IFFO RS V2.0

FISHERY ASSESSMENT METHODOLOGY AND TEMPLATE REPORT

Fishery Under Assessment	**Skipjack tuna (*Katsuwonus pelamis*)**
Date	**April 2019**
Assessor	**Jim Daly**

IFFO RS Ltd, Unit C, Printworks, 22 Amelia Street, London, SE17 3BZ, United Kingdom

Application details and summary of the assessment outcome				
Name: Sarval Bio-Industries Noroeste S.A.U				
Address:				
Country: Spain & Portugal		**Zip:**		
Tel. No.		**Fax. No.**		
Email address:		**Applicant Code**		
Key Contact:		**Title:**		

Certification Body Details				
Name of Certification Body:		**SAI Global Ireland**		
Assessor Name	**Peer Reviewer**	**Assessment Days**	**Initial/Surveillance/ Re-approval**	**Whole fish / By-product**
Jim Daly	Vito Romito	0.5	SURV 1	By-product
Assessment Period	2018			

Scope Details	
Management Authority (Country/State)	Spain & Portugal
Main Species	Skipjack tuna (*Katsuwonus pelamis*)
Fishery Location	FAO Area 27, 34, 47 (Eastern Atlantic)
Gear Type(s)	Longline, pole-lines, purse seine
Outcome of Assessment	
Overall Outcome	Pass
Clauses Failed	None
Peer Review Evaluation	Approve
Recommendation	Pass

Assessment Determination

Stock assessments for East and West Atlantic skipjack stocks were conducted in 2014 using catch data available to 2013. A previous assessment of skipjack stocks was conducted in 2008. This report covers the most recent information on the state of the stocks (ICCAT website accessed 30.04.19).

Skipjack reproductive potential is considered to be high because it reaches sexual maturity in around one year and spawns opportunistically in warm waters above 25°C throughout the year. An analysis of East Atlantic stock tagging data has confirmed that the growth of skipjack was quicker in sub-tropical waters than in equatorial waters where it produces most of its spawn.

Total catches of skipjack throughout the Atlantic Ocean (including catches of "faux poisson" landed in Côte d'Ivoire) remain high, reaching 265,565 t in 2017. Preliminary estimates of catches made in 2017 in the Eastern Atlantic amounted to 242,289t, an increase of about 91% as compared to the average of 2005-2009. In the West Atlantic the major fishery is the Brazilian bait boat fishery, followed by the Venezuelan purse seine fleet. The preliminary estimates of catches in 2017 made in the West Atlantic amounted to 23,276 t. Fishery removals of the species under assessment are included in the stock assessment process.

Several assessment methods, conventional and non-conventional (based solely on catches, or on development of average size) have been applied to the two stocks of Atlantic skipjack. Several fishery indicators have also been analysed in order to track the development of the state of the stock over time.

Despite the absence of evidence that the Eastern stock is overexploited, but considering (1) the lack of quantitative findings for the Eastern stock assessment, and (2) pending the submission of additional data (including on Fish Aggregating Devices (FADs) and on ongoing tagging surveys necessary to improve the stock assessment, the Committee (ICCAT Scientific Committee) recommends that catch and effort levels do not exceed the level of 2012-2013 catch or effort. The provisional catch (Eastern stock) in 2017 exceeds this level by 11%. There is no evidence of a fall in yield, or in the average weight of individuals captured. The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy).

For the Western Atlantic, the Committee recommends that catches should not be allowed to exceed MSY.

It is expected that the five year Atlantic Tropical Tuna Tagging Programme (AOTTP), may improve understanding of both skipjack stock structures and movement patterns. ICCAT-AOTTP will tag 120,000 tropical tuna overall with conventional 'spaghetti' tags. Of these 20% should be double-tagged, allowing 'tag-shedding rates' to be estimated. 10,000 will be tagged chemically, a procedure which makes ageing the fish easier, while smaller numbers (approximately 600) will be tagged with 'pop-up' and 'archival' electronic tags.

Skipjack tuna has been assessed as a species of least concern (IUCN Red List) and is not on the current list of CITES endangered species (websites accessed 30.04.19).

Skipjack tuna in the assessment area (East Atlantic) is approved for the production of fishmeal and fish oil under the IFFO-RS v 2.0 by-products standard.

Peer Review Comments

Stock assessments for East and West Atlantic skipjack stocks were conducted in 2014 using catch data available to 2013. Data used for the stock assessment includes retained catches considered to be generally well known for the major industrial fleets. Catch-and-effort series are available for various industrial and artisanal fisheries. Average fish weight, catch at size and age and catch at length trends are also available. Improvements including additional data on FADs and tagging data should be included in future stock assessments.

The stock assessment indicates that it is not likely the East and West Atlantic skipjack stock is overfished and not likely that overfishing is occurring.

2

The Peer Reviewer agrees that Skipjack tuna in the assessment area (East Atlantic) should be approved for the production of fishmeal and fish oil under the IFFO-RS v 2.0 by-products standard.

Notes for On-site Auditor

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

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

Species-Specific Results

Category	Species	% landings	Outcome (Pass/Fail)	
Category A			A1	
			A2	
			A3	
			A4	
Category B				
Category C	Skipjack tuna (*Katsuwonus pelamis*)	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.

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.

3

SPECIES CATEGORISATION

The following table should be completed as fully as the available information permits. All species regularly* caught in the fishery 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. **Type 1 species must represent 95% of the total catch. Type 2 species may represent a maximum of 5% of the 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
Skipjack tuna	*Katsuwonus pelamis*	FAO 27, 34, 47	N/A	EU/ICCAT	C

Category A species are assessed through an examination of the data collection, stock assessment, management measures, and stock status relating to the species. Category B species are assessed using a risk-based assessment covering similar areas. Category C species are assessed on stock status only. Category D species are assessed using a PSA analysis as described in the relevant section of this document.

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.

4

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		Skipjack tuna *Katsuwonus pelamis*	
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**

Evidence (Eastern Stock only FAO 27, 34, 47):

C1.1

Data includes retained catches considered to be generally well known for the major industrial fleets. Catch-and-effort series are available for various industrial and artisanal fisheries. Average fish weight, catch at size and age and catch at length trends are also available. Improvements including additional data on FADs and tagging data should be included in future stock assessments.

The ICCAT Scientific Committee has analyzed two standardized fishery indices from the EU-purse seine fishery: an index which accounts for skipjack caught in free schools off the coast of Senegal up to 2006 and the second index which characterizes fish captured off FADs and in free schools in the equatorial area.

The absence of definition of a fishing effort associated with FADs for purse seiners, the difficulty of taking into account changes in catchability, the lack of marked contrast in datasets despite the historical development of fishing pressure and the fact that catches and CPUEs have increased in parallel in recent years are constraints for effective use of classic stock assessment methods. The Committee has also highlighted that it is difficult to estimate MSY in conditions of continuous growth of catches without having reliable indicators on the response of the stock to these increases.

The estimated value of MSY, according to the catch-only assessment model, has tended to increase in recent years but at a growth rate that is lower than that observed for catches for the same period. However, according to this model, although it is unlikely that the Eastern skipjack stock is overexploited, current catches could be at, even above, the MSY. Fishery removals of skipjack tuna are included in the stock assessment process.

C1.2

Taking into account the biological and fishery specificities of skipjack, the Committee has attempted to develop Harvest Control Rules based on the proportion of individuals whose sizes are larger than the reference sizes (e.g. size at sexual maturity, the size corresponding to the length which maximizes the catches for a given cohort, etc.). The Committee recommends, however, that due to the multi-species nature of the tropical tuna fishery, HCRs on skipjack should take into account the consequences of targeting skipjack on other species of tropical tunas.

Despite the absence of evidence that the Eastern stock is overexploited, but considering (1) the lack of quantitative findings for the Eastern stock assessment, and (2) pending the submission of additional data (including on Fish Aggregating Devices (FADs) and ongoing tagging surveys) the Committee (ICCAT Scientific Committee) recommends that catch and effort levels do not exceed the levels of 2012-2013 catch or effort. The provisional catch in 2017 (provisional figures) exceeds this level by 11%: (**Table 1**):

Table 1: ICCAT (website accessed 30.04.19) Summary Table (Atlantic Skipjack) **R1**

ATLANTIC SKIPJACK SUMMARY TABLE

	East Atlantic	West Atlantic
Maximum Sustainable Yield (MSY)		Around 30,000-32,000 t
Current yield (2017[1])	242,289 t	23,276 t
Current Replacement Yield	Unknown	Somewhat below 32,000 t
Relative Biomass (B_{2013}/B_{MSY})	Likely >1	Probably close to 1.3
Mortality due to fishing (F_{2013}/F_{MSY})	Likely <1	Probably close to 0.7
Stock Status		
Overfished:	Not likely	Not
Overfishing:	Not likely	Not
Management measures in force	Rec. 16-01	None

[1] Reports of catches for 2017 should be considered provisional.

For the Eastern Stock the Committee has concluded that it is not likely the stock is overfished and not likely that overfishing is occurring. The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy),

References

R1 ICCAT Skipjack tuna Executive Summary 2014/2020:
https://iccat.int/Documents/SCRS/ExecSum/SKJ_ENG.pdf Website accessed 30.04.19
R2 IUCN Red List http://www.iucnredlist.org/details/170310/0
R3 ICCAT AOTTP https://www.iccat.int/AOTTP/en/
Standard clauses 1.3.2.1 - 1.3.2.4

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 A - Determining Resilience Ratings

The assessment of Category B species described in this assessment report template utilises a resilience rating system suggested by the American Fisheries Society. This approach was chosen because it is also used by FishBase, and so the resilience ratings for many thousands of species are freely available online. As described by FishBase, the following is the process used to arrive at the resilience ratings:

"*The American Fisheries Society (AFS) has suggested values for several biological parameters that allow classification of a fish population or species into categories of high, medium, low and very low resilience*

6

or productivity (Musick 1999). If no reliable estimate of r_m (see below) is available, the assignment is to the lowest category for which any of the available parameters fits. For each of these categories, AFS has suggested thresholds for decline over the longer of 10 years or three generations. If an observed decline measured in biomass or numbers of mature individuals exceeds the indicated threshold value, the population or species is considered vulnerable to extinction unless explicitly shown otherwise. If one sex strongly limits the reproductive capacity of the species or population, then only the decline in the limiting sex should be considered. We decided to restrict the automatic assignment of resilience categories in the Key Facts page to values of K, t_m and t_{max} and those records of fecundity estimates that referred to minimum number of eggs or pups per female per year, assuming that these were equivalent to average fecundity at first maturity (Musick 1999). Note that many small fishes may spawn several times per year (we exclude these for the time being) and large live bearers such as the coelacanth may have gestation periods of more than one year (we corrected fecundity estimates for those cases reported in the literature). Also, we excluded resilience estimates based on r_m (see below) as we are not yet confident with the reliability of the current method for estimating rm. If users have independent r_m or fecundity estimates, they can refer to Table 1 for using this information."

Parameter	High	Medium	Low	Very low
Threshold	0.99	0.95	0.85	0.70
r_{max} (1/year)	> 0.5	0.16 - 0.50	0.05 - 0.15	< 0.05
K (1/year)	> 0.3	0.16 - 0.30	0.05 - 0.15	< 0.05
Fecundity (1/year)	> 10,000	100 - 1000	10 - 100	< 10
t_m (years)	< 1	2 - 4	5 - 10	> 10
t_{max} (years)	1 - 3	4 - 10	11 - 30	> 30

[Taken from the FishBase manual, "Estimation of Life-History Key Facts", http://www.fishbase.us/manual/English/key%20facts.htm#resilience]

Appendix B – Background on the 5% catch rule

The proposed fishery assessment methodology uses a species categorisation approach to divide the catch in the assessment fishery into groups. These groups are:

- **Category A:** "Target" species with a species-specific management regime in place.
- **Category B:** "Target" species with no species-specific management regime in place.
- **Category C:** "Non-target" species with a species-specific management regime in place.
- **Category D:** "Non-target" species with no species-specific management regime in place

The distinction between 'target' and 'non-target' species is made to enable the assessment to consider the impact of the fishery on all the species caught regularly, without requiring a full assessment be conducted for each. Thus 'target' species are subjected to a more detailed assessment, while 'non-target' species are

considered more briefly. For the purposes of the IFFO RS fishery assessment, 'target' and 'non-target' species are defined by their prevalence in the catch, by weight. Applicants must declare which species are considered 'target' species in the fishery, and the combined weight of these must be at least 95% of the annual catch. The remaining 5% can be made up of 'non-target' species. Note also that ETP species are considered separately, irrespective of their frequency of occurrence in the catch.

The proposed use of 5% as a limit for 'non-target' species is one area in which feedback is being sought via the public consultation. The decision to propose a value of 5% ensures consistency with other fishery assessment programmes, such as the MSC which uses 5% to distinguish between 'main' and 'minor' species (see MSC Standard, SA3.4 and GSA3.4.2); and Seafood Watch, which uses 5% when defining the 'main' species for the assessment (see Seafood Watch Standard, Criterion 2). The value is also consistent with the approached used in Version 1 of the IFFO RS Standard, in which up to 5% of the raw material could be comprised of 'unassessed' species.

Comments on this proposition are welcomed along with any other feedback on the proposed approach.