RESPONSIBLE
SUPPLY

IFFO RS Limited

T: +44 (0) 2030 539 195
E: Standards@iffors.com
W: www.iffors.com

Unit C, Printworks | 22 Amelia Street
London, SE17 3BZ | United Kingdom

RESPONSIBLE
SUPPLY
IFFO
RS
ASSURED

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

Fishery Under Assessment	Chub mackerel *S.japonicus* N of 41S
Date	**March 2019**
Assessor	**Virginia Polonio**

Application details and summary of the assessment outcome				
Name: Coomarpes Ltd				
Address:				
Country: Argentina		Zip:		
Tel. No.:		Fax. No.:		
Email address:		Applicant Code		
Key Contact:		Title:		
Certification Body Details				
Name of Certification Body:		SAI Global Ltd		
Assessor Name	Peer Reviewer	Assessment Days	Initial/Surveillance/Re-approval	Whole fish/ By-product
V. Polonio	Jim Daly	1	Surveillance 1	By-product
Assessment Period	2018			

Scope Details	
Management Authority (Country/State)	Argentina
Main Species	Chub mackerel (*Scomber japonicus*)
Fishery Location	Mar de Plata, Argentina N of 41S
Gear Type(s)	Pelagic Trawl
Outcome of Assessment	
Overall Outcome	**Pass**
Clauses Failed	None
Peer Review Evaluation	Approve by-product
Recommendation	**PASS**

Assessment Determination
The stock assessment uses well-accepted methods, including several surveys of different population segments that provide fishery-independent data. An electronic Vessel Monitoring System aids enforcement of closed zones. IUU fishing, foreign vessels catches, discards and mackerel bycatch estimates are included in the assessment since 2009. Managers appear to be setting TACs in line with scientist's advice. The TAC for 2019 have been reduce to 41k tons to 31k tons using the precautionary approach. Spawning stock biomass (SSB) has been fluctuating between 99,000 and 204,000t in the last ten years (average =152,000 t, C.V. = 21%) and recruitment was set up between 85,000 and 167,000 t. in the last year's stock status. Global research cruises were not conducted in 2014 and 2015. There are loopholes in monitoring and control of catches that has triggered a number of uncertainties that have been considered in the models. Fishery removals of the species in the fishery under assessment are included in the stock assessment process. The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy). This species is listed as of Least Concern on the IUCN Red List (accessed March 2019). Therefore, the assessment team recommends the approval of this by-product against IFFO –RS standard.
Peer Review Comments
Agree
Notes for On-site Auditor

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

General Results

General Clause	Outcome (Pass/Fail)
M1 - Management Framework	NA
M2 - Surveillance, Control and Enforcement	NA
F1 - Impacts on ETP Species	NA
F2 - Impacts on Habitats	NA
F3 - Ecosystem Impacts	NA

Species-Specific Results

Category	Species	% landings	Outcome (Pass/Fail)	
Category A			A1	
			A2	
			A3	
			A4	
Category B				
Category C	Chub Mackerel (*Scomber japonicus*)	NA	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
Chub mackerel, Caballa C	*Scomber japonicus*	Mar del plata N 41S Argentina	N/A	Argentina	C

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		Chub Mackerel (*Scomber japonicus*)	
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.	Yes
	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.	Yes
		Clause outcome:	**Pass**

Evidence

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.

Fishery removals of Chub mackerel are included in the stock assessment process. An age structured assessment is carried out. Fishery data is collected from fishery dependent sampling and acoustic surveys however some uncertainties have been taken in the allocation of the total catch due to the lack of acoustic surveys in recent years. **Clause C1.1 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.

An analysis of spawning biomass per recruit has led to the definition of biological reference points F60 (89,000t) was taken as the target reference point and F40 (59,000t) as the limit reference point. In the period 1990-2015 the spawning biomass has been between 78,000 – 171,000t (average 127,000t, cv=21%). According to the assessment the stock of mackerel is stable and is fished below its potential. However, since in the last two years acoustic surveys haven't taken place, a precautionary TAC of 31,000t has been set.

A Structured Production Model by Age is used to evaluate the stock status. The model was implemented using a special code for automatic differentiation software (ADMB), describing the population dynamics between 1990 and 2017. The adjustment was made with: (a) abundance values from ages 3 to 10 (years 1996, 1997, 2000 and 2013) and age 2 (2012) derived from acoustic estimation campaigns; (b) annual returns; and (c) proportions by age in the catches. In the period 1990 - 2017, the biomass of all the age groups at August 15 would have varied between 99,000 and 204,000 tons (average = 152,000 t, C.V. = 21%); and recruitment was set up (at November 15), between 85,000 and 167,000 t (average = 125,000 tons, C.V. = 22%). From an analysis of SSB, biological reference points were defined. Target Reference Point were set up at F60 for SSB while the one obtained by applying the F40 rate was adopted as Biological Reference Point Limit. Assuming recruitments equal to the average (274 million individuals), the spawning biomass corresponding to the F60 rate = 0.31 would be 89,000 t (Target Biomass); while that corresponding to F40 = 0.79 would be 58,000 t (Biomass Limit). Simulations were carried out to evaluate the possible evolution of the stock considering different intensities of exploitation and the risks of biological collapse. The projections were made based on the total biomass value estimated at the beginning of the last year with fishing (137,590 t), with a standard

deviation of 18,800 t (C.V. = 13.7%). The predicted yields for the year 2018 varied between 25,000 t and 54,000 t, according to the exploitation rate investigated. The results of the stock status allow to conclude that the situation of the southern stock continues stable and that the exploitation of it is below its potential; Although a catch of 40,000t during 2018 would constitute a lower risk therefore a TAC of 31,000 tons is suggested with a precautionary approach. In recent years, this value has been established by the Federal Fisheries Council as the Maximum Allowable Catch (Resolution CFP No. 7/2014, 9/2015, 13/2016 and 11/2017).

Therefore, the assessment team can conclude that the stock is above reference points and **Clause C1.2 is met**.

References
Buratti, Claudio Cesar; ORLANDO, Paula; GARCIARENA, Alejandro David. Estado de la población de caballa al sur de 39° s y recomendaciones de capturas biológicamente aceptables durante el año 2018. https://www.inidep.edu.ar/solicitud-de-informes-catalogo/ito-2018.html
Standard clauses 1.3.2.2