THE UNITED REPUBLIC OF TANZANIA
NATIONAL AUDIT OFFICE

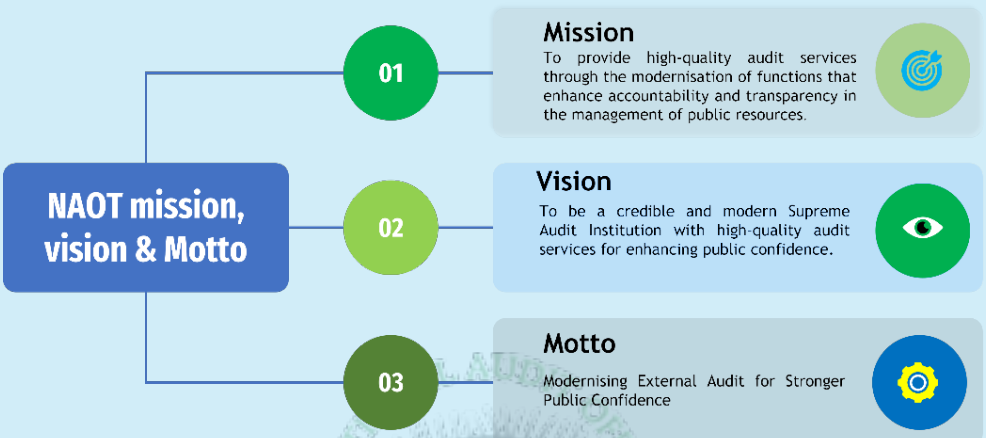
ISO 9001:2015 Certified

PERFORMANCE AUDIT REPORT ON THE MANAGEMENT OF FISHERIES RESOURCES IN TANZANIA

CONTROLLER AND AUDITOR GENERAL
MARCH, 2024

About the National Audit Office

The statutory mandate and responsibilities of the Controller and Auditor General are provided for under Article 143 of the Constitution of the United Republic of Tanzania, 1977, and in Section 10 (1) of the Public Audit Act, Cap. 418.



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PREFACE

Section 28 of the Public Audit Act, CAP 418 gives mandate to the Controller and Auditor General to carry out Performance Audit (Value-for-Money Audit) to establish the economy, efficiency and effectiveness of any expenditure or use of resources in the Ministries, Departments and Agencies (MDAs), Local Government Authorities (LGAs) and Public Authorities and Other Bodies which involves enquiring, examining, investigating and reporting, as deemed necessary under the circumstances.

I have the honour to submit to Her Excellency, the President of the United Republic of Tanzania, Hon. Dr. Samia Suluhu Hassan, and through her to the Parliament of the United Republic of Tanzania, the Performance Audit Report on the Management of Fisheries Resources in the Country.

The report contains findings, conclusions, and recommendations directed to the Ministry of Livestock and Fisheries (MLF) and the President's Office - Regional Administration and Local Government (PO-RALG) through Local Government Authorities (LGAs). MLF and PO-RALG had the opportunity to scrutinize the factual contents of the report and comment on it. I wish to acknowledge that discussions with the auditees were useful and constructive.

My Office intends to conduct a follow-up at an appropriate time regarding actions taken by the audited entities concerning the recommendations in this report.

I would like to thank my staff for their commitment to preparing this report. I also acknowledge the audited entities for their cooperation with my office, which has facilitated the timely completion of the audit.

Charles E. Kichere
Controller and Auditor General
United Republic of Tanzania
March, 2024

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LIST OF ABBREVIATIONS AND ACRONYMS

BMU	Beach Management Unit
CSO	Civil Society Organizations
DSFA	Deep Sea Fishing Authority
DSM	Dar es Salaam
e-CAS	Electronic Catch Assessment Survey
EEZ	Exclusive Economic Zone
FETA	Fisheries Education and Training Agency
FRP	Fisheries Resources Protection
GDP	Gross Domestic Product
INTOSAI	International Organisation of Supreme Audit Institutions
ISSAIs	International Standards of Supreme Audit Institutions
IUU	Illegal, Unreported and Unregulated
KM^2	Square Kilometre
LGAs	Local Government Authorities
LVFO	Lake Victoria Fisheries Organization
M&E	Monitoring and Evaluation
MCS	Monitoring Control and Surveillance
MLF	Ministry of Livestock and Fisheries
MPRU	Marine Parks and Reserves Unit
MT	Metric Tonnes
NGO	Non-Governmental Organization
NWG	National Working Group
OC	Other Charges
PO-RALG	President's Office - Regional Administration and Local Government
SDGs	Sustainable Development Goals
TAFICO	Tanzania Fishing Corporation
TAFIRI	Tanzania Fisheries Research Institute

DEFINITION OF TERMS

Aquaculture	The practice of breeding, raising, and harvesting of aquatic organisms in a controlled aquatic environment (marine, brackish water or freshwater) until they attain the appropriate size needed or reach the desired sizes
Artisanal fisheries	Categories of fisheries that are of small scale and not commercially orientated, using a relatively small amount of capital and in which fishers usually have a traditional involvement with fishing
Open Access	Open access fisheries" means there are no restrictions or limitations on access to the fishery resources. In other words, anyone can fish in these waters without any specific regulations or controls.
Beach Management Unit	A group of devoted stakeholders in a fishing community whose main function is the management, conservation and protection of fish in their locality in collaboration with the government
Beach Seine (BS)	A fishing net designed to hang vertically in the water, the ends being drawn together to the beach while the foot rope drags through the fishing ground towards the beach, sandbank, shallow waters area
Capture fisheries	All kinds of removal of aquatic organisms from natural habitats in both marine and freshwater environments
Catch Assessment Survey	Refer to the fisheries sector's continuous collection, processing and production of catch and effort statistics.
Compounding Registry Book	It is a special book that documents the actions of those who violated fishing regulations and by-laws and agreed to pay a fine rather than face criminal prosecution in court.
Control measure	Any action or activity that can be used to eliminate hazards or reduce their impact or occurrence to acceptable levels
e-CAS	A software developed to manage fish catch and related statistics

Exclusive Economic Zone	An ocean area generally extends 200 nautical miles (230 miles) beyond a nation's territorial sea, within which a coastal nation has jurisdiction over living and non-living resources.
Fish landing station or landing site	A designated site along the beach where fishers land and sell their catch
Fishing vessel	A boat or other aquatic or amphibious craft or vehicle used, outfitted or designed for gathering, processing or transporting fish, whether operating on, above or below water.
Frame Survey	A census-based approach in which data is collected on all fishing vessels and gear (at all fishing sites) could potentially operate within the estimation context or stratum. It also provides the opportunity to record supplementary information useful for planning and implementation purposes, such as fishing patterns and seasonal use and information on the socio-economics and demography of fishing communities.
Hydro Acoustic Survey	The method of surveying fish populations utilizing sound movements through the water
Immature fish	A fish of the species which is smaller in size or length than the size or length prescribed in the Tanzania Fisheries Act, 2003 and fisheries Regulations, 2009
Inland fisheries	Any activity conducted to extract fish and other aquatic organisms from inland waters
Man-days	The number of hours of work per person completed in a day
Monitoring procedure	A planned sequence of observations or measurements of control parameters to assess whether a critical control point is under control
Surveillance	Checking and ensuring compliance with the control
Unregulated fishing	Fishing activities conducted in a manner that is not consistent with or contravenes the conservation and

	management measures stipulated in the Fisheries Act and Fisheries Regulations
Unreported fishing	Fishing activities which have not been reported or have been misreported to the fisheries authority in contravention of the Fisheries Act and Fisheries Regulations

EXECUTIVE SUMMARY

The Fisheries Sector in Tanzania is comprised of capture fisheries and aquaculture. It plays an important role in food security and socio-economic well-being. The development of this Sector is guided by the National Fisheries Policy 2015, which aims to ensure that fish stocks and fisheries resources are exploited sustainably in the long term. Many stocks are still overfished and face many management challenges. Based on this, continued efforts are necessary to manage fisheries. Therefore, the Ministry of Livestock and Fisheries (MLF) has developed management measures to ensure sustainable fishing activities within the country.

The objective was to determine whether the Ministry of Livestock and Fisheries and PO-RALG, through LGAs, have effectively implemented fisheries management and control systems to enhance sustainable fisheries practices in the country. The audit mainly focused on assessing the development and implementation of management and control measures, the reliability of the information, the completeness, reliability, and periodic updating of relevant information in the database, the appropriateness of the inspection plan and the application of sanctions, and the adequacy of coordination among players in implementing fisheries management and control measures

The audit came up with the following findings, conclusions and recommendations.

Main Findings

Presence of Illegal Fishing Practices in the Country

The audit noted the existence of illegal fishing practices (in terms of both fishing gear and methods) in the audited water bodies at different levels. It was observed that Lake Victoria is leading in the use of illegal fishing gear, including beach seines, monofilament nets, mosquito nets, and small-sized nets. The lake had approximately 60 gill nets (>6) at each landing site. Also, Lake Victoria exhibited a high monofilament net use, approximately 25 at each landing site. In contrast, the use of dynamite and spears in fishing was observed in marine fisheries, with around 11 instances at each landing site.

Meanwhile, Lake Tanganyika stands out with a proportionate of 12 beach seines at each landing site, compared with other water bodies.

It was noted that the continued use of illegal fishing methods was attributed to inadequate monitoring, control and surveillance campaigns. Specifically, these included inadequate regular patrols and inspection of fishing activities, lack of regular awareness campaigns on the effects of illegal fishing on fishers, inappropriate control of import and entrance of illegal fishing gear into the country, the uncontrolled desire of fishers to get more fishery products at once, and the existence of cheap illegal fishing gear.

Inadequate Licensing and Registration

The audit noted that a total of 20,885 vessels out of 28,615, equivalent to 72.99% of all operating fishing vessels, are unregistered. Also, a review of compounding registry books for MLF and LGAs indicated that 70% of compounded offences resulted from non-registration and non-licensing of fishers and fishing vessels. It is important to note that registration of fishing vessels is mandatory as per fisheries legislation.

The presence of both unregistered and unlicensed vessels has led to a potential cumulative loss of TZS 15,162,640,000, which would have been generated through fisher's registration license fee, TASAC fee and tax revenues by TRA. Local government contributes about 75% to this overall amount. Furthermore, Dar es Salaam and Lindi experienced a potential annual loss below TZS 500 million, with less than 30% of vessels being unregistered and unlicensed. Dar es Salaam performed better than other regions due to its better infrastructure and geographical setup. The region operates fishing activities in a centralized manner, which makes it easy to regulate.

This contrasts with other fishing regions, including Mwanza, Mara, Kigoma, and Coast, which have widespread landing sites and inadequate resources for registration. In addition, these regions have ineffective performance in monitoring and regulating fishing activities. As a result, their loss has been above TZS 500 million, with the percentage of unregistered vessels above 60%.

Inadequate Management of Maximum Allowable Catches

A maximum Allowable Catch (TAC) regime is an important tool in approximating the abundance of fish stocks within a system to determine the optimal harvesting levels that ensure maximal economic benefits without destroying the fishery sector. It was noted that neither MLF nor PO-RALG, through LGAs, developed or implemented measures on the maximum allowable catch limits on fish stock to be taken from their water bodies. This is attributed partly to a lack of guidance from TAFIRI, which provides scientific surveys to determine the availability of fish stock in our water bodies.

However, it was noted that TAFIRI conducted the last hydroacoustic surveys in 2020 and issued recommendations to those involved in fisheries management to comply with the recommendations while issuing the fisheries licenses and registering fishing vessels. Yet, the audit noted that in all visited LGAs, fisheries officials were unaware of the recommended level of harvesting in the hydroacoustic survey.

The same was observed in all zones in the Fisheries Resources Protection Centres (FRPs) under MLF. This implies that the sharing of information and coordination were inadequate among the researchers (TAFIRI and those responsible for fisheries management). Because of that, the LGAs and Fisheries Resources Protection Centres in all zones have been operating without recognizing the maximum catch limit over a certain period.

Inadequate Regulation of Fish Catch Sizes (slot size regime)

The audit analysed the catch statistics provided by fisheries' zonal officers and LGAs and noted insufficient control over the size of fish catches. Both FRP centres and LGAs managing respective landing sites reported the presence of undersized fish at the market. This issue was particularly dominant in the Lake Victoria zone, where Nile perch and Tilapia are the most overfished species and were frequently found at immature stages. This is contrary to the existing regulations as amended in 2020 (reg. 58(2) (a) and (d), whereby the Nile perch should measure over 50 cm, and Tilapia should exceed 10 cm, respectively.

Little Emphasis on the Management of the Close Season by the MLF and LGAs

Among the nine visited Local Government Authorities (LGAs), only Rorya DC enforced a closing season for all fish species; it was done in 14 days. The remaining six LGAs (75%) implemented only a closing season exclusively for a single species — Sardine in Lake Victoria and Prawns and Octopus in the Marine waters. In addition, Kigoma MC also did not implement a closing season in Lake Tanganyika despite being a requirement stipulated in the Riparian State Agreement for the sustainable fisheries management of Lake Tanganyika among member countries signed on December 16, 2021.

The reason for not enforcing the closure of the season is that the LGA is concerned about losing revenues collected from license fees, fish levy, etc., during close season implementation. Nevertheless, none of the LGAs have conducted a cost-benefit analysis to assess the advantage of implementing close seasons. Another reason for not implementing close seasons in respective water bodies is that there is an absence of physical boundaries to demarcate the gazetted breeding sites in Lake Tanganyika and Lake Victoria.

Based on interviews, it was observed that most fishers have inadequate knowledge of the breeding sites where fishing is restricted. It implies that the intended objectives of closing fisheries seasons, which are to allow species to breed or juvenile fish to have enough time to grow in order to obtain the maximum biomass from the population, will not be realized.

Ineffectively Implemented Monitoring, Control and Surveillance Activities

Fishing activities are carried out day and night; therefore, the corresponding MCS activities must also be conducted as per the fishing cycles. However, the audit noted that the patrol and inspection are mainly done during working hours from 7:30 a.m. to 3:30 p.m. Inspections and patrols are rarely conducted during the evening, at night and on weekends.

Since the fisheries activities are mainly done at night, most fish caught and landed, especially the illegal deals, are carried out during night-time. Consequently, the fisheries staff did not have data on the activities carried

out at night, on weekends, and after regular working hours. Given the nature of fishing activities, it was expected that both the LGAs and MLF would apply the 24-hour operation protocol, for which staff can work the eight-hour schedule. However, based on the interview with fishery officials, working on the 24-hour operation is ineffective for security reasons; the fishery officers are not armed, unlike the forest and wildlife officers, who are para-military.

Inadequate Performance of the MLF on Collecting and Maintaining Daily Fisheries Catch Data

Fisheries information, especially catch data, is vital for sustainable fisheries resource management and development. The Ministry of Livestock and Fisheries is mandated to coordinate this important role, and LGAs are responsible for catch data collection. However, the coordination of Daily Fisheries Catch Data collection and maintenance by the MLF was inadequate and unreliable. For example, the reported daily fisheries catch data were only obtained from 59 of 595 sampled landing sites, representing less than 10% of Lake Victoria's total number of landing sites. In such cases, making decisions based on daily fish catch data from less than 10% of the population may be insufficient.

Deficiencies in Database and Data Duality Management within MLF's Fisheries Revenue Collection Information System (FiRCIS)

The Ministry of Livestock and Fisheries is responsible for fisheries information management, including fisheries revenue collection information systems (FiRCIs). The System has been developed by the IT department and vetted by relevant authorities. However, the development of this system involved limited players. Through the review of the Fisheries Sector Master Plan, 2021/22 – 2036/37, the audit noted that the existing database within Mainland Tanzania's Fisheries Revenue Collection Information System (FiRCIS) was not regularly maintained and updated. This may result in an increased risk of inaccurate information, potentially affecting the decision-making process related to fisheries management.

Audit Conclusion

The audit assessed whether the Ministry of Livestock and Fisheries and PO-RALG, through LGAs, have effectively implemented fisheries control systems to enhance sustainable fisheries practices in the country. The findings presented in this report show that there is inadequate performance in managing fisheries resources. As a result, it calls for improvements in implementing, monitoring, and controlling surveillance measures to increase the effectiveness of the management of the country's fisheries resources. This is because neither the MLF nor PO-RALG, through LGAs, has adequately implemented the existing measures for controlling fisheries.

Audit Recommendations

Recommendations to the Ministry of Livestock and Fisheries

The Ministry of Livestock and Fisheries (MLF) is urged to:

1. Ensure access to the fishery is managed and controlled through the improved system for registration and licensing by offering licenses to all fishing crafts, fishing vessels and fishers in the water bodies as per the existing fisheries legislation;

2. Devise a digital and effective mechanism that will ensure the smooth collection of real-time data on fish caught and the distribution of fishing efforts in the water bodies; and

3. Enforce MCS activities and adhere to the legal obligations, including fishing closure activities during defined close seasons to allow for fish breeding and improve the sustainability of fisheries stocks.

Recommendations to the President's Office – Regional Administration and Local Government

The President's Office – Regional Administration and Local Government is urged to ensure that LGAs:

1. Improve the system for registration and licensing of all fishing crafts, fishing vessels, and fishers in the water bodies to enhance total control in the fishing sector; and

2. Enforce and adhere to the obligation of closing fishing activities during defined close seasons to allow for fish breeding and improve the sustainability of fisheries stock.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Audit

The Fisheries Sector in Tanzania is one of the largest fishing sectors in Africa. Tanzania is among the top 10 countries in total capture fisheries production, with an annual average of 395,006 tonnes[1]. According to the Fisheries Sector Master Plan (2021/22–2036/37), Tanzania's Fisheries Sector comprises capture fisheries and aquaculture value chains. Further, the sector has been growing at an average annual rate of 1.5% and plays important roles in food security and socio-economic well-being.

According to the Tanzania Investment Centre[2], Tanzania's inland (freshwater) resources cover a surface area of more than 50,000 km^2. The marine fishery waters include coastal waters extending over a 1,240 km shoreline, including major islands such as Unguja, Pemba, and Mafia, and offshore waters with a covered 223,000 km^2 exclusive economic zone (EEZ). Also, a similar report showed that Inland fisheries account for over 85% of all accessible water resources.

The Fisheries Sector Master Plan of the United Republic of Tanzania (2021/22-2036/37) indicates that the current per capita fish consumption is 8.5 kg and contributes 30% of daily animal protein intake. Further, the masterplan elaborates that fisheries contribute 1.7% of the GDP and provide direct employment to 195,435 fishers and 30,064 aquafarmers. In addition, about 4.5 million people (6.89% of the total population) are indirectly employed in various ancillary activities along the two value chains (inland and marine fishing). The sector's activities are dominated by small-scale operations undertaken by artisanal fishers and subsistence aquafarmers responsible for over 95% of the fish production.

A report of the Tanzania Investment Centre, 2019 on the Investment opportunities in the fisheries and aquaculture sub-sector indicates that fish production is approximately 340,000 MT per year, excluding catches of tuna

[1] Ministry of Livestock and Fisheries: Fisheries Masterplan 2021-2037
[2] en-1643984151-Investment Opportunities in Fisheries Value Chain in Tanzania PDF (www.tic.go.tz)

and tuna-like species by Distant Water Fleet Nations (DWFN) in the exclusive economic zone (EEZ). Marine fisheries contribute 10 – 15% to national fish production, while the contribution of aquaculture to fisheries is 4%[3]

According to the Fisheries Sector Master Plan (2021/22–2036/37), the Fisheries Sector faces a number of challenges, including limited extension services, limited access to finance, high post-harvest losses, limited value addition, delay in infrastructure development, and limited access to appropriate fishing and aquaculture technologies. Other challenges include environmental degradation of aquatic ecosystems, climate change, illegal, unreported, unregulated fishing, illegal cross-border trade, lack of decent work in fisheries, aquaculture and related activities for sustainable development and low public and private investment.

To manage fisheries resources, the Government, through the National Fisheries Policy, 2015, has set the objective to ensure effective management of fisheries resources through proper conservation, protection and national utilization for sustainable development. The Fisheries Policy of 2015 has been implemented through fisheries legislation, including but not limited to the Fisheries Act 2003, Tanzania Fisheries Research Institution Act 2016, Deep Sea Fisheries Management 2020, Marine Parks and Reserve Unit and subsequent regulations.

1.2 The Motivation for the Audit

The Fisheries Sector is among the most important economic sub-sectors in Tanzania, and it remains a key source of employment, food security, and revenue for the country. However, fisheries resources in the country have declined due to malpractices in fishing (IUU and illegal cross-border trade of fishery products) (Ibengwe et al. 2022) in all waters and trade border points, respectively. This situation has resulted in overfishing, competition over resource access, community conflicts, etc. Therefore, this audit was motivated by the persistent public concern about the depletion of fisheries resources in the country. The decline of fisheries resources is attributed to the following fishing activities:

[3] https://www.fao.org/3/cc4339en/cc4339en.pdf

a) Illegal Fishing

According to the International Union for Conservation of Nature (IUCN), illegal, unregulated, and unreported (IUU) fishing poses a severe threat to the fisheries resources in Tanzania. In Lake Victoria, the second-largest freshwater body in the world, it has been reported that 76% of fish species are currently facing extinction[4]. Illegal operations largely fuel the rapid decline of fish stocks and species through organized crime syndicates.

Furthermore, research findings from Mkuna and Baiyegunhi (2021) indicated that the key commercial species in Lake Victoria, namely the Nile perch, have dropped by 50%. Also, the study by Van de Knaap (2013) showed that most fish species in Lake Victoria were endangered due to illegal fishing and environmental degradation practices. According to the East African Newspaper, illegal fishing is widespread in the Indian Ocean, costing Tanzania about USD 400 million annually.

b) Export of Fish and Fishery Products to External Markets

Tanzania's Fish export market, which rose to TZS 696.0 billion during the financial year 2018/2019 from TZS 379.25 billion in 2015/2016[5], has declined to TZS 453.81 during the financial year 2022/2023. It has been reported that the drop is due to a drop in European fish demand, low catches due to illegal fishing and cross-border trade of fish and fishery products, including but not limited to fish maws, which are of high value compared to other fishery products.

The aforementioned conditions explained in a and b above threaten the achievement of goal number 14 of the Sustainable Development Goals of 2030 (SDGs), which aims to ensure sustainable fisheries and aquaculture linked with environmental and economic benefits. Likewise, these situations threaten the achievement of the National Five-Year Development Plan (2016/17 to 2020/21) and that of 2021/22 to 2025/2026, both aimed to strongly emphasise enhancing the fisheries sector. The plan outlined various priorities within the fisheries sector, encompassing freshwater

[4] https://enactafrica.org/enact-observer/illegal-fishing-in-lake-victoria-endangers-livelihoods-and-species
[5] https://allafrica.com/stories/202008241047.html

fishing, aquaculture, and marine and freshwater conservation, with the goal of boosting its contribution to the overall national economy.

Based on the motivation factors presented in 1.2 (a) and 1.2 (b) above, the Controller and Auditor General decided to carry-out a performance audit on the management of fisheries resources in the country. The intention was to examine the performance of the MLF and PO-RALG through LGAs concerning implementing fisheries control systems to enhance sustainable fisheries practices in the country and recommend areas for further improvements.

1.3 Audit Design

1.3.1 Main Objective

The objective of the audit was to determine whether the Ministry of Livestock and Fisheries and PO-RALG, through LGAs, have adequately implemented fisheries control measures to enhance sustainable fisheries practices in the country.

1.3.2 Specific Objectives

The specific objectives of the audit were to determine whether:

(a) Control measures to enhance sustainable fisheries practices have been adequately implemented in the country;
(b) MLF and PO-RALG, through LGAs, have reliable information on fishing efforts (vessels, fishing gear, fish landings and the number of fishers) and fish stock size available;
(c) the database needed for fisheries management is complete, reliable and periodically updated;
(d) Inspections and sanctions are appropriately planned, performed and applied; and
(e) Coordination among players in implementing fisheries management measures is adequate.

To address the specific audit objectives mentioned above, the Audit Team developed six (6) audit and sub-audit questions presented in **Appendix 2**.

1.3.3 Audit Scope

The main audited entities were the Ministry of Livestock and Fisheries (MLF) and the President's Office – Regional Administration and Local Government (PO-RALG) through LGAs. The reason for focusing on these entities is that MLF is primarily responsible for managing fisheries resources in the country, while PO-LARG, through LGAs, manages fisheries resources at the grassroots level.

The audit covered five (5) financial years, from 2018/19 to 2022/23. This period was selected to track the performance level and trends in managing fisheries resources in the country. Also, during this period, illegal fishing practices have existed, and there has been a decline in fish exports, as stated in section 1.2 of this report.

The audit mainly focused on assessing the development and implementation of Inspections and sanctions measures; the reliability of the information; the completeness, reliability, and periodic updating of the database; the appropriateness of the monitoring, control and surveillance (MCS), including inspection plan and the application of sanctions; and the adequacy of coordination among players in implementing fisheries management measures.

On the appropriateness of the inspection plans and the application of sanctions, the audit assessed the effective implementation of inspections and whether the application of sanctions against defaulters is a deterrent.

Regarding the reliability of the information on fishing, the audit assessed the availability of verifiable data on fishing efforts (vessels, fishing gear, fish landings, number of fishers) and the fish stock size available.

On assessing the completeness, reliability, and periodic updating of the database, the audit assessed whether the database contained valid information on fishing activities.

Concerning the adequacy of coordination among players in implementing fisheries management measures, the audit assessed the effectiveness of information sharing and reporting arrangements among key actors.

1.3.4 Assessment Criteria

The audit team used the benchmarks mentioned below to assess the performance of MLF and LGAs in the management of fisheries resources in the country:

(a) Determine whether MLF and PO-RALG, through LGAs, have developed and implemented fisheries management measures to enhance sustainable fisheries practices in the country

According to Fisheries Regulations, 2009, MLF and LGAs are required to ensure all the procedures for fishing vessel registration and provision of licenses are followed. Also, MLF and LGAs are required to impose a closed season for designated areas, fish species, and fishing methods and to provide a landing site with important facilities.

Also, the Fisheries Act, 2003 and Fisheries Regulations, 2009 require MLF to control and regulate the importation, manufacture, and construction of fishing gear, limit the amount of species composition of fish that may be landed or traded, and impose conditions to restrict the size of species composition of fish that may be caught.

(b) Determine whether MLF and PO-RALG through LGAs have reliable information on fishing vessels, fishing gears, stock available, the number of fish caught, and the number of fishers

The Fisheries Act, 2003 and Fisheries Regulations, 2009 require MLF to collect, process, analyse, publish and disseminate fisheries statistical data and establish and maintain a vessel monitoring system, popularly known as VMS, in the industrial sea fishery. Also, MLF is required to collect, process, analyse, publish, and disseminate fishery statistical data.

Moreover, the Fisheries Regulations of 2009 require external monitoring of each beach management unit to use a monitoring format provided in the National Beach Management Unit Guidelines by the District Executive Director, who may delegate this task to an appropriate officer.

(c) Determine whether MLF and PO-RALG have the complete and reliable update database needed for fisheries management

Fisheries Regulations, 2009, require MLF to cooperate with other appropriate agencies and divisions or departments of the government and promote, encourage, and support all initiatives leading to the development and sustainable use of the fish stock and aquatic resources.

Also, the Fisheries Regulations of 2009 stipulate that MLF is required to set penalties for defaulters of illegal fishing. The penalties set should bring about the intended deterrent effect.

Furthermore, the Fisheries Act 2003 requires MLF and LGAs to establish well-defined reporting arrangements for sharing information on fisheries activities. Also, MLF should use its best endeavours to ensure that all the LGAs and Police are consulted and kept informed of fisheries management.

(d) Determine whether the MLF and PO-RALG ensure monitoring, control, surveillance and sanctions are appropriately planned, performed and applied

The Fisheries Regulations, 2009, require MLF to co-operate with other appropriate agencies and divisions or government departments; promote, encourage and support all initiatives leading to the development and sustainable use of the fish stock and aquatic resources; and ensure that penalties given to defaulters of illegal fishing bring about the intended deterrent effect. Also, MLF, in collaboration with LGAs, is required to enter into management agreements with beach management units to ensure proper management of the fish landing stations and make random spot-check monitoring of the beach management unit's activities.

Also, the Fisheries Regulations of 2009 require BMUs to collaborate with village government councils to develop by-laws and engage in monitoring, control and surveillance for the purpose of reducing illegal fishing and fish trading practices and environmental degradation within the beach management unit areas.

(e) Determine whether MLF and PO-RALG, through LGAs, ensure adequate coordination among players in implementing fisheries control management measures

The Fisheries Regulations of 2009 require MLF to use its best endeavours to ensure that all the LGAs and Police are consulted and kept informed of the management of fisheries.

Moreover, the Fisheries Regulations of 2009 require MLF and LGAs to establish well-defined reporting arrangements for sharing information on fisheries activities.

1.4 Sampling, Data Collection and Analysis Methods

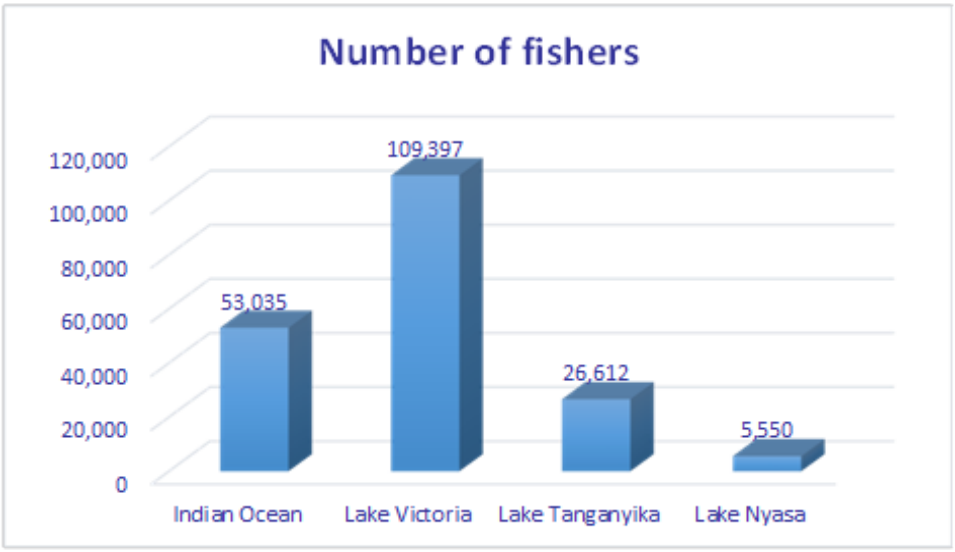
Various methods for sampling, data collection and analysis were used, as presented below:

1.4.1 Sampling methods

Purposive and random sampling methods were used to select zones, regions, and LGAs to be covered for the audit.

The audit focused on major water bodies, including the Indian Ocean, Lake Victoria, Lake Nyasa and Lake Tanganyika. These served as representative samples for other water bodies nationwide. The selection criteria were determined by assessing the number of fishers and landing sites of these water bodies, as depicted in **Figure 1.1** and **Table 1.1**.

Figure 1.1: Ranking of major water bodies based on the number of fishers



Source: *Auditors' Analysis from Annual Fisheries Statistics Report (January- December 2020)*

Three water bodies, namely Lake Victoria, Lake Tanganyika, and the Indian Ocean, each with over 10,000 fishers operating, were selected, as illustrated in **Figure 1.1**.

The selection of regions from each water body chosen in this audit was determined by identifying those areas with a substantial number of landing sites in each region, as highlighted in **Table 1.1**.

Table 1.1: Selection of regions visited

Water Body	Total number of landing sites in each region					Selected region
Lake Zone	Geita	Kagera	Mara	Mwanza	Simiyu	1. Mwanza 2. Mara
	73	167	168	223	10	
Indian Ocean (Marine)	Pwani	Dar es Salaam	Lindi	Mtwara	Tanga	3. Pwani 4. DSM 5. Lindi
	93	31	57	37	56	
Lake Tanganyika	Kigoma	Katavi	Rukwa			6. Kigoma
	87	20	18			

Source: *Auditors' Analysis from Annual Fisheries Statistics Report (January- December 2020)*

Table 1.1 shows that six regions with a high number of landing sites were selected. The selected regions were Mwanza, Mara, Pwani, Dar es Salaam, Lindi and Kigoma. Dar es Salaam has a low number of landing sites, but it was selected because it is a commercial city where fishers and fishing gear from other regions and abroad are sold.

Table 1.2 summarises the selected regions and the Fisheries Resources Protection Centres (FRP) and LGAs within each selected Region. The LGAs were selected based on reported cases of illegal fishing and the presence of unregistered fishers.

Table 1.2: Zones, regions and LGAs covered

Zones	Region	MLF Place/Location visited	LGAs covered
Indian Ocean Zone (Marine)	Dar es Salaam	TAFIRI	Kigamboni MC
	Pwani	Mafia Island Fisheries Resources Protection (FRP) Centre	Mafia DC
	Lindi	Kilwa FRP Centre	Kilwa DC
Lake Tanganyika Zone	Kigoma	Kigoma FRP Centre	Kigoma MC
Lake Victoria Zone	Mwanza	Ukerewe FRP Centre TAFIRI Mwanza FRP zonal Centre	Ukerewe DC Mwanza CC Ilemela MC
	Mara	Rorya FRP Centre	Rorya DC

Source: *Auditors' Analysis of Data Collected from* MLF *(2023)*

TAFIRI was selected because it is responsible for carrying out research in various aspects of fisheries for sustainable management of fisheries resources.

1.4.2 Data collection methods

Both qualitative and quantitative data were collected to provide reliable, relevant, and convincing evidence on the performance of MLF and LGAs in protecting fisheries resources in the country. The audit team used different methods to collect information from the audited entities and other stakeholders. These methods include interviews, observations and document reviews, as detailed below:

(a) Interviews

The interview method was used to collect information during the main study phase to respond to the audit questions and provide adequate conclusions against the audit objective. The interviews were conducted to understand and identify existing challenges, root causes and, eventually, the consequences of those problems.

Appendix 3 provides a detailed list of individuals and entities interviewed during the study and the reasons for interviewing them.

(b) Documents reviews

Various relevant documents were reviewed to obtain appropriate and sufficient information that enabled the audit team to develop clear findings supported by collaborative evidence. The reviewed documents fell within the period under audit, i.e., from 2018/19 to 2022/23. The documents that were reviewed and the reasons for selecting them are detailed in **Appendix 4.**

(c) Physical verification and observation

Physical verifications and observations were conducted on the selected landing stations from the sampled LGAs and MCS centres visited. During the verification and observation, the audit team assessed the extent to which the landing sites in the country have sufficient facilities and accessibility.

(d) Questionnaire

Closed-end questions were prepared and distributed using Google Forms to all 28 MCS centres nationwide and nine sampled LGAs. The respondents were requested to provide their concerns about the timing of conducting MCS operations within water bodies and on land (landing sites and market places). The incidence was ranked from frequency, rare, very rare, and never. The target respondents were officers in charge of MCS centres and LGA officers in charge. Out of the 37 questionnaires that were distributed, 30 were returned. A summary of the response rates is provided in **Table 1.3**

Table 1.3 Response rate of the questionnaire

Respondent	Questionnaires distributed	Questionnaire returned	Success of responses (in %)
MCS centres	28	21	75
LGAs	9	9	100
Total	37	30	81

Source: *Auditors' analysis on response of questionnaire (2023)*

All respondents were senior staff from their respective workstations, which indicated that the responses were provided by staff who are familiar with the management of fisheries resources.

1.4.3 Methods for data analysis

The collected information was analysed using qualitative and quantitative methods to obtain facts and sufficient information regarding the overall performance of MLF and other fisheries stakeholders in ensuring the management of fisheries resources in the country. The following methods were used for data analysis.

a) Analysis of qualitative data

- Content analysis techniques were used to analyse qualitative data by identifying different concepts and facts obtained from interviews, document reviews, and physical verification and as observation and then categorising them based on their priorities.
- The extracted concepts or facts were tabulated or presented as they were to explain or establish a relationship between different variables originating from the audit questions.
- The recurring concepts or facts were quantified depending on the nature of the data they portray.
- The quantified information (concepts/facts) was then summed up or averaged on spreadsheets to explain or establish the relationship between different variables.

b) Analysis of quantitative data

- Quantitative information with multiple occurrences was tabulated on spreadsheets to develop point data or time series data, and relevant facts were extracted from the figures obtained.
- The tabulated data was summed up, averaged or proportionated to extract relevant information and relationships from the figures.
- The sums, averages or percentages were presented using different types of graphs and charts depending on the nature of data to explain facts for point data or establish trends for time series data and other quantitative information/data with single occurrences that are presented as they are in the reports by explaining the facts they assert.

1.5 Data Validation Process

The Ministry of Livestock and Fisheries (MLF) was given the opportunity to go through the draft report, comment on the figures, and present information. The MLF confirmed the accuracy of the figures used and information presented in **Appendix 1** in the report.

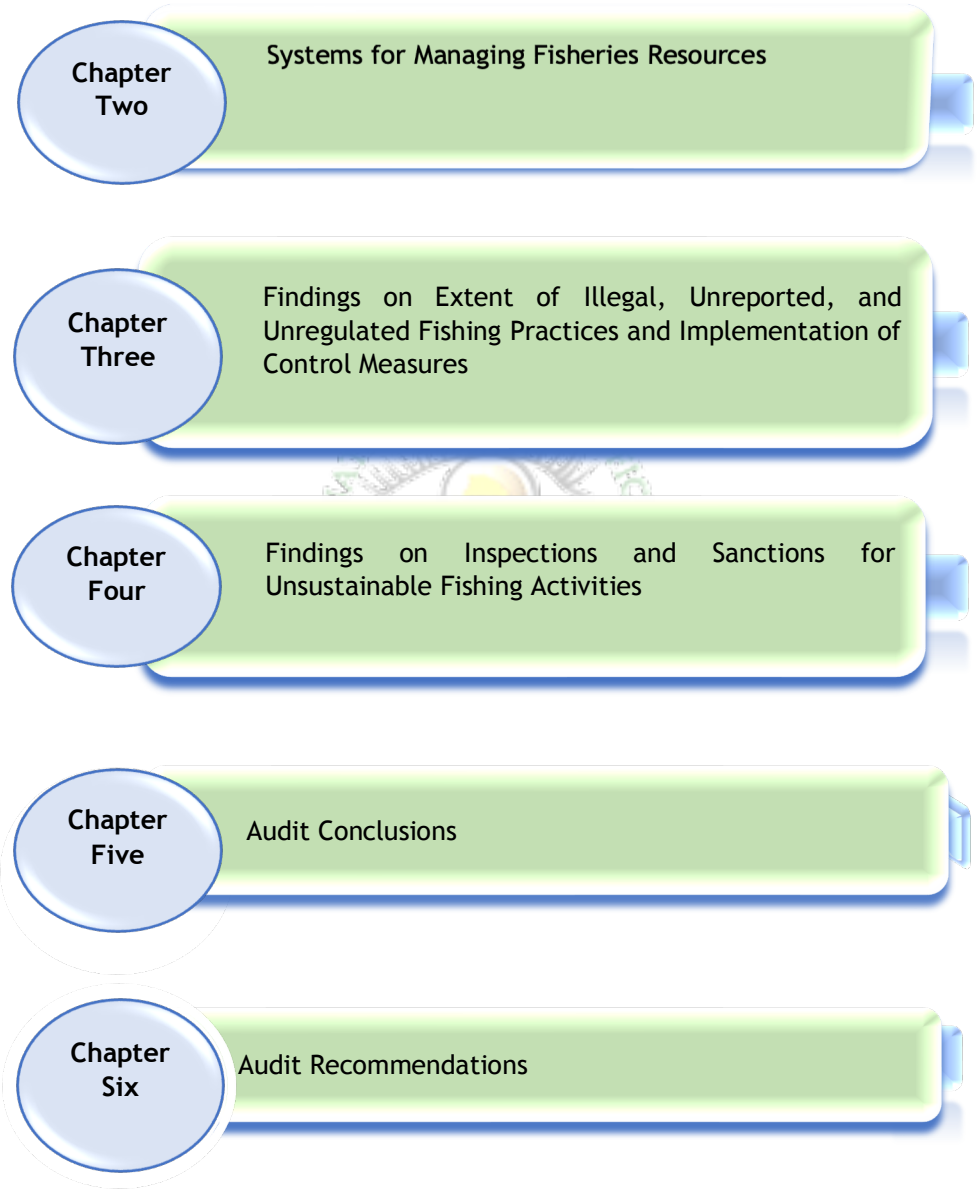
1.6 Standards used for the Audit

The audit was conducted in accordance with the International Standards of Supreme Audit Institutions (ISSAIs) issued by the International Organization of Supreme Audit Institutions (INTOSAI). These standards require the audit to be planned and performed to obtain sufficient and appropriate evidence to provide a reasonable basis for findings and conclusions based on the audit objective.

1.7 Structure of the Audit Report

The remaining part of the report covers the parts described in **Figure 1.2**.

Figure 1.2: Structure of the audit report



Source: *Auditors' Analysis (2023)*

CHAPTER TWO

SYSTEM FOR THE MANAGEMENT OF FISHERIES RESOURCES IN THE COUNTRY

2.1 Introduction

This chapter describes the policy and legal framework governing the system for managing fisheries resources in the country. It further presents the roles and responsibilities of key actors involved. Additionally, the chapter indicates the functioning of the program and the strategies applied in the management of fisheries' resources in the country.

2.2 Governing Legal Framework

The policy and legislation covering the management of fisheries resources in the country are highlighted and explained in Sections 2.3.1 and 2.3.2.

2.2.1 Policies

National Fisheries Policy, 2015

This policy aims to achieve sustainable, effective, and efficient development and management of fisheries resources. It provides a framework that outlines the desired targets and measures to guide the entire range of actions for managing fisheries resources.

National Environmental Policy (2021)

The Policy aims to provide a national frame to harmonise and coordinate environmental management to improve the welfare of present and future generations. It detailed the enhancement of the conservation of aquatic ecosystems for sustained ecological services and socioeconomic well-being.

2.2.2 Legislation

There are different acts that regulate the management of fisheries resources in Tanzania. These are highlighted below:

The Fisheries Act, 2003

The Fisheries Act No. 22 of 2003 mandates the Ministry of Fisheries and Livestock and the President's Office – Regional Administration and Local Government (PO RALG) to manage fisheries resources.

Tanzania Fisheries Research Institute (TAFIRI) Act 2016

The Act mandates that TAFIRI conduct and coordinate research to promote the sustainable management of fisheries resources in the country.

The Fisheries Regulations, 2009 and its amendments

The Fisheries Regulations, 2009, provide detailed guidance on managing fisheries resources. The regulations provide details on the registration and licensing of fishing vessels, sanctions, and restrictions on using various fishing gear and methods, including dynamite explosives or electrical devices to kill fish or simplify fishing. It also permits the dealing and trading of fish and fishery products.

2.3.3 National and Regional Strategies, Guidelines, Protocol/ Conventions

The country has various national and adopted regional guidelines to ensure the adequacy of socio-economic benefits derived from the fisheries resources, as detailed below.

a) National Strategies and Guidelines

Tanzania Development Vision (2025)

The Tanzania Vision 2025 aims to achieve a high-quality livelihood for its people by attaining good governance. The vision aims to achieve the sustainable management of fisheries resources to avoid current adverse trends in the loss and degradation of environmental resources such as fisheries resources.

Guidelines for Beach Management Units (BMUs), (2017)

The guideline promotes empowerment and active participation by creating and developing BMUs that manage fisheries resources in their communities.

National Five-Year Development Plan (2016/17-2020/21) and (2021/22 – 2025/26)

The National Five-Year Development Plan (2016/17-2020/21) emphasizes the management of fisheries resources, particularly on the following aspects:

- Transformation of the fisheries includes modernization of the sector through intensification of the blue economy potentials in both marine and fresh waters. Sector priorities include freshwater fishing, sea and deep-sea fishing, aquaculture, and marine and freshwater conservation. It also focuses on facilitation of fishing activities through procurement of fishing vessels and construction of fishing harbour;
- Conserving marine and freshwater fisheries protected areas; and
- Protecting critical habitats and conserving endangered and threatened aquatic species.

Strategic Plan for the Ministry of Livestock and Fisheries (2020/21-2025/26)

The Fisheries Strategic Plan (2020/21-2025/26) focuses on enhancing the transformation of the fisheries sector by intensifying the blue economy potentials in marine and fresh waters. At the same time, it aims to increase per capita consumption of fisheries products. It also provides strategies for curbing the increased use of illegal fishing gear and tapping the vast potential for aquaculture development that could contribute to food security, nutrition, employment and national income.

b) Regional Strategies and Guidelines

Tanzania and other riparian governments have signed several charters and agreements for sustainable fisheries management in Lake Victoria and Lake Tanganyika. For Lake Victoria, fishing activities are mainly governed by the agreements outlined in the Convention for the establishment of the Lake Victoria Fisheries Organization. The agreement was signed on June 30,

1994, and went into effect on May 24, 1996. It was first amended on November 12, 1998, and again on January 29, 2016. Therefore, the Lake Victoria Fisheries Organization (LVFO) was made as a specialized institution of the East African Community (EAC) whose mandate is to coordinate the management and development of fisheries and aquaculture resources in the EAC region. (*https://www.lvfo.org/*)

For Lake Tanganyika, fishing activities are mainly governed by the Lake Tanganyika Authority (LTA). The Lake Tanganyika Authority is established under Article 23 of the Convention on the Sustainable Management of Lake Tanganyika. The function of the Authority is to coordinate the implementation of the Convention by the Contracting States and, in accordance with this Convention and the decisions of the Conference of Ministers, to advance and represent the common interests of the Contracting States in matters concerning the management of Lake Tanganyika and its Basin.

The Contracting States cooperate in developing and implementing harmonized laws and standards concerning the management of Lake Tanganyika and its Basin. Cooperation shall include building the capacity of the institutions established under this Convention; formulating and adopting protocols to this Convention; exchanging information within the scope of the Convention and, in particular, on activities that may have an adverse environmental impact; engaging in joint research; and implementing this Convention.

2.3 Roles and Responsibilities of Key Actors

The management of fisheries resources is a cooperative responsibility that involves government and non-government actors on a local and international scale. The government's key actors who are directly required to ensure the management of fisheries resources are highlighted below.

2.3.1 Ministry of Livestock and Fisheries (MLF)

The organisation structure of the MLF consists of two sectors, namely the livestock sector and the fisheries sector. MLF, through the fisheries sector, is guided by the National Fisheries Policy of 2015 and the Fisheries Regulations of 2009 and its amendments. The role of MLF, among others, is to manage, prepare, implement, monitor, and review national fisheries

policies, regulatory frameworks and management of inland, marine fisheries and aquaculture within the territorial waters of the mainland. The fisheries sector comprises various divisions: the fisheries development division, fisheries aquaculture research, training and extension services division, and the aquaculture division.

2.3.2 Control, Monitoring and Surveillance Unit

At an operational level, MLF implements the National Fisheries Policy of 2015 and the Fisheries Regulations of 2009 and its amendments through special units. These special units established by MLF are located at fisheries regionally to protect fisheries resources by conducting daily patrols, inspections, and surveillance. Also, apart from conducting patrols and inspections, they are responsible for collecting revenues from fisheries localities and compounding those who infringe fisheries laws and regulations. The other roles include witnessing and providing evidence for any fisheries offences in the cases under prosecution.

2.3.3 President's Office - Regional Administration and Local Government (PO-RALG)

The organisation structure of the President's Office – Regional Administration and Local Government have several directorates, among them the Division of Regional Administration and the Division of the Local Government. The section on economic and productive sectors' coordination is responsible for the management of fisheries resources. PO – RALG, as the coordinating ministry, is also guided by the National Fisheries Policy of 2015 and the Fisheries Regulation of 2009 and its amendments. The role of PO-RALG, among others, is to coordinate, support, and advise the LGAs on implementing fisheries policies. Also, council directors are responsible for implementing the fisheries policies and legislation. Council fisheries officers report to council directors on administrative issues and regional fisheries advisors (RFA) on technical matters about fisheries.

2.3.4 Regional Secretariat

According to the functions and organisational structure of the Regional Secretariats issued by the President's Office - Public Service Management and Good Governance, the RAS is responsible for providing expert

facilitation on economic and productive sectors to the LGA through the Assistant Administrative Secretary (AAS), Economic and Productive Sectors Section in the office.

The section is responsible for coordinating and implementing fisheries policy at the regional level, building the capacity of LGAs to provide fisheries services and development, and promoting better production of the fishing industry.[6]

2.3.5 Local Government Authorities (LGAs)

The role of Local Government Authorities is to consider the devolution of powers from the central to the local government authorities, whereby the fisheries sector's management responsibility has been expanded in scope and scale. In this context, LGAs are responsible for the following roles:

- Translating and supervising the implementation of policy, laws, regulations and procedures for fisheries;
- Preparing short and long-term plans and programmes for fisheries resources development;
- Evaluating conservation and use of fisheries resources; and
- Providing technical support to stakeholders of the fisheries sector.[7]

2.3.6 Local Communities

The National Fisheries Policy of 2015 and the Beach Management Unit Guideline of 2017 have cited that the local communities need a co-management approach comprising BMUs and local authorities. The role of local communities is to manage fisheries and aquaculture resources. Thus, the communities are the custodians of fisheries resources and must be empowered to become aware of resource ownership and their responsibilities in managing fisheries.[8]

[6] The Functions and Organisation structure of Regional Secretariats
[7] Approved functions and organization structure of Local Government Authorities (LGAs)
[8] National Fisheries Policy 2015 and Beach Management Unit Guideline, 2017

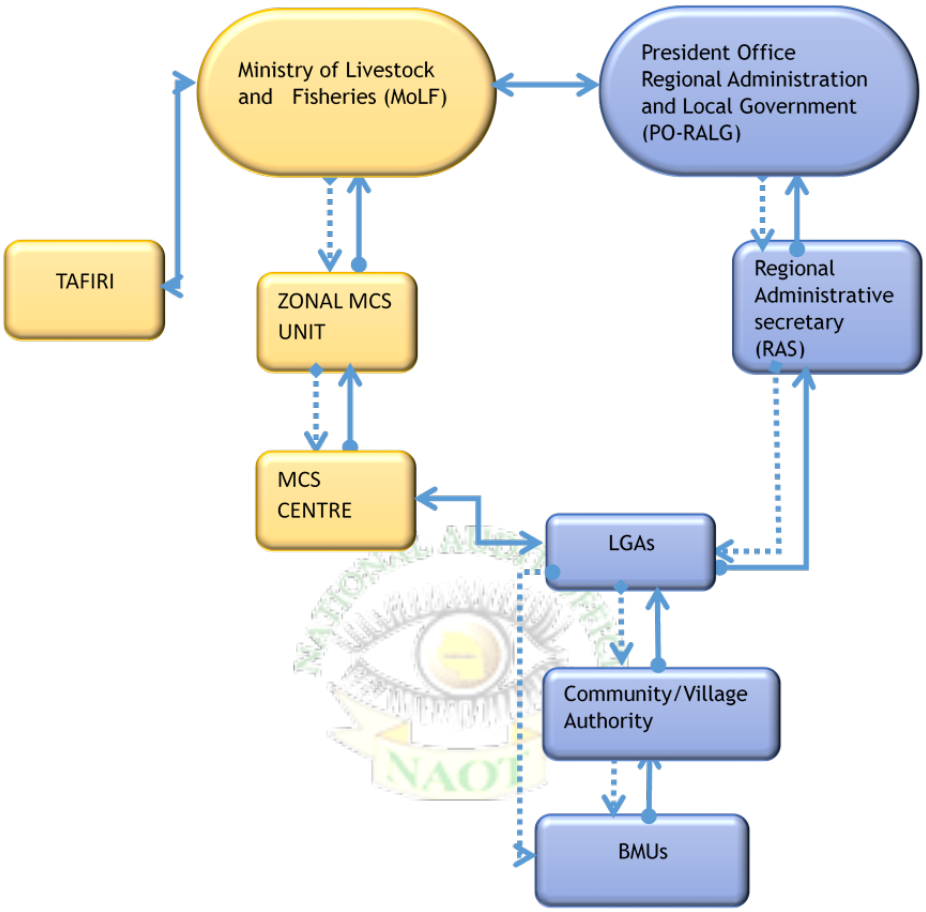
2.3.7 Tanzania Fisheries Research Institute (TAFIRI)

The Tanzania Fisheries Research Institute Act, in the year 2016, created the Tanzania Fisheries Research Institute (TAFIRI) and stipulates its powers and operations in terms of research conduct and promotion. The roles of TAFIRI include conducting and coordinating research concerning fisheries resources, promoting the development, improvement, and protection of the fishing industry and carrying out and promoting experiments and research in fisheries and aquaculture. In collaboration with the Fisheries Development Department from MLF, LGAs officials and BMUs members, TAFIRI conducts a frame survey, which is the key determinant of fishing effort as it is a key directive to control the measure of fisheries resources.[9]

Figure 2.1 describes the relationship among key actors in the management of fisheries resources in the country.

[9] National Fisheries Policy 2015

Figure 2.1: Relationship among key actors in the management of fisheries resources in Tanzania[10]



Source: *Auditors' analysis of interviews conducted with officials in the visited entities, (2023)*

Figure 2.1 shows that there is a close interrelationship and flow of information, as indicated by the arrows. The Ministry of Livestock and Fisheries is responsible for formulating policies, regulations, strategies, and

[10] Organisation structure of MLF and PO-LARG

guidelines. MCS units ensure the implementation of the policy, acts, regulations, strategies, and guidelines.

Moreover, PO-RALG coordinates and manage the undertakings of LGAs in collaboration with MLF to enhance the effectiveness of the management of fisheries resources. Also, the local government authorities (LGAs) are responsible for managing fisheries resources at local levels. Finally, through BMUs, local communities enhance the co-management of fisheries resources within the aquatic ecosystem.

2.4 Resources for the Management of Fisheries Resources

The sufficient availability of financial and human resources enhances the management of fisheries resources. Since the MLF is the main actor in managing fisheries issues in the country, the resources presented are specifically for managing fisheries resources from within the MLF. The description of the resources is as follows:

2.4.1 Human Resources

The distribution of staff at the Ministry of Livestock and Fisheries is indicated in **Table 2.1**:

Table 2.1: Human resources available for the management of fisheries at the MLF as of July 2023

Designation	Available Number
Director of Fisheries	1 (Acting)
Assistant Directors	5
Fisheries Officers	173
Fish Technologists	37
Fisheries Laboratory Officers	17
Boat Builders	3
Skippers	16
Marine Technicians	13
Accountants	22
Economists	4
Statistician	1
Human resources Officers	4
Legal Officers	2
ICT Officers	3

Designation	Available Number
Environmental Officers	0
Total	**300**

Source: *Auditors' analysis on the Fisheries sector staffing level/Job list (2023)*

Based on the Ministry's staff list, the Ministry faces a shortage of 381 staff in various areas, including fisheries resource protection centres. The Ministry has requested employment slots from the President's Office – Public Service Management and Good Governance (PO-PSMGG) and granted to hire 20 staff for 2023/2024 to fill the gap.

2.4.2 Financial Resources

This part elaborates on the funding arrangements for managing fisheries resources by the MLF. **Table 2.2** indicates the fund allocation from 2018/19 – 2020/21 and 2022/23[11].

Table 2.2: Financial resources available for the management of fisheries resources for the period 2018/19 - 2022/23 (Amount in TZS)

Vote	2018/19	2019/20	2020/21	2022/23
Fisheries Development	5,756,327,000	2,072,794,390	2,987,034,390	9,202,230,000
Fisheries Laboratory	-	252,200,000	-	853,963,000
Aquaculture Division	1,064,407,930	1,064,408,930	1,184,407,930	11,334,407,930
Fisheries Aquaculture Research, Training and Extension Services	-	1,637,797,089	2,046,736,948	1,907,892,667
Fisheries and Aquaculture Infrastructure Development	-	-	-	300,000,000
Total	**6,820,734,930**	**5,027,200,409**	**6,218,179,268**	**23,598,493,597**

Source: *Auditors' analysis on the Fisheries sector MTEF from 2018/19 to 2022/23*

[11] Medium Term Expenditure Frame works for 2018/19 – 2020/21 and 2022/23

Table 2.2 indicates the budget for the management of fisheries resources in the financial year 2018/19, 2020/21 and 2022/23.

2.5 Managing Fisheries Resources in the country

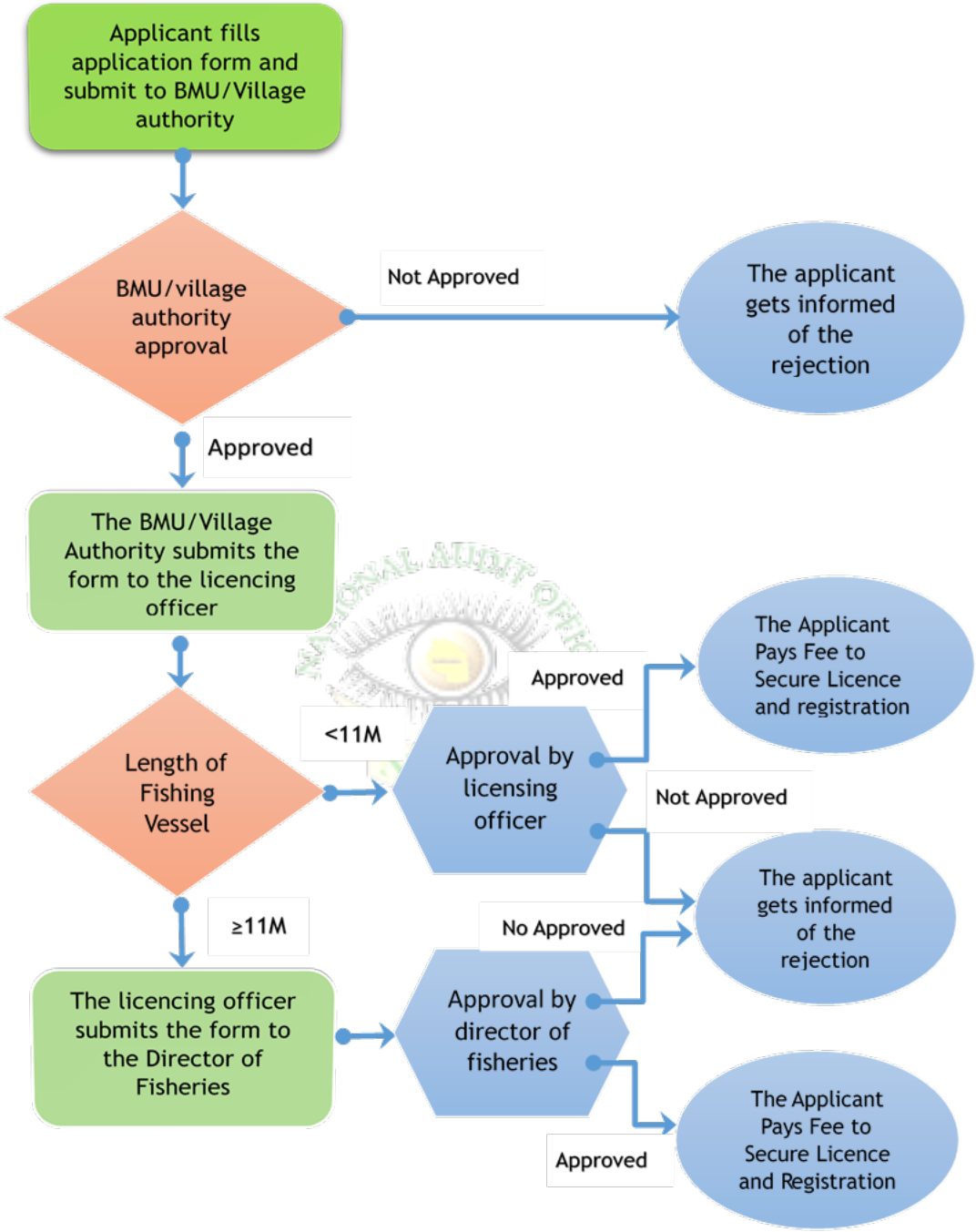
This section offers a description/process for managing fisheries resources in the country. It includes registration and licensing of fishers and fishing vessels and frame survey process as discussed below;

2.5.1 Registration and Licencing of Fishers and Fishing Vessels

Registration and licencing of fishers and fishing vessels are the keys to controlling fishing efforts within water bodies. Regulations 4(1) and 4(6) of the Fisheries Regulations of 2009 limit the size of fishing vessels and their registrations. The LGA's licencing officer does the registration and licencing of a fishing vessel with an overall length of up to 11.0 metres, while the director of fisheries registers those above 11.0 metres.

Fishers or fishing dealers fill out the designated application form as directed and provided in the 2009 fisheries regulations, then lodge the application through the village authority or BMUs for approval and endorsement. After the form is sent to the licencing officer by the applicant, the BMU or ward fisheries extension officer then assesses and conforms to the details of the application for approval. If the vessel in the application exceeds 11.0 metres, the application is sent to the director of fisheries; if it does not exceed 11.0 metres, the licencing officer approves and requests that the applicant pay to secure licencing and registration.

Figure 2.2: Process for registration and licensing of fishers and fishing vessels



Source: *Auditors Analysis (2023)*

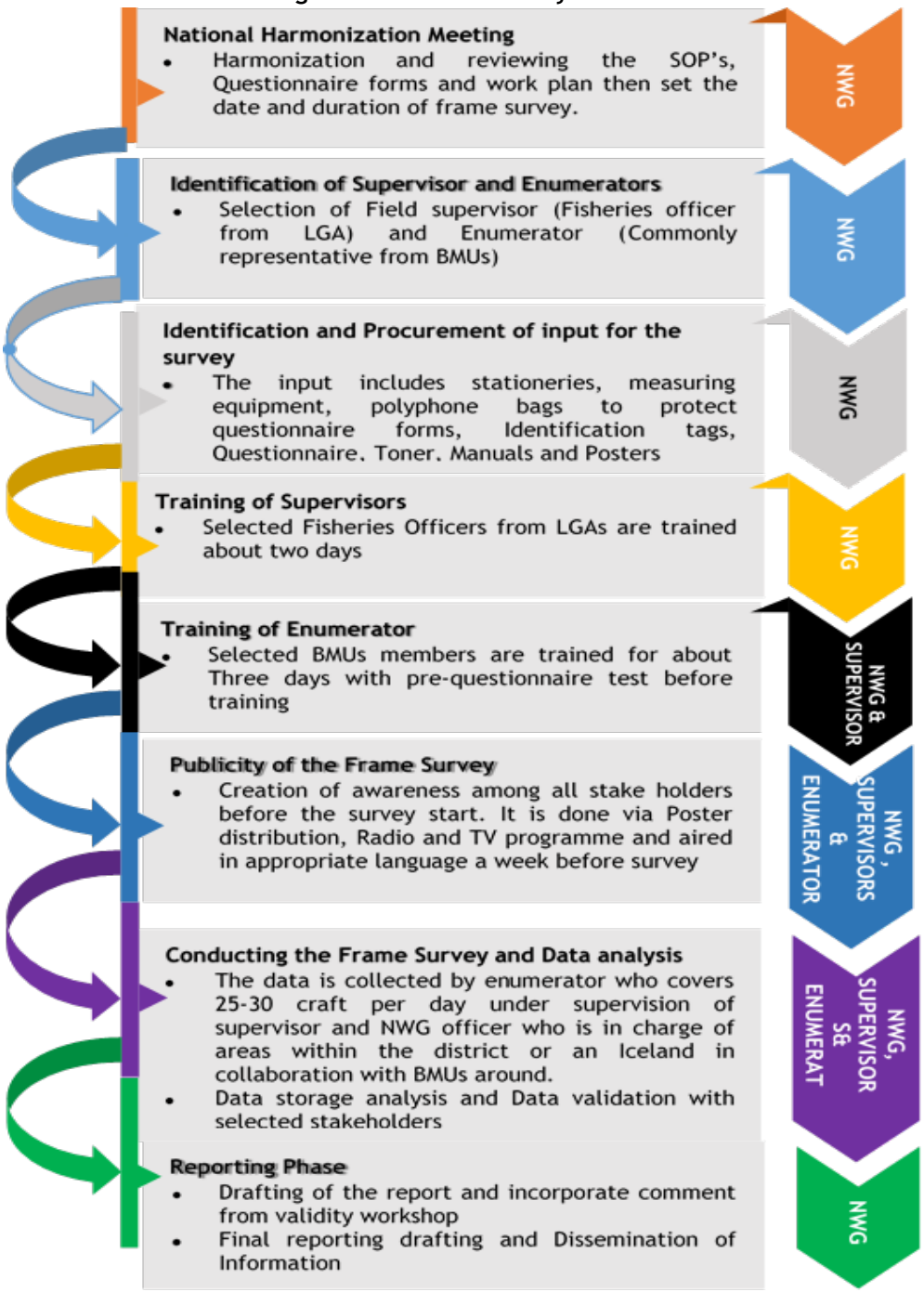
2.5.2 Frame Survey Process

A fishery frame survey is one of the key sources of fisheries information to provide policy guidance and management under MLF. The main aim is to provide information on the socio-economics of fisherfolk, community facilities at the fish landing site, and the composition, magnitude, and distribution of fishing efforts to guide the development and management of fisheries' resources.

Specifically, it provides information on the number of landing stations, fishers, facilities and infrastructure available at the landing site, services rendered by fisheries staff and BMUs at the landing sites, number and type of fishing vessels and their mode of propulsion, type and size of fishing gears and mode of operations and raising factor for estimating fish catch during catch assessment surveys.

Further, the frame survey is done by fisheries development division officials and officials from TAFIRI as National working group (NWG), TAFIRI, and LGAs fisheries officials as supervisors and BMU members as enumerators. The frame survey is scheduled to take place every two years.
Figure 2.3 describes the frame survey process.

Figure 2.3: Frame Survey Process

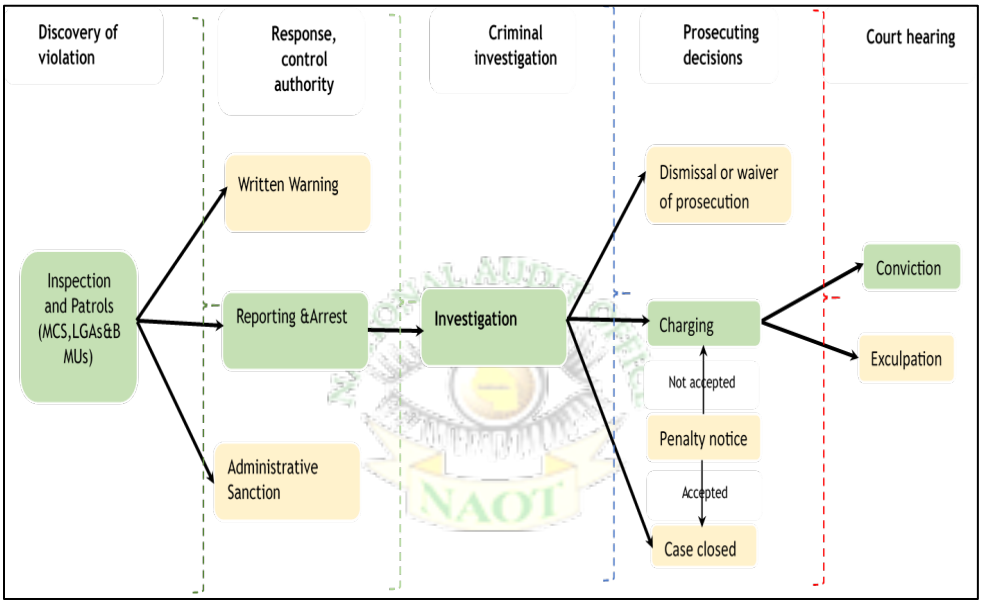


Source: *Auditors Analysis (2023)*

2.6 Sanction and Prosecution Procedures

When MCS unit officials or fisheries officers from LGAs discover regulation infringements or a fisherman circumvents the laws and regulations of fisheries management, the victim is either compounded, given a warning or taken to court concerning the nature of the infringements. **Figure 2.4** shows the sanction and prosecution process for any fishing violation.

Figure 2.4: Structure and procedure for enforcing the regulations and prosecutions involving fishery cases



Source: *Auditors Analysis (2023)*

CHAPTER THREE

FINDINGS ON THE EXTENT OF ILLEGAL, UNREPORTED, AND UNREGULATED FISHING PRACTICES AND IMPLEMENTATION OF CONTROL MEASURES

3.1 Introduction

This chapter presents an overview of the presence of illegal, unreported, and unregulated fishing practices. It describes the magnitude of illegal fishing practices, unreported fishing activities, and unregulated fishing practices.

Additionally, this chapter discusses the effectiveness of implementing control measures, including aspects such as the licensing and registration of fishers and fishing vessels, the management of fisheries information, and databases needed to manage information related to fisheries resources. It also assesses the effectiveness of coordination among various stakeholders involved in implementing fisheries management. The detailed findings are provided below.

3.2 Findings on the Magnitude of Illegal, Unreported and Unregulated Fishing Practises

The audit noted that there was a presence in illegal, unreported and unregulated fishing activities, as explained below.

3.2.1 Presence of illegal fishing gear and methods in the country

Regulation 66 (1-3) of the Fisheries Regulations, 2009, prohibits certain fishing gear and methods, which include manufacturing, importing, possessing, storing, stocking, selling or causing another person to use monofilament, beach seine net, fishnet of mesh size less than eight millimetres, gill nets of more than twenty-six meshes deep, gill nets of mesh size less than six inches or 152.4 millimetres and the like as stated in the regulation.

Upon reviewing frame survey reports for the financial year 2020, the Audit Team noted that illegal fishing gear persists in fishing activities and has not been entirely eradicated, as depicted in **Table 3.1**.

Table 3.1: Type of Illegal fishing gear found per Landing site

Name of water body	Number of the landing site	Beach seines	Monofilament	Mosquito nets/gillnets (>6")	Spears
Lake Tanganyika	107	12	9	1	0
Lake Victoria	580	1	25	60	0
Marine Water	274	2	1	1	11

Source: *Auditors' analysis from Frame Survey report for Lake Tanganyika 2022, Lake Victoria for 2020 and Marine fisheries for 2018*

Table 3.1 illustrates the presence of illegal fishing gear in Lake Tanganyika, Lake Victoria, and marine fisheries. The number and extent of illegal fishing gear varies from one landing site to another, depending on the degree of enforcement and patrols.

Table 3.1 shows that Lake Tanganyika stands out with 12 beach seines at each landing site, compared with other water bodies. Lake Victoria takes the lead with approximately 60 gillnets (>6) at each landing site. Additionally, the table reveals that Lake Victoria has the highest number of monofilament nets, about 25 at each landing site. Moreover, the use of spears in fishing activities was highly observed in marine fisheries, with 11 instances at each landing site.

A review of progress reports for the financial years 2019/20-2022/23 from the visited LGAs and MCS centres and interviews conducted with fisheries officials revealed that the continued use of illegal fishing gear was attributed to several factors. These include inadequate MCS operations, lack of awareness of the effects of illegal fishing among fishers, inadequate control of the importation of illegal fishing gear into the country, the desire of fishers to get massive fishing products at once, and low price of illegal fishing gear compared to the legal ones.

3.2.2 Insufficient reporting of fishing activities in the country

Regulations 71(4)-(9) of Fisheries Regulations, 2009, require the MLF and LGAs to collect, report, or document complete and accurate fisheries data, including vessel positions and catches data. Similarly, Regulation 134(1)k, Fisheries Regulations, 2009, requires the BMU to keep an updated register and submit quarterly reports on fisheries activities to LGAs.

Table 3.2 presents the analysis of reporting or documenting fishing data in the visited LGAs, highlighting key issues that need to be recorded. The table provides a breakdown of the number of LGAs reporting specific issues, categorized as "more often," "seldom," and "not reported."

Table 3.2: Reporting fishing data in nine visited LGAs

S/N	Required key issues	Number of LGAs reported a particular issue		
		More often	Seldom	Not reported
1	Catch data	0	4	5
2	Number of fishers	0	2	7
3	Fishing gears	4	2	3
4	Revenue collected	0	2	7

Source: *Auditor's analysis on reported data from 9 Visited LGAs (2023)*

Table 3.2 indicates the frequency at which LGAs report key fishing-related data. For instance, catch data was seldom reported in four out of nine LGAs and not reported in five out of nine LGAs. The number of fishers was seldom reported in two LGAs and was not reported in seven LGAs. Similarly, information on fishing gear was more often reported in four LGAs but seldom reported in two LGAs. Information on revenue collected was seldom reported in two LGAs and not reported in seven LGAs.

Additionally, 85% of the visited nine LGAs did not submit quarterly, semi-annual, and annual implementation reports to the Director, contrary to Regulation 71(7) of Fisheries Regulations, 2009. On the other hand, there was an inadequacy in reporting crucial issues that needed to be recorded and reported, such as fish catch data, fishing efforts, and fishing gear.

Furthermore, the frame survey, recognized as a reliable source of information, was not conducted periodically as required. **Table 3.3** reveals a consistent pattern of underachievement in the number of conducted

frame surveys across various water bodies during the fiscal years 2018/19 - 2022/23.

Table 3.3: Conducted frame surveys

Name of Water Body	Required frame survey for FY 2018/19-2022/23	Actually, conducted a frame survey on the financial year 2018/19 up to 2022/23	Year frame survey conducted
Lake Tanganyika	2	1	2022
Lake Victoria	2	1	2020
Marine	2	1	2018

Source: *Auditor's analysis of Frame survey reports from 2018 to 2023*

Table 3.3 reveals that from the financial year 2018/2019 to 2022/23, only one frame survey was conducted for Lake Tanganyika, Lake Victoria, and Marine, which was less than the required two surveys.

Inadequate implementation of frame survey reports resulted in the absence of reliable information on fishing activities, such as the number of fishers, number of fishing vessels, fishing gears available and landing sites with facilities within the country, which would be useful in managing fishing activities and properly utilising fishery resources.

3.2.3 Fishers and fishing vessels not fully regulated

Regulation 5 (1) of Fisheries Regulations, 2009, prohibits a person from using, employing, causing or permitting any person to use any fishing vessel for fishing purposes unless such a vessel has been registered.

During the review of progress reports from the visited LGAs, it was noted that fisheries activities such as registration, licensing and approving landing sites were not well regulated in Lake Victoria, Lake Tanganyika and marine. The conditions of the fisheries activities that were not well regulated are detailed below.

i. License and permit issuance

Concerns about insufficient fishing vessel licensing and registration coverage in water bodies have been noted among the MLF and the LGAs. The review of frame survey reports for 2018/19, 2019/20, and 2021/22

reveals the presence of operational unregistered fishing vessels and other business activities that did not comply with the fisheries regulations. **Table 3.4** illustrates the extent of unregistered fishing crafts.

Table 3.4: Performance of registration for fishing crafts

Frame survey conducted	Fishing crafts	Registered fishing crafts	Unregistered fishing crafts	Percentage of unregistered fishing crafts
Lake Tanganyika Frame Survey 2022	11,963	4,609	7,354	61
Lake Victoria Frame Survey 2020	30,646	10,220	20,426	67
Marine Fisheries Frame Survey 2018	9,242	5,343	3,899	42
Average % of unregistered fishing crafts				**56.67**

Source: *Auditors' analysis from Frame Survey Reports 2018/19, 2019/20 and 2021/22*

Table 3.4 reveals that, on average, 56.67% of fishing vessels involved in fishing activities were not registered. Lake Victoria takes the lead, with 67% of fishing craft operating without a license. Additionally, 61% of the fishing crafts operating on Lake Tanganyika did not possess the required license. The data and percentages presented above demonstrate the unsustainable management of fisheries resources.

ii. Unapproved landing sites

A review of the frame survey report, 2018, together with the Annual Fisheries Statistics Report (January- December) 2020, revealed that there were landing sites that were neither registered nor under the administration of BMUs. Landing sites that are not under the administration of BMU contribute to unsustainable fishing activities, such as fishing in breeding sites, immature fishing, and using illegal gear. **Table 3.5** highlights the existence of landing sites that are not under the administration of BMU.

Table 3. 5: Performance of registration of BMUs and landing sites with BMUs

Frame survey conducted	Landing sites	Landing sites with BMUs	Landing sites with no BMUs	Percentage of landing sites with no BMUs	Unregistered fishing craft/landing sites per year
Lake Tanganyika Frame Survey 2022	107	59	48	45	69
Lake Victoria Frame Survey 2020	580	573	7	1	35
Marine Fisheries Frame Survey 2018	274	174	100	36	14

Source: *Auditors' analysis from Frame Survey Reports 2018/19, 2019/20 and 2021/22*

Table 3.5 shows that 45% of landing sites in Lake Tanganyika were without BMUs. This condition poses a concern to fisheries' resource management and has resulted in uncontrolled incidences of illegal, unreported, and unregulated fishing (IUU). Because of this, Lake Tanganyika has the highest number of unregistered fishing craft, an average of 69 at each landing site.

Lake Victoria exhibited a very low percentage (1%) of landing sites without BMUs, suggesting a greater coverage of BMUs in this area, hence having fewer unregistered fishing vessels than Lake Tanganyika. In 2018, marine fisheries faced a substantial challenge, with 36% of landing sites lacking BMUs, though there are fewer unregistered fishing vessels. This was due to regular surveillance conducted as both LGAs and MCS fisheries centres are equipped with patrol equipment and good infrastructures.

The existence of landing sites without BMUs, which were responsible for streamlining the registration and licensing process, has resulted in an increasing number of unregistered and unlicensed fishers and fishing vessels, which influence the continuation of illegal fishing activities.

3.3 Findings on Implementation of Fisheries Management Measures

The audit noted inadequate performance in implementing management measures, such as inadequate licensing and registration, inadequate management of maximum allowable catches, inadequate regulation of maximum fish catch size, inadequate management of close seasons and

inadequate public education and outreach. These findings are discussed below.

3.3.1 Inadequate licensing and registration of fishing vessels

MLF and LGAs must register and license all fishing vessels operating within their administrative jurisdictions. Registration and licensing are a strategy used to regulate and rationalize sustainable fishing activities.

Regulations 4 and 5 of the Fisheries Regulations, 2009, stipulate that fishing vessels should not operate unless registered by respective authorities, which are LGAs for vessels with an overall length below 11m and MLF for vessels with an overall length above 11m.

A review of the Lake Victoria frame survey report 2020, the Marine frame survey report 2018, and the Lake Tanganyika frame survey report 2022 audit noted that 20,885 vessels out of 28,615, equivalent to 72.99% of all operating fishing vessels, were unregistered.

Also, a review of compounding registry books for MLF and LGAs noted that 70% of compounded offences resulted from non-registration and non-licensing of fishers and fishing vessels. Furthermore, T**able 3.6** presents the performance of vessel registrations and licensing in the visited regions.

Table 3.6: Fishing vessels registration and licensing performance

Region	Registered vessels	Unregistered vessels	Total number of vessels	Number of staff	Ratio of vessels/staff	percentage of unregistered vessels
Kigoma	1,250	4,553	5,803	8	725	78%
Coast/Pwani	743	2,198	2,941	22	134	75%
Mwanza	3,702	9,466	13,168	23	573	72%
Mara	2,035	4,668	6,703	11	609	70%
Lindi	1,583	513	2,096	6	349	24%
Dar es Salaam	1,128	92	1,220	22	55	8%
Total	**10,441**	**21,490**	**31,931**	**182**	**301**	**67%**

Source: *Auditors' analysis on reports of Lake Victoria, Lake Tanganyika and Marine Frame Survey Results (Tanzania)*

Based on **Table 3.6**, the registration and licensing performance varies across the visited regions. Dar es Salaam has the lowest percentage of unregistered vessels (8%). This performance was contributed by the proportional number of fisheries officers in relation to operating vessels, which allows single staff to monitor fewer vessels. Kigoma, Coast (Pwani), Mwanza, and Mara regions have more than 50% of vessels unregistered. This performance was contributed to by the presence of a lower number of fisheries officers than operating vessels, which demand a single staff member to monitor a large number of vessels.

Through interviews with fisheries officials, it was realised that, the registration process has been streamlined to start at a lower level by involving BMU as initiators of the fishers' registration process. However, the review of frame survey reports landing sites were not under the administration of BMU. A total of 155 out of 961 landing sites were not under BMU administration, leading to the presence of a large number of unregistered and unlicensed fishers and fishing vessels.

Interviews with officials from visited MCS centres and LGAs highlighted that the extensiveness of the coastline, broader coverage of lakes and rivers, and consistent registration across the country have become highly complex and challenging. Given the fact that the fishery has open access to lakes, where fisheries are artisanal, Neither LGA nor MLF is monitoring and conducting surveillance adequately in these areas, making it difficult to identify the unregistered vessels and fishers.

The interviews with officials from LGAs noted that the presence of unregistered fishers and vessels in the visited LGAs was influenced by the fact that most fishers reside near lake areas and are far from council offices responsible for registration and licensing. For example, Rorya District Council is located more than 50km from Sota Village, which has an operational landing site. Due to this situation, LGAS has decided to do onsite registration, where registration is done at the landing site by involving BMU officers. However, in the case of landing sites that are not accessible, fishers conduct fishing activities without registration and licenses.

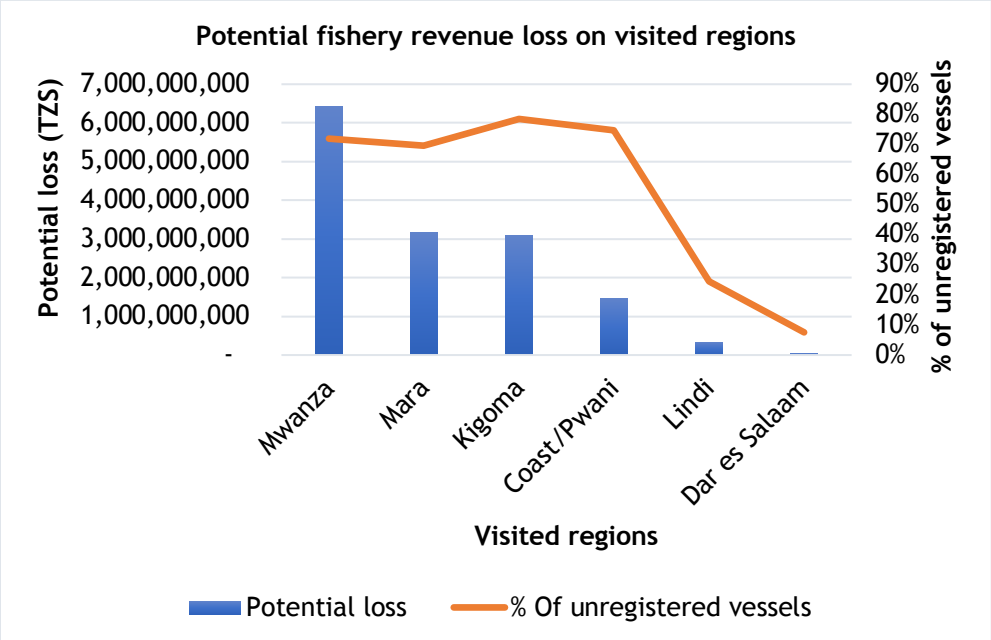
Furthermore, unregistered and unlicensed fishers are unaware of the benefits of licensing their vessels, which is essential for their safety and protection when carrying out their fishing activities.

Moreover, MLF staff had limited capacity to oversee all landing sites. For instance, Ukerewe District Council has one fisheries protection centre tasked with supervising fishing activities across 21 operational landing sites scattered among 31 islands with active fishing activities, but it does not have reliable patrol boats. Besides, many boats and vehicles owned by the visited FRP centres were out of use.

The presence of unregistered and unlicensed fishers and fishing vessels has led to the persistence of IUU activities and the consequent failure to collect reliable fisheries data in the respective water bodies.

The presence of unregistered and licensed vessels has led to a potential cumulative loss of TZS 15,162,640,000, which would have been generated through the license, TASAC, and TRA revenues. **Figure 3.**1 presents the statistics on potential revenue loss in the visited regions.

Figure 3.1: Potential revenue loss due to fisher's licence, taxes, and TASAC fees in the visited regions



Source: *Auditors' analysis from frame survey reports 2018 to 2022*

The data in **Figure 3.1** reveals that registration performance affected revenue collection performance. Notably, Dar es Salaam and Lindi had a potential loss below TZS 500 million, with the percentage of unregistered vessels below 30%. The performance of Dar es Salaam was contributed by good infrastructures and geographical setup; fishing activities in the region are centralized, and thus, they can easily be regulated. Conversely, Mwanza, Mara, Kigoma, and Coast have widespread landing sites, which creates difficulties in allocating resources for registration. In addition, these regions do not perform well in monitoring and regulating fishing activities. As a result, their loss has been above TZS 500 million, with the percentage of unregistered vessels above 60%.

3.3.2 Inadequate management of Maximum Allowable Catches

Section 17(i) of the Fisheries Act No. 22 of 2003, calls for the MLF to limit the species composition of fish that may be caught, landed or traded; it also requires a number of measures be taken, including setting a maximum allowable catch or Total Allowable Catch (TAC). There should be the maximum quantity of fish that may be taken from a particular fishery from a given area over a given period. TAC forms the basis for determining optimal harvesting regimes that ensure maximal economic benefits without upsetting the fishery.

However, upon scrutinizing the annual progress reports of each visited Local Government Authority (LGA) and MCS centres, it was evident that none of the LGAs and MCS documented allowable catches necessary for controlling fish catches for water bodies within their jurisdiction.

Also, the review of TAFIRI annual reports revealed that TAFIRI did not conduct regular hydroacoustic surveys as required yearly. The last survey was conducted in 2020. The absence of regular surveys in assessing fish biomass affects the availability of data to set maximum limits for catching fish from water bodies, threatening fisheries' sustainability and, consequently, food security. This will lead to long-term economic losses as fish stocks decline.

3.3.3 Inadequate regulation of fish catch size

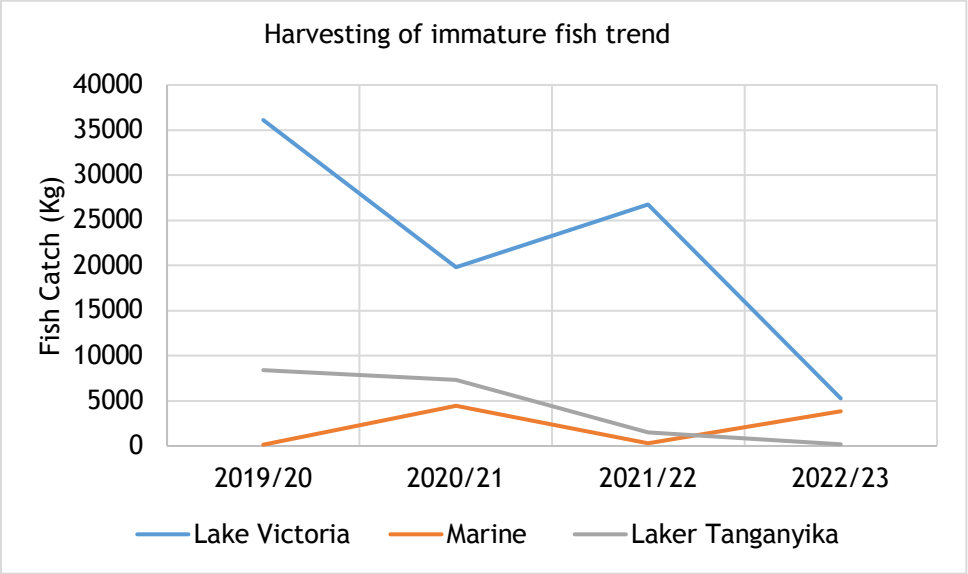
Fish catch size refers to a tool used to regulate the size of fish that can legally be harvested from particular bodies of water. Usually, it has been set to protect or prohibit the harvest of small-sized fish in accordance with fisheries regulations. It is based on the principle that fish populations exhibit different habitat requirements during different phases of their lives, which can influence overall fishing success. A minimum landing size is established. The Fisheries Regulations of 2009 (R.58 as amended in 2020) provide a slot size regime for Nile Perch (*Lates niloticus*) to sustain standing stock and attain profitable and viable exploitation stock sizes.

Furthermore, the Seventh Schedule of Fisheries Regulations of 2009, Part A (5), stipulates that possession of immature fish is one of the offences that will be compounded.

Through the analysis of statistics provided by fisheries officers from Fisheries Resource Protection (FRPs/MCS) centres and LGAs, the audit noted insufficient control over the size of fish catches. Both FRP centres and LGAs situated at landing sites reported the presence of undersized fish at the market.

This issue was particularly dominant in the Lake Victoria zone, where Nile perch and tilapia are the most overfished species and were frequently found at premature sizes. According to regulations, Nile perch should measure over 50 cm, and tilapia should exceed 10 cm. The trend in the sizes of immature fish caught is shown in **Figure 3.2**.

Figure 3. 2: Trend in the sizes of immature fish caught



Sources: *Auditors' analysis from the monitoring and surveillance reports (2018/19-2022/23)*

As illustrated in **Figure 3.2**, the harvest of immature fish has decreased in Lake Victoria and Lake Tanganyika, but it persists in marine waters. Despite the declining trend of harvesting immature fish in freshwaters, the audit noted that the data used were not comprehensive. The data were only gathered during the day patrol and inspection done by the fisheries officers. Moreover, it was realized that the fisheries officers conduct their patrol mainly during working hours from 7:30 a.m. to 3:30 p.m. They rarely conduct inspections and patrols during evenings, nights, and weekends, as shown in **Figures 4.1**, **4.2**, **4.3** and **4.4** of this report. Since fishing activities are mainly carried out during the night, illegal fishing activities take place at night as well. The detailed findings on the performance of time spent for patrols and inspection are presented in Section 4.3.1 of this report.

Since inspections and patrols were not often conducted during the night and weekends, the fisheries staff did not have data for the night and weekend activities. As such, the observation that the catching of immature fish is declining may not be valid due to the limitation of the data used. So, the actual condition might differ from the observed trend because even the illegal dealers would take advantage of the existing inadequacy in the inspection and patrol activities. Given the nature of fisheries' activities, it was expected that both the LGAs and MLF would apply the 24-hour

operation, for which staff could work the eight-hour schedule. However, based on the interviews with the fisheries officials, working on the 24-hour operation is ineffective for security reasons; the fisheries officers are not armed, unlike the forest and wildlife officers, who are para-military.

3.3.4 Little emphasis on the management of the close season by the MLF and LGAs

A fishery close season is imposed either in the breeding season to give each species in the population a chance to breed or in the recruitment season to allow a generation of larvae or juveniles to give enough time to grow to get optimum biomass from the population or recovery of fish stocks.

Regulation 54 (8)-(10) of the Fisheries Regulations of 2009 (as amended in 2020) provides for imposing close seasons in our water bodies. The MLF and LGAs are required to enforce fishing close seasons, with the primary goal of safeguarding fish stocks, enhancing fish stock recovery, and addressing critical issues such as mitigating overfishing, reducing fishing pressure, restoring overexploited fish stocks, and replenishing dwindling fish populations.

Through reviewing the progress report (2018/19-2022/23) from the visited MLF Fish Resource Protection centres (FRP) and LGAs, the Audit Team observed that there were close seasons for sardines in Lake Victoria and prawns in marine water fisheries.

Table 3.7 shows the performance of LGAs on implementing seasonal closing.

Table 3.7: Performance of implementation of the close season in the visited LGAs

District	Performance of implementation of close season
Kigamboni MC	The close season is for prawns only and is done for seven (7) months, from September to March.
Dar es Salaam CC	Close season is for prawns only and is done for seven (7) months, from September to March.
Kilwa DC	Close season is done for three (3) months for octopus and prawns species only.
Mafia DC	Close season is implemented for three months for octopus and prawn species only.

District	Performance of implementation of close season
Rorya DC	Close season is done for 14 days per month for all species. Alternating weekly closure followed by the opening of fish activities each month throughout the year
Nyamagana CC	The close season is for sardines only and is done for 10 days each month.
Kigoma MC	No close season was implemented.
Ilemela MC	The close season is for sardines only and is done for 10 days each month.
Ukerewe DC	The close season is for sardines only and is done for 10 days each month.

Source: *Auditor analysis on close season information from the visited councils (2023)*

The data in **Table 3.7** reveals that among the nine visited Local Government Authorities (LGAs), only Rorya DC enforces a close season for all fish species for 14 days. The remaining six LGAs (75%) implement a close season, but exclusively for a single species — sardine in the Lake Zone and prawns and octopus in the Marine Zone. Notably, Kigoma MC did not implement a close season, despite being stipulated in the signed partner state agreement for Lake Tanganyika Authority made during the Council of Ministers on December 16, 2021, for continuous management of Lake Tanganyika among member countries.

The observed inadequate performance in enforcing the closure is due to the following reasons.

i. LGAs did not manage closure implementation to avoid losing revenues collected from license fees, fishy levies, etc. However, no LGAs have conducted a cost-benefit analysis to assess the advantage of implementing close seasons against open access seasons.
ii. In freshwater fisheries in Lake Tanganyika and Lake Victoria, no physical boundaries exist to demarcate the breeding sites. Based on interviews, fishers have inadequate knowledge of the breeding sites in which fishing is restricted. However, these areas are encroached and difficult to monitor without physical boundaries. This contrasts with the marine environment, where the protected areas are demarcated and closely patrolled by MPRU, and no fishing activities are allowed. However, Marine Protected Areas (MPA) experience illegal encroachment and fishing with improper gear.

3.3.5 Inadequate public education and outreach

Public awareness of the importance of conserving fisheries by practising sustainable fishing management is essential for the general public to understand and appreciate fishery resources.

According to the Fisheries Sector Plan (2021/2022-2036/37), Operational Objective 5 requires the MLF to perform awareness-raising and training as part of its strategy for ensuring the sustainability of fisheries resources. However, neither LGAs nor MLFs were noted to provide public education and outreach, as discussed below sufficiently.

i. Performance of public education at LGAs

Public education and awareness-raising programmes are the key components of fisheries management. It was realized that public education and awareness raising are important activities to the sustainability of the fisheries resources. Awareness creation should be a continuous process. A review of strategic plans and action plans from the financial year 2018/19 to 2022/23 for the visited LGAs revealed no plan for conducting an awareness campaign for the communities. However, the review of progress reports revealed that the awareness campaigns were ad hoc.

The interview with LGA officials revealed that there was a lack of regular public awareness seminars because of a lack of funds and staff to facilitate these activities regularly.

The absence of regular public awareness campaigns for the community members, including fishers and coastal residents, has resulted in the persistence of unregulated fishing practices such as the use of unregistered vessels, the use of illegal fishing gear (such as monofilaments) and the catching of immature fishes. These practices were frequently recorded in compound registry books. The impact of continuing unregulated fishing practices is the depletion of fish resources.

ii. Performance of public education by MLF

As a means to provide awareness and education to the community, MLF, through the Department of Fisheries Research, Training and Education services (DRTE), has developed mobile kilimo (M-Kilimo) technology through

smartphones to assist fishers and farmers to easily reach their target markets and link with MLF at a minimum cost. Also, this technology serves as a quick link for fishers to obtain various information from MLF because it allows users to ask questions and receive their correspondences. Furthermore, the audit noted that since its establishment in 2022, MLF has responded to more than 2000 questions regarding various fishery and agriculture issues.

A review of the annual progress reports from the Ministry of Livestock and Fisheries (MLF) revealed that the Ministry had undertaken an awareness campaign to promote sustainable fishing activities within communities. Although these campaigns were not regularly carried out throughout the year, they were conducted during particular events such as the International Trade Exhibitions, Nanenane Exhibitions and World Food Day to reach out to a large number of communities in one place.

In addition, in the review of action plans for the MLF Department of Fisheries Aquaculture Research, Training and Extension Services (DRTE) and DRTE progress reports, the audit noted that MLF had exceeded the intended targets as reflected in the number of fisheries stakeholders reached during public seminars for education and training, as shown in **Table 3.8**.

Based on the interviews with MLF officials, it was noted that a total of 16,000 extension officers were required country-wide to ensure proper protection of sustainable fishing resources, including the provision of awareness campaigns in their respective working areas. However, the available number of extension officers is 667, which is only 4.17% of the total number needed. The shortage of staff by 95.83% of the required staffing number has contributed to the setback of MLF efforts in carrying out awareness seminars for the community, especially in areas where fishing activities were dominant.

The Ministry planned to conduct annual training for 25,030 fisheries and aquaculture stakeholders on sustainable fisheries and aqua-farm practices as reviewed in annual action plans for the MLF Department of Fisheries Aquaculture Research, Training and Extension Services (DRTE). The result of the implementation of the plans for each year is shown in **Table 3.8**.

Table 3.8: Performance of awareness campaigns conducted by the MLF

Awareness Program conducted	2019/20	2020/21	2021/22	2022/23
Number of people trained during the International Trade Fair	6578	8442	44500	23471
People Trained during Nanenane Exhibitions	29355	23458	-	34195
People Trained on World Food Day	1020	5162	3231	2838
Number of fisheries Stakeholders trained in 19 districts annually	5702	16733	15226	6895
Total number of fisheries stakeholders educated annually	**42655**	**53795**	**18457**	**67399**
Number of radio programs	19	50	25	45
Number of TV programs	32	15	25	41
Leaflet	4000	10500	9680	18008
Booklet	-	500	-	-

Source: *Auditor's analysis from action plan and progress report from the financial year 2019/20 to 2022/23*

Table 3.8 indicates that the (MLF) has consistently demonstrated its commitment to conduct awareness and education each year. It was observed that the Ministry has trained, on average, 45,576 fisheries stakeholders, exceeding the planned number of 25030 fisheries stakeholders per year. Notably, a substantial number of individuals were trained during international events like the International Trade Exhibitions, Nanenane Exhibitions, and World Food Day, reaching an average of 11,000 fisheries stakeholders annually across 19 districts.

Furthermore, the dissemination of information was expanded through radio and TV programs, along with the distribution of information leaflets. This concerted effort reflects MLF's dedication to enhancing community awareness and knowledge of sustainable fisheries and aquaculture practices.

However, the audit noted that the planned targets for conducting public seminars and awareness campaigns, as reviewed in the action plans, were low and unrealistic as they remained constant throughout each financial year despite the successful attainment of previous targets.

Moreover, the audit noted a lack of assessment concerning the impact of the implemented initiatives for awareness campaigns. Specifically, there was no evaluation of the effectiveness of these efforts on the intended targets, especially fishing communities in villages and islands. This includes the crucial aspect of tracking whether illegal or unsustainable fishing practices are rising or declining. Such assessments are essential for planning alternative approaches if training and educational methods are ineffective.

The audit team noted that failure to assess public awareness campaigns and regular training sessions for community members, including fishers and coastal residents, has led to the continued prevalence of unregulated fishing practices. These include using unregistered vessels, using illegal fishing gear like monofilaments, and catching immature fish, as documented in compound registry books.

3.4 Findings on the management of fisheries information, database, and coordination among players in the implementation of fisheries activities

The audit noted inadequate performance in managing fisheries information and databases and inadequate coordination among players in implementing fisheries activities. The findings on this aspect are discussed below.

3.4.1 Findings on the management of fisheries information and database

The following audit findings were observed.

i. Inadequate documentation of information on the management of fisheries resources

Fisheries management is the pursuit of certain objectives through the direct or indirect control of effective fishing efforts. Fishery management components, among others, include information about fisheries that guides the maximization of economic returns from the fishery. To implement such objectives, MLF has fisheries legislation that guides sustainable utilization of fisheries resources throughout the country.

Regulation 71(4)-(9) of the Fisheries Regulations, 2009, requires the Director of Fisheries and Directors at LGAs to maintain reliable data concerning all active fishing vessels. All fisheries activities, such as

licensing, fish catches, vessel details and revenue collection, must be documented and kept updated.

Currently, the Ministry uses eCAS and fisheries revenue collection information systems (FiRCIS) to collect fisheries information on the market-value chain (fish catch, value, permits, license, export and import volume, revenue, etc.). The system is robust enough to capture comprehensive data and information related to fisheries management, including strengthening existing systems to process, store, and analyse the data effectively for better performance and management.

However, the audit found that the documentation method applied in all visited LGAs was manually recorded, with insufficient details, including specific licensing records, fish catches, vessel details, and revenue collection. Besides, in all the nine LGAs visited, counter-books containing fisheries information for some years were missing. This made it difficult for auditors and fisheries officers to access and follow trends specific to fishery activities.

It was observed that LGAs replace counter-books containing fishery records every time they are full. This frequent replacement of counter-books prevented the straight flow of information from landing sites to council authorities. Also, it was not easy to retrieve information due to the poor condition of counter-books over time.

The audit noted that some of the visited LGAs, including Kilwa DC, Mafia DC, Mwanza CC, Rorya DC, and Ukerewe DC, did not have a centralized system for managing fishing activity information. The interview with fisheries officials revealed that the LGAs did not have computers required by staff to perform their tasks. **Table 3.9** illustrates the performance of the documentation of fisheries records in nine visited LGAs.

Table 3.9: Performance of documentation of fisheries records in the visited LGAs

LGA	Have separate counter -books for different fisheries activities	Have converted data from counter-books for different fisheries activities into electronic systems	Total number of counter-books used per year
Dar es Salaam CC	Yes	It is done only for registration of fishing vessels, but for the daily catch, data is not converted into an Excel spreadsheet	3
Ilemela MC	Yes	Yes, ledger for registration of fishing vessels, daily catch data and registers of license for fish and fish products	3
Kigamboni MC	Yes	It is done only for the registration of fishing vessels. Daily catch data are not recorded in the Fish landing station with no e-CAS	2
Kigoma MC	Yes	No fisheries data is converted to an Excel spreadsheet or any other software system	3
Kilwa DC	Yes	No fisheries data is converted to an Excel spreadsheet or any other software system	3
Mafia DC	Yes	No fisheries data is converted to an Excel spreadsheet or any other software system	2
Mwanza CC	Yes	No fisheries data is converted to an Excel spreadsheet, including daily catch data, registration of fishing vessels	3
Rorya DC	Yes	Only daily catch data was converted to an Excel spreadsheet	3
Ukerewe DC	Yes	No fisheries data is converted to an Excel spreadsheet or any other software system	3

Source: *Auditor's Analysis based on Document review (2023)*

The data presented in **Table 3.9** reveals that only 3 LGAs, namely Dar es Salaam CC, Kigamboni MC and Kigoma MC, have converted data from counter books for only fisheries data and registration of fishing vessels into an electronic system. Kilwa DC, Mafia DC, Mwanza CC, Rorya DC, and Ukerewe DC did not convert the same data from counter-books into an

electronic system. **Photo 3.1** shows an example of a counterbook recording fishing activities.

Photo 3.1: Sampled counter-book used for recording fishing activities

Source: *Fisher's registry book at Dar es Salaam City Council (October 2023)*

Similarly, the Audit noted that counter-book filling systems in the visited LGAs were ineffective. LGAs did not have an accurate and reliable register in the files containing information on all licensed fishers. Compliance with this requirement varies among LGAs, fisheries, and MCS offices. It was difficult to track various fisheries documents, such as forms for registration of fishers and vessels, the status of fishers and fishing vessels, etc. **Table 3.10** shows the performance of documentation in the visited LGAs.

Table 3.10: Performance of documentation in nine visited LGAs

LGA	File for registration of fishing vessels	File for licensing of fish and fish products	File for daily catch data
Dar es Salaam CC	Yes	Yes	No
Ilemela MC	Yes	Yes	Yes
Kigamboni MC	Yes	Yes	No
Kigoma MC	Yes	Yes	Yes
Kilwa DC	Yes	Yes	No
Mafia DC	Yes	Yes	No
Mwanza CC	Yes	Yes	Yes
Rorya DC	Yes	Yes	Yes
Ukerewe DC	Yes	Yes	No

Source: *Auditor's analysis based on documents review and interview (2023)*

The information in the table above confirmed that some LGAs have different correspondence files for different stages of fisheries activities. However, a non-consistent registry arrangement has made it difficult to locate the hardcopy files. Therefore, there was insufficient documentation of files and other records, making it difficult for the audit team to track the information.

The tracing of files was done manually, which made the task tedious. Poor record-keeping hindered the ability of authorities to make swift, timely, and informed decisions regarding resource allocation, conservation efforts, and overall management of daily fishing activities.

ii. Inadequate performance of the MLF in collecting and maintaining daily fisheries catch data

Fisheries information, especially catch data, is vital for sustainable fisheries resource management and development. The Ministry of Livestock and Fisheries is mandated to coordinate this important role, and LGAs are responsible for primary catch data collection.

Section 9 (1)g & k(v) of the Fisheries Act, 2003 outlines the mandate of the Director of Fisheries to establish database and information networks to collect and disseminate data related to fisheries development at the national, sub-regional, regional, and global levels for sustainable use of fish stocks and resources.

The Ministry has developed the eCAS system, which collects fish catches in Lake Victoria, Lake Tanganyika, and the Indian Ocean. Data enumerators from LGAs input data into the system and the data can be visualized by district fisheries officers and officials at the Ministry.

However, the review of the Annual Performance Report and the Report on the Lake Victoria Catch Assessment Survey, July 2021-June 2022, revealed that the collection and maintenance of daily fisheries catch data by the MLF was inadequate in the sense that daily fisheries' catch data were obtained from only 59 of 595 sampled landing sites, representing less than 10% of Lake Victoria's total number of landing sites. As a result, making decisions based on daily fish catch data from less than 10% of the population may be insufficient.

In addition to having daily fish catch data, the Strategic Plan of the MLF requires that the catch assessment be conducted once a year. During auditing for the financial years 2018/19 – 2022/23, it was noted that only 1 out of 5 required catch assessment surveys was conducted, which is equivalent to 20% of the requirements. This catch assessment survey was conducted in 2021 through GIZ. The funding covered only Lake Victoria.

Another survey in Lake Victoria was conducted in May 2013 and 2017 with financial support from the Trade and Agriculture Support Program Phase II (TASP II) and the Lake Victoria Environment Management Project (LVEMP II), respectively.

Since then, no catch assessment surveys have been conducted to cover the fishing activities in the whole nation. According to MLF officials, the nationwide fish catch assessment and stock assessment surveys are not conducted yearly due to lack of funds. The Ministry generally sets a budget for these activities each year, but the government does not release the funds. Since the last survey, the Ministry has budgeted about TZS 38,200,000 for this activity, but the funds have never been released.

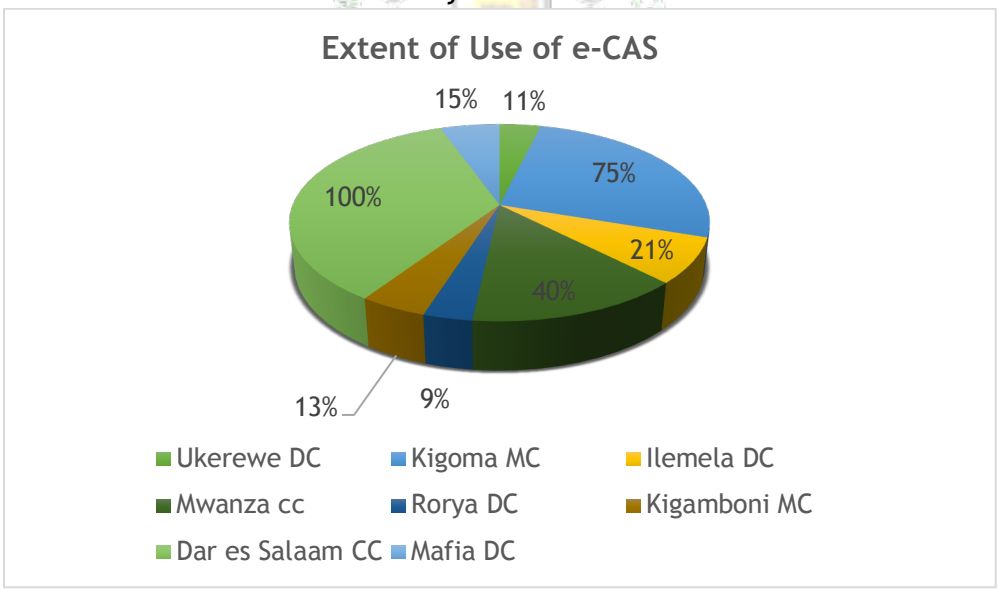
Therefore, the inadequacy of fisheries data from infrequent surveys and reliance on coarsely estimated data could affect the decision-making process for fisheries management.

iii. Inadequate performance of LGAs in collecting and maintaining daily fisheries catch data

As described above, at the level of LGAs, the collection of fisheries catch data is guided by Regulations 71(4)&(5) of the Fisheries Regulations, 2009, which requires daily fish catch data from artisanal fisheries to be collected by a fisheries beach recorder or a beach management unit data enumerator using catch assessment survey form. It further requires an officer in charge of fisheries in the local government authority to ensure that catch assessment survey data are collected.

During interviews with ward officers in the visited LGAs, it was found that while some LGAs used the electronic Catch Assessment Survey (e-CAS), others did not. The officers confirmed that the e-CAS was not used because the new BMU Committee, which is made up of data enumerators at the landing site, was not trained to use this electronic system. **Figure 3.4** shows the state of catch data collection in the visited LGAs.

Figure 3.3: Performance of LGAs in the usage of e-CAS in the collection of daily catch data



Source: *Auditor's analysis based on documents review and interview (2023)*

Figure 3.4 shows the extent of usage of e-CAS in the collection of daily catch data in the visited LGAs. The figure shows that Dar es Salaam City Council had one landing site that used e-CAS, equivalent to 100%, while Kigoma MC had 3 out of 4 landing sites that used e-CAS, equivalent to 75%. The data further shows that in some LGAs, the usage of e-CAS was very low. These include Rorya DC, which had 3 out of 33 landing sites that used e-CAS, which was equivalent to 9%, and Ukerewe DC, which had 6 out of 56 landing sites that used e-CAS, equivalent to 11%.

While reviewing the manually filled paper forms used to collect fish catch data, the audit found that not all information on fisheries management of fishing activities was recorded. The following information was required on the form: vessel name, fish species, quantity, and price. Some columns were left blank in most of the forms reviewed, and important information such as value and average price were not reported. **Photo 3.2.1** shows samples of daily registries with important details of daily catch data: value and average price. **Photo 3.2.2** shows a scenario where the sampled registry daily catchbook missed important details, including value and average price.

Photo 3.2: Daily catch information recorded in the data registry book

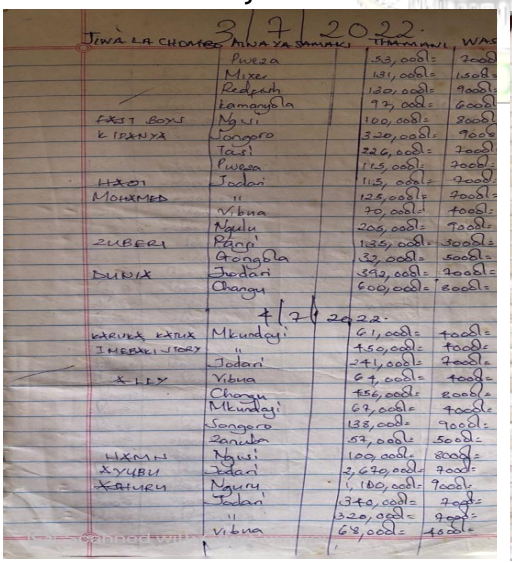


Photo 3.2.1 Complete information recorded in the daily fisheries catch data book at Dar es Salaam City Council (October 2023)

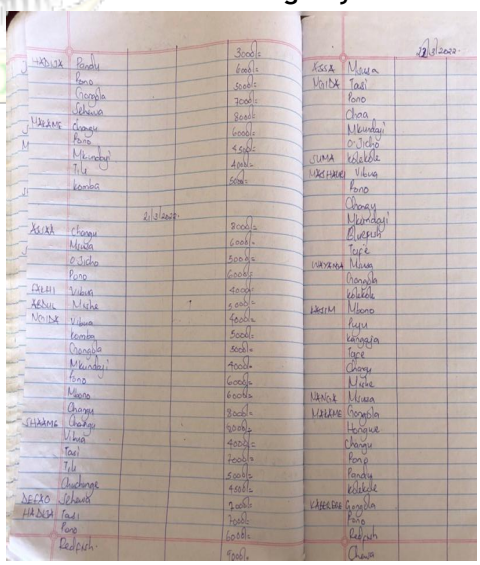


Photo 3.2.2 *Incomplete information in some of the fishery's daily catch books at Dar es Salaam City Council (October 2023)*

The major cause of the observed deficiency is the improper filling of fish catch data forms. The fisheries officers at LGA did not exercise strict quality control to crosscheck the filled form. This proves that the supervision and review of the form were not overseen sufficiently. The data can be collected as most fishing activities are artisanal; the daily fish catch data could be collected using the catch assessment survey form by a fisheries beach recorder or beach management unit data enumerator.

iv. Functioning of database and data quality management in the fisheries information system

This subsection presents the performance of database and data quality management in the fisheries information system.

a. Deficiencies in database and data quality management within MLF's fisheries revenue collection information system (FiRCIS)

Section 9 (1)g & k(v) of the Fisheries Act, 2003 outlines the mandate of the Director of Fisheries to establish database and information networks to collect and disseminate data related to fisheries development at the national, sub-regional, regional, and global levels for sustainable use of fish stocks and resources.

Through the review of the Fisheries Sector Master Plan, 2021/22 – 2036/37, the audit noted that the database in Mainland Tanzania's Fisheries Revenue Collection Information System (FiRCIS) was not annually maintained and updated. Some key information that needs to be updated includes catch assessment survey data, frame survey data, and hydro acoustic survey data.

Based on the interview with officials at MLF, the database was not updated because of insufficient data collected from the fisheries zonal office and LGAs, which are important input elements in the database. The audit found that data collection control was insufficient. Fisheries officers from the LGAs were supposed to ensure effective data collection from beach recorders in areas where beach management units (BMUs) are active. They were further supposed to ensure that the collected data were subsequently compiled by District Fisheries Officers (DFOs) and shared with the Regional Administration and Local Government (RALG) office. However, in most cases, this was not done.

Furthermore, this data management is not integrated into MLF's database. As a result, the data is not directly updated in the FIS. On the other hand, through interviews with MLF fisheries officers, the audit observed that estimates of fish annual catches made by the Ministry of Fisheries and Livestock (MLF) are not based on data collected from all existing fish landing sites in the country. They are still based on the sampled landing sites, which were less than ten per cent of the total operational landing sites. This makes the system ineffective and not truly representative, as it has not been well designed since the year 2021, when it was installed.

In addition, the audit noted that the Fisheries Information System (FIS) database is restrictive, as many fisheries officers cannot access essential information necessary for effective management. The system also needs to be updated, but the government has not released the required funds to do so.

b. Deficiency of computerized database and data quality management at LGAs

It has been remarked as important by the government that all authorities should now be realigning with IT systems to deliver effective goods and services. Regulation 71 (5) of the Fisheries Regulations, 2009, requires fisheries officials within the local government authority to guarantee the successful compilation of fisheries data within their specific locality.

In all nine visited LGAs, namely Dar es Salaam CC, Ilemela MC, Kigamboni MC, Kigoma MC, Kilwa DC, Mafia DC, Mwanza CC, Rorya DC, Ukerewe DC, the audit noted the absence of a centralized system in place for managing fisheries data to ensure data accuracy, consistency, and accessibility. This challenge limits obtaining streamlined data for effective management, monitoring and analyzing fisheries information, which is critical for informed decision-making. Such information includes inspection data, number of registered fishers, operating fishing vessel details, revenue collection, and enforcement performance. Such data has continued to be recorded in hard registry books.

The absence of a centralized system limits the capacity to compile comprehensive fisheries data and the ability to document various fisheries

information aspects such as daily catch data, inspection data, the number of registered fishers, details of operating fishing vessels and enforcement performance. This drawback led to inefficiencies and potential inaccuracies.

3.4.2 Findings in performance of coordination among players in implementing fisheries activities

The fisheries sector plays an important role in building a strong national economy by increasing household food security, income, and employment opportunities while nurturing the fisheries' resources. Fisheries resources management requires stakeholders' active involvement, including Local Government Authorities (LGAs), local communities, and regional and research institutions. The audit noted inadequate coordination within and between TAFIRI, MLF, and LGAs, as discussed below.

i. Inadequate coordination in implementing fisheries management among MLF, LGA and TAFIRI

Section 8(1) of the Fisheries Act No 22 of 2003 requires the MLF to use its best endeavours to ensure that all the local government authorities and associations of local authorities and other fisheries management authorities are consulted and kept informed of the management of fisheries activities and any other written laws related to the management of fisheries. In addition, Regulation 3(a)2 of Fisheries Regulations (amended 2020) requires those in charge of fisheries management in the respective LGAs to report all matters related to fisheries management to the Director of Fisheries.

The audit noted there was inadequate coordination in sharing information and reports regarding the management of fisheries among MLF, LGAs and TAFIRI, as shown in **Table 3.11**:

Table 3.11: Coordination required to be provided to stakeholders

Fisheries stakeholders	Duties of stakeholders	Audit observation
LGAs	Collection and dissemination of fisheries data and information	LGAs did not submit reports and information on fishing activities to MLF in accordance with the Fisheries regulations(amended), 2020. The audit team visited the Regional Secretariats' offices in Mwanza, Mara, Pwani, and

Fisheries stakeholders	Duties of stakeholders	Audit observation
		Dar es Salaam but found no reports on fishing activities submitted to MLF.
MLF, TAFIRI and LGAs	MLF, in collaboration with TAFIRI, LGAs, and other stakeholders, is required to carry out fish stock assessment and biodiversity, as well as environmental, ecological, and socio-economic studies, as a strategy for effective management of the resources.	The Ministry of Livestock and Fisheries (MLF), Local Government Authorities (LGAs), and Tanzania Fisheries Research Institute (TAFIRI) have not coordinated efforts to conduct essential research activities, including stock assessment, biodiversity studies, and research on environmental, ecological, and socio-economic aspects. This lack of collaboration hinders the comprehensive approach to managing fisheries resources effectively.

Sources: *Auditor's analysis from National Fisheries Policy (2015) and Fisheries Regulations (2009)*

Table 3.11 shows inadequate coordination in fisheries management among MLF, LGAs and TAFIRI.

The audit team identified the following factors contributing to the insufficient coordination among the Ministry of Livestock and Fisheries (MLF), Local Government Authorities (LGAs), and TAFIRI in managing fisheries resources in the country.

Communication gaps: Ineffective communication channels and mechanisms between MLF, LGAs, and TAFIRI have led to misunderstandings/misinterpretations, delays in information sharing, and the absence of synchronized efforts. Communication has been ineffective since MLF cannot communicate directly with LGAs. Instead, MLF is supposed to communicate with PO-RALG first since LGAs report to PO-RALG and not MLF. Also, MLF cannot force LGAs to undertake certain duties related to fisheries activities.

Data sharing challenges: Difficulties in sharing accurate and timely data between LGAs, the Ministry of Fisheries, and TAFIRI have hindered the development of informed and coordinated fisheries management. For example, it was noted that fisheries-related data from LGAs is shared with the Regional Administration and Local Government (RALG) office but not integrated into MLF's database.

Institutional barriers: Existing institutional structures and working relationships within LGAs, the Ministry of Livestock and Fisheries, and TAFIRI have posed challenges to effective collaboration. The barrier to these institutions is that LGAs report to PO-RALG and not to MLF. Also, when MLF requires official information from LGAs, it can be obtained through PO-RALG.

ii. Inadequate sharing of information between MLF and LGAs regarding fisheries activities

Regulation 64(1) of the Fisheries Regulations, 2009, requires the Director, in collaboration with local authorities, to enter into a management agreement with Beach Management Units to ensure proper management of the fish landing stations. The collection of information on fisheries is one of BMU's activities prescribed in Regulation 104(1) (b) of the Fisheries Regulations, 2009.

The audit noted that there was little cooperation between MLF and LGAs with regard to sharing information on fisheries activities. The audit found neither agreement nor a well-defined reporting arrangement for sharing information on fisheries activities between MLF and LGAs.

The audit noted that 98% of the BMUs visited did not collect any catch data necessary to be shared with MLF and LGAs. Based on the interviews held with BMU officials at Minazi, Mikinda, and Mjimwema BMUs in Kigamboni Dar es Salaam, it was noted that the activity of recording the fish caught and traded at the landing site was not done at all.

iii. Inadequate coordination of fisheries resource management

Fisheries resources management requires active involvement of various stakeholders, including Local Government Authorities (LGAs), local communities, regional research institutions and other stakeholders.

Section 53(1) of the Fisheries Act No. 22 of 2003 requires the MLF to outline the research areas in collaboration with TAFIRI and LGAs. Similarly, Regulation 27 of the Fisheries Regulations, 2009, requires the Director of Fisheries, in collaboration with Tanzania Fisheries Research Institute,

relevant research institutions and other stakeholders, to carry out the fish stock assessment and biodiversity, environmental, ecological and socio-economic studies as a strategy for effective management of the resources.

The audit has identified a challenge in communicating and planning required research activities between TAFIRI, MLF, and LGAs for the financial years 2018/19 through 2022/23. Notably, there was a lack of outlined areas for necessary research and communication regarding effective fisheries resource management.

Additionally, the audit noted that TAFIRI typically conducts research in response to requests from MLF. However, a mutually agreed-upon plan was lacking among MLF, LGAs, and TAFIRI to outline specific areas for required research during the financial years 2018/19 through 2022/23. It was also noted that TAFIRI's research proposals were not identified as required research areas despite the existence of a research agenda approved during this period.

The audit highlighted that the absence of essential research areas from the plans of TAFIRI and MLF has led to neglecting crucial research needs in most areas. Consequently, there is a predominant reliance on research funded by donors, driven by their specific interests and priorities. As a result, important aspects necessary for effectively managing resources, such as stock assessment, biodiversity, and studies encompassing environmental, ecological, and socio-economic dimensions, are unfortunately not considered.

Rectifying this situation is paramount for a more comprehensive understanding and improved management of fisheries activities. The audit recommends that it is important for TAFIRI and MLF to incorporate the required research areas into their plans to ensure a more balanced and thorough approach to fisheries research and management.

CHAPTER FOUR

FINDINGS ON THE PLANNING, INSPECTION AND SANCTION OF DEFAULTERS

4.1 Introduction

This chapter presents findings on the appropriateness of planning for inspections, the performance of carrying out inspections and the nature of sanctions for illegal fishing activities.

4.2 Inappropriate Plan for the Inspection and Patrol Activities

Section 9(1) (f) of the Fisheries Act No. 22 of 2003 requires the MLF and PO-RALG, through LGAs, to plan their inspection and patrol activities toward managing fisheries resources.

The audit team assessed whether the inspection plans for MLF, fisheries zone centres (MCS) and LGAs were risk-based, treated prioritized areas with illegal, unreported and unregulated (IUU) risks, involved stakeholders, inspection frequency, were randomized (ad-hoc) to ensure subsequent detection of infringements and applied appropriate sanctions.

4.2.1 Inadequate documentation of the inspection planning process

The medium-term strategic plan for the Fisheries sector, 2021/22 - 2025/26, presents the Monitoring plan as Table 2, which sets targets for MLF to develop plans, programs, and budgets. The Performance Indicators for the Fisheries sector will be the existence of annual action plans, annual reports, and other similar items, which will be verified through Progress reports. The general observation regarding planning is that the planning for inspection was not appropriately documented. This was observed in all key actors in the fisheries sector, including the parent ministry, the fisheries protection centres (FRP), and LGAs. It was unclear how resources for MCS activities were allocated during the planning stage. No documented criteria, methods or formulas were employed for allocating resources to zones and centres, particularly human resources, financial resources and equipment.

Although there was no documented criteria, were employed for allocating resources to zones and centres. The FAO Technical Guidelines on Methodologies and Indicators for the estimation of the Magnitude and Impact of Illegal, Unreported and Unregulated Fishing identifies that[12], during planning, criteria such as the size of the area, geographical location (remoteness), IUU threat, and previous performance of the unit against workload would be considered. The FAO guidelines also include the amount of revenue collected, the number of fishers, and the richness of the fishing ground to be considered in allocating resources during the planning.

The lack of such criteria makes the developed plans unrealistic and objective. The audit noted that the planning methodology is done, and resources are allocated mainly arbitrarily based on discussions and agreements based on the current demand. On the other hand, the audit reviewed the job list of the Ministry and Ikama[13] for 2022/23 and noted that the Ministry has shown that it has a shortage of staff and is in demand for more staff. However, the audit noted that the established demand was just a global figure, not based on the need for an analysis of the size and workload among the fisheries zones and centres.

4.2.2 Performance of planning process at MLF

Each year, the Ministry of Finance issues Guidelines for the Preparation of Plans and Budgets, which require public entities to produce plans and budget projections using the Medium Term Expenditure Framework (MTEF). The plans and budget include operational objectives, strategic interventions, key performance indicators (KPI), baselines, timeframes, and so on. This budgeting process at the Ministry is part of the planning for inspection activities. All the MCS centres submit their plans and budget for consolidation. At the Ministry, the plans and budget are supposed to be reviewed, and communication is done in case there are comments and if there is a ceiling budget amount for each centre.

This allows the centre to prioritize its activities based on the suggested ceiling. However, interviews with MCS centre officials revealed that the Ministry has not been giving feedback on the submitted plans and budgets.

[12] FAO (2021). Technical Guidelines on Methodologies and Indicators for the Estimation Of The Magnitude and Impact of Illegal, Unreported and Unregulated Fishing (IUU Fishing) Volume 3.1: A Practical Guide For Undertaking IUU Fishing Estimation Studies. Advanced Copy. Available at https://www.fao.org/3/cb3175en/cb3175en.pdf

[13] List of the number of employees needed in the department

They only released funds quarterly for operation and left the centre to decide for themselves.

In most cases, the centres have inadequate budget performance because the released funds are far less than what the centres have budgeted for. This communication barrier causes the centres to develop unrealistic budgets because they are not well-guided.

Such ambiguity in funding MCS activities will delay the achievement of the established target to reduce illegal fishing practices and IUU general from 25% to 10% by June 2025. This target was stated in the 2021/22–2025/26 strategic plan under objective "C". However, the audit team was unable to track the progress of the implementation of this target because the Ministry's M&E reports did not set up clear KPIs and a baseline to measure the extent of IUU in the country. Even though the implementation of the SP is in the third year, these goals cannot be achieved and tracked.

4.2.3 Performance of planning process at MCS centres

To obtain the consolidated budget, as stated in 4.2.2 above, all MCS centres have to submit their plans and budgets for consolidation. To asses the performance of these activities, the Audit Team also reviewed the plans from the MCS, which are submitted to the Ministry.

The review of MCS centres' plans submitted to MLF indicated that budgets are based on the centres' demands. However, none of the reviewed plans from all MCS centres had details on the patrol schedules and milestones to specifically show when and where patrol or inspections are expected to be undertaken. As a result, it is difficult for the Ministry to have an overview of the patrol activities in the country so that they can allocate resources accordingly.

Based on the interview of MSC officials, the reason for not putting in a detailed plan was that previous budgets were inadequately implemented. Therefore, they lack the motivation to produce a detailed budget each year since they know that it is not going to be implemented. The trend of fund release for budget implementation in each month is summarized in **Table 4.1.**

Table 4.1: Monthly frequency performance on release of funds to MCS centres

MCS centre	2018/19	2019/2020	2020/21	2021/22	2022/23	Total	%
Mwanza	0	5	7	9	8	29	48
Kigoma	7	6	5	6	5	29	48
Musoma	0	7	7	5	3	22	37
Sirari	0	5	7	4	3	19	32
Sota	0	6	6	4	3	19	32
Kilwa	-	-	-	8	5	13	22
Dar es Salaam	-	-	2	3	3	8	13
Ukerewe	6	8	4	3	4	25	42

Source: *Auditors' analysis from Warrant of fund received by MCS centres (2018/19-2022/23)*

Table 4.1 shows that no MSC received the OC fund for all 12 months in all financial years. There are 60 months covering the audit scope, and only the centres of Mwanza and Kigoma have received patrol funds for at least 29 months, equivalent to 48% of the total months. Receiving the funds for MCS activities allows the fisheries enforcement officers to conduct patrols to deter illegal practices. Therefore, this situation entails that the fisheries centres did not manage to conduct MCS activities for more than half the time.

On the other hand, the situation has been worse for the Dar es Salaam Fisheries Centre. Even though this centre did not receive MCS funds for many months (it only received 13%), the performance of its MCS activities has been better compared with other centres. This better performance is reflected in the region's achievement in registering fishing vessels; the number of unregistered vessels in the region is relatively smaller compared to other regions.

The main factor that makes the Dar es Salaam centre perform better than others is the geographic location, which makes the fisheries activities more centralized and easily coordinated. Moreover, the shoreline of Dar es Salaam is accessible and inhabited by many marine operation activities, including patrols by the Navy and other institutions, including the Marine Park Reserve Unit.

Furthermore, the officials at MLF stated that the trend shown for 2018/19 was that no fund was released to the fisheries centres as most of the funds were allocated for a nationwide campaign to fight IUU, known as ***Operation***

Sangara, conducted by MLF. The interviewed officials from the MCS centres confirmed that their centres carried out MCS activities based on directives issued by MLF headquarters rather than based on their own plans. The best example was the 2018 special nationwide campaign, *Operation Sangara*, which was conducted on all major water bodies.

4.2.4 Inadequate performance of planning at LGA level

MCS campaign is a regular activity of fisheries officials at LGA. It focuses on marketplaces, border points, landing sites and within waters. The inspection and patrol activities were indicated in the strategic plan, which was also reflected in the MTEF of LGAs. In the process of developing MCS plans, the Ministry of Livestock and Fisheries department could request the needs of actors at the grassroots. Specifically, ward extension officers and the LGA fisheries officers prepare the needed assessment and submit it to the planning department to consolidate for the council's approval.

In all the LGAs visited, the audit team found no documents that identified the requirements submitted to the planning department. Also, the Fisheries Department had no plans to support them in conducting MCS activities. Based on the interview with officials from the visited LGAs, the reasons for not preparing an MCS plan was that the decision makers at LGAs are more focused on revenue collection rather than conservation through patrol activities.

Interviews done with LGA officials in all nine LGAs showed that, even if the officials in all LGAs had plans, the emphasis put by LGAs was on financing revenue collection activities. This means that inappropriate planning has resulted in inadequate management of fishing resources. Consequently, it creates chances of growing illegal activities due to shifting the attention from control to revenue collection.

4.3 Ineffectively Implemented Inspection and Patrol Activities

Regulation 72(a)-(m) of Fisheries Regulations, 2009, requires fish inspectors to access, inspect, and search any fish establishment, aquaculture business, fish market, auction hall, warehouse, or storage facility for cured goods to assure compliance.

The audit team reviewed quarterly and annual progress reports for 2018/19 - 2022/23 to determine the performance of the zone centres and LGAs in inspecting and patrolling fisheries operations. The ineffective inspection and patrols were attributed to the following aspects.

4.3.1 Insufficient time spent on patrols and monitoring

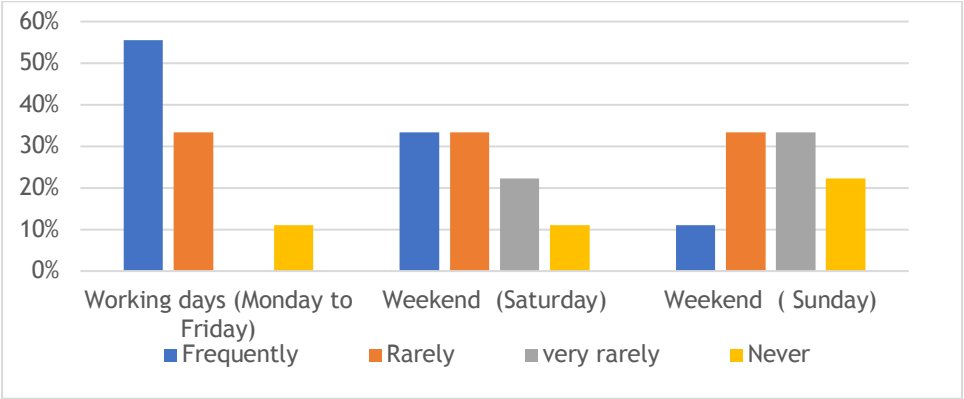
Fishing activities are full-time activities as they are carried out during the day and at night. Due to the nature of the activities, it is the requirement for the respective authority to conduct endless patrols and monitoring to deter IUU.

The review of the implementation report from MLF, MCS centres, and selected LGAs indicated the time spent on person days and the number of patrols conducted. It was observed that the duration of those patrols was not indicated. Regarding the nature of the operation, the audit team administered a questionnaire, as discussed in Section 1.5 (d) of this report. This questionnaire survey was administered in collaboration with experienced fisheries officials from all nine LGAs and 28 MCS centres. Therefore, the responses were from nine fisheries officers from nine LGAs and 28 responses from 28 MCS centres. The intention was to provide an understanding of patrol and inspection frequency based on weekly times or hours. Following the analysis and processing of responses from MCS and LGA officers, the following observations were made, among others.

i. Less time employed by LGAs for conducting patrols during the weekends and after working hours

LGAs are responsible for managing fisheries resources daily and in a timely manner. As detailed in Chapter Three, the extent of patrols and inspections on land (i.e., landing sites) and fish sales points were ineffective following increased illegal practices. **Figures 4.1** and **4.2** indicate the responsiveness frequency with time for LGAs in carrying out patrols and inspections.

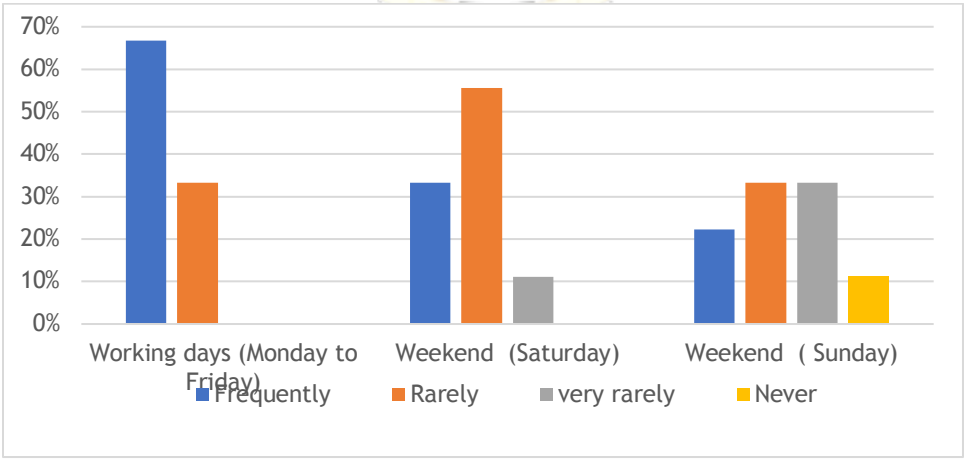
Figure 4.1: Frequency of inspection and patrol within water bodies by days of the week by LGAs



Source: *Auditors' analysis on survey study with LGAs (2023)*

Figure 4.1 illustrates that patrols were conducted more frequently on workdays and gradually decreased as the weekend approached. The frequency on working days exceeded that of the weekend, with Saturday showing a higher frequency than Sunday. **Figure 4.2** shows the frequency of inspection and patrol on landing sites and fish markets.

Figure 4.2: Frequency of inspection and patrol on land (landing sites and fish market centre) by days of the week



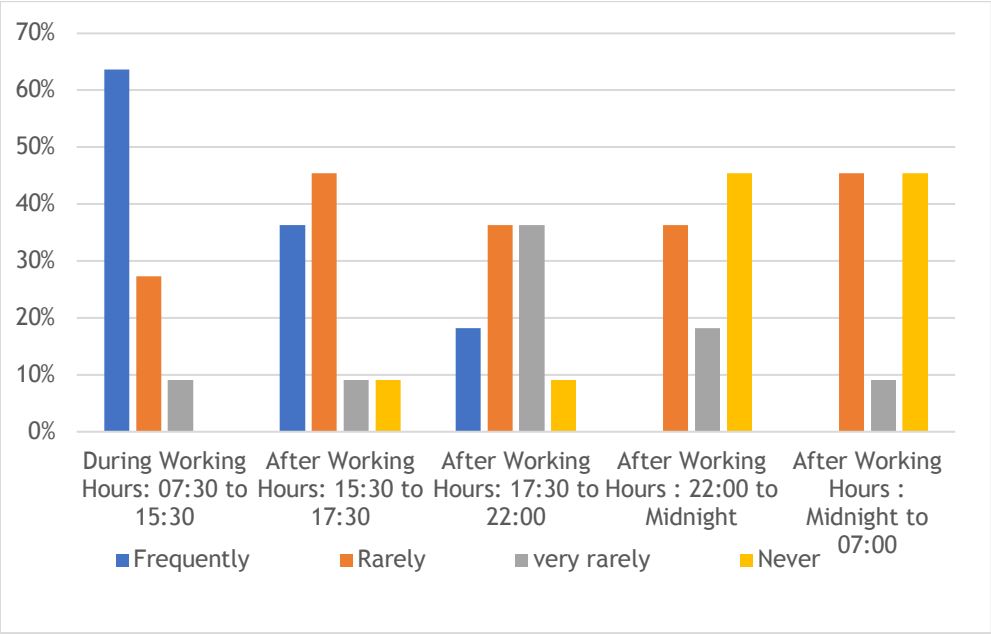
Source: *Auditors' analysis on survey study with LGAs (2023)*

Figure 4.2 illustrates that patrols and inspections were more frequent on workdays on land, gradually decreasing as the weekend approached. The frequency on workdays exceeded that of the weekend, with Saturday having a higher frequency than Sunday. Notably, the patrols on land during the

weekend, particularly on Saturday, exhibited a higher rate than patrols conducted within water bodies.

Figure 4.3 indicates the hours of inspection and patrol on water bodies in the visited LGAs.

Figure 4.3: Frequency of inspection and patrol on water bodies, by hours of the day

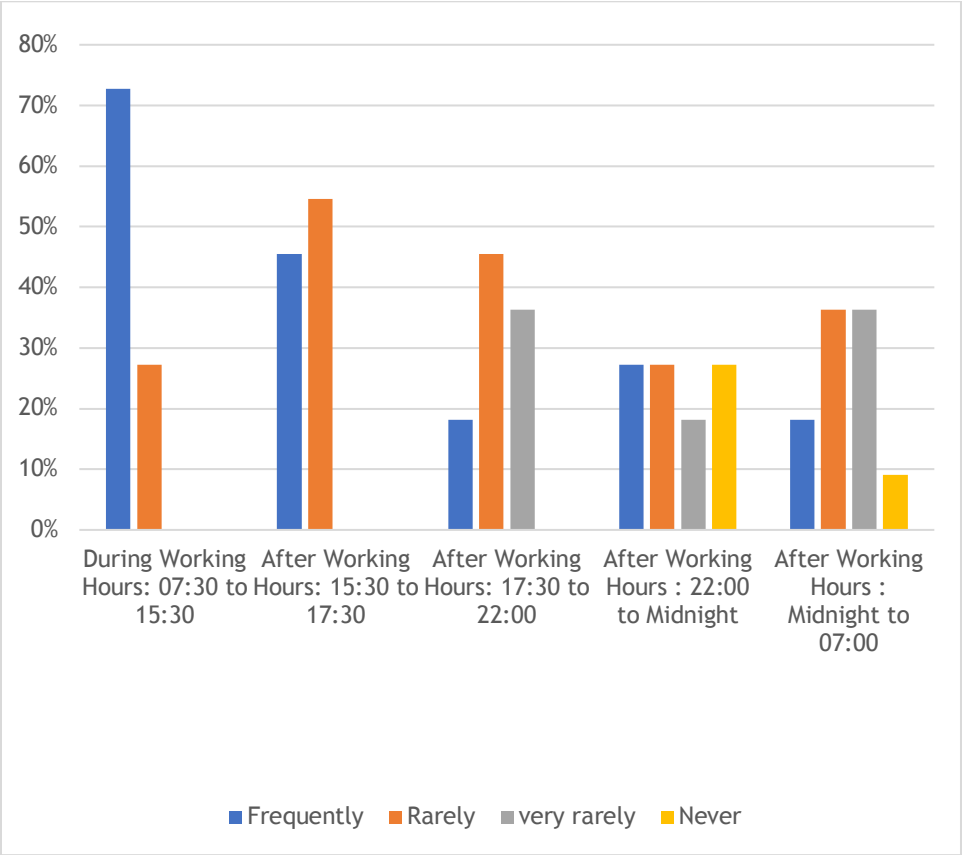


Source: *Auditors' analysis of survey results at LGAs (2023)*

Figure 4.3 shows that the patrols were conducted frequently during working hours and gradually decreased as evening approached. The rate continued to decline until midnight when patrols on water bodies were absent.

Figure 4.4 indicates the hours of inspection and patrol on land, including market areas and landing sites in the visited LGAs.

Figure 4.4: Frequency of inspection and patrol on land (landing sites and market centres), by hours of the day

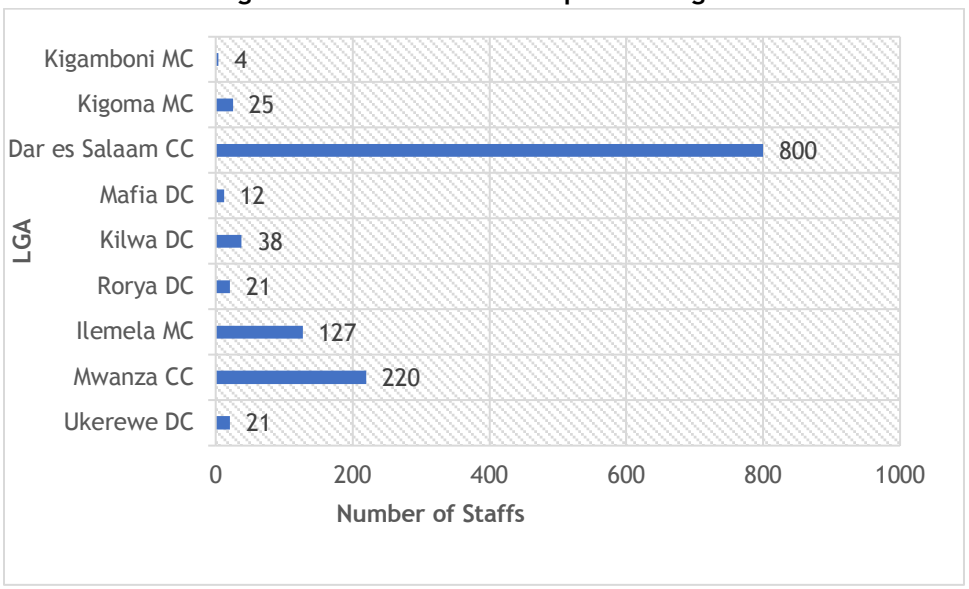


Source: *Auditors' analysis of survey results at LGAs (2023)*

Figure 4.4 reveals that patrols and inspections occurred at the highest frequency during working hours compared to the evening and midnight. Moreover, patrols and inspections at landing sites and market centres exhibited a higher frequency than the corresponding hours spent within waterbodies.

The inspections were incomplete and infrequent because LGAS did not have sufficient staff to conduct regular patrols during shifts. Moreover, from the information obtained from LGA, the audit team noted that there was an uneven distribution of fisheries staff as per demand, as indicated in **Figure 4.5.**

Figure 4.5: Number of staff per landing station



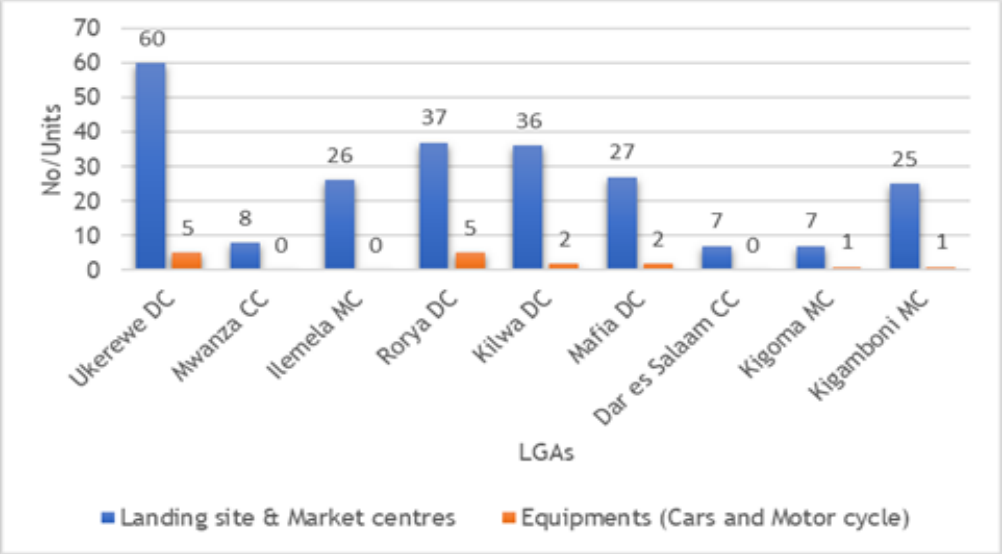
Source: *Auditors' analysis from LGA's staffing level and framed survey reports (2018/19 to 2022/23)*

Figure 4.5 indicates that Dar es Salaam CC has the highest staff rate per landing station, which is eight compared to Kigamboni MC, with one staff covering an average of 25 landing sites.

In the case of Lake Victoria, Mwanza CC has the highest number of staff per landing site, which is two staff for one landing site, compared to Rorya DC, which has the lowest number of one staff per five landing stations. The scenario above indicates that staff are highly stationed at city centres rather than district urban centres and villages, which have more prevailing demand.

Moreover, ineffective MCS operations and insufficient working equipment such as cars, motorcycles, and patrol boats have contributed to low compliance, especially at fishing market points and landing stations. **Figure 4.6** indicates the status of available working equipment in the respective fish market points and landing stations.

Figure 4.6: Number of working tools in relation to landing stations and fish market centres



Source*: Auditors' analysis on working tools (2023)*

Figure 4.6 displays the allocation of working equipment, including motorcycles and vehicles, to the visited LGAs. Notably, Ukerewe, with 60 landing sites and market centres, only possesses five motorcycles and no vehicles. On the other hand, councils like Mwanza CC, Ilemela MC, and Dar es Salaam CC do not have vehicles or motorcycles despite having many landing sites requiring timely inspection and patrols.

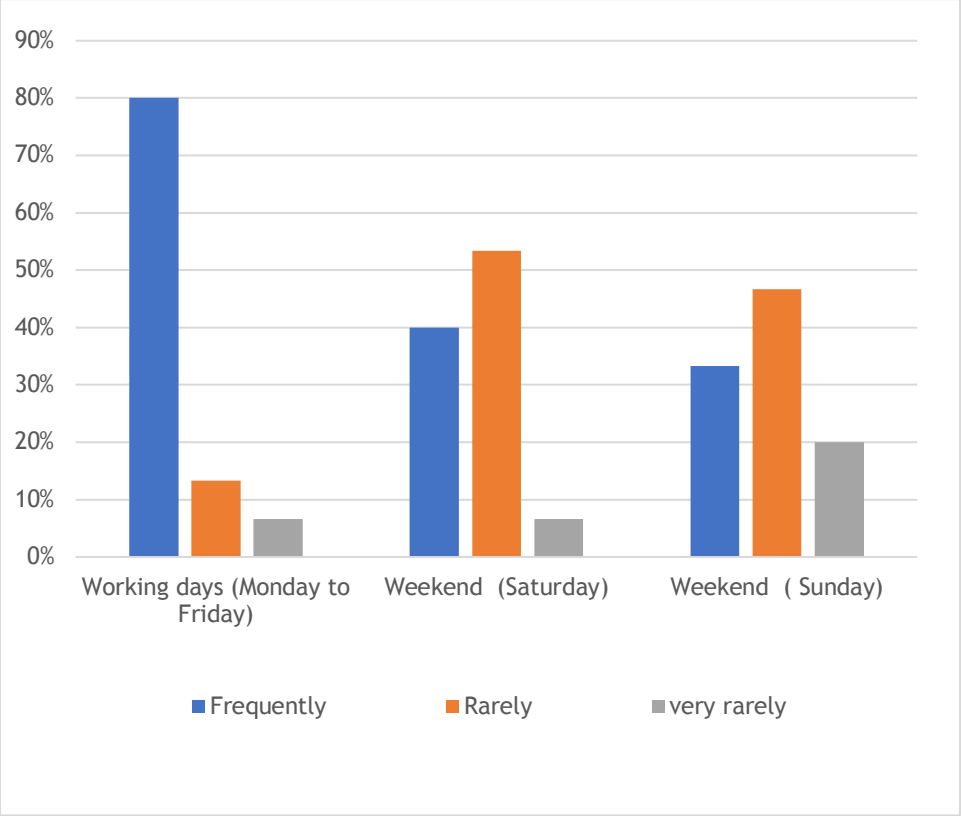
Beyond the conditions outlined in **Figure 4.6**, three of the nine visited LGAs lack vehicles and motorcycles. Moreover, there is a shortage of vehicles to support patrols and inspections in all LGAs, except for Rorya DC, which possesses one vehicle. The LGAs that do not have a vehicle have to borrow one from other departments when needs arise, which is an indication of a critical shortfall in the availability of working equipment and resources.

The audit team noted operational constraints for officers to engage primarily in office and desk-related tasks. These activities included revenue collection, license issuance, and ad-hoc activities, including district council meetings.

ii. Less time used by MLF for patrols during weekends after working hours

The frequency of MCS operations on a timely basis was also an issue, as timely patrols were conducted during workdays and working hours, but they were less frequent at night and on weekends, as shown in **Figure 4.7.**

Figure 4.7: Frequency of inspection and patrol within water bodies, by days of the week

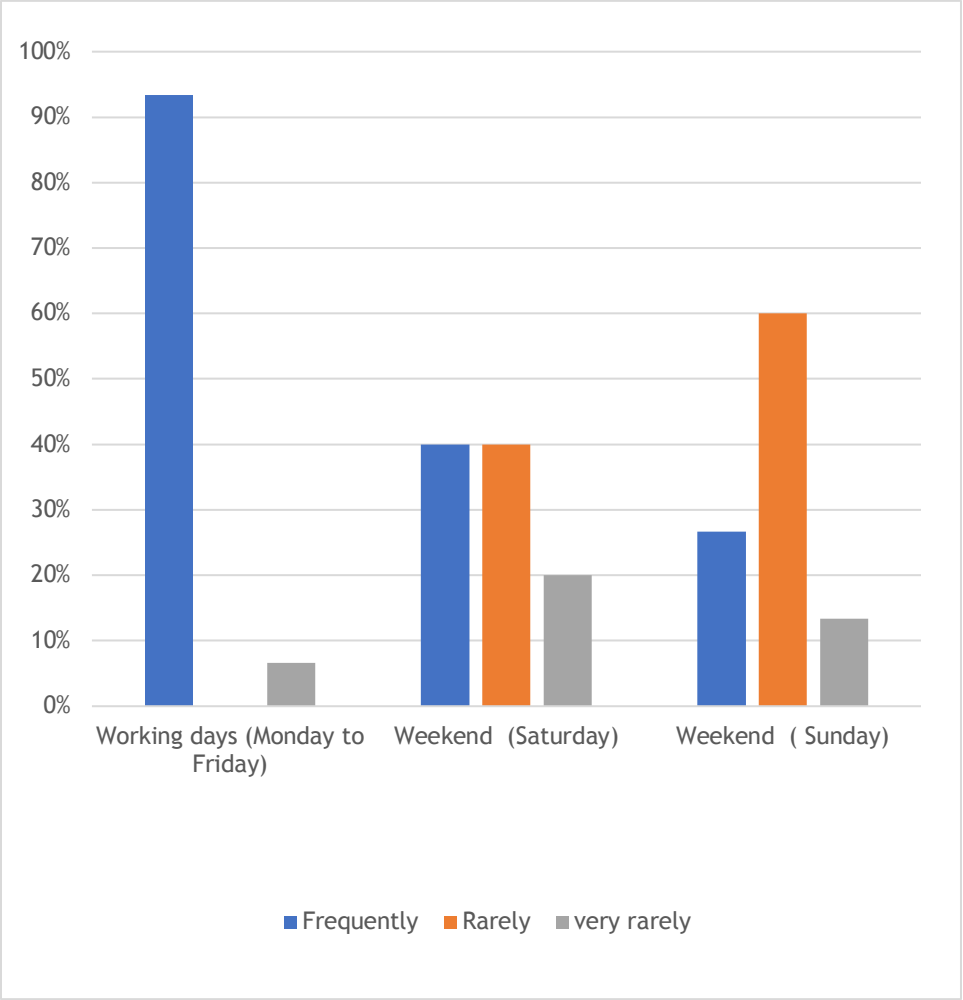


Source*: Auditors' analysis on survey study with MCS centres (2023)*

Figure 4.7 illustrates a pattern where patrols were more frequent on workdays, gradually decreasing as the weekend approached. The frequency on workdays was higher than the weekend, with Saturday having a higher frequency than Sunday.

Figure 4.8 indicates the days of the week for inspection and patrol on land, including market areas and landing sites.

Figure 4.8: Frequency of inspection and patrol on land (landing sites and fish market centres) by days of the week

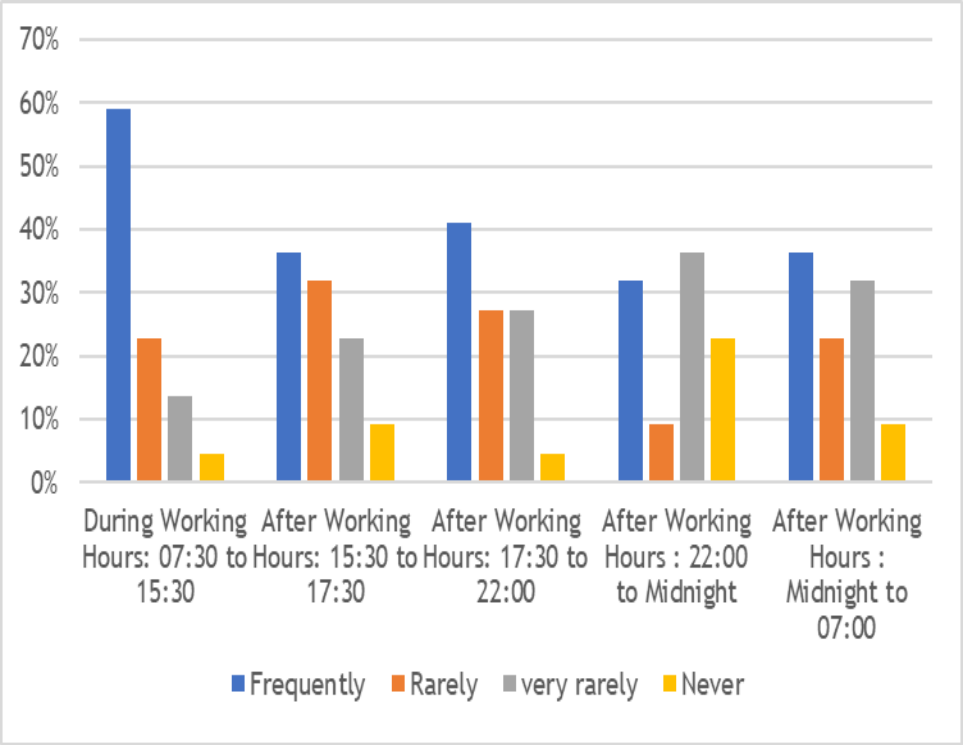


Source*: Auditors' analysis on survey study with MCS centres (2023)*

The auditing team reveals that patrols and inspections were carried out more frequently on workdays on land, with a gradual decrease leading up to the weekend. The frequency on workdays exceeded that of the weekend; on weekends, Saturday had a higher frequency than Sunday. Notably, the rate of patrols and inspections conducted on land during the weekend, especially on Saturday, was higher than those carried out within water bodies.

Figure 4.9 indicates the frequency of hours of days for inspection and patrol within water bodies.

Figure 4.9: Frequency of inspection and patrol within water bodies by hours of the day

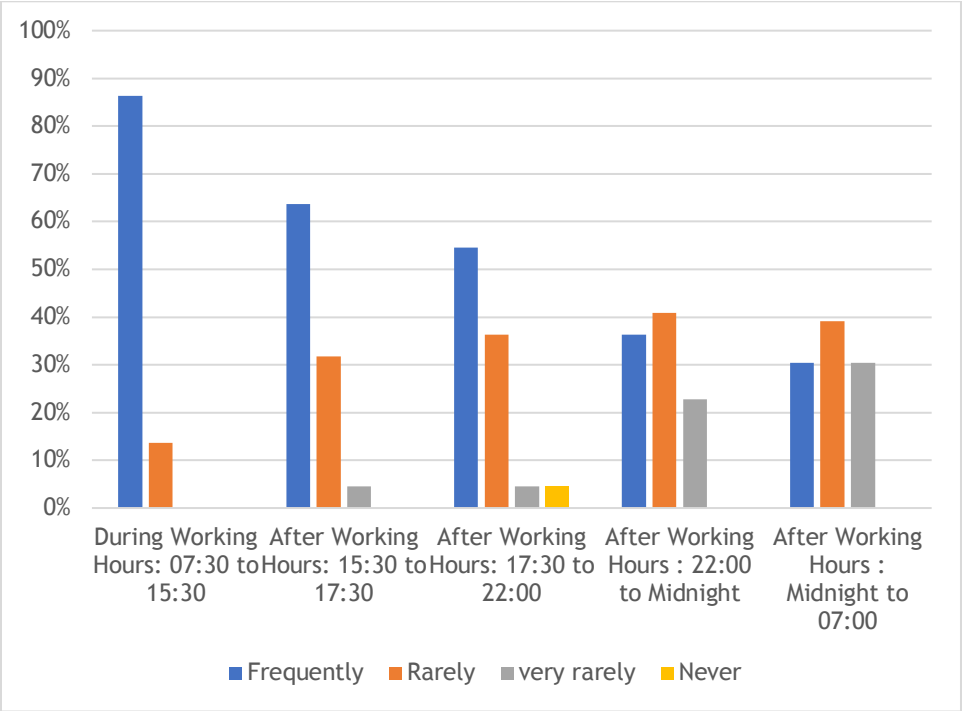


Source*: Auditors' analysis of survey results at MCS centres (2023)*

Figure 4.9 indicates that patrols were done frequently during working hours and slightly decreased when approaching evening. The rate kept decreasing until midnight when patrols were not conducted within the water bodies.

Figure 4.10 indicates the frequency of hours of inspection and patrol on land, including landing sites and market areas.

Figure 4.10: Frequency of inspection and patrol on land (landing sites and market centres) by hours of the day



Source: *Auditors' analysis of survey results at MCS centres (2023)*

Figure 4.10 indicates that patrols and inspections were carried out at the highest frequency at working hours compared to evening and midnight. Still, patrols and inspections at landing sites and market centres were higher than those hours spent within water bodies.

The lower frequency of night-time and weekend surveillance allows IUU operators to gain unauthorized access to fishing grounds and exploit fisheries resources without adhering to regulations because many fishers operate at night.

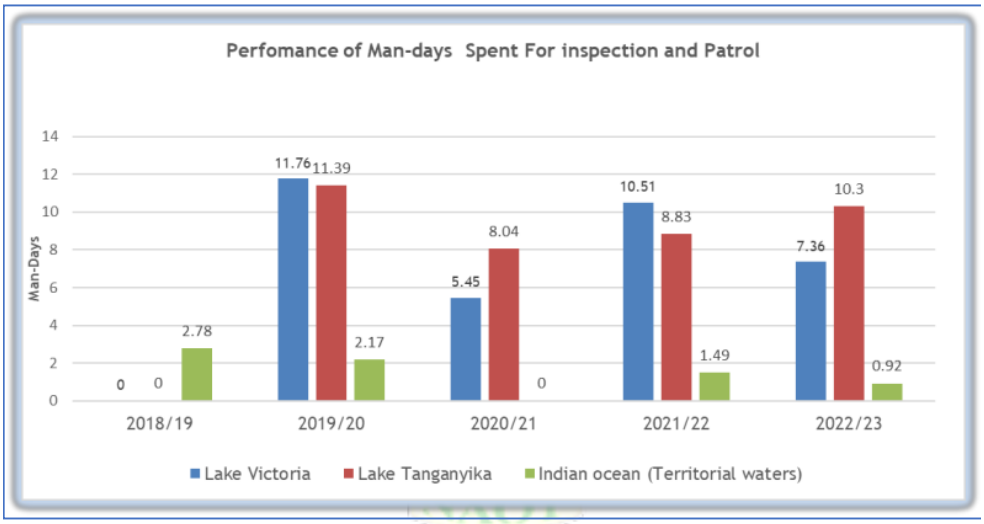
4.3.2 Insufficient man-days spent on patrol and inspection

After reviewing the annual progress report from four selected zones of Lake Victoria, Lake Tanganyika, the Indian Ocean and the Northern and Eastern zones, the Audit Team revealed a significant shortfall in the frequency of patrols conducted to combat IUU fishing activities.

Data analysis indicated that patrols were conducted at a frequency lower than necessary to deter IUU fishing operations effectively. This shortfall raises concerns about the capacity to monitor and enforce fisheries regulations adequately.

Figure 4.11 indicates the status of man-days spent for patrol and inspection in a given fiscal year.

Figure 4.11: Performance of man-days spent for inspection and patrols per 100 km^2

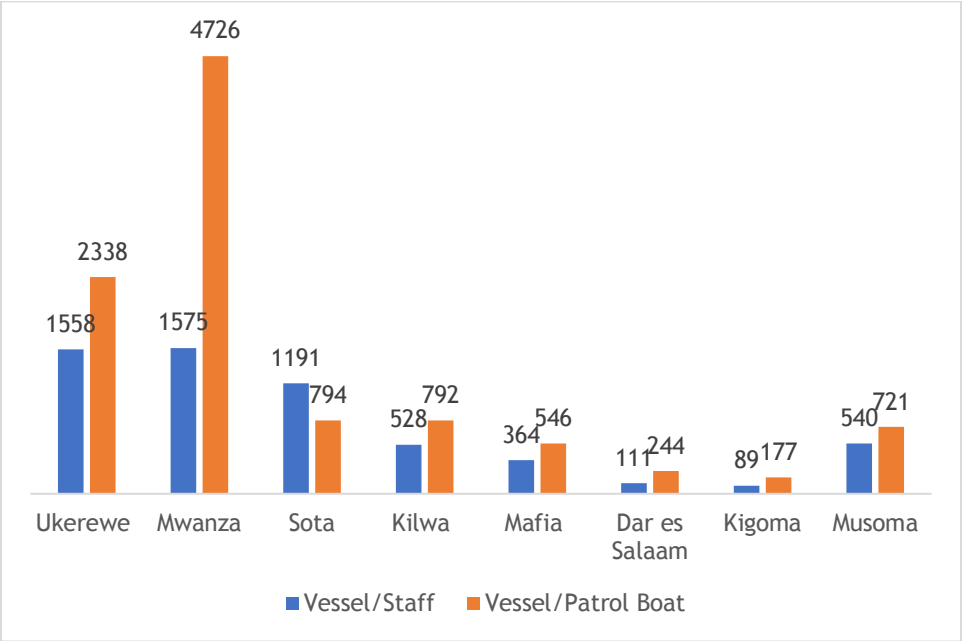


Source: *Auditors' analysis of MCS centres annual reports (2018/19 to 2022/23) and frame survey conducted from 2018 to 2022*

Figure 4.11 shows that the Lake Tanganyika zone has the highest number of person-days used for coverage, 38.56, while the Indian Ocean has the lowest. Also, for 2019/20, Lake Victoria had the highest coverage of 11.76, while for 2022/23, Indian Ocean territorial waters coverage per person-hour spent was very low at about 0.92 man-days per 100 km^2.

The shortage of man-days employed for patrol and inspection is caused by different factors, including the uneven distribution of fishing efforts (vessels and fishers), staff and boats to control the effort exerted, as indicated in **Figure 4.12.**

Figure 4. 12: Distribution of fishing vessels in relation to the available staff and operating boats at MCS Centres



Source: *Auditors' analysis of Frame survey (2018 to 2022) and Inventory report of MCs centres (2023)*

Figure 4.12 indicates the disproportionate allocation of staff and boats to MCS. In Mwanza Centre, the available staff per patrol boat is about 4,726 fishing vessels operating in the lake water in four districts: Magu, Ukerewe, Sengerema, and Misungwi. Meanwhile, one patrol boat served 177 fishing vessels in the Kigoma MCS centre. The workload experienced in the Mwanza zone is high, which leads to inefficiency. That is why a higher level of illegality is observed in Lake Victoria.

It has been noted that Dar es Salaam and Kigoma have the lowest staff rate per vessel control compared to Mwanza and Ukerewe. **Figure 4.12** indicates the need for more workforce and patrol boats in Mwanza and Ukerewe compared to Dar es Salaam and Kigoma.

The number of man-days spent for patrol and inspection was insufficient because budget allocation was insufficient to support patrol and inspection activities. The review of MTEF and implementation reports from MLF indicates that shortage, as shown in **Table 4.2.**

Table 4. 2: Budgeted amount versus disbursed amount for patrols and surveillances to protect fisheries resources

Financial Year	Budget amount (TZS)	Disbursed amount (TZS)	Deficit (TZS)
2018/19	1,264,362,701.00	827,450,858.00	436,911,843.00
2019/20	1,443,750,000.00	1,418,693,903.43	25,056,096.57
2020/21	1,874,372,300.00	1,806,322,300.00	68,050,000.00
2021/22	1,281,236,253.00	1,176,779,925.00	104,456,328.00
2022/23	1,113,181,331.00	927,367,526.26	185,813,804.74

Sources: *Auditors' analysis of MTEF and implementation reports (2018 to 2023)*

Table 4.2 shows that the allocated budget was not fully disbursed to cater for the financial requirement to support effective MCS operations countrywide. It is noted that a total of TZS 820,288,072.31 was not disbursed. The financial year 2018/19 had the highest amount of undisbursed funds, amounting to TZS 436,911,843. Furthermore, in the interviews with MCS fisheries officials from selected centres, it was found that there was no clear budget flow from MLF to MC centres. Consequently, fisheries patrols and inspections are carried out based on received funds warrants.

4.4 Inadequate Inspection Practices of the Fishing Gear at Borders

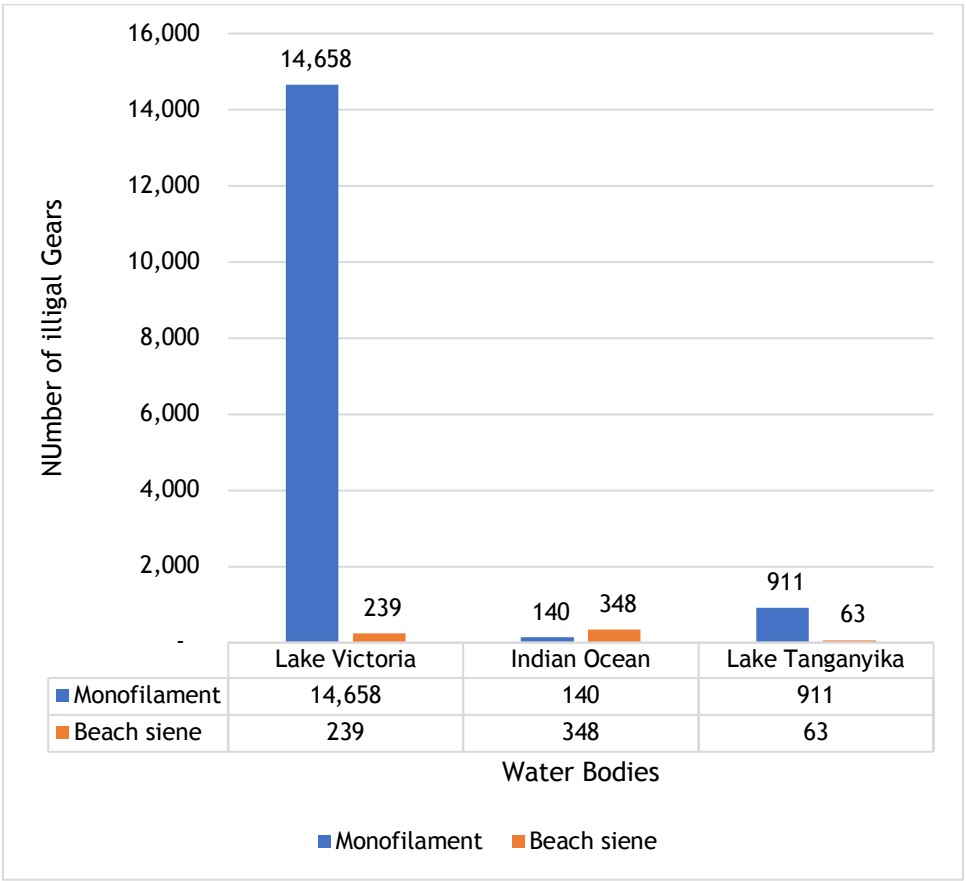
Regulations 65(1), 66(1) of the Fisheries Regulations, 2009 and Article 7 of the regional charter of the member states of the Lake Tanganyika Authority of 2021 provide measures for sustainable fisheries management in Lake Tanganyika. They require MLF to control and regulate fishing gear importation, manufacturing and construction.

In the review of the inspection reports (2018–2021/23) from the border points visited, it was noted that MLF did not thoroughly inspect the entrance of fishing gear passing through the border points. Nevertheless, imported fishing gear, such as monofilaments, are available, which is against Regulation 66(1)a of the Fisheries Regulations of 2009, which prohibits the manufacturing, importating, possessing, storing, stocking, or selling of monofilament nets.

Even though illegal fishing gear like beach seines and monofilaments are forbidden, they were found in different water bodies.

Figure 4.13 indicates the number of illegal fishing gear that are still used in the Tanzania fishing industry.

Figure 4.13: Status of illegal fishing gear



Source: *Auditors' analysis from Frame survey[14] (2023)*

Figure 4.13 shows that despite the effort made by the MLF to restrict the passage of those forbidden gear, they were still found in major water bodies. It further indicates more monofilaments in Lake Victoria and more beach seines in marine waters. For example, a review of the MLF implementation reports of 2021/22 and 2022/23 indicates an increase in monofilament net confiscation from 223,324 to 362,509, respectively, indicating an increase of 38%.

[14] Lake Tanganyika Fisheries Frame Survey 2022 Report, Report on Lake Victoria Fisheries Frame Survey Results 2020 – Tanzania and Marine Fisheries Frame Survey 2018 Report Mainland Tanzania

Based on the interview conducted by the Audit Team, the officers in charge declared that they only inspect the consignment, which is declared to contain fishing gear. However, all fishing gear dealers are supposed to have registered warehouses/stores that would be inspected from time to time upon receiving a new consignment of fishing gear. It was noted that fisheries officers in their respective areas do not randomly cross-check all consignments, both passing through orders and in storage facilities. However, there are times when a random check is conducted based on tips and information from informers. For example, based on a review of the enforcement file from the Sirari border, the audit noted a case in which illegal gear was identified at the border through random inspection of loose cargo.

Table 4.3: Enforcement record at the border point from 2018/19 to 2022/23

Border point	Inspections conducted	Infringement noted	Licenses revoked
Sirari	Not recorded	Three incidences were recorded on 28th August 2018 and 4th February 2019 (Monofilament seizure) and on 7th March 2020 (gillnet with mesh size below 8mm)	None
Dar es Salaam (Airport)	Not recorded	--	None
Dar es Salaam (Harbour port)	-		None
Kigoma	-	-	-

Source: *Auditors' analysis of enforcement files from MCS and Compounding Ledgers (2023)*

Table 4.3 shows that only five cases were observed within five years in Dar es Salaam and Sirari centres. Also, documentation of confiscated fishing gear, including photographs, descriptions, quantities, and seizure locations, was not properly documented. The circumstances that contributed to inadequate fishing gear inspection at the international border points are described below:

i. Unavailability of inspectors at the border point

The audit team visited border stations to evaluate the performance of the inspectors positioned there. The Audit Team visited borders to assess the performance of the inspectors positioned there. The analysis of borders of entry is shown in **Table 4.4**.

Table 4.4: Allocation of fisheries Inspectors at the border point for the year 2021 - 2023

Name of Border Point	Number Of Staff Available	Average annual Quantities of consignment with fisheries items passing in this border
Sirari	01	There are no records / to reconcile with the TRA
Dar es Salaam Airport	2 with shifting of one night and one day time	There are no records / to reconcile with the TRA
Dar es Salaam Harbour	2 with shifting of one night and one day time	There are no records / to reconcile with the TRA

Source: *Auditor's Analysis of Information from the Border Point of Entry in Tanzania (2023)*

Table 4.4 shows the current low number of staff at the border point to facilitate proper inspection during the day and night. According to interviewed MLF officials, the Ministry has not assessed the requirement for inspectors to be stationed at each border post based on the workload. For example, in the Sirari border, only one staff member works during the day and at night and serves both sides, the departure and arrival sides. Based on the interview with this staff, the night-time inspection was not done because there was no shift, unlike in Dar es Salaam Port, where only two staff members maintained day and night shifts.

ii. Limited working equipment (scanner) to support inspection at border point

The Audit Team found that the officers at the border point of Sirari, Julius Nyerere International Airport and Dar es Salaam port were supplied with tools to conduct inspection activities. Although all luggage passing the border is scanned, inspectors have found it difficult to detect the illegality of fishing gear or fisheries products passing through. It was observed that

the scanner was not designed to detect fisheries items, but for revenue purposes, it could not detect illegal fishing gear.

Lack of closer inspection of fishing gear led to increased use of illegal gear and illegal fishing practices. Illegal fishing gear, such as monofilament, when abandoned within water bodies, may result in ghost fishing in the water bodies, causing ongoing entanglement of aquatic life and contributing to aquatic pollution.

4.5 Ineffectiveness of the Sanctions Imposed

MLF and PO-RALG, through LGAs, should impose sanctions and other deterrent measures against possession of illegal, unreported and unregulated fishing according to Part IX of the Fisheries Act, 2003 and Part VII of Fisheries Regulations, 2009. The Fisheries Act 2003, Part Vi, sections 22 and 23, amended sections 40 and 47, provides that "(a) in the case of offences involving unlawful fishing or fish trading or facilitating unlawful fishing or fish trading, to a fine of not less than ten million shillings but not exceeding fifty million shillings; "(b) in the case of offences other than offences under paragraph (a), to a fine of not less than two hundred thousand shillings but not exceeding ten million shillings, or to imprisonment for a term of not less than two years but not exceeding ten years.". However, the audit team noted the following deficiencies in handling sanctions.

4.5.1. Administrative sanctions were not well-managed

The key purpose of any punishment is to ensure that the infringement in place does not recur. However, based on the assessed compounding list, it was noted that illegal incidences have been recurring, as discussed in parts (i) and (ii);

i. Performance of MLF and MCS centres

Section 31 of the Fisheries Act of 2003 requires the Minister to establish a Surveillance Unit after consultation with the Minister responsible for Home Affairs. Also, Section 32(1) requires a protection unit to protect fish and their environment, fishery products and aquatic flora against unlawful dealers and generally the enforcement of the provisions of this Act.

However, after reviewing the MLF implementation report from 2018/19 to 2022/23 and the sanction of compounding offences list extracted from 2021/22 to 2022/23, the audit team noticed the inadequate performance of the protection unit (MCS centres). The results indicate that the frequency of recurrence of certain offences has varied over time, with some showing an increasing trend while others showing a decreasing trend of recurrence of infringements. Analysis of recurred offences is indicated in **Table 4.5.**

Table 4.5: Recurrent and increasing rate of infringements from 2021/22 to 2022/23

Infringement	Lake Tanganyika Zone	Lake Victoria Zone	Indian Ocean and North East Zone
Fishing in breeding areas/critical habitats without motorized boat	92%	3800%	N/A
Dealing with fish maw's trade without a local license	Not applicable	350%	N/A
Fishing using ringent in Lake Tanganyika below 1000m range from the shoreline, island or peninsular, and during daytime	-50%	N/A	N/A
Local fish maw collector dealing in fish maw processing, trade or possession of illegal fish maw size or weight	Not applicable	-33%	-100%
Possession or transportation of fresh or fried/dried fish (legal size) of various sizes without a license/permit	44%	32%	163%
Possession of illegal fishing gear	66%	32%	-100%
Possession of immature fish	59%	-19%	-57%
Possession of an unregistered or unlicensed fishing vessel.	81%	143%	-72%
Transportation of fish or fishery products with other products in the same approved vessel or vehicle for commercial purpose	67%	-43%	-76%
Transportation of immature fish	-42%	-36%	200%

Source: *Auditors Analysis from extract information of Compounding fee Database (2023)*

Table 4.5 shows that the recurrence of offences has varied over time, with some showing an increasing trend while others showing a decreasing trend of recurrence of infringements. For example, fishing in breeding zones has

the highest rate of increase in all three zones covered, and Lake Victoria is leading with a percentage increase of 3800%. Other infringements which have increased and recurred include possession or transportation of fresh or fried/dried fish (legal size) of various sizes without a license/permit (with the highest rate of increase (162%) being witnessed in the Indian Ocean zone), and possession of unregistered or unlicensed fishing vessels. The latter showed a significant increase in the Lake Zone, but it exhibited a decreasing rate in the Indian Ocean.

ii. Performance of LGAs

The review of quarterly progress reports and annual progress reports for the years 2018/19 to 2022/23 and various registers of offences from LGAs showed that details of offences for unregistered vessels were not reported in such reports. However, the offence issues were reported as part of the revenue information in the revenue reports.

It was further noted that the offence related to unregistered vessels had a higher compounding amount than others. **Table 4.6** indicates the sanction status for the infringement/offences committed by fishers in the visited LGAs from 2018/19 to 2022/23.

Table 4.6: Status of the sanction for the infringement/offences committed by LGAs visited from 2018/19 to 2022/23

Fiscal Year	Number of Penalties and fines	Revocation of Licenses/Blacklisting from fishing	Warning Provided
Ukerewe MC	150	None	No records
Rorya DC	39	None	No records
Kigamboni MC	-	None	No records
Dar es Salaam CC	-	None	No records
Mafia DC	-	None	No records
Kigoma MC	-	None	No records

Sources: *Electronic extract of revenue collected from various LGAs* (2018/19 to 2022/23)

Table 4.6 indicates the enforcement actions taken by each LGA, showcasing the number of penalties and fines imposed for Ukerewe MC and Rorya DC. The table shows that no licenses were revoked, and no individuals were blacklisted from fishing. This is contrary to Regulation 15 of the Fisheries Regulations, 2009, which gives power to the director of fisheries to cancel

or revoke a licence or permit issued either due to the following grounds: (a) that the holder has been convicted of an offence against the Act or any Regulations made there under or has violated or failed to comply with any of the conditions or restrictions attached to or imposed on the licence or permit; (b) that the holder has been convicted of an offence involving dishonesty or fraud; or (c) that the level of exploitation of any fishery is detrimental to the resource.

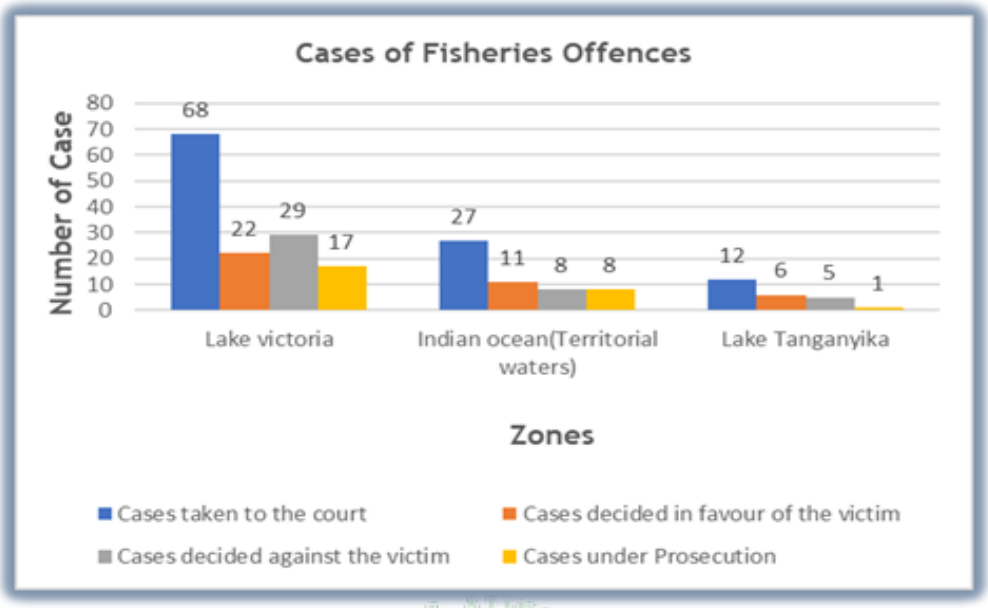
It also shows that there are no records as to whether weather warnings were issued. The lack of a full record of administrative sanctions created difficulties in following up and establishing a benchmark to determine the effectiveness of those penalties. Fish dealers may add those penalties and fines as part of the running cost of their business and continue defaulting.

4.5.2 Prosecutions of fisheries cases were not correctly handled

Some infringements and offences were directly taken to court, or sometimes, where the offender rejected the infringement, the offender triggered investigation and prosecution procedures. Some cases were delayed or lost because the certificate of evidence was not prepared in accordance with Section 35(1) of the Fisheries Act, 2003.

Moreover, the review of enforcement files from the selected LGAs did not indicate any case taken to court. MLF had recorded various cases found in the review of enforcement files from MCS centres. **Figure 4.14** presents the case of fisheries committed from 2018/19 to 2022/23.

Figure 4.14: Case of fisheries offences committed from 2018/19 to 2022/23



Sources: *MLF Case status report from zonal MCS centres* (2018/19 to 2022/23)

It was noted that Lake Victoria experienced the highest number of culprits, totalling 68. Among these 68 cases brought to the courts, only 22 were decided in favour of the victims, representing a percentage rate of 32%.

Additionally, the Ministry of Livestock and Fisheries (MLF) general report for 2021/22 has shown that only thirty cases have been filed out of 1687 suspects, and only seven cases out of 1,070 were registered with the court in 2022/23.

This shows that resolving cases of arrest and confiscation of caught defaulters is done informally, and this causes the risk of extortion of money by some patrolling agents. This situation signifies a lack of discipline and failure to adhere to norms and government ethics in performing given duties and roles.

During interviews with the FRP unit, LGA fisheries officials and some selected BMUs units revealed that some culprits were not taken to court. It was revealed that from 2018/19 to 2022/23, a total of 28 out of 107 cases were not concluded, while the responsible authority did not fully support the official or BMU individuals. This situation may be attributed to the following aspects:

i. Lack of sufficient transport and communication system

The audit team observed that the boats, vehicles, and motorcycles that fisheries officers used in the visited LGAs and MCS were insufficient to support the transportation of illegal fishing gear apprehended during patrols. The officials explained that sometimes they apprehend illegal gear but cannot carry it as evidence to the destination.

The audit team noted that Ilemela MC and Dar es Salaam CC had no boats to support fisheries management in their department. It was noted that Mwanza MC has the highest workload of its vessels, with a ratio of one patrol boat per 4,726 operating vessels, followed by Ukerewe, with a ratio of 2338. As for the marine waters, Kilwa District Council is the leading centre, with a ratio of 792 operating fishing vessels per patrol boat, as shown in **Figure 4.12**.

Generally, LGAs do not have logistical equipment for MCS operations, including transporting apprehended and seized tools, gear, and products. Moreover, tools, such as radio calls, were not available in all MCSs and LGAs visited. Such tools would support communication during patrol and inspection.

ii. Inadequate documentation and handling of evidence

Fisheries patrols can be more cost-effective if they are planned to integrate the surveillance resources to achieve the best results.

Fisheries officers usually commence their patrols and inspections by checking all compliance evidence verified and confirmed in recorded forms. Documentation and evidence are key requirements for any fisheries crime, inspection, or prosecution. The fisheries officers should always keep in mind that the judiciary is not on the scene. Hence, the judiciary can only understand events unfolding in chronological order through the evidence presented before the court of law.

In addition, one of the most demanding and important tasks for a Fisheries Administrator and officers is the successful preparation and execution of a fisheries prosecution.

Many fisheries offences have resulted in court acquittal due to a lack of proper evidence concerning fisheries prosecutions. The inability to successfully prosecute a case in court makes the expense and effort expended on fisheries MCS activities ineffective and a considerable waste of time and money.

The audit team visited five inspection and patrol centres where they observed inconsistencies in the documentation of enforcement documents. None of the visited LGAs had a special file to enable reference for future cases or enforcement activities. Besides, the LGAs did not have a separate file to document proceedings of cases for the apprehended culprits taken to the Police. Officials at LGA explained that they only depend on getting information from the files handled by the police. The audit opines that this is not an efficient way to manage fisheries information.

Moreover, storage facilities in the visited LGAs were not good. An official from LGAs revealed that sometimes they store the seized fishing gear at MCS centres while other officers just dump them near their offices or leave them at BMU offices, as shown **in Photo 4.2**.

Photo 4.2: Seized beach seine dumped outside the office building

***Photo 4.2**: Beach seine seized by a BMU member abandoned outside the office. The photo was taken by auditors at the Mkuyuni BMU office in Mwanza CC on 1th July 2023.*

iii. Insufficient training of staff

The review of training schedules and implementation reports from LGAs and MLF showed that MLF and LGAs had not conducted education programs or seminars on fisheries legislation and related infringements to support and draw enough evidence for police while writing charges.

The interviews with officials from LGAs revealed that they had never received any training related to prosecution issues; rather, they left the process to the police. This has always led to inappropriate charge writing. Consequently, evidence of the cases was not correctly presented, and the judgement favoured the offender.

Moreover, the review of invitation letters to MLF officials and the audit team reveals that the MLF fisheries officials got enforcement training, specifically aspects of patrols and inspection. However, there was no special training for handling prosecution proceedings.

iv. Overlaps between goals of collecting revenues and conservation

Based on interviews with fisheries officers from LGAs and MCS, it was noted that LGAs had been organizing their patrols for the purpose of collecting revenues. The MCS centres were also given a dual role: to collect revenues and to patrol for surveillance, deterring illegality. These overlaps can lead to a variety of consequences, often involving a delicate balance between economic interests and environmental preservation, e.g. environmental degradation and social impacts.

CHAPTER FIVE

AUDIT CONCLUSION

5.1 Introduction

This chapter presents the audit conclusions based on the findings analysed in the preceding chapters. The conclusion is consistent with the general and specific objectives of the audit.

5.2 General conclusion

The Audit Team acknowledges the work done by the Government through the Ministry of Livestock and Fisheries (MLF), Regional Secretariats and Local Government Authorities (PO-RALG) through Local Government Authorities (LGAs) towards the management of fisheries resources in the country. However, the findings presented in this report show that there is inadequate performance in the management of fisheries resources. The team, therefore, calls for improvement in the implementation of control measures to enhance the effectiveness of the management of fisheries resources in the country.

The audit assessed whether the Ministry of Livestock and Fisheries and PO-RALG, through LGAs, have adequately implemented fisheries control systems to enhance sustainable fishing practices in the country. However, the audit found that the MLF and PO-RALG, through LGAs, have not adequately implemented fisheries control measures, which resulted in non-compliance to the existing fisheries legislation and other key management instruments due to various attributes. These include, among others, non-licensed and non-registered fishers and fishing vessels, insufficient reliability of fishery information, and inadequate coordination among key stakeholders. The report calls for modifications to enable MLF and LGAs to control and manage fisheries activities effectively.

5.3 Specific conclusions

The following are specific conclusions:

5.3.1 Inadequate Control Measures to Enhance Sustainable Fisheries Practices

Inadequate registration and licensing of fishes

The audit has shown that, to a large extent, fishers and fishing vessels were not registered. This is an indication that the process of registration is not adequately controlled. To a large extent, this registration gap has caused a loss of revenues for the government and deters efforts towards sustainable management of fisheries resources. Moreover, inadequate registration limits the government's access to information on the fishing efforts employed in all water bodies in the country. The audit noted that without proper registration and licensing, there is a risk of unregulated and unsustainable exploitation of fish populations, resulting in overfishing and depletion of valuable species and subsequently losing national socio-economic benefits from the fisheries sector.

Illegal, unreported, and unregulated fishing practices in the country

Although the Ministry of Livestock and Fisheries (MLF) and Local Government Authorities (LGAs) are mandated to conduct patrols to monitor illegal fishing activities, the audit observed the persistence of illegal fishing practices. This issue is attributed to insufficient coordination and the limited capacity of both MLFs and LGAs to monitor and control such activities effectively. It is also partly linked to the mismanagement of fisheries resources, which led to unregulated fishing practices, insufficient reporting of fishing activities, and the absence of essential MCS facilities and equipment. If the government does not take strong measures and actions, the problem of illegal fishing will persist.

Little emphasis on the management of close season and minimum sizes

The close season of fishing protects fish during breeding when they mature and fertilize their eggs. Closing fishing activities during this season gives them the best chance to sustain and increase their numbers. However, both the MLF and LGAs have placed little emphasis on the management of close season and control of the fishing of immature fish. Lack of close season

enforcement undermines sustainable fisheries management principles and jeopardizes marine and freshwater ecosystems' long-term health and viability.

5.3.2 Inadequate Management of Fishing Efforts (Fishing Vessels, Fishing Gear, Available Stock, Fish Landings and the Number of Fishers)

Inadequate data management systems and collection practices for operating fishing vessels

The ineffective data management systems and data collection methods employed by Local Government Authorities (LGAs), predominantly relying on paper-based processes, have resulted in untrustworthy, incomplete, and difficult-to-access data. This impedes the ability to perform thorough analysis and resource management, which in turn impacts regulatory compliance and fisheries management.

Furthermore, the absence of regularly scheduled fisheries surveys such as hydroacoustic surveys, frame surveys, and fish catch data conducted by the Ministry of Livestock and Fisheries (MLF) and LGAs have compounded the issue by causing critical data gaps, making it even more challenging to obtain an accurate assessment of fisheries stocks necessary for sustainable resource management.

Incomplete and inconsistent daily fisheries catch data

Manual methods for recording catch data and landing declarations, coupled with the absence of suitable infrastructure and digital data collection tools, have resulted in inaccuracies, omissions, misreporting, and a lack of reliability in the gathered information. The insufficient funding and the condition of existing equipment have additionally constrained the consistency of conducting hydroacoustic surveys and have impeded the assessment of fish stocks and catch levels.

Accuracy and integrity of licensed fisher's registers

The audit has identified shortcomings in the registries, revealing missing records on the number of fishers, fish catches, fishing gear and details of activities ongoing in the fisheries sector. Such a gap indicates that even the number of licenses issued by local government authorities (LGAs) is insufficient to conclude the fishing efforts operating within the water bodies. The lack of accuracy and integrity of licensed fishers registers primarily originates from the incomplete license application process for specific fishers, absence of documentation and avoidance of fishers to comply with requirements for fear of failure to meet application prerequisites. On the other hand, manual operation of registries is also an issue, leading to registers with many errors and omissions compared to automated systems.

5.3.3 Inadequate Database and Data Quality Management in the Fisheries Information System

The database has unreliable fisheries data such as daily fish catch, fish stock, revenue, fish vessel sizes, etc. This is partly due to a lack of strong quality control for data quality management and follow-up. Therefore, the reliability issues in the database raise concerns regarding its adequacy for facilitating crucial decisions in fisheries management. Additionally, the delays in data updates have impeded the ability to respond promptly to fishing conditions in the fisheries, which could potentially have negative implications for sustainability.

Also, the lack of quality control measures, follow-up in data management and inadequate quality control procedures have led to concerns about the reliability of the fishery database. It casts doubt on its suitability for informing crucial decisions in fisheries management.

This necessitates strengthening the existing systems to effectively capture, process, store and analyse fisheries information for better performance and management.

5.3.4 Inadequate Coordination in the Management of Fisheries Resources

The absence of strong and efficient coordination mechanisms among stakeholders, encompassing government agencies, local communities, and conservation organizations, has resulted in the unsustainable management of fisheries resources and has compromised the effective safeguarding of marine ecosystems.

Also, failure to establish effective communication and cooperation channels among these stakeholders hinders the development and implementation of comprehensive strategies for sustainable fisheries management, contributing to overfishing, depletion of fishery resources, and ecological imbalance in water bodies.

Moreover, the absence of effective coordination mechanisms among key stakeholders, including the Ministry of Livestock and Fisheries as well as the Ministry of President's Office - Regional Administration and Local Government, has led to detrimental consequences for the management of fisheries resources and the protection of ecosystems in the water bodies, such illegal, unreported and unregulated fishing.

5.3.5 Inadequate Planning and Implementation of MCS Operations and Sanctions

Planning for inspection and patrols is not satisfactory

Planning for surveillance operations and patrol was not designed based on risky factors/hotspots. Those areas that need more attention for monitoring, surveillance, and patrol were not clearly set out in the MLF's and LGAs' strategies. MCS activities were carried out randomly, depending on the availability of funds and the need for more revenue at LGA. The revenue collection motivation determines the coverage and strong suit of MCS activities in the respective areas. Due to unstructured planning, MLF and LGAs could not adequately and rationally allocate resources, inspectors, inspection tools, and funds for inspection.

MLF and LGAs have not fully developed and implemented an MCS system for fishery control that supports risk-based fisheries. Moreover, even the attempted risk-based fisheries control was not thoroughly evaluated or measured because they were not properly documented.

Ineffectively implemented inspections

There was an effective inspection and patrol system to reduce chances of illegal activities in protected areas. MLF and LGAs do not conduct patrols regularly, especially at night and on weekends. Such trends have provided an undisturbed opportunity for illegal fishermen to fish unnoticed within water bodies. The patrol team's inefficiency was also linked to a lack of supporting tools to enhance the patrol. Both MLF and LGA patrol teams do not have sufficient patrol equipment, such as radio communications equipment, GPS, binoculars, and vessel safety sparkles.

Non-deterrent imposition of sanctions

It was found that the sanctions imposed were not deterrent enough across all visited LGAs and MCS units. As a result, illegal fishers have been present. Fighting illegal fishing was not given much priority by MCS units and LGAs; they focused much on revenue collection from illegal activities instead of taking measures to eradicate such activities. On the unlikely occasion that those infringements were detected, the penalties imposed on lawbreakers were frequently insufficient to deter other defaulters. So, defaulters were not afraid of committing the offence again.

CHAPTER SIX

AUDIT RECOMMENDATIONS

6.1 Introduction

This chapter presents recommendations directed to the Ministry of Livestock and Fisheries (MLF) and Local Government (PO-RALG) through Local Government Authorities (LGAs) on what should be done to improve the management of fisheries resources in the country.

The National Audit Office is of the opinion that these recommendations must be fully implemented to improve the country's fisheries resources management. The recommendations cover the development and implementation of control measures, the reliability of the information, the completeness, reliability, and periodic updating of the database, the appropriateness of the inspection plan and the application of sanctions, and the adequacy of coordination among players in implementing fisheries control measures.

6.2 Recommendations to the Audited Entities

5.2.1 Recommendations to the Ministry of Livestock and Fisheries

The Ministry of Livestock and Fisheries (MLF) is urged to take the following actions.

1. Ensure access to the fishery is controlled through the improved MCS system for registration and licensing offering and licensing all fishing crafts, fishing vessels and fishers in the water bodies;

2. Devise a digital mechanism that will ensure the smooth collection of real-time data on fish caught and the distribution of fishing efforts in the water bodies;

3. Enforce and adhere to the obligations of closing fishing activities during defined close seasons to allow for fish breeding and improve the sustainability of fisheries stock;

4. Update the fisheries management database as per the schedule, with a particular focus on enhancing data security measures and conducting regular audits of the database to identify and rectify reliability issues;

5. Improve the existing collaboration between MLF and PO-RALG to allow easy sharing of fisheries reports and data, including having access to the fisheries management database hosted at the MLF and allowing the Director of Fisheries to receive fisheries reports from LGAs;

6. Prioritize budget allocation for conducting the fisheries frame survey according to the established biennial schedule to know the state of the fishing industry in the country;

7. Ensure TAFIRI conducts all statutory research and surveys, including the Hydro Acoustic Survey, to obtain data on the fisheries biomass abundance and distribution of fish in our water bodies and use such data to deter the fish harvest rate;

8. Ensure all inspections are appropriately planned, considering risk-based areas and involving all relevant players to inspect and determine all infringements raised effectively; and

9. Ensure deterrent legal actions are taken against all defaulters.

5.2.2 Recommendations to the President's Office - Regional Administration and Local Government (PO-RALG)

The President's Office – Regional Administration and Local Government should ensure that LGAs do the following:

1. Improve the system for registration and licensing of all fishing crafts, fishing vessels, and fishers in the water bodies to enhance total control in the fisheries sector;

2. Enforce and adhere to the obligations of closing fishing activities during defined closing seasons to allow for fish breeding and improve the sustainability of fisheries stock;

3. Ensure that in each budget cycle, the procurement of MCS equipment, fishing gear, and data collection infrastructure for monitoring, control and surveillance of illegal fishing are included and prioritized;

4. Devise a digital mechanism that will ensure the smooth collection of real-time data on fish caught and the distribution of fishing efforts in the water bodies;

5. Conduct a risk-based planning and patrol, such that all MCS activities are planned and target a risk-based area and time, involving all relevant players; and

6. Ensure proper monitoring and reporting of the performance of BMU activities.

REFERENCES

1. Guidelines for Beach Management Units (BMUs) on Lake VictoriaFisheries Organization, 2005

2. Ibengwe, L. J., Onyango, P. O., Hepelwa, A. S., & Mfilinge, P. L. (2023). Revealing the hidden marine dagaa cross-border trade in mainland Tanzania. Reviews in Fish Biology and Fisheries, 1-22.

3. Lake Victoria Fisheries Frame Survey, 2016, 2020

4. M Van der Knaap. (2013) Comparative analysis of fisheries restoration and public participation in Lake Victoria and Lake Tanganyika. *Aquatic Ecosystem Health & Management* 16:3, pages 279-287.

5. Medium-term strategic plan 2021/22 – 2025/26, Fisheries Sector, Ministry of Livestock and Fisheries

6. Ministry of Livestock and Fisheries Development (MLFD), Dodoma, Tanzania: March 2019

7. Mkuna, E., & Baiyegunhi, L. J. (2021). Impacts of Nile perch (Lates niloticus) overfishing on the technical efficiency of fishers in the Tanzania portion of Lake Victoria. Lakes & Reservoirs: Research & Management, 26(3), e12373.

8. The second Fisheries Sector Master Plan of the United Republic of Tanzania (2021/22-2036/37)

9. National Fisheries Policy, 2015

10. Tanzania Fisheries Research Institute Act, 2016

11. The articles were written by Mr. Ally *Mayala in Mwanza, in the Daily News of 19 November 2022, "Prime Minister stresses war against illegal fishing.''*

12. The Annual Fisheries Statistics Report (January- December), 2020

13. The Fisheries Act, 2003

14. The Fisheries Regulations, 2009

15. The Lake Victoria Catch Assessment Survey (CAS), 2021

16. https://www.mifugouvuvi.go.tz

APPENDICES

Appendix 1: Responses from the audited entities

This part provides details on the overall responses from the audited entities and the responses to the comments, actions to be taken, and implementation timelines for each of the issued recommendations.

Appendix 1(a): Responses from the Management of the Ministry of Livestock and Fisheries (MLF)

General Comment

Management of the Ministry of Livestock and Fisheries has reviewed the main findings of the Office of the Controller and Auditor General (CAG) on the Management of Fisheries Resources in Tanzania. The management will address all areas facing challenges by formulating strategies and plans and taking appropriate measures. Key identified areas that need action include illegal fishing practices, managing fish breeding areas, imposing closed seasons for priority species, and improving the availability of fisheries data and information. The Ministry anticipates that addressing the highlighted issues would increase the fisheries sector's contribution to National development and enhance the productivity of the fisheries sector productivity.

Specific Comments

S/N	Recommendation	Comments from MLF	Planned Action(s)	Implementation timeline(s)
(i)	Ensure access to the fishery is controlled through the improved system for registering and licensing all fishing crafts, fishing vessels and fishers in the water bodies	1. The Ministry has a core role in maintaining a database of fishers and fishing vessels through registration and licensing. According to Fisheries Regulation No.4(1) - (6) of 2009, all vessels are required to be registered and licensed, and registration of fishing vessels is done once in a lifetime by the local government. MLF and LGAs license all vessels above and below 11 meters, respectively. Fishing vessels below 11 meters constitute over 90% of all fishing vessels in the country. 2. The Ministry has established 36 MCS centres along all water bodies to effect the implementation of fisheries management, including issuing fishing licenses. Through the established FiRCIS, clients can obtain export licenses within seven working days.	1. The Ministry will integrate TAUSI from TAMISEMI and the fisheries revenue collection system. 2. Training for the integrated system for revenue collection, registration and licensing will be conducted for both MLF and TAMISEMI. 3. The Ministry will harmonize fees charged by LGAs and MLF. 4. The Ministry will conduct regular meetings, joint inspections and patrols, and education and awareness campaigns for fishers and other key stakeholders about the importance of adhering to registration and licensing requirements.	April-June, 2024

S/N	Recommendation	Comments from MLF	Planned Action(s)	Implementation timeline(s)
(ii)	Devise a digital mechanism that will ensure the smooth collection of real-time data on fish caught and the distribution of fishing efforts in the water bodies.	1. Fisheries data are being collected through an Electronic Catch Assessment Survey (eCAS) system. The system has been used across the East Africa region in countries such as Kenya and Uganda. In addition, the eCAS system has a special feature that assists in the assessment of data quality control, such as GIS coordinates. The collected data can be exported to Excel for further data cleaning and analysis. 2. The sampling protocol for the catch assessment survey requires each data collector to collect 3-4 samples from each fishing unit (Boat-Gear combination) and collect data for 10 days on a monthly basis to attain a relative error of 90%.	1. In 2023/2024, the Ministry will procure **60** mobile phones and distribute them to landing sites for data collection 2. The ministry will train 300 enumerators from Lake Victoria, Lake Nyasa and Lake Tanganyika on the use of eCAS. 3. In 2024/2025, the Ministry will upscale the use of eCAS in other water bodies.	2023/2024
(iii)	Enforce and adhere to the obligation of closing fishing activities during defined closing seasons to allow for fish breeding and improve fisheries stock's sustainability.	1. Implementing seasonal fishing closures for priority fish species is one approach aimed at facilitating the recovery of fish stocks. However, closure is contingent upon various factors, such as the type and biology of the fish species, the fishing community involved, the stock status and scientific research. Fish closure involves a number of processes to engage and agree with all stakeholders	1. Buoy markers for protecting breeding sites in Lake Victoria will be installed in all breeding sites across Lake Victoria. 2. In Lake Victoria, fishers have started a voluntary close season for *dagaa* fishery in each month. 3. The Ministry will start consultation to engage	July, 2024 to June, 2025

S/N	Recommendation	Comments from MLF	Planned Action(s)	Implementation timeline(s)
		from the fishing community, politicians and high-level government officials. 2. In the case of Lake Tanganyika, the Ministry started stakeholders' awareness engagement in May 2023 before enforcing a fishery closure agreed upon at the regional level to foster a shared understanding of the Lake Tanganyika Charter. 3. The Ministry raised awareness about fishing closures to Members of Parliament, Regional Commissioners, Regional Administrative Secretaries, District Commissioners, and Municipal and District Directors from the Lake Tanganyika. 4. Furthermore, MLF, in collaboration with The Nature Conservancy (TNC), has identified 16 breeding areas, of which 13 have been marked with buoys. These sites are situated in Mgambazi, Kapalamsenga, Helembe, Lukoma, Lagosa, Ndele, Igalula, Mgambo, Buhingu, Mkokwa, and Katumbi villages in Uvinza District. For Lake Tanganyika District, the marked sites are in Kasanga Ntongwe, Kalema, and Itetemya villages.	stakeholders from other water bodies to conduct voluntary closure. 4. Consultations for introducing voluntary closure for other fish species, such as Nile Perch, are underway.	

S/N	Recommendation	Comments from MLF	Planned Action(s)	Implementation timeline(s)
(iv)	Updating of the fisheries management database is done as per the schedule, with a particular focus on enhancing data security measures and conducting regular audits of the database to identify and rectify reliability issues.	1. The Ministry use eCAS system and the Fisheries Revenue Collection Information System (FiRCIS) to collect fisheries information on fish catch, value, permits, license, export and import volume, revenue, etc. 2. The eCAS system has a special feature that assists in the assessment of data quality control, such as GIS coordinates. The collected data can be exported to Excel for further data cleaning and analysis. 3. The sampling protocol for the catch assessment survey requires each data collector to collect 3-4 samples from each fishing unit (Boat-Gear combination) and collect data for 10 days on a monthly basis to attain a relative error of 90%. 4. The eCAS system is designed so that there are internal intelligence and quarries to produce colours for samples that have not attained the minimum target, which is 33 samples per fishing unit.	1. The Ministry will conduct Monitoring and Evaluation to verify data collection and inputting data in the eCAS system; 2. The Ministry will engage eGA to strengthen database security 3. The Ministry will capacitate District Fisheries officer to be able to verify data in the eCAS in their localities	July, 2024 to June, 2025

S/N	Recommendation	Comments from MLF	Planned Action(s)	Implementation timeline(s)
(v)	Improve the existing collaboration between MLF and PO-RALG to allow easy sharing of fisheries reports and data, including having access to the fisheries management database hosted at the MLF and allowing the Director of Fisheries to copy the fisheries reports from LGAs	1. In collaboration with PO-RALG, the Ministry will strengthen the sharing of fisheries' information systems to provide accurate statistics on fish catch, the number of licenses issued, fishing vessels, government revenue collection, and other implementation reports.	1. Expert meetings between MLF and PO-RALG will be conducted in January 2024. The expected outcome of the meeting will be a smooth flow of information and effective sharing of reports between MLF and TAMISEMI.	January, 2024
(vi)	Prioritize budget allocation for conducting the fisheries frame survey according to the established biennial schedule to know the state of the fishing industry in the country.	1. The Ministry developed a plan to conduct a frame survey for all Tanzania water bodies. In 2023/2024, the Ministry conducted a frame survey for Lake Babati and Lake Manyara (preparation of the report is underway).	1. The Ministry plans to conduct a frame survey for Lake Victoria, Lake Nyasa and the Indian Ocean in the financial year 2024/2025.	July, 2024 to June, 2025

S/N	Recommendation	Comments from MLF	Planned Action(s)	Implementation timeline(s)
(vii)	Ensure that TAFIRI conducts all statutory research and surveys, including the Hydro Acoustic Survey, to obtain data on the fisheries biomass abundance and distribution of fish in our water bodies and use such data to deter the fish harvest rate.	1. The Ministry, in its annual plans, includes research activities as a priority area to guide the management of the resources. Research areas to be implemented in a given period of time rely on specific areas as outlined in the Ministry's Fisheries and Aquaculture Research Agenda 2020-2025. 2. TAFIRI conducted the hydroacoustic survey for Lake Tanganyika in 2022/2023.	1. The report for the hydroacoustic survey for Lake Tanganyika will be shared for audit verification.	January, 2024.
(viii)	All inspections should be planned properly, considering risk-based areas and involving all relevant players to inspect and determine all infringements raised effectively.	1. Management has noted auditors' observation that MLF allocates resources based on the intensity of fisheries activities and the potentiality of the water body and accompanying fisheries resources. 2. The Ministry will continue to sharpen its planning and resource allocation frameworks. 3. The Ministry organises various patrols to combat illegal fishing, contingent upon the availability of funds and the actual situation of illegal fishing in the specific	1. The Ministry will strengthen the planning mechanism for inspections.	July 2024-June 2025

S/N	Recommendation	Comments from MLF	Planned Action(s)	Implementation timeline(s)
		area. Scheduling of patrol timing relies on intelligence reports gathered in the respective area. Patrols are conducted at night, and others are carried out during the day. 4. The Ministry will continue to equip MCS centres with the resources required to conduct round-the-clock patrols and collect intelligence information as deemed necessary.		
(ix)	Ensure deterrent legal actions are taken against all defaulters	1. The existing regulations are sufficient to impose penalties that can deter illegal fishers from repeating acts of breaking fishing laws and regulations.	1. The Ministry will capacitate its staff to impose penalties according to misconduct as provided in the fisheries regulation of 2009 and its amendments. 2. The Ministry will educate magistrates and other law enforcers on the impact of illegal fishing practices on them.	January, 2024-June, 2025

Appendix 1(b): Responses from the Management of President's Office - Regional Administration and Local Government (PO-RALG)

General Comment

For sustainable management of fisheries resources, the MoLF has to work closely with PORALG and provide all necessary resources to Regional Secretariats and LGAs to implement policies, strategies, and guidelines for managing, protecting, and conserving fishery resources effectively. This should go hand in hand with the involvement of other key actors, including the private sector, which is critical in management.

Specific Comments

S/N	Recommendation	Comments from PO-LARG	Planned Action(s)	Implementation Timeline(s)
(i)	Improve the system for registration and licensing of all fishing crafts, fishing vessels, and fishers in the water bodies to enhance total control in the fishing sector.	The Ministry of Livestock & Fisheries (MLF) has to develop or improve the existing system (MKingajani) to ensure fishing vessels are registered.	Communicate and advise MLF to develop a participatory and acceptable registration system and to establish a database that should be updated regularly	2024/2025
(ii)	Enforce and adhere to the obligation of closing fishing activities during defined closing seasons to allow for fish breading and improve sustainability of fisheries stock.	This is very important but difficult to implement as it requires the creation of a conducive environment to promote adherence. MLF should enhance fish value addition (cold rooms,	Communicate and advise MLF to identify appropriate closing seasons for particular water bodies. Communicate with Regional Secretariats to sensitize fishers on the importance of closing seasons and sensitisation the Community on diversification of livelihood	2024/2025

S/N	Recommendation	Comments from PO-LARG	Planned Action(s)	Implementation Timeline(s)
		processing) of fishery resources for utilisation during the closing season. MLF should establish dialogue platforms with neighbouring countries sharing the same water bodies to have a uniform closing season.	as an adaptation strategy during closing season.	
(iii)	Ensure that in each budget cycle, the procurement of inspection equipment, gear, and data collection infrastructure for monitoring control and surveillance of illegal fishing are included and prioritised.	MLF fulfils its mandate by allocating a budget to support LGA in controlling and supervising illegal fishing.	Communicate with Regional Secretariats to insist on budgeting and disbursement of 5% of their own source revenue obtained from fishery collections.	2024/2025
(iv)	Devise a digital mechanism that will ensure the smooth collection of real-time data on fish caught and the distribution of fishing efforts in the water bodies.	The Ministry of Livestock and Fisheries (MlF) has to develop or improve the existing systems (e.g., MKingajani) to capture real data on fish caught and the distribution of fishing efforts.	Collaborate with MLF to design and develop data collection tools. Communicate and advise MLF to develop or improve the existing system (MKingajani) to capture real data on fish caught	2024/2025

S/N	Recommendation	Comments from PO-LARG	Planned Action(s)	Implementation Timeline(s)
(v)	Conduct a risk-based planning and patrol, such that all inspections are planned and target a risk-based area and time, involving all relevant players.	There is a need to have a relevant multidisciplinary approach to conduct periodic patrols and inspections.	Communicate with MLF to develop guidelines for conducting risk-based patrols and inspections. This should go hand in hand with having action plans where all key players have to be involved	2024/2025
(vi)	Ensure proper monitoring and reporting of the performance of BMU activities.	This is very crucial but requires resources.	MLF and LGA allocate a budget for monitoring and reporting BMU activities and compilation of quarterly reports from LGAs.	2024/2025

Appendix 2: Detailed main audit questions with sub-questions

Audit Question 1	**To what extent are illegal, unprotected, and unregulated fishing practices common?**
Sub-question 1.1	What is the extent of illegal fishing practices in the country?
Sub-question 1.2	What is the extent of unreported fishing practices in the country?
Sub-question 1.3	What is the extent of unregulated fishing practices in the country?
Audit Question 2	**To what extent have MLF and PO-RALG, through LGAs, developed and implemented control measures to enhance sustainable fisheries practices in the country?**
Sub-question 2.1	Do the MLF and LGAs ensure all vessels are registered and licensed?
Sub-question 2.2	Do the MLF and LGAs ensure all the procedures for vessel registration are adequately followed?
Sub-question 2.3	Does MoFL verify compliance with their authorised capacity ceiling, in kilowatts (kW) and gross tonnage (GT) used by the CFP as indicators of a vessel's ability to catch fish?
Sub-question 2.4	Do the MLF and LGAs implement measures to restrict immature fishing?
2.5	Does the MFL have requirements regarding the close season and minimum sizes?
2.6	Does the MLF impose a close season for designated areas, species of fish, and fishing methods, and does it ensure its implementation?
2.7	Do the MLF and LGAs conduct regular awareness campaigns to deter IUU?
Audit Question 3	**Do the MLF and PO-RALG, through LGAs, have reliable information on fishing vessels, fishing gears, stock available, the number of fish caught, and the number of fishers?**
Sub-question 3.1	Do MLF and Po-LARG, through LGAs, have reliable information on fishing vessels?
Sub-question 3.2	Do the MLF and LGAs capture data adequately on fishing gear?
Sub-question 3.3	Does the MLF have reliable information on stocks and the number of fish caught?
Sub-question 3.4	Do the MLF and LGAs have adequate and accurate data on the number of fishers?
Audit Question 4	**Do MLF and PO-RALG have a complete and reliable update database for fisheries management?**

Sub-question 4.1	Does MFL have **a** complete database needed for fisheries management**?**
Sub-question 4.2	Does the MFL have a reliable updated database needed for fisheries management?
Audit Question 5	**Do the MLF and PO-RALG ensure the inspections and sanctions are appropriately planned, performed and applied?**
Sub-question 5.1	Have the MLF and PO-RALG, through LGAs, appropriately planned for the inspection activities?
Sub-question 5.2	Do the MLF and PO-RALG, through LGAs, effectively implement inspection and patrol to deter IUU?
Sub-question 5.3	Does the MLF adequately inspect the fisheries' gear at borders and at the suppliers'?
Sub-question 5.4	To what extent do MLF and PO-RALG, through LGAs, apply sanctions and other deterrent measures against illegal, unreported and unregulated infringements?
Audit Question 6	**Do MLF and PO-RALG ensure adequate coordination among players in implementing fisheries control management measures?**
Sub-question 6.1	Does the existing information-sharing framework between MLF, LGA, police, and TAFIRI effectively control illegal fishing?
Sub-question 6.2	Do MLF and LGAs put in place and use a well-defined reporting arrangement to share information on fisheries activities?
Sub-question 6.3	Does the MLF, in collaboration with TAFIRI, outline areas that require research?

Appendix 3: Officials who were interviewed and reasons for interviewing them

Institution	Interviewee	Reasons
MLF	• Director of Fisheries • Assistant Director of Monitoring, Control and Surveillance (MCS) • Fisheries officials • Economists	• To assess the performance of MLF in ensuring procedures for vessel registration and implement measures for restricting immature fishes, conduct regular campaigns to deter IUU and adequately use. • To assess the performance of MLF in conducting regular monitoring of aquaculture practices in aquatic ecosystem
MLF (selected Zonal office Centres)	• Zonal Officer in Charge • Fisheries officers/Inspectors	• To assess the performance of MLF in putting in place as well as using a well-defined reporting arrangement for sharing information on fisheries activities • To assess the performance of the Zonal Office in inspecting the fisheries gear at borders and suppliers
PO-LARG	• Assistant Director-Economic and Productive Sectors	• To assess the performance of PO-LARG in ensuring effective coordination between LGAs and MLF in managing fishing activities and controlling fishing gears
Selected LGAs	• Head of Livestock and Fisheries Resources • Fisheries Officers in Charge • Ward Fisheries Extension officers	• To assess the performance of LGAs in imposing closed season for designated areas, species of fish and methods of fishing • To assess the performance of LGAs in conducting adequate monitoring of fishing vessels • To assess the performance of LGAs in monitoring BMUs to adequately control, monitor and enforce laws and regulations to reduce IUU
TAFIRI	• Director General • Director of Research Development and Coordination • Manager of Water Fisheries research • Manager of Water Fisheries Research Centres	• To assess the performance of TAFIRI in collaboration with MLF in outlining areas that require research • To assess the performance of TAFIRI in using an information networks system to collect data related to fisheries activities

Institution	Interviewee	Reasons
	• Manager of marine fisheries research • Manager of M&E • Research officers	
Selected BMUs from selected LGAs	BMUs Committee	• To assess the performance of BMUs, including their coordination with other fisheries stakeholders in the protection of fisheries resources • To assess the performance of BMUs in monitoring and curbing illegal fishing activities.

Appendix 4: Documents that were reviewed and reasons for their review

Category	Name of Document	Reason
Reports	Monitoring and Evaluation Reports	Evaluate the progress of implementing the planned activities
	Inspection Reports	To evaluate the patrols conducted in controlling illegal fishing and fishers
	Annual Progress Reports	To evaluate the track of the operation of MLF in the management of fisheries resources activities
	Correspondence Reports between MLF and LGAs	To assess the effective coordination between MLF and LGAs
	Fisheries Frame Survey Reports	To evaluate social services and community facilities at fish landing sites and the composition, magnitude, and distribution of fishing efforts to guide the development and management of fisheries resources.
Budget	Approved Medium Term Expenditure Framework for the Year 2018/19 to 2022/23	To find out how the MLF allocate resources to the protection of Fisheries Resources
Activity Plan	Annual Activity Plans from 2018/19 to 2022/23	Assess the activities set by the MLF in managing fisheries resources through monitoring, control, and surveillance.