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	**Atlantic mackerel (*Scomber scombrus)***
Date	**February 2019**
Assessor	**Virginia Polonio**

Application details and summary of the assessment outcome				
Name: TripleNine A/S. IFFO104a. 22/09/2018. FF Skagen A/S- Skagen. IFFO105a. 12/04/2020. FF Skagen A/S- Hanstholm. IFFO105b. 26/10/2018				
Address:				
Country: Denmark		**Zip:**		
Tel. No.:		**Fax. No.:**		
Email address:		**Applicant Code**		
Key Contact:		**Title:**		
Certification Body Details				
Name of Certification Body:		**SAI Global Ltd**		
Assessor Name	**Peer Reviewer**	**Assessment Days**	**Initial/Surveillance/Re-approval**	**Whole fish/ By-product**
V. Polonio	J. Daly	0.5	Re-approval	By-product
Assessment Period	2018			

Scope Details	
Management Authority (Country/State)	Denmark
Main Species	Atlantic mackerel *Scomber scombrus*
Fishery Location	ICES Division Va
Gear Type(s)	Trawl
Outcome of Assessment	
Overall Outcome	PASS
Clauses Failed	NONE
Peer Review Evaluation	PASS
Recommendation	APPROVE

Assessment Determination
The high fishing pressure (nearly twice FMSY and above Fpa in recent years) combined with low recruitments in 2015 and 2016 have resulted in SSB going below MSY Btrigger in 2018. Short-term projections show that this will remain the case in 2019 and 2020 even if catches are taken in agreement with ICES advice. Maintaining the current level of catches or fishing mortality would result in SSB falling below Blim in 2020. As Mackerel, in its most recent stock assessment, was determined to have a biomass above the limit reference point (B_{lim}), the species currently passes the IFFO-RS by-product assessment (Clause C 1.2). However this decision will be reviewed by the IFFO-RS assessment team following publication in 2019 of the revised Action Plan for the North East Atlantic (NEA) Mackerel stock and publication of any additional ICES advice. There is an ongoing need for coastal states to set quotas and management measures in line with scientific advice and also to revise the way the stock is assessed. This species has currently not been assessed by the IUCN Red List. The assessment team approves the use of Mackerel (by-product) under IFFO-RS v 2.0 of the Standard for the production of fishmeal and fish oil.
Peer Review Comments
A long-term management strategy for Northeast Atlantic (NEA) mackerel must finally be agreed by all parties involved in the mackerel fishery in order to avoid future suspension of this material for IFFO-RS approval should SSB fall below B_{lim}.
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	NA
M2 - Surveillance, Control and Enforcement	NA
F1 - Impacts on ETP Species	NA
F2 - Impacts on Habitats	NA
F3 - Ecosystem Impacts	NA

Species-Specific Results

Category	Species	% landings	Outcome (Pass/Fail)	
Category A			A1	
			A2	
			A3	
			A4	
Category B				
Category C	Atlantic mackerel (*Scomber scombrus*)	NA	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
Atlantic Mackerel	*Scomber scombrus*	NEA Mackerel	N/A	EU/Coastal States	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		Atlantic mackerel *Scomber scombrus*	
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

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 stock assessment is carries out by ICES, Working Group on Widely Distributed Stocks (WGWIDE). Mackerel in areas 1-8 is considered as category 1 stock (ICES 2016b). The assessment type used is Age-based analytical model (SAM) that uses catches in the model and in the forecast. The input data consider the removals of the species and Catch data, coded wire tagging data (1980–2006) and RFID tagging data (2012–2017), and three survey indices: SSB index from the triennial egg survey (1992–2016), abundance indices from the IBTS survey (combined Q1 and Q4; age 0, 1998–2015), and from the IESSNS survey (ages 3–11, 2010, 2012–2018). Catches prior to 2000 are given a very low weight in the assessment.

Natural mortality (= 0.15 for all ages and years) is based on tagging studies from the early 1980s. Discarding is known to take place (0.25% of the total catch in weight in 2017), but is only quantified for part of the fisheries; the proportion of the landings covered cannot be calculated. Partial discard estimates are included in the assessment and overall discarding in recent years is assumed negligible. However, all removals are known the management plan used is the MSY approach however, in 2017, ICES evaluated potential options for a management plan for this fishery, based on a request from Norway, the EU and the Faroe Islands (ICES, 2017a), this request was made due to the fact that there is currently no long-term management strategy for Northeast Atlantic (NEA) mackerel agreed by all parties involved in the mackerel fishery.

Fishery removals of the species in the fishery under assessment are included in the stock assessment process. **The species 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

Following the last assessment published by ICES in September 2018 the spawning-stock biomass (SSB) is estimated to have increased in the late 2000s to reach a maximum in 2011 and has been declining since then. The stock is estimated to be below MSY Btrigger in 2018, for the first time since 2007. The fishing mortality

(F) has declined from high levels in the mid-2000s, but increased again after 2012, and remains above FMSY. There has been a succession of large year classes since the early 2000s, but the 2015 and 2016 year classes are estimated to be below average:

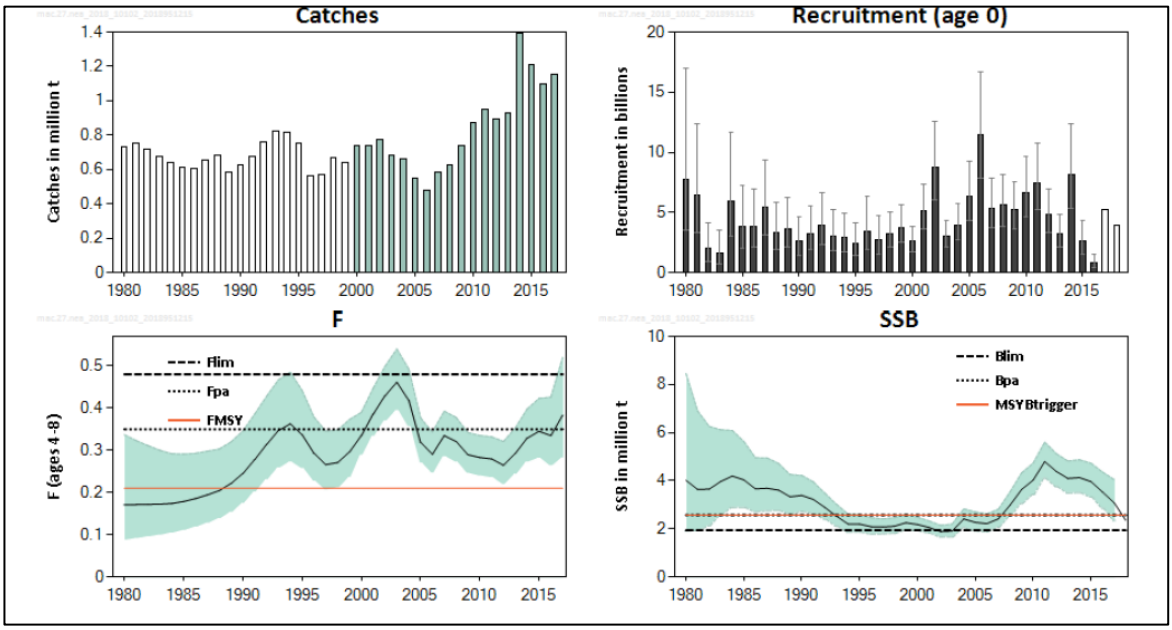

Figure 1. Mackerel in subareas 1–8 and 14, and in Division 9.a. Summary of the stock assessment. Source: **R1**

ICES assesses that fishing pressure on the stock is above FMSY and between Fpa and Flim; and spawning-stock size is below MSY Btrigger but between Bpa and Blim.

Table 1. Mackerel in subareas 1–8 and 14, and in Division 9.a. State of the stock and fishery relative to reference points **R1**

	Fishing pressure				Stock size			
		2015	2016	2017		2016	2017	2018
Maximum sustainable yield	F_{MSY}	✗	✗	✗ Above	MSY $B_{trigger}$	✓	✓	✗ Below trigger
Precautionary approach	F_{pa},F_{lim}	✓	✓	○ Increased risk	B_{pa},B_{lim}	✓	✓	○ Increased risk
Management plan	F_{MGT}	–	–	– Not applicable	B_{MGT}	–	–	– Not applicable

The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy). **The species passes Clause 1.2.**

References

R1 ICES Advice on fishing opportunities, catch, and effort Ecoregions in the Northeast Atlantic and Arctic Ocean Published 28 September 2018 mac.27.nea. https://doi.org/10.17895/ices.pub.4537

R2 ICES. 2017b. Report of the Workshop on management strategy evaluation for the mackerel in subareas 1–7 and 14, and in divisions 8.a–e and 9.a (Northeast Atlantic) (WKMACMSE), 28–29 August 2017, Copenhagen, Denmark. ICES CM 2017/ACOM:48. 216 pp

R3 ICES. 2016b. Advice basis. In Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 1, Section 1.2.

Standard clauses 1.3.2.2