli	Hutozwa kwa kila trip	Mara kwa mara	-
67	Ada ya kukodi gari la mizigo	Hutozwa kwa kifaa	Mara kwa mara	-
68	Ada ya kukodisha vifaa vinginevyo (Miscellaneous equipment)	Ada itatozwa kwa kia meli ya uvuvi	Mara kwa mara	-
69	Ada ya huduma ya kutupa taka	Hutozwa kwa kila mwito	Mara kwa mara	-
70	Ada ya huduma za simu		Hutozwa kwa siku	-
71	Ada ya huduma ya kutumia tela	Hutozwa kwa tukio	Mara kwa mara	-

72	Ada ya huduma ya matumizi ya zana za zimamoto na uokoaji (Appliences)	Hutozwa kwa tukio	Hulipwa kwa siku	-
Na.	**Chanzo**	**Maelezo ya Chanzo**	**Nyakati za malipo**	**Malipo kwa kipimo (TZS)**
73	Ada ya huduma ya matumizi ya zana za zimamoto na uokoaji (equipments)	Hutozwa kwa tukio	Hutozwa kwa trip	-
74	Ada ya huduma ya matumizi ya zana za zimamoto na uokoaji maji ya zimamoto	Hutozwa kwa tukio	Hutozwa kwa kila kifaa kinachofungwa	-
75	Tozo ya kufanya majaribio na ukarabati wa vifaa	ada ni $9 kwa tani ya samaki iliyohamishwa	Mara kwa mara	-
76	Ada ya mzigo uliopokelewa na kuhamishiwa katika meli nyingine na vyumba vingine (Cargo landed and reshipped and shifting from hold to hold)	Hutozwa $ 13.5 kwa kila tani	Mara kwa mara	5,002,560
77	Ada ya kuhudumia mizigo kavu iliyofungwa kwenye mifuko	Hutozwa $12 kwa tani	Mara kwa mara	4,446,720
78	Ada ya huduma ya kupakua ama kupakia bidhaa zilizogandishwa (Discharging loading cold storage cargo	Hutozwa $ 21.5 kwa kila mzigo	Mara kwa mara	-
79	Ada ya nyongeza kwenye huduma za kupakia na kupakua mizigo			
80	LESENI	Hutozwa $73.9 kwa mwaka kwa meli moja, Meli tano zitaomba exemption	Mara moja kwa mwaka	-

Na.	Chanzo	Maelezo ya Chanzo	Nyakati za malipo	Malipo kwa kipimo (TZS)
81	Leseni ya kutosaidiwa kuingiza na kutoa meli bandarini (Exemption from pilotage)	Hutozwa $8.10 kwa mtu au kampuni inayoomba kutoa huduma ya kuhudumia mizigo bandarini kwa kipindi cha mwaka mmoja	Mara moja kwa mwaka	-
82	Leseni ya wabeba mizigo (5 kwa kila meli)	Hutozwa $500 kwa watoa huduma na $500 kwa mawakala wa kusimamia mahitaji ya meli	Mara moja kwa mwaka	-
	Leseni ya mawakala/ wazabuni na watoa huduma kwenye meli	Hutozwa kwa mashua na vyombo vingine vinavyomilikiwa na watu binafsi	Mara moja kwa mwaka	-
	Leseni za vyobo vya usafiri vinavyotoa huduma ya kusafirisha mizigo katika eneo la banradi	Hutozwa kwa mtu binafsi au kampuni mara moja kwa mwaka	Mara moja kwa mwaka	-
	Leseni ya wakala wa kutoa/ kusambaza turubai la kutengeza tanga kwa mashua	Hutozwa kwa mtu binafsi au kampuni mara moja kwa mwaka	Mara moja kwa mwaka	-
	Leseni kwa watoa huduma ya chakula na maji safi kwenye meli za uvuvi (Bankering)	Hutozwa $50 kwa mtu binafsi au kampuni mara moja kwa mwaka	Mara moja kwa mwaka	-
	Leseni kwa mawakala wa kuhudumia mizigo (Clearing and forwading)	Hutozwa $4 kwa safari moja ya kwenda na kurudi, leseni 10 zitatolewa	Mara moja kwa mwaka	-
	Lesen za vyombo saidizi vya uvuvi (bumboatments)	Hutozwa $ 33.6 kwa chombo kwa mwaka, leseni 10 zitatolewa	Mara moja kwa mwaka	-
	Leseni ya maboya binafsi ya kuvuta na kuongoza meli	Itatozwa $3 kwa nyaraka za maombi ya huduma	Mara moja kwa mwaka	-

Na.	Chanzo	Maelezo ya Chanzo	Nyakati za malipo	Malipo kwa kipimo (TZS)
	Tozo ya kuahirisha/ kufuta ama kuboresha huduma iliyoombwa (amending or cancellation of orders)	Hutozwa $2 kwa tani	Mara moja kwa mwaka	-
	Ada ya huduma za kuegesha meli (Wharfage) kwa ajili ya kupakia au kupakua mizigo			

-

Appendix II: Staff Salary Estimates for TFAA

SALARY ESTIMATES FOR EMPLOYEES					
POSITION	NEED	NUMBER	AMOUNT TZS	TOTAL PER MONTH	TOTAL PER YEAR
	Salary	1	10,000,000	10,000,000	120,000,000
	Water and Electricity	1	260,000	260,000	3,120,000
Director Genaral	Communication	1	230,000	230,000	2,760,000
	House	1	600,000	600,000	7,200,000
	Salaries	4	7,000,000	28,000,000	336,000,000
Directors	Water and Electricity	4	260,000	1,040,000	12,480,000
	Communication	4	230,000	920,000	11,040,000
	House	4	600,000	2,400,000	28,800,000
	Salary	11	5,000,000	55,000,000	660,000,000
Managers	Electricity and water	11	260,000	2,860,000	34,320,000
	Communication	11	230,000	2,530,000	30,360,000
	House	11	600,000	6,600,000	79,200,000
	Salary	6	4,000,000	24,000,000	288,000,000
Head of Units	Electricity and water	6	260,000	1,560,000	18,720,000
	Communication	6	230,000	1,380,000	16,560,000
	House	6	600,000	3,600,000	43,200,000
	Salary	7	3,530,000	24,710,000	296,520,000
Zone Managers	Electricity and water	7	260,000	1,820,000	21,840,000
	Communication	7	230,000	1,610,000	19,320,000
	House	7	600,000	4,200,000	50,400,000
OTHER STAFF					
Principal officer I		10	2,700,000	27,000,000	324,000,000
Principal Officer II		15	2,400,000	36,000,000	432,000,000
Officer I		30	2,000,000	60,000,000	720,000,000
Officer II		80	1,600,000	128,000,000	1,536,000,000
Afisa Mkuu Msaidizi		20	2,200,000	44,000,000	528,000,000
Afisa Msaidizi Mwandamizi		60	1,900,000	114,000,000	1,368,000,000
Afisa Msaidizi I		73	1,600,000	116,800,000	1,401,600,000
Afisa Msaidizi II		300	1,200,000	360,000,000	4,320,000,000
Secretary		10	1,500,000	15,000,000	180,000,000
Recods		15	1,500,000	22,500,000	270,000,000
Driver		20	1,000,000	20,000,000	240,000,000
Wahudumu (Supporting staff)		5	800,000	4,000,000	48,000,000
TOTAL		**638**	**55,380,000**	**1,120,620,000**	**13,447,440,000**

Selected Infrastructure & Stakeholder Field Survey Report

September, 2024

Abbreviations

BMU	Beach Management Unit
CC	City Council
DRC	Democratic Republic of Congo
LGA	Local Government Authority
Lts	Litters
MC	Municipal Council
MLF	Ministry of Livestock and Fisheries
MT	Metric Tons
MCS	Monitoring, Control and Surveillance
POS	Point of Sale
TASAC	Tanzania Shipping Agencies Corporation
TFAA	Tanzania Fisheries and Aquaculture Authority
TZS	Tanzania shilling
UAE	United Arab Emirates

TFAA Establishment Feasibility Study - Selected Infrastructure and Stakeholder

Background

The main objective of this study is to assess the viability for establishment of Tanzania Fisheries and Aquaculture Authority (TFAA) as an autonomous Authority with the aim of improving fisheries and aquaculture production and productivity in Tanzania.

The field survey on the other hand is aimed to collect and validate stakeholders views in a bid to establish the level of both public and private infrastructure and their conditions, existing and experienced administrative and systemic challenges so as to inform the study and accommodate recommendations that will address noted challenges.

The field survey covered capture fisheries and aquaculture. In the capture fisheries reflecting three key areas namely lakes, sea and dams and in aquaculture focusing on production settings (cage fish farming), hatcheries, Mariculture Development Centres and seaweed (production and processing) spread over seven regions namely Mwanza, Kigoma, Rukwa, Iringa, Tanga, Dar Es salaam and Lindi.

The survey reached out to more than forty (40) stakeholders both in public and private sectors covering fish markets, landing sites, fish processors, drying facilities (racks, electric drier), aquaculture development centre (mariculture), seaweed farmers, seaweed processors, vessel owners and fish traders. The list of stakeholders is provided to this report as Annex 1.

This report documents details of findings and observations from the field and equally provide recommendations on how registered gaps and challenges are to be addressed.

Tables below provides the details of the findings and recommendations.

I. Field survey - Leg 1

SN	Institution/ Infrastructure	Lake/Sea/ Dam	Location	Ownership	Areas of interest	Findings/ Observations
1.	Lake Victoria: Tanzania Fish Processors Ltd (TFP)	Lake	Mwanza	Private	Capacity	• Installed capacity: 120 metric tons (MT) /day • Current utilized capacity is 10 - 12MT/ day or 300 - 360 MT/ month • However, there is a mismatch between plant installed and utilized capacity. The mismatch is caused by fluctuating supply of the raw materials, that is, fish attributable to: lunar cycle/ moon shine effect, illegal fishing using prohibited gears which over exploits fish stock, fish maws and import duty tax.
					Management	• The management has employed adequate manpower requirement for efficient and smooth plant operations covering: production, quality control and assurance, accounting, human resource department, Marketing, Engineering team and Transport department, which include transport fleet management.
					Amenities	• The plant has adequate supply of electricity, water, hygiene facilities such as showers, and toilets all in good working condition.
					Fees and Tax.	• The management registered concerns on multiple taxes including atomic energy commission fee amongst others. Consequently, reduces their competitive edge within the East Africa region and beyond. For instance, their counterparts in Uganda are more competitive because they don't have royalty charges. • Concerns were registered that Taxes and levies consumes about 30% of the revenue and affects operation, competitiveness and business sustainability.
					Challenges	• Seasonality / fish supply fluctuation due to lunar/ moon light effect, illegal fishing, unregulated business practices encouraging illegal fishing, tax evasion etc. • Too many taxes/ multiple taxes, consequently reducing competitiveness in the market. • The negative impact of high import duty tax ($2.5/kg). It reduces import of fish and fish products for domestic consumption, resulting in consumption of Nile perch in local markets which are important raw materials for processing plants and export market.

2	Lake Victoria: Kamanga Fish Market		Ilemela Municipal Ccouncil (MC)	Public	Capacity	• 2000 kgs of fish are handled per day. • The fish market is operated by. 400 group members It appears over crowded yet ill-equipped. • It is a temporary market though. Ilemela city council has identified a suitable space within the neighbourhood to relocate the market in a near future.
					Management	• Jointly managed by Ilemela Municipal Council (MC) in collaboration with Fish trader group. Group leadership is comprised of the Chairman, Secretary, Treasury and committee members for various group committees. Ilemela MC has assigned one permanent fisheries officer to provides technical support to fish traders on daily basis including production and quality control issues and record keeping. The officer is also responsible for tax / service fees collection for Ilemela MC.
					Amenities	• Water, electricity, hygiene facilities are available. However, traders pointed out that the facilities suffer maintenance issues caused by delayed response by Ilemela MC to maintenance requests submitted for their attention. • No cold chain facility, however traders use dilapidated deep freezers, filling them with ice for storing fish • No office space provided for the group by Ilemela Municipal Council. Currently renting office space.
					Fees and Tax	• Charges/fees/tax are collected using (Point of Service) machines for easy accounting and stock verification. • Fish and fish products fee, TZS 50 / kg of fish, PoS receipted, 100% goes to Ilemela City Council (CC)
						• Fish and fish business/collection license, 30,000 TZS/ year, PoS receipted
						• Fresh sardines (dagaa) fee, TZS 200/ 20 kg bucket, POS receipted
						• Dried sardines' fee, 1,000 TZS/ bag of about 70kg, POS receipted
						• Market fee per stall: TZS 10,000 / month • Traders pay TZS 10,000/month for security and facility cleanliness maintenance
					Seasonality	• Product supply seasonality exists. Attributable to: lunar/ moon shine effect, illegal fishing practices resulting to over exploitation of fish stock. • The lunar effect: July - October - High production season; Nov - Feb Medium season; March - June low season (due to low water temperature).
					Challenges	• Inadequately / poor roofed space in the market. Traders use umbrellas to cover their products from sun, dust, rain etc.
						• Inadequate and dilapidated storage facility. Currently using dilapidated deep freezers scattered all over the place.
						• Problems with POS machine. Sometimes it fails to issues a receipt due to low network connectivity thus, delaying subsequent after-service activities like issuance of movement permit.
						• The current facility is temporarily located. Plans in the pipeline to relocate and build a new market infrastructure in the neighbourhood. Traders in place have been requested by Ilemela MC to make some financial contributions to this effect. Eagerly waiting to shift to a more decent market infrastructure. • Fish and fish products movement permit fee per consignment varies significantly in different areas (LGAs) surrounding Lake Victoria: Sengerema 40,000; Ilemela MC 30,000, Ukerewe 20,000; Magu 20,000 and Geita 20,000. Need to be harmonized for fair competition between traders. The idea of TFAA establishment was well received, hoping that aforesaid challenges will be addressed, thus improving capture fisheries and aquaculture and livelihood of those operating within its value chain.
						• **Recommendation** • The desire by the MLF to establish TFAA is the way to go in-order to unleash the inherent potential of fisheries and aquaculture sector for the benefit of those in the value chain and country economy at large. • Fast track the plan to build a modern fish market to solve overcrowding and cold storage storage facilities and sanitation issues.

3.1	Lake Victoria: Kirumba Fish market		MZA, Ilemela Municipal Council	Public	Capacity	• Capacity - Inadequately meeting the demand of its customers. • 19,690,177 kgs of fish and fish products worthy TZS 1,009,432,960 were processed and sold in 2023 to DR Congo, Rwanda, Burundi, Kenya, Zimbabwe and United Arab Emirates (UAE). There is a room for improvement on the amount processed with improvement on the status of key infrastructure including the market, cold storage and drying facilities. • Sardines: 100 stalls each occupying 5 traders= 500 traders • Fish: 100+ traders, Processors 100+ • Operations: Buying and selling, salting and drying, and packaging fish.
					Management	• There is a strong management structure from fish trader group within the market supported by experienced Fisheries staff from Ilemela MC (3 Diploma, 2 BSc) working hand in hand with management structure and guideline of the Ilemela MC.
					Amenities	• Water, electricity, fish processing and storage facilities are available. Weigh bridge, drying racks for fish only, no drying racks for sardine • Shower rooms and toilets are not adequate though.
					Seasonality	• As above - see 1 & 2
					Fees and Taxes	• Concerns were registered by traders on multiplicity of taxes and levies. • Market fee: stall fee TZS 50,000/month, • Cleaning fee: TZS 10,000/month.
					Challenges	• Too many taxes - refer to the list, consequently affecting operations, reducing profit margin and business sustainability. • Weigh bridge utilization policy is not uniformly enforced across all fish markets surrounding Lake Victoria e.g Bukoba and Musoma have no weigh bridge. Consequently, customers go to markets with no weigh bridges in place eg. (Musoma, Bukoba etc). • Multiple taxation of the same product from one stop to the next during transportation. • Offloading jet at the receiving site. Submerged under water during the rainy season causing offloading challenges. • Poor/inadequate and delayed facility maintenance by Ilemela MC. • Land use planning issues: Land reclaim initiatives by individuals has displaced and increased water levels at different sites along lake-shoes causing serious security threats to market infrastructure. For instance, offloading jet has been partially submerged causing difficulties in offloading the cargo. • Inadequate garbage collection capacity causing untidy surroundings and public health threats.
3.2	Receiving site	Lake	Ilemela Municipal Council	Public	Vessel types	• Wooden both Motorized and non-motorized/paddled, mostly 8 - 10 mts
					Capacity	• Can accommodate 5 boats, just for cargo landing/ offloading
					Taxes and fees	• Charged to both the vessel and operator

3.4	Drying facilities	Lake	Ilemela Municipal council	Public	Capacity	• More demand than supply of fish
					Fish and fishery Products processed	• Fish and fishery products for export to DR Congo, Rwanda, Burundi, United Arab Emirates, Kenya, and Zimbabwe.
					Fees and Taxes	• Fish, TZS 50,000 per month
						• Fishery products, TZS 10,000 per month
					Challenges	• Supply doesn't match with demand, hence deficit. • Inadequate garbage collection capacity • Inadequate supply of clean water for cleaning the floor and drying facilities.
4	Sameki Ltd		Mwanza	Private	Capacity	• Type of fish species kept: Nile Tilapia • Square cages of 6mx6mx4m dimension each produces 3MT/cycle of 8 months. Total number of square cages is 90 pcs producing a total of 270 MT / cycle • Round cages with a diameter of 10mts produces 12 MT/ cycle of 8 moths. There are 25 pcs of round cages, producing a total of 300 MT/ season. • Total production is about 570 MT/ cycle. Nevertheless, the supply doesn't meet the demand. • Fingerling production capacity is 3 million/ month. Demand is higher than ability to supply. • Fingerling price: Mono sex TZS 200/pc, mixed sex TZS 150/ pc.
					Beneficiaries	• 44 Aqua farmers from Dar es salaam, Dodoma, Mwanza, Bukoba, Katavi and Lindi operate 55 cages at SAMEK's site. SAMEK provides cages, fingerling and feeds on loan to be paid after harvesting the product. This arrangement has changed and improved the livelihoods of many farmers participating in SAMEK company aquaculture farming enterprise programme.
					Fees and taxes	• Numerous taxes are being charged, including PAYE, Ushuru wa Halmashauri 200 TZS/kg, Movement permit fee TZS 100/kg deemed very expensive. On-going discussion with relevant offices to get it reduced to TZS 25/ kg; packaging box fee 10,000 / 100kg box, TZS 50/ pc for processors; TZS 200/pc for freezing charges
					Challenges	• Feed cost is too high, sky-rockets each year. • Raw materials including feed are normally imported and purchased in US$, yet sales are done in local currency. Consequently, exchange rate difference affects the gross margin significantly. • Sometimes US$ is not readily available in the market when needed thus affecting procurement of raw materials. • Inadequate availability of fingerling. Used to import from Uganda. However, turned this challenge to an opportunity. Established a hatchery to produce fingerling. Can produce up to 3 million fingerling per month. • External market is available (DR. Congo) but has failed to seize the opportunity due to inconsistency in volume of production. • Upwelling of the Lake resulting to fish mortality and reduced production due to low oxygen concentration. The impact was amplified by improper deployment of cages. • Tax exemption processing sometimes takes too long due to lack of policy harmonization between sectoral ministries.

5	Lake Tanganyika: Kibirizi landing site	Kigoma Municipal Council (MC)	Public	Structures in place	• Receiving yard, drying / processing racks, auction /market building, and office building for fish traders operating locally and internationally in place. • Ice-flakes making machine, with a capacity of producing up to 4 tons/ day. Price of ice flakes per container of 20 lts is TZS 4,500. The ice-flakes market is readily available. It is apparent that substantial amount of revenue could be collected from ice flakes sales thus complementing revenue from conventional / traditional sources. • Landing site is currently not operational due to being submerged under water.
				Capacity	• Harvests about 150 tons of fish per year
				Amenities	• Water and electricity supply, toilets, and security guards available. • Beach Management Unit (BMU) for keeping the surrounding tidy, conflict resolution and illegal fishing control in place • Maintenance of the facilities is timely done as need arises by funds from Kigoma MC.
				Management/ staffing	• There are 3 fishery officers with B.Sc degree, 3 fees collectors, 3 security guards, and 1 overall landing site manager.
				Fees / taxes	• Fishing vessels license TZS 25,000/ year • Fishing licence 25,000/ year • Business license 11,00/ year • Produce collection charges TZS 500 per 20 lts container; 3000 per sack of 70 kg • Parking fee 10,000
				Vessels	• Wooden boats either motorized or non-motorized, size - up to 10 mts • There are 100 pcs of Motorized boats and 70 pcs non-motorized boats. • Vessel caring capacity - 1.5 tons • Fishing method used - Mostly legal method.
				Seasonality	• It exists, mainly due to lunar effect and temperature changes. May to July is a very low season.
				Challenges	• Landing site surroundings and facilities were seriously affected (submerged) by floods due to excessive rainfall experienced during the last rain season. • No reliable means of transport (motor-cycles) for fisheries officers. • No patrol boat for monitoring, control and surveillance (MCS).
6	Lake Tanganyika-Katonga landing site	Kigoma MC	Public	Structures	• Inadequately structured (It has no market/ auction shade, collapsed toilets). • Plan to install Ice flakes making machine of 15 tons/ day capacity through FISH4ACP Project
				Capacity	• 175 - 200 MT/ year
				Amenities	• Water and electricity supply available. •Currently there is no toilet in place. The existed structure collapsed due to excessive floods.
				Vessels	• There are about 90 pieces of boats both motorized and non-motorized of not more than 10 mts long.
				Challenges	• Inadequate amenities including toilets, market sheds, cold storage facility
				Management/ staffing	• Refer to Kibirizi.
				Fees/ tax	• Refer to Kibirizi.

7	Lake Rukwa: Muze Landing site	Rukwa	Public	Structures	• It has been operational for the last 10 years but no permanent landing site infrastructure in place. The area is inconvenient for post fishing operations during the rainy season with floods. The landing site is currently submerged. • Processing/ drying facilities - temporarily built during harvest season using locally available materials. • Processing is done by smoking; salting; sun drying and frying for local and external/ foreign market destination being DR Congo and Zambia. • Storage facilities - No cold rooms in place. Fishermen/ traders uses ice blocks orreefer trucks.
				Capacity	• Harvests: On average 3 MT/day, about 2,000 MT / year, selling price ranges between 7,000 to 10,000 per 20 litre containers (fresh fish)
				Amenities	• No running water, no electricity. Maintenance (if any) is collectively done, organized by fisherman group leadership.
				Staff	• One fishery extension officer, two revenue collectors, one Natural resources management officer working closely with fishery staff to ensure protection of the lake protected area.
				Fee collection	• Vessel fee collected by district council, 20,000/ year • Vessel fee collected by TASAC 25,000 - 65,000/ year, depending on the size of the vessel • Fishery license 20,000/ year • Fish trader license 25,000/ year • Fish products charges 100/ kg of fish
				Vessels	• Motorized boats 15 pcs, size not more than 10mts • Non-motorized boats, 80 pcs. Size not more than 10mts
				Challenges	• Multiple taxation, the case of fishing boats (council and TASAC[1]) • Sporadic cases of Illegal fishing - fishing at protected areas, using mono-filament nets. • Lack of essential landing site infrastructures causes operation inconvenience and predispose operators to safety and health risks. Also shifting of landing site due to flooding of drying • Accessibility issues. Poor roads significantly affect the business especially during the rainy season. • Diminishing fish size and quantity over time due to overexploitation and illegal fishing. • Lack of cold storage facility/ ice plant facility-traders source ice from nearby village where there is electricity • Road conditions-difficult to reach landing site-resulting in high transport costs and product transportation delays resulting to post-harvest loses.
				Seasonality	• High season Nov-March, low season: May-September.

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8	Mtera dam: Migoli Fish Market - Mtera	Iringa DC	Public	Capacity	• Harvest: High season: Jan-May (50-60 MT); Low season Jun-July less than 5 MT • The market was built by Iringa DC to provide enabling business environment for fish and fish traders operating in Mtera dam. The district council used to collect about TZS 17 Mil - 20 Mil/ month (2015-2017) from fish and fish products business, hence the project was considered highly justifiable. But from 2018 to-date the council is collecting TZS 17 - 20 Mil per year. • The market structure was built 10 years ago, but it has been idle, (not utilized for intended purpose) due to inadequate fish harvests. • Inadequate supply/ harvest is attributable to: reduced water levels due to anthropogenic activities such as irrigation agriculture, increased livestock population in the basin; fisheries receiving least priority, hence reduced fisheries resources.
				Fees and taxes	• Fishing vessel licence by district council TZS 22,000/ year • Fishing licence TZS 20,000/ year • Business licence TZS 30,000/ year • Produce charges (dried): TZS 4000 - 5000 / 50kg pack. • Produce charges (fresh): TZS 100 per kg
				Amenities	• Electricity, toilets and water is available.
				Maintenance	• No timely response to maintenance requests submitted to District council for their consideration
				Landing site	• There are 10 sites, of which only two sites are operational (Migoli and Izazi). They are temporary in nature, and don't have essential structures associated to landing sites hence inconvenient to fisherman and traders, and threatens public health.
				Cold storage facilities	• Housing structure with 20 rooms for installation of refrigerators were constructed but observed not to be fit for the intended purpose due to poor design.
				Staffing	• There is one Fisheries officer serving six villages surrounding the dam. • He is supported by the BMU in conflict resolution, and prevention/ control of illegal fishing practices.
				Vessels	• Non - motorized, less than 4 meters • Fishermen indicated interest to own motorized boats thus advised on how to access Ministry fishing gear loans
				Challenges	• Inadequate fish stock, with diminishing size. There is a need to consider regulating fishing activities including stopping fishing activities for at least three months each year. • Insecurity threats associated with hippo and crocodile attack. • Water use conflict: Decrease in water levels thus affecting fish breeding hence diminishing fish population • Landing site-No supporting infrastructures • No patrol boat to facilitate MCS • Vandalization of facility: 12 ceiling fans, fence line, and gate have been vandalized.

II. leg 2: Tanga, Dar Es Salaam, Lindi

S/N	Institution/ infrastructure type	Lake/See/ Dam/Oth-ers	Location	Owner-ship	Area of Interest	Findings/Observations
1	Sahare: Kasera Landing site	Sea (Indian Ocean)	Tanga	Public/ LGA	Capacity	• Adequate for current volume • Processing capacity/Day: 400-500 buckets [2] of sardines.
					Value Chain	• Fishermen: • Boat/vessel owners: • Processors: 40 processors
					Management	The site is managed under BMU[3]
					Amenities	• The landing site has toilets • No Water, No electricity, no storage facilities • Few Dilapidated drying rack • Drying racks (not in good condition)
					Products	Sardines
					Seasonality	There are low and high seasons and in the recent time the availability of fish has remained a challenge (June, July and August are low season)
					Types of vessels	• 250 wooden boats which are motorized with size - up to 10 mts and no non-motorized vessels • Vessel capacity: 500 buckets of 20 kg (10,000Kg) • Vessel length >=10M:250. <=11M:0
					Fees & taxes	Fishermen and Vessel Fees: • Fishing Vessel license by district council: TZS 20,000/= /vessel • Fishing license: TZS 20,000/= per Fisher • TASAC: Marine vessel license: >10 miters: TZS 110,000 per vessel • LGA: Fish Levy: 3% of sales • Boats from outside the district: - anchoring fee: TZS 2,000/= per vessel (No receipt issued) Fees charged to Processors: • LGA: Fees on transporting fish outside region: TZS 50/= per Kg • Fish Business license: TZS 15,000/=
					Pricing:	• Fresh sardines: TZS 50,000-60,000/= per bucket of 20 kg • Dried sardines: TZS 8,500/= per Kg
					Payment Method	Payment made through Point of Sale (POS)
					Beneficiaries	Local community and surrounding districts/regions: Pwani, Lindi regions.
					Challenges	• When fishermen of this landing site land to a different landing site of different or same district are charged TZS 20,000= parking/anchoring fee (Nanga) • High post-harvest Loss during rainy season due to lack of drying and storage facilities which affects their business • No rescue body, facilities/equipment • There is an element of illegal fishing using beach seine nets.

2 1 Bucket= approximately 20KG
3 BMU= Beach Management Unit

2	Machui: Aquaculture Development Centre (Mariculture)	Hatchery for various marine species	Tanga	Public/MLF	Capacity	• Produce marine species fingerlings (crabs, prawns, milk fish and sea cucumber) • Seeds: target is to produce 1 million per year • Now the centre is under renovation and construction.
					Management	• By MLF • 4 staff (3 bachelors and 1 diploma) • Staff: Not adequate (No laboratory technicians, Genetics expert and store keeper
					Amenities	• Concrete tanks: 6 tanks • Plastic tanks: 4 each 5,000 litres • Lab and Laboratory equipment (microscope and consumables) • Electricity • Solar power 66 panels - (under construction) • Water • Toilets (under construction) • Two Vacuum pumps (Air pressure pump (to pump water from the sea to the tank) • Two protein skimmers • Solar pump • Nursery ponds
					Products	• Production of various marine species (Currently only crabs, sea cucumber & prawns) • Provide training and extension services.
					Prices	• Prawns: TZS 400/= per seed • Fin fish: TZS 100-150/= • Sea cucumber: TZS 400-500/=
					Payment Method	POS
					Beneficiaries	Fisheries community
					Challenges	• This facility was built in 2014 and only started operations in 2022. • The center has no transport (motor vehicle or motor circle) • Nursery ponds/pens are lacking • Understaffing • No concrete tank for reserving water

3	**Kipumbwi (Landing site)**	**Sea**	**Pangani, Tanga**	**Public/LGA**	**Capacity**	• Adequate for current volume • Number of Fishermen: 2,700 • Number of fish and fishery product processors: 1,200 • Installed electric drier capacity/Hour: 18 buckets of 18 kgs each
					Value Chain actors	• Fishermen: • Processors: can process 6-30 tons/day depending on the season
					Management	The site is managed under BMU-25 members including processors, fishermen and vessel owners.
					Amenities	• Office building (used as office) • Building for drying plant (not in operation) • Electric Fish drying Plant (Not operation since installation) • Sardines drying racks • The landing site has toilets • Water • Electricity • No storage facilities
					Products	Mainly Sardines, but also other fish species (Sardines and fishes (small and large pelagic)
					Seasonality	There are low and high seasons and in the recent time the availability of fish has remained a challenge.
					Types of vessels	• No of vessels (Local): 15 • No of vessels (from outside Kipumbwi: 400 • Motorized vessels: All • Non-motorized: 0 • Vessel capacity: 5-7MT • >=10M: All • <=11M:0

					Fees & taxes	**Fishermen and Vessel Fees:**
						• LGA: Fish Levy of 5% of fish sales of which:
						• 2% is retained by the village)
						  • 2% is given to the village as collection fee
						  • 10 of 5% is given to BMU
						• Fishing Vessel license by district council: TZS 20,000/= (Vessel <11M)/year
						• LGA: Fishing license: TZS 20,000/=/fisher
						• LGA: Fish trading/business license: TZS 10,000/=
						• MLF: Export royalty 10 U$ cents per 1 kg
						• Movement permit by MLF: TZS 50/= per 1 Kg
						• LGA: Fees on transporting fish outside region: TZS 20,000/= for 100Kg
						• LGA: parking fee/nanga: Vessels from outside the district: TZS 10,000/= per season.

					Payment Method	By POS
					Challenges	• No rescue services and facilities e.g boat • The installed electric drier is not equipped/designed to handle the type and the volume of fish received at site. • BMU is unable to run the building after 2% initially retained by BMU as a collection being transferred to the village. • High post-harvest losses of fish especially during the rainy season due to insufficient processing and drying facilities • Lack of capital to establish their own fish business. Mostly they depend on Congolese • Presence of multiple charges and fees • Absence of MLF officer at the vicinity areas for fees and taxes collection.

4	**Seaweed Cafe**	**Seaweed processor**	**Dar Es salaam (Bunju, Ki-nondoni)**	**Private Processor**	**Capacity**	• 10 kg per day
					Value Chain	• Seaweed farmers • Seaweed agents • Seaweed export traders
					Management	• 10 staff
					Amenities	• Milling plant • Blender • Cooking stove (4 plates) • Freezer (for Jelly products)
					Products	• Nutritional Processed seaweed products.
					Pricing:	• Purchase price from farmers: TZS 1,000/= per kg of raw seaweed. • Sales price: TZS 15,000 – TZS 60,000 per kg (depending on the product and quantity).
					Market	• Local: 40% of sales • Export: 60% of sales
					Challenges	• Poor quality of raw material (seaweed) • Availability of raw materials (especially for the purple type which is a preference of importers) • Lack of quality standards by Tanzania Bureau of Standards on various products produced by the company hindering both local and export sales (There is only standards for raw seaweed NOT for seaweed processed products). • Barcode is controlled by agents and therefore difficult to access.

5	**Bahari Food Limited**	**Fish processors**	**Dar Es salaam (Mlalakua, Kinondoni)**	**Private Processor**	**Capacity**	• Processing plant
						  • Installed processing capacity: 15MT per day
						  • Utilized capacity: 2MT per day
						• Ice Plant:
						  • Installed capacity: 15MT/Day
						  • Utilized capacity: 2MT/Day
						• Export capacity: 25MT per month

					Value Chain	• Fishermen • Logistic companies • Packers (packaging materials)

					Type of Vessels:	• No of vessels: 2
						• Vessel length:
						  • Vessel 1: 25 Meters
						  • Vessel 2: 23 Meters

					Management	• Staff: 13 • Administrative: 4 • Factory 23 • Technicians: 3 • Drivers: 2 • Receptionist: 1
					Amenities	• Fish processing machines with installed capacity of 15MT/Day • Ice plant (installed capacity of 15MT/day • Cold room: 5 rooms • Chiller: 1 • Office and processing building
					Products	• Prawns • Octopus
					Pricing:	Was not disclosed
					Market	100% export market

					Challenges	**i. non-Administrative:**
						• Lack of raw materials
						• High Export Royalty at $1.20 cents per Kg for prawns and $0.80 cents per kilo for other products (Compared to neighboring and competitors: Mozambique-$0.25 per kg across all products, Kenya-$.050 per kg across all products.
						• Asia (China and India) have subsidized fish exports
						These high royalties reduce competitiveness in the world market (For each 20 Ft container of prawns, the company pays a royalty of $30,000), also discourage investment
						• Too many licenses (TZS 29.1 mil/year)
						  • Fishing license: TZS 7.708M
						  • Fishing Vessel license: TZS 7.901M
						  • Prawn fishing: TZS 13.49M
						• Not allowed to troll on territorial waters (continental shelf with abundant resources not utilized)
						ii. Administrative:
						  Licensing process: The chain is bureaucratic and waste productive time.
						  ○ It starts with LGA where the tax clearance of the application year is required. Tax clearance is only issued on the previous audited financials. So, this is an immediate bottleneck. The reason for going through LGA is for the LGA to introduce the Processor. The processor is already known at the ministry from previous licenses and the ministry inspect the Processor every three month. This process can be made redundant.
						  ○ Then MLF who are to inspect the premises before license can be issued. MLF inspects these premises every three months and therefore September inspections can be used to issue provisional license.
						  ○ Comment from the Processor: See the possibility of utilizing the Mwl Nyarere hydroelectric dam for aquaculture production

6	**Kivukoni Fish Market (Landing site and Fish Market)**	**Sea**	**Dar Es salaam, Kivukoni**	**LGA, Dar es Salaam City Council**	**Capacity**	• Installed capacity: 1,200 People • Patrons per day: 10,000-11,000 People • Tourists per day: 200-300 People • Quantity of fish received: 27,000MT per day • Although several expansions have been made and still ongoing, the market capacity is overwhelmed
					Value Chain actors	• Traders: 3,600 • Fishermen:500 • Vessel owners • Processors: 0 • Auction brokers

					Management	• Staff: 158
						  • Casual: 122
						  • Permanent: 36
						• No of staff is inadequate: Only 8 fisheries officers who are responsible for revenue collection. A total of 16 fisheries officers are required.
						• The facility is governed under a Board of Directors

					Amenities	• Market buildings • Shops (Popularly known as Frames) • Exhibition facilities (for tourists) • Toilets – 3 Units (1 built by MLF) • Patrol/surveillance Boats: 2 Units • Containers: 6 (installed by private sector) • No cold room facilities (under plan for FY 2024/25) • Garage for fishing vessels • Electricity • Water (Mains and wells) • Frying fish area • Resting area • Processing/cleaning area • Packaging area.
					Monthly collections	• TZS 150 million (Average)
					Seasonality	• November to April is a high season (Mavuvi) • May to September: Low season
					Types of vessels	• Motorized and non-motorized boats. • Most boats landing at Kivukoni Fish market landing sites are from Kigamboni. **(Statistics for the boats were not available).**
					Fees & taxes	• LGA: Fish levy: 3% of sales • LGA: stalls fee (Vizimba): TZS 500-1,000 per day • LGA: Rents- shops (Vibanda): TZS 50,000-100,000 per month • LGA: Rent- Offices: TZS 100,000 per month • LGA: Auction Brokers: TZS 10,000 per month.

					Payment Method	POS
					Challenges	• The market is overwhelmed and is no longer adequate to serve the number of traders and patrons • Inadequate staff, especially fisheries officers who are responsible for revenue collection, which affect revenue collection and forcing the management to use casual labor for revenue collection. • Sand filling problem: The market fills with sand. It is the responsibilities of Tanzania Port Authority (TPA) to remove the sand, but in most cases TPA is non responsive. • Weak Database/Statistics: need to update database eg for capturing daily fish prices, Number of fishermen, quantity sold • Illegal fishing still persists- methods such as use of dynamite, beach seine, and undersized fishnets.

7	**Kilwa Masoko (landing site)**	**Sea**	**KIlwa Masoko**	**LGA, Kilwa Masoko**	**Capacity**	• The facility is adequate for current volume.
					Value Chain	• Fishermen: • Boat owners • Processors:
					Management	The site is managed under BMU
					Amenities	• Auction platform • Water • No electricity • No storage facilities • Toilets (Under construction) • Mosque • Drying racks (vichanja) – 20 mts- 20 units • Cooking Stoves (jiko): 15
					Products	Sardines and other fish species.
					Seasonality	There are low and high seasons and in the recent time the availability of fish has remained a challenge.

					Types of vessels	• No of vessels:
						  • Motorized Boats: 25
						  • Non-motorized boats (Mitumbwi): 41
						• No of vessels (from outside Kilwa masoko:
						• Motorized vessels: 56
						• Non-motorized: 10
						• >=10M: 27
						• <=11M: 22
						• Capacity per vessel:
						  • Fibre boat:150kg/day
						  • Other boats (average): 30 baskets

					Fees & taxes	Fishermen and Vessel Fees: • LGA: 3% (collected by POS) of fish sales of which: • 2% is retained by BMU)- collected manual • LGA: Parking fee (Nanga): TZS 50,000 collected by BMU. • Drying racks (vichanja): TZS 2,000 per month. Drying racks are owned by private individuals and only paying rentals for the space • Cooking stoves (Jiko): TZS 3,000 per month • LGA: Vessel license: TZS 23,000/= (Vessel >10M) • LGA: Fishing license: TZS 23,000/= • LGA: Introduction by BMU: TZS 2,000/=(Retained by BMU).
					Payment Method	By POS
					Challenges	• No rescue services and facilities • Lack of drying facilities (some existing drying racks /vichanja were spoilt during the heavy rainy season) • No electricity (as the available structures are considered temporary). • Notable illegal fishing (beach seine and mideke – an iron bar made as a catapult and used to stab the fish)

8	**Seaweed farmers** **(Maryam Rashid Rep of Mwani Kwanza Group with 20 members)**	**Sea**	**Kilwa Masoko, Mnazi Mmoja**	**Private seaweed farmer**	**Capacity**	• 120 lines (Kamba each 20 meters) • 1 line produces: 50kg (wet) • Wet to dry ratio: 5:1 • Seaweed species grown: spinosum and cottonii.
					Value Chain	• Farmers • Seaweed processors • Input suppliers (lines/Kamba)
					Management	• Own farm • Labourers who are compensated by providing seaweed seeds (prices are too low to afford cash payment).
					Amenities	• No drying racks • Storage at own homes.
					Taxes & Fees	No taxes or fees/levies charged to seaweed farmers.
					Products	• Dried seaweed
					Pricing:	• TZS 700/= per Kg
					Market	• Direct sales to the local market • Where farmers have contract farming, the sales are done direct to the contractors who provided inputs (lines/Kamba)
					Challenges	• Inability to secure inputs (lines/Kamba) due to poor/low prices received • Drying locations/platform (Harvested seaweed is dried on the ground/sand resulting to poor quality and sometimes loss during rainy seasons) • Farmers lack knowledge on the best practice and value addition • Loss of seaweed where fishermen drag their boats across seaweed farms as they return from fishing • Climate change which makes the sea very hot for the seaweed and the farmers to withstand • Lack of protective gears resulting on accidents and poisoning through stinging by poisonous species • No rescue services during emergencies • Low price per kg of harvested dry seaweed.

General Recommendations

S/N	Area	Observations	Recommendations
1	**Lake (Victoria/ Rukwa)**	Sporadic cases of illegal fishing exist: • (e.g. Gizagiza where fishermen pretend to be fishing sardines (dagaa), but actually fishing Nile perch) in the case of Lake Victoria. • Similar illegal activities were reported in lake Rukwa and across Indian ocean (Sea) through use of beach seine (kokoro) and mideke.	• A need for reliable mechanism to control illegal fishing, including strengthening the capacity of BMU and reliable patrol boats in our water bodies for monitoring and controlling illegal fishing activities. • Establishment of TFAA: TFAA structure is designed with a Directorate of Monitoring and Evaluation whose main function among others will be controlling of illegal fishing.
2	**Fishery production, processing and marketing (Lake/Sea/Dam)**	Multiple and sometimes duplicate fee charges which reduces competitiveness of the local products in the global market featured out as a major concern to the growth and survival of the industry. Cases in example include: • Fishing boat, where it is charged by both the district council and TASAC. • High fish export royalty on processed fish with a case in example being $1.20 per Kg charged on prawns and $0.80 per kilo for other products. • Multiple licenses on fishing, resulting on increased operating costs (Fishing license: TZS 7.708M, Vessel license: TZS 7.901M, Prawn fishing: TZS 13.49M).	• Harmonize the regulations (charges, fees, and treatments) to create a fair business environment.
3	**Lake**	High cost of fish feeds, fingerling and cages is limiting the investment and growth of aquaculture subsector.	Reduce import duty and other taxes on fish feeds, raw materials for compounding fish feeds locally, and machineries to attract privates sector investment in fish feed production.
4	**Administrative**	The negative impact of high import duty tax ($2.5/kg). It reduces import of fish and fish products for domestic consumption, resulting in consumption of Nile perch in local markets which are important raw materials for processing plants and export market.	• Importation contributes towards bridging the fish availability gap which subsequently will reduce over exploitation of fishing in our lakes. • Consider reduction of fish import duty. This will result in availability of fish into domestic markets-eventually supply of raw materials to local processing plants will improve, leading to export surge hence Government benefits from increased forex generation, while creating sustainability of fish resources.
5	**Lake**	The impact on fish stock depletion in our water bodies is real. Fishermen reported decreasing fish size and quantity harvested.	Fisheries resources are renewable. The Ministry of Livestock and Fisheries to continue and intensify her efforts on: • Improved control on illegal fishing and over-fishing • Improved capacity in terms of human and financial resources, use technologies and involvement of community in fisheries resources management and protection.
6	**Lake (Victoria, Tanganyika)**	Submerged landing sites in Lake Victoria, Tanganyika and Rukwa, causing incontinences to fishermen and traders. The submerging of the landing site is the result of poor judgement in site selection and construction.	Future infrastructure development to conduct thorough environment impact assessment to determine any future potential environmental risk to allow appropriate mitigation, including choosing appropriate site.
7	**Lake/Sea/Dam**	Fish market infrastructures is characterized by inadequate space, dilapidates storage facilities, lack of amenities such as electricity and clean running water.	The establishment of TFAA is aimed and designed to address these challenges by designing, developing fish market infrastructure with appropriate utilities and ensuring their proper maintenance.
8	**Lake/Sea/Dam**	High chances of post-harvest lose due to inadequate or non-existence of cold storage facilities, and processing facilities.	The establishment of TFAA is aimed to address this challenge by: • Optimization of idle infrastructure • Ensure proper maintenance of infrastructure. • Development of new infrastructure

9	**Dam/Sea**	Poor design and or wrong location of infrastructures. • Case of structures supposedly to keep refrigerators/ cold room in Mtera dam and the case of landing sites. • Fish drying plant at Kipumbwi whose design does not fit the type of fish and its capacity also being too small to accommodate the volume. • At Masoko Pwani (Kilwa masoko), market facility built by MLF and handled over to LGA and equipped with an ice plant, auction building, standby generator and other key amenities remain out of operation since its completion in 2013.	• One of the main purposes of establishing the Authority (TFAA) is to ensure optimal management of fisheries infrastructure, including appropriate design and maintenance. • TFAA organization structure is designed with Infrastructure Development & Management which is expected to deal with this challenge head on. • TFAA there will have to ensure that infrastructure are appropriately design to fit the purpose, including appropriate location, equipment and making sure the facilities are put to use.
10	**Lake/Sea/Dam**	Delayed responses to infrastructure maintenance requests for public owned facilities. The Municipal/ district council collects fees/ charges but do not respond timely to maintenance requests when need arises.	As above
11	**Lake/Sea/Dam**	Increased demand for credit to acquire of improved fishing gears such as motorized boats.	The government through the Bank of Tanzania is currently in a process of establishing Agriculture Lending Policy which is expected to provide guidance on agriculture lending and improve on credit access to agribusiness (agriculture, fisheries and livestock sectors).
12		There is a huge market for fish and fish products both within and outside the country – DR Congo, Zambia etc.	Once again, establishment of TFAA is designed with Trade Facilitation & Investment Promotion unit, which will facilitate the coordination of market and market development.
13	**Lake/Sea/Dam**	Revenue collected from aquaculture and capture fish is far less compared to the potentials of water bodies surrounding Tanzania.	• Establishment of TFAA is aimed at optimizing the potential of this sector. • TFAA to unsure availability of fingerlings, feeds, cages and appropriate infrastructure • Ensure harmonization of taxes related to aquaculture equipment and feed to allow more flow investment to the subsector.
14	**Lake**	Tax / fees/ tariff introduced can result into unintended negative impact. The case of import duty on Sangara, variable fees on fish and fish products in Mwanza, Bukoba and Musoma.	There is a need to harmonize these tariffs and taxes. A coordination is required between various ministries (MLF, Ministry of Finance, LGA) to harmonize necessary instruments that will enable harmonization of such taxes. This role will be led by TFAA.
15	**Processors**	Lack of quality standards by Tanzania Bureau of Standards (TBS) on various seaweed products hindering both local and export sales. TBS only have standards for raw seaweed.	MLF to engage with the Ministry of Industry and Trade (whose portfolio TBS falls under) to fast-track standardization of processed seaweed products.
16	**Administrative**	Bureaucratic fishing licensing process where the process starts at local government with a requirement to submit tax clearance for the application year. **Tax clearance is only issued on based on the previous year audited financials.** The reason for going through LGA is for the LGA to introduce the Processor, whereas the processor is already known at the ministry from previous licenses and through Ministry's quarterly inspections.	MLF inspects these premises every three months (quarterly) and therefore September inspections can be used to issue a **Provisional License** that will avoid business disruption and ensure business continuity.
17	**Sea**	**Seaweed farmers:** Drying locations/platform (Harvested seaweed as currently is dried on the ground/sand resulting to poor quality and sometimes loss during rainy seasons)	Support construction of seaweed drying rakes (by Government, DPs or private investors).
18	**Sea**	Seaweed farmers lack knowledge on the best practice and value addition	MLF to develop capacity building programs that will equip seaweed farmers with requisite knowledge on best farming practise and value addition.

19	**Sea**	Loss of seaweed where fishermen drag their boats across seaweed farms as they return from fishing	• BMU to be empowered to provide control as is the case with illegal fishing. • LGAs establish spatial planning to accommodate various marine water users.
20		Climate change which makes the sea very hot for the seaweed and the farmers to withstand	Develop and scale-up deep-sea seaweed farming technologies.
21		Low seaweed prices per kg	Encourage input loan schemes such as nylon ropes Enhance marketing linkages and search Encourage seaweed processing and promotion.
22	**Sea**	Lack of protective gears resulting on accidents and poisoning through stinging by poisonous species.	• Encourage input loan schemes • Facilitate the farmers with protective gears through working capital loan
23	**Sea**	Beach Management Units (BMU): • It was noted that most BMUs are not well informed of their responsibilities as well as have little skills on leadership and governance • It was noted of conflicts within the BMU members that may lead to poor functioning of unit and impact revenues where BMU is the collector on behalf of LGA (Case in example is Kipumbwi where collection had to be entrusted the village council)	• Capacity building to BMU on their roles, leadership, governance and conflicts resolution

Annex 1: List of stakeholders contacted during the field study

S/N	Name/Company	Region	Public/Private	Value Chain	Water Body (Lake/sea/dam)	Contact Person	Position	Contacts
1	Sahare: Landing Site	Tanga	Public	Fishermen, processors, vessel owners	Indian Ocean	Mzee Papara	Processor	0785 505 504
					Indian Ocean	Skandal	Processor	0769 215 162
2	Machui: (Acquaculture Development Centre (Mariculture)	Tanga	Public	Hatchery for various marine species				
3	Kipumbwi - Pangani - Landing Site and Market	Tanga	Public	Fishermaen, processors, vessel owners	Indian Ocean			
						Emmanuel Msuku	BMU member/process	0717 855 622
5	Seaweed Café	Dar Es salaam	Private	Seaweed farmers, Agents & Export traders		Fatuma Mang'ena	Chief Technical Officer	+255 624 776962/745 675374
6	Bahari Food Limited - Fish Processors	Dar Es salaam	Private	Fishermen, packers/packaging materials	Indian Ocean			
7	Kivukoni Fish Market - Landing Site & Market	Dar Es salaam	Public	Fishermen, Trders, vessel owners, Auction brokers	Indian Ocean	Selemani Abdalla Mfinanga	General Manager	+255 715 134 040
8					Indian Ocean	Shamte	Fisheries Officer	0678 144 069
9	Kilwa Masoko - Landing Site	Kilwa	Public	Fishermen, Processors, vessel owners	Indian Ocean	Swabri Abdala Hamisi	BMU	+255 715 482 842
10	Seaweed farmer	Kilwa	Private	Farmers, processors, input traders	Indian Ocean	Mariam Rashid	Member, Mwani Kwanza Group	+255 784 029 696
11	Tanzania Fish Processors Ltd	Mwanza	Private	Processor, Exporter-Nile perch	Lake Victoria			
12	Kamanga Ferry Fish Market	Mwanza	Public	Processing, Market	Lake Victoria	Raphael Magambo	Group Chairperson	0757968393
						Bungusi M. Migire	Group Secretary	0782050145
						Tatu Hamis	Fisheries Officer	0767462229
						Kasoli Sabato	Member	0784807073
						Kavuye Omary	Member	0763742128
						Charles Kisamba	Member	0767005577
						Zidina Yusuph	Deputy Chair	0786920800
						Peter Vicent	Member	0759661028
						Yona Tomas	Member	0754424979
						Sijaona Mnyamila	Accountant	0753636080
13	Kirumba Mwaloni Fish Market	Mwanza	Public	Landing site, processing, market	Lake Victoria	Fikiri Magafu	Market chair	0782 928 559
		Mwanza	Public	Landing site, processing, market	Lake Victoria	Sulaji Swadi	Market Accountant	0762 674 542
		Mwanza	Public	Landing site, processing, market	Lake Victoria	Shaban Hamis	Group Secretary	0768 461 159
		Mwanza	Public	Landing site, processing, market	Lake Victoria	Khalid Athuman	Processor	
		Mwanza	Public	Landing site, processing, market	Lake Victoria	Erasto Balosha	Group Chairperson	0783 338 902
		Mwanza	Public	Landing site, processing, market	Lake Victoria	Simeo Bundara	Trader	0674 103 195
		Mwanza	Public	Landing site, processing, market	Lake Victoria	Kinoki Nyasimbo	Market leadership Mer	0763 496 688
		Mwanza	Public	Landing site, processing, market	Lake Victoria	Mustafa Mataba	Group Chairperson	0768 461 159
14	Sameki Aquaculture Farm	Mwanza-Sengerema	Private	Aquaculture farm	Lake Victoria	Edgar Kagashe	Manager	
15	Kibirizi Landing site	Kigoma	Public	Fishing, Processing, Market/ Traders	Lake Tanganyika	Edmund S. Kajuni	Fisheries officer	0764880748
16	Kitonga Landing site	Kigoma	Public	Fishing, Processing, Market/ Traders	Lake Tanganyika	Edmund S. Kajuni	Fisheries Officer	0764880748
17	Muze Landing site	Rukwa	Public	Fishing, Processing, Market/ Traders	Lake Rukwa	Andrew Mwambalasa	Group Chairperson	0763292111
						Hilda Mudu	Fisheries Officer	0757 151 176
						Tunza A. Isela	Processor	0763196924
18	Migoli Fish market and landing site	Iringa	Public	Fishing, Processing, Market/ Traders	Mtera dam	Baraka J. Uchimbira	Fisheries Officer	0757809134
						Musa Chenjelai	Chairman - BMU	0752339305
						Alto Ngatunga	Group Chairperson	0768536388
						Francis Ngongi	Chair- Landing site	0767415026

THE UNITED REPUBLIC OF TANZANIA
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