

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



IFFO RS Global Standard for Responsible Supply of Marine Ingredients



Fishery Under Assessment	Lemon sole Microstomus kitt
Date	May 2019
Assessor	Jim Daly

Application details and summary of the assessment outcome						
Name: FF Skagen AS and others						
Address:						
Country: Denmark		Zip:				
Tel. No.:		Fax. No.:				
Email address:		Applicant Code				
Key Contact:		Title:				
Certification Body De	etails	-				
Name of Certification	n Body:	SAI Global Ltd	l			
Assessor Name	Peer Reviewer	Assessment Days	Initial/Surveillance/ approval	/Re- Whole fish/ By- product		
Jim Daly	Virginia Polonio	0.5	Surveillance 1	By-product		
Assessment Period	2018					

Scope Details	
Management Authority (Country/State)	EU/Denmark
Main Species	Lemon sole Microstomus kitt
Fishery Location	FAO 27 (ICES Subarea IV Divisions IIIa, VIId)
Gear Type(s)	Otter trawl, beam trawl, seine and gillnet
Outcome of Assessment	
Overall Outcome	Pass
Clauses Failed	None
Peer Review Evaluation	Approve
Recommendation	Pass

Assessment Determination

Lemon sole in FAO 27 (ICES Subarea IV; Divisions III a, VII d) has a species-specific management regime in place under the EU's Common Fisheries Policy so it has been assessed under Clause C. No additional assessments were undertaken in 2018. Advice (**R1**) was provided by ICES for 2017-2018.

The ICES framework for Category 3 stocks (stocks for which survey based assessments indicate trends) was applied. The IBTS Q1 survey (SSB per hour, kg h-1) was used as the index of stock development. The index is estimated to have decreased by less than 20% and thus uncertainty caps were not applied. The Surplus Production in Continuous Time (SPiCT) analysis suggests that fishing mortality is below and stock size above proxies of MSY reference points (**R1**).

Fishery removals are included in the stock assessment process and the stock is considered, in its most recent assessment, to have a biomass above the limit reference point. Consequently, it passes Clause C.

Lemon sole is not listed on the IUCN Red list of Threatened Species nor listed by CITES (websites accessed 29 May 2019).

This fishery by-product is recommended for approval under the IFFO RS Standard v 2.0.

Peer Review Comments

PR agrees with the main conclusions raised in the report and however, a single-species TAC would be better approach to prevent the overexploitation of the stock. The PR recommends the approval of this by product.

Notes for On-site Auditor

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

Species-Specific Results

Category	Species	% landings	Outcome (Pass/Fail)
			A1
Cotogomy A			A2
Category A			A3
Category A Category B			A4
Category B			
Category C	Lemon sole Microstomus kitt	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	n name Stock		Management	Category
Lemon sole	Microstomus kitt	FAO 27 (Subarea IV, Divisions III a and VII d)	N/A	EU	С

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.

Spec	ies N	ame	Lemon sole Microstomus kitt								
C1	C1 Category C Stock Status - Minimum Requirements										
$\mathbf{\nabla}\mathbf{I}$	C1.1 Fishery removals of the species in the fishery under assessment are included in the										
		stock assess	ment process, OR are considered by scientific authorities to be negligible.								
	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.										
			Clause outcome:	Pass							

Evidence: C1.1

Member States of the European Union implement the Common Fisheries Policy (CFP) in their waters. With regard to resource management, the CFP regulations comprise:

- A traditional management tool based on Total Allowable Catches (TACs) and quotas;
- Technical measures relating to gear or catch;
- Effort-related management, based on vessel engine power and the number of days at sea.
- Control measures including the introduction of a ban on discarding at sea for EU flagged vessels.

Commercial catch data is used in the ICES stock assessment (international landings and discards) and also one survey index (IBTS Q1), annual maturity and weight-at-age data from surveys. Fishery removals of the species in the fishery under assessment are included in the stock assessment process. Clause C1.1 is met. **R1**

C1.2:

The biomass index (IBTS Q1, SSB per hour) has fluctuated without significant trend since the mid-1980s. Landings have mostly decreased since the early 1980s, with a small increase in recent years. The discard rate is similar over the four years for which estimates are available (Figure 1).



Figure 1. Lemon sole in Subarea IV and Divisions IIIa and VIId. Summary of the stock assessment. Left: Official landings (1983–2012), and ICES estimated landings and discards (2013–2016; tonnes). The discard estimate for 2012 was based on very low sample rates from few countries, and is not thought to be reliable. Official landings for 2012 are low because some data were not submitted. Right: Abundance indices (trend in catch per unit effort since 1966 (kg h–1) from IBTS Q1), including horizontal lines showing the DLS 3.2 decision rule. **R1**

The ICES framework for category 3 stocks was applied (ICES, 2012). The advice is based on a comparison of the two latest index values (index A) with the three preceding values (index B), multiplied by the recent (advised catch). The index is estimated to have decreased by less than 20% and thus the uncertainty cap was not applied.

The Surplus Production in Continuous Time (SPiCT) analysis suggests that fishing mortality is below and stock size above proxies of the MSY reference points (**Figure 2**); therefore, no additional precautionary buffer was applied.



Figure 2. Lemon sole in Subarea IV and Divisions IIIa and VIId. SPiCT analysis showing exploitable biomass relative to BMSY and fishing mortality relative to FMSY. The symbols in the relative biomass plot indicate observed biomass indices (blue dots = IBTS Q1) while the shaded areas in both plots indicate 95% confidence intervals. The horizontal lines indicate levels relative to the FMSY and MSY Btrigger proxies. A subset of the IBTS Q1 index (Dutch and Scottish surveys only) is used for the SPiCT analysis, which differs from the full IBTS used for the index ratio. **R1**

Table 1 shows that the species is considered, in its most recent stock assessment, to have a biomass above limit reference points.

Table 1 Lemon sole in Subarea IV and Divisions III a and VIId. State of the stock and fishery relative to reference

 points. The fishing pressure and stock size status indicators are based on the SPiCT analyses shown in Figure 1 R1

		Fishing pressure					Stock size				
		2014	2015		2015			2015	2016		2017
Maximum sustainable yield	F _{MSY} proxy	0	0	0	Below		MSY B _{trigger}	0	0	0	Above trigger
Precautionary approach	F _{pa} , F _{lim}	0	0	0	Below possible reference points		^B pa' ^B lim	0	0	0	Above possible reference points
Management plan	F _{MGT}	-	-	-	Not applicable		B _{MGT}	-	-	-	Not applicable

Therefore, following the last ICES advice in 2017 the assessment team conclude that clause C1.2 is met for this stock.

References

R1 ICES, 2017-2018. ICES Advice on fishing opportunities, catch, and effort Greater North Sea Ecoregion Published 30 June 2017. Lemon sole (*Microstomus kitt*) in Subarea IV and Divisions III .a and VII d (North Sea, Skagerrak and Kattegat, eastern English Channel). http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/lem.27.3a47d.pdf

Standard clauses 1.3.2.2

CATEGORY D SPECIES

In a whole fish assessment, Category D species are those which make up less than 5% of landings and are not subject to a species-specific management regime. In the case of mixed trawl fisheries, Category D species may make up the majority of landings. In a by-product assessment, Category D species are those which are not subject to a species-specific management regime. In both cases, the comparative lack of scientific information on the status of the population of the species means that a risk-assessment style approach must be taken.

The process for assessing Category D species involves the use of a Productivity-Susceptibility Analysis (PSA) to further subdivide the species into 'Critical Risk', 'Major Risk' and 'Minor Risk' groups. If there are no Category D species in the fishery under assessment, this section can be deleted.

Productivity and susceptibility ratings are calculated using a process derived from the APFIC document "Regional Guidelines for the Management of Tropical Trawl Fisheries, which in turn was derived from papers by Patrick *et al* (2009) and Hobday *et al* (2007). Table D1 should be completed for each Category D species as follows:

- Firstly, the best available information should be used to fill in values for each productivity and susceptibility attribute.
- Table D2 should be used to convert each attribute value into a score between 1 and 3.
- The average score for productivity attributes and the average for susceptibility attributes should be calculated.
- Table D3 should be used to determine whether the species is required to meet the requirements of Table D4. A species which does not need to meet the requirements of D4 is automatically awarded a pass.
- Table D4 should be used to assess those species indicated by Table D3 to determine a pass/fail rating.
- Any Category D species which has been categorised by the IUCN Red List as Endangered or Critically Endangered, or which appears in the CITES appendices, automatically results in a fail.

D1	Species Name:								
	Productivity Attribute	Value	Score						
	Average age at maturity (years)								
	Average maximum age (years)								
	Fecundity (eggs/spawning)								
	Average maximum size (cm)								
	Average size at maturity (cm)								
	Reproductive strategy								
	Mean trophic level								
		Average Productivity Score							
	Susceptibility Attribute	Value	Score						
	Overlap of adult species range with fishery								
	Distribution								
	Habitat								
	Depth range								
	Selectivity								
	Post-capture mortality								
	Average Susceptibility Score								
	PSA	A Risk Rating (From Table D3)							
	Compliance rating								
Refer	ences								
Stand	ard clauses 1.3.2.2								

Productivity attributes	Low productivity/ High risk	Medium productivity/ Medium risk	High productivity/ Low risk
	Score 3	Score 2	Score 1
Average age at maturity (years)	>4	2 to 4	<2
Average maximum age (years)	>30	10 to 30	<10
Fecundity (eggs/spawning)	<1 000	1 000 to 10 000	>10 000
Average maximum size (cm)	>150	60 to 150	<60
Average size at maturity (cm)	>150	30 to 150	<30
Reproductive strategy	Live bearer, mouth brooder or significant parental investment	Demersal spawner "berried"	Broadcast spawner
Mean trophic level	>3.25	2.5-3.25	<2.5

Table D2 - Productivity / Susceptibility attributes and scores.

Susceptibility at	trib	utes	High susceptibility/ High risk	Medium susceptibility/ Medium risk	Low susceptibility/ Low risk	
			Score 3	Score 2	Score 1	
Availability	 Overlap of adult species range with fishery 		>50% of stock occurs in the area fished	Between 25% and 50% of the stock occurs in the area fished	<25% of stock occurs in the area fished	
	2)	Distribution	Only in the country/ fishery	Limited range in the region	Throughout region/ global distribution	
Encounterability	1)	Habitat	Habitat preference of species make it highly likely to encounter trawl gear (e.g. demersal, muddy/sandy bottom)	Habitat preference of species make it moderately likely to encounter trawl gear (e.g. rocky bottom/reefs)	Depth or distribution of species make it unlikely to encounter trawl gear (e.g. epi-pelagic or meso-pelagic)	
	2)	Depth range	High overlap with trawl fishing gear (20 to 60 m depth)	Medium overlap with trawl fishing gear (10 to 20 m depth)	Low overlap with trawl fishing gear (0 to 10 m, >70 m depth)	
Selectivity			Species >2 times mesh size or up to 4 m length	Species 1 to 2 times mesh size or 4 to 5 m length	Species <mesh or<br="" size="">>5 m length</mesh>	
Post capture mortality			Most dead or retained Trawl tow >3 hours	Alive after net hauled Trawl tow 0.5 to 3 hours	Released alive Trawl tow <0.5 hours	

Note: Availability 2 is only used when there is no information for Availability 1; the most conservative score between Encounterability 1 and 2 is used.

D2			Average Susceptibility Score				
D3			1.00 - 1.75	1.76 - 2.24	2.25 - 3.00		
Average	Productivity	1.00 – 1.75	PASS	PASS	PASS		
Score		1.76 – 2.24	PASS	PASS	TABLE D4		
		2.25 - 3.00	PASS	TABLE D4	TABLE D4		

D4	Spee	cies Name									
	Impao	Impacts On Species Categorised as Vulnerable by D1-D3 - Minimum Requirements									
	D4.1	D4.1 The potential impacts of the fishery on this species are considered during the									
	management process, and reasonable measures are taken to minimise these impacts.										
	D4.2	D4.2 There is no substantial evidence that the fishery has a significant negative impact on									
		the species.									
			Outcome:								
Evide	nce										
Refer	ences										
Standa	ard clau	use 1.3.2.2									