ANNEX VI Report to support the request for by-catches of the species megrim (Lepidorhombus spp.), anglerfish (Lophiidae), plaice (Pleuronectes platessa), whiting (Merlangius merlangus) and pollack (Pollachius pollachius), a combined de minimis up to a maximum of 5% of the total annual catches of these species made by trawlers (gear codes: OTT, OTB, PTB, OT, PT, TBN, TBS, TX, SSC, SPR, TB, TBB, SDN, SX, SV) in divisions VIII and IX.

In the framework of the landing obligation in accordance with article 15 of regulation (EU) N° 1380/2013, a de minimis exemption obligation is requested for anglerfish, megrim, plaice, whiting and pollack caught with demersal vessels using bottom trawls (OTB, OTT, PTB, OT, TBN, TBS, TX, SSC, SPR, TB, TBB, SDN, SX, SV) in ICES subarea 8 and 9, up to 5% in 2019 and beyond of the total annual catches of those species caught with demersal vessels using bottom trawls.

The request for an exemption for de minimis is based on article 15.c.i), due to difficulties to further increase selectivity in this mixed fishery, and on article 15.c.ii), due to disproportionate costs a total application of the landing obligation would cause in this fishery. The fleet is particularly vulnerable for the risk of commercial catch losses an improvement in selectivity would cause.

Summary

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Motive

Vessels having a mixed activity catch simultaneously a diversity of species during the same fishing operation. They are depending financially on several species (Nephrops, whiting, megrims, and anglerfish) which can be spatially and temporally related. Thus, it is very difficult to improve selectivity without causing significant commercial losses.

This difficulty is even truer regarding the differences of those species morphology. Moreover, even with all scientists' efforts on developing mixed species models, it is for now unreal to

find the appropriate balance between fishing opportunity taking into account technical and biological interactions. That is why, besides the description of choke species issues linked to this activity (mixed fisheries), it is highly necessary to establish suitable solutions.

This specificity of mixed demersal fisheries justifies this exemption request due to this difficulty to improve the selectivity.

Therefore, there are situations where TAC cannot be entirely consumed without overconsuming the TAC of another stock exploited simultaneously.

In addition to those situations of choke species, landing application enforcement may generate disproportionate cost due to hold overloading and increase the sorting time by the crew. Those arguments justify this de minimis request also for disproportionate costs. Some studies demonstrate those aspects such as EODE program (*Balazuc et al. 2016*). According to the study, in bottom trawler case, total landing obligation enforcement would cause a workable time increase on board of around 30% to 60% depending on vessel size. Besides, 20% of fishing trip could be concerned by hold overloading issues.

This specificity of mixed demersal fisheries justifies this exemption request due to this difficulty to improve the selectivity. This de minimis request aims at giving some flexibility needed for fishermen, exercising bottom trawler metier, to implement the landing obligation.

Definition of the species

Below, the states of the stocks affected by this exemption, according to ICES:

- White-Anglerfish (in divisions 7.b–k, 8.a–b, and 8.d): ICES advises that when the precautionary approach is applied, landings should be no more than 26 691 tonnes in each of the years 2017 and 2018. ICES cannot quantify the corresponding total catches.
- The EVHOE-WIBTS-Q4 biomass index shows high interannual variability with no strong trends, and a decrease in the last two years. The other indices, IGFS-WIBTS-Q4 and the SPPGFS-WIBTS-Q4, show an overall increasing trend during the last five years. The recruitment index varies without clear trends over time.
- -Black-bellied anglerfish (in divisions 7.b–k, 8.a–b, and 8.d): ICES advises that when the precautionary approach is applied, landings should be no more than 10 757 tonnes in each of the years 2017 and 2018. ICES cannot quantify the corresponding total catches. The biomass index has been fluctuating without trend over the time-series and with high interannual variability. The recruitment shows an increasing trend over time, although the last year is around the average of the time-series.
- Megrim (in divisions 7.b–k, 8.a–b, and 8.d): ICES advises that when the MSY approach is applied, catches in 2018 should be no more than 15 720 tonnes. If discard rates do not change from the average of the last three years (2014–2016), this implies landings of no

more than 12 884 tonnes. 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.

- Whiting (in subarea 8 and Division 9.a (Bay of Biscay and Atlantic Iberian waters)): ICES advises that when the precautionary approach is applied, wanted catches in each of the years 2018 and 2019 should be no more than 1613 tonnes. ICES cannot quantify the corresponding total catches. Landings have been reasonably stable over the time period. The available information is insufficient to evaluate stock trends and exploitation status.
- Plaice (in Subarea 8 and Division 9.a): ICES advises that when the precautionary approach is applied, wanted catches1 in each of the years 2018 and 2019 should be no more than 194 tonnes. ICES cannot quantify the corresponding total catches. Landings have been relatively stable over the time period. The available information is insufficient to evaluate stock trends and exploitation status.
- Pollack (in Subarea 8 and Division 9.a): ICES advises that when the precautionary approach is applied, commercial catches in each of the years 2018 and 2019 should be no more than 1131 tonnes. All commercial catches are assumed to be landed. ICES cannot quantify the corresponding total catches because the recreational catches cannot be quantified. The commercial landings have been stable for the last 17 years. The information available is insufficient to evaluate stock trends and exploitation status.

Definition of the management unit

Characteristics of the bottom trawl fishery and its activity

The SWW Discard Atlas reports that two French fisheries of TR2 and TR1 exist in ICES subarea 8:

- Bottom-trawlers targeting demersal fishes and cephalopods in the Bay of Biscay. The vessels which operate this metier use a bottom otter-trawl or otter twin trawls in ICES areas 8a, b; Trip duration varies from 1 to 14 days with an average 4 days. It is the one concerned by this exemption.
- Bottom-trawlers targeting Nephrops in the Bay of Biscay. The vessels which operate this metier use a bottom otter-trawl or otter twin trawls to target Nephrops in ICES areas 8a, b.

For the rest of the member states find here the table of metiers in SWW.

Table 1.1. Métiers included in the SWW discard atlas and their target stocks.

Métier	Métier code	-	Target species	
		Hake	Nephrops	Sole
Portuguese métiers				
Otter bottom trawl targeting crustaceans or demersal	OTB_>70mm	S	IXa	
species in Portuguese waters				
Spanish métiers				
Pair bottom trawl targeting demersal species in the Bay of	PTB_DEF_VIIIabd	S		
Biscay				
Otter bottom trawl targeting demersal species in the Bay	OTB_DEF_VIIIabd	S		
of Biscay				
Otter bottom trawl targeting demersal fish and	OTB_DEF_CEP_VIIIabd	[S]		
cephalopods in the Bay of Biscay				
Otter bottom trawl targeting demersal species in north	OTB_DEF_>=55_VIIIc_I	S		
Spanish Iberian waters ('Baca')	Xa			
Pair bottom trawl targeting pelagic and demersal species	PTB_MPD_>=55_VIIIc_	S		
in north Spanish Iberian waters ('Pareja')	IXa			
Otter bottom trawl targeting crustaceans and demersal	OTB_MCD_>=55_VIIIc	S	VIIIc	
species in south Spanish Iberian waters	_IXa			
French métiers				
Bottom trawls targeting demersal fish and cephalopods in	OTB_OTT_PTB_DEF_C	N		VIIIab
the northern Bay of Biscay	EP _VIIIab			
Bottom trawls targeting crustaceans in the northern Bay	OTB_OTT_CRU_VIIIab		VIIIab	
of Biscay				
Belgian métier				
Beam trawls targeting sole in the Bay of Biscay	TBB_DEF_70-99			VIIIab

Composition of catches, landings and discards

When they are targeting demersal species, bottom trawlers are catching a group of varied species, which several are under TAC management: blue-whiting, megrim, anglerfish, etc. Therefore, those species are potential choke species for those vessels. Based on STECF database (2013-2016) we tried to establish a catch and discard profile for those vessels.

It is important to notice that data used are not always representative, thus an extreme care on the interpretation and use of the estimates presented below is needed. The nonrepresentativness of discard data in general and the mixed character of those fisheries makes hard to establish a profile discard and to estimates which quantity of every species could be discarded under the use of a de minimis as presented here. Nevertheless, it gives us a general idea based on the best data available for now (STECF data). It is also important to notice that discards and catches may highly vary from a year to another.

Based on the estimates, catches of anglerfish, megrim, plaice, whiting and pollack represent approximately 7% of overall catches of TAC species. (Fig 1).

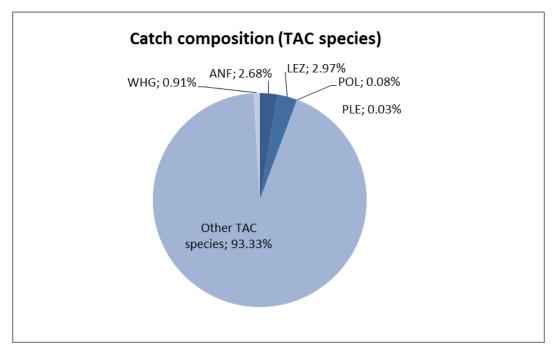


Figure 1: catch composition of TAC species in weight for bottom trawl fleet in ICES subarea 8 and 9 (*STECF data base - average 2013-2016*)

NB: "Other TAC species" includes all demersal species under TAC management but also pelagic species that can be caught by demersal vessels, especially blue-whiting, a pelagic species that is sometimes targeted by Spanish and Portuguese demersal trawlers.

Discards represent approximately 70% of the total TAC catches (average 2013-2016) of bottom trawlers. The French data observer program indicates an overall discard rate of around 38% in 2016 for French vessel targeting demersal fishes and cephalopods (Cornou *et al.*, 2017).

The main TAC specie discarded is blue whiting (Fig 2). Discards of anglerfish, megrim, plaice, whiting and pollack represent approximately 4.2% of overall TAC discards.

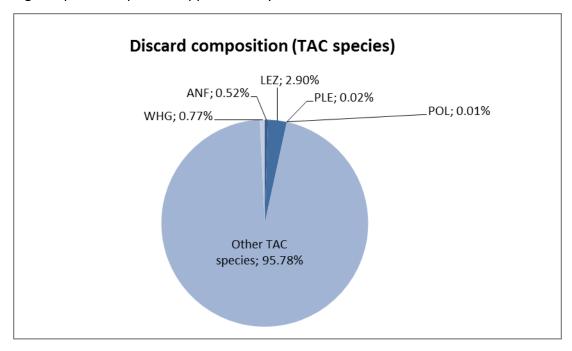


Figure 2: Discard composition of TAC species for bottom trawl fleet in ICES 8 and 9 (*STECF data base - average 2013-2016*)

Specifying de minimis volume

Discard volume

Based on STECF data (average 2013-2016, see annexe II), we established a discard profile in order to estimate maximum volumes of species that would be theoretically discarded under a de minimis as presented in this case. All precautions shall be taken in interpreting and using those estimates as discards can vary significantly from a year to another due to the aleatory specify of fishery activity. Moreover, data used are not always representative. Nevertheless, estimates present hereafter can give a general idea of maximum volume discard estimates.

Those data present an average of catch and discard data for 2013, 2014, 2015 and 2016 (STECF data base).

Based on annex I (*STECF* data), mixed bottom trawl vessels in ICES area 8 and 9 caught 296 396 tonnes of TAC species (average 2013-2016) of which 19 782 tonnes were anglerfish, megrim, plaice, whiting and pollack catches. Thus, a de minimis of 5% would represent theoretically a maximum volume of discards of 990 tonnes (for all European bottom trawl in ICES 8 and 9).

- Anglerfish: a maximum of 12% of the total of anglerfish, megrim, plaice, whiting and pollack discards volume
- Megrim: a maximum of 69% of the total of anglerfish, megrim, plaice, whiting and pollack discards volume
- Plaice: a maximum of 0.04% of the total of anglerfish, megrim, plaice, whiting and pollack discards volume
- Whiting: a maximum of 18% of the total of anglerfish, megrim, plaice, whiting and pollack discards volume
- Pollack: a maximum of 0.01% of the total of anglerfish, megrim, plaice, whiting and pollack discards volume

Safeguards

This de minimis would respond partly in how to implement landing obligation in specific fisheries where it is difficult in a 2019 scenario to implement it. Also this de minimis has its limits and its risks. It is true that the combination of several species can represent a high volume of possible discards. Nevertheless, it will never be more than 5% of the catches concerned.

As said before, volume and composition of catches can be unpredictable and vary from a year to another. It is also important to emphasize that, because of the mixed character of the fisheries it is highly unlikely that only one species would be discarded. This is all the point of a combined de minimis: giving some flexibility needed for fisherman to face the variability of by-catch stocks abundance.

Nevertheless, in order to limit the risk of discarding only one species and because discard rate can be significantly different from a species to another it is propose to put in place safeguard.

Here after is a proposition of safeguards that need to be evaluated and discussed:

According to the discard profile of the fishery (see annexe II), a margin on 25% shall apply. This margin would allow the flexibility needed to face the variability of catches and discards. On the overall discard volume permitted by this exemption, only the proportion calculated (+25%) could be discarded on the overall discard. In this case, and taking all precaution in using those data, this would allow fishermen to discard (see annexe II):

- Anglerfish: a maximum of 15% of the total of anglerfish, megrim, plaice, whiting and pollack discards volume
- Megrim: a maximum of 86% of the total of anglerfish, megrim, plaice, whiting and pollack discards volume

- Plaice: a maximum of 0.05% of the total of anglerfish, megrim, plaice, whiting and pollack discards volume
- Whiting: a maximum of 23% of the total of anglerfish, megrim, plaice, whiting and pollack discards volume
- Pollack: a maximum of 0.02% of the total of anglerfish, megrim, plaice, whiting and pollack discards volume

Those safeguards should be revised if necessary and according to discard profile that can evolve over the years.

Only for informative purpose, theoretical volumes of discards are presented in Annex II.

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ICES 2017d. Megrim (Lepidorhombus whiffiagonis) in divisions 7.b–k, 8.a–b, and 8.d (west and southwest of Ireland, Bay of Biscay)

http://ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/meg.27.7b-k8abd.pdf

ICES 2017e. Plaice (Pleuronectes platessa) in Subarea 8 and Division 9.a (Bay of Biscay and Atlantic Iberian waters)

http://ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/ple.27.89a.pdf

ICES 2017f. Pollack (Pollachius pollachius) in Subarea 8 and Division 9.a (Bay of Biscay and Atlantic Iberian waters)

http://ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/pol.27.89a.pdf

Annexes

ANNEX I - Catch, landing and discard of the bottom trawl fisheries in (ICES 8 and 9)

Source: STECF data

		2014		2	2015			2016		Avera	ge (2013-2	2016)		
species	landings	discards	catch	landings	discards	catch	landings	discards	catch	landings	discards	catch	discards	catch
ALF	1		1	1	1	2	1		1	1	1	2	0%	0%
ANE	45	0	45	4	0	4	22	0	22	30	0	30	0%	0%
ANF	7450	1515	8965	7057	1755	8812	7417	727	8144	6829	1120	7949	1%	3%
BOR	0	0	0			0	0		0	0	0	0	0%	0%
BSF	9		9	10	0	10	3		3	7	102	59	0%	0%
BSH	5		5	7		7	9		9	7		5	0%	0%
COD	46	44	90	48	0	48	30	0	30	39	15	50	0%	0%
DGS	0		0	1		1	0		0	1		1	0%	0%
HAD	137	33	171	202	37	238	188	10	198	147	23	170	0%	0%
HKE	8998	5400	14398	9767	4791	14559	10332	6771	17104	9368	6365	15733	3%	5%
JAX	19172	89962	109134	18856	70890	89746	22830	1570	24400	19029	41035	60064	19%	20%
LEZ	2408	21554	23963	2732	1138	3870	2998	1093	4092	2506	6308	8814	3%	3%
LIN	150	4	154	124	0	124	108	0	108	119	1	120	0%	0%
MAC	13197	6781	19978	14326	2923	17249	11647	5867	17514	11394	4809	16203	2%	5%
NEP	2978	1576	4554	3813	1497	5310	4380	1806	6186	3285	1462	4746	1%	2%
PLE	96	8	104	92	1	93	71	0	71	76	3	79	0%	0%
POK	4	0	4	2		2	3	0	3	3	0	3	0%	0%
POL	410	0	410	200	0	200	155	4	159	243	1	244	0%	0%
RNG	0	0	0	1		1	0		0	0	0	0	0%	0%
SBR	47	1	48	50	0	50	42	8	50	64	15	79	0%	0%
SOL	1664	209	1873	1289	53	1342	1180	170	1349	1361	122	1483	0%	1%
SOO			0	0		0			0	0		0	0%	0%
SRX	0		0	0		0	0		0	1		1	0%	0%
WHB	26493	6729	33222	26615	600853	627468	25182	3331	28513	23688	154178	177866	71%	60%
WHG	913	2240	3153	1321	3108	4429	1150	497	1647	1020	1676	2696	1%	1%
TOTAL	84222	136057	220279	86519	687046	773565	87749	21855	109604	79217	217237	296396	100%	100%

Portuguese fisheries

Trawl Catches

Species	(tonnes)	(%)
ANF	29,652	1,86%
LEZ	3,151	0,20%
PLE	0,206	0,01%
POL	0,030	0,00%
WHG	0,001	0,00%
Other		
species	1.558,394	97,92%
Total	1.591,434	

Vessels

Species	(tonnes)		(%)
ANF		15	22,39%
LEZ		11	16,42%
PLE		4	5,97%
POL		5	7,46%
WHG		5	7,46%
Total		67	

Annex II - Specifying de minimis for 2019 of the bottom-trawl fleet in ICES subarea 8 and 9 $\,$

Estimate of Maximum volume under a 5% de minimis	151.3	852.2	4.7	1.8	226.4	
Maximum discard share	15%	%98	0.5%	0.2%	23%	
Maximum Maximum Maximum Maximum volume of volume of volume of volume of volume of discard with discard with discard with discard with discard with a 3% DM (in a 4% DM (in a 5% DM (in a tonnes) tonnes) tonnes)			3.8 25% of the estimated discard	share composition		
Maximum volume of discard with a 5% DM (in tonnes)	121.0	681.7	3.8	1.4	181.1	
MaximumMaximumMaximumvolume ofvolume ofvolume ofiscard withdiscard withdiscard with2% DM (ina 3% DM (ina 4% DM (intonnes)tonnes)tonnes)	8.96	545.4	3.0	1.1	144.9	
Maximum Maximum volume of discard with discard with tonnes) Maximum as maximum of discard with a 3% DM (in a 4% DM (in tonnes)	72.6	409.0	2.3	0.0	108.7	
Maximum volume of discard with of a 2% DM (in a tonnes)	48.4	272.7	1.5	9.0	72.4	
Estimated discard share compositio a n (DS)	12%	%69	0.4%	0.1%	18%	
Estimated discard share compositio n on overall catches	0.5%	2.9%	0.02%	0.01%	%8'0	
Total catch	7948.7	8814.4	78.9	243.5	2696.1	
Species subject to the DM	Anglerfish	Megrim	Plaice	Pollack	Whiting	

ANNEX III - Landing and discard of the bottom trawl fisheries in (ICES 8 and 9) by country

COUNTRY YEARS	RS ANF	LEZ	PLE	2014 POL	MHG	TOTAL	N.F	LEZ P	2015 PLE PC	ر 10	NHG	rotal /	N F	EZ P	20	4	MHG	OTAL
	ngs 289.	12 12.2	2 1.1	1.12 0.07	0.81	303.34		4.6	5.09	0.15	1.86	192.16	218.92	8 2.09 0.15 1.86 192.16 218.92 13.58	0.94	0.05	0.55	234.04
=	.ds 96.	85 1.9	4	0	2.51	101.3		0.5	0	0	0.57	110.02	55.49	9.94				65.43
.=	1873.	16 1477.9		6 98.19		3504.26		1388.8	1.87	13.01	55.12	3100.9	1846.74	1464.42	1.67	19.08	41.25	3373.16
E	ds 346.	346.85 11158.1	1 0.26			11610.3		509.2	0.02	0.01	132.72	1013.25	123.44	627.89	0	0.25	9.11	760.69
÷	ngs 1	80			П	181	247					247	210.8				9.05	219.85
ar		3.6			0.68	4.28						13.64	6.46				0	6.46
dir	Landings 5107.09	917.94		92.96 311.22		7287.21	4985.08	1338.4	88.34	186.45	1264.34	7862.64	5140.55	1520.46	68.64	68.64 135.93 1099.5 7965.08	1099.5	7965.08
25	de 1067	1039		,		13600 9	1260.81	89 229	0 69	000	2974 33	4863 6	5415	455.47	C	2 63	487 9	1488 5