IFFO RS Limited

T: +44 (0) 2030 539 195
E: Standards@iffors.com
W: www.iffors.com

Unit C, Printworks | 22 Amelia Street
London, SE17 3BZ | United Kingdom

Global Standard for Responsible Supply of Marine Ingredients

Fishery Assessment Methodology and Template Report V2.0

Fishery Under Assessment	**Albacore tuna (*Thunnus alalunga*)**
Date	**July 2018**
Assessor	**V.Polonio**

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

Scope Details	
Management Authority (Country/State)	Western and Central Pacific Fisheries Commission (WCPFC)
Main Species	Albacore tuna (*Thunnus alalunga*)
Fishery Location	FAO 61,67 (Pacific Ocean)
Gear Type(s)	Longline, pole and line, purse seine, troll
Outcome of Assessment	
Overall Outcome	PASS
Clauses Failed	NONE
Pier Review Evaluation	PASS
Recommendation	PASS

Assessment Determination
Legal and administrative frameworks exist at the Thai national level, in addition to the research and management frameworks implemented at the international level by tuna RFMOs. Following the latest assessment carried by Western and Central Pacific Fisheries Commission (WCPFC) in 2017 the status of albacore tuna in the North Pacific Ocean (FAO region 61 and 71) was deemed to be not overfished and overfishing is not occurring. However no reference points regarding F (fishing mortality) have been defined. Although considerable uncertainty remains in the model, particularly due to the lack of biological information of female sizes in the Northern stock, the stock is currently above SSB reference points. IUCN has categorised albacore tuna as a near threatened species. The species does not appear on the current list of CITES appendices (both sites accessed 26.07.18). Fishery removals of the species in the fishery under assessment are included in the stock assessment process. The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy). The assessment team recommends the approval of albacore tuna as a by-product species under the current IIFO RS By-product Standard v 2.0.
Pier Review Comments
Future assessments to determine to what extent recommendations made in 2017 for the improvement of the stock assessment process by the International Scientific Committee of the Albacore Working Group have been implemented.
Notes for On-site Auditor

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 (*Thunnus alalunga*)	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	*Thunnus alalunga*	North, West Central Pacific	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			
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

Evidence

Fisheries Management in Thailand:

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). Its 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 the authority and responsibility to (*inter alia*) :

- Apply, implement and enforce the Fisheries Act and other relevant laws related to fishery matters.
- Study, research and develop aquatic resources, the aquatic environment, aquaculture, fish enhancement including genetic research and fishing gear.
- Survey, explore, analyse and research fishery grounds within and outside Thai waters.

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:

- The issuing of valid fishing permits from DOF.
- Compliance with all Vessel Monitoring Systems (VMS) Legislation.
- All laws, recommendations and regulations linked with (Regional Fishery Management Organisations (RFMOs) and
- Implementation of the Port State Measures (PSM) Programme.

Western and Central Pacific Fisheries Commission (WCPFC):

The Western and Central Pacific Fisheries Commission (WCPFC) was established by the Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPF Convention) which entered into force on 19 June 2004. The Commission supports three subsidiary bodies; the Scientific Committee, Technical and Compliance Committee, and the Northern Committee, that each meet once during each year.

The Scientific Committee (SC) meets annually and ensures that the Commission has the best available scientific information on which to consider appropriate conservation and management measures. The Scientific Committee utilizes the services of fisheries scientists and also coordinates with the Technical and Compliance Committee (TCC) on certain matters to ensure consistent advice is provided to the Commission. Additional information and recommendations on the stock assessment process are also provided by the Albacore Working Group (ALBWG 2017).

Species-specific Management:
The latest stock assessment (North Pacific albacore) was conducted in 2017. An overview of the stock status has been provided by the Scientific Committee (Report No SC13-SA-WP-09); recommendations by the Albacore Working Group (Report ALBWG 2017).

Stock status is depicted in relation to a limit reference point (LRP; 20% SSB current, F=0 for the stock) and equivalent fishing intensity (F20%; calculated as 1-SPR20%). Fishing intensity is a measure of fishing mortality expressed as the decline in the proportion of the spawning biomass (SSB) produced by each recruit relative to the unfished state. A fishing intensity of 0.8 will result in a SSB of approximately 20% of SSB0 over the long run. Fishing intensity is considered a proxy of fishing mortality**.** Fishery removals of the species in the fishery under assessment are included in the stock assessment process.

The Kobe plot (**Figure 1**) shows that the estimated female SSB has never fallen below the LRP since 1993, albeit with large uncertainty in the terminal year (2015) estimates:

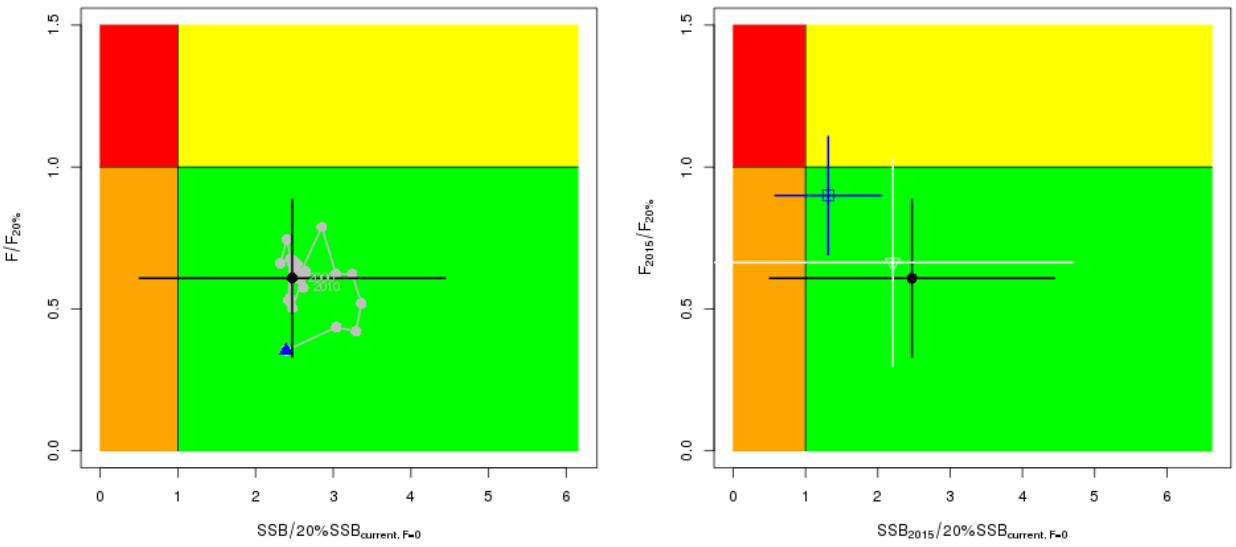

Figure 1: Kobe plot showing the status of the north Pacific albacore (Thunnus alalunga) stock relative to the 20% SSBcurrent, F=0 biomass-based limit reference point, and equivalent fishing intensity (F20%; calculated as 1-SPR20%) over the base case modelling period (1993-2015).

The SSB (2015) was estimated to be 80,618 t and was 2.47 times greater than the LRP threshold of 32,614t. Current fishing intensity, F2012-2014 (calculated as 1- SPR2012-2014), was lower than potential F-based reference points identified for the north Pacific albacore stock, except F50% (calculated as 1-SPR50%).

The Scientific Committee advise that:

The stock is likely not overfished relative to the limit reference point adopted by the Western and Central Pacific Fisheries Commission (20%SSBcurrent F=0), and

No F-based reference points have been adopted to evaluate overfishing. Stock status was evaluated against seven potential reference points. Current fishing intensity (F2012-2014) is below six of seven reference points evaluated except F50%.

Management advice for the Northern Pacific albacore stock:

- If a constant fishing intensity (F2012-2014) is applied to the stock, then median female spawning biomass is expected to decline and there will be < 0.01% probability of falling below the limit reference point established by the WCPFC by 2025. However, expected catches will be below the recent average catch level for this stock.
- If a constant average catch (C2010-2014 = 82,432 t) is removed from the stock in the future, then the decline in median female spawning biomass will be greater than in the constant F scenario and the probability that SSB falls below the LRP will be greater by 2025 (30%). Additionally, the estimated fishing intensity will double relative to the current level (F2012- 2014) by 2025 as spawning biomass declines.

Further information has also been provided by the Albacore Working Group (Report ALBWG 2017). Several key uncertainties were noted and research recommendations made. Uncertainties with the stock assessment were noted as follows: lack of sex-specific size data, shortened modelling period and the simplification of spatial structure of north Pacific albacore population dynamics.

The following recommendations were developed by the Working Group to improve future iterations of the stock assessment model:

- Further investigation of sex-specific growth is required with respect to the model and the inclusion of growth increment data from tagging (change in size between release and recapture) and otolith data.
- Evaluate the use of Japan longline juvenile index from northern areas to represent juvenile albacore trends rather than the Japan pole-and-line index.
- Investigate incorporating the early period (1966-1992) back into the model and address the data conflict during this period.
- Evaluate sampling protocols and accuracy of historical and current size frequency data (length and weight) for all fleets, including Japan training vessels.
- Standardizing size composition data to the CPUE index that they represent.
- Collect high quality samples for development of genetic sex markers.
- The collection of sex ratio data by fleet should be implemented.
- Explore the utility of conventional and electronic tagging (archival and PSAT) data to inform growth, catchability, spatial dynamics in future models; and 9. Explore ocean productivity as drivers of albacore trends and dynamics.

The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy). The assessment team recommends the approval of albacore tuna as a by-product species under the current IIFO RS By-product Standard v 2.0.

References

- 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 26..07.18

- IUCN Red list: http://www.iucnredlist.org/search accessed accessed 26..07.18

- WCPFC Scientific Committee (July 2017) Report No. SC13-SA-WP-09 Stock Assessment of Albacore in the North Pacific Ocean in 2017 Rev 2(approved version) 4pp https://www.wcpfc.int/doc/05/north-pacific-albacore-tuna

- Report of the Albacore Working Group (ISC). ALBWG (July 2017) Seventeenth Meeting of the International Scientific Committee (ISC) for Tuna and Tuna-like Species in the North Pacific Ocean Plenary Session. To be completed after ISC 17.

Standard clauses 1.3.2.2