APPENDIX 2
EXECUTIVE SUMMARY: BIGEYE TUNA (2025)

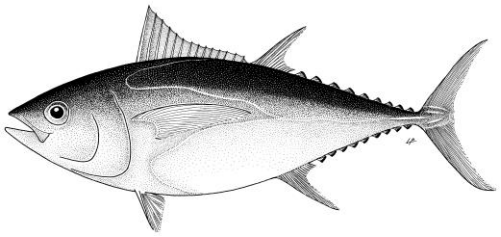

Table 1. Status of bigeye tuna (*Thunnus obesus*) in the Indian Ocean

Area[1]	Indicators		2025 stock status determination[3]
Indian Ocean	Catch 2024 (t) Mean annual catch 2020-2024 (t)	87,040[2] 88,555	**15.9%* OVERFISHED (54%) BUT NOT SUBJECT TO OVERFISHING (62%)**
	MSY (1,000 t) (80% CI) F_{MSY} (80% CI) SB_{MSY} (1,000 t) (80% CI) F_{2024}/F_{MSY} (80% CI) SB_{2024}/SB_{MSY} (80% CI)	100 (94 – 106) 0.27 (0.21 – 0.33) 276 (143 – 409) 0.94 (0.69-1.18) 0.98 (0.71 – 1.25)	

[1]Boundaries for the Indian Ocean stock assessment are defined as the IOTC Area of Competence

[2]Proportion of 2024 catch fully or partially estimated by IOTC Secretariat: 0.2%

[3]2024 is the final year that data were available for this assessment

*Estimated probability that the stock is in the respective quadrant of the Kobe Plot (Table 2), derived from the confidence intervals associated with the current stock status. Yellow (overfished and not subject to overfishing) also corresponds to two marginal probabilities ($p(SB<SB_{MSY}) = 54\% > 50\%$, thus overfished) and ($p(F<F_{MSY})=62\% > 50\%$, thus not subject to overfishing)

Table 2. Probability of stock status with respect to each of four quadrants of the Kobe plot. Percentages are calculated as the proportion of model terminal values that fall within each quadrant with model weights taken into account

	Stock overfished (SB_{2024} / SB_{MSY}<1)	Stock not overfished (SB_{2024} / SB_{MSY}≥ 1)
Stock subject to overfishing (F_{2024} / F_{MSY}≥ 1)	38 %	0 %
Stock not subject to overfishing (F_{2024} / F_{MSY}≤ 1)	16 %	46 %
Not assessed / Uncertain / Unknown		

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. A new stock assessment was carried out for bigeye tuna in 2025 using SS3 to provide scientific advice. The 2025 stock assessment was built on the 2022 assessment model structure and incorporated new growth and natural mortality estimates. The model was fitted to regional joint longline CPUE indices, and the European Union (EU) purse seine index. The reported stock status is based on a grid of 36 model configurations designed to capture the uncertainty on stock recruitment relationship, longline selectivity, natural mortality and catchability dynamics.

Overall, the stock assessment results suggest that bigeye biomass has nearly recovered to the target SBMSY level. Considering the characterized uncertainty, the assessment indicates that:

- there is a 54% probability that SB_{2024} is below SBMSY, with median spawning biomass in 2024 estimated at 0.98 (0.71-1.25) times the level that can support MSY.
- there is a 62% probability that F_{2024} is below F_{MSY}, with median fishing mortality (in 2024) estimated at 0.94 (0.69-1.18) times the F_{MSY} level.

On the weight-of-evidence available in 2025, the bigeye tuna stock is determined to be overfished and not subject to overfishing.

As IOTC adopted on a bigeye Management Procedure (Res. 22/03), it should be noted that the stock assessment is used to provide current stock status advice and to monitor the performance of the MP, but is not used to provide a recommendation on the TAC.

Management Procedure. A management procedure for Indian Ocean bigeye tuna was adopted under Resolution 22/03 by the IOTC Commission in May 2022 and was applied to determine a recommended TAC for bigeye tuna of 80,583 t for 2024 and 2025 (adopted in Resolution 23/04). The MP was run in early 2025 to determine a TAC of 92,670 t per year for the period 2026-2028, which was adopted by the Commission in 2025 (Resolution 25-04). A review of evidence for exceptional circumstances, was also conducted following the adopted guideline (IOTC-2021-SC24-R Appendix 6A) as per the requirements of Resolution 22/03. The review covered information pertaining to i) new knowledge about the stock, population dynamics or biology, ii) changes in fisheries or fisheries operations, iii) changes to input data or missing data, and iv) inconsistent implementation of the MP advice. The 2024 catch (87,040 t) exceeded the 2024 TAC (80,583 t), which is considered an exceptional circumstance and, therefore, the Commission should ensure that the appropriate provisions of 23/04 are implemented to ensure catches remain below the TAC, conditional on the allowances and requirements of those provisions.

Outlook. Catch in 2021 (90,844 t), 2022 (90,832 t), 2023 (94,598 t) and 2024 (87,040) of bigeye tuna were above the recommended TAC for 2024, 2025 from the application of the bigeye tuna MP. Achieving the objectives of the Commission for this stock will require effective implementation of the MP TAC advice by the Commission going forward, a requirement further emphasised by the current status of the stock estimated from the stock assessment to be overfished but not subject to overfishing.

Management advice. The TAC adopted by the Commission for 2024 and 2025 is 80,583 t per year (Resolution 23/04) and the TAC for 2026-2028 is 92,670 t per year (Resolution 25/04).

The following key points should also be noted:

- **Main fisheries (mean annual catch 2020-2024)**: bigeye tuna are caught using purse seine (41.3%), followed by longline (37.3%) and line (14.6%). The remaining catches taken with other gears contributed to 6.8% of the total catches in recent years (**Fig. 1**).
- **Main fleets (mean annual catch 2020-2024)**: the majority of bigeye tuna catches are attributed to vessels flagged to Indonesia (19.4%) followed by Seychelles (15.7%) and EU (Spain) (15.4%). The 30 other fleets catching bigeye tuna contributed to 49.5% of the total catch in recent years (**Fig. 2**).

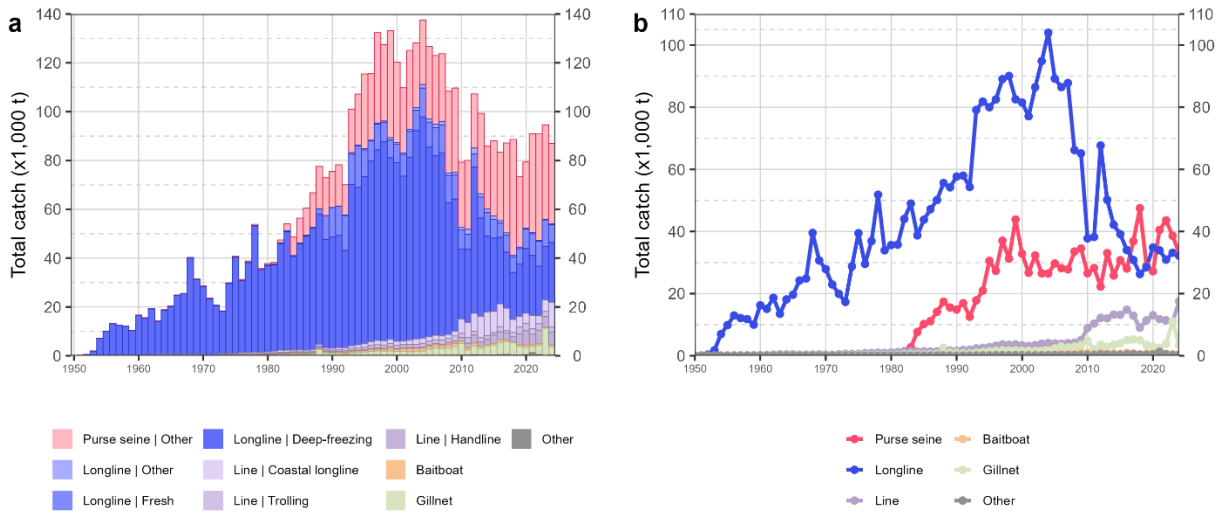

Fig. 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for bigeye tuna during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

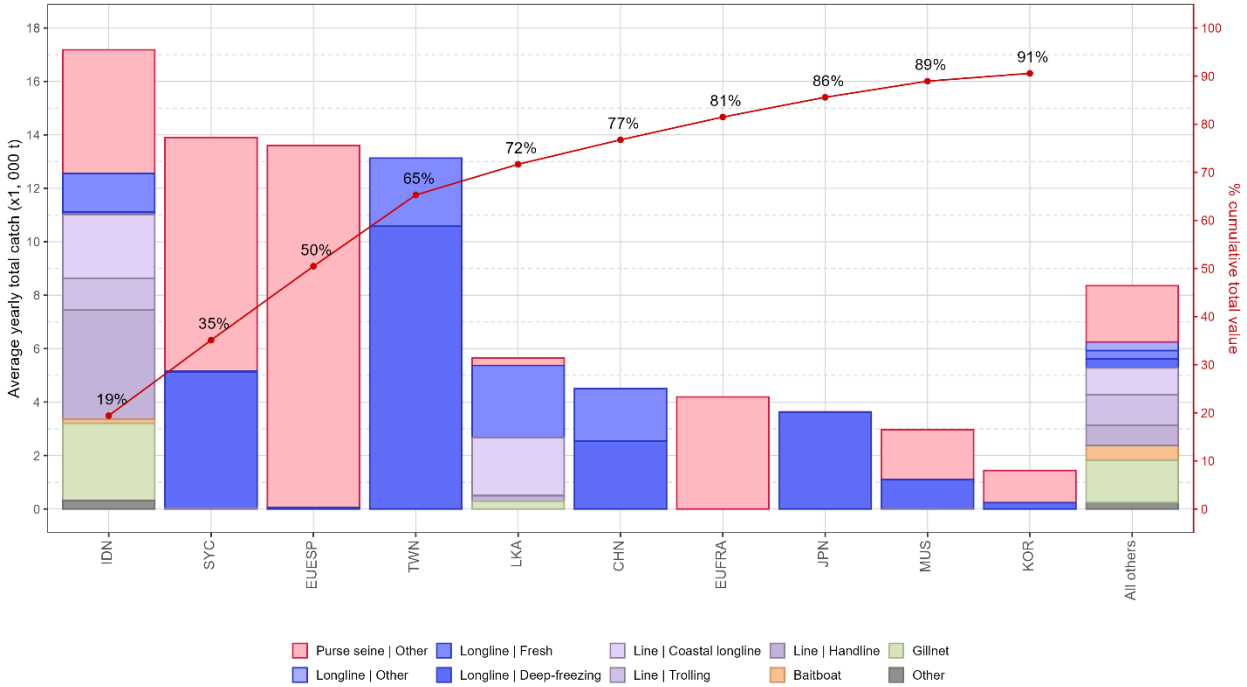

Fig. 2. Mean annual retained catches (metric tonnes; t) of bigeye tuna by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

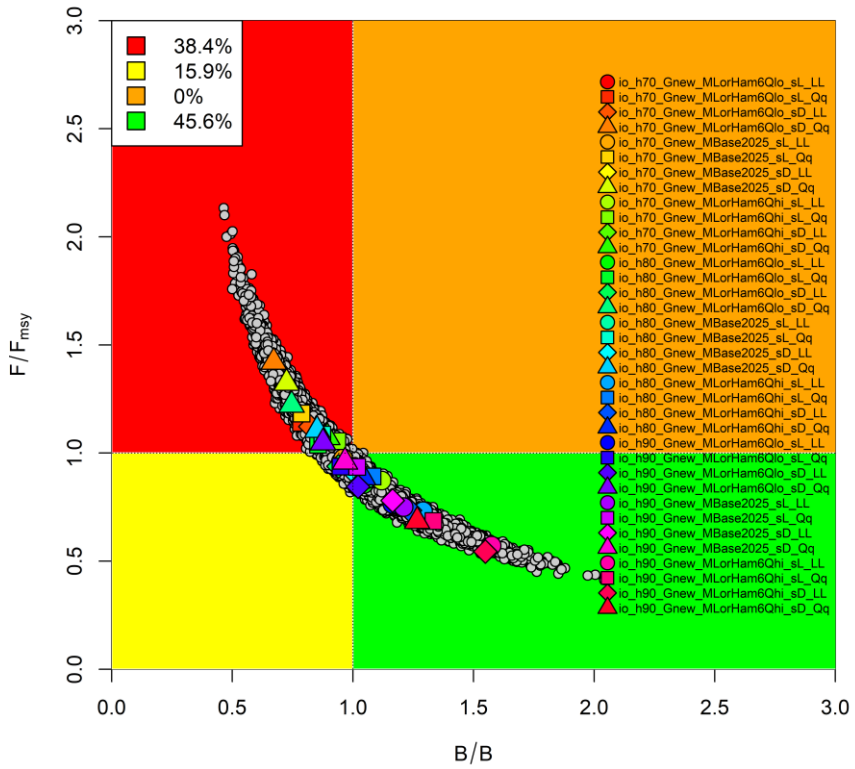

Fig. 3. Bigeye tuna: SS3 Aggregated Indian Ocean assessment Kobe plot. The coloured points represent stock status estimates from the 36 model options. Coloured symbols represent Maximum Posterior Density (MPD) estimates from individual models which varied in terms of steepness (h), natural mortality (M), selectivity on the LL2+LL3 fleets (sL *vs* sD), and gear creep applied to the LL CPUE indices (LL *vs* Qq, where Qq represents 0.5% of effort creep ajustment on the indices).