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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	Bigeye tuna <i>Thunnus obesus</i> FAO 71, 77
Date	October 2019
Assessor	Jim Daly

Application details and summary of the assessment outcome				
Name: Piyo Bhokabhan				
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/R e-approval	Whole fish/ By-product
Jim Daly	Conor Donnelly	0.5	Initial	By-product
Assessment Period	2019			

Scope Details			
Management Authority (Country/State)		The Western and Central Pacific Fisheries Commission (WCPFC)	
Main Species		Bigeye tuna <i>Thunnus obesus</i>	
Stock:		Western and Central Pacific Ocean	
Fishery Location		Western and Central Pacific FAO 71,77	
Gear Type(s)		Purse seine	
Outcome of Assessment			
Overall Outcomes:		Outcome	Clause(s) failed
1	Western and Central Pacific FAO 71,77 Stock Bigeye tuna	PASS	NONE
Peer Review Evaluation		Agree with assessment outcome	
Recommendations		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. Bigeye tuna *Thunnus obesus* has been assessed as Vulnerable on IUCN's Red List. The species does not appear in the CITES appendices; therefore, Bigeye tuna *Thunnus obesus* is eligible for approval for use as an IFFO RS raw material.

For Bigeye tuna *Thunnus obesus* in the assessment area fishery removals are considered in the assessment process so the stock **PASSES** Clause C1.1.

For Bigeye tuna *Thunnus obesus* in the assessment area the most recent estimated spawning stock biomass (SSB) is above Blim; 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, Bigeye tuna *Thunnus obesus* in the assessment area **PASSES** and is approved for use by the assessment team for the production of fishmeal and fish oil under IFFO-RS v 2.0 by-products standard.

Peer Review Comments

Agree with assessment outcome

Notes for On-site Auditor

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
Bigeye tuna	<i>Thunnus obesus</i>	FAO 71, 77	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		Bigeye tuna <i>Thunnus obesus</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

C1.1:

The Western and Central Pacific Fisheries Commission (WCPFC) manages the stock in the assessment area FAO 71, 77:

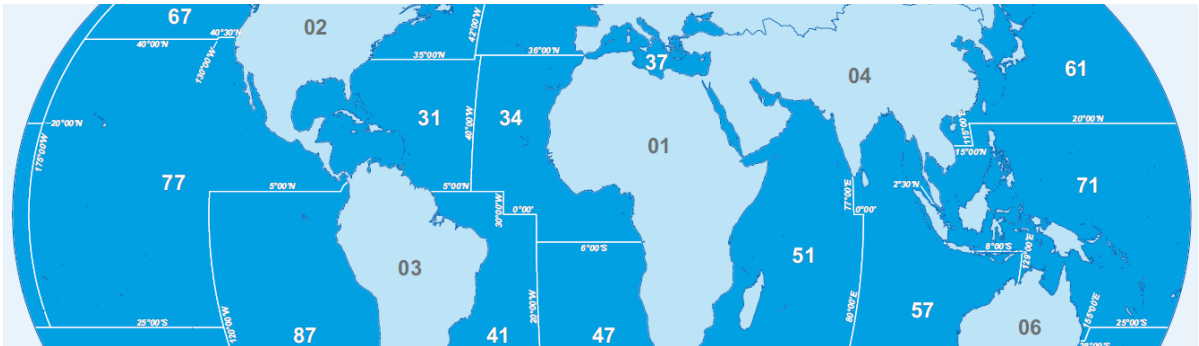


Figure 1 Map of the assessment area R1

WCPFC's Scientific Committee (SC15) met in August 2019 and reported on latest catch advice. Bigeye catch for 2018 (142,402 mt - 5%) was lower than the previous 10-year average, but around 15,000 mt higher than 2017. SC15 also noted that no new assessment was undertaken since 2015 therefore, stock assessment advice from SC14 should be maintained.

Population indicators used in the 2018 (SC14) stock assessment included:

Total catch by gear, nominal CPUE trends, spatial distribution of catch and associated trends, size composition of the catch and trends in average size. Stock projections were performed based upon actual fishing levels by fleets in 2015 to 2019, based upon the assumption that levels of effort or catch would remain constant at 2015 levels.

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

C1.2:

Median values of relative recent (2012-2015) spawning biomass depletion ($S_{B\text{recent}}/S_{BF=0}$) and relative recent (2011-2014) fishing mortality ($F_{\text{recent}}/F_{MSY}$) over an uncertainty grid of 36 models were used to define stock status.

Values of the upper 90th and lower 10th percentiles of empirical distributions of relative spawning biomass and fishing mortality from the uncertainty grid were used to characterize the probable range of stock status.

Kobe plots summarising the results for each of the models in the structural uncertainty grid were provided:

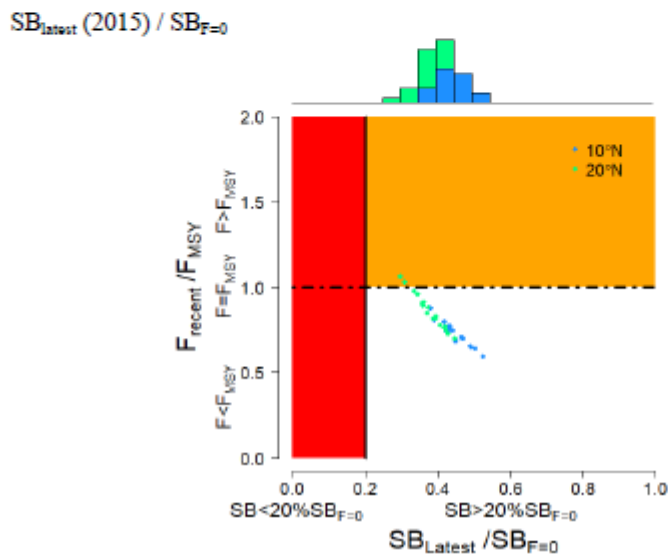
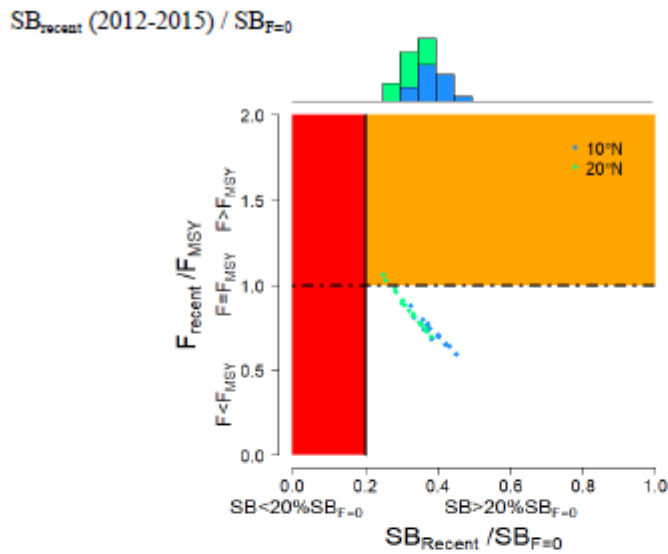


Figure 2: Majuro plot summarising results for each of the models in the structural uncertainty grid. The plots represent estimates of stock status in terms of spawning biomass depletion and fishing mortality. The red zone represents spawning biomass levels lower than the agreed limit reference point (solid black line). Orange region is for fishing mortality greater than FMSY (black dashed line).

In the upper panel (Figure 2) points represent $SB_{recent}/SB_{F=0}$, where SB_{recent} is the mean SB over 2012-2015. In the lower panel, the points represent $SB_{latest}/SB_{F=0}$, where SB_{latest} is from 2015. In both panels colors depict models in the grid with the 10°N and 20°N regional structures. All models estimated stock above the limit reference point, 20%SBF=0:

The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and PASSES Clause C1.2.

References:

R1 Map of the assessment area: FAO Major Fishing Areas: <https://www.newsea.dk/info/fao-fishing-areas>
 R2 WCPFC Bigeye tuna (2018): <https://www.wcpfc.int/current-stock-status-and-advice>

R3 WCPFC Scientific Committee SC15 (Sept 2019 Summary Report 273pp):

<https://www.wcpfc.int/meetings/sc15>

R WCPFC Scientific Committee SC1 Summary Report (Aug 2018 308pp):

<https://www.wcpfc.int/node/32155>

Standard clauses 1.3.2.2