

IFFO RS Global Standard for Responsible Supply



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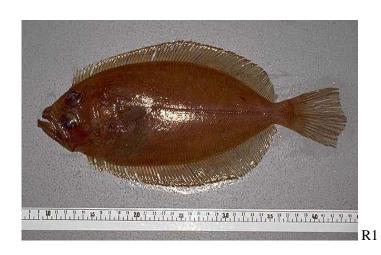


Global Standard for Responsible Supply of Marine Ingredients Fishery Assessment Methodology and Template Report V2.0



IFFO RSGlobal Standard for Responsible Supply of Marine Ingredients





Fishery Under Assessment	Megrim (<i>Lepidorhombus whiffiagonis</i>) North East Atlantic
Date	May 2019
Assessor	Jim Daly

Application details and summary of the assessment outcome							
Name: Pelagia	Name: Pelagia						
Address: Killybegs							
Country:		Zip:					
Tel. No.:		Fax. No.:					
Email address:		Applicant Cod	Applicant Code				
Key Contact :	Title:						
Certification Body D	etails						
Name of Certification	n Body:	SAI Global Lto	d				
Assessor Name	Peer Reviewer	Assessment Days	Initial/Surveillance/Re- approval	Whole fish/ By- product			
Jim Daly	Virginia Polonio	nia Polonio 0.5 SURV 1 By-product					
Assessment Period	2018						

Scope Details		
Management Authority (Country/State)	EU/Common Fisheries Policy	
Main Species	Megrim (Lepidorhombus whiffiagonis)	
Fishery Location	North East Atlantic	
Gear Type(s)	Mixed trawl	
Outcome of Assessment		
Overall Outcome	Pass	
Clauses Failed	None	
Peer Review Evaluation	Approve	
Recommendation	Pass	

Assessment Determination

Management is supported by species-specific data collection and stock assessment. However, management units do not match the stocks for which ICES advice is provided. *L.whifflagonis* in the North Sea Waters (FAO Area 27) is currently under MSC assessment (multi species, trawl fishery).

For several stocks ICES considers that management of two megrim species (includes *L.boscii*) under a combined TAC prevents effective control of the single-species exploitation rates and could lead to overexploitation of either species. ICES will request species-specific landings data in the future to help inform on the status of this stock.

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 European Commission has proposed a multiannual management plan (MAP) for the Western Waters, which is not yet finalized.

IUCN has listed *Lepidorhombus whiffiagonis* (European stock) as a species of least concern. This species is not listed in CITES appendices (both sites accessed 21.05.19)

The assessor recommends the approval of this by-product material against the IFFO RS standard.

Peer Review Comments

Agree with the conclusion raised for the four stock evaluated by ICES. See my comment below regarding the geographic distribution of the stock.

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
Cotogory			A2
Category A			A3
			A4
Category B			
Category C	Megrim Lepidorhombus whiffiagonis	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
Megrim	Lepidorhombus	NE		EU/CFP	С
	whiffiagonis	Atlantic			

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	Species Name Megrim Lepidorhombus whiffiagonis					
C 1	Category C Stock Status - Minimum Requirements					
	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 P					
	above the limit reference point (or proxy), OR removals by the fishery under					
	assessment are considered by scientific authorities to be negligible.					
Clause	outcor	ne:		PASS		

Evidence

This is a stock managed under the Common Fisheries Policy (CFP). Management is supported by species-specific data collection and stock assessment. Stock assessment and catch advice is provided by ICES. ICES note that management units do not match the stocks for which their advice is provided. The most recent ICES advice makes recommendations regarding the updating of management units.

ICES provide advice on the following stocks:

- Division IVa and VIa (Northern North Sea, West of Scotland)
- Division V1b (Rockall)
- Division VII b-k, VIIIa,b,d (West and Southwest Ireland, Bay of Biscay)
- Division VIIIc and IXa (Southern Bay of Biscay, Atlantic Iberian waters East)

C1.1:

For Megrim in Divisions IVa and VI an input data is derived from commercial sampling of landings and discards; six survey indices (SAMISS-Q2, IAMISS-Q2, Sco-IBTS-Q1, Sco-IBTS-Q3, Sco-WIBTS-Q1 until 2010, and Sco-WIBTS-Q4 until 2010).

For Megrim in Division VIb (Rockall) input data is derived from Commercial landings and one dedicated industry–science survey index (SCO-IV-VI-AMISS-Q2).

For Megrim in Divisions VIIb–k, VII.a–b, and VIIId no assessment was undertaken in 2018. Two survey indices (EVHOE-WIBTS-Q4 and IGFS-WIBTS-Q4 2003–2016) were used as indicators of abundance. This stock was assessed as Category 5 by ICES (stocks for which only landings data are available).

For Megrim in Divisions VIIIc and IX a (Cantabrian Sea and Atlantic Iberian waters) data was derived from Commercial catches (international landings, ages, and length frequencies from catch sampling); one survey index (SpNSGFS-WIBTS-Q4; 1988–2017, excluding 2003 and 2013); two commercial indices (SPLCGOTBDEF (1986–2017) and SP-AVSOTBDEF (1986–2017)); constant maturity ogive and an assumed natural mortality of 0.2.

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

C1.2:

Divisions IVa and VI a (Northern North Sea, West of Scotland):

Fishing mortality (F) has been declining since the mid-1990s and has been well below FMSY since the mid-2000s. Biomass (B) has been increasing since the mid-2000s and has been above MSY Btrigger for the entire time-series:

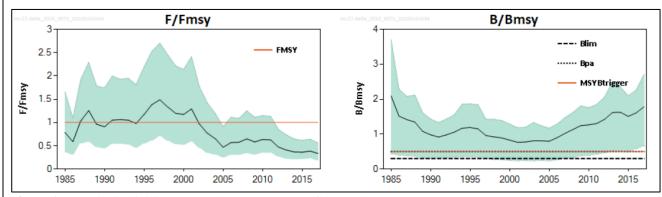


Figure 1: Megrim in divisions IVa and VIa. Summary of the stock assessment. Shaded areas in the F/FMSY and B/BMSY plots represent 95% confidence intervals. **R3**

ICES assesses that fishing pressure on the stock is below FMSY, Fpa, and Flim, and the stock size is above Bpa, Blim, and MSY Btrigger. The reference points are re-estimated within the assessment. The change between 2017 and 2018 reference points is larger than has been previously seen and results in a notable shift of relative stock status. However, trends in relative B and F are consistent with those of previous years.

Megrim in Division VIb (Rockall):

Stock biomass generally increased up to 2012 and has been relatively stable since:

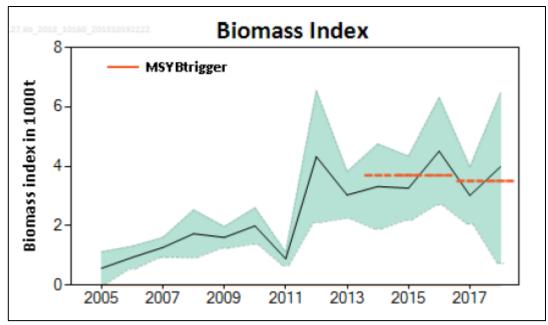


Figure 2: Megrim in Division VIb. Summary of the stock assessment. Catches and stock size indicator (biomass from survey SCO-IV-VI-AMISS-Q2 in thousand tonnes) with 95% confidence intervals. Dashed horizontal lines indicate the average of the respective year range. **R3**

Fishing mortality is below and the stock size above proxies of the maximum sustainable yield (MSY) reference points. The Surplus Production In Continuous Time (SPiCT; Pedersen and Berg, 2017) analysis suggests that

fishing mortality is below, and stock size above, proxies of MSY reference points (**Figure 3**); therefore, no additional precautionary buffer was applied. Discard rate in 2017 was 28.4% of the total catch.

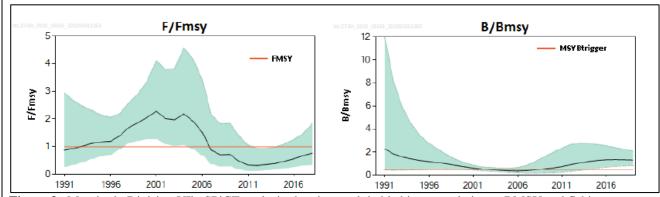


Figure 3: Megrim in Division VIb. SPiCT analysis showing exploitable biomass relative to BMSY and fishing mortality relative to FMSY. The shaded areas in both plots indicate 95% confidence intervals. The horizontal lines indicate FMSY and MSY Btrigger proxies. **R3**

ICES provides catch advice as vessels targeting gadoids at Rockall have been subject to the landings obligation for megrim since 2017.

Four-spot megrim (Lepidorhombus boscii) in Divisions VIIb-k, VII.a-b, and VIIId:

There is uncertainty in the recruitment estimates for recent years. The spawning-stock biomass (SSB) has been above MSY B trigger since 2008. The fishing mortality (F) has decreased since 2004, although it is still above FMSY. Recruitment (R) has been relatively stable throughout the time-series. The European Commission has proposed a multiannual management plan (MAP) for the Western Waters, which is not yet finalized.

The two megrim species (L.whiffiagonis and L.boscii) are not totally separated in the landings. A single TAC covers both species, and species-specific landings are estimated by ICES (ICES, 2018).

ICES considers that management of the two megrim species under a combined TAC prevents effective control of the single-species exploitation rates and could lead to overexploitation of either species. ICES will request species-specific landings data in the future to help inform on the status of this stock.

Megrim in Divisions VIIIc and IX a (Cantabrian Sea and Atlantic Iberian waters):

The spawning-stock biomass (SSB) has generally increased from a minimum in 2009 and is now above MSY $B_{trigger}$. Large variation is evident in fishing mortality (F) for much of the time-series. F has declined from F_{lim} in 2014 to below F_{MSY} in 2017. Estimated recruitment (R) in 2015 to 2017 is the highest since the mid-1990s:

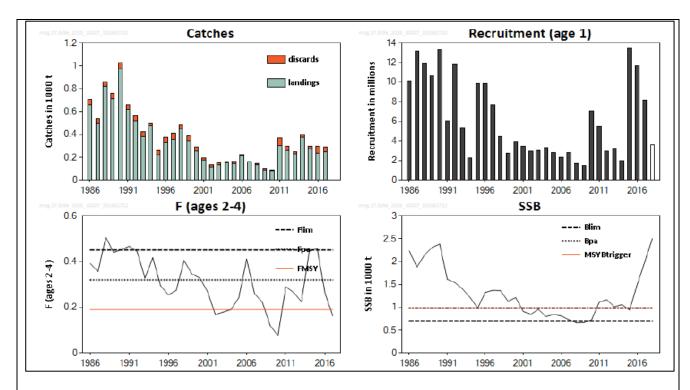


Figure 4: Megrim in Divisions VIIIc and IXa. Summary of the stock assessment. Assumed recruitment values are unshaded R3

ICES assesses that fishing pressure on the stock is below F_{MSY} , F_{pa} and F_{lim} , and that spawning stock size is above MSY $B_{trigger}$, B_{pa} , and B_{lim} .

For all four stocks assessed the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), and passes Clause C1.2.

References

R1 Image of *Lepidorhombus whiffiagonis* by Sánchez Delgado, Francisco http://fishbase.org/photos/PicturesSummary.php?StartRow=0&ID=28&what=species&TotRec=7

R2 EU fishing quotas 2019: Council Regulation (EU) 2019/124 of 30 January 2019 fixing for 2019 the fishing opportunities for certain fish stocks and groups of fish stocks, applicable in Union waters and, for Union fishing vessels, in certain non-Union waters https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32019R0124

R3: ICES advice:

- Megrim (*Lepidorhombus spp.*) in Divisions IVa and VI a (Northern North Sea, West of Scotland) http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/lez.27.4a6a.pdf
- Megrim (*Lepidorhombus ssp.*) in Division VIb (Rockall) http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/lez.27.6b.pdf
- Four-spot megrim (Lepidorhombus boscii) in Divisions VIIb-k, VII.a-b, and VIIId (West and Southwest of Ireland, Bay of Biscay)
 - http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/ldb.27.7b-k8abd.pdf
- Megrim (*Lepidorhombus whiffiagonis*) in divisions 8.c and 9.a (Cantabrian Sea and Atlantic Iberian waters) http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/meg.27.8c9a.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.

Table D2 - Productivity / Susceptibility attributes and scores.

Productivity attributes	Low productivity/ High risk	Medium productivity/ Medium risk	High productivity/ Low risk Score 1	
	Score 3	Score 2		
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	

Susceptibility attributes		High susceptibility/ ty attributes High risk		Low susceptibility/ Low risk	
		Score 3	Score 2	Score 1	
Availability	ability 1) Overlap of >50% of stock occurs adult species in the area fished range with fishery	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.

D3		Average Susceptibility Score		
DS		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	Spec	cies Name						
	Impa	Impacts On Species Categorised as Vulnerable by D1-D3 - Minimum Requirements						
	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	There is no substant	ial evidence that the fishery has a significant negative impact on					
		the species.						
Outco	me:							
Evide	Evidence							
Refer	ences							
Stande	ard clau	se 1.3.2.2						

SOCIAL CRITERION

In addition to the scored criteria listed above, applicants must commit to ensuring that vessels operating in the fishery adhere to internationally recognised guidance on human rights. They must also commit to ensuring there is no use of enforced or unpaid labour in the fleet(s) operating upon the resource.

Appendix A - Determining Resilience Ratings

The assessment of Category B species described in this assessment report template utilises a resilience rating system suggested by the American Fisheries Society. This approach was chosen because it is also used by FishBase, and so the resilience ratings for many thousands of species are freely available online. As described by FishBase, the following is the process used to arrive at the resilience ratings:

"The American Fisheries Society (AFS) has suggested values for several biological parameters that allow classification of a fish population or species into categories of high, medium, low and very low resilience or productivity (Musick 1999). If no reliable estimate of r_m (see below) is available, the assignment is to the lowest category for which any of the available parameters fits. For each of these categories, AFS has suggested thresholds for decline over the longer of 10 years or three generations. If an observed decline measured in biomass or numbers of mature individuals exceeds the indicated threshold value, the population or species is considered vulnerable to extinction unless explicitly shown otherwise. If one sex strongly limits the reproductive capacity of the species or population, then only the decline in the limiting sex should be considered. We decided to restrict the automatic assignment of resilience categories in the Key Facts page to values of K, t_m and t_{max} and those records of fecundity estimates that referred to minimum number of eggs or pups per female per year, assuming that these were equivalent to average fecundity at first maturity (Musick 1999). Note that many small fishes may spawn several times per year (we exclude these for the time being) and large live bearers such as the coelacanth may have gestation periods of more than one year (we corrected fecundity estimates for those cases reported in the literature). Also, we excluded resilience estimates based on r_m (see below) as we are not yet confident with the reliability of the current method for estimating rm. If users have independent r_m or fecundity estimates, they can refer to Table 1 for using this information."

Parameter	High	Medium	Low	Very low
Threshold	0.99	0.95	0.85	0.70
r _{max} (1/year)	> 0.5	0.16 - 0.50	0.05 - 0.15	< 0.05
K (1/year)	> 0.3	0.16 – 0.30	0.05 - 0.15	< 0.05
Fecundity (1/year)	> 10,000	100 – 1000	10 – 100	< 10
t _m (years)	< 1	2 – 4	5 – 10	> 10
t _{max} (years)	1 - 3	4-10	11 – 30	> 30

Taken from the FishBase manual, "Estimation of Life-History Key Facts": http://www.fishbase.us/manual/English/key%20facts.htm#resilience]

Appendix B – Background on the 5% catch rule

The proposed fishery assessment methodology uses a species categorisation approach to divide the catch in the assessment fishery into groups. These groups are:

- Category A: "Target" species with a species-specific management regime in place.
- Category B: "Target" species with no species-specific management regime in place.
- Category C: "Non-target" species with a species-specific management regime in place.
- Category D: "Non-target" species with no species-specific management regime in place

The distinction between 'target' and 'non-target' species is made to enable the assessment to consider the impact of the fishery on all the species caught regularly, without requiring a full assessment be conducted for each. Thus 'target' species are subjected to a more detailed assessment, while 'non-target' species are considered more briefly. For the purposes of the IFFO RS fishery assessment, 'target' and 'non-target' species are defined by their prevalence in the catch, by weight. Applicants must declare which species are considered 'target' species in the fishery, and the combined weight of these must be at least 95% of the annual catch. The remaining 5% can be made up of 'non-target' species. Note also that ETP species are considered separately, irrespective of their frequency of occurrence in the catch.

The proposed use of 5% as a limit for 'non-target' species is one area in which feedback is being sought via the public consultation. The decision to propose a value of 5% ensures consistency with other fishery assessment programmes, such as the MSC which uses 5% to distinguish between 'main' and 'minor' species (see MSC Standard, SA3.4 and GSA3.4.2); and Seafood Watch, which uses 5% when defining the 'main' species for the assessment (see Seafood Watch Standard, Criterion 2). The value is also consistent with the approached used in Version 1 of the IFFO RS Standard, in which up to 5% of the raw material could be comprised of 'unassessed' species.

Comments on this proposition are welcomed along with any other feedback on the proposed approach.