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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



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Fishery Under Assessment	Yellowfin Tuna Western Indian Ocean
Date	February 2020
Assessor	Jim Daly
Stock Pass	FAO 51
Stock Fail	

Application details and summary of the assessment outcome				
Name: Marine Biotechnology Products				
Address:				
Country: Mauritius		Zip:		
Tel. No.:		Fax. No.:		
Email address:		Applicant Code:		
Key Contact: Arasen Moodelly		Title: Quality Manager		
Certification Body Details				
Name of Certification Body:		SAI Global Ltd		
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval	Whole fish/ By-product
Jim Daly	Conor Donnelly	0.5	SURV 1	By-product
Assessment Period	2020			

Scope Details	
Management Authority (Country/State)	Indian Ocean Tuna Commission (IOTC)
Main Species	Yellowfin Tuna <i>Thunnus albacares</i>
Stock:	FAO 51
Fishery Location	Western Indian Ocean
Gear Type(s)	Purse Seine, longline
Outcome of Assessment	
Peer Review Evaluation	AGREE
Recommendation	APPROVE

Assessment Determination

If any species is categorised as Endangered or Critically Endangered on IUCN's Red List, or if it appears in the CITES appendices, it cannot be approved for use as IFFO RS raw material. Yellowfin tuna does not appear as Endangered or Critically Endangered on IUCN's Red List, nor does it appear in CITES appendices; therefore, Yellowfin tuna is eligible for approval for use as IFFO RS by-product raw material.

One stock forms part of this assessment:

- 1) FAO 51 Indian Ocean (West)

Fishery removals of the stock are considered in the various stock assessment processes so the stock **PASSES** Clause C1.1.

For Yellowfin tuna in the assessment area current spawning biomass is considered to be above the interim limit reference point of $0.4 * SB_{MSY}$. Removals are not considered to be negligible therefore, the stock **PASSES** Clause C1.2.

In order to be approved, the stock assessed must pass both Clause C1.1 and C1.2; therefore:

- 1) Yellowfin tuna is **APPROVED** by SAI Global assessors in the assessment area for the production of fishmeal and fish oil under the current IFFO RS v 2.0 by-products standard.

Peer Review Comments

Notes for On-site Auditor

HOW TO COMPLETE THIS ASSESSMENT REPORT

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
Yellowfin tuna	<i>Thunnus albacares</i>	FAO 51	N/A	IOTC	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		Yellowfin tuna <i>Thunnus albacares</i>
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 Evidence		
This assessment covers Yellowfin tuna harvested from the area (FAO 51) outlined in Figure 1:		

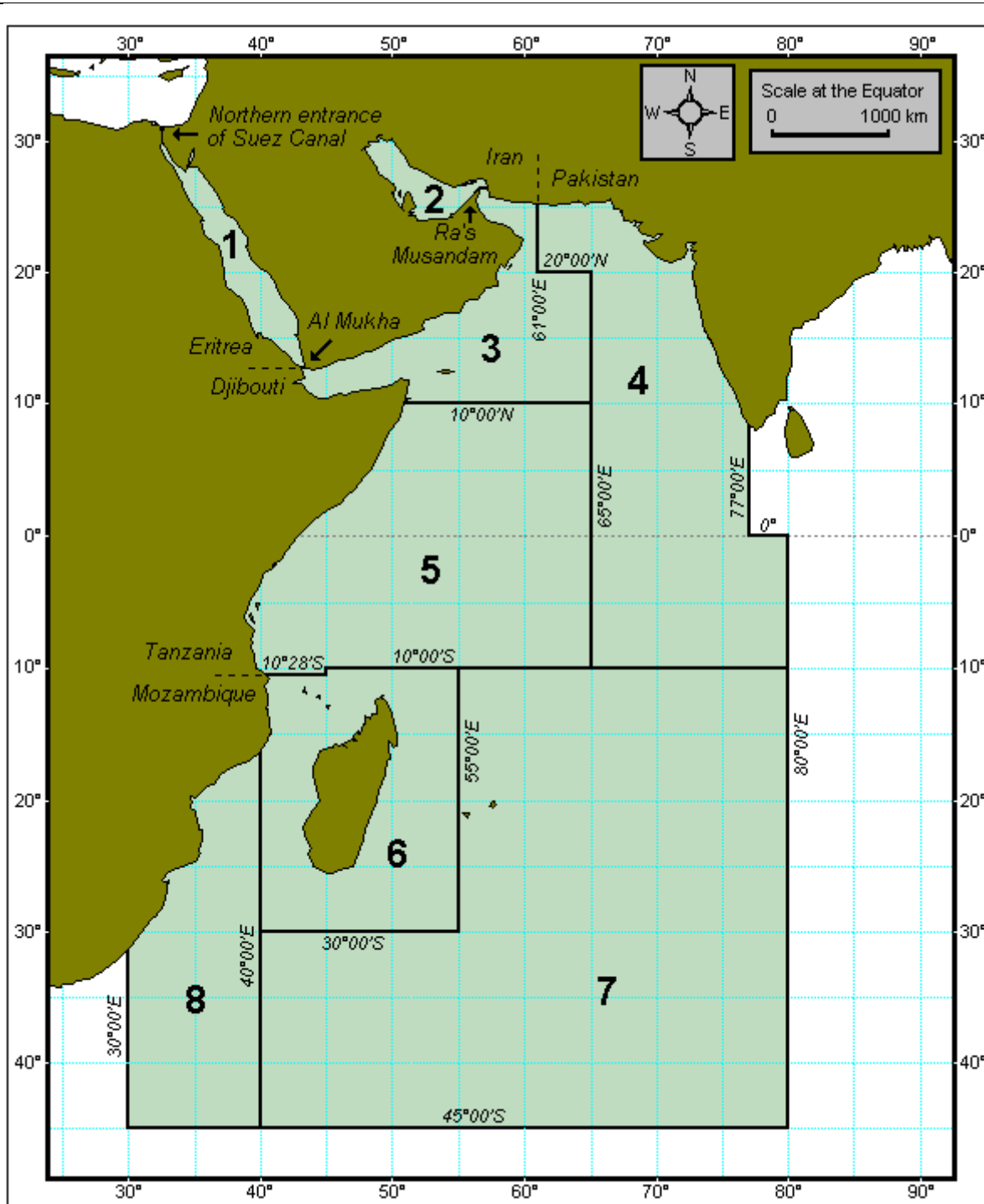


Figure 1: Map of the assessment area (FAO 51 Indian Ocean West) **R1**

A new stock assessment was carried out for yellowfin tuna in the IOTC area of competence in 2018 using the Stock Synthesis III (SS3) model that provides scientific advice for three tropical tunas stocks in the Indian Ocean.

The model uses four types of data: catch, size frequency, tagging and joint longline CPUE indices. The new stock assessment is somewhat more pessimistic than the 2016 assessment due to the steeper declining trend of composite longline CPUE series and sustained large catches in recent years.

Total catch has remained relatively stable at levels around estimated MSY (390,000t - 410,000 t) since 2012 (**Figure 2**):

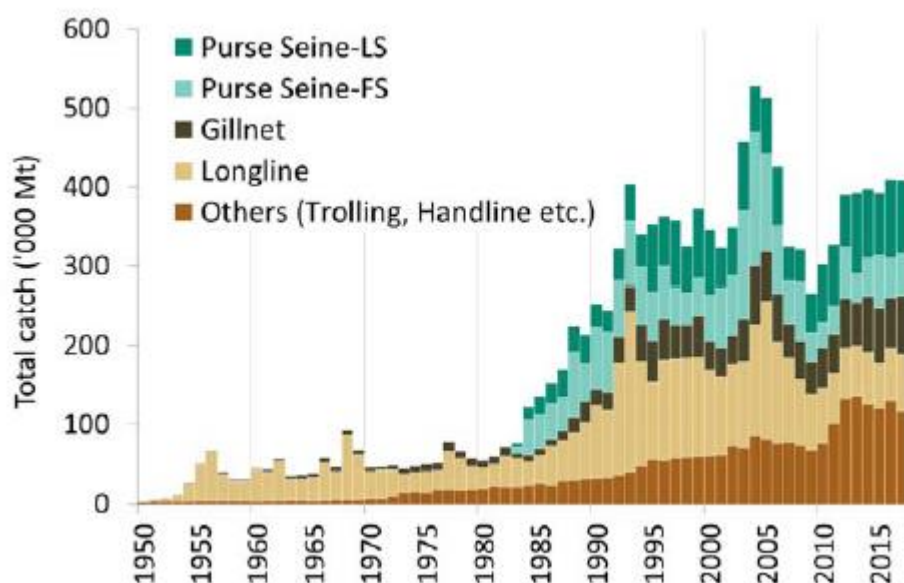


Figure 2: Annual catches of yellowfin tuna by gear (1950-2017) **R2**

C1.2 Evidence

Spawning stock biomass in 2017 was estimated to be 30.0% of unfished levels. The 2018 assessment estimates SB_{2017}/SB_{MSY} at 0.83 (0.74-0.97) and F_{2017}/F_{MSY} at 1.20 (1.00 -1.71) (**Table 1**, **Figure 3**):

Table 1: Yellowfin tuna: Status of yellowfin tuna (*Thunnus albacares*) in the Indian Ocean. **R2**

Area ¹	Indicators		2018 stock status ³ determination
Indian Ocean	Catch 2017 ² :	409,567t	
	Average catch 2013–2017:	399,830 t	
	MSY (1000 t) (80% CI) ³ :	403 (339–436)	
	F_{MSY} (80% CI):	0.15 (0.13–0.17)	
	SB_{MSY} (1,000 t) (80% CI):	1069 (789–1387)	
	F_{2017}/F_{MSY} (80% CI):	1.20 (1.00–1.71)	
SB_{2017}/SB_{MSY} (80% CI):	0.83 (0.74–0.97)		
SB_{2017}/SB_0 (80% CI):	0.30 (0.27 – 0.33)		

¹ Boundaries for the Indian Ocean stock assessment are defined as the IOTC area of competence.

² Proportion of catch estimated or partially estimated by IOTC Secretariat for catches in 2017: 24%

³ Median and quantiles calculated from the uncertainty grid taking into account of weighting on models

It is noted by the IOTC that quantified uncertainty in stock status is likely underestimating underlying uncertainty of the assessment. The yellowfin tuna stock is determined by IOTC to remain overfished and subject to overfishing: (**Figure 3**):

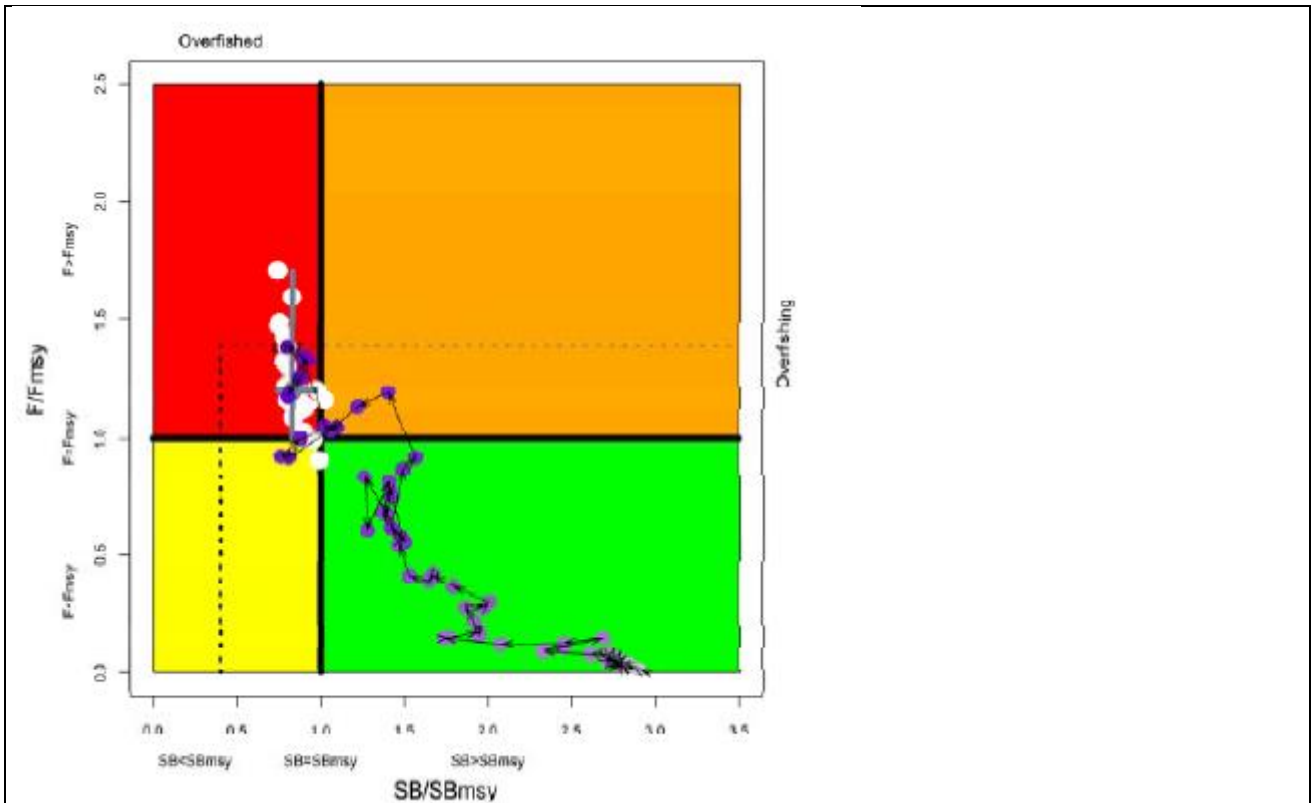


Figure 3: Yellowfin tuna: Grey line represents 80% confidence interval associated with 2017 stock status. Dotted black lines are interim limit reference points adopted by the Commission. White circles represent 2017 stock status for each grid run. **R2**

Current spawning biomass is considered to be 17 % below interim target reference point of SB_{MSY} and above the interim limit reference point of $0.4 * SB_{MSY}$ (**Figure 3**).

A workplan has been developed to address the issues identified in the assessment review, aimed at increasing the Committee's ability to provide more concrete and robust advice by the 2019 meeting of the Scientific Committee (not yet published).

References

- R1:** Map of the assessment area (Indian Ocean West) <http://www.fao.org/fishery/area/Area51/en>
R2: IOTC Executive Summary Yellowfin Tuna (Dec 2018):
https://www.iotc.org/sites/default/files/documents/science/species_summaries/english/Yellowfin2018.pdf

Standard clauses 1.3.2.2