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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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<b>Fishery Under Assessment</b>	<b>Albacore tuna (<i>Thunnus alalunga</i>)</b>
<b>Date</b>	<b>July 2018</b>
<b>Assessor</b>	<b>V. Polonio</b>

Application details and summary of the assessment outcome				
<b>Name:</b> TC Union Agrotech Co Ltd and others				
<b>Address:</b>				
<b>Country:</b> Thailand		<b>Zip:</b>		
<b>Tel. No.:</b>		<b>Fax. No.:</b>		
<b>Email address:</b>		<b>Applicant Code</b>		
<b>Key Contact:</b>		<b>Title:</b>		
Certification Body Details				
<b>Name of Certification Body:</b>		SAI Global		
<b>Assessor Name</b>	<b>Peer Reviewer</b>	<b>Assessment Days</b>	<b>Initial/Surveillance/Re-approval</b>	<b>Whole fish/ By-product</b>
V. Polonio	J. Daly	1	Surveillance 1	By-product
<b>Assessment Period</b>	2017			

<b>Scope Details</b>	
<b>Management Authority (Country/State)</b>	IOTC
<b>Main Species</b>	Albacore tuna ( <i>Thunnus alalunga</i> )
<b>Fishery Location</b>	FAO 51,57 (Indian Ocean)
<b>Gear Type(s)</b>	Longline, pole and line, purse seine, troll
<b>Outcome of Assessment</b>	
<b>Overall Outcome</b>	PASS
<b>Clauses Failed</b>	NONE
<b>Peer Review Evaluation</b>	PASS
<b>Recommendation</b>	PASS (By-product IFFO RS v 2.0)

<b>Assessment Determination</b>
<p>Legal and administrative frameworks exist at the national level, in addition to the research and management frameworks implemented at the international level by the Indian Ocean Tuna Commission (IOTC). Fishery removals of the species in the fishery under assessment are included in the stock assessment process.</p> <p>The stock status (Indian Ocean albacore) is determined on the basis of the 2016 assessment and other indicators presented in 2017. Although considerable uncertainty remains in the assessment model used, particularly due to the lack of biological information on the albacore stock, a precautionary approach to the management of the stock is advised by capping total catch to MSY levels.</p> <p>Management advice is that the stock status in relation to the IOTC's <math>B_{MSY}</math> and <math>F_{MSY}</math> target reference points indicates that the stock is not overfished and not subject to overfishing. The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy).</p> <p>The IUCN have listed albacore tuna as near threatened; the species does not appear in the CITES appendices (both sites accessed 12.07.2018).</p> <p>The assessment team recommends the approval of albacore tuna from the Indian Ocean fishery as a by-product species under the current IIFO RS Standard (By-product) v 2.0.</p>
<b>Peer Review Comments</b>
<p>When completed, IOTC's evaluation of management procedures for the Indian Ocean fishery should be included in future assessments.</p>
<b>Notes for On-site Auditor</b>

Note: This table should be completed for whole fish assessments only.

## General Results

General Clause	Outcome (Pass/Fail)
M1 - Management Framework	
M2 - Surveillance, Control and Enforcement	
F1 - Impacts on ETP Species	
F2 - Impacts on Habitats	
F3 - Ecosystem Impacts	

## Species-Specific Results

Category	Species	% landings	Outcome (Pass/Fail)
Category A			A1
			A2
			A3
			A4
Category B			
Category C	Albacore tuna ( <i>Thunnus alalunga</i> )	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]

## HOW TO COMPLETE THIS ASSESSMENT REPORT

This assessment template uses a modular approach to assessing fisheries against the IFFO RS standard.

### Whole Fish

The process for completing the template for a **whole fish** assessment is as follows:

1. **ALL ASSESSMENTS:** Complete the Species Characterisation table, to determine which categories of species are present in the fishery.
2. **ALL ASSESSMENTS:** Complete clauses M1, M2, M3: Management.
3. **IF THERE ARE CATEGORY A SPECIES IN THE FISHERY:** Complete clauses A1, A2, A3, A4 for **each** Category A species.
4. **IF THERE ARE CATEGORY B SPECIES IN THE FISHERY:** Complete the Section B risk assessment for **each** Category B species.
5. **IF THERE ARE CATEGORY C SPECIES IN THE FISHERY:** Complete clause C1 for **each** Category C species.
6. **IF THERE ARE CATEGORY D SPECIES IN THE FISHERY:** Complete Section D.
7. **ALL ASSESSMENTS:** Complete clauses F1, F2, F3: Further Impacts.

A fishery must score a pass in **all applicable clauses** before approval may be recommended. To achieve a pass in a clause, the fishery/species must meet **all** of the minimum requirements.

### 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
Albacore tuna	<i>Thunnus alalunga</i>	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		
<b>C1</b>	<b>Category C Stock Status - Minimum Requirements</b>	
	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
		<b>Clause outcome:</b> PASS
<b>Evidence</b>		
<b>Fisheries Management in Thailand:</b>		
<p>The Fisheries Act is the principal legislative instrument dealing with fisheries and the cultivation of aquatic animals in the country. The act is administered by the Ministry of Agriculture and Cooperatives (MAC). The Department of Fisheries (DOF) is the principal Government agency responsible for managing and developing fisheries and aquaculture. Its mandate and structure are set out in the Royal Decree on Administration (1994), which provides DOF with authority and responsibility to (<i>inter alia</i>) :</p> <ul style="list-style-type: none"> <li>– Apply, implement and enforce the Fisheries Act and other relevant laws related to fishery matters.</li> <li>– Study, research and develop aquatic resources, the aquatic environment, aquaculture, fisheries enhancement including genetic research and fishing gear.</li> <li>– Survey, explore, analyse and research fishery grounds within and outside Thai waters.</li> </ul> <p>Current Thai fisheries management objectives are set out in the Fisheries Management Plan (FMP). This plan includes different measures to manage the fleet targeting tuna such as:</p> <ul style="list-style-type: none"> <li>– The issuing of valid fishing permits from DOF.</li> <li>– Compliance with all Vessel Monitoring Systems (VMS) Legislation.</li> <li>– All laws, recommendations and regulations linked with Regional Fishery Management Organisations (RFMOs) including the IOTC and</li> <li>– Implementation of the Port State Measures (PSM) Programme.</li> </ul>		
<b>Indian Ocean Tuna Commission:</b>		
<p>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.</p>		

**Albacore tuna:**

Albacore is a highly migratory species, individuals swim large distances during their lifetime. In the Indian Ocean, there is probably only one southern stock, distributed from 5° N to 40° S, because there is no northern gyre (IOTC, 2017).

Albacore tuna are currently caught almost exclusively using drifting longliners, with the remaining catches recorded using purse seines and other gears. Catches from the longline fisheries are split between deep-freezing longliners, and fresh-tuna longliners (**Figure 1**). The majority of albacore catches in the region are attributed to vessels flagged to distant water fishing nations (i.e., Taiwan, China and Japan), followed by coastal countries such as Indonesia and Malaysia.

**Species-Specific Stock Assessment:**

The species has been evaluated in 2016 and the next stock assessment should be carried out in 2019 (IOTC (2017)). No new stock assessment was carried out for albacore in 2017, thus, the stock status is determined on the basis of the 2016 assessment and other indicators presented in 2017. The summary of the stock status reported in December 2017 is shown in Table 1 below\*:

**Table 1 Albacore tuna (Indian Ocean) Summary of stock status**

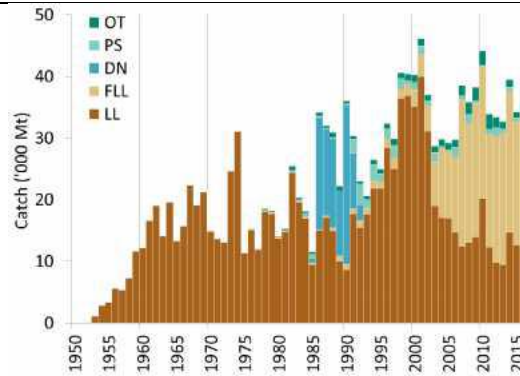
Area	Indicators – 2016 assessment	
Indian Ocean		SS3 (Methot and Wetzel 2013)
	Catch 2016:	35,996 t
	Average catch 2012–2016:	35,150 t
	MSY (1000 t) (80% CI):	38.8 (33.9–43.6)
	F <sub>MSY</sub> (80% CI):	-
	SB <sub>MSY</sub> (1000 t) (80% CI):	30.0 (26.1–34.0)
	F <sub>2014</sub> /F <sub>MSY</sub> (80% CI):	0.85 (0.57–1.12)
SB <sub>2014</sub> /SB <sub>MSY</sub> (80% CI):	1.80 (1.38–2.23)	
SB <sub>2014</sub> /SB <sub>1950</sub> (80% CI):	0.37 (0.28–0.46)	

\*Source: IOTC Executive summary (2017).

Catches in 2014 were marginally above the MSY level of the stock synthesis SS3 model. Fishing mortality represented as F<sub>2014</sub>/F<sub>MSY</sub> is 0.85 (0.57-1.12). Biomass is considered to be above the SB<sub>MSY</sub> level (SB<sub>2014</sub>/SB<sub>MSY</sub> = 1.80 (1.38-2.23)) from the SS3 model. Thus, the stock status in relation to the Commission's B<sub>MSY</sub> and F<sub>MSY</sub> target reference points indicates that the stock is not overfished and not subject to overfishing. Fishery removals of the species in the fishery under assessment are included in the stock assessment process.

Prior to 1980 there was 20 years of moderate fishing, after which total catches of albacore tuna in the Indian Ocean more than doubled in subsequent years (Fig. 1):





**Fig. 1. Albacore: Catches of albacore by gear (1950-2016)**

*Driftnet (DN); Freezing-longline (LL); Fresh-tuna longline (FLL); Purse seine (PS); Other gears nei (OT).*

The impacts of piracy in the western Indian Ocean have resulted in the displacement of a substantial portion of longline fishing effort into the traditional albacore fishing areas in the southern and eastern Indian Ocean. With the reduction of the effects of piracy in recent years, due to increased security on-board vessels of some longline fleets (e.g., Taiwan, China, and China), it is unlikely that catch and effort on albacore will increase in the near future. There is a moderate probability of exceeding MSY-based reference points by 2017 if catches are maintained at 2014 levels. Management advises a precautionary approach should be applied by capping total catch levels to MSY levels (38,800 t;).

#### Summary:

The two primary sources of data that drive the assessment, total catches and CPUE, are highly uncertain and should be developed further as a priority. While catches in 2014 (39,507 t) marginally exceeded MSY levels the preliminary catch estimates for 2016 (~36,000 t) are below current estimated MSY levels (Table 1). The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy).

An evaluation of Management Procedures (MPs) for albacore tuna is being carried out. The analysis attempts to simulation-test a full MP, consisting of data collection, an agreed evaluation of stock status, and a decision rule. A base case Operating Model (OM) for albacore is being developed by the Working Party on Methods (WPM) with input from the Working Party on Temperate Tuna (WPTmT). The current base case has yet to be fully reviewed by either WP (IOTC May 2018).

#### References

- Anon (2017) IOTC Report: Status of the Indian Ocean albacore (ALB: *Thunnus alalunga*) resource, Executive Summary 3pp  
[http://www.iotc.org/sites/default/files/documents/science/species\\_summaries/english/Albacore.pdf](http://www.iotc.org/sites/default/files/documents/science/species_summaries/english/Albacore.pdf)
- Anon (217) IOTC Report: Albacore Supporting Information (Working Party on Temperate Tunas and other sources as cited) 13pp  
[http://www.iotc.org/sites/default/files/documents/science/species\\_summaries/english/Albacore\\_Supporting\\_information.pdf](http://www.iotc.org/sites/default/files/documents/science/species_summaries/english/Albacore_Supporting_information.pdf)
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<http://www.iotc.org/sites/default/files/documents/2017/10/IOTC-2017-WPM08-13.pdf>
- R Methot & C Wetzel (2013): Stock synthesis: A biological and statistical framework for fish stock assessment and fishery management Fisheries Research Vol 142 pp 86-99

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- Anon FAO country fisheries overview, Thailand:  
<http://www.fao.org/fishery/facp/THA/en>
- Thailand Department of Fisheries Management Plan (FMP):  
<https://fisheries-refugia.org/downloads/inception-workshop/docs/21-21-fr-inception-workshop-marine-fisheries-management-plan-thailand/file>
- CITES Species Endangered list: <http://checklist.cites.org/#/en> accessed 12.07.18
- IUCN Red list: <http://www.iucnredlist.org/search> accessed 12.07.18

*Standard clauses 1.3.2.2*

