MarinTrust Standard V2

By-product Fishery Assessment
ZAF09 - Japanese Pilchard
(Sardinops sagax melanostictus)
in FAO 61 (Tsushima warm current stock)

Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Japanese pilchard (*Sardinops sagax melanostictus*)
	Geographical area:	FAO 61, northwest Pacific
	Country of origin of the product:	South Africa (Flag state: Thailand)
	Stock:	Japanese sardine Tsushima stock
Date	April 2024	
Report Code	ZAF09	
Assessor	Ana Elisa Almeida Ayres	
Country of origin of the product - PASS	South Africa (Flag state: Thailand)	
Country of origin of the product - FAIL	NA	

Application details and summary of the assessment outcome			
Company Name(s): West Point Processors, St Helena Bay (Lucky Star Ltd), Amawandle Pelagic (Pty) Ltd			
Country: South Africa (Flag state: Thailand)			
Email address:		Applicant Code:	
Certification Body Details			
Name of Certification Body:		Global Certification Trust/NSF	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/Re-approval
Ana Elisa Almeida Ayres	Matthew Jew	0.5	Initial
Assessment Period		April 2024 – April 2025	

Scope Details	
Main Species	Japanese pilchard (*Sardinops sagax melanostictus*)
Stock	Japanese sardine Tsushima stock
Fishery Location	FAO 61, northwest Pacific
Management Authority (Country/ State)	Ministry of Agriculture, Forestry, and Fisheries (Japan)
Gear Type(s)	Not provided by client
Outcome of Assessment	
Peer Review Evaluation	Agree with assessor's recommendation
Recommendation	APPROVED

Table 2. Assessment Determination

Assessment Determination
Japanese pilchard is also known as Japanese sardine or South American pilchard and is widely referred to via the binomial name *Sardinops sagax.* If any species is categorised as Endangered or Critically Endangered on Union for Conservation of Nature's Red List of Threatened Species - IUCN's Red List, or if it appears in the Convention on International Trade in Endangered Species of Wild Fauna and Flora - CITES appendices, it cannot be approved for use as MarinTrust raw material. Japanese pilchard (*Sardinops sagax melanostictus*) is not categorised as Endangered or Critically Endangered on IUCN's Red List and does not appear in CITES appendices; therefore, Japanese pilchard (*Sardinops sagax melanostictus*) is eligible for approval for use as MarinTrust by-product raw material.   The Japanese sardine/pilchard Tsushima stock is subject to regular stock assessment relative to established reference points, by the Japan Fisheries Research and Education Agency (FRA) and the most recently available stock assessment publication appears to be from 2020. Thefore, the stock was initially assessed under Category C. Fishery removals of the species in the fishery under assessment are included in the stock assessment process, thus it passed C.1.1. However, the species is considered to have a biomass below the limit reference point, leading to a fail in C.1.2. Then, the species was assessed under Category D.   With an average productivity score of 1.14 and an average susceptibility score of 2.75, the species passed Table D1.   Therefore, Japanese pilchard (*Sardinops sagax melanostictus*) from Japanese sardine/pilchard Tsushima stock in FAO 61, northwest Pacific is APPROVED for the production of fishmeal and fish oil under the current MarinTrust v2.3 by-products standard.
Fishery Assessment Peer Review Comments
The assessor correctly classified Japanese pilchard (*Sardinops sagax melanostictus*) from Japanese sardine/pilchard Tsushima stock in FAO 61 as Category C, the stock is subject to a specific management regime and reference points are defined.   Fishery removals are considered in the stock assessment process. The most recent stock assessment shows that the stock is below the limit reference point. Therefore, because the stock has biomass below the limit reference point, it fails Category C and the assessor correctly assessed the stock under Category D.   The assessor correctly assigned attribute values to each of the categories in Table D1. The assessor correctly calculated the productivity and susceptibility scores, and the stock passes Category D.   Japanese pilchard (*Sardinops sagax melanostictus*) from Japanese sardine/pilchard Tsushima stock in FAO 61 passes Category D and therefore should be approved under the MarinTrust Standard v.2.3.
Notes for On-site Auditor
N/A

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 € 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]
Japanese pilchard	*Sardinops sagax melanostictus*	Japanese sardine Tsushima stock	Yes	Fails C, Subsequently assessed under D	LC[3]	No

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[1] https://www.iucnredlist.org/
[2] https://cites.org/eng/app/appendices.php
[3] https://www.iucnredlist.org/species/183347/143831586

CATEGORY C SPECIES

In a by-product assessment, Category C species are those which are subject to a species-specific management regime and are usually targeted species in fisheries for human consumption.

Clause C1 should be completed for each Category C species. If there are no Category C species in the fishery under assessment, this section can be deleted. Where a species fails this Clause, it should be assessed as a Category D species instead.

Species Name		Japanese pilchard *(Sardinops sagax melanostictus)*	
C1	**Category C Stock Status - Minimum Requirements**		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	PASS
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	FAIL
		Clause outcome:	FAIL

C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.

The Japanese sardine/pilchard Tsushima stock is subject to regular stock assessment by the Japan Fisheries Research and Education Agency (FRA). The most recently available stock assessment publication appears to be from 2020 (FRA, 2020). The stock assessment utilises catch data to perform an analytical assessment, and includes length, weight and age samples from the catch. The stock assessment report does not indicate any concerns in relation to completeness of data.
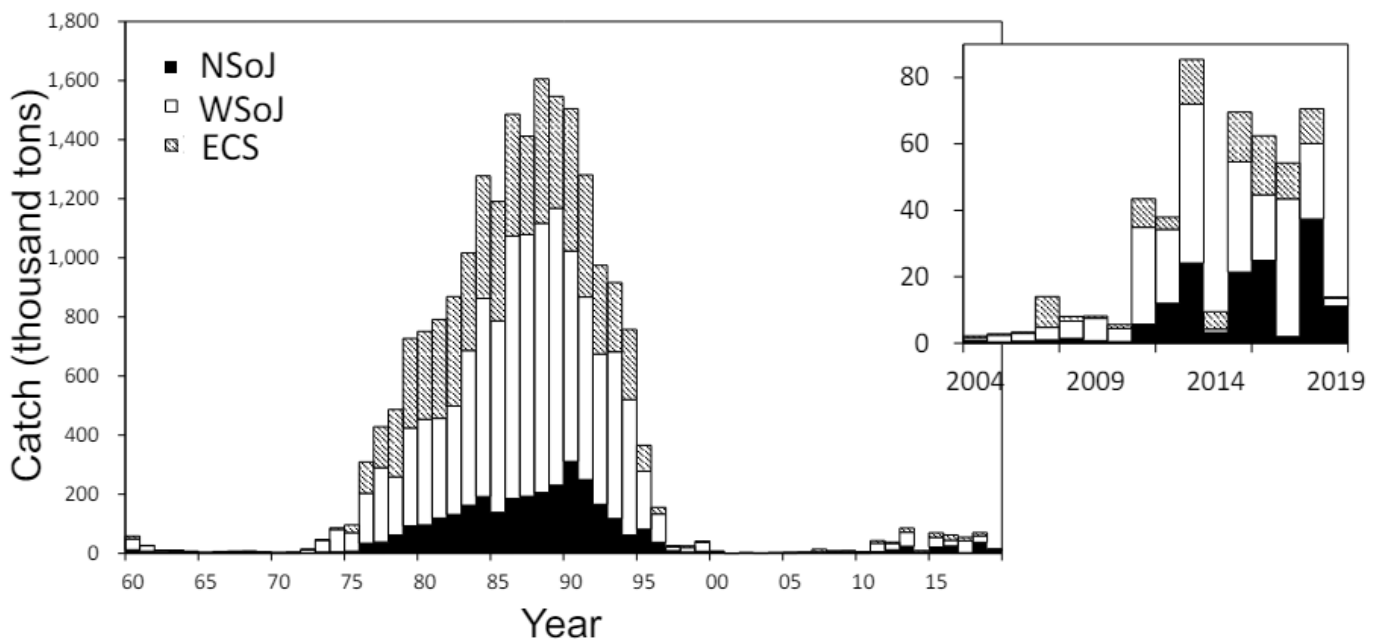

Figure 1. Catches of Japanese sardine/pilchard Tsushima stock (FRA, 2021).

Fishery removals of the species in the fishery under assessment are included in the stock assessment process. C.1.1 is met.

C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.

The 2020 stock assessment report includes an indication of the status of the stock relative to established reference points at that time. Stock biomass in 2019 was estimated to be 194,000t, relative to a target reference point (SBMSY) of 1.1 million tons and a limit reference point (SBlimit) of 465,000t (FRA 2020). Stock biomass was therefore estimated to be substantially below the limit reference point in 2019.
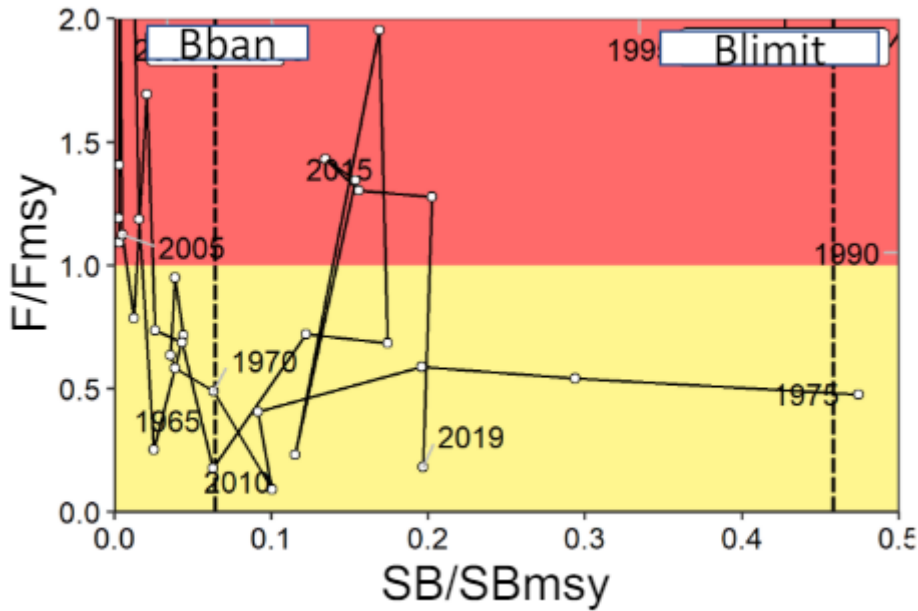

Figure 2. Kobe plot for Japanese sardine/pilchard Tsushima stock (FRA 2021).

The species is considered, in its most recent stock assessment, to have a biomass below the limit reference point. C.1.2 is not met and the species will be assessed under Category D.

References
FRA (2020). Stock Assessment of Japanese Sardine Tsushima Stock in 2020, Japan Fisheries Research and Education Agency (FRA). http://www.fra.affrc.go.jp/shigen_hyoka/peer_review/2020/27.pdf
FRA (2021). Tsushima Warm Current stock Japanese sardine For Peer Review in 2021. https://www.fra.affrc.go.jp/shigen_hyoka/peer_review/2020/52.pdf

Links	
MarinTrust Standard clause	1.3.2.2
FAO CCRF	7.5.3
GSSI	D.3.04, D5.01

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	Japanese pilchard (*Sardinops sagax melanostictus*)	
	Productivity Attribute	**Value**	**Score**
	Average age at maturity (years)	2.2	1
	Average maximum age (years)	8.6	1
	Fecundity (eggs/spawning)	25,495	1
	Average maximum size (cm)	33.8	1
	Average size at maturity (cm)	19.7	1
	Reproductive strategy	Broadcast spawning	1
	Mean trophic level	2.8	2
		Average Productivity Score	**1.14**
	Susceptibility Attribute	**Value**	**Score**
	Availability (area overlap)	10-30%	2
	Encounterability (the position of the stock/species within the water column relative to the fishing gear)	Precautionary	3
	Selectivity of gear type	Precautionary	3
	Post-capture mortality	Retained	3
		Average Susceptibility Score	**2.75**
		PSA Risk Rating (From Table D3)	**Pass**
		Compliance rating	**Pass**
	Further justification for susceptibility scoring (where relevant) *For susceptibility attributes, please provide a brief rationale for scoring of parameters where there may be uncertainty affecting your decision* The geographic range of *Sardinops sagax* encompasses the western Pacific Ocean from norther Japan to southern Australia and New Zealand (Froose and Pauli, 2024). Gear types type were not provided by client, thus encounterability and selectivity were given a precautionary score of 3. As it is a commercial species, it is retained.		

Note: Distribution range colours indicate degree of suitability of habitat which can be interpreted as probabilities of occurrence.

Relative probabilities of occurrence	Explore:	Download native range data:	More species info:	Session no. 17
0.80 - 1.00 0.60 - 0.79 0.40 - 0.59 0.20 - 0.39 0.01 - 0.19	Native range map Suitable habitat map Point map Show mapping parameters Create your own map	csv format NetCDF (view in Godiva) About AquaMaps	List of countries List of FAO areas List of ecosystems Comments & Corrections	-Close window- *Please use -Close window- link just above to exit instead of the browser's X button.*

Figure 3. Distribution map of *Sardinops sagax* (Aquamaps, 2019).

References

AquaMaps (2019). Computer generated distribution maps for *Sardinops sagax* (South American pilchard), with modelled year 2050 native range map based on IPCC RCP8.5 emissions scenario.
https://www.aquamaps.org/receive.php?type_of_map=regular&map=cached

Froese, R. and D. Pauly (2024). *Sardinops sagax* (Jenyns, 1842) South American pilchard. FishBase. World Wide Web electronic publication. https://www.fishbase.se/summary/Sardinops-melanostictus.html

Standard clauses 1.3.2.2

Table D2 - Productivity / Susceptibility attributes and scores.

Productivity attributes	High productivity (Low risk, score = 1)	Medium productivity (medium risk, score = 2)	Low productivity (high risk, score = 3)
Average age at maturity	<5 years	5-15 years	>15 years
Average maximum age	<10 years	10-25 years	>25 years
Fecundity	>20,000 eggs per year	100-20,000 eggs per year	<100 eggs per year
Average maximum size	<100 cm	100-300 cm	>300 cm
Average size at maturity	<40 cm	40-200 cm	>200 cm
Reproductive strategy	Broadcast spawner	Demersal egg layer	Live bearer
Mean Trophic Level	<2.75	2.75-3.25	>3.25

Susceptibility attributes	Low susceptibility (Low risk, score = 1)		Medium susceptibility (medium risk, score = 2)		High susceptibility (high risk, score = 3)	
Areal overlap (availability) Overlap of the fishing effort with the species range	<10% overlap		10-30% overlap		>30% overlap	
Encounterability The position of the stock/species within the water column relative to the fishing gear, and the position of the stock/species within the habitat relative to the position of the gear	Low overlap with fishing gear (low encounterability).		Medium overlap with fishing gear.		High overlap with fishing gear (high encounterability). Default score for target species	
Selectivity of gear type Potential of the gear to retain species	a	Individuals < size at maturity are rarely caught	a	Individuals < size at maturity are regularly caught.	a	Individuals < size at maturity are frequently caught
	b	Individuals < size at maturity can escape or avoid gear.	b	Individuals < half the size at maturity can escape or avoid gear.	b	Individuals < half the size at maturity are retained by gear.
Post-capture mortality (PCM) The chance that, if captured, a species would be released and that it would be in a condition permitting subsequent survival	Evidence of majority released post-capture and survival.		Evidence of some released post-capture and survival.		Retained species or majority dead when released.	

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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

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