MarinTrust Standard V2

By-product Fishery Assessment Report: Big Eye Tuna FAO 51

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Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Bigeye tuna, *Thunnus obesus*
	Geographical area:	FAO Area 51 Western Indian Ocean
	Country of origin of the product:	El Salvador (Flag country: El Salvador, Ecuador, Spain, Panama)
	Stock:	Indian Ocean bigeye tuna
Date	23/09/2021	
Report Code	BP195	
Assessor	Virginia Polonio	
Country of origin of the product - PASS	El Salvador (Flag country: El Salvador, Ecuador, Spain, Panama)	
Country of origin of the product - FAIL	NA	

Application details and summary of the assessment outcome			
Name:			
Address:			
Country: El Salvador		Zip:	
Tel. No.:		Fax. No.:	
Email address:		Applicant Code:	
Key Contact:		Title:	
Certification Body Details			
Name of Certification Body:		Global Trust Certification	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Virginia Polonio	Geraldine Criquet	0.5	Initial
Assessment Period	To September 2021		

Scope Details	
Main Species	Bigeye tuna, *Thunnus obesus*
Stock	FAO Area 51 Western Indian Ocean
Fishery Location	El Salvador (Flag country: El Salvador, Ecuador, Spain, Panama)
Management Authority (Country/ State)	Indian Ocean Tuna Commission/ Flag country: El Salvador, Ecuador, Spain, Panama
Gear Type(s)	Purse seine and longlines
Peer Review Evaluation	Agree with the assessor's recommendation of approval.
Recommendation	**APPROVED**

Table 2. Assessment Determination

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 Marin Trust raw material. Bigeye tuna, *Thunnus obesus* does not appear as Endangered or Critically Endangered on IUCN's Red List, nor does it appear in CITES appendices, therefore Bigeye tuna, (*Thunnus obesus*) is eligible for approval for use as Marin Trust by-product raw material. Bigeye tuna in the western Indian Ocean is managed at the international level by the Indian Ocean Tuna Commission (IOTC) which is an intergovernmental organisation responsible for the management of tuna and tuna-like species in the Indian Ocean. In 2019 a new stock assessment was carried out for bigeye tuna in the IOTC area of competence to update the stock status undertaken in 2016. Therefore, the stock is subject to specific management regime and reference points are available to define the stock status relative to. Therefore, it was assessed under Category C. The most recent assessment (2019) indicates that the stock status determination changed qualitatively in 2020 to not overfished but subject to overfishing. In order to be approved, the stock assessed must achieve a pass in both clauses C1.1 and C1.2. Therefore, Indian Ocean Bigeye tuna, *Thunnus obesus* is **APPROVED** for the production of fishmeal and fish oil under the current Marin Trust v 2.0 by-products standard.
Fishery Assessment Peer Review Comments
The assessor correctly classified the Indian Ocean bigeye tuna stock as category C, reference points or proxies are defined to assess status of the stock relative to. Fishery removals are included in the stock assessment process so the stock PASSES Clause C1.1. The IO bigeye stock is considered, in its most recent stock assessment, to have a biomass above the limit reference point, it PASSES Clause C1.2. Therefore, the Indian Ocean bigeye tuna stock should be approved.
Notes for On-site Auditor

Species Categorisation

NB: If any species is categorised as Endangered or Critically Endangered on the IUCN Red List, or if it appears in CITES Appendix 1, it **cannot** be approved for use as an MARINTRUST raw material.

IUCN Redlist Category

By-product material from a species listed by IUCN (the International Union for Conservation of Nature) under the Red List for the following categories shall immediately fail the assessment;

- EXTINCT (E) AND EXTINCT IN THE WILD (EW)
- CRITICALLY ENDANGERED (CR) facing an extremely high risk of extinction in the wild.
- ENDANGERED (EN) facing a very high risk of extinction in the wild.

By-product material may be used from the following categories provided that all clauses in the MarinTrust standard are passed.

- VULNERABLE (VU) facing a high risk of extinction in the wild.
- NEAR THREATENED (NT) does not qualify for above now, but is close or is likely to qualify for, a threatened category in the near future.
- LEAST CONCERN (LC) Widespread and abundant.
- DATA DEFICIENT (DD) and NOT EVALUATED (NE)

Table 3 Species Categorisation Table

Common name	Latin name	Stock	Management	Category	IUCN Red List Category[1]	CITES Appendix 1[2]
Bigeye tuna	*Thunnus obesus*	Indian Ocean bigeye tuna	IOTC	C	VU	No

[1] https://www.iucnredlist.org/
[2] https://cites.org/eng/app/appendices.php

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.

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. Where a species fails this Clause, it should be assessed as a Category D species instead.

Species Name		**Bigeye tuna, *Thunnus obesus***	
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.	Yes
	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.	Yes
		Clause outcome:	**PASS**

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.

The fisheries removals are reported as commercial catches. Data are considered to be relatively reliable for the main industrial fleets targeting bigeye tuna, with the proportion of catches estimated or adjusted by the IOTC Secretariat relatively low. Therefore, each IOTC dataset (nominal catch, catch-and-effort, and length frequency) are assessed against IOTC reporting standards (Figure 1).

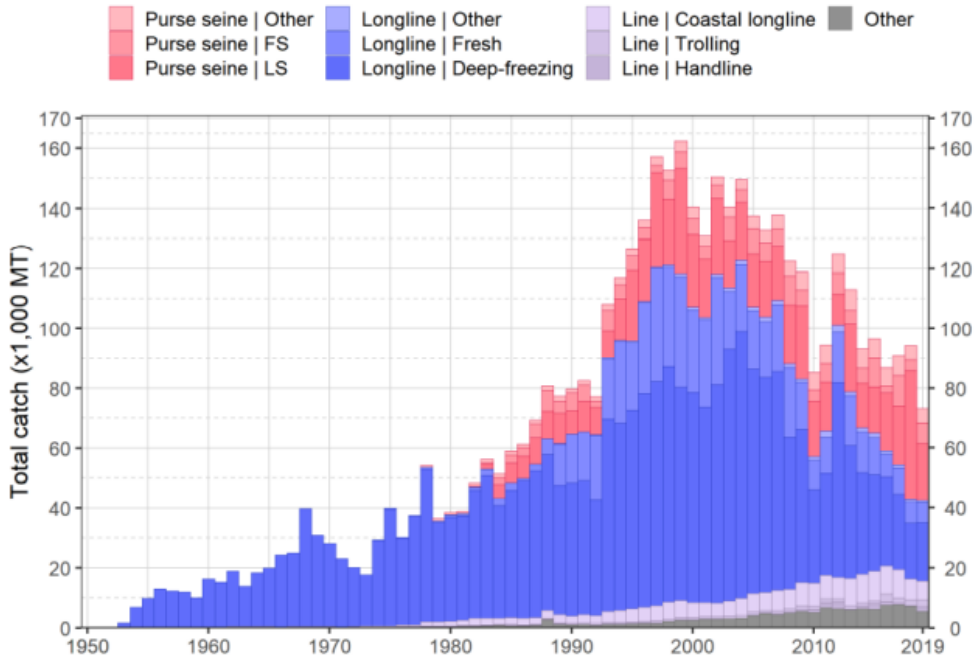

Figure 1. Annual time series of cumulative nominal catches (MT) by gear and by gear group for bigeye tuna during 1950–2019. LS = drifting log or FAD-associated school and FS = free-swimming school. Purse seine: coastal purse seine, purse seine, ring net; Longline: deep-freezing and fresh longlines, swordfish and sharks-targeted longlines; Line: coastal longline, trolling and handline; Other: all remaining fishing gears. Source: IOTC 2020

Therefore, fishery removals are considered in the stock assessment and it **PASSES** clause C1.1.

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.

The SS3 projections from the 2019 assessment show that there is a risk of breaching MSY-based reference points by 2021, and 2028 if catches are maintained at 2018 levels at the2018 selectivity and therefore size distribution of catch (Table 1). Should the management objective of maintaining biomass at levels higher than SBMSY with more than 50% probability in 2028 be pursued, the overall catch should be reduced 10% from 2018 levels (73,272 MT).

Table 1. Bigeye tuna: Stock Synthesis base case Indian Ocean assessment Kobe II Strategy Matrix. Probability (percentage) of violating the MSY-based target (top) and limit (bottom) reference points for constant catch projections (relative to average catch level from 2018 (81,413 MT); -10%, -20%, -30%, -40%) projected for 3 and 10 years. Source: IOTC stock assessment 2019.

Reference point and projection timeframe	Alternative catch projections (relative to the catch level from 2018) and weighted probability (%) scenarios that exceed reference point				
	60% (48,848 MT)	70% (56,990 MT)	80% (65,130 MT)	90% (73,272 MT)	100% (81,413 MT)
$SB_{2021} < SB_{MSY}$	51.1	53.3	54.2	57.1	58.9
$F_{2021} > F_{MSY}$	7.3	17.8	32	47.9	62.8
$SB_{2028} < SB_{MSY}$	8	19.5	35.1	49.1	60.8
$F_{2028} > F_{MSY}$	1.1	6.9	19.8	37.7	55.6
Reference point and projection timeframe	**Alternative catch projections (relative to the catch level from 2018) and probability (%) of violating MSY-based limit reference points (SB_{lim} = 0.5 SB_{MSY}; F_{Lim} = 1.3 F_{MSY})**				
	60% (48,848 MT)	70% (56,990 MT)	80% (65,130 MT)	90% (73,272 MT)	100% (81,413 MT)
$SB_{2021} < SB_{LIM}$	0	0	0	0	0
$F_{2021} > F_{LIM}$	6.0	11.0	17.0	28.0	39.0
$SB_{2028} < SB_{LIM}$	0.0	0.0	6.0	11.0	22.0
$F_{2028} > F_{LIM}$	0.0	6.0	17.0	22.0	39.0

Following the information in the table above and the results of the Kobe plot from 18 models, the median stock status has showed that the stock is not overfished, therefore, it is above biomass reference points and it **PASSES** clause C1.2.

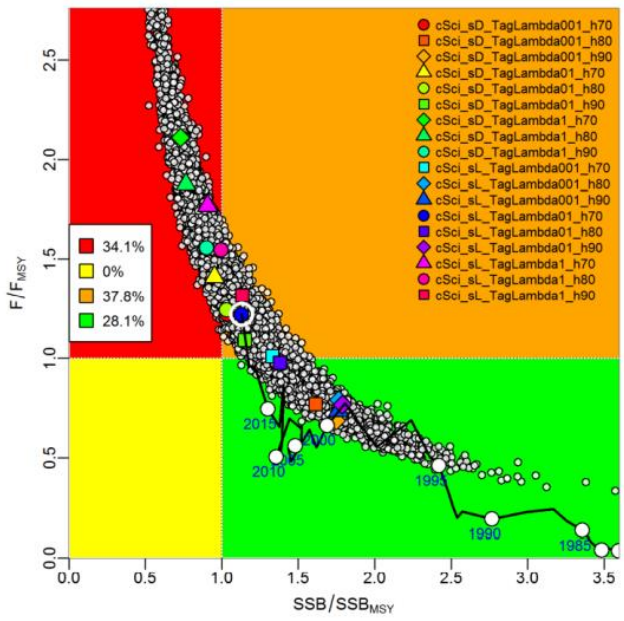

Figure 2. Bigeye tuna: SS3 Aggregated Indian Ocean assessment Kobe plot. The coloured points represent stock status estimates from the 18 model options. The grey dots represent 5,000 estimates of 2018 stock status from the multivariate normal approximation from the mean and variance-covariance of the 18 model options. The legend indicates the estimated probability

of the stock status being in each of the Kobe quadrant. The white circle (around the blue dot) represents the median stock status in 2018. Source: IOTC stock assessment 2019.
References Froese R, Pauly DE (2009) FishBase, version 02/2009, FishBase Consortium, Nootmorn, P (2004). Reproductive biology of bigeye tuna in the eastern Indian Ocean. IOTC–2004–WPTT04–05. Indian Ocean Tuna Commission. 2019 Stock Assessment Appendix 9 executive summary: bigeye tuna (2020). https://www.iotc.org/science/status-summary-species-tuna-and-tuna-species-under-iotc-mandate-well-other-species-impacted-iotc

Links	
MARINTRUST Standard clause	1.3.2.2
FAO CCRF	7.5.3
GSSI	D.3.04, D5.01