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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 <i>Thunnus albacares</i> FAO 61, 71 Pacific Northwest, West Central
Date	December 2019
Assessor	Jim Daly

Application details and summary of the assessment outcome				
Name: TCF Co Ltd				
Address:				
Country: Thailand		Zip:		
Tel. No.:		Fax. No.:		
Email address:		Applicant Code:		
Key Contact:		Title:		
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	Vito Romito	0.5	Surveillance 2	By-product
Assessment Period	2019			

Scope Details		
Management Authority (Country/State)	Western and Central Pacific Fisheries Commission (WCPFC)	
Main Species	Yellowfin tuna <i>Thunnus albacares</i>	
Stock:	Pacific Northwest, West Central	
Fishery Location	FAO 61, 71	
Gear Type(s)	Purse seine	
Outcome of Assessment		
Overall Outcomes:	Outcome	Clause(s) failed
1 Yellowfin tuna <i>Thunnus albacares</i>	PASS	NONE
Peer Review Evaluation	AGREE	
Recommendation	APPROVE	

Assessment Determination

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 IFFO RS raw material. Yellowfin tuna *Thunnus albacares* does not appear as Endangered or Critically Endangered on the IUCN Red List, nor does it appear in the CITES appendices; therefore, Yellowfin tuna *Thunnus albacares* is eligible for approval for use as IFFO RS raw material.

One stock forms part of this assessment:

- 1) Yellowfin tuna *Thunnus albacares* Pacific Northwest

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

For this stock the most recent estimated spawning stock biomass (SSB) had a probability of 8% (4 of 48 models) of being below Blim. Removals are not considered to be negligible therefore, the stock **PASSES** Clause C1.2.

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

- 1) Yellowfin tuna *Thunnus albacares* Pacific Northwest is **APPROVED** by the SAI Global assessment team for the production of fishmeal and fish oil under the IFFO-RS v 2.0 by-products standard.

Peer Review Comments

Catches and other assessment related data are included in the 2017 stock assessment. The stock has a relatively small probability of being below the limit reference point (i.e. 8%). The peer reviewer agrees that Yellowfin tuna *Thunnus albacares* Pacific Northwest 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

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.

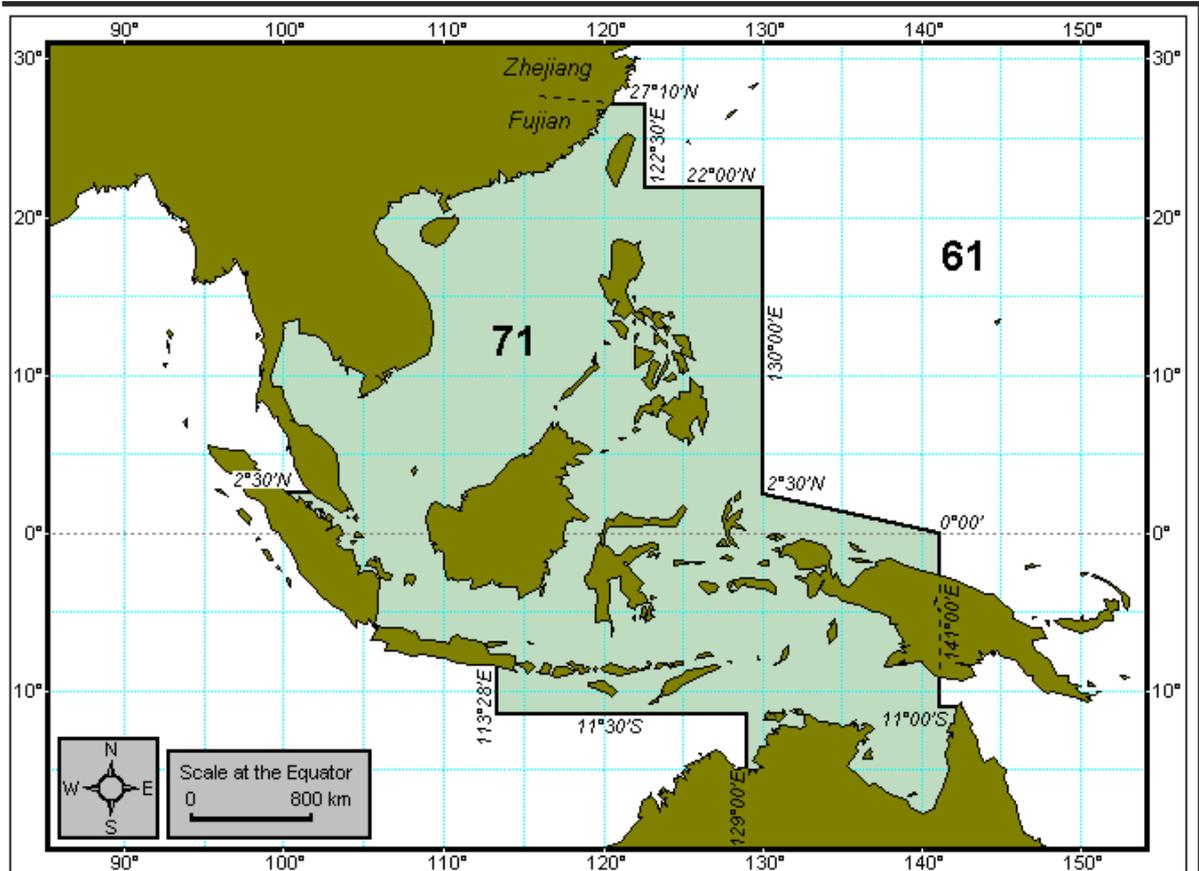
Category D: No species-specific management regime in place.

Common name	Latin name	Stock	% of landings	Management	Category
Yellowfin tuna	<i>Thunnus albacares</i>	Pacific Northwest	N/A	WCPFC	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:		See above	
C1.1	Evidence C1.1: MAP This assessment covers the Pacific Northwest FAO 61, 71 as outlined in Figure 1 :		
			
Figure 1: Map of the assessment area FAO 61, 71 (R1).			

No stock assessment was conducted for WCPO yellowfin tuna in 2019. Therefore, the stock status description from WCPFC Scientific Committee (SC13) Meeting in 2017 is still current. Total yellowfin catches in 2018 were 666,971 mt (the second highest catch on record), a 2% decrease from 2017 and a 9% increase from the 2013-2017 average.

The Stock Assessment was based on a diagnostic case model (MULTIFAN-CL settings) with input data covering the period up to the end of 2015 and including information on CPUE, tagging data, size frequencies. In the assessment area yellowfin tuna are considered to constitute a single stock.

C1.2 2019 Current stock status:

The stock is initially projected to increase as recent estimated recruitments support adult stock biomass. Adult stock biomass is projected to decline slightly before again increasing. Projected fishing mortality is below FMSY (median F2020/FMSY = 0.74, the risk of F2020 > FMSY = 3%) and projected median spawning biomass is above LRP (SB2020/SBF=0 = 0.2) (median SB2020/SBF=0 = 0.32; median SB2020/SBMSY = 1.33. Risk that SB2020 < LRP = 8%. **R2**

2016 Stock Assessment:

An uncertainty grid was used to characterize stock status, summarize reference points, and calculate probability of breaching adopted spawning biomass limit reference point (0.2*SBF=0) and the probability of Frecent being greater than FMSY. Reference points defined for the stock comprise MSY biomass; fishing mortality reference points and a limit reference point (**Table 1**):

Table 1. Summary of reference points over 48 models in the structural uncertainty grid retained for management advice using divisors of 20 and 50 for the weighting on size composition data. **R3**

	Mean	Median	Min	10%	90%	Max
C_{latest}	611,982	612,592	606,762	607,517	614,237	614,801
MSY	670,658	670,800	539,200	601,480	735,280	795,200
$Y_{Frecent}$	646,075	643,400	534,400	586,120	717,880	739,600
F_{mult}	1.34	1.36	0.88	1.03	1.61	1.86
F_{MSY}	0.12	0.12	0.07	0.10	0.14	0.16
F_{recent}/F_{MSY}	0.77	0.74	0.54	0.62	0.97	1.13
SB_{MSY}	544,762	581,400	186,800	253,320	786,260	946,800
SB_0	2,199,750	2,290,000	1,197,000	1,366,600	2,784,500	3,256,000
SB_{MSY}/SB_0	0.24	0.24	0.15	0.18	0.28	0.34
$SB_{F=0}$	2,083,477	2,178,220	1,193,336	1,351,946	2,643,390	2,845,244
$SB_{MSY}/SB_{F=0}$	0.25	0.26	0.16	0.19	0.30	0.35
SB_{latest}/SB_0	0.33	0.34	0.18	0.23	0.42	0.45
$SB_{latest}/SB_{F=0}$	0.35	0.37	0.16	0.22	0.46	0.50
SB_{latest}/SB_{MSY}	1.40	1.39	0.80	1.02	1.80	1.91
$SB_{recent}/SB_{F=0}$	0.32	0.33	0.15	0.20	0.41	0.46
SB_{recent}/SB_{MSY}	1.40	1.41	0.81	1.05	1.71	1.93

The Scientific Committee (SC 13) noted that the central tendency of relative recent spawning biomass was median (SBrecent/SBF=0) = 0.33 with a probable range of 0.20 to 0.41 (80% probable range), and a roughly 8% probability (4 out of 48 models) that recent spawning biomass had breached the adopted LRP with Prob((SBrecent/SBF=0) < 0.2) = 0.08.

Figure 2 presents Kobe plots summarizing results for each of the models used in the structural uncertainty grid:

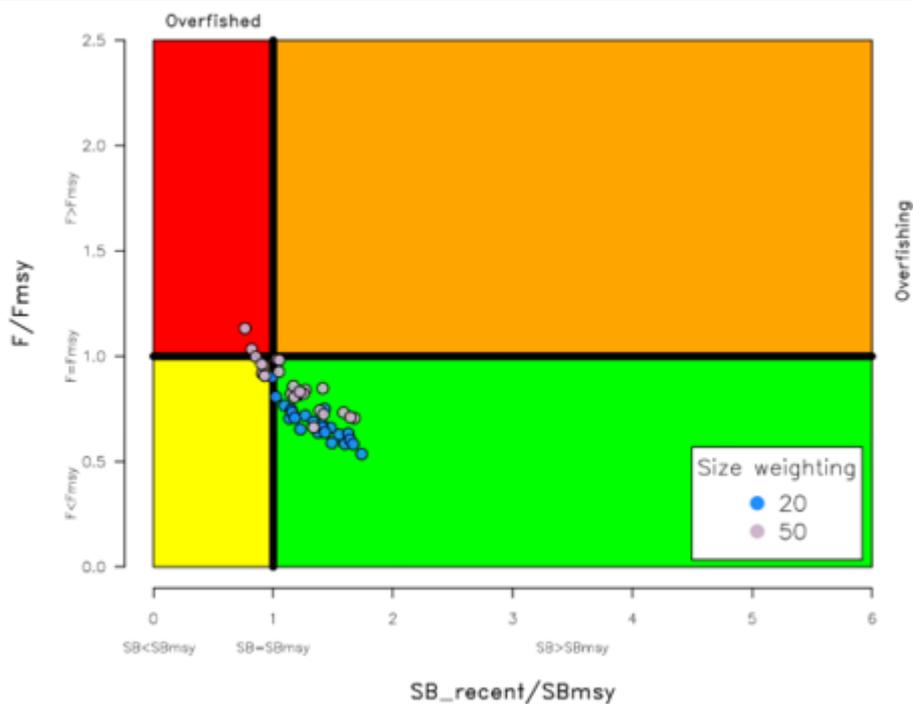


Figure 2: Kobe plot summarising results for each model in the structural uncertainty grid. Points represent SB_{recent}/SB_{msy} , the colours depict models in the grid with size composition weighting using divisors of 20 and 50. **R3**

The Scientific Committee (SC 13, 2017) concluded that the stock was not experiencing overfishing (96% probability) and that the stock was not in an overfished condition (92% probability).

References

- R1** MAP FAO 61, 71: <http://www.fao.org/fishery/static/cwp/handbook/annex/maps/>
R2 WCPFC Yellowfin tuna current stock status and management advice 13pp (2019): <https://www.wcpfc.int/doc/02/yellowfin-tuna>
R3 WCPFC Scientific Committee SC 13 (2017): <https://www.wcpfc.int/meetings/sc13>

Standard clauses 1.3.2.2