Presentation of the results of data 12 months Data collection on the size frequency of 4 fish species.

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Data Collection Overview(August 2024- Jully 2025)

Objective: Measure size variations of key marine species based on economic and quantitative importance to .

Target Species:

- King Mackerel
- Emperor Mahsena
- Tuna
- Bigeye Trevally

Methodology:

Sampling: Measurement of length of landed fish

Fishing Gear Analysis: Characteristics of gear used were considered to contextualize results.

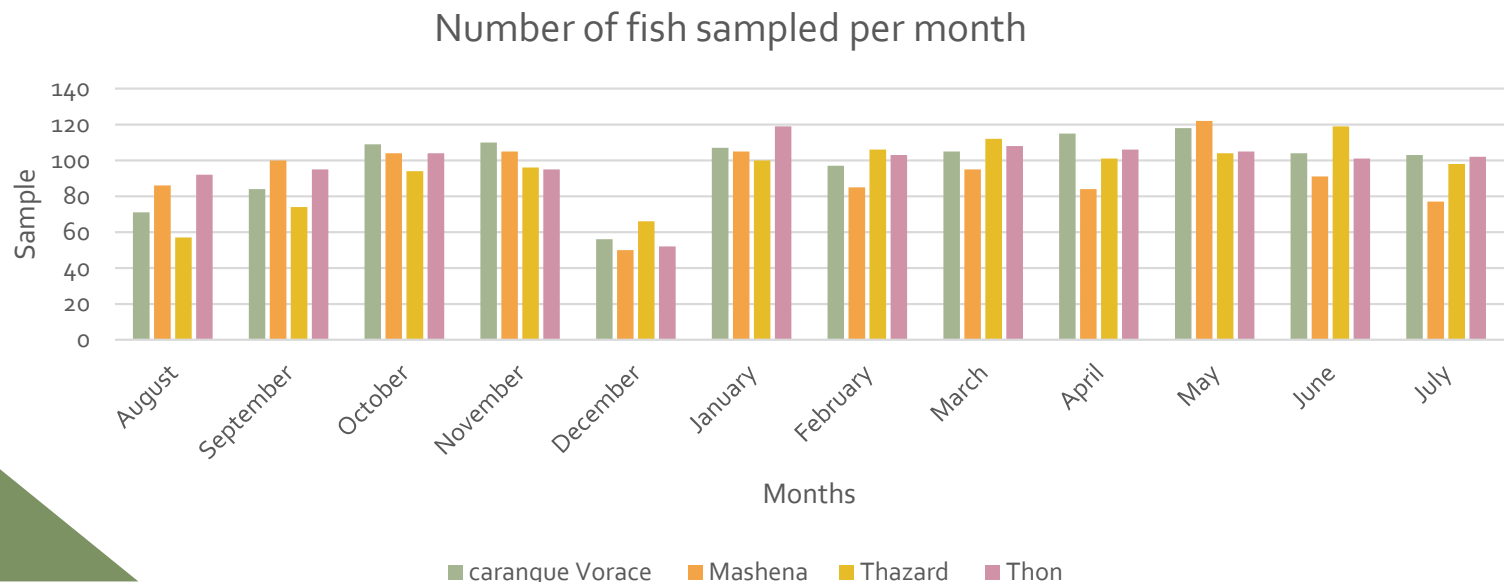
Choice of Data Collection Site

- Djibouti Fishing Port: Main data collection site.
- Justification: 76% of the country's fishery production is landed there.
(Source: DP Data, 2024)

Figure 1: Djibouti Fishing Port

Number of samples of measured fish for the target species

Months/ESPECES	n	Mashena	Thazard	Thon	Total
August	71	86	57	92	306
September	84	100	74	95	353
October	109	104	94	104	411
November	110	105	96	95	406
December	56	50	66	52	224
January	107	105	100	119	431
February	97	85	106	103	391
March	105	95	112	108	420
April	115	84	101	106	406
May	118	122	104	105	449
June	104	91	119	101	415
July	103	77	98	102	380
TOTAL	1179	1104	1127	1182	4592



Number of boats sampled

Vessel Type	Number of boats sampled
Cat A	149
Cat B	290
Total	439

- More than 9 meters ;. (Catégorie A)
- Less than 9 meters ;(Catégories B).

Assessment Objectives and Regional

This comprehensive stock assessment initiative employs advanced analytical methods to evaluate the sustainability of critical commercial fish species in Somali waters (Djibouti). Using FiSAT II software and length-frequency analysis, we provide the first systematic comparison of Somali fish stocks against established Red Sea and Gulf of Aden populations.

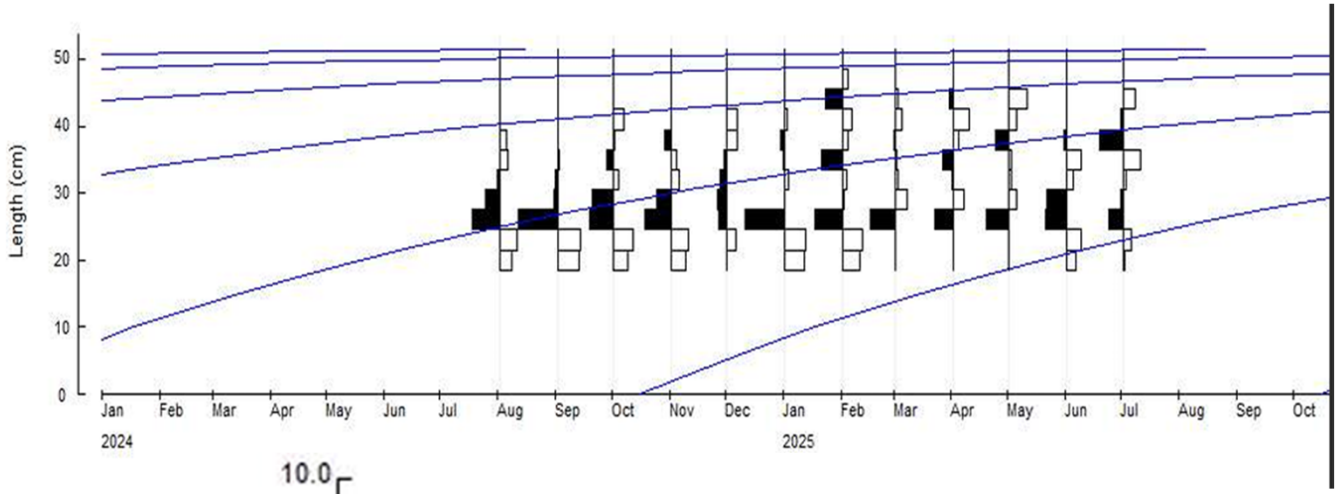
- Estimate key growth parameters including asymptotic length ($L\infty$) and growth coefficient (K)
- Calculate total mortality (Z), natural mortality (M), and fishing mortality (F)
- Determine exploitation rate (E) to assess sustainability thresholds
- Establish baseline biological reference points for future management

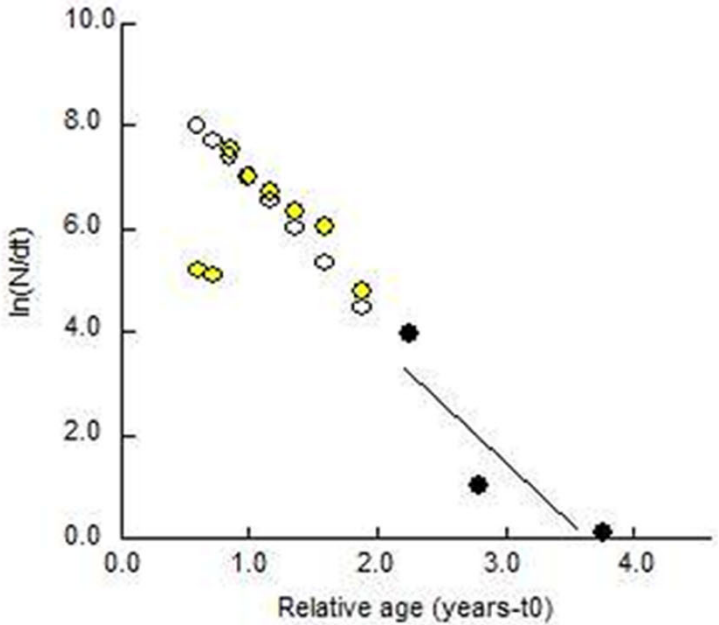
Lethrinus mahsena : Stock Parameters and Regional Standing

FiSAT II Assessment Results

Kawakawa in Somali waters demonstrate robust growth characteristics with an asymptotic length of 127.05 cm TL and a relatively high growth coefficient (K = 0.73 yr^{-1}). The exploitation rate of 0.51 places this stock at a critical threshold, indicating balanced but intensive fishing pressure.

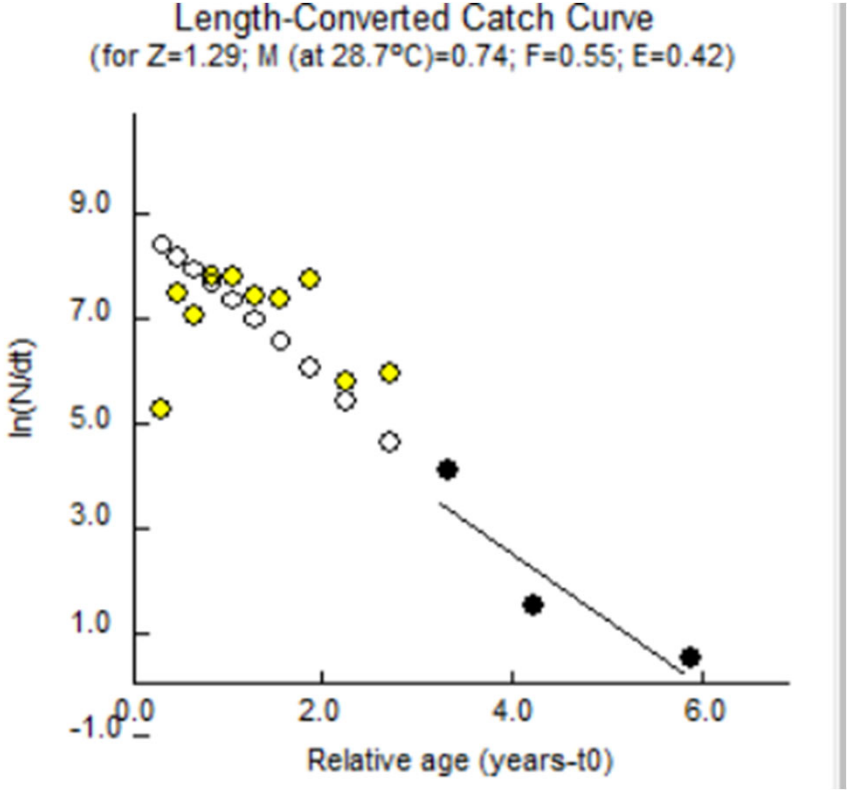
Parameter	Value	Unit
$L\infty$	52.50	cm TL
K	0.810	yr^{-1}
Z	2.35	yr^{-1}
M	1.34461	yr^{-1}
F	1	yr^{-1}
E	**0.43**	–

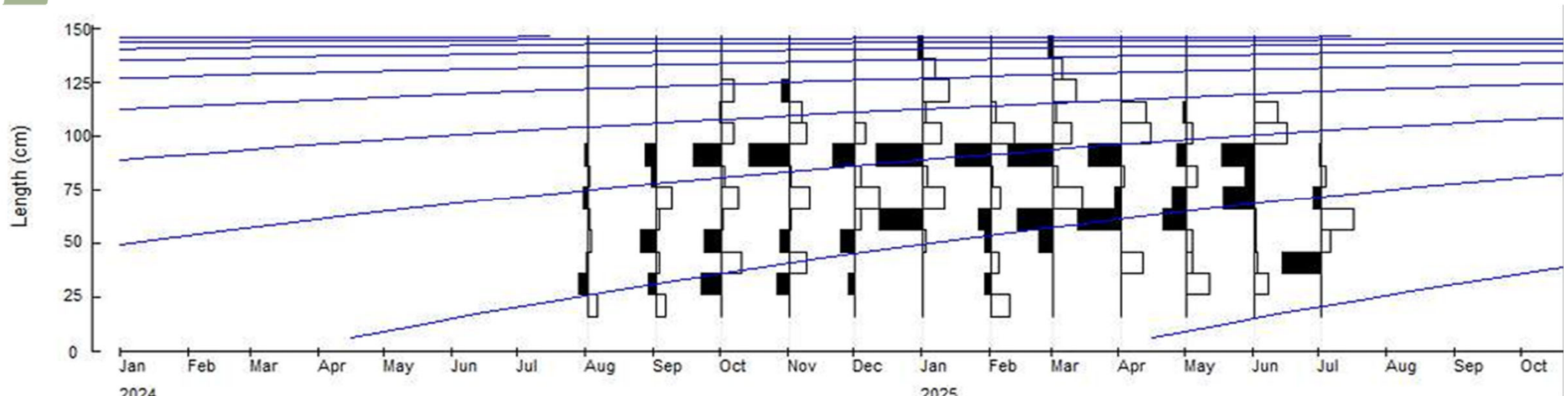




Scomberomorus commerson: Stock Parameters and Regional Standing

Parameter	Value	Unit
L∞	148.05	cm TL
K	0.510	yr^{-1}
Z	1.29	yr^{-1}
M	0.74	yr^{-1}
F	0.55	yr^{-1}
E	**0.42**	–





Observations

- **Size variability**: Variations in individual lengths among species suggest differences in the population structure of the captured fish.

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Presence of young individuals: *Lethrinus mahsena* shows a dominance of smaller individuals, suggesting possible overfishing of adults.

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Size of pelagics species: Size variability observed in *Caranx sexfasciatus*, *Scomberomorus commerson*, and tuna species may indicate that fisheries exploit multiple age classes within these populations.

Conclusion and Recommendation

The data collection yielded significant insights into the size distribution of landed fish. The results reveal interspecific variability and underline key patterns relevant to the sustainable management of fish stocks.

To improve the study, the following recommendations are proposed:

- Acquire additional measuring equipment to increase the sample size and improve data accuracy for the second step.

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