



MarinTrust Standard V2

By-product Fishery Assessment Bali sardinella (*Sardinella lemuru*) in FAO Area 57, Eastern Indian Ocean

MarinTrust Programme

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Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Bali sardinella, <i>Sardinella lemuru</i>
	Geographical area:	FAO Area 57, Eastern Indian Ocean
	Country of origin of the product:	Flag country not provided by the client
	Stock:	Southern Java to Western of Timor Sea
Date	7 October 2022	
Report Code	THA23	
Assessor	Matthew Jew	
Country of origin of the product - PASS	Flag country not provided by the client	
Country of origin of the product - FAIL	NA	

Application details and summary of the assessment outcome			
Company Name(s):			
Country: Thailand			
Email address:		Applicant Code:	
Certification Body Details			
Name of Certification Body:		Global Trust Certification	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Matthew Jew	Léa Lebechnech	0.5 days	Surveillance 1
Assessment Period	To October 2022		

Scope Details	
Main Species	Bali sardinella, <i>Sardinella lemuru</i>
Stock	Southern Java to Western of Timor Sea
Fishery Location	FAO Area 57, Eastern Indian Ocean
Management Authority (Country/ State)	Ministry of Marine Affairs and Fisheries of the Republic of Indonesia (KKP-RI) and Thailand Department of fisheries
Gear Type(s)	Purse seine
Outcome of Assessment	
Peer Review Evaluation	Agree with the assessor's recommendation of approval
Recommendation	APPROVED

Table 2. Assessment Determination

Assessment Determination
If any species is categorised as Endangered or Critically Endangered on IUCN's Red List, or if it appears in the CITES appendices, it cannot be approved for use as Marin Trust raw material. Bali sardinella (<i>Sardinella lemuru</i>) is neither listed as Endangered or Critically Endangered on IUCN's Red List, nor listed in CITES appendices; therefore, Bali sardinella is eligible for approval for use as Marin Trust by-product raw material. A management plan is implemented by two local governments through a bilateral agreement between East Java and Bali provinces. An agreed catch limit was implemented, however there are no biomass reference points defined for this stock. Hence, due to the lack of scientific information on the status of the stock, it was assessed under Category D. Table D1 (PSA) shows that the stock as an average productivity score of 1.28 and an average susceptibility score of 2.75. The PSA risk rating results (Table D3) determined that the species passes. Therefore, Bali sardinella in FAO area 57 eastern Indian Ocean is APPROVED for the production of fishmeal and fish oil under the current MarinTrust v 2.0 by-products.
Fishery Assessment Peer Review Comments
The internal peer reviewer agrees with the assessor's evaluation, who correctly classified Bali sardinella in FAO Area 57 Indian Ocean Eastern under category D, as reference points are not defined to assess status of the stock relative to. With an average productivity score of 1.28 and an average susceptibility score of 2.75, Bali sardinella in FAO Area 57 Indian Ocean Eastern PASSES Clause D1 in accordance with Table D3. Therefore, the Bali sardinella in FAO Area 57 Indian Ocean Eastern should be approved.
Notes for On-site Auditor
Determine which flag states the plant is sourcing its Bali sardinella from.

Species Categorisation

NB: If any species is categorised as Endangered or Critically Endangered on the IUCN Red List, or if it appears in CITES Appendix 1, it **cannot** be approved for use as an MarinTrust raw material.

IUCN Red list Category

By-product material from a species listed by IUCN (the International Union for Conservation of Nature) under the Red List for the following categories shall immediately fail the assessment;

- EXTINCT (E) AND EXTINCT IN THE WILD (EW)
- CRITICALLY ENDANGERED (CR) facing an extremely high risk of extinction in the wild.
- ENDANGERED (EN) facing a very high risk of extinction in the wild.

By-product material may be used from the following categories provided that all clauses in the MarinTrust standard are passed.

- VULNERABLE (VU) facing a high risk of extinction in the wild.
- NEAR THREATENED (NT) does not qualify for above now, but is close or is likely to qualify for, a threatened category in the near future.
- LEAST CONCERN (LC) Widespread and abundant.
- DATA DEFICIENT (DD) and NOT EVALUATED (NE)

Table 3 Species Categorisation Table

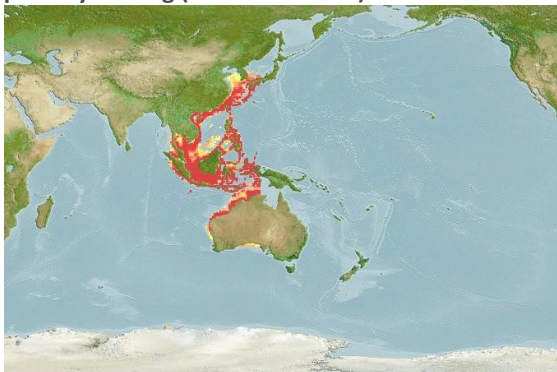
Common name	Latin name	Stock	Management	Category	IUCN Red List Category ¹	CITES Appendix 1 ²
Bali sardinella	<i>Sardinella lemuru</i>	Southern Java to Western of Timor Sea	Ministry of Marine Affairs and Fisheries of the Republic of Indonesia (KKP-RI) and Thailand Department of fisheries	D	NT	No

¹ <https://www.iucnredlist.org/>

² <https://cites.org/eng/app/appendices.php>

CATEGORY D SPECIES

Category D species are those which are not subject to a species-specific management regime. In the case of mixed trawl fisheries, Category D species may make up the majority of landings. The comparative lack of scientific information on the status of the population of the species means that a risk-assessment style approach must be taken.

D1	Species Name	Bali sardinella (<i>Sardinella lemuru</i>)	
	Productivity Attribute	Value	Score
	Average age at maturity (years)	0.8 years	1
	Average maximum age (years)	2.8 years	1
	Fecundity (eggs/spawning)	4,507 to 43,733 eggs	2
	Average maximum size (cm)	23 cm	1
	Average size at maturity (cm)	12 cm	1
	Reproductive strategy	Non-guarders: open water/substratum egg scatterers	1
	Mean trophic level	2.5	2
	Average Productivity Score		1.28
	Susceptibility Attribute	Value	Score
	Availability (area overlap)	25% to 50%	2
	Encounterability (the position of the stock/species within the water column relative to the fishing gear)	Targeted (marine; pelagic-neritic; oceanodromous)	3
	Selectivity of gear type	>2 times mesh size (Targeted)	3
	Post-capture mortality	Retained species	3
	Average Susceptibility Score		2.75
	PSA Risk Rating (From Table D3)		PASS
	Compliance rating		PASS
	Further justification for susceptibility scoring (where relevant)		
			
	References Froese, R. and D. Pauly. Editors. 2022. FishBase. World Wide Web electronic publication. www.fishbase.org, (06/2022): https://www.fishbase.se/summary/Sardinella-lemuru.html . Joson-Pagulayan AE, Arceta SM, Banaag AC, Macalintal C, Reyes CA, Garcia LM. Batch, absolute and relative fecundity of the Bali Sardinella, <i>Sardinella lemuru</i> (Bleeker 1853) from Balayan Bay, Batangas (Philippines). Acta Manilana. 2019;67:1-9.		

Santos, M. 2018. *Sardinella lemuru* (errata version published in 2019). *The IUCN Red List of Threatened Species* 2018: e.T75154879A143836046: <https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T75154879A143836046.en>. Accessed on 07 October 2022.

Sustainable Fisheries Partnership (SFP). Bali sardinella Southern Java to Western of Timor Sea. FishSource profile. In: FishSource [online]. Updated 25 June 2021. Accessed [7 October 2022]. https://www.fishsource.org/stock_page/2041

Standard clauses 1.3.2.2

Table D2 - Productivity / Susceptibility attributes and scores.

Productivity attributes	Low productivity/ High risk	Medium productivity/ Medium risk	High productivity/ Low risk
	Score 3	Score 2	Score 1
Average age at maturity (years)	>4	2 to 4	<2
Average maximum age (years)	>30	10 to 30	<10
Fecundity (eggs/spawning)	<1 000	1 000 to 10 000	>10 000
Average maximum size (cm)	>150	60 to 150	<60
Average size at maturity (cm)	>150	30 to 150	<30
Reproductive strategy	Live bearer, mouth brooder or significant parental investment	Demersal spawner "berried"	Broadcast spawner
Mean trophic level	>3.25	2.5–3.25	<2.5

Susceptibility attributes		High susceptibility/ High risk	Medium susceptibility/ Medium risk	Low susceptibility/ Low risk
		Score 3	Score 2	Score 1
Availability	1) Overlap of adult species range with fishery	>50% of stock occurs in the area fished	Between 25% and 50% of the stock occurs in the area fished	<25% of stock occurs in the area fished
	2) Distribution	Only in the country/ fishery	Limited range in the region	Throughout region/ global distribution
Encounterability	1) Habitat	Habitat preference of species make it highly likely to encounter trawl gear (e.g. demersal, muddy/sandy bottom)	Habitat preference of species make it moderately likely to encounter trawl gear (e.g. rocky bottom/reefs)	Depth or distribution of species make it unlikely to encounter trawl gear (e.g. epi-pelagic or meso-pelagic)
	2) Depth range	High overlap with trawl fishing gear (20 to 60 m depth)	Medium overlap with trawl fishing gear (10 to 20 m depth)	Low overlap with trawl fishing gear (0 to 10 m, >70 m depth)
Selectivity		Species >2 times mesh size or up to 4 m length	Species 1 to 2 times mesh size or 4 to 5 m length	Species <mesh size or >5 m length
Post capture mortality		Most dead or retained Trawl tow >3 hours	Alive after net hauled Trawl tow 0.5 to 3 hours	Released alive Trawl tow <0.5 hours

Note: Availability 2 is only used when there is no information for Availability 1; the most conservative score between Encounterability 1 and 2 is used.

D3		Average Susceptibility Score		
		1 - 1.75	1.76 - 2.24	2.25 - 3
Average Productivity Score	1 - 1.75	PASS	PASS	PASS
	1.76 - 2.24	PASS	PASS	TABLE D4
	2.25 - 3	PASS	TABLE D4	TABLE D4