MarinTrust Standard V2

By-product Fishery Assessment

Atlantic Big Eye Tuna

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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 Areas 34-41-47 Atlantic Eastern Central, Southwest, Southeast
	Country of origin of the product:	Ivory Coast
	Stock:	Atlantic bigeye tuna
Date	14 March 2022	
Report Code	BP047	
Assessor	Ivan Mateo	
Country of origin of the product - PASS	Ivory Coast	
Country of origin of the product - FAIL	NA	

Application details and summary of the assessment outcome			
Company Name(s): Marine Biotechnology Products			
Country: Ivory Coast			
Email address:		Applicant Code:	
Certification Body Details			
Name of Certification Body:		Global Trust Certification	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Ivan Mateo	Vito Romito	0.5	Surveillance 2
Assessment Period	March 22 2022		

Scope Details	
Main Species	Bigeye tuna, *Thunnus obesus*
Stock	Atlantic bigeye tuna
Fishery Location	FAO Areas 34-41-47 Atlantic Eastern Central, Southwest, Southeast
Management Authority (Country/ State)	International Commission for the Conservation of Atlantic Tunas (ICCAT)/Ivory Coast
Gear Type(s)	Longline, pole & line and purse seine
Outcome of Assessment	
Peer Review Evaluation	Approve
Recommendation	Approve

Table 2. Assessment Determination

Assessment Determination
If any species is categorized 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 MARINTRUST raw material. Bigeye tuna (*Thunnus obesus*) is not listed as Endangered or Critically Endangered on IUCN's Red List, nor it is listed in CITES appendices; therefore, Atlantic bigeye tuna is eligible for approval for use as MARIN TRUST by-product raw material. There is a single bigeye tuna stock in the Atlantic. This stock is managed at the international level by the International Commission for the Conservation of Atlantic Tunas (ICCAT). ICCAT conducts stock assessments; reference points are defined for the Atlantic bigeye tuna stock The stock is classified as Category C. Fishery removals of the stock are considered in the various stock assessment processes so the stock **PASSES** Clause C1.1. The stock assessment concluded that the stock is overfished and overfishing is occurring. However, assuming the limit reference point (currently not defined) is half the target as it is the case in many fisheries, we can safely assume that the stock is above the assumed limit reference point. For example, In this case biomass is 94% of Bmsy which should be well above the assumed Blim level. Therefore, Atlantic bigeye tuna is APPROVED by the assessor for the production of fishmeal and fish oil under the current Marin Trust v.2.0 by-product Standard.
Fishery Assessment Peer Review Comments
The stock is correctly assessed under Category C as there is an assessment of it. The model uses catch data and ICCAT concludes that the stock is overfished and that overfishing is not occurring (as per the latest 2021 assessment). Biomass is likely to be above the assumed limit reference point. Accordingly, Atlantic bigeye tuna passes both Clauses C1.1 and C1.2, and shall be APPROVED for the production of fishmeal and fish oil under the current Marin Trust v.2.0 by-product Standard.
Notes for On-site Auditor
NA

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 Red list 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*	Atlantic bigeye tuna	International Commission for the Conservation of Atlantic Tunas (ICCAT)/Ivory Coast	C	VU	No

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

CATEGORY C SPECIES

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

Species Name		**Bigeye tuna**	
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 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 last stock assessment for bigeye tuna was conducted in 2021 using fishery data from the 1950-2020 period. Total catches from the 1950-2020 period are shown in Figure 1. The total annual Task I catch (Figure 1) increased continuously up to the mid-1970s reaching 60,000 t and fluctuated over the next 15 years. In 1992, catch reached 100,000 t and continued to increase, reaching a historic high of about 135,000 t in 1994. Since then, reported and estimated catch continuously declined and fell to 59,192 t by 2006. From the low level of 2006, catches increased again and reached 79,524 t in 2015. Catches averaged 77,241 t in the period 2015-2019. The preliminary catch reported for 2020 was 57,486 t, below the TAC of 62,500 t.
Therefore, the stock PASSES Clause C1.1.

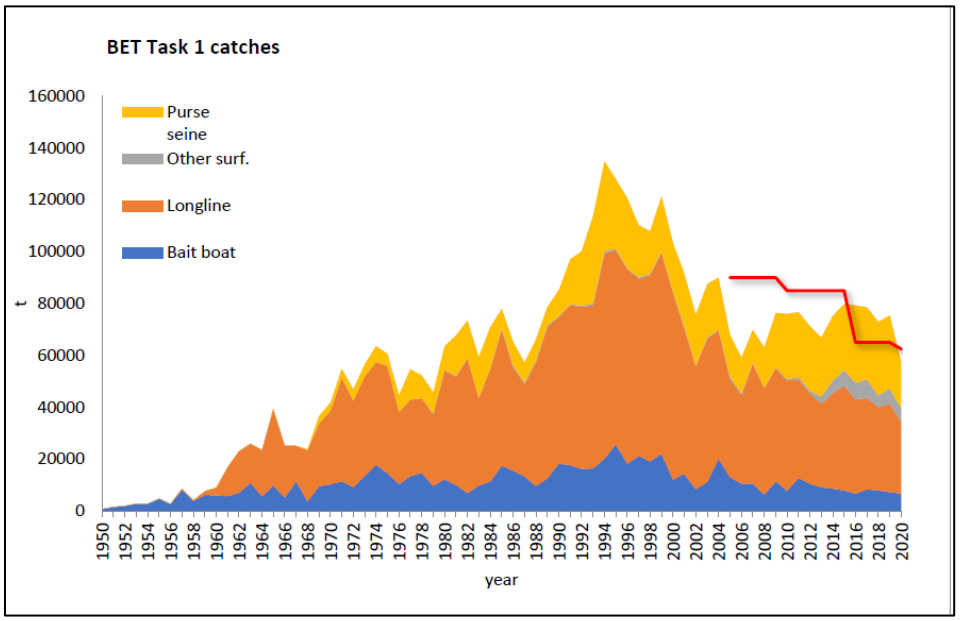

Figure 1. Bigeye tuna estimated and reported catches for all the Atlantic stock (t). The value for 2020 represents catch reports until September 18, 2021.

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.

A stock assessment for bigeye tuna was conducted in 2021 through a process that included a data preparatory meeting in April and an assessment meeting in July. The stock assessment used fishery data from the period 1950-2019 and indices of relative abundance used in the assessment were calculated through 2019. As in 2018, stock status evaluations for Atlantic bigeye tuna used in 2021 several modelling approaches, ranging from non-equilibrium (MPB) and Bayesian state-space (JABBA) production models to integrated statistical assessment models (Stock Synthesis).

The stock synthesis uncertainty grid shows 1950 - 2019 trajectories of increasing F and decreasing B towards the red area of the Kobe plot (F> FMSY and SSB<SSBMSY) (Figure 2). Overfishing starts in around 1993 and the stock becomes overfished around 1997, therefore reaching the red quadrant of the Kobe plot and mostly remained in the red quadrant until 2019 when overfishing ceased (Figure 2). The results of the assessment based on the median of the entire uncertainty grid shows that in 2019 the Atlantic bigeye tuna stock was overfished (median SSB2019/SSBMSY = 0.94 and 80% CI of 0.71 and 1.37) and was not undergoing overfishing (median F2019/FMSY=1.00 and 80% CI of 0.63 and 1.35). The average of MSY was estimated as 86,833 t with (80% CI of 72,210 and 106,440) from the uncertainty grid deterministic runs.

The stock assessment concluded that the stock is overfished, and overfishing is not occurring (Table 3,Figure 2). SSB2019 is below SSBMSY. However assuming the limit reference point (currently not defined) is half the target as it is the case in many fisheries, we can safely assume that the stock is above the assumed limit reference point. For example, In this case biomass is 94% of Bmsy which should be well above the assumed Blim level.

Therefore, Atlantic Bigeye Tuna is APPROVED in the assessment area by the assessors for the production of fishmeal and fish oil under the current MARIN TRUST v 2.0 by-products standard.

Table 3. Atlantic Bigeye Tuna Summary.

ATLANTIC BIGEYE TUNA SUMMARY	
Maximum Sustainable Yield	86,833 t with (72,210 -106,440 t)[1]
Current (2020) Yield	57,486 t[2]
Relative Spawning Biomass (SSB_{2019}/SSB_{MSY})	0.94 (0.71-1.37)[1]
Relative Fishing Mortality (F_{2019}/F_{MSY})	1.00 (0.63-1.35)[1]
Stock Status (2019)	Overfished: Yes[3] Overfishing: No[3]
Conservation & management measures in effect:	Rec. 16-01, Rec. 18-01, Rec. 19-02 – Total allowable catch for 2020-2021 was set to 62,500 and 61,500 t respectively for Contracting Parties and Cooperating non-Contracting Parties, Entities or Fishing Entities. – Specific limits of number of longline boats; China (65), Chinese Taipei (75), Philippines (5), Korea (14), EU (269) and Japan (231). – Specific limits of number of purse seine boats; EU (34) and Ghana (17). – No fishing with natural or artificial floating objects from 1 January to 31 March in 2021, throughout the Convention area. – No more than 300 FADs active at any time by vessel. – Use of non-entangling FADs.

[1] Combined result of stock synthesis 27uncertainty grid runs. Median and 10 and 90% percentile in brackets.
[2] Reports for 2020 reflect most recent data but should be considered provisional.
[3] Probability of overfished 58%, probability of overfishing 50%.

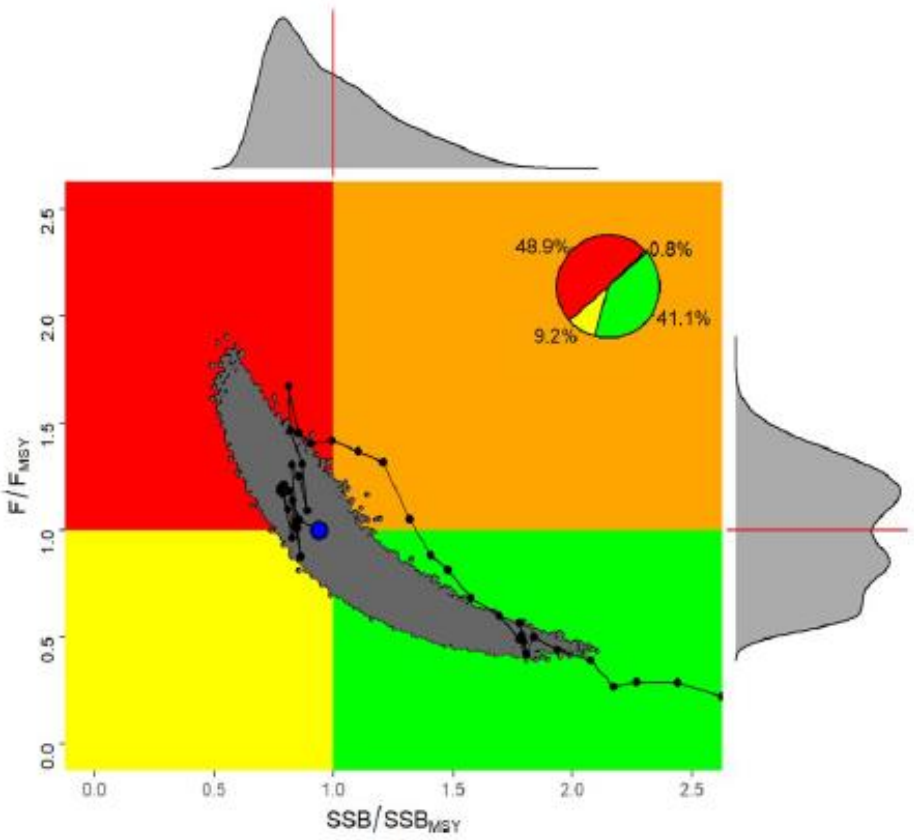

FIGURE 2. Stock Synthesis: Kobe plot of SSB/SSBMSY and F/FMSY for stock status of Atlantic bigeye tuna in 2019 based on the log multivariate normal approximation across the 27-uncertainty grid model runs of Stock Synthesis with an insert pie chart showing the probability of being in the red quadrant (48.9 %), green quadrant (41.1 %), orange (0.8%) and in yellow (9.2 %). Blue circle is the median and marginal histograms represent distribution of either SSB/SSBMSY or F/FMS.

References

Collette, B., Acero, A., Amorim, A.F., Boustany, A., Canales Ramirez, C., Cardenas, G., Carpenter, K.E., Chang, S.-K., Chiang, W., de Oliveira Leite Jr., N., Di Natale, A., Die, D., Fox, W., Fredou, F.L., Graves, J., Viera Hazin, F.H., Hinton, M., Juan Jorda, M., Minte Vera, C., Miyabe, N., Montano Cruz, R., Nelson, R., Oxenford, H., Restrepo, V., Schaefer, K., Schratwieser, J., Serra, R., Sun, C., Teixeira Lessa, R.P., Pires Ferreira Travassos, P.E., Uozumi, Y. & Yanez, E. 2011. *Thunnus obesus*. *The IUCN Red List of Threatened Species* 2011: e.T21859A9329255. https://dx.doi.org/10.2305/IUCN.UK.2011-2.RLTS.T21859A9329255.en.

ICCAT Stock Assessment and Executive Summary – Bigeye tuna. https://www.iccat.int/en/assess.html

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