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Global Standard for Responsible Supply of Marine Ingredients

Fishery Assessment Methodology and Template Report V2.0

Fishery Under Assessment	**Yellowfin tuna (*Thunnus albacares*) FAO 51 (Western Indian Ocean)**
Date	**May 2019**
Assessor	**Jim Daly**

Application details and summary of the assessment outcome				
Name: Marine Biotechnology Products (MBP)				
Address:				
Country: Mauritius		**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**
Jim Daly	Virginia Polonio	0.5	Re-approval	By-product
Assessment Period	2018-2019			

Scope Details	
Management Authority (Country/State)	IOTC
Main Species	Yellowfin tuna (*Thunnus albacares*)
Fishery Location	FAO 51 Indian Ocean
Gear Type(s)	Purse seine, longline, artisanal (hand line, gillnet, pole-and-line)
Outcome of Assessment	
Overall Outcome	Pass
Clauses Failed	None
Peer Review Evaluation	Pass
Recommendation	Approve

Assessment Determination

Indian Ocean Tuna Commission:

The Indian Ocean Tuna Commission (IOTC) is an intergovernmental organisation responsible for the management of tuna and tuna-like species in the Indian Ocean. The Commission has four key functions and responsibilities which enable it to achieve its objectives. They are drawn from the United Nations Convention on the Law of the Sea (UNCLOS), and include adopting, on the basis of scientific evidence, Conservation and Management Measures (CMMs) to ensure the conservation of stocks and to promote their 'optimum utilisation' throughout the IOTC Area of Competence.

Stock status:

The Commission has an interim plan for the rebuilding of this stock (Resolution 17/01) which is yet to be evaluated. On the weight-of-evidence available, the yellowfin tuna stock is determined to remain overfished and subject to overfishing.

As a fishery with a species-specific fishery management regime in place it has been assessed under clause C. Fishery removals of the species in the fishery under assessment are included in the stock assessment process. Current spawning biomass is considered to be below the interim target reference point SB_{MSY} however, the stock is considered to be above its interim limit reference point. Consequently, it passes clause C.

A work plan 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. The work plan is scheduled to start in January 2019 and aims at addressing issues identified by the WPTT (Working Party Tropical Tunas) and the external reviewer.

IUCN has categorised yellowfin tuna as a near-threatened species. The species does not appear in the current CITES appendices (both sites accessed 28.05.19).

This fishery by-product is recommended for approval against the IFFO RS standard.

Peer Review Comments

I consider we should be consistent with the other "stock/ fisheries" of the same species but we should make clear our rationales to pass the BP as the stock is not doing well in the last assessment.

Notes for On-site Auditor

Species-Specific Results

Category	Species	% landings	Outcome (Pass/Fail)	
Category A			A1	
			A2	
			A3	
			A4	
Category B				
Category C	Yellowfin tuna (*Thunnus albacares*)	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]

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	*Thunnus albacares*	Indian Ocean	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 *Thunnus albacares***	
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 C1.1-C1.2:

Scientific evidence shows large movements of yellowfin tuna, thus supporting the assumption of a single stock for the Indian Ocean. Spawning occurs mainly from December to March in the equatorial area with the main spawning grounds West of 75^0E. Newly recruited fish are primarily caught by the purse seine fishery on floating objects. Sizes exploited in the Indian Ocean range from 30cm to 180cm fork length. Smaller fish (juveniles) form mixed schools with skipjack tuna and juvenile bigeye tuna and are mainly limited to surface tropical waters, while larger fish are found in surface and sub-surface waters.

Purse seiners (free and associated schools) and longline fisheries still account for around 50% of total catches, while catches from artisanal gears have steadily increased since the 1980s. The main industrial fisheries (Purse seine, longline) are in the Western Indian Ocean (Seychelles, waters off Somalia) and the Mozambique Channel.

A new stock assessment was carried out for yellowfin tuna in the IOTC area of competence to update stock status undertaken in 2016. The stock assessment was carried out using Stock Synthesis III (SS3), a fully integrated model that is currently used to provide scientific advice for the three tropical tunas stocks in the Indian Ocean. The model uses four types of data: catch, size frequency, tagging and joint longline CPUE indices.

Fishery removals of the species in the fishery under assessment are included in the stock assessment process, the stock passes Clause C1.1.

Species-Specific Stock Assessments:

Total catch has remained relatively stable at levels around the estimated MSY since 2012 (i.e. between 390,000 t and 410,000 t). The 2018 stock 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**) **R4:**

Status of the Indian Ocean yellowfin tuna (YFT: *Thunnus albacares*) resource

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

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

On the weight-of-evidence available the yellowfin tuna stock is determined to remain overfished and subject to overfishing. The decline in stock status to below MSY reference level is not well understood due to various uncertainties. As a precautionary measure, the Commission should ensure that catches are reduced to end overfishing and allow SSB to recover to SSBMSY levels. At this stage, specific catch limits are not provided.

Current spawning biomass is considered to be below the interim target reference point SB_{MSY} however, the stock is considered to be above its interim limit reference point. Consequently, it passes clause C1.2.

A work plan 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. The work plan is scheduled to start in January 2019 and aims at addressing issues identified by the WPTT (Working Party Tropical Tunas) and the external reviewer.

References:

R1 Sustainable Fishing Partnership Agreements (SFPA's):
https://publications.europa.eu/en/publication-detail/-/publication/c8b5d962-0d38-11e7-8a35-01aa75ed71a1/language-en/format-PDF/source-37907030

R2 EU Fishing Quotas (2019):
Council Regulation (EU) No. 2019/124 fixing for 2018 the fishing opportunities for certain fish stocks and groups of fish stocks, applicable in Union waters and, for Union fishing vessels, in certain non-Union waters.

R3 FAO Species Fact Sheets (Yellowfin tuna)

http://www.fao.org/fishery/species

R4 IOTC Status of the Indian Ocean yellowfin tuna; Executive summary (2018): https://www.iotc.org/sites/default/files/documents/science/species_summaries/english/Yellowfin2018.pdf

R5 ANON (Dec 2016) IOTC Report Yellowfin Tuna (Supporting information): pp1-17 http://www.iotc.org/sites/default/files/documents/science/species_summaries/english/Yellowfin%20tuna%20Supporting%20Information.pdf

R6 ANON (updated Dec 2017) IOTC Report: Status of the Indian Ocean Yellowfin tuna resource: Executive summary pp 1-4 http://www.iotc.org/sites/default/files/documents/science/species_summaries/english/Yellowfin_tunaExecutive_Summary.pdf

R7 CITES Species Endangered list: http://checklist.cites.org/#/en (accessed 26.03.18)

R8 IUCN Red list: http://www.iucnredlist.org/search (accessed 26.03.18)

R9 MSC Track a Fishery: https://fisheries.msc.org/en/fisheries/search?q=certified+yellowfin (accessed 26.03.18)

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.