

MONITORING NERITIC TUNA EXPLOITATION BY FOREIGN VESSELS IN MADAGASCAR'S EEZ (2024–2025)

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Summary

Neritic tunas (*Auxis thazard*, *Euthynnus affinis*), vital for Madagascar's artisanal fisheries, also appear as bycatch in the catches of foreign industrial fleets operating within the country's Exclusive Economic Zone (EEZ). According to ERS data, their share in total catches remains low but shows a slight increase: 0.22% in 2024 and 0.66% in 2025. Although marginal, this presence raises questions about the sustainability of industrial practices, particularly in relation to the use of fish aggregating devices (FADs). The low reported bycatch rate (1–2%) suggests either underreporting or partial effectiveness of control measures. The study recommends strengthening monitoring systems to protect coastal fishery resources.

Keywords: Neritic Tunas, Madagascar, foreign fleets, bycatch

Résumé

Les thons néritiques (*Auxis thazard*, *Euthynnus affinis*), essentiels aux pêcheries artisanales malgaches, apparaissent aussi dans les captures accessoires des flottes industrielles étrangères opérant dans la ZEE de Madagascar. Selon les données ERS, leur part dans les captures totales reste faible mais en légère hausse : 0,22 % en 2024 et 0,66 % en 2025. Cette présence, bien que marginale, interroge sur la durabilité des pratiques industrielles, notamment en lien avec l'usage de DCP. Le faible taux de by-catch déclaré (1–2 %) suggère soit une sous-déclaration, soit une efficacité partielle des mesures de contrôle. L'étude recommande un renforcement des dispositifs de surveillance pour protéger les ressources halieutiques côtières.

Mots Clés : Thons Néritiques, Madagascar, flottes étrangères, by-catch

1. Introduction

The island country, Madagascar situated in the western Indian Ocean, possesses a nearly 1.2 million km² Exclusive Economic Zone (EEZ) with a high biodiversity of marine environment. Tuna stocks in these waters are being harvested by national as well as foreign fishing fleets under fishing agreements or protocols as permitted by Malagasy laws, where foreign vessels have the right to fish with licenses or agreements.

While foreign industrial vessels primarily target large oceanic tuna species such as yellowfin tuna (*Thunnus albacares*), skipjack tuna (*Katsuwonus pelamis*), and bigeye tuna (*Thunnus obesus*), accidental catches of neritic tunas (*Auxis thazard* and *Euthynnus affinis*) also occur.

These neritic tunas play a crucial role in Madagascar's coastal artisanal fisheries, which rely on them for food security, local livelihoods, and cultural practices. More than 98% of neritic tuna in Madagascar are caught by the small-scale fishery (Marolova R, 2024). The expansion of foreign vessels in Madagascar's EEZ raises concerns about potential overlap with artisanal fishing zones and the impact on neritic tuna stocks.

This study aims to quantify the proportion of neritic tunas in the total catches reported by foreign vessels operating in Madagascar's EEZ, based on data from 2024 and 2025. The results are expected to guide management strategies and, if necessary, specific regulations tailored to these species.

2. Methodology

The study relies on Electronic Reporting System (ERS) declarations submitted by authorized foreign vessels. In 2024, a total of 28 foreign vessels were considered, including 22 purse seiners and 6 longliners. For 2025, the data covers the period from January to May, with 19 vessels, divided into 11 purse seiners and 8 longliners. It should be noted that these figures do not represent all foreign fleets operating in Malagasy waters but only those using the Electronic Reporting System (ERS) since 2024.

Catches were classified into the following major categories:

Tropical and temperate tunas: *Thunnus albacares* (YFT – yellowfin tuna), *Thunnus obesus* (BET – bigeye tuna), *Katsuwonus pelamis* (SKJ – skipjack tuna), *Thunnus alalunga* (ALB – albacore).

- **Neritic tunas:** *Auxis thazard* or *Auxis rochei* (FRI – frigate tuna), *Euthynnus affinis* (KAW – kawakawa).
- **Swordfish and related species:** *Xiphias gladius* (SFA/SWO – swordfish), *Istiophorus platypterus* (SSP – Indo-Pacific sailfish), *Makaira nigricans* (BUM – Atlantic blue marlin), *Istiompax indica* (BLM – black marlin), *Kajikia audax* (MLS – striped marlin).
- **Other bycatch species:** All species not included in the above groups.

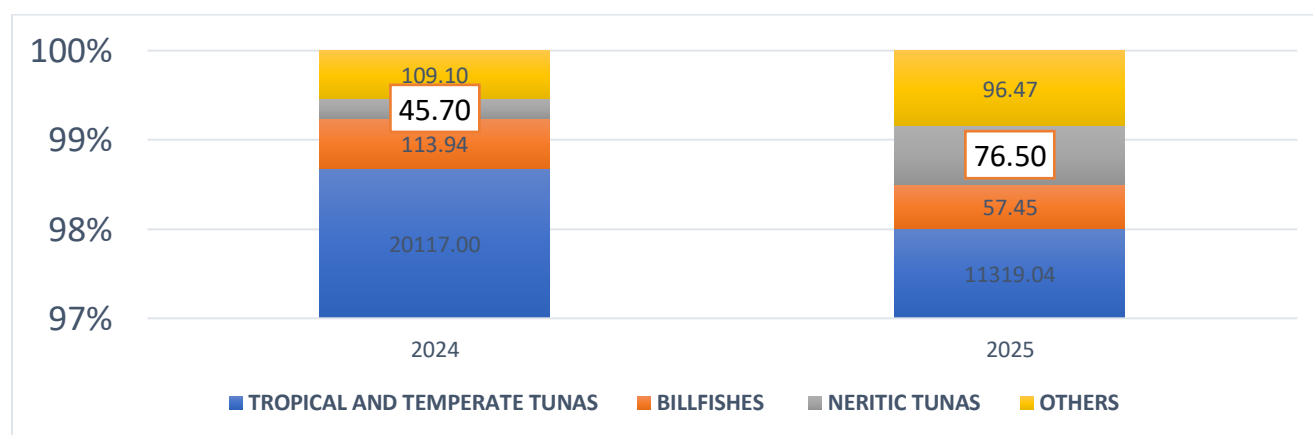
Descriptive analyses calculated the proportion of neritic tunas and their seasonal distribution. Mapping of fishing zones was conducted using the Vessel Monitoring System (VMS) data.

3. Results and discussion

3.1 Total Catches

Neritic tunas account for less than 1% of foreign fleet catches, with an increase from 0.22% (2024) to 0.66% (2025) (Figure 1). These catches, although marginal, exclusively involve *Auxis thazard* and *Euthynnus affinis*. The proportion of total bycatch captured ranged between 1 and 2 percent over the two-year period.

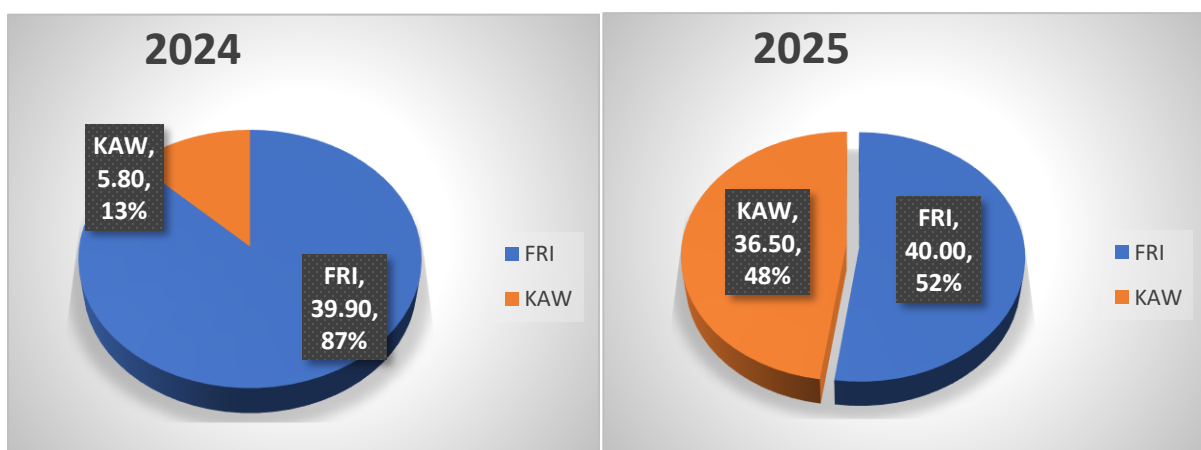
Figure 1: Foreign Vessel Catches within Madagascar's EEZ (in tons)



Source: Ministry of Fisheries and Blue Economy of Madagascar, 2025

The species composition of neritic tunas caught by foreign fleets in Madagascar's fishing zone showed a notable variation between the years 2024 and 2025. However, only two species dominate the catches: *Euthynnus affinis* (FRI) and *Auxis thazard* (KAW). In 2024, FRI accounted for 87% of the neritic tuna catches, compared to only 13% for KAW, indicating a strong predominance of the former species in the landings. However, this trend reversed in 2025, with the proportion of FRI dropping to 52%, while that of KAW significantly increased to 48% (Figure 2).

Figure 2: Species Distribution of Neritic Tunas Caught in Madagascar's Fishing Zone



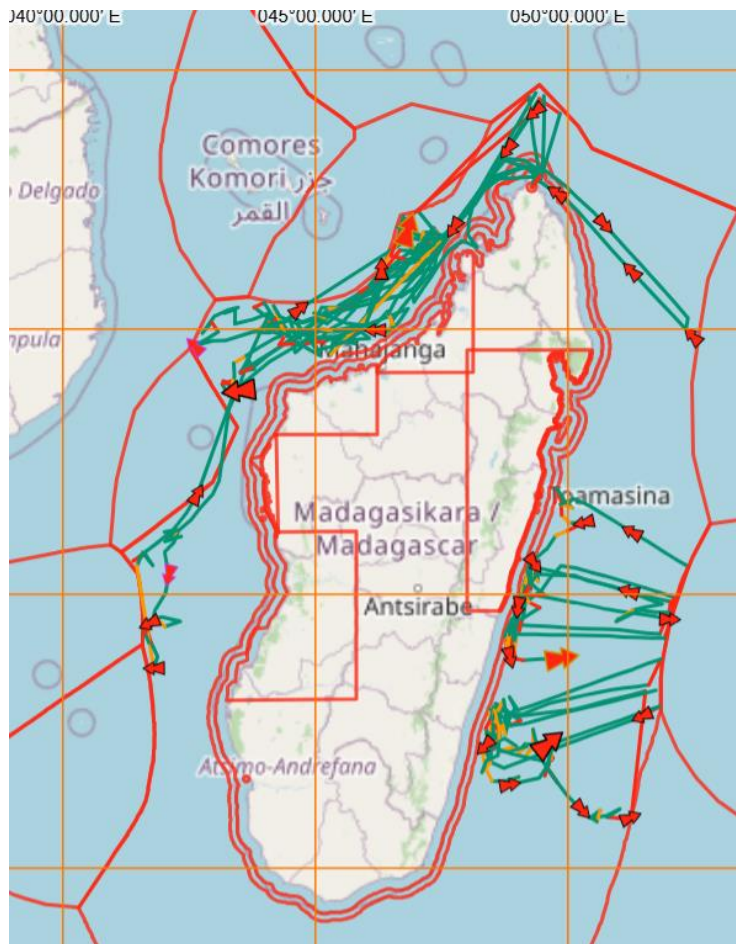
Source: Ministry of Fisheries and Blue Economy of Madagascar, 2025

3.2 Spatial Distribution

Foreign purse seiners operate mainly in the northwest of Madagascar, while foreign longliners concentrate on the east coast. Regulations restrict their access beyond 20 nautical miles from the coast (12 miles for small vessels < 100 GT), reducing conflicts with artisanal fishing.

Figure 3 below illustrates the trajectories of foreign vessels operating in Madagascar's fishing zone from January 1, 2024, to May 31, 2025, as recorded by VMS data.

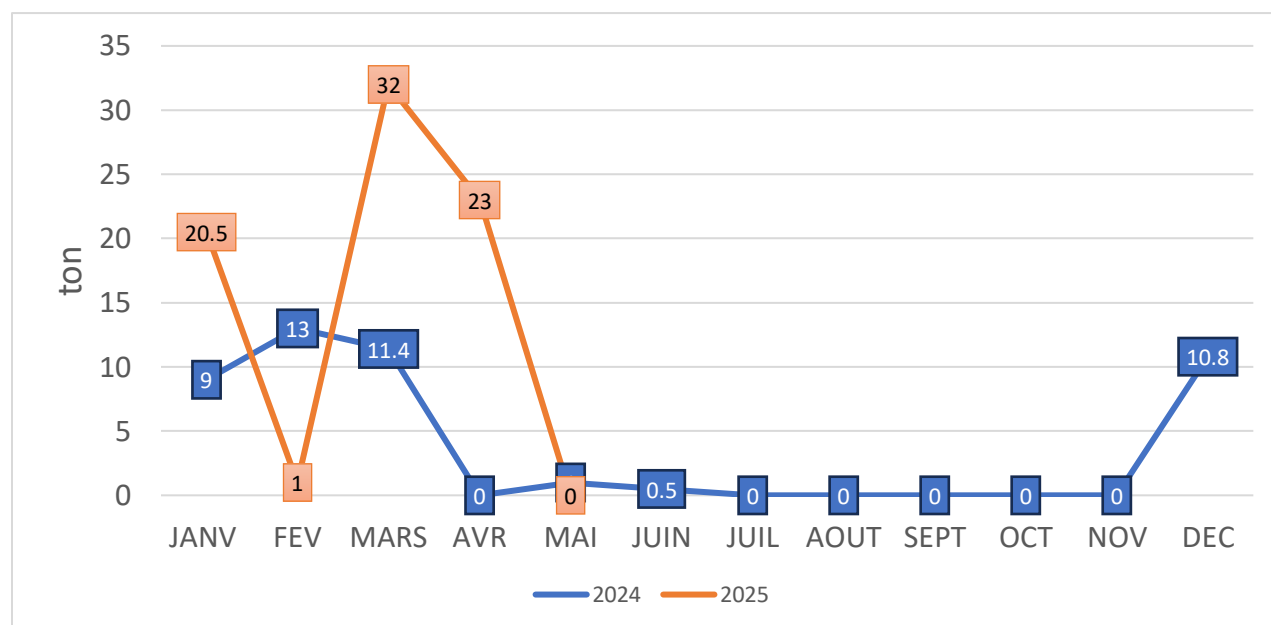
Figure 3: Activities of Foreign Vessels in Madagascar's Fishing Zone (Jan 1, 2024 – May 31, 2025)



Source: VMS, Ministry of Fisheries and Blue Economy, 2025

3.3 Seasonality

Neritic tuna catches are seasonal, peaking between December and June, coinciding with the migration of tropical tunas in the region. It should be noted that longline vessels operate nearly year-round along the east coast. Figure 4 below shows the catches made by foreign vessels in Madagascar's EEZ by month.

Figure 4: Neritic Tuna Catches by Month (tons)

Source: Ministry of Fisheries and Blue Economy, 2025

The low proportion of neritic tunas in foreign vessel catches can be attributed to several factors: the distance of industrial fishing zones from the coast, gaps in bycatch reporting, and the partial effectiveness of onboard observers. Although not alarming, the upward trend calls for increased vigilance, particularly to preserve coastal stocks essential for local fishermen. Additionally, compared to other regions in the Indian Ocean, bycatch rates in Madagascar remain lower, possibly reflecting the positive impact of current management measures or simply underreporting. Generally, purse seine fishing has a relatively low bycatch rate, around 5%. In the Indian Ocean, European fleets record a rate of about 4.7% (Garcia, A H. 2018).

However, depending on the area and practices (especially with FADs), rates can rise to 20%, as observed in Colombia in the Pacific (Puentes, V et al., 2024).

This raises the question of why the reported bycatch rate in Madagascar remains so low—between 1 and 2% of total catches—despite the widespread use of Fish Aggregating Devices (FADs), which are known to significantly increase bycatch proportions.

4. Conclusion

The catches reported by foreign fleets operating in the fishing zone of Madagascar showed a marginal and increasing contribution of neritic tunas to the total catches. As these species still constitute a very small proportion (less than 1%) of the catches, their socio-economic importance to artisanal fisheries in Madagascar warrants special attention.

The rise between 2024 and 2025, though slight, warrants better watchfulness and rules for industrial actions in common areas. Also, the small reported bycatch rate, despite the wide use of FADs, brings up doubts about how true the reported info is and how good the watch and control systems are.

For the sustainable management of fishery resources, particularly those in the provision for coastal communities, it is essential to:

- Strengthen electronic reporting and catch monitoring systems
- Improve onboard observer coverage
- Take further detailed assessments of interactions between industrial and artisanal fishing.

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