

IFFO RS Global Standard for Responsible Supply of Marine Ingredients

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Global Standard for Responsible Supply of Marine Ingredients Fishery Assessment Methodology and Template Report V2.0



IFFO RS Global Standard for Responsible Supply of Marine Ingredients



Fishery Under Assessment	Pacific anchoveta Cetengraulis mysticetus FAO 77
Date	March 2019
Assessor	Conor Donnelly

Application details and summary of the assessment outcome						
Name: Specialities Pe	Name: Specialities Pet Food SA de CV- Aquativ Mexico.					
Address:						
Country: Mexico		Zip:				
Tel. No.:		Fax. No.:				
Email address:		Applicant Code				
Key Contact:		Title:				
Certification Body De	etails	-				
Name of Certification	n Body:	SAI Global Ltd				
Assessor Name	Peer Reviewer	Assessment Days	Initial/Surveillance approval	e/Re- Whole fish/ By- product		
Conor Donnelly	Jim Daly	1	Surveillance 1	By-product		
Assessment Period	2018					

Scope Details	
Management Authority (Country/State)	Mexico
Main Species	Pacific anchoveta Bocona sardine Cetengraulis
Fishery Location	FAO 77
Gear Type(s)	Purse seine
Outcome of Assessment	
Overall Outcome	Pass
Clauses Failed	None
Peer Review Evaluation	Agree
Recommendation	Maintain approval

Assessment Determination

There are fishery management and research frameworks established at the national level. Pacific anchoveta (Bocona sardine) is managed under these frameworks as a component of the Pacific small pelagic stock. There are some species-specific management measures in place so it has been assessed under Clause C.

Fishery removals are included in the stock assessment process and the stock is considered, in its most recent assessment, to have a biomass above the limit reference point. Consequently, it passes Clause C.

Pacific anchoveta is listed as of least concern on the IUCN Red list of Threatened Species (March 2019) and is not listed by CITES (<u>https://www.iucnredlist.org/species/183878/8193356</u>; last assessed May 2007),

This fishery by-product is recommended for approval under the IFFO RS Standard (by-products).

Peer Review Comments

Agree

Notes for On-site Auditor

Note: This table should be completed for whole fish assessments only.

Species-Specific Results

Category	Species	% landings	Outcome (Pass/Fail)
			A1
Category A			A2
			A3
			A4
Category B			
Category C	Pacific anchoveta Cetengraulis mysticetus	N/A	Pass
Category D			

[List all Category A and B species. List approximate total % age of landings which are Category C and D species; these do not need to be individually named here]

HOW TO COMPLETE THIS ASSESSMENT REPORT

This assessment template uses a modular approach to assessing fisheries against the IFFO RS standard.

Whole Fish

The process for completing the template for a **whole fish** assessment is as follows:

- 1. ALL ASSESSMENTS: Complete the Species Characterisation table, to determine which categories of species are present in the fishery.
- 2. ALL ASSESSMENTS: Complete clauses M1, M2, M3: Management.
- 3. IF THERE ARE CATEGORY A SPECIES IN THE FISHERY: Complete clauses A1, A2, A3, A4 for each Category A species.
- 4. IF THERE ARE CATEGORY B SPECIES IN THE FISHERY: Complete the Section B risk assessment for **each** Category B species.
- 5. IF THERE ARE CATEGORY C SPECIES IN THE FISHERY: Complete clause C1 for **each** Category C species.
- 6. IF THERE ARE CATEGORY D SPECIES IN THE FISHERY: Complete Section D.
- 7. ALL ASSESSMENTS: Complete clauses F1, F2, F3: Further Impacts.

A fishery must score a pass in **all applicable clauses** before approval may be recommended. To achieve a pass in a clause, the fishery/species must meet **all** of the minimum requirements.

By-products

The process for completing the template for **by-product raw material** is as follows:

- 1. ALL ASSESSMENTS: Complete the Species Characterisation table with the names of the by-product species and stocks under assessment. The '% landings' column can be left empty; all by-products are considered as Category C and D.
- 2. IF THERE ARE CATEGORY C BYPRODUCTS UNDER ASSESSMENT: Complete clause C1 for **each** Category C by-product.
- 3. IF THERE ARE CATEGORY D BYPRODUCTS UNDER ASSESSMENT: Complete Section D.
- 4. ALL OTHER SECTIONS CAN BE DELETED. Clauses M1 M3, F1 F3, and Sections A and B do not need to be completed for a by-product assessment.

By-product approval is awarded on a species-by-species basis. Each by-product species scoring a pass under the appropriate section may be approved against the IFFO RS Standard.

SPECIES CATEGORISATION

The following table should be completed as fully as the available information permits. Any species representing more than 0.1% of the annual catch should be listed, along with an estimate of the proportion of the catch each species represents. The species should then be divided into Type 1 and Type 2 as follows:

- **Type 1 Species** can be considered the 'target' or 'main' species in the fishery. They make up the bulk of annual landings and are subjected to a detailed assessment.
- **Type 2 Species** can be considered the 'bycatch' or 'minor' species in the fishery. They make up a small proportion of the annual landings and are subjected to relatively high-level assessment.

Type 1 Species must represent 95% of the total annual catch. Type 2 Species may represent a maximum of 5% of the annual catch (see Appendix B).

Species which make up less than 0.1% of landings do not need to be listed (NOTE: ETP species are considered separately). The table should be extended if more space is needed. Discarded species should be included when known.

The 'stock' column should be used to differentiate when there are multiple biological or management stocks of one species captured by the fishery. The 'management' column should be used to indicate whether there is an adequate management regime specifically aimed at the individual species/stock. In some cases it will be immediately clear whether there is a species-specific management regime in place (for example, if there is an annual TAC). In less clear circumstances, the rule of thumb should be that if the species meets the minimum requirements of clauses A1-A4, an adequate species-specific management regime is in place.

NOTE: 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 an IFFO RS raw material. This applied to whole fish as well as by-products.

TYPE 1 SPECIES (Representing 95% of the catch or more)

Category A: Species-specific management regime in place. **Category B:** No species-specific management regime in place.

TYPE 2 SPECIES (Representing 5% OF THE CATCH OR LESS)

Category C: Species-specific management regime in place. **Category D:** No species-specific management regime in place.

Common name	Latin name	Stock	% of landings	Management	Category
Pacific anchoveta (Bocona sardine)	Cetengraulis mysticetus	FAO 77	NA	Mexico	С

CATEGORY C SPECIES

In a whole fish assessment, Category C species are those which make up less than 5% of landings, but which are subject to a species-specific management regime. In most cases this will be because they are a commercial target in a fishery other than the one under assessment. 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. A Category C species does not meet the minimum requirements of clause C1 should be re-assessed as a Category D species.

Species Name Pa			Pacific anchoveta (Bocona sardine) Cetengraulis mysticetus			
C1	C1 Category C Stock Status - Minimum Requirements					
U	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.					
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: P					

Evidence

Fishery removals of Pacific anchoveta (Bocona sardine) are included in the stock assessment process. Data input includes catch and landings data (Alvarez et al. 2017).

Biological reference points including B_{MSY} have been calculated for Pacific anchoveta in the Central-Northern Gulf of California fishery using a biomass dynamics model (Nevárez-Martínez et al. 2016d, quoted in Alvarez et al., 2017) (Table 1). Alvarez et al. 2017, note that interpretations of biomass trends are limited due to problems with poor model fit. However, it is estimated that biomass is about twice the level producing MSY (Figure 1). Fishing mortality rate has been much lower than the level producing the MSY, except in fishing season 2011-12 were it surpasses B_{MSY} , indicating that overfishing is not taking place (Alvarez et al. 2017).

Table 1. Biomass model parameter and biological reference points for Bocona sardine (*Cetengraulis mysticetus*) in the Central-Northern Gulf of California fishery (Source: Nevárez-Martínez *et al.* 2016d quoted in Alvarez *et al.*, 2017).

Parameter	<i>Bocona</i> sardine
R	0.5240
К	1,415,800
Bo	360,000
Вмя	707,900
MSY	185,485
FMSY	0.2620
fмsy	3,885
qmed	6.7452E-05



with environmental forcing. $K/2 = B_{MSY}$. Source: Nevárez-Martínez *et al.* 2016d quoted in Alvarez *et al.*, 2017)

References

Alvarez *et al.* (2017). Small pelagics fishery in Sonora, Gulf of California. MSC Fishery Assessment Report. SCS Global Services.

https://fisheries.msc.org/en/fisheries/small-pelagics-fishery-in-sonora-gulf-of-california/@@assessments

Standard clauses 1.3.2.2

CATEGORY D SPECIES

In a whole fish assessment, 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. In a by-product assessment, Category D species are those which are not subject to a species-specific management regime. In both cases, 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.

The process for assessing Category D species involves the use of a Productivity-Susceptibility Analysis (PSA) to further subdivide the species into 'Critical Risk', 'Major Risk' and 'Minor Risk' groups. If there are no Category D species in the fishery under assessment, this section can be deleted.

Productivity and susceptibility ratings are calculated using a process derived from the APFIC document "Regional Guidelines for the Management of Tropical Trawl Fisheries, which in turn was derived from papers by Patrick *et al* (2009) and Hobday *et al* (2007). Table D1 should be completed for each Category D species as follows:

- Firstly, the best available information should be used to fill in values for each productivity and susceptibility attribute.
- Table D2 should be used to convert each attribute value into a score between 1 and 3.
- The average score for productivity attributes and the average for susceptibility attributes should be calculated.
- Table D3 should be used to determine whether the species is required to meet the requirements of Table D4. A species which does not need to meet the requirements of D4 is automatically awarded a pass.
- Table D4 should be used to assess those species indicated by Table D3 to determine a pass/fail rating.
- Any Category D species which has been categorised by the IUCN Red List as Endangered or Critically Endangered, or which appears in the CITES appendices, automatically results in a fail.

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				
Refer	ences					
Stand	ard clauses 1.3.2.2					

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	

Table D2 - Productivity / Susceptibility attributes and scores.

Susceptibility attributes		High susceptibility/ High risk	Medium susceptibility/ Medium risk	Low susceptibility/ Low risk	
		Score 3	Score 2	Score 1	
Availability	 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 or<br="" size="">>5 m length</mesh>
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.

D2		Average Susceptibility Score			
D3		1.00 - 1.75	1.76 - 2.24	2.25 - 3.00	
Average Productivit	1.00 – 1.75	PASS	PASS	PASS	
Score	1.76 - 2.24	PASS	PASS	TABLE D4	
	2.25 - 3.00	PASS	TABLE D4	TABLE D4	

D4	Spee	cies 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, a	and reasonable measures are taken to minimise these impacts.					
	D4.2	There is no substantial	l evidence that the fishery has a significant negative impact on					
		the species.						
	Outcome:							
Evide	Evidence							
Refer	ences							
Stande	ard clau	use 1.3.2.2						