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Global Standard for Responsible Supply
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Global Standard for Responsible Supply of Marine Ingredients Fishery Assessment Methodology and Template Report V2.0



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Fishery Under Assessment	Haddock (<i>Melanogrammus aeglefinus</i>)
Date	February 2019
Assessor	Virginia Polonio

Application details and summary of the assessment outcome				
Name: Triple Nine ; FF Skagen				
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	1	Surveillance 1	By-product
Assessment Period	2018			

Scope Details	
Management Authority (Country/State)	EU/Denmark
Main Species	Haddock (<i>Melanogrammus aeglefinus</i>)
Fishery Location	North East Atlantic, FAO 27- several stocks
Gear Type(s)	Demersal and otter trawls, seines
Outcome of Assessment	
Overall Outcome	Pass (the three stocks evaluated)
Clauses Failed	None
Peer Review Evaluation	Agree
Recommendation	The assessment team recommends the segregation of catches coming from other stocks not evaluated in this report. ICES manages 8 stocks in the area FAO 27; in this report three were analysed.

Assessment Determination
<p>There is a robust fishery management framework at the EU and Danish levels, applied specifically to haddock stocks in the assessment area. Management is supported by species-specific data collection and stock assessments. Haddock in FAO area 27 has been split into 8 different stocks. The Assessment Team has considered three of them due to proximity with client factories and Danish EEZ. Stocks considered in this assessment are:</p> <p><u>Stock 1: Subarea 4, Division 6.a, and Subdivision 20 (North Sea, West of Scotland, Skagerrak)</u></p> <p>All the removals are taken into account in the stock assessment, including discards. Further, in the last ICES advice (2018) ICES assessed that fishing pressure on the stock is above FMSY and below Fpa and Flim; SSB is above MSY Btrigger, Bpa, and Blim. Therefore, the species is above limits and the assessment team recommends the approval of by-products coming from this stock.</p> <p><u>Stock 2: Haddock (<i>Melanogrammus aeglefinus</i>) in Division 5.b (Faroes grounds)</u></p> <p>ICES in charge of the assessment of this stock and all the catches from commercial fisheries are taken into account. Discarding is considering negligible and ICES assesses that fishing pressure on the stock is above FMSY and below Fpa and Flim, while the spawning stock size is above MSY Btrigger, Bpa, and Blim. Therefore, the species is above limits and the assessment team recommends the approval of by-products coming from this stock.</p> <p><u>Stock 3: Haddock (<i>Melanogrammus aeglefinus</i>) in divisions 7.b–k (southern Celtic Seas and English Channel)</u></p> <p>Removals of haddock in Europe stock are controlled and monitored by each country member that take part in the fisheries and is evaluated by ICES. In the last assessment of 2018, ICES assesses that fishing pressure on the stock is above FMSY, but below Fpa and Flim, and that the spawning–stock size is above MSY Btrigger, Bpa, and Blim.</p>

Haddock is globally considered as vulnerable in IUCN (web visited on February 2019) but in Europe the species is considered as least concern, therefore the assessment team recommends the approvals of the by-products coming from these three stocks herein, under v 2.0 Fisheries Standard.
Peer Review Comments
Agree
Notes for On-site Auditor
The assessment team recommends the segregation of catches coming from other stocks not evaluated in this report.

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

General Results

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

Species-Specific Results

Category	Species	% landings	Outcome (Pass/Fail)	
Category A			A1	
			A2	
			A3	
			A4	
Category B				
Category C	Haddock (<i>Melanogrammus aeglefinus</i>)	NA	Pass (stocks assessed)	
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
Haddock	<i>Melanogrammus aeglefinus</i>	FO 27 several stocks:	N/A	EU/Denmark	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		Haddock (<i>Melanogrammus aeglefinus</i>)	
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			
<u>Stock 1: Subarea 4, Division 6.a, and Subdivision 20 (North Sea, West of Scotland, Skagerrak)</u>			
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 in this areas is carried out with the data form commercial catches (international landings, ages from catch sampling) and two survey indices: IBTS Q1, IBTS Q3 are analysed to define the status of the stock. Maturity data are assumed fixed over time and knife-edged at age 3, while natural mortality data vary with age and over time (estimates updated ICES, 2018b). Discards, BMS landings and bycatch are included in the assessment, data series from the main fleets (covering around 90% of the landings). BMS landings, where reported, are included with discards as unwanted catch in the assessment from 2016 onwards. Therefore, the assessment team can conclude that all the removals are included in the stock assessment in the area.			
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. Fishing mortality (F) has been fluctuating above FMSY for most of the time-series and is above FMSY in 2017. Spawning stock biomass (SSB) has been above MSY Btrigger in most of the years since 2002. Recruitment since 2000 has been characterized by a low average level with occasional larger year classes, the size of which is diminishing (ICES, 2018) (Table 1). ICES assessed that fishing pressure on the stock is above FMSY and below Fpa and Flim; SSB is above MSY Btrigger, Bpa, and Blim. Table 1 shows that the species is above limits and therefore the clause C 1.2 is met.			

Table 1. Haddock in Subarea 4, Division 6.a, and Subdivision 20. 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	✗	✓	✓ Above trigger	
Precautionary approach	F_{pa}, F_{lim}	✗	○	✓ Harvested sustainably	B_{pa}, B_{lim}	○	✓	✓ Full reproductive capacity	
Management plan	F_{MGT}	—	—	— Not applicable	B_{MGT}	—	—	— Not applicable	

Stock 2: Haddock (*Melanogrammus aeglefinus*) in Division 5.b (Faroes grounds)

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 data uses in the stock assessment methodology are coming from commercial catches (mainly Faroese catches, ages and length frequencies from catch sampling). Two survey indices (FO-GFS-Q1 and FO-GFS-Q3) are used to evaluate the status of the stock and an annual maturity data from FO-GFS-Q1 is also taken into account in the models. Natural mortalities are set at 0.2 and Discards and bycatch are considered negligible into the data sets. Therefore the assessment team concludes that **all the removals are considered in the stock assessment. The clause C1.1 is met.**

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.

The spawning-stock biomass (SSB) has been below B_{lim} since 2009 but has increased to above $MSY B_{trigger}$ in 2018. The fishing mortality (F) has decreased in recent years and was slightly above F_{MSY} in 2017. Recruitment was low from 2004 to 2016, while the 2017 and 2018 recruitments of one-year-olds are estimated to be high, though there is large uncertainty concerning these estimates (ICES, 2018).

ICES assesses that fishing pressure on the stock is above F_{MSY} and below F_{pa} and F_{lim} , while the spawning stock size is above $MSY B_{trigger}$, B_{pa} , and B_{lim} . Table 2 shows that the **stock status is above limits and Biomass is above B trigger. Therefore the assessment team concludes that the stock is above limits and the clause C1.2 is met (Table 2).**

Table 2. Haddock in Division 5.b. 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	✗	✗	✓ Above trigger	
Precautionary approach	F_{pa}, F_{lim}	✓	✓	✓ Harvested sustainably	B_{pa}, B_{lim}	✗	○	✓ Full reproductive capacity	
Management plan	F_{MGT}	—	—	— Not applicable	B_{MGT}	—	—	— Not applicable	

Stock 3: Haddock (*Melanogrammus aeglefinus*) in divisions 7.b–k (southern Celtic Seas and English Channel)

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

Haddock are caught in mixed fisheries with cod and whiting, and this should be taken into account when managing the fishery. The mixed-fisheries analysis carried out by ICES shows that cod will be the limiting species for all fleets (representing 100% of fleet effort) in 2019 (Section 5.2.2.1 in ICES, 2018). Haddock is fished at above F_{MSY} in 2019 under all scenarios except for the 'min', 'had' and 'cod_fmsy' scenarios, reflecting that it is a limiting stock for some fleets (representing 32% of fleet effort; ICES, 2018).

The data set to evaluate the stock status are coming from commercial catches (age composition of landings and discards), survey index (combined IGFS-WIBTS-Q4 and EVHOE-WIBTS-Q4) and commercial index (IRL_OTB_HAD). To define all the data in the models, besides catches, the maturity data (surveys and observer data; constant for all years) and natural mortalities (based on Lorenzen, 1996) are taken into account in the analysis to estimate the stock status results. Therefore the assessment team concludes that **all the removals are considered in the models and there is no discards or unreported catches for this species. Therefore the clause C1.1 is met.**

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.

Spawning-stock biomass has declined since 2011 and is above MSY Btrigger. Fishing mortality (F) has been above FMSY for the entire time-series. Recruitment in 2017 was below the average and among the lowest estimated. ICES assesses that fishing pressure on the stock is above FMSY, but below Fpa and Flim, and that the spawning-stock size is above MSY Btrigger, Bpa, and Blim. **Table 3** shows that the stock is in a good shape and is above limits, **therefore the clause C1.2 is met**

Table 3. Haddock in divisions 7.b–k. 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	✓	✓	✓	Above trigger
Precautionary approach	F_{pa}, F_{lim}	✓	✓	✓	Harvested sustainably	B_{pa}, B_{lim}	✓	✓	✓	Full reproductive capacity
Management plan	F_{MGT}	—	—	—	Not applicable	B_{MGT}	—	—	—	Not applicable

Haddock is globally considered as vulnerable in IUCN (web visited on February 2019) but in Europe the species is considered as least concern, therefore the assessment team approves the by-products coming from these three stocks herein.

References

R1 ICES Advice 2018 for different stocks depends on the statistical area:

<http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/had.27.7b-k.pdf>

<http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/had.27.46a20.pdf>

R2 Cook, R., Fernandes, P., Florin, A., Lorange, P. & Nedreaas, K. 2015. *Melanogrammus aeglefinus*. The IUCN Red List of Threatened Species 2015: e.T13045A45097487

Standard clauses 1.3.2.2