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Office of the Auditor-General



Performance Audit Report of the Auditor-General

Implementation of Measures to Combat Illegal, Unregulated and Unreported Fishing and Post-harvest Losses in Lake Victoria

Ministry of Agriculture, Livestock and Fisheries



APRIL 2014

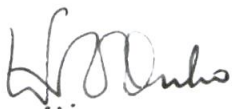
## Foreword by the Auditor-General

I am pleased to publish and publicize this performance audit report which examines the implementation of measures to curb illegal, unregulated and unreported fishing activities and post-harvest losses in Lake Victoria. My Office carried out the audit under the mandate conferred to me by the Public Audit Act, 2003. Section 29(1) of the Act mandates me to assess the economy, efficiency and effectiveness with which the Government, a state corporation or local authority uses its resources.

Performance audits together with financial and continuous audits form the three-pillar audit assurance framework that I have established to give focus to the varied and wide scope of audit work done by my Office. The framework is intended to provide a high-level of assurance to stakeholders that public resources are not only correctly disbursed, recorded and accounted for, but that the use of the resources results in positive impacts on the lives of all Kenyans. The main goal of our performance audits is to ensure effective use of public resources and promote delivery to Kenyans of public services of outstanding quality.

The audit has an environmental management perspective given its concern with the conservation of an important aspect of the biodiversity of Lake Victoria. Our environmental audits examine compliance with environmental policies and obligations, laws, regulations and standards and whether resources are managed in an environmentally effective and sustainable manner. They may also examine the integration of social, economic and environmental concerns in public and other programs and activities. I am hopeful that corrective action taken following the findings and recommendations contained in this report will contribute to the realization of the provisions of Articles 42, 69, 70 and 71 of Chapter Four of the national Constitution which call for better management of the environment for the benefit of all Kenyans.

The report shall be tabled in Parliament in accordance with Article 229(7) of the Constitution. I have submitted the original copy of the report to the Speaker of the National Assembly to table in Parliament. In addition, I have remitted copies of the report to the Cabinet Secretary and to the Principal Secretary, Ministry of Agriculture, Livestock and Fisheries.



**EDWARD R.O. OUKO, CBS**  
**AUDITOR - GENERAL**

**April 1 2014**

## List of Abbreviations

AIA	Appropriation-In-Aid
BMU	Beach Management Unit
CAS	Catch Assessment Survey
DFO	District Fisheries Officers
EAC	East African Community
FMDST	Fisheries Management Decision Support Tool
INTOSAI	International Organization of Supreme Audit Institutions
IUU	Illegal, Unreported and Unregulated
KMFRI	Kenya Marine Fisheries and Research Institute
LVBC	Lake Victoria Basin Commission
LVEMP	Lake Victoria Environmental Management Project
LVFO	Lake Victoria Fisheries Organization
MCS	Monitoring, Control and Surveillance
MOALF	Ministry of Agriculture, Livestock and Fisheries
OAG	Office of the Auditor General
SAI	Supreme Audit Institution

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# Executive Summary

## Introduction

1. Lake Victoria is the world's second largest freshwater lake and the largest in Africa. Its total catchment area is estimated at 250,000 square kilometers out of which 68,000 square kilometres are the water surface. The waters are shared by the three East African Countries of Kenya (6%), Uganda (43%) and Tanzania (51%). Rwanda and Burundi are part of the upper watershed that drains into Lake Victoria through the Kagera River and occupy about 18% of its catchment area. Fishing activities carried out on the Lake are of great economic significance to the region since they provide food, income and employment to millions of people in the lake basin and beyond. However, studies undertaken by fisheries experts in recent years have consistently shown that the annual output of fish harvested from Lake Victoria is declining.
2. In Kenya, for example, data published by the Ministry of Agriculture, Livestock and Fisheries on annual fish production indicated that catches from the Lake Victoria reduced from 143,908 metric tons in 2006 to 111,868 metric tons in 2010. This Ministry attributes the decline to various factors key among which is environmental degradation of the lake's waters and basin lands. However, illegal, unregulated and unreported fishing activities together with overfishing pose a more potent danger since they result in unsustainable exploitation of the fishery.
3. In view of the emerging threats to sustainable fishing on Lake Victoria, the governments of the partner states of the East African Community together with stakeholders and development partners have over the last several years developed measures intended to secure the Lake's resources for the present and future generations. Among the measures are plans and strategies intended to curb overfishing, illegal, unregulated and unreported fishing activities and minimize post-harvest losses.

## Motivation for the Audit

4. In response to concerns expressed by various stakeholders on illegal, unregulated and unreported (IUU) fishing activities on Lake Victoria, the Auditors-General of the Supreme Audit Institutions (SAIs) of Kenya, Tanzania and Uganda in August 2010 decided to carry out parallel performance audits on management of fisheries activities carried out on the lake. A joint audit report will be tabled for discussion in the East African Assembly in Arusha, Tanzania, while each country's report (as this one for Kenya) is to be tabled in the respective Parliaments. The findings and recommendations of the report are expected to help fisheries authorities improve on how they implement measures for sustainable exploitation of the Lake's fisheries resources for the benefit of the peoples of the three partner states.

## What the Audit Examined

5. The objective of the audit was to assess the implementation of fisheries management measures intended to address the decline of fish stocks in Lake Victoria. The audit specifically assessed whether Kenya, as a partner state of the East Africa Community, has effectively implemented the monitoring, control and surveillance systems meant to combat fishing IUU over-fishing and post-harvest losses of fish products.
6. The focus of the audit was on fishing activities undertaken on Lake Victoria during the four-year period from July 2007 to June 2012. The responsibility for implementing sustainable fisheries measures in Kenya lies with Fisheries Department of the Ministry of Agriculture, Fisheries and Livestock. Other important stakeholders include the Lake Victoria Fisheries Organization (LVFO), Kenya Marine Fisheries and Research Institute (KMFRI) and fisher groups named Beach Management Units (BMUs).

## Findings of the Audit

The Fisheries Department has initiated measures to combat illegal, unregulated and unreported fishing but has not implemented these in a thorough manner as envisaged in various strategies and plans developed under the LVFO

7. The Fisheries Department has identified the causes of IUU fishing practices in Lake Victoria and initiated several remedial measures. However, the measures have not been implemented in a consistent and comprehensive manner and as envisaged in various strategies and plans developed under the LVFO. For example, in three out of eight of the districts samples, slightly over 50% of the fishers were not licensed to operate in the Lake thus, the increased levels of IUU fishing activities.
8. The main cause of the unsatisfactory level of registration and licensing of fishers on the Lake is the constrained capacity of the Fisheries Department to execute its responsibilities effectively. The Department does not conduct surveillance over fishing activities regularly due to shortage of boats for patrol and field staff to enforce regulations among fishers. For example, the Department's records indicated that the 331 landing beaches on the Kenyan side of the Lake were only supervised by 17 District Fisheries Officers (DFO). Further, no MCS activities were planned for in an elaborate way and neither are they executed consistently. Further, no plans on MCS activities were available for review in areas we visited. In addition, funds made available to District Fisheries Offices for MCS are not sufficient to sustain the operations throughout the year.
9. Also, the BMUs expected to complement the work of the Fisheries Department have significant operational inadequacies. The majority have not established effective means to carry out their mandates. For instance only 57% of the BMUs had established systems to control overfishing. Records maintained by the Department indicated that few BMUs had sufficient capacity to ensure that their members complied with systems established to support sustainable fishing on the Lake. In 43% of the landing sites we visited, fishers were observed to have caught undersize fish.

10. Awareness campaigns among fishers and other stakeholders are not carried extensively due to shortage of funds and lack of proper planning. Only 50% of the BMUs had created awareness campaign programs on better fishing practices. Similarly, information on fishing activities is not shared among key research institutions, investors and policy implementers to the extent and frequency expected. As a result, the link between research and implementation is weak. Consequently, major decisions, as fish harvesting limits are not necessarily based on objective data. According to the LVFO Fisheries strategy, Catch Assessment Surveys (CAS) were to be conducted at least once every four (4) months to enable the Fisheries Department gather data that would guide decisions on regulation of fishing activities. However, the surveys are not conducted on each occasion that they become due. In the absence of regular CAS, the Ministry may not be able to make proper estimates of the stock levels of fish in the Lake and thus determine in an objective way the maximum sustainable yields at any given period.
11. The Fisheries Department occasionally fails to observe sustainable fisheries management regulations it has prescribed. For example, owing to incessant pressure from fisher groups and their political supporters the Department issued special licenses to *omena* (*rastrineobola argentea*) fishers during the closed fishing season that runs from April 1 to July 31 of every year.

The Department has facilitated the establishment of infrastructures to cater for post-harvest handling of fish at landing sites but these are neither adequate nor sufficient

12. Infrastructure established by the government for handling fish at landing sites is not adequate, as the majority of landing sites do not have cold storage facilities. Indeed the 2010 Kenya Frame Survey report indicated that sanitary facilities at the landing sites were inadequate for proper handling of harvested fish. Out of the 331 existing landing sites, only 196 (60%) had toilets, 117 (35%) had shed, 15 (5%) had clean water supply and only 101(30%) of the total were served by all- weather access roads. Therefore, the sites pose a health hazard not only to consumers of fish harvested from the Lake but to the fishers as well. In addition, out of the 14 BMUs sampled for the audit, only two (14%) had cold storage facilities. Therefore, spoilage of catches are common and fishers eager to recover their losses return to the lake to fish more often and thus threaten sustainable exploitation of the fishery.

## Conclusions of the Audit

13. The implementation of measures intended to curb IUU fishing and post-harvest losses by the Fisheries Department has not been as extensive and thorough as expected. While the Fisheries Department has undertaken studies and initiated action to ensure sustainable exploitation of fisheries resources on the Lake, the desired outcomes are yet to be attained. Various factors explain the unsatisfactory performance. These include underfunding of MCS activities and weaknesses in operational systems deployed by the Department and fisheries stakeholders such as BMUs.

## Recommendations

14. In view of the findings of the audit, the Auditor-General recommends that the Fisheries Department intensifies its efforts on implementing measures envisaged under the sustainable fisheries management strategy developed under the Lake Victoria Fisheries Management Organization, and in the Fisheries Department's plans.
15. Restrictions on licensing of fishers should be enforced consistently over all fishing areas. A new approach to implementing the conservation measures based on persuasion and co-operative efforts with all stakeholders including county governments bordering the Lake may yield better results at a lower cost to the Fisheries Department. Regular reviews of the strengths and weaknesses of BMUs should be undertaken and control actions taken as necessary. Further, the government should enforce the implementation of closed fishing areas and seasons in order to ensure sustainable exploitation of Lake Victoria resources. Also, means to fund monitoring, surveillance, control activities and improvements in infrastructure to support post-harvest handling of fish products should be established to avoid post-harvest losses.
16. The complete list of recommendations that the Auditor-General has proposed for implementation by the Accounting Officer in the Fisheries Department of the Ministry of Agriculture, Livestock and Fisheries are outlined in Chapter 6 of the report.

## Response of the Accounting Officer

17. The Accounting Officer has read the report and has agreed with its findings and recommendations. His comments are outlined in Appendix II of the report.

# Chapter 1

## Background to the Audit

### Introduction

- 1.01 This audit report examines the implementation of measures established under the Lake Victoria Development Program to control irregular, unregulated and unreported (IUU) fishing on the Kenyan waters of Lake Victoria. The Fisheries Department in the Ministry of Agriculture, Livestock and Fisheries is responsible for implementing the measures. The cooperative audit was conducted by the Office of the Auditor-General of Kenya, Office of the Auditor-General of Uganda and the National Audit Office of Tanzania, who conducted parallel audits on the subject in their respective jurisdictions of the Lake. The three Offices will prepare a joint report covering all the findings for tabling in the East African Legislative Assembly.

### Key Facts on Lake Victoria

- 1.02 Lake Victoria is the world's second largest freshwater lake and the largest in Africa, with a total catchment of 250,000 square kilometers of which 68,000 square kilometers is the water surface. The Lake stretches 412 kilometers from North to South, and 355 kilometers from West to East. The waters of the Lake are shared by the three East African Countries of Kenya (6%), Uganda (43%) and Tanzania (51%). Rwanda and Burundi are part of the upper watershed that drains into Lake Victoria through the Kagera River and between them, occupy about 18% of the Lake's catchment area.



Figure 1: Map of Lake Victoria: 51% of the Lake's waters are in Tanzania, 43% In Uganda and 6% in Kenya.  
Source: LVFO

- 1.03 The Lake Victoria Basin supports an estimated population of 30 million people with large concentrations along the lake's edge and within the Kagera River Basin, which is shared by Burundi, Rwanda, Tanzania and Uganda. Fishing activities are estimated to account for over 25% of the region's annual Gross Domestic Product.
- 1.04 The Kenya Frame Survey 2010 data published by Fisheries Department indicates that fish output declined from 143,908 metric tons in 2006 to 117,231 metric tons in 2007, 111,369 metric tons in 2008, 108,934 metric tons in 2009 while, in 2010 the aggregate catch recorded was 111,868 metric tons. The decline denotes a decreasing trend in fish output. Fisheries experts attribute the declining output to overfishing and poor environmental management practices in the partner states.

1.05 Fisheries authorities and experts have over the years identified threats to sustainable fishing on Lake Victoria. Fishing activity for both food, source of employment and income has been rising each year due the increase in population in the Lake region. This has happened even as the biodiversity of the Lake and its basin is continually put under stress from increased human activities. In addition to population increase, the risks to overexploitation of the Lake's fish resource are driven by the following factors:

- i. The authorities lacking full control over access to the Lake waters by fishers;
- ii. Use of illegal fishing gear and techniques;
- iii. Landing of fish catches that are below permitted sizes;
- iv. Failure to comply or enforce closed breeding areas;
- v. Illegal trading in the Lake's fish-harvest across borders;
- vi. Proliferation of unlicensed fishers;
- vii. Lack of adequate post-harvest handling infrastructure resulting in fish losses that further increases fishing activity on the Lake.

1.06 The illegal, unregulated and unregulated activities and the poor post-harvest handling infrastructure are further sustained by weak control and lack of sufficient awareness on environmental management among fishers. The authorities have therefore seen the need to establish and implement comprehensive measures intended to control fishing activities on the Lake. It was hoped that implementation of the measures would ensure that the fishery remains sustainable to benefit the present and future generations of the partner states.

### Motivation for the Audit

1.07 Lake Victoria faces environmental stress induced by a variety of interlinked human and natural activities, including over-fishing, destructive fishing practices, pollution from human and industrial activities, siltation from the erosion of deforested watersheds and enhanced urban runoff with high sediment loads and large volumes of waste products. The impacts of these activities are now clearly evident with the Lake's ecosystem showing signs of severe environmental distress, including depleted oxygen levels, eutrophication (high presence of dissolved nutrients) and reduced water clarity and increased levels of microbiological and chemical pollution.

- 1.08 Because of these problems, fisheries authorities in the East African Community (EAC) partner states working with stakeholders have drawn up measures to monitor and control fishing activities on the Lake. They hope that the controls would help reverse the worsening condition of the Lake's ecosystem and promote a sustainable approach to the management of its resources.
- 1.09 In response to lingering concerns on the management of the Lake's fishery resources by the partner states of the EAC, the Auditors'-General of Kenya, Tanzania and Uganda decided to jointly carry out an environmental audit on management of fishing activities conducted on the Lake. The Office of the Auditor-General of Tanzania, as the immediate former Chair of the African Organization of Supreme Audit Institutions Working Group on Environmental Auditing (AFROSAI- WGEA), was given the responsibility to coordinate the audit. The audit was intended to promote sustainable management of fishery activities undertaken on the Lake, facilitate sharing of information and learning on environmental auditing, and enhance capacity building and networking among the three audit Offices.

## Chapter 2

# Design of the Audit

### Objective

- 2.01 The overall objective of the audit was to examine the implementation of measures established under the Lake Victoria Fisheries Development Program to address the decline of fish stocks in Lake Victoria. The specific objective of the audit was to assess whether the Fisheries Department of the Ministry of Agriculture, Livestock and Fisheries had fully implemented the monitoring, control and surveillance system for combating IUU fishing and post-harvest handling of fish catches as envisaged under the sustainable fisheries, management strategy developed under the Lake Victoria Environmental Management Program (LVEMP).

### Scope

- 2.02 The audit examined activities undertaken by the Fisheries Department of the Ministry of Agriculture, Livestock and Fisheries solely or in collaboration with various stakeholders during a four-year period from July 2007 to June 2012. The stakeholders included; the Lake Victoria Fisheries Organization (LVFO) of the East African Community, Kenya Marine Fisheries and Research Institute (KMFRI) and the Beach Management Units in Kenya (BMUs). The audit only examined issues related to fisheries management and not other environmental and ecological management concerns in the Lake. These would be subject to a separate audit.

### 2.03 Assessment Criteria

We assessed the performance of the Fisheries Department against criteria obtained from plans and strategies developed under the LVEMP. The criteria included performance targets and indicators as well as regulations and standards. The specific criteria used in each aspect of the issues examined in the audit are highlighted against the respective findings in Chapter 4 of this report.

### Methods Used to Gather Audit Evidence

2.04 The audit was carried out in accordance with Auditing Guidelines issued by the International Organization of Supreme Audit Institutions (INTOSAI) and policies and procedures established by the Office of the Auditor-General of Kenya.

2.05 To assess the implementation of fisheries management measures by BMUs, with the assistance of a fisheries expert, we sampled 14 out of 331 BMUs within the eight districts that border Lake Victoria in Kenya. These are Bondo, Kisumu East, Nyando, Homabay, Suba, Rachuonyo South, Migori and Busia. In developing the audit sample, we considered the districts that run large fishing operations, and are located in sections of the Lake where IUU fishing activities and post-harvest losses had commonly been reported for long periods by the Fisheries Department and other fisheries stakeholders.

2.06 The following methods were used to collect data for the audit;

#### (i) Interviews

We interviewed senior management, staff and stakeholders from the following key organizations:

- i. Lake Victoria Fisheries Organization (LVFO);
- ii. Ministry of Agriculture, Livestock and Fisheries;
- iii. Selected Beach Management Units (BMUs); and
- iv. The Kenya Marine Fisheries and Research Institute (KMFRI).

(ii) **Documents Review**

To gather sufficient, relevant and reliable information on the fisheries management measures implemented by the lead agencies, we examined documents as outlined in Appendix I of this report.

(iii) **Site Visits**

We also visited the fish landing sites for the purpose of assessing the measures taken by the BMUs to implement the fisheries management measures. The sites were distributed across all the districts covered in the audit. Data gathered from various sources was analyzed to establish the extent of implementation of the fisheries management measures on the Kenyan side of the Lake basin. The sites are listed in Appendix I.

## Chapter 3

# Description of the Audit Area

### Framework for Management of Lake Victoria Fisheries

3.01 Fishing activities in Lake Victoria are regulated at both national and regional levels in Kenya, Uganda and Tanzania. In each country, the respective national laws and regulations on fishing and environmental management apply. In addition, each country recognizes and pursues supplementary management policies and regulations defined under the EAC Treaty. The Treaty was signed by the Governments of Kenya, Uganda and Tanzania in 1994 but has since been expanded to include Rwanda and Burundi. The comprehensive framework on fisheries management for Lake Victoria is defined in several documents that include the following:

- i. Convention for Establishment for the Lake Victoria Fisheries Organization;
- ii. LVFO Strategy and Action Plan for Monitoring Control and Surveillance of Fisheries on Lake Victoria;
- iii. Lake Victoria Research Project–Fisheries Management Plan;
- iv. Protocol for Sustainable Development of Lake Victoria Basin;
- v. Human Resource Development Strategy and Action Plan for Lake Victoria Fisheries;
- vi. Guidelines for Beach Management Units; and
- vii. Annual Frame Survey Reports.

3.02 The key aspects of each of the components of the framework are highlighted in the following paragraphs.

### The Convention for Establishment of the Lake Victoria Fisheries Organization

3.03 The Lake Victoria Fisheries Organization (LVFO) is a regional organization formed under an agreement signed in 1994 by Kenya, Uganda and Tanzania. The objective of the organization is to enhance cooperation among the three partner states in managing the Lake's ecosystem including its resources. The organization was to harmonize national measures, develop and adopt conservation and management activities that ensure sustainable use of living resources of the Lake Victoria. It was to do so by performing the following functions:

- i. Promoting the proper management and optimum use of fisheries and other resources of Lake Victoria;
- ii. Enhancing the capacity of existing fisheries institutions;
- iii. Providing a forum for discussion of the impacts of initiatives on Lake Victoria;
- iv. Providing for the conduct of research on the living resources of Lake Victoria and its environment;
- v. Coordinating and undertaking training and extension services in all aspects of fisheries;
- vi. Advising on the impact of introduction of non-indigenous organisms into Lake Victoria;
- vii. Serving as a clearing house and a data bank for information on the fisheries of lake Victoria; and
- viii. Promoting and disseminating information on fisheries management.

3.04 The key statutory organs of the LVFO are:

- i. The Council of Ministers which comprises Ministers responsible for fisheries in the partner states;
- ii. The Policy Steering Committee comprising of Permanent Secretaries responsible for fisheries in the partner states;

- iii. The Executive Committee composed of the Directors of the Fisheries and Fisheries Research Institutes of partner states; and
- iv. All heads of key institutions responsible for fisheries management in the partner states;

### LVFO Strategy and Action Plan for Monitoring, Control and Surveillance of Fisheries on Lake Victoria

- 3.05 The strategy and action plan for MCS of Fisheries on Lake Victoria and the Guidelines for BMUs are the main tools developed by the LVFO for ensuring that fishing activities in the Lake is legal and sustainable:
- 3.06 The Monitoring, Control and Surveillance (MCS) strategy provides the strategic framework that the LVFO has established to gather information and respond to the outcomes of fishing activities conducted on the Lake. The overall goal of the MCS strategy is to ensure that fishing activities on the Lake are sustainable. It seeks to increase compliance with fisheries rules and regulations by using both rule-based and persuasive approaches to influence how fishers conduct themselves on the Lake. This would be attained by implementing the following nine strategies:
- i. Create an operational structure that implements MCS effectively and efficiently in all riparian States of Lake Victoria;
  - ii. Improve voluntary compliance and simplify the MCS task;
  - iii. Develop an effective reporting system for information exchange within and between MCS stakeholders;
  - iv. Improve information and intelligence sharing between MCS units both within and among states to combat illegal practices and smuggling at border boundaries;
  - v. Improve and standardize the planning and conduct of inspection procedures to enhance the impact of surveillance, apprehension and prosecution of offenders;
  - vi. Establish or designate an MCS analysis and monitoring unit within the LVFO and in member States;
  - vii. Identify procurement needs and sources of funding in response to identified MCS requirements;

- viii. Review penalties and judicial procedures in each state and develop appropriate interventions; and
- ix. Develop skills, knowledge and capacity at all levels for MCS.

3.07 The strategy further outlines a comprehensive framework of activities to be undertaken, performance indicators to measure success, timelines to be observed and key players expected to guide the implementation of the strategy.

### Beach Management Units (BMU)

3.08 BMUs are community-based, fisheries management organizations registered with the Fisheries Development. The Units bring fishing stakeholders at local beaches together and are primarily intended to encourage co-management of fisheries resources between the users (fishers), regulatory authorities and fisheries stakeholders. BMUs are the focal institutions through which fisheries stakeholders including the Government partner with fishing communities. The activities of the Lake Victoria BMUs are regulated through the principles and regulations defined in the Guidelines for BMUs issued by the LVFO. The guidelines address the following issues:

- i. Relationships within the BMUs and with other actors;
- ii. Aims of BMUs;
- iii. Procedures for forming BMUs;
- iv. Structure and form of operations;
- v. Potential risks for BMUs;
- vi. Linkages between BMUs and other stakeholders; and
- vii. Monitoring BMUs Performance.

3.09 BMUs are community-based, legally-recognized fisheries management organizations, registered with the Fisheries Departments of the three EAC states. It is a requirement that every fisher and vessel operating on the Lake be registered with a BMU and with the authorities. BMUs are expected to assist the Fisheries Department in MCSs activities in designated local fishing zones. They are to ensure that

their members comply with requirements for sustainable use of the Lake's resources. There were approximately 331 Lake Victoria BMUs as at 30 June 2012 spread out within the eight riparian districts.

### The Fisheries Department of the Ministry of Agriculture, Livestock and Fisheries

3.10 All matters relating to the management of fisheries resources in Kenya are supervised by the Ministry of Agriculture, Livestock and Fisheries. Executive Order No. 2 of 2013 issued by the President of the Republic defines the following responsibilities for the Ministry under the Fisheries sub-sector:

- i. Fisheries Policy;
- ii. Development of Fisheries;
- iii. Fisheries Marketing;
- iv. Fish Quality Assurance and Value-addition;
- v. Fishing Licensing;
- vi. Protection of Fisheries and Exclusive Economic Zones; and
- vii. Protection and Regulation of Marine Ecosystems.

3.11 The responsibilities are managed by the Fisheries Department of Ministry of Agriculture, Livestock and Fisheries. The functions of the Department at local level are managed by District Fisheries Offices located in each of the eight districts of the Lake Victoria Basin.

### The Kenya Marine and Fisheries Research Institute (KMFRI)

3.12 The Kenya Marine and Fisheries Research Institute (KMFRI) is a state corporation within the Ministry of Agriculture, Livestock and Fisheries. It is mandated to conduct aquatic research covering all the Kenyan waters and riparian areas including the Kenya's Economic Exclusive Zone (EEZ) in the Indian Ocean. KMFRI is responsible for collecting scientific data and providing information required by the LVFO on various marine activities. The data includes surveys and assessment of the fishery resources exploited from the Lake. The surveys provide important data for management of the fishery including sustainable fish catches and breeding patterns.

## Sources of Funding for Fisheries

- 3.13 The operations of the Fisheries Department are financed through appropriations by Parliament under both the Development and Recurrent Votes. The appropriations by Parliament to the Department, which was until March 2013 a fully fledged Ministry, have been rising over the years and totaled to approximately Kshs.13.34 billion over the five year period between 2007/08 and 2011/12. The trend is shown in the chart below:

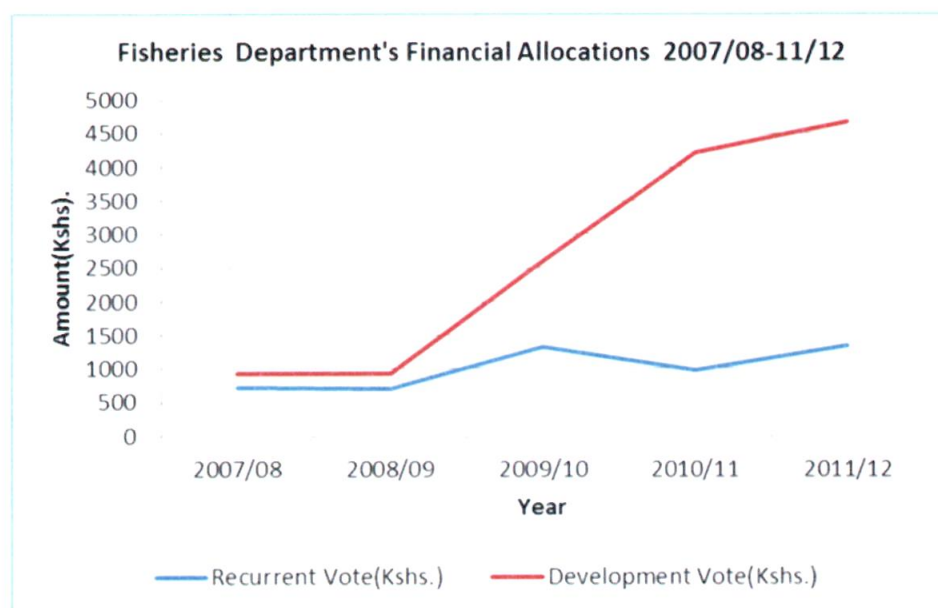


Figure 2 Both Recurrent and Development Vote Allocations to the Department have been increasing with the annual total for the two reaching Kshs 13.34 billion in 2011/12

Source: OAG Analysis of the estimates of the then Ministry Fisheries & Livestock Development

- 3.14 Partner states of the LVFO had agreed to contribute to projects and activities related to management of the Lake's fisheries. For example, the LVFO Council of Ministers meeting of 28 May 2010 asked each partner state to contribute US\$ 600,000 to a project initiated by the LVFO to save the Nile Perch species of fish. Information obtained from the Fisheries Department indicated that as at 27 January

2012, Kenya had remitted USD 570,907 (approximately Kshs.50 million at the exchange rate prevailing then) to LVFO for use in the project.

## Chapter 4

# Findings of the Audit

- 4.01 The findings of the audit discuss the performance of the Fisheries Department in implementing measures intended to curb illegal, unreported and unregulated fishing and minimize post-harvest losses.

Although systems for registering and licensing fishing vessels have been established, a large number of vessels operating on the Lake are neither licensed nor registered

- 4.02 The protocols established under the LVFO requires all fishing vessels, fish collection and fish transport vessels in the partner states to be registered and licensed by the respective national authorities before they are allowed into the Lake. The Kenya Frame Survey reports of 2008 and 2010 revealed that the total number of fishing vessels operating in Lake Victoria decreased from 14,257 in 2008 to 14,251 in 2010 while the number of fishers decreased from 42,257 in 2008 to 41,912 in 2010 as indicated in Table 1 below.

- 4.03 However, these numbers include both licensed and unlicensed fishers and crafts. The frame survey report recommended that all fishers and vessels be registered and licensed so as to control fishing activities on the Lake. In addition, the report recommended that in considering the number of fishers and crafts to be registered, the fisheries authorities base their decisions on sustainability of the Lake's fish stocks and not on revenue collection targets they may have set.

- 4.04 Interviews carried out with the Fisheries Officers and documents reviewed during the audit revealed that that limits on the number of vessels registered and licensed to fish on the Lake were factored on the total annual sum targeted for collection as Appropriations-In-Aid (AIA) in each district. There were many vessels and fishers operating in Lake Victoria that were neither registered nor licensed. The reports we obtained from three out of the eight riparian districts of the Lake revealed that majority of the fishermen were not licensed to fish in the Lake. For example, at Sienga Beach in Migori District, none of the fishers at the Beach had been registered at the time of the audit.
- 4.05 Documents and reports made available for audit indicated that licenses were issued to the fishers without due regard to the type of fishing gear, the method of fishing they were to use or species of fish they were allowed to catch, and the areas the fishers were to operate in.
- 4.06 Returns obtained from the Fisheries Department on the status of registration and licensing of fishers and fishing gears deployed in the District indicated gaps in these two important aspects of fisheries control. Table 1 below indicates the presence of unregistered and unlicensed fishers and fishing vessels.

District	Fishers Recorded	Licensed Fishers	Unlicensed Fishers	Registered Boats	Unregistered Boats	Unregistered Gears
Suba	15131 (2010 Frame Survey)	Not Indicated	Not Indicated	None registered in 2011	Not Indicated	Not Indicated
Migori	4858	342	4516	278	1170	19
Kisumu	Not Indicated	Not Indicated	1072	Not Indicated	300	Not Indicated

Table 1: Analysis of Returns On Licencing of Fishers in Kisumu, Migori and Suba Districts

As the table indicates, data on licensed fishers is scarce. In one district (Migori) where the audit team obtained the data, less than 10% of the fishers on the Lake were registered with the authorities.

Source: OAG Analysis of Fisheries Department data

- 4.07 As a result of these weak controls in registering and licensing vessels and fishers, the risk of IUU fishing practices in the Lake is high, which in turn threatens sustainable exploitation of the fishery.
- 4.08 Lack of an effective registration and licensing regime leads to loss of revenue. For example, reports prepared by the Fisheries Department revealed that budgeted AIA receipts estimated at Kshs.15,276,856 (USD 181,867) from eight riparian districts of Lake Victoria between 2009/10 and 2010/11 years were not collected. In addition, unregistered fishing vessels hinder collection of reliable data on fish caught from the Lake. As a result, decisions made by the authorities on quantities allowed to be harvested from the Lake in any period are likely to be inaccurate and may lead to unsustainable fishing on the Lake:

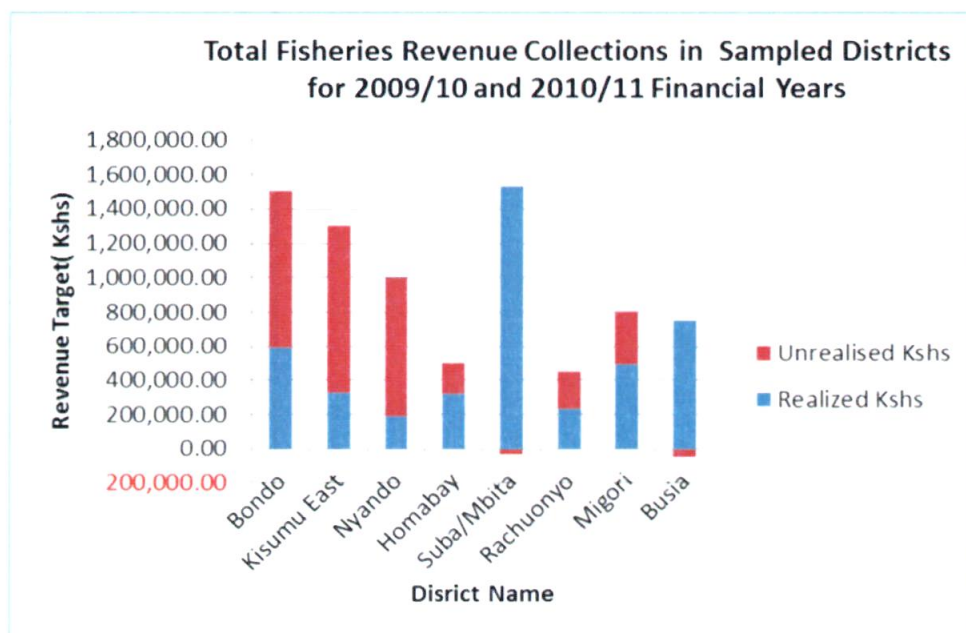


Figure 3: In three of the eight districts, less than half of the revenue budgeted was collected. Thus over the two year period, the deficit totaled to Kshs. 15,276,856 or 61 % of the budget. However, two districts of Suba and Busia recorded surpluses after they collected more than they had budgeted for

Source: OAG Analysis of Fisheries Department data

4.09 For monitoring and surveillance of fishing activities in the Lake to be effective, a mechanism should be established to ensure that all fishers operate under conditions approved by the Government of partner states. According to the Council of Ministers of the EAC meeting of May 2010, partner states were to re-dedicate efforts towards fisheries resource protection by establishing MCS measures. To conduct MCS effectively, the Fisheries Department should have sufficient resources and staff with the skills and competencies needed to conduct inspections and interact with fishers across the lake.

4.10 However, the report of Kenya's Frame Survey for 2010 indicated that the distribution of Fisheries Officers within the eight districts of Lake Victoria was uneven and inadequate. For example, four out of the eight districts did not have any Fisheries Officer in their establishments. The numbers in the other four were not sufficient. The officers could not effectively carry out enforcement activities against illegal fishing activities on the Lake.

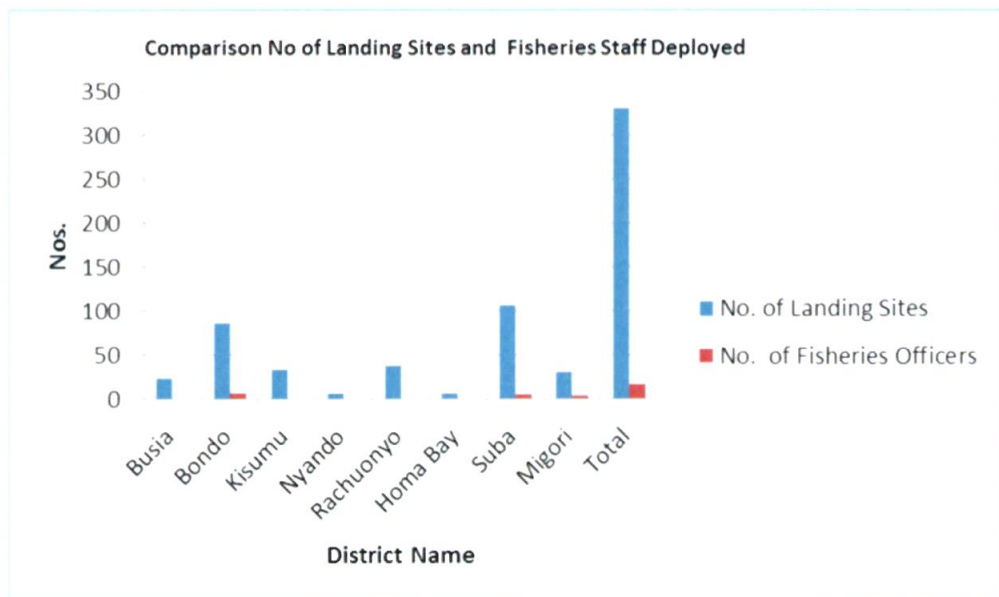


Figure 4: There were very few officers assigned to monitor activities in the total of 331 fish landing beaches in eight districts bordering the Lake. Kisumu, Nyando, Rachuonyo did not have any officer deployed in the Landing Beaches in spite of having 84 fish landing beaches between them.

Source: OAG Analysis of 2010 Frame Survey Data

4.11 The Frame Survey Report of 2010 revealed that there were only 17 Fisheries Officers assigned to supervise the activities of 331 BMUs. Therefore on average, each officer was expected to supervise the activities of 19 BMUs while the beaches were located long distances apart. Our visits revealed insufficient staffing in District Fisheries Offices as shown in figure 5 below:

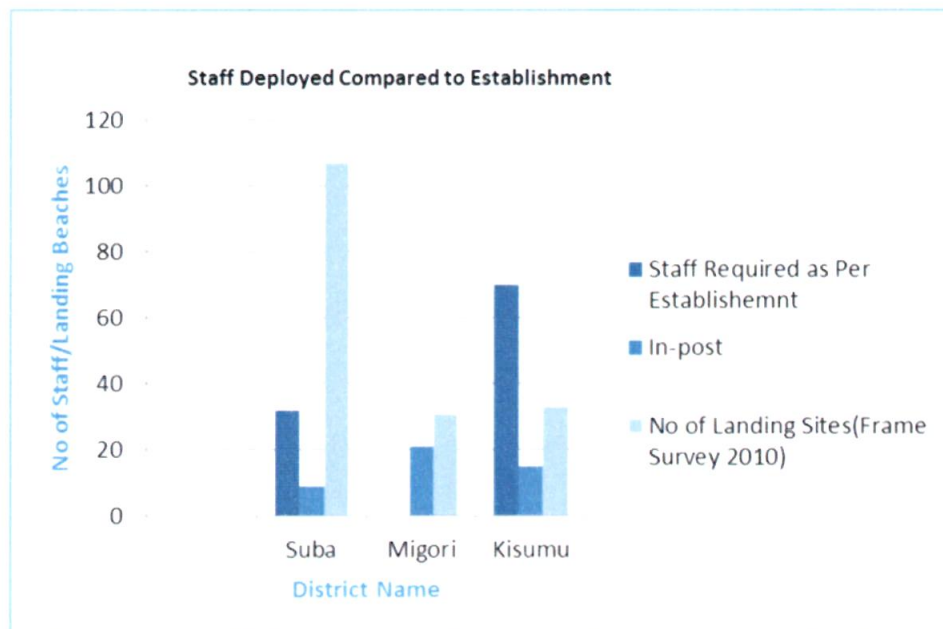


Figure 4: The number of staff deployed in the sampled districts were far much less than the numbers provided in the establishment.

Source: OAG Analysis of Fisheries Department Data: Staff Distribution in Three Districts

4.12 We noted that due to operational constraints, the Officers were mainly concerned with tasks they could accomplish in their offices as issuance of licenses, collection revenue, and attendance of District Council meetings, but not MCS of fishing activities on the Lake. The activities were not directly related to their responsibilities for MCS of fishing activities.

4.13 In addition, the capacity of the Officers to conduct MCS of fishing activities was constrained by shortage of boats and vehicles and where available, shortage of funds to purchase fuel. Many of the boats owned by the Fisheries Department were broken down and were therefore not in use as shown

in figure 6 below. As a result, the Department was unable to conduct surveillance of fishing activities regularly.

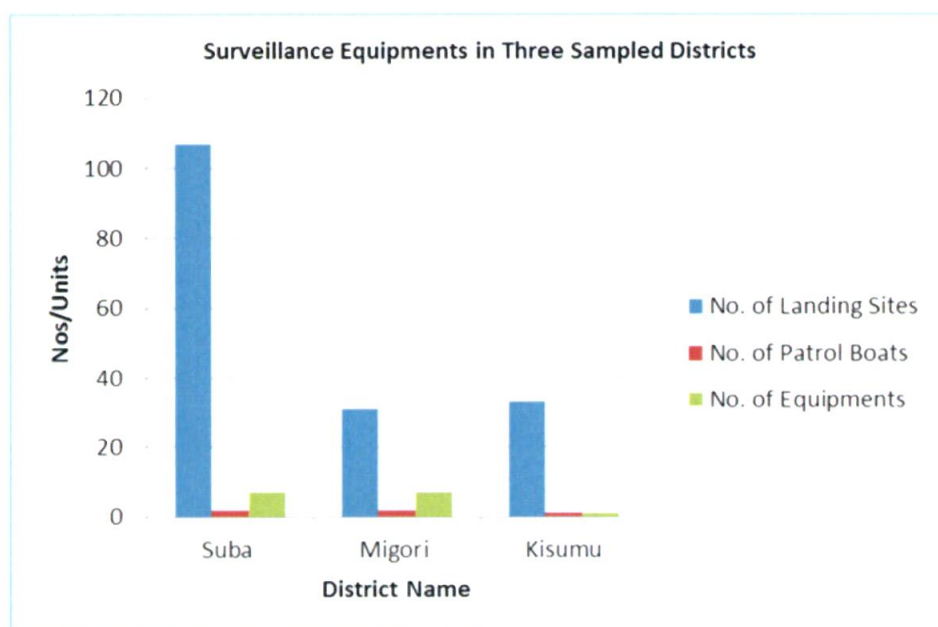


Figure 6: The number of boats and other equipment available to the Fisheries Department in the three districts is disproportionate to the number of fish landing beaches on which surveillance is expected to be conducted

Source: OAG analysis

- 4.14 Effective enforcement of registration and licensing of fishers would require sufficient budgetary allocations to finance patrol activities. Indeed, the Council of Ministers of the East African Community (EAC) in its meeting of 29 October 2008, urged partner states to provide sufficient financial budgets for MCSs and for strengthening fisheries governance. Further, Council of Ministers of the LVFO in a meeting dated 28 May 2010 urged the partner states to re-dedicate efforts towards fisheries resource protection by enhancing MCSs of fishing activities.
- 4.15 However, examination of the Fisheries Department's budget estimates for 2008/09, 2009/2010 and 2010/11 financial years indicated that MCS function did not receive sufficient funds. The Council of Ministers of the EAC being aware of financial constraints faced by fisheries authorities in the region

have occasionally asked the respective governments to contribute funds to projects intended to support management of the Lake's fisheries.

For Example, the Government of Kenya paid Kshs.48,000,000 (USD 570,907) to the LVFO between 2009 and 2011 as commitment to fisheries management in the region. The total commitment made by the Government was US\$600,000.

- 4.16 Fisheries Officers interviewed revealed that MCS activities conducted on the Lake are financed through the AIA collected from fishers. However, DFOs considered the funds inadequate to cover their operations and MCS activities.
- 4.17 Further, the MCS activities did not appear to be properly planned. For example, the Ministry of Agriculture, Livestock and Fisheries did not avail for audit its MCS activity plans for the eight districts. It was therefore not possible to verify the existence of the plans.
- 4.18 Slightly over half of BMUs that we encountered had established systems to control overfishing and other illegal activities. However, the majority of these lacked capacity to ensure compliance by members. The anomaly appeared to confirm what the Annual Frame Surveys for 2008 and 2010 reported that "...in spite of the presence of BMUs, the use of illegal gears on the Lake was still prevalent..." Extracts of the Frame Survey data are shown in the Table below:

Gillnets		Beach Seine		Monofilament		Casts Nets		Long Hooks	
2008	2010	2008	2010	2008	2010	2008	2010	2008	2010
43,467	47,638(10)	762	991(+30%)	4190	1468	131	143	2,501,944	2,705,895

Table 2: Illegal Fishing Gears in Lake Victoria

Source: Fisheries Department Frame Surveys 2008 and 2010

4.19 We visited fourteen BMUs out of which eight (57%) had reportedly established measures to control overfishing. Leaders of the BMUs told us that they had attained effective control over the number of boats and the type of gears used by fishers in their respective jurisdictions. However, we could not confirm the assertion as data and reports on activities carried out by the BMUs were not available for audit examination.

4.20 Ineffective surveillance by BMUs over their member's activities allows the use of illegal fishing gear and the catching of undersize fish to thrive. The audit team observed the illegalities at Utajo Beach and at Kendu Bay Beach as shown in the photos below:



Picture 1 & 2: Beach seining witnessed by the audit team in Utajo beach and undersize fish harvested at Kendu Bay Beach.

Source: OAG

A strategy for monitoring control and surveillance of fishing to deter illegal, unregulated and unreported fishing exists but it has not been implemented well

4.21 Public awareness campaigns and community-based programs may serve as a cost-effective means to discourage IUUs fishing practices. The Council of Ministers in their meeting on 15 February 2009 directed partner states to organize national stakeholder's conferences to raise awareness, gain political

commitment and sensitize stakeholders on the dangers and negative impacts that illegal fishing activities cause to local communities and the ecosystem.

- 4.22 The audit however revealed that the Fisheries Department had not fully implemented the Council of Ministers' resolution as there were no reliable systems for educating fishers. For example, awareness campaigns on illegal fishing activities were only conducted occasionally mainly at public meetings called for other purposes. In addition, the Fisheries Department did not avail to us information outlining awareness campaigns planned or conducted in the period under review. Further, of the fourteen BMUs visited, only seven (50%) indicated they had established awareness creation programs targeted at fishing communities. Failure to sufficiently sensitize the fishing community has allowed increased levels of IUU fishing activities and thus caused further decline in the Lake's fish stocks.

Although a detailed system for collecting and sharing fisheries data and information among stakeholders has been established, the data and information it generates is not shared regularly

- 4.23 According to the LVFO, each partner state is required to establish a fisheries database and a fisheries management decision support tool (FMDST) that would provide ample and reliable data on changes in fish populations on the Lake. The purpose for FMDST is to improve information and intelligence sharing between fisheries management authorities both within and among the partner states in order to help combat illegal fishing practices. The tool is also intended to provide up-to-date information on the state of fisheries resources. The tool may further be used to assess the optimal fishing activity levels during any period. This would help regulate fishing activities on the Lake and thus avoid overfishing.
- 4.24 However, the audit revealed that the FMDST had not been fully adopted by the fisheries authorities. Instead, the level of authorized fishing activity on the Lake is decided based on other factors, including the amounts of revenue (AIA) budgeted for collection in the financial year. This increases the risk of overfishing and the prevalence of irregular and illegal fishing practices.

- 4.25 The meetings of the Fisheries Working Group of the EAC Treaty provide regular forums for sharing of information on fisheries management activities related to Lake Victoria. Data is collected through the Frame, Catch Assessment and Hydro-acoustic surveys and is disseminated by the LVFO through its representative institutions. Locally, the information should be shared among networks at national, county and district levels including BMUs.
- 4.26 The audit however revealed that the information is not collected in a timely manner due to inadequate funding for the activity. Only on occasions when donor-funded projects that entail collection of fisheries data are under implementation is the information collected and disseminated to stakeholders regularly. Lack of sufficient information constrains the ability of fisheries authorities to make the right managerial decisions on control of fishing activities. For example, without sufficient and reliable data on fish harvests made at any one period, it is not possible for authorities to determine objectively the maximum sustainable fish yields to be harvested from the Lake in the following period.

Measures required to combat over-fishing in the Lake have been identified and efforts made to implement them but much remains to be done

- 4.27 The partner states were supposed to implement several measures intended to combat over-fishing in the Lake. The main ones were:
- i. Establish systems to capture data on fish catches;
  - ii. Use research data to regulate fishing;
  - iii. Use information obtained from surveys to manage fishing activities;
  - iv. Build infrastructure to cater for post-harvest handling;
  - v. Make available cold-rooms for fish storage to preserve fish; and
  - vi. Build sufficient sanitary facilities, sheds and provide water for landing sites for proper hygiene.

The following paragraphs discuss the extent of implementation of these measures:

A system to capture data on fish catches has been established, but its benefits have not been exploited

- 4.28 The Food and Agriculture Organization (FAO) has identified the existence of excess fishing capacity as one of the primary causes of overfishing. However, assessing and managing fishing capacity is a significant challenge for fisheries authorities world-wide. Over-capacity can be addressed either through input controls or incentive-adjusting measures. Examples of input controls used in the fisheries management include setting allowable fishing seasons/days, open and closed areas, net mesh sizes, allowable fishing equipment, and fishing vessel restrictions.
- 4.29 Data from CAS also provide rough indices of fish-stock size. The information is used by decision-makers to set up strategies for sustainable fisheries management. The LVFO requires CAS to be conducted at least once every four months to assess catch composition, catch rates and effort, and length and distribution of the catch. However, KEMFRI revealed that the surveys were not conducted quarterly as the regulations require. In the absence of regular CAS, the Department may not offer the correct advice to the Government on the estimated fish stock levels on the Lake. Lack of data in turn makes it difficult for the Ministry of Agriculture, Livestock and Fisheries to determine whether the targeted catch limits (fish tonnage) have been achieved.
- 4.30 The KMFRI's management attributed the perennial delays in conducting the surveys to lack of funding. The surveys were reportedly funded by donors. Examination of KMFRI's records indicated that there were no funds allocated for the CAS in the budgets of KMFRI from the 2008/09 to the 2010/11 financial years.
- 4.32 Frame Survey reports provide information on facilities and services at landing sites, and the composition, magnitude and distribution of fishing effort required to guide development and management of the fishing industry. The surveys are carried out concurrently in the three riparian countries at two-year intervals, and were coordinated by the LVFO Secretariat together with the Regional and National Working Group.

- 4.33 Recommendations made in the regional Frame Survey Report of 2010 required the member states of the EAC to control fishing activities on the Lake. They were to begin by removing unregistered and unlicensed crafts and fishers from Lake Victoria. However, as indicated in this report this had not been accomplished at the time of the audit. The report also recommended that fisheries authorities in each country establish the level of optimal fishing effort that matches the available stocks. This was to be done after thorough analyses using data obtained from frame surveys as well as catch assessments, trawl and hydro-acoustic surveys.
- 4.34 The Fisheries Act Cap. 378 of the Laws of Kenya, allows the Director with the approval of the Minister, to close, through a gazette notice, fishing activities in designated areas, or ban the catching of any species of fish or the use of any specified fishing method. The ban is meant to allow the fish population in any identified site to breed and recover from over-exploitation. A Legal Notice No.7565, which sets the closed season for *Omena* (*Rastrineobola Argentea*) in Lake Victoria as April 1 to July 31 of each calendar year was issued in 2001.
- 4.35 However, in 2009 the Government through the Director of Fisheries' Notice No.01/2009 unexpectedly allowed fishers and boat owners to fish during the closed season. This was after petitions from fishers and other stake holders including political leaders. The authorities lifted the ban in spite of knowing that their action would result in the catching of big numbers of berried or gravid (under-age) fish and thus hinder restocking and was likely to result in depletion of fish stocks. During site visits, we found that the Fisheries Department apprehended illegal gears and destroyed them by burning as shown in the photo below:



Picture 3: Illegal fishing gears set on fire by Fisheries Department Officers along the shores of the Lake.

Source: Fisheries Department

- 4.36 In about 43% of all the fishing areas we visited, the fishers caught undersized fish and there was no visible control on entry of fishing boats onto the Lake. Due to lack of updates on fish- stock levels and the level of control to be exercised on the Lake, the authorities' lack sufficient information to make the right decisions on sustainable exploitation of fish-stocks.
- 4.37 The results of the Catch Assessment and Hydro Acoustic surveys conducted in 2010 confirmed the decrease the Nile Perch, tilapia and *Omena* (*rastrineobola argentea*) stocks in the Lake. Fisheries experts attributed the decrease to increased fishing activities. In response, the LVFO Council of Ministers resolved measures to remedy the situation and initiated "Operation Save the Nile Perch" clarion call during the LVFO Council of Ministers meeting in Dar-es-Salaam in February 2009. Each partner state was required to ensure that in their respective jurisdictions, Nile-perch fishers used appropriate fishing net and hook sizes, of a minimum legal mesh size of 7" and use hook sizes four from nine. The Ministers further resolved that each partner state would contribute \$600,000 to the LVFO to fund the operation.

- 4.38 Records maintained by the Fisheries Department indicated that Kenya paid USD 570,907 (equivalent to Kshs.48 Million) to the LVFO for use in the project. At the time of the audit, the KMFRI was conducting public campaigns to educate the fisher community on the use of the approved fishing gears in the Lake.

The Government has facilitated the establishment of cold-storage facilities on fish landing sites but the infrastructure is still inadequate

- 4.39 Establishment of cold-storage facilities accessible by fishers is critical to the creation of a profitable and sustainable fishing industry. In addition, fish landing sites should have adequate sanitary facilities including toilets, sheds and clean water supply so that the health of consumers is safeguarded by preventing the contamination of harvested fish.
- 4.40 The Kenya Frame Survey for 2010 indicated that out of 331 landing sites on the Lake, only six (1.8 %) had cold storage facilities. Only one of the six was in full working condition when the survey was conducted. The Fisheries Department supports programs aimed at ensuring that fishers have access to cold storage facilities at various landing sites. The Ministry indicated that the situation was set to improve and there would be at least 11 additional cold-stores around the Lake, six built under a Fisheries Management Plan (IFMP), four (4) auction centers built by the Government and one (1) owned by Bunyala Fishermen Co-operative Society.
- 4.41 The KEMFRI has in addition piloted the use of solar dryers. The dryers are expected to help fishers attain savings on their costs and mitigate against frequent electric power interruptions which increase post-harvest losses. However, at the time of the audit, the solar dryers had not been installed.
- 4.42 Of the fourteen fish landing sampled, eleven representing 78% did not have cold-room facilities. Generally it was observed that the facilities lacked proper maintenance and could not preserve fish catches for long. The quality of fish that is not stored under the right temperatures deteriorates quickly and as a result, the risk of overfishing increases sharply because fishers eager to recover their losses fish more often than they would otherwise do. Thus fishers should be give easy access to landing sites

and cold-room storage facilities should be accessible easily to the fishers through well-connected all weather road networks. This would enable efficient transportation of catches and their effective preservation in order to minimize post-harvest losses.

- 4.43 However, the audit revealed that roads connecting the landing sites and fish storage facilities were not in good condition. Data maintained by the Fisheries Department indicated that only 101 out of 331 landing sites representing 30% sites have all weather roads to allow for timely fish transportation to markets and cold storage facilities.

The authorities have recognized the need to improve sanitary facilities at fish landing sites but the implementation of the plans has been slow

- 4.44 The LVFO Council of Ministers meeting of 26 June 1999 required partner states to improve and rehabilitate landing sites and other infrastructure along the Lake shores to meet acceptable hygiene and sanitary standards. Good fisheries management practices require that every landing site should have toilets, sheds and clean water supply to ensure cleanliness and prevent contamination of fish.
- 4.45 However, the Frame Survey report for 2010 revealed that basic hygiene requirements at landing sites were low. For example, the distribution of toilet facilities and portable water along the shore was unsatisfactory. The survey indicated that 196 of the 331 landing sites representing 60% had toilets, and only fifteen, representing 5% had clean water supply.
- 4.46 Site visits and interviews conducted by the audit team revealed that eight out of the 14 landing sites (representing 57% of the audit sample) did not have basic hygiene and sanitation facilities such as toilets and portable water supplies. As a result, the risk of contamination of fish was very high. In previous years, poor sanitation facilities were cited by fish importers abroad as the reason for their refusal to buy fish harvested from the Lake.

## Chapter 5

# Conclusions

- 5.01 Although measures to curb IUU fishing activities and post-harvest losses in Lake Victoria have been drawn and agreed with partner states of the EAC under the framework of the LVFO, its implementation has to a large extent not been successful. As a result, undesirable fishing practices are still common on the Lake.
- 5.02 Several factors have hampered effective implementation of the measures in Kenya. The Fisheries Department registers and issues licenses to fishers and their vessels mainly to maximize revenue collection and not control entry into the Lake by the fishers. More fishers than would be appropriate are therefore allowed into the Lake resulting in unsustainable exploitation of its fisheries resource.
- 5.03 In addition, the Department lacks sufficient capacity to undertake MCS activities. Patrol boats and staff are not sufficient and neither are funds allocated to DFOs to effectively carry out MCS responsibilities in each financial year proportional to the work they are expected to accomplish in the year. Further, the number of staff deployed to the activities is insufficient. Also, a proper system for self-regulation by BMUs has not been established. The Department blames lack of sufficient funds for its failure to implement the control measures well. However, evidence collected during the audit suggested that the Department has not done well in turning the strategies and ideas contained in various planning documents into effective and efficient operational activities plans. For example, operational plans and reports are not seen as essential to the MCS system operated by the Department and are therefore not prepared regularly. In addition, a comprehensive strategy to enjoin local influential stakeholders such

as county governments in implementation of the Department's fisheries control measures has not been prepared and engagements with them are largely random and far between .

- 5.04 Further, the provisions of the Fisheries Act and the Council of Ministers' resolutions have only been implemented partly. Thus, closed fishing areas and seasons intended to allow for recovery of fish-stocks during the breeding season are not enforced in a consistent manner. Furthermore, there is limited, use of information from the Catch Assessment, Frame and Hydro-Acoustic surveys. The FMDST intended for use in making managerial decisions on fishing activities on the Lake is not used effectively because data for input into the tool is not collected and implemented regularly. Also, government agencies with information vital to effective management of the Lake's fisheries do not share it as much as they should.
- 5.05 Post-harvest handling methods applied by members of BMUs (who constitute the vast majority of local fishers) are, to a large extent, inadequate. Cold storage facilities and road networks to the landing sites do not allow for timely transportation of fish to the markets. The resultant high volumes of spoilt fish encourage overfishing by fishers keen to recover their losses. Sanitary facilities at landing sites do not meet the required standards and hence pose risk to the health of the fishers and consumers of the fish both locally and abroad.
- 5.06 Illegal, unregulated and unreported fishing activities and post-harvest losses pose a big threat to sustainable exploitation of Lake Victoria's fisheries. To attain better results in taming these undesirable activities, the Fisheries Department has to redouble its monitoring, control, and surveillance efforts, and in addition facilitate the development of infrastructure required to minimize post-harvest losses of fish products. Further, it should intensify its efforts to convince fishers to adopt recommended fishing practices and develop new partnerships including joint fisheries management strategies with County governments of the riparian districts.
- 5.07 The list of recommendations proposed by the Auditor-General for implementation by the Department is outlined in Chapter 6 of the report.

## Chapter 6

# Recommendations

6.01 In view of the findings and conclusions of the audit, the Auditor-General would wish to make the following recommendations for implementation by the Accounting Officer, Fisheries Department, of the Ministry of Agriculture, Livestock and Fisheries:

To curb IUU fishing activities on Lake Victoria, the Fisheries Department should;

- i. Increase education and awareness activities targeted at Beach Management Units.
- ii. Implement an elaborate program that entails management training and regular evaluation of the effectiveness of Beach Management Units and assist them improve on their operational systems as necessary.
- iii. Establish and maintain a comprehensive system for Monitoring, Control, Surveillance and reporting in fishing activities between the Department and BMUs.
- iv. Leverage on capacities of local institutions, for example, municipal authorities and community policing initiatives in monitoring illegal fish catches.
- v. Conserve fish breeding sites by establishing environmental protective measures and enforcing closed fishing seasons as provided for in Legal Notice No. 7565 of 2001.

To enhance its capacity to manage fisheries activities conducted on the Lake, the Department should;

- vi. Ensure that Frame Surveys and data collection activities are undertaken when due and the information derived from the data is disseminated in a timely manner to all concerned parties for use in decision-making.
- vii. Strengthen mechanisms for gathering information on fisheries activities conducted on the Lake and for sharing the information among fisheries stakeholders and decision makers.

To reduce post-harvest losses of fish caught in the Lake the Department should;

- viii. Prioritize the development of infrastructure for post-harvest handling including cold rooms, road networks, sanitary facilities toilets and fresh water supplies so as to ensure fish harvested is not lost.
- ix. Prepare and disseminate information on opportunities for investment in fish handling infrastructure and work with respective riparian county governments to create conducive business environment that would attract investors who may wish to establish post-harvest handling fish cooling facilities and other value-adding infrastructure.
- x. Form partnerships with riparian county governments to pool resources needed to conduct MCSs of fishing activities on the Lake and invest in maintenance of feeder roads in the fishing areas.

6.02. The Accounting Officer has read the report and confirmed his agreement with its findings and Recommendations. His comments are outlined in Appendix III of the report.

# Appendices

## Appendix I - Methods Used to Gather Audit Evidence

1. The audit team interviewed various officials in the following organizations:
  - i. Ministry of Environment and Mineral Resources;
  - ii. Ministry of Fisheries Development (MOFD), now defunct;
  - iii. National Environmental Management Authority (NEMA);
  - iv. Lake Victoria Environmental Management Project (LVEMP II);
  - v. Selected Beach Management Units (BMUs); and
  - vi. Kenya Marine Fisheries Research Institute (KMFRI).
  
2. The following were the key documents reviewed by the audit team:
  - i. The Vision and Strategy Framework for Management and Development of Lake Victoria Basin;
  - ii. National Oceans and Fisheries Policy, 2008;
  - iii. LVEMP I Annual reports;
  - iv. KMFRI Reports;
  - v. Fisheries Department Reports;
  - vi. Frame Survey reports for 2006, 2008 and 2010;
  - vii. Convention for Establishment for the Lake Victoria Fisheries Organization;
  - viii. LVFO Strategy and Action Plan for Monitoring Control and Surveillance of Fisheries on Lake Victoria;
  - ix. Lake Victoria Research Project –Fisheries Management Plan;
  - x. Protocol for Sustainable Development of Lake Victoria Basin;
  - xi. Human Resource Development Strategy and Action Plan for Lake Victoria Fisheries; and
  - xii. Guidelines for Beach Management Units.

3. The audit team visited and interviewed the members of the following BMUs.

- i. Usoma
- ii. Kijinchio
- iii. Lwanda Rombo
- iv. Sindo Gateway
- v. Gingo
- vi. Takawiri
- vii. Rambira
- viii. Obaria
- ix. Miti Mbili
- x. Rakwaro
- xi. Sienga
- xii. Kendu Bay
- xiii. Mainuga

The site visits and interviews sought to establish the capacity and efforts of the BMUs to fulfill the standards and expectations on their performance laid out in the LVFO Monitoring Control and Surveillance Strategy and guidelines on management of Beach Management Units' Guidelines set under the Lake Victoria Fisheries Organization Framework. We used purposeful sampling techniques to identify the Units. The choice of the sampling method was intended to allow for the engagement of as wide a variety of the BMUs as possible taking into account the level of fishing activities reported in various sections of the Lake and the frequency of incidents of IUU fishing and post-harvest losses recorded in various reports of the Fisheries Department as well as information obtained from other stakeholders.

We interviewed officials as well as ordinary members of the sampled BMUs and further corroborated the evidence gathered from the interviews through physical observation and reference to relevant records made available to us.

## Appendix II - Response of the Accounting Officer on the Findings and Recommendations of the Report

I: Performance of the Fisheries Department in combating illegal, unregulated and unreported fishing activities-Para 4.01-4.26		
Audit Finding and Recommendation	Accounting Officer's Response	OAG Comments on Ministry's Response
<p><b>A) Para.4.1-4.20 Registering and licensing of fishing vessels</b></p> <p><b>Although systems for registering and licensing fishers and their vessels have been established, a large number operating on the Lake are neither licensed nor registered:</b> A large proportion of vessels operating on the Lake are neither licensed nor registered mainly because controls on registering and licensing vessels and fishers are weak.</p> <p>As a result of weak controls in registering and licensing vessels and fishers, illegal, unregulated and unreported (IUU) fishing practices in the Lake have increased and put to risk sustainable exploitation of the resource. Further, the absence of an effective registration and licensing regime leads to loss of revenue.</p> <p><b>Recommendation:</b></p> <p>i. Increase frequency of surveillance and inspection activities with a view to catch unregistered and unlicensed vessels.</p>	<p><b>Agreed.</b> However this is due to operational constraints facing the Fisheries Department including shortage of staff, boats and vehicles for use in conducting surveillance activities. This is due to insufficient budgetary allocations</p> <p><b>Agreed.</b> However, this will require funding. The Council of Ministers in its meeting held in November 2013 in Arusha Tanzania urged partner states to set up the Fish Levy Trust Fund (FLTF)</p>	<p>Some causes of unsatisfactory performance are operational and require system reform and not additional funds for improvement to be realized.</p> <p>The Office will assess and report on implementation of the recommendations during a follow up audit to be conducted on a time-frame</p>

I: Performance of the Fisheries Department in combating illegal, unregulated and unreported fishing activities-Para 4.01-4.26		
Audit Finding and Recommendation	Accounting Officer's Response	OAG Comments on Ministry's Response
<p>ii. Partner with County governments to ensure that only registered and licensed vessels are allowed to sell their catches in local markets.</p> <p>iii. Encourage BMUs to monitor and report on activities of any unregistered vessels in the Lake.</p>	<p>by June 2014. The Fund is expected to finance the acquisition of resources required to manage the fishery.</p> <p><b>Agreed.</b></p> <p><b>Agreed.</b> The capacity of the BMUS to execute their mandates has been and continues be strengthened to enable them participate in co-management – they vet the fishermen and inspect the boats before licensing. The Government has provided some BMUs with engines to fit on their patrol boats.</p>	<p>agreed with the Ministry</p>
<p><b>B). Para.4.21-4.22: Monitoring, control and surveillance of fishing activities to deter illegal, unregulated and unreported fishing.</b></p> <p><b>A strategy for monitoring control and surveillance of fishing to deter illegal, unregulated and unreported fishing exists but has not been implemented fully:</b></p> <p>The Fisheries Department had not fully implemented the Council of Ministers' resolutions on monitoring, control and surveillance of fishing activities conducted on the Lake. These include gaining political commitment and sensitizing stakeholders on the dangers and negative impacts that illegal fishing</p>	<p><b>Agreed.</b> However, commemorative days have been held, support provided to advocacy groups that teach stakeholders about sustainable management of the Lake's resources e.g. Bondo Conservation Group and UHAI Forum hold Lake Victoria Days. Wetlands Day is celebrated annually.</p> <p>However, the support given by the Government to conduct MCS operations nationally is minimal. The Department recently bought and commissioned one</p>	

I: Performance of the Fisheries Department in combating illegal, unregulated and unreported fishing activities-Para 4.01-4.26

Audit Finding and Recommendation	Accounting Officer's Response	OAG Comments on Ministry's Response
<p>activities cause to local communities and society at large</p>	<p>speed boat. During their meeting held on 13th November 2013, the LVFO Council of Ministers noted the continued decline of the Nile Perch stocks and called upon partner States to intensify efforts to curb illegal fishing activities including catching and trading in undersize/immature fish and use of prohibited fishing gears; and implement specific licensing measures in order to control fishing effort. County governments in order to achieve the desired impact.</p> <p><b>Agreed.</b> Half of the BMUs on Lake Victoria have been trained on sustainable management covering; general fisheries management, post-harvest losses and value addition to reduce the losses. Awareness campaigns are going on, sensitization of political leaders and road shows continue to be held to inform the public on the importance of fisheries and the need to manage the Lake sustainably.</p>	<p>The Office will assess and report on implementation of the recommendations during a follow up audit to be conducted on a time-frame agreed with the Ministry</p>

I: Performance of the Fisheries Department in combating illegal, unregulated and unreported fishing activities-Para 4.01-4.26

Audit Finding and Recommendation	Accounting Officer's Response	OAG Comments on Ministry's Response
<p><b>Recommendation:</b>  <b>To curb illegal unregulated unreported fishing activities on the Lake the Fisheries Department should;</b></p> <p>i. Implement an elaborate programs that entails training and advice on solutions to challenges faced by BMUs and strengthen their capacity to regulate themselves.</p> <p>ii. Establish and maintain means for undertaking monitoring, control and surveillance activities between the Department and BMUs.</p> <p>ii. Leverage on capacities of local institutions, for example, municipal authorities and community policing initiatives in monitoring and surveillance including identifying illegal fish catches.</p>	<p><b>Agreed.</b> The Department is in the process of procuring two heavy utility boats for use in MCS activities – the contracts were signed, down payment paid and final specifications concluded.</p> <p><b>Agreed.</b> The MCS patrol operations will be carried out jointly by all the Riparian</p> <p><b>Agreed.</b></p>	<p>The Office will assess and report on implementation of the recommendations during a follow up audit to be conducted on a time-frame agreed with the Ministry</p>

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Audit Finding and Recommendation	Accounting Officer's Response	OAG Comments on Ministry's Response
<p>iii. Liaise with authorities in the other partner states and conduct regional MCS activities more often.</p> <p>iv. Conserve fish breeding sites by establishing environmental protective measures and enforcing implementation of closed fishing seasons as provided for in Legal Notice No. 7565 of 2001.</p>		
<p><b>Although a detailed system for collecting and sharing fisheries data and information among stakeholders has been established, the data and information it generates is not shared regularly.</b></p> <p><b>Recommendation: To enhance its capacity to manage fisheries activities conducted on the Lake, the Department should;</b></p> <p>vi. The Ministry should put in place a proper database and also streamline information between research and management and ensure that from the data is disseminated in a timely manner to all concerned parties for use in decision-making.</p>	<p><b>Agreed.</b> No proper database on the resources in the fishery has been established. Further, the system for exchange of information between research and management is still not streamlined.</p> <p><b>Agreed.</b></p>	<p>The Office will assess and report on implementation of the recommendations during a follow up audit to be conducted on a time-frame agreed with the Ministry.</p>

I: Performance of the Fisheries Department in combating illegal, unregulated and unreported fishing activities-Para 4.01-4.26		
Audit Finding and Recommendation	Accounting Officer's Response	OAG Comments on Ministry's Response
<p>vii. Strengthen mechanisms for gathering information on fisheries activities conducted on the Lake and for sharing the information among fisheries stakeholders and decision makers.</p>	<p><b>Agreed.</b> The LVFO's Council of Ministers' meeting held in November 2013 urged requested partner states to budget for resource monitoring activities (Catch Assessment, , Frame and Hydro Acoustic Surveys) to improve information base on fisheries management.</p>	<p>The Office will assess and report on implementation of the recommendations during a follow up audit to be conducted on a time-frame agreed with the Ministry.</p>
<p><b>Measures required to combat over-fishing in the Lake have been identified and efforts made to implement them but much remains to be done- Para 4.27-4.38.</b></p> <ul style="list-style-type: none"> <li>- Catch Assessment and Hydro Acoustic and Frame surveys were not conducted regularly as the regulations require due to lack of funding: A system to capture data on fish catches has been established but its benefits have not been exploited</li> <li>- Scheduled seasonal fishing bans intended to allow restocking were on occasions not enforced. For example, the Government in 2009 through the Director of Fisheries' Notice No.01/2009 allowed fishers and boat owners to fish during the closed season.</li> </ul>	<p><b>Agreed.</b> However, minimum support has been given by the Government to conduct MCS operations nationally; one speed boat was procured and commissioned. LVEMP has been and continue to support BMUs in providing them with boats and auto-boat engines for patrols and monitoring of fish breeding grounds.</p>	<p>The Office will assess and report on the implementation of the recommendations during a follow up audit to be conducted on a time-frame agreed with the Ministry</p>

I: Performance of the Fisheries Department in combating illegal, unregulated and unreported fishing activities-Para 4.01-4.26

Audit Finding and Recommendation	Accounting Officer's Response	OAG Comments on Ministry's Response
<p><b>Recommendation:</b>  <b>To enhance its capacity to manage fisheries activities conducted on the Lake, the Department should;</b></p> <p>i. Ensure that frame surveys and data collection activities are undertaken when due and the information derived from the data is disseminated in a timely manner to all concerned parties for use in decision-making.</p> <p>ii. Strengthen mechanisms for gathering information on fisheries activities conducted on the Lake and for sharing the information among fisheries stakeholders and decision makers.</p>	<p><b>Agreed.</b></p> <p><b>Agreed.</b></p>	<p>The Office will assess and report on implementation of the recommendations during a follow up audit to be conducted on a time-frame agreed with the Ministry</p>
<p><b>The Government has facilitated the establishment of cold-storage facilities on fish landing sites but the infrastructure is still inadequate Para.4.39-4.46</b></p> <p>Only 101 landing sites representing 30% out of the 331 sites have all weather roads to allow vehicles carrying fish to access cold storage facilities and fish markets in a timely manner. There are inadequate sanitary facilities at landing sites. Eight out of the 14 fish landing sites visited (representing 57% of the audit sample) did not have basic hygiene and sanitation facilities such as toilets and portable water supplies.</p>	<p><b>Agreed.</b> There is inadequate capacity in terms of equipment. Half of the BMUs on Lake Victoria have been trained on sustainable management covering; general fisheries management, post-harvest losses and value addition to reduce post-harvest losses.</p>	<p>The Office will assess and report on implementation of the recommendations during a follow up audit to be conducted on a time-frame agreed with the Ministry</p>

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Audit Finding and Recommendation	Accounting Officer's Response	OAG Comments on Ministry's Response
<p><b>Recommendation: To enhance the condition of Post-harvest handling facilities located along the Lake shores, the Department should;</b></p> <p>i. Prioritize the development of infrastructure for post-harvest handling including cold rooms, road networks, sanitary facilities toilets and fresh water supplies so as to ensure fish harvested is not lost.</p> <p>ii. Prepare and disseminate information on opportunities for investment in fish handling infrastructure and work with respective County governments to create a conducive business environment that may attract investors to establish post-harvest handling infrastructure including fish cooling facilities.</p> <p>iii. Encourage riparian county governments to pool resources needed to conduct monitoring, surveillance and control on fishing activities on the Lake as well as invest in maintenance of roads in the region.</p>	<p><b>Agreed.</b> The government and development partners have built/rehabilitated fish landing sites and cold stores so as to ensure the quality of the fish products and reduce post-harvest losses. Various technologies for reducing post-harvest losses have been introduced (e.g. <i>Omena</i> drying racks).</p> <p>---</p> <p><b>Agreed.</b> The MCSs patrols/operations will be carried out jointly by all the riparian County governments for effectiveness.</p>	<p>The Office will assess and report on implementation of the recommendations during a follow up audit to be conducted on a time-frame agreed with the Ministry</p> <p>No comment proffered by the Ministry.</p> <p>The Office will assess and report on the implementation of this recommendation during a follow up audit to be conducted on a time-frame agreed with the Ministry.</p>

## Glossary of Terms

<b>Term</b>	<b>Description</b>
<b>Biomass</b>	Status of fish-stock
<b>Catch Assessment Survey</b>	Refers to a periodical assessment designed to obtain information on both fish catches and fishing controls.
<b>Framework Survey</b>	Is a survey method used to generate information required for effective management of fisheries. The information may be used to create sampling frames for Catch Assessment Surveys.
<b>Gravid Stock</b>	Fish for Breeding
<b>Hydro-acoustic Survey</b>	Surveys aimed at providing information on biomass, composition, distribution, structure and population of fisheries stock
<b>Illegal-fishing</b>	Fishing done in violation of the laws of a fishery, either within areas of national jurisdiction, the regional fisheries management organizations or the high seas.
<b>Monitoring</b>	Collecting, measuring and analyzing information about fisheries activity.
<b>IUU</b>	Illegal, unreported and unregulated fishing is fishing which does not comply with national, regional or global fisheries conservation and management requirements.
<b>Partner States</b>	A state of the East African Community- Kenya Uganda ,Tanzania , Rwanda and Burundi
<b>Surveillance</b>	Overview of fishing activity to ensure that fishers adhere to legislation, conditions of access and approved management measures.
<b>Unreported Fishing</b>	Fishing that is not reported to the relevant national authority or regional organization as required in applicable laws and regulations.
<b>Unregulated Fishing</b>	Refers to fishing by vessels without nationality or vessels flying the flag of a country not party to the regional fisheries management organization governing that fishing area or species.