MarinTrust RS V2.0

BYPRODUCT FISHERY ASSESSMENT TEMPLATE REPORT

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TABLE 1 APPLICATION DETAILS AND SUMMARY OF THE ASSESSMENT OUTCOME

Fishery Under Assessment	**Species:**	California / Japanese Pilchard *Sardinops sagax caeruleus*
	Geographical area:	FAO Area 77 Pacific Eastern Central
	Country of origin of the product:	Thailand
	Stock:	Central and Southern Baja California & Gulf of California
Date	January 2021	
Report Code	171-2020	
Assessor	Virginia Polonio	
Country of origin of the product - PASS	Thailand	
Country of origin of the product - FAIL	NA	

Application details and summary of the assessment outcome			
Name:			
Address:			
Country: Thailand		**Zip:**	
Tel. No.:		**Fax. No.:**	
Email address:		**Applicant Code:**	
Key Contact:		**Title:**	
Certification Body Details			
Name of Certification Body:		Global Trust Certification	
Assessor	**Peer Reviewer**	**Assessment Days**	**Initial/Surveillance/ Re-approval**
Virginia Polonio	Geraldine Criquet	0.5	Surveillance
Assessment Period	January 2021		

Scope Details	
Main Species	California Pilchard *Sardinops sagax caeruleus*
Stock	Central and Southern Baja California & Gulf of California
Fishery Location	FAO Area 77 Pacific Eastern Central
Management Authority (Country/ State)	Mexican Secretary of Agriculture and Rural Development (SADER), Mexico National Commission of Aquaculture and Fisheries (CONAPESCA)
Gear Type(s)	Purse seine
Outcome of Assessment	
Peer Review Evaluation	Agree with assessor's recommendation.
Recommendation	**APPROVED**

TABLE 2. ASSESSMENT DETERMINATION

Assessment Determination
If any species is categorised as Endangered or Critically Endangered on the IUCN Red List, or if it appears in the CITES appendices, it cannot be approved for use as Marin Trust raw material. California pilchard does not appear as Endangered or Critically Endangered on the IUCN Red List, nor does it appear in CITES appendices, therefore California pilchard in FAO Area 77 Pacific Eastern Central is eligible for approval for use as Marin Trust raw material. There are two subpopulations of this stock: A northern ("cold") subpopulation (northern Baja California to Alaska), a southern subpopulation (central and southern Baja California & Gulf of California). This assessment covers the southern subpopulation. This fishery is regulated under the Norma Oficial Mexicana (NOM) 003-PESC-1993 and a management plan in place. The stock is subject to a specific research and management regime, therefore it is classified as Category C. The species has passed the category C clauses. California pilchard in FAO Area 77 Pacific Eastern Central is approved by the assessor for the production of fishmeal and fish oil under the Marin Trust v 2.0 by-products standard.
Peer Review Comments
The assessor correctly classified central and southern Baja California & Gulf of California pilchard stock as category C, the stock is managed and reference points are defined to assess the stock status against. Fishery removals from the stocks are considered in the stock assessment process. The most recent stock assessment shows that the stock is considered to have a biomass above the limit reference point. The central and southern Baja California & Gulf of California pilchard stock in FAO Area 77 Pacific Eastern Central passes both C1.1 and C1.2 and are therefore approved.
Notes for On-site Auditor

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 Redlist Category

Byproduct 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.

Byproduct 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 caeruleus*	The central and southern Baja California & Gulf of California Japanese pilchard stock in FAO Area 77 Pacific Eastern Central	Mexican Secretary of Agriculture and Rural Development (SADER), Mexico National Commission of Aquaculture and Fisheries (CONAPESCA	C	LC	No

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

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 may be assessed as a Category D species instead, EXCEPT if there is evidence that it is currently below the limit reference point.

Species Name		**Californian pilchard, *Sardinops sagax caeruleus***	
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.	PASS
		Clause outcome:	**PASS**

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.

There is long history of fishery independent and dependent data collected. Bycatch is also considered, however, the absence of observer scheme had lead to shortage of data on by-catch and discards species in this fishery.

The last stock assessment was conducted using the Age Structured Assessment Program (ASAP) model. The analysis used catch and biological data from the fishery. Fishery independent data included the following indices of relative abundance: a) number of fish caught per squared km in tows, during prospective and acoustic surveys from 1990 to 2014; b) indices of biomass obtained by means of acoustic detection of fish from 2008 to 2014; c) abundance of eggs and larvae (number/10 m2) from 1971 to 1988; d) an environmentally based index specifying the spawning probability from 1979 to 1996; and d) an index based on the proportion of sardine in the diet of sea birds.

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and the fishery **PASSES** clause C1.1

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.

Reference Points are set up at Optimum yield which was estimated at 220,000 tonnes and most recent value for fishing pressure was estimated Fmsy = 0.28. Management exploitation rate is defined at 0.25.

The spawning biomass increased from around 432,000 t in 2014 / 15 to almost 1,020 million tons in 2017 / 18-2018 / 19, while the exploitable biomass displays the same trend as the spawners, but the values in 2014/15 were almost 409,000 tons while this value increased to approximately 876,000 tons in 2016 / 17 and an average of 1,288 million tonnes in 2017 / 18-2018 / 19. The annual fishing mortality rate and the exploitation rate (E = 1-exp (-F)) show values below 0.15 / year for almost the entire time period, with some seasons where these values were between 0.16 and 0.23, with a maximum peak in 1988/89 and the second highest peak in 2008/09. A similar trend presents E = Ctotal / Bexp, although higher values are observed with respect to E = 1-exp (-F), but the peaks occur in the same stations. Fishing mortality and E in the MSY (FMSY = 0.309 and EMSY = 0.266), were much higher than the Fcurrent= 0.107 / year and Ecurrent = 0.101 year.

The estimate of the spawning biomass in the MSY was BMSY = 557,053 t, biomass lower than that estimated for the last years. When applying the control rule (BAC = (Bexp - BMIN) * FRACTION) stipulated in the Fisheries Management Plan, considering that BMIN = 120,000 t and FRACTION = 1-exp (-FMSY), it was found that the population of the Japanese pilchard has been exploited below the estimated BAC in the period of time analysed (Martinez Zavaia et al 2020; SGS Surveillance report 2020).

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it **PASSES** clause C1.2

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it **PASSES** clause C1.2

References

Gaughan, D., Di Dario, F. & Hata, H. 2018. Sardinops sagax (errata version published in 2019). The IUCN Red List of Threatened Species 2018: e.T183347A143831586. https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T183347A143831586.en.

Gabriela Anhalzer, Andy Bystrom and Dr. Enrique Morsan. SGS 2020. Small Pelagics Fishery in sonora, Gulf of California. Second Surveillance Audit Report. Certification Code: F-SCS-0107

Martínez Zavala, M.A., Nevarez Martinez, M.O., López Lagunas, A.E., Reyes Benitez, E.N., Valdez Pelayo, A. 2020. Pesquería de Pelágicos Menores en el Golfo de California Durante los Oscuros 9 (Junio) y 10 (Julio) de la Temporada 2019/2020. Informe Técnico.

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 make up less than 5% of landings and 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		
	Productivity Attribute	**Value**	**Score**
	Average age at maturity (years)		
	Average maximum age (years)		
	Fecundity (eggs/spawning)		
	Average maximum size (cm)		
	Average size at maturity (cm)		
	Reproductive strategy		
	Mean trophic level		
		Average Productivity Score	
	Susceptibility Attribute	**Value**	**Score**
	Overlap of adult species range with fishery		
	Distribution		
	Habitat		
	Depth range		
	Selectivity		
	Post-capture mortality		
		Average Susceptibility Score	
		PSA Risk Rating (From Table D3)	
		Compliance rating	
References			
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

D4	Species Name		
	Impacts On Species Categorised as Vulnerable by D1-D3 - Minimum Requirements		
	D4.1	The potential impacts of the fishery on this species are considered during the management process, and reasonable measures are taken to minimise these impacts.	
	D4.2	There is no substantial evidence that the fishery has a significant negative impact on the species.	
		Outcome:	

Evidence

D4.1: The potential impacts of the fishery on this species are considered during the management process, and reasonable measures are taken to minimise these impacts.

D4.2 There is no substantial evidence that the fishery has a significant negative impact on the species.

References

Links	
MARINTRUST Standard clause	1.3.2.2, 4.1.4
FAO CCRF	7.5.1
GSSI	D.5.01

SOCIAL CRITERION

In addition to the scored criteria listed above, applicants must commit to ensuring that vessels operating in the fishery adhere to internationally recognised guidance on human rights. They must also commit to ensuring there is no use of enforced or unpaid labour in the fleet(s) operating upon the resource.

Appendix B: From MARINTRUST Standard V2.0 Annex 2: Fish By-product Assessment Methodology

Definition of a Fish By-product

A by-product is a useful and marketable product that is not the primary product being produced. A marketable by-product is from a process that can technically not be avoided. This includes materials that may be traditionally defined as waste such as industrial scrap that is subsequently used as a raw material in a different manufacturing process.

"Fish By-products" refers to commodities that are manufactured from fish, including shellfish, and crustaceans in a form that is different than conventional foods and which are intended for human consumption (either directly or as a food ingredient). Fish By-products include, but are not limited to:

- By-products derived from fish, including fish cartilage, fish oils, and fish proteins; and
- By-products derived from the carapaces of crustaceans; but do not include marine plants or marine plant products.

(Canadian Food Inspection Agency Definition)

In addition, a whole fish which is rejected on an intrinsic quality ground e.g. does not meet the specification for human consumption due to physical damage or the quality is substandard. These whole fish shall in these cases be classified as a by-product from the human consumption fishery, and can be used for marine ingredients production.

A whole catch of fish that is rejected by a fish processing factory on economic grounds is not considered to be a fish by-product. This fish can only be used for marine ingredients production if the fishery has been assessed and approved under the requirements of the IFFO Responsible Sourcing Standard.

Why utilise Fish By-products?

FAO Code of Conduct for Responsible Fisheries

General Principles Article 6

6.7 The harvesting, handling, processing and distribution of fish and fishery products should be carried out in a manner which will maintain the nutritional value, quality and safety of the products, reduce waste and minimize negative impacts on the environment.

Responsible fish utilisation Article 11.1

11.1.8 States should encourage those involved in fish processing, distribution and marketing to reduce post-harvest losses and waste.

Benefits of Including Fish By-Products in the MARINTRUST Standard:

1. Improved fish resource utilisation

2. Reduction in waste for nutritional value

3. 35% of fish by-products are currently used to make quality fishmeal and oil

4. Excellent Economic return

5. Better compliance with FAO Code of Conduct for Responsible Fisheries

What Fish By-products cannot be used?

1. IUCN

Fishery By-products shall Not be taken from a species listed by IUCN (the International Union for Conservation of Nature) under the Red List for certain categories;

- 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.

Fish By-product material may be used from the vulnerable category, but it shall incur a fishery surveillance conducted by the certification body prior to it being included in the scope of this standard.

- VULNERABLE (VU) facing a high risk of extinction in the wild.

The Fish By-product material from these species will be acceptable for use in the scope of this standard;

- 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.

Fish By-product material may be used from the following category, but it shall incur a fishery surveillance prior to it being included in the scope of this standard;

- DATA DEFICIENT (DD) and NOT EVALUATED (NE)

The fishery surveillance conducted by the certification body will review the following areas:

Stock Assessment

- From a recognised Institution
- Fisheries are recognised as legal
- Fisheries do not contradict scientific opinion

2. FAO Code of Conduct for Responsible Fisheries

In addition the Fish By-products shall not come from fisheries that do not comply with the following criteria;

1. Fisheries should prohibit dynamiting, poisoning and other comparable destructive fishing practices.

2. Fishery material shall not be from IUU fishing activity nor sourced from vessels officially listed as engaging in illegal, unreported and unregulated (IUU) fishing activity.

Sources of Information

1. Food Standards Agency

2. Canadian Food Inspection Agency

3. DEFRA

4. GAA Feed mill BAP standard

5. EU Commission

6. IUCN