KENYA MARINE AND FISHERIES RESEARCH INSTITUTE

FRESH WATER SYSTEMS

FACT SHEET

KMF/GoK/BAR/2025-26/ C82_4(1)

June 2026

A technical report on conducting a Catch Assessment Surveys

(CAS) for Lake Baringo to inform management decision making



The findings indicate that majority of the fishermen use long lines with an average of 450±4.0 SE hooks of sizes 8 and 9 to catch *Protopterus aethiopicus* and *Clarias gariepinus,* whose composition was 17.9% and 15.4% respectively. *Oreochromis niloticus* was the most abundant fish landed in Lake Baringo constituting 58.9% of the total catch. Gill nets of sizes ranging from 37.5mm to 125 mm stretched mesh were used with 62.5mm and 75mm nets being most used at 38% and 25% respectively. The total fish landings for 2025 were estimated at 475 tons with a beach value of Ksh. 310 Million.

AUTHORS:

Mugo, J., Odoli, C., Nyakeya, K., Obegi. B., Nyamweya, C., Aura, C, M.

June 2026

KMFRI Headquarters
P.O. Box 81651 – 80100, Mombasa
Tel: +254 (041475151/4)
Email: kmfridirector@gmail.com

KMFRI Baringo Station
P.O. Box 231 – 30403, Marigat
Tel: +254 (0) 729 321609
Email: cogombe@yahoo.com

EXECUTIVE SUMMARY

- Fisheries production is monitored through established information collection systems. Artisanal and industrial fisheries fish catches and efforts used in total production estimates for both sub-sectors are captured through a sample survey (Catch Assessment Survey CAS).
- The data collected through these systems are used in the planning, development and management of our fisheries
- This is intended for increased food self-sufficiency and security; a healthy population and enhanced employment opportunities for nationals; increased revenue generation and foreign exchange earnings; and the attainment of national social and economic development
- The purpose was to enumerate the fishing vessels and gears, estimate CPUE for various effort groups, and estimate the total landings and earning as a step towards assessing the fish stocks of Lake Baringo
- Results show that majority of the fishermen use long lines with an average of 450±4.0 SE hooks of sizes 8 and 9
- Catch composition of *Protopterus aethiopicus* and *Clarias gariepinus,* was 17.9% and 15.4% respectively.
- *Oreochromis niloticus* was the most abundant fish landed in Lake Baringo constituting 58.9% of the catch.
- Gill nets of sizes ranging from 37.5mm to 125 mm stretched mesh were used with 62.5mm and 75mm nets being most used at 38% and 25% respectively.
- The total fish landings for 2025 were estimated at 475 tons with a beach value of Ksh. 310 Million.

- There is a need to enforce the fishery regulations more zealously for sustainable exploitation and management of the fishery.
- Better social and economic benefits from Lake Baringo fishery can be achieved through adherence to fisheries regulations and cooperation with relevant enforcement agencies.

INTRODUCTION

- Inland water bodies are highly productive natural capital assets, contributing to food security, livelihoods and income, and hence significantly increase sustainable contribution of the sub-sector to the blue economy of countries and regions (FAO 2014).
- The current benefits from inland water bodies are however under threat from a variety of sources.
- Key management challenges include poor governance frameworks, incoherent policies and legislative frameworks and weak institutions.
- The underlying challenges include the open access nature of inland fisheries, weak capacity for governance under these circumstances, threats from climate variability and change among others
- Fisheries production is monitored through established information collection systems such as catch assessment surveys (CAS). Fisheries Catch Assessment Surveys (CASs) is directed towards generating information relating on fish catches and fishing effort.
- The information generated provide indicators to support decision-making through policy development, planning and management plan evaluation.
- These indicators include the Gross value of production, Total catch by species, Total effort by gear, Mean catch per unit of effort by species and gear, and estimation of the optimum fishing effort of the main species.

- The information from these indicators are utilized to monitor removals and changes in the abundance of key species, assess the value of the fishery and changes in effort. CAS indicators also provide estimates of fishing that maximize production and employment in the harvest sector.

STUDY AREA

- The study was conducted in Lake Baringo, a shallow freshwater lake in the eastern Rift Valley of Kenya (Figure 1). The lake lies at 0°36′N, 36°04′E, and approximately 60 km north of the equator at an altitude of 975 m above mean sea level.
- It is a source of freshwater used for domestic purposes especially drinking, livestock and supports a substantial fishery in a semi-arid area. Its fishery comprise of three commercially important species (*Oreochromis niloticus*, *Clarias gariepinus* and *Protopterus aethiopicus*) while Labeo*barbus intermedius and Labeo cylindricus* rarely appears in fishermen's catches (Mugo et al, 2018). The decreased fish diversity is thought to be due to overfishing and water quality changes (Hickley *et al*., 2004)

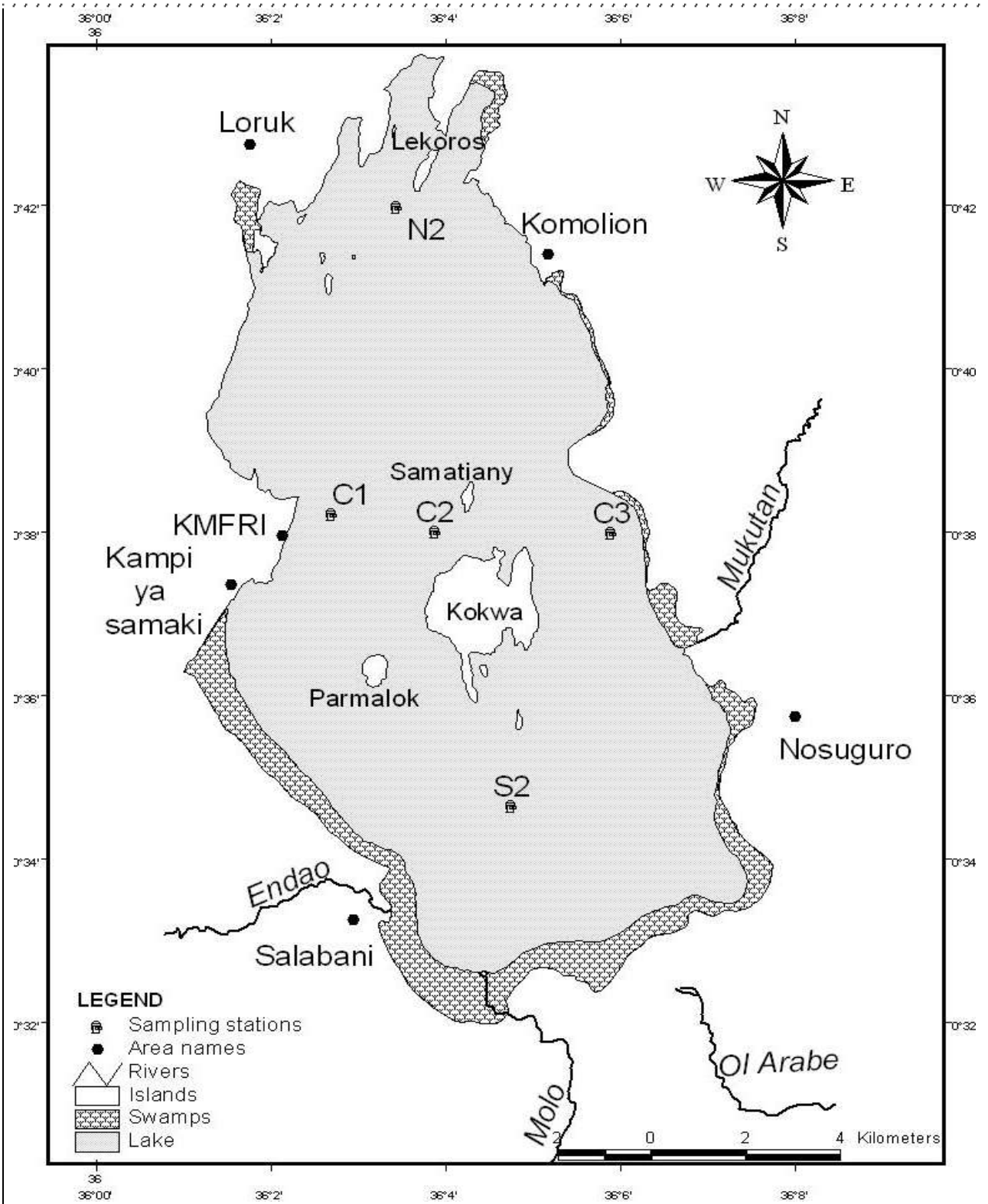


Figure 1. Map of Lake Baringo depicting the the various landing sites/BMUs where the study was undertaken.

RESULTS AND DISCUSSION

- The commonly used hooks were size 8 and 9 with most fishers using 450 hooks. Gillnets used varied from 1.5″ (37.5mm) stretched mesh to 5″ (125 mm). Mesh size 2.5″ (62.5mm) was the most commonly deployed at (38%) followed by 3 ″ (75mm) and 4 ″ (100 mm) nets. The species caught in the various nets were *O. niloticus, C. gariepinus* and *L. intermedius*
- *O. niloticus* (O.n) was the most abundant fish landed in Lake Baringo constituting 58.9% followed by *Protopterus aethiopicus* 17.9%, *C. gariepinus* at 15.4% and *L. intermedius* 7.8%
- The average catch per boat was highest for *O. niloticus* 65.3 Kg/boat/day followed by *P. aethiopicus* at 28.0 Kg/boat/day, *C. gariepinus,* 24 Kg/boat/day while *L. intermedius* had the lowest catch of 9.5 Kg/boat/day
- The total fish landings for 2025 were estimated at 475 tons with a beach value of KSh 310 Million.
- *O. niloricus* was the most expensive at Ksh 255.30 ±3.40 SE per Kg followed by *P. aethiopicus* at Ksh 230.80 ±1.90 SE per Kg while *L. intermedius* was the cheapest at 140.70 ± 2.50 per Kg

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

- Majority of the fishermen were using long lines of an average of 450±4.0 SE hooks, sizes 8 and 9 to catch *P. aethiopicus* and *C. gariepinus,* whose composition was 17.9% and 15.4% respectively.
- The most abundant fish landed in Lake Baringo was *O. niloticus* constituting 58.9% of the total catch landed. Gill nets of sizes 37.5mm to 125 mm stretched mesh were used with 62.5mm and 75mm nets being most used at 38% and 25% respectively.
- The average catch per boat was highest for *O. niloticus* was 65.3 Kg/boat/day followed by *P. aethiopicus* at 28.0 Kg/boat/day, *C. gariepinus* at 24 Kg/boat/day, while *L. intermedius* had the lowest catch at 9.5 Kg/boat/day.
- The total fish landings for 2025 were estimated at 475 tons with a beach value of KSh 310 Million.

RECOMMENDATIONS

- Continued funding to undertake CAS comprehensively to reach reliable conclusions.
- Enhance sustainable management of the fishery through: empowering and enforcement of fisheries regulations by Fisheries department, Coast guard and BMU among other measures.