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**The economic importance of the fishery in the exclusive economic zones of the United Kingdom, Norway and the Faroe Islands for Danish fisheries in 2016, 2017 and 2018**

Hoff, Ayoe; Andersen, Jesper Levring; Andersen, Peder

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# IFRO Report



The economic importance of the fishery in the exclusive economic zones of the United Kingdom, Norway and the Faroe Islands for Danish fisheries in 2016, 2017 and 2018

*Ayoe Hoff*  
*Jesper Levring Andersen*  
*Peder Andersen*

## **IFRO Report 285**

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Authors: Ayoe Hoff, Jesper Levring Andersen and Peder Andersen

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Department of Food and Resource Economics (IFRO)

University of Copenhagen

Rolighedsvej 25

DK 1958 Frederiksberg

[www.ifro.ku.dk/english](http://www.ifro.ku.dk/english)

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## 1. Background

In 2017, the Department of Food and Resource Economics carried out an analysis of the possible economic consequences following the decision by the United Kingdom to leave the European Union, cf. Andersen, Andersen, Hoff and Ståhl (2017). The analysis was based on data until 2016.

In order to update the analysis from 2017, this report describes the current situation for the Danish fishery with focus on the fishery in the exclusive economic zone of the United Kingdom (UK-EEZ) based on the latest available data from 2016, 2017 and 2018.

Furthermore, a description of the importance of the Danish fishery in the exclusive economic zones of Norway (NOR-EEZ) and the Faroe Islands (FRO-EEZ) are also included. The current fishing agreements between the European Union and Norway/the Faroe Islands give the fishermen from these countries access to the UK-EEZ as part of the EU-EEZ. However, this may not be the case in the future, depending on the agreements with the United Kingdom.

It must be noted that any possible consequences with respect to access for EU27 vessels to Norwegian and/or Faroese waters will not be automatic. Norway and/or the Faroe Islands would have to initiate negotiations with the EU to find a solution, and it must be stressed that an outcome where Brexit will have consequences for EU access to Norwegian and Faroese waters must be seen as a worst case scenario.

The presented tables cover the years 2016, 2017 and 2018. The year 2016 was the last year available in Andersen, Andersen, Hoff and Ståhl (2017), and updated 2016 figures are included in the current report in order to make a useful link to the previous analysis. The approach and methods used in the current report are the same as in Andersen, Andersen, Hoff and Ståhl (2017).

This report is divided into two sections. In the first section, the Danish fishing activities in the exclusive economic zones of the United Kingdom, Norway and the Faroe Islands are described. The second section considers the economic consequences for the Danish fishery, if Danish fishermen are prohibited from fishing in the UK-EEZ, NOR-EEZ and FRO-EEZ.

## 2. The Danish fishing activity in the exclusive economic zones of the United Kingdom, Norway and the Faroe Islands

Danish fishermen fish in a range of fishing areas primarily in the North East Atlantic. Many vessels solely fish around Denmark in the Baltic Sea, Kattegat, Skagerrak and the North Sea close to Denmark. However, especially larger vessels have activity further away from Danish ports, i.e. on the fishing grounds around the Shetland Islands, around Ireland, further north in Norwegian waters and in some cases around the Faroe Islands.

In the three sections below, the fishing activity undertaken by Danish fishing vessels is investigated in detail in order to describe the importance of the exclusive economic zones of the United Kingdom

(UK-EEZ), Norway (NOR-EEZ) and the Faroe Islands (FRO-EEZ). Each description covers vessels with activity in the specific EEZ each year. A vessel can be included in more than one description, e.g. if a vessel has activity in the UK-EEZ and NOR-EEZ, it will be included in each description. In addition, a vessel might be included in the description covering one year, but not the next, if it had no activity in the specific EEZ that year. The final section presents a summary of the total importance of the three zones together, for the Danish fishery.

The descriptions below are all based on data derived from the vessel, logbook and sales notes register hosted by the Danish Fisheries Agency and extracted the 11 February 2019. By combining information from the three registers, detailed information on the statistical rectangles of the International Council for the Exploration of the Sea (ICES-squares) can be derived. Based on the statistical rectangles, the activity in the UK-EEZ can be separated from the current EU zone. This has already been done for the NOR-EEZ and FRO-EEZ, because the landings from these areas are managed through the Total Allowable Catches (TAC) regulation.

The general economic importance of various exclusive economic zones for Danish fishery is shown in Table II.1. On average, the NEW-EU-EEZ, i.e. the remaining exclusive economic zone of the European Union excluding the exclusive economic zone of the United Kingdom, make up for 52% of total landings value from 2016 to 2018. The UK-EEZ accounted for 30%, while 14% of the total landings value originated from the Norwegian EEZ. Only minor landings were from FRO-EEZ, while other zones, primarily the Greenland EEZ accounted for 4% on average from 2016 to 2018. Measured in absolute values, the UK-EEZ accounts for approximately 1 billion DKK yearly out of a yearly total landings value of 3.5 billion DKK.

**Table II.1** Landings value of exclusive economic zones for Danish fishery (1,000 DKK)

Exclusive economic zone	2016		2017		2018		Average 2016-2018	
	Value	%	Value	%	Value	%	Value	%
<b>NEW-EU</b>	1,959,503	53%	1,733,021	51%	1,852,417	52%	1,848,314	52%
<b>UK</b>	1,018,173	28%	1,052,818	31%	1,071,390	30%	1,047,460	30%
<b>NOR</b>	536,065	15%	489,437	14%	474,274	13%	499,925	14%
<b>FRO</b>	14,106	0%	0	0%	389	0%	4,832	0%
<b>Other EEZ*</b>	147,370	4%	144,017	4%	142,557	4%	144,648	4%
<b>Total by all Danish vessels</b>	<b>3,675,217</b>	<b>100%</b>	<b>3,419,293</b>	<b>100%</b>	<b>3,541,027</b>	<b>100%</b>	<b>3,545,179</b>	<b>100%</b>

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: \* Other EEZ includes the exclusive economic zone around Greenland, the zone around Svalbard and Bear Island, the international zone, and the waters adjacent to the territory of Western Sahara.

## 2.1. Activity in the UK-EEZ

The dependency of Danish fisheries of exclusive economic zones of the United Kingdom (UK-EEZ) is described in detail in this section. In total, 69 vessels in 2016, 69 vessels in 2017 and 69 vessels in 2018 had fishing activity in the UK-EEZ, cf. Table II.2. Out of a total Danish fishing fleet of around 2,200 vessels, it is thus only a minor percentage, who fish in the UK-EEZ. However, besides one vessel in 2016 and 2017, these vessels are all above 18 meters in length and are primarily trawlers.

**Table II.2** *Number of Danish fishing vessels by fleets fishing in UK-EEZ*

Length	Gear type	2016		2017		2018	
<b>12-15m</b>	Netters and liners			1	1%		
	Subtotal			1	1%		
<b>15-18m</b>	Netters and liners	1	1%				
	Subtotal	1	1%				
<b>18-24m</b>	Netters and liners	3	4%	3	4%	2	3%
	Multi-purpose gears	1	1%	1	1%	1	1%
	Danish seine	3	4%	3	4%	3	4%
	Trawl	3	4%	3	4%	5	7%
	Subtotal	10	14%	10	14%	11	16%
<b>24-40m</b>	Beam trawl	1	1%	2	3%	2	3%
	Multi-purpose gears	4	6%	3	4%	3	4%
	Trawl consumption	16	23%	17	25%	20	29%
	Trawl reduction	3	4%	2	3%	2	3%
	Trawl mixed	1	1%	1	1%		
Subtotal	25	36%	25	36%	27	39%	
<b>&gt;40m</b>	Purse seine	4	6%	4	6%	4	6%
	Trawl reduction	14	20%	14	20%	13	19%
	Trawl mixed	11	16%	9	13%	10	14%
Subtotal	29	42%	27	39%	27	39%	
<b>Decommissioned vessels</b>		4	6%	6	9%	4	6%
<b>Total</b>		69	100%	69	100%	69	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

On average, the 69 vessels observed each year accounted for 59% of the total landings value and 78% of the total landings live weight taken by Danish fishermen in the period 2016 to 2018, cf. Table II.3. Thus, despite being a minor part of the Danish fishing fleet measured in numbers, their activity is of much higher importance for Danish fisheries. The vessels have an equal dependency on the UK-EEZ and the remaining EEZ. Thus, for these vessels, the future access to the UK-EEZ is central for their economic situation, but the exact importance will vary from vessel to vessel.

**Table II.3** Landings by Danish vessels, their dependency on UK-EEZ and UK-EEZ active vessels' landings on exclusive economic zones

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
<b>UK-EEZ by UK-EEZ active vessels</b>	1,018,173	28%	1,052,818	31%	1,071,390	30%	1,047,460	30%
<b>NEW-EU-EEZ by UK-EEZ active vessels</b>	673,345	18%	497,128	15%	643,677	18%	604,717	17%
<b>NOR-EEZ by UK-EEZ active vessels</b>	420,105	11%	403,514	12%	411,721	12%	411,780	12%
<b>FRO-EEZ UK-EEZ active vessels</b>	14,106	0%	0	0%	389	0%	4,832	0%
<b>Other EEZ* by UK-EEZ active vessels</b>	10,232	0%	21,279	1%	13,710	0%	15,074	0%
<b>Total by UK-EEZ vessels</b>	2,135,961	58%	1,974,739	58%	2,140,887	60%	2,083,863	59%
<b>Total by all Danish vessels</b>	3,675,217	100%	3,419,293	100%	3,541,027	100%	3,545,179	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ by UK-EEZ active vessels	208,608	31%	396,918	44%	308,262	39%	304,596	38%
NEW-EU-EEZ by UK-EEZ active vessels	247,194	37%	270,314	30%	288,531	36%	268,680	34%
NOR-EEZ by UK-EEZ active vessels	40,901	6%	34,145	4%	32,539	4%	35,862	5%
FRO-EEZ UK-EEZ active vessels	2,440	0%	0	0%	251	0%	897	0%
Other EEZ* by UK-EEZ active vessels	4,099	1%	8,987	1%	2,364	0%	5,150	1%
<b>Total by UK-EEZ vessels</b>	<b>503,242</b>	<b>75%</b>	<b>710,364</b>	<b>78%</b>	<b>631,947</b>	<b>80%</b>	<b>615,185</b>	<b>78%</b>
<b>Total by all Danish vessels</b>	<b>674,322</b>	<b>100%</b>	<b>907,517</b>	<b>100%</b>	<b>792,404</b>	<b>100%</b>	<b>791,414</b>	<b>100%</b>

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: \* Other EEZ includes the exclusive economic zone around Greenland, the zone around Svalbard and Bear Island, the international zone, and the waters adjacent to the territory of Western Sahara.



Table II.4 gives a more detailed description of the vessels active in the UK-EEZ and their economic dependency on UK-EEZ compared to the other EEZ, where they fish. There is generally an increasing dependency on the UK-EEZ with the length of the vessel. The vessels above 40 meters in length have a dependency of up to 70% of their landings value from the UK-EEZ.

**Table II.4 Landings dependency on UK-EEZ by fleets for UK-EEZ active vessels**

Landings value (1,000 DKK)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	% in UK-EEZ
18-24m	Total	39,476	138,433	63,533	146,350	34,492	163,274	45,834	149,352	23%
24-40m	Total	110,317	379,073	155,056	384,674	106,900	407,403	124,091	390,383	24%
	- Trawl consumption	76,755	268,596	113,679	274,345	72,437	308,451	87,624	283,797	24%
>40m	Total	868,380	600,280	834,228	390,898	929,999	498,818	877,536	496,665	64%
	- Trawl reduction	54,429	161,838	81,146	100,476	80,745	131,347	72,107	131,220	35%
	- Trawl mixed	541,313	295,412	446,816	174,797	525,096	247,198	504,408	239,136	68%
Total		1,018,173	1,117,786	1,052,817	921,922	1,071,391	1,069,495	1,047,461	1,036,400	50%

Landings live weight (tonnes)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	% in UK-EEZ
18-24m	Total	8,655	36,383	29,361	45,772	14,205	35,612	17,407	39,256	31%
24-40m	Total	10,188	30,435	19,577	28,278	10,701	27,034	13,489	28,583	32%
	- Trawl consumption	4,198	15,113	5,913	14,558	3,934	15,601	4,682	15,091	24%
>40m	Total	189,763	227,816	347,979	239,397	283,354	261,040	273,699	242,750	53%
	- Trawl reduction	26,319	79,612	65,484	82,419	44,601	78,077	45,468	80,036	36%
	- Trawl mixed	115,691	106,234	169,873	101,812	157,436	122,903	147,667	110,316	57%
Total		208,606	294,634	396,917	313,447	308,260	323,686	304,596	310,588	50%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Definitions: *Trawl consumption* are vessels landing above 80% consumption species and *Trawl reduction* are vessels landing above 80% reduction species (i.e. sand eel, Norway pout, sprat etc.).

Note: For discretionary purposes, vessels below 18 meters and decommissioned vessels have been included in length group 18-24 meters.

The tables above focus on all vessels with activity in the UK-EEZ, but a range of these only have a low economic dependency on the UK-EEZ. Thus, as in Andersen, Andersen, Hoff and Ståhl (2017), the following analyses focus on the vessels having at least 15% of their total landings value from the UK-EEZ.

With this threshold, the number of vessels is reduced from 69 each year, to 36 in 2016, 50 in 2017 and 44 in 2018, cf. Table II.5. Looking at 2018, no vessels below 18 meters are included, 10 out of 11 vessels between 18 and 24 meters are excluded, and 12 out of 27 vessels between 24 and 40 meters, while none above 40 meters are excluded.

**Table II.5** Number of Danish fishing vessels by fleets fishing in UK-EEZ with 15%-dependency

Length	Gear type	2016		2017		2018	
18-24m	Danish seine	1	3%	2	4%	1	2%
	Subtotal	1	3%	2	4%	1	2%
24-40m	Beam trawl			1	2%	1	2%
	Multi-purpose gears	1	3%	2	4%	2	5%
	Trawl consumption	6	17%	11	22%	7	16%
	Trawl reduction	2	6%	2	4%	2	5%
	Trawl mixed			1	2%		
	Subtotal	9	25%	17	34%	12	27%
>40m	Purse seine	3	8%	4	8%	4	9%
	Trawl reduction	10	28%	14	28%	13	30%
	Trawl mixed	10	28%	9	18%	10	23%
	Subtotal	23	64%	27	54%	27	61%
Decommissioned vessels		3	8%	4	8%	4	9%
Total		36	100%	50	100%	44	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Table II.6 shows the implications on landing by introducing the 15%-threshold, and thereby reducing the number of vessels included in the following description. On average, the threshold implies that 2% of the landings value, i.e. 23 million DKK from the UK-EEZ are excluded from the description and 1% of the landings weight.

**Table II.6** Landings from the UK-EEZ distributed on UK-EEZ 15%-vessels and below-15%-vessels

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Total UK-EEZ 15%-vessels	982,939	97%	1,038,353	99%	1,053,396	98%	1,024,896	98%
Total UK-EEZ non-15%-vessels	35,235	3%	14,465	1%	17,994	2%	22,565	2%
Total	1,018,173	100%	1,052,818	100%	1,071,390	100%	1,047,460	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Total UK-EEZ 15%-vessels	200,759	96%	393,864	99%	306,086	99%	300,236	99%
Total UK-EEZ non-15%-vessels	7,848	4%	3,054	1%	2,176	1%	4,359	1%
Total	208,608	100%	396,918	100%	308,262	100%	304,596	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

The UK-EEZ 15%-vessels totally landed for around 1.7 billion DKK annually, comprising thus almost half of the total Danish landings value of 3.5 billion DKK, as shown in Table II.7. 60% of their landings value are from their fishery in the UK-EEZ, while 24% are from NEW-EU-EEZ. Thus, if the agreements with the United Kingdom and Norway were cancelled, these vessels would accordingly get a reduction of 75% in their landings value, everything else being equal.

**Table II.7 Landings by the UK-EEZ 15%-vessels distributed on exclusive economic zones**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ	982,939	60%	1,038,353	61%	1,053,396	60%	1,024,896	60%
NEW-EU-EEZ	394,008	24%	346,652	20%	487,491	28%	409,384	24%
NOR-EEZ	236,517	14%	293,099	17%	214,237	12%	247,951	15%
FRO-EEZ	14,106	1%	0	0%	389	0%	4,832	0%
Other zones*	10,134	1%	21,279	1%	8,429	0%	13,281	1%
Total	1,637,703	100%	1,699,383	100%	1,763,942	100%	1,700,343	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ	200,759	51%	393,864	59%	306,086	51%	300,236	54%
NEW-EU-EEZ	162,674	41%	239,202	36%	267,759	45%	223,212	40%
NOR-EEZ	30,156	8%	28,403	4%	22,716	4%	27,092	5%
FRO-EEZ	2,440	1%	0	0%	251	0%	897	0%
Other zones*	879	0%	8,987	1%	2,060	0%	3,975	1%
Total	396,909	100%	670,456	100%	598,873	100%	555,413	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: \* Other EEZ includes the exclusive economic zone around Greenland, the zone around Svalbard and Bear Island, the international zone, and the waters adjacent to the territory of Western Sahara.

The above 15%-vessels on average take 60% of their landings value and 54% of their landings weight in the UK-EEZ, cf. Table II.8. The lowest dependency of 39% of landings value is seen for trawlers for consumption between 24 and 40 meters and for trawl reduction greater than 40 meters, while the highest is observed for mixed trawlers above 40 meters.

**Table II.8 Landings dependency on UK-EEZ by fleets for the 15%-vessels**

Landings value (1,000 DKK)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	% in UK-EEZ
24-40m	Total	126,137	162,001	204,126	270,133	123,398	211,728	151,220	214,621	41%
	- Trawl consumption	65,992	101,392	105,938	166,262	59,408	98,016	77,113	121,890	39%
>40m	Total	856,801	492,762	834,228	390,898	929,999	498,818	873,676	460,826	65%
	- Trawl reduction	48,297	100,442	81,146	100,476	80,745	131,347	70,063	110,755	39%
	- Trawl mixed	539,914	277,678	446,816	174,797	525,096	247,198	503,942	233,224	68%
Total		982,938	654,763	1,038,354	661,031	1,053,397	710,546	1,024,896	675,447	60%

Landings live weight (tonnes)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	% in UK-EEZ
24-40m	Total	16,187	22,730	45,884	37,197	22,731	31,748	28,267	30,558	48%
	- Trawl consumption	3,550	5,611	5,489	9,025	3,216	5,076	4,085	6,571	38%
>40m	Total	184,573	173,421	347,979	239,397	283,354	261,040	271,969	224,619	55%
	- Trawl reduction	23,830	49,076	65,484	82,419	44,601	78,077	44,638	69,857	39%
	- Trawl mixed	114,978	96,975	169,873	101,812	157,436	122,903	147,429	107,230	58%
Total		200,760	196,151	393,863	276,594	306,085	292,788	300,236	255,178	54%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Definitions: *Trawl consumption* are vessels landing above 80% consumption species, *Trawl reduction* are vessels landing above 80% reduction species (i.e. sand eel, Norway pout, sprat etc.), and *Trawl mixed* are the remaining trawl vessels within that length group.

Note: For confidentiality reasons, vessels below 24 meters and decommissioned vessels have been included in length group 24-40 meters.

Table II.9 shows the composition of landings by species from the UK-EEZ by the 15%-vessels. Herring is the most important species in each of the three years based on value. Mackerel is the second most important species, while sand eel in 2017 and 2018 was the third most important. Together, these three species account for around 80% of the total landings value from the UK-EEZ.

**Table II.9 Landings of top 10 species in 2018 from the UK-EEZ by the 15%-vessels, measured by value, and share of total landings from the UK-EEZ by the 15%-vessels in Table II.8**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Herring	495,508	50%	313,253	30%	414,773	39%	407,845	40%
Mackerel	257,266	26%	280,885	27%	278,469	26%	272,207	27%
Sandeel	26,459	3%	240,679	23%	173,284	16%	146,807	14%
Blue whiting	49,162	5%	18,515	2%	40,577	4%	36,085	4%
Cod	25,224	3%	37,216	4%	32,704	3%	31,715	3%
Monkfish	14,642	1%	28,675	3%	20,388	2%	21,235	2%
Horse mackerel	16,100	2%	17,325	2%	20,031	2%	17,818	2%
Norway pout	44,803	5%	17,653	2%	18,607	2%	27,021	3%
Sprat	5,888	1%	9,978	1%	14,804	1%	10,224	1%
Saithe	8,876	1%	14,272	1%	12,707	1%	11,952	1%
Total	943,929	96%	978,452	94%	1,026,346	97%	982,909	96%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Herring	96,652	48%	97,708	25%	121,291	40%	105,217	35%
Mackerel	34,484	17%	37,423	10%	29,897	10%	33,935	11%
Sandeel	13,284	7%	212,149	54%	103,422	34%	109,618	37%
Blue whiting	20,876	10%	14,278	4%	24,988	8%	20,048	7%
Cod	1,114	1%	1,538	0%	1,334	0%	1,329	0%
Monkfish	473	0%	938	0%	632	0%	681	0%
Horse mackerel	2,674	1%	3,137	1%	3,363	1%	3,058	1%
Norway pout	23,743	12%	13,739	3%	9,871	3%	15,784	5%
Sprat	2,963	1%	7,145	2%	7,834	3%	5,980	2%
Saithe	772	0%	1,415	0%	1,468	0%	1,219	0%
Total	197,036	98%	389,470	99%	304,101	99%	296,869	99%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Table II.10 shows the composition of landings at the fleet level. It is the group above 40 meters, which lands the major part of herring, mackerel and reduction species. The vessels below 40 meters primarily land codfish (i.e. cod, hake and monkfish) and flatfish (i.e. plaice).

**Table II.10 Landings composition in UK-EEZ by fleets for 15%-vessels, average 2016-2018**

Landings value (1,000 DKK)								
Length	Gear type	Codfish	Flatfish	Mackerel	Herring	Reduction species	Other species	Total
24-40m	Total	95,303	7,354	12,138	10,960	24,768	696	151219
	- Trawl consumption	72,449	4,073	1	0	0	590	77113
>40m	Total	1,582	52	260,069	396,885	214,737	350	873675
	- Trawl reduction	994	39	219	4,329	64,150	332	70063
	- Trawl mixed	314	2	143,970	249,029	110,608	18	503941
Total		96,885	7,406	272,207	407,845	239,505	1046	1024894

Landings live weight (tonnes)								
Length	Gear type	Codfish	Flatfish	Mackerel	Herring	Reduction species	Other species	Total
24-40m	Total	5,082	409	1,813	3,143	17,797	25	28,269
	- Trawl consumption	3,860	206	0	0	0	19	4,085
>40m	Total	216	6	32,121	102,074	137,536	16	271,969
	- Trawl reduction	117	4	31	1,273	43,202	11	44,638
	- Trawl mixed	55	0	18,020	64,767	64,582	5	147,429
Total		5,298	415	33,934	105,217	155,333	41	300,238

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Definitions: *Trawl consumption* are vessels landing above 80% consumption species, *Trawl reduction* are vessels landing above 80% reduction species, and *Trawl mixed* are the remaining trawl vessels within that length group.

Note: For confidentiality reasons, vessels below 24 meters and decommissioned vessels have been included in length group 24-40 meters.

In which part of the UK-EEZ, the fishery by the UK-EEZ 15%-vessels is conducted, is shown in Table II.11. Around 60% of the landings originate from the northern part of the North Sea (4A), where mackerel and herring are caught. The middle part of North Sea (4B) constitutes the second most important area, and here sand eel and herring are caught. In the waters on the western side of the United Kingdom (6A), mackerel and blue whiting are the main species caught.

**Table II.11 Landings distributed on ICES subdivisions by the 15%-vessels**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
2A	0	0%	0	0%	2,546	0%	849	0%
4A	687,790	70%	609,536	59%	617,787	59%	638,371	62%
4B	121,001	12%	295,993	29%	310,623	29%	242,539	24%
4C	1,439	0%	1,884	0%	705	0%	1,343	0%
5B	2,306	0%	0	0%	744	0%	1,017	0%
6A	154,590	16%	128,747	12%	120,412	11%	134,583	13%
6B	12,858	1%	0	0%	0	0%	4,286	0%
7B	0	0%	141	0%	0	0%	47	0%
7D	286	0%	1,852	0%	513	0%	883	0%
7E	2,431	0%	42	0%	49	0%	840	0%
7H	238	0%	158	0%	18	0%	138	0%
Total	982,939	100%	1,038,353	100%	1,053,396	100%	1,024,896	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
2A	0	0%	0	0%	270	0%	90	0%
4A	123,693	62%	120,918	31%	122,311	40%	122,307	41%
4B	35,457	18%	240,981	61%	146,742	48%	141,060	47%
4C	732	0%	1,214	0%	369	0%	772	0%
5B	973	0%	0	0%	480	0%	484	0%
6A	32,923	16%	29,355	7%	35,601	12%	32,626	11%
6B	5,550	3%	0	0%	0	0%	1,850	1%
7B	0	0%	44	0%	0	0%	15	0%
7D	140	0%	1,215	0%	275	0%	543	0%
7E	1,181	1%	26	0%	29	0%	412	0%
7H	111	0%	109	0%	9	0%	76	0%
Total	200,759	100%	393,864	100%	306,086	100%	300,236	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: See Annex 1 for location of ICES subdivisions.

In Andersen, Andersen, Hoff and Ståhl (2017), the analysis was also undertaken in order to describe the fishing activity, taking place in the areas around the exact borderline between the UK-EEZ and the NEW-EU-EEZ. The analysis showed that the activity in these areas was limited, and therefore no tables are included regarding the border in this analysis. On average, it accounted for approximately 8% of the total yearly landings value, with around 4% in the UK-EEZ and 4% in the NEW-EU-EEZ.

Turning attention to where the 15%-vessels land their fish, Table II.12 shows the countries, where the fish are landed. While Danish ports are the most important, it is observed that landings in ports in the United Kingdom only account for 3% of the landings value, despite that the vessels catches the fish in the UK-EEZ.

**Table II.12 Landings from the UK-EEZ to countries by the 15%-vessels**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Denmark	574,983	58%	624,458	60%	697,351	66%	632,264	62%
Norway	110,074	11%	174,278	17%	128,735	12%	137,696	13%
Germany	144,315	15%	118,203	11%	111,532	11%	124,683	12%
Ireland	47,326	5%	34,645	3%	53,560	5%	45,177	4%
Faroe Islands	41,735	4%	65,568	6%	38,170	4%	48,491	5%
United Kingdom	60,607	6%	17,854	2%	18,972	2%	32,478	3%
Sweden	1,458	0%	90	0%	4,024	0%	1,858	0%
The Netherlands	2,028	0%	3,047	0%	1,053	0%	2,043	0%
France	34	0%					11	0%
Unknown	380	0%	209	0%			196	0%
Total	982,939	100%	1,038,353	100%	1,053,396	100%	1,024,896	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Denmark	133,957	67%	305,226	77%	238,901	78%	226,028	75%
Norway	14,305	7%	27,667	7%	17,099	6%	19,691	7%
Germany	27,720	14%	36,428	9%	31,764	10%	31,971	11%
Ireland	7,516	4%	5,044	1%	6,600	2%	6,387	2%
Faroe Islands	6,609	3%	8,790	2%	4,121	1%	6,507	2%
United Kingdom	10,115	5%	10,296	3%	6,333	2%	8,915	3%
Sweden	287	0%	31	0%	1,201	0%	507	0%
The Netherlands	174	0%	371	0%	67	0%	204	0%
France	16	0%					5	0%
Unknown	60	0%	11	0%			24	0%
Total	200,759	100%	393,864	100%	306,086	100%	300,236	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.



The specific Danish harbours, where the landings take place, are presented in Table II.13. Essentially only four harbours are used, Skagen, Thyborøn, Hirtshals and Hanstholm.

**Table II.13 Landings from the UK-EEZ to Danish harbours by the 15%-vessels**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Skagen	244,657	43%	238,959	38%	280,928	40%	254,848	40%
Thyborøn	97,022	17%	180,645	29%	197,806	28%	158,491	25%
Hirtshals	161,131	28%	76,229	12%	136,866	20%	124,742	20%
Hanstholm	72,173	13%	126,396	20%	81,751	12%	93,440	15%
Hvide Sande	0	0%	2,230	0%	0	0%	743	0%
Total	574,983	100%	624,458	100%	697,351	100%	632,264	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Skagen	58,677	44%	124,037	41%	102,667	43%	95,127	42%
Thyborøn	38,719	29%	113,037	37%	89,567	37%	80,441	36%
Hirtshals	27,776	21%	26,191	9%	24,807	10%	26,258	12%
Hanstholm	8,784	7%	41,842	14%	21,859	9%	24,162	11%
Hvide Sande	0	0%	119	0%	0	0%	40	0%
Total	133,957	100%	305,226	100%	238,901	100%	226,028	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Above, it was observed that the landings in harbours in the United Kingdom constituted around 3% of the landings from the UK-EEZ. In Table II.14, all landings in harbours in the United Kingdom by the 15%-vessels are included. Out of an average yearly landings value of 1.7 billion DKK, only 2% or 37 million DKK are landed in UK harbours.

**Table II.14 Landings in UK harbours by the 15%-vessels and percentage of total landings by the 15%-vessels**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Landings in UK harbours from non UK-EEZ	10,831	1%	1,266	0%	2,235	0%	4,777	0%
Landings in UK harbours from UK-EEZ	60,607	4%	17,854	1%	18,972	1%	32,478	2%
Total landings in UK harbours	71,438	4%	19,119	1%	21,207	1%	37,255	2%
Total landings by 15%-vessels	1,637,703	100%	1,699,383	100%	1,763,942	100%	1,700,343	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Landings in UK harbours from non UK-EEZ	1,591	0%	1,209	0%	1,170	0%	1,323	0%
Landings in UK harbours from UK-EEZ	10,115	3%	10,296	2%	6,339	1%	8,917	2%
Total landings in UK harbours	11,707	3%	11,505	2%	7,509	1%	10,240	2%
Total landings by 15%-vessels	396,909	100%	670,456	100%	598,873	100%	555,413	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Four harbours are used by Danish fishermen, when they land in the United Kingdom, cf. Table II.15. Lerwick and Peterhead are the most important ones.

**Table II.15 Landings in specified UK harbours by the 15%-vessels and percentage of the landings in UK harbours**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Lerwick	40,312	56%	6,025	32%	13,432	63%	19,923	53%
Peterhead	27,905	39%	12,491	65%	7,561	36%	15,986	43%
Fraserburgh	2,924	4%	603	3%	195	1%	1,241	3%
Grimsby	297	0%	0	0%	18	0%	105	0%
Total	71,438	100%	19,119	100%	21,207	100%	37,255	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Lerwick	6,206	53%	2,801	24%	3,163	42%	4,057	40%
Peterhead	4,865	42%	8,239	72%	4,246	57%	5,783	56%
Fraserburgh	610	5%	464	4%	99	1%	391	4%
Grimsby	25	0%	0	0%	1	0%	9	0%
Total	11,707	100%	11,505	100%	7,509	100%	10,240	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Table II.16 shows the top five species landed in the United Kingdom by the 15%-vessels. Out of the total landings value and weight, these constitute only very small percentages.

**Table II.16 Landings in UK harbours specified by species by the 15%-vessels, top 5 species in 2018 measured by value, and percentage of total landings by 15%-vessels**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Herring	31,795	2%	5,767	0%	7,657	0%	15,073	1%
Sandeel			7,811	0%	5,693	0%	4,501	0%
Mackerel	37,481	2%	2,730	0%	3,526	0%	14,579	1%
Norway pout	588	0%	2,583	0%	1,739	0%	1,636	0%
Sprat			1	0%	884	0%	295	0%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Herring	6,116	2%	2,426	0%	2,234	0%	3,592	1%
Sandeel			6,665	1%	3,395	1%	3,353	1%
Mackerel	5,043	1%	354	0%	390	0%	1,929	0%
Norway pout	311	0%	2,035	0%	955	0%	1,100	0%
Sprat			1	0%	450	0%	150	0%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Turning attention to the vessels with a dependency on the UK-EEZ below 15% of their total landings value, Table II.17 shows the number of vessels and the distribution on fleets. 33, 19 and 25 vessels fished in the UK-EEZ.

**Table II.17** *Number of Danish fishing vessels by fleets fishing in UK-EEZ with below 15%-dependency*

Length	Gear type	2016		2017		2018	
12-15m	Netters and liners			1	5%		
	Subtotal			1	5%		
15-18m	Netters and liners	1	3%				
	Subtotal	1	3%				
18-24m	Netters and liners	3	9%	3	16%	2	8%
	Multi-purpose gears	1	3%	1	5%	1	4%
	Danish seine	2	6%	1	5%	2	8%
	Trawl	3	9%	3	16%	5	20%
	Subtotal	9	27%	8	42%	10	40%
24-40m	Beamtrawl	1	3%	1	5%	1	4%
	Multi-purpose gears	3	9%	1	5%	1	4%
	Trawl consumption	10	30%	6	32%	13	52%
	Trawl reduction	1	3%				
	Trawl mixed	1	3%				
	Subtotal	16	48%	8	42%	15	60%
>40m	Purse seine	1	3%				
	Trawl reduction	4	12%				
	Trawl mixed	1	3%				
	Subtotal	6	18%				
Decommissioned vessels		1	3%	2	11%		
Total		33	100%	19	100%	25	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

As Table II.18 shows, these vessels only fished in the UK-EEZ to a minor extent. On average from 2016 to 2018, the UK-EEZ constituted 6% of their total landings value, while landing from the NEW-EU-EEZ and NOR-EEZ made up the major part of their fishery.

**Table II.18** Landings by the below 15%-UK-EEZ vessels distributed on zones

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ	35,235	7%	14,465	5%	17,994	5%	22,565	6%
NEW-EU-EEZ	279,337	56%	150,476	55%	156,186	41%	195,333	51%
NOR-EEZ	183,589	37%	110,416	40%	197,484	52%	163,829	43%
Other zones*	97	0%			5,281	1%	1,793	0%
Total	498,258	100%	275,357	100%	376,944	100%	383,520	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ	7,848	7%	3,054	8%	2,176	7%	4,359	7%
NEW-EU-EEZ	84,520	79%	31,112	78%	20,771	63%	45,468	76%
NOR-EEZ	10,745	10%	5,742	14%	9,822	30%	8,770	15%
Other zones*	3,220	3%			304	1%	1,174	2%
Total	106,332	100%	39,908	100%	33,073	100%	59,771	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: \* Other EEZ includes the exclusive economic zone around Greenland, the zone around Svalbard and Bear Island, the international zone, and the waters adjacent to the territory of Western Sahara.

Broadening the picture out on length groups and selected gear types, it is from Table II.19 observed that the average dependency on UK-EEZ is below 10% for the below 15%-vessels.

**Table II.19 Landings dependency on UK-EEZ by fleets for below 15%-vessels**

Landings value (1,000 DKK)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	% in UK-EEZ
18-24m	Total	4,195	107,599	6,360	121,124	3,837	11,7540	4,797	115,421	4%
24-40m	Total	19,461	247,905	8,105	139,768	14,157	24,1410	13,908	209,694	6%
	- Trawl consumption	10,762	167,204	7,742	108,083	13,029	21,0435	10,511	161,907	6%
>40m	Total	11,578	107,516					3,859	35,839	10%
Total		35,234	463,020	14,465	260,892	17,994	358,950	22,564	360,954	6%

Landings live weight (tonnes)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	UK-EEZ	Other EEZ	% in UK-EEZ
18-24m	Total	1,377	26,782	2,609	29,490	1,402	18,999	1,796	25,090	7%
24-40m	Total	1,281	17,308	447	7,364	773	11,899	834	12,190	6%
	- Trawl consumption	648	9,502	424	5,533	718	10,525	597	8,520	7%
>40m	Total	5,189	54,395					1,730	18,132	9%
Total		7,847	98,485	3,056	36,854	2,175	30,898	4,359	55,412	7%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Definitions: *Trawl consumption* are vessels landing above 80% consumption species.

Note: For confidentiality reasons, vessels below 18 meters and decommissioned vessels have been included in length group 18-24 meters.

Based on the above detailed description of the below 15%-vessels, it is observed that the number of vessels, their volume of landings and their dependency on the UK-EEZ is low. Therefore, their activity will not be described in more detail.

## 2.2. Activity in the NOR-EEZ

The Danish fisheries dependency on Norwegian exclusive economic zones (NOR-EEZ) is described in detail in this section. In total, 79 vessels in 2016 and 2017, and 84 vessels in 2018 had fishing activity in the NOR-EEZ, cf. Table II.20. Out of a total Danish fishing fleet of around 2,200 vessels, it is thus only a minor percentage, who fish in NOR-EEZ. However, more than 87% of these vessels are above 18 meters in length.

**Table II.20** Number of Danish fishing vessels fishing in NOR-EEZ

Length	Gear type	2016		2017		2018	
12-15m	Netters and liners	1	1%	1	1%	0	0%
	Subtotal	1	1%	1	1%		0%
15-18m	Beam trawl	1	1%		0%		0%
	Netters and liners	3	4%	4	5%	4	5%
	Multi-purpose gears	1	1%	1	1%		0%
	Danish seine	1	1%	1	1%		0%
	Trawl	4	5%	3	4%	6	7%
	Subtotal	10	13%	9	11%	10	12%
18-24m	Beam trawl	1	1%		0%		0%
	Netters and liners	4	5%	5	6%	5	6%
	Multi-purpose gears	3	4%	3	4%	2	2%
	Danish seine	4	5%	6	8%	8	10%
	Trawl	14	18%	12	15%	13	15%
	Subtotal	26	33%	26	33%	28	33%
24-40m	Beam trawl	2	3%	2	3%	2	2%
	Multi-purpose gears	4	5%	3	4%	2	2%
	Trawl mixed	1	1%	2	3%	2	2%
	Trawl reduction	1	1%				
	Trawl consumption	25	32%	26	33%	29	35%
	Subtotal	33	42%	33	42%	35	42%
>40	Purse seine	3	4%	3	4%	3	4%
	Trawl mixed	4	5%	3	4%	3	4%
	Subtotal	7	9%	6	8%	6	7%
Licensed fishery				1	1%	1	1%
Decommissioned vessels		2	3%	3	4%	4	5%
Total		79	100%	79	100%	84	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: Licensed fishery is vessels fishing for brown shrimp or mussels.

The 79-84 vessels accounted for 51% of the total landings value and 41% of the total landings live weight taken by Danish fishermen in the period 2016 to 2018, cf. Table II.21. Thus, despite being a minor part of the Danish fishing fleet measured in numbers, their activity is of much higher importance for Danish fisheries. The vessels have an approximately equal dependency on the NOR-EEZ and the remaining EEZ. Thus, for these vessels, the future access to the NOR-EEZ is central for their economic situation, but the exact level will vary from vessel to vessel.

**Table II.21** Landings by Danish vessels, their dependency on NOR-EEZ and NOR-EEZ active vessels' landings on exclusive economic zones

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ by NOR-EEZ active vessels	716,762	20%	811,260	24%	651,582	18%	726,535	20%
NEW-EU-EEZ by NOR-EEZ active vessels	571,259	16%	519,594	15%	602,015	17%	564,290	16%
NOR-EEZ by NOR-EEZ active vessels	536,065	15%	489,437	14%	474,274	13%	499,925	14%
FRO-EEZ NOR-EEZ active vessels	1,115	0%			389	0%	501	0%
Other EEZ* by NOR-EEZ active vessels	8,635	0%	21,279	1%	1,3710	0%	1,4541	0%
Total by NOR-EEZ vessels	1,833,837	50%	1,841,570	54%	1,741,970	49%	1,805,792	51%
Total by all Danish vessels	3,675,217	100%	3,419,293	100%	3,541,027	100%	3,545,179	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ by NOR-EEZ active vessels	123,894	18%	243,039	27%	159,263	20%	175,399	22%
NEW-EU-EEZ by NOR-EEZ active vessels	87,500	13%	102,724	11%	120,483	15%	103,569	13%
NOR-EEZ by NOR-EEZ active vessels	46,028	7%	37,359	4%	34,822	4%	39,403	5%
FRO-EEZ NOR-EEZ active vessels	470	0%			251	0%	240	0%
Other EEZ* by NOR-EEZ active vessels	654	0%	8,987	1%	2,364	0%	4,002	1%
Total by NOR-EEZ vessels	258,545	38%	392,111	43%	317,182	40%	322,613	41%
Total by all Danish vessels	674,322	100%	907,517	100%	792,404	100%	791,414	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: \* Other EEZ includes the exclusive economic zone around Greenland, the zone around Svalbard and Bear Island, the international zone, and the waters adjacent to the territory of Western Sahara.

Table II.22 gives a more detailed description of the vessels active in the NOR-EEZ and their economic dependency on NOR-EEZ compared to the other EEZ, where they fish. There is generally a high dependency on the NOR-EEZ, relative to other EEZs, in all length groups, where vessels between 24 and 40 meters have the highest dependency on NOR-EEZ.

**Table II.22 Landings dependency on NOR-EEZ by fleets for NOR-EEZ active vessels**

Landings value (1,000 DKK)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		NOR-EEZ	Other EEZ	NOR-EEZ	Other EEZ	NOR-EEZ	Other EEZ	NOR-EEZ	Other EEZ	% in NOR-EEZ
15-18m	Total	40,927	70,827	19,575	108,328	27,703	117,551	29,402	98,902	23%
18-24m	Total	62,781	200,964	61,155	216,068	61,004	207,419	61,647	208,150	23%
	Trawl	26,557	126,762	27,483	116,203	29,881	111,136	27,974	118,034	19%
24-40m	Total	306,299	296,395	326,451	302,242	333,717	265,957	322,156	288,198	53%
	- Trawl consumption	241,710	190,573	259,198	222,346	264,891	210,430	255,266	207,783	55%
>40m	Total	126,058	729,586	82,258	725,496	51,850	676,768	86,722	710,617	11%
Total		536,065	1,297,772	489,439	1,352,134	474,274	1,267,695	499,926	1,305,867	28%

Landings live weight (tonnes)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		NOR-EEZ	Other EEZ	NOR-EEZ	Other EEZ	NOR-EEZ	Other EEZ	NOR-EEZ	Other EEZ	% in NOR-EEZ
15-18m	Total	4,055	9,857	1,256	24,462	2,709	28,065	2,673	20,795	11%
18-24m	Total	3,049	21,452	2,699	17,933	2,704	10,832	2,817	16,739	14%
	Trawl	1,176	11,803	1,207	4,366	1,373	7,189	1,252	7,786	14%
24-40m	Total	16,949	24,129	16,771	26,111	16,374	16,095	16,698	22,112	43%
	- Trawl consumption	12,856	9,474	13,023	10,898	13,095	9,468	12,991	9,947	57%
>40m	Total	21,976	157,082	16,632	286,245	13,034	227,369	17,214	223,565	7%
Total		46,029	212,520	37,358	354,751	34,821	282,361	39,403	283,211	12%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Definitions: *Trawl consumption* are vessels landing above 80% consumption species.

Note: For confidentiality reasons, vessels below 15 meters, decommissioned vessels, and vessels conducting licensed fishery have been included in length group 15-18 meters.

The tables above focus on all vessels with activity in the NOR-EEZ, but a range of these only have a low economic dependency on the NOR-EEZ. Thus, the focus will be on the vessels having at least 15% of their total landings value from the NOR-EEZ.



With this threshold, the number of vessels reduces to 50 in 2016 and 51 in 2017 and 2018, cf. Table II.23. Looking at 2018, 6 out of 10 vessels between 15 and 18 meters are excluded, 13 out of 28 vessels between 18 and 24 meters are excluded, 6 out of 35 vessels between 24 and 40 meters, while all above 40 meters and the one licensed vessel are excluded.

**Table II.23** *Number of Danish fishing vessels fishing in NOR-EEZ with a 15%-dependency*

Length	Gear type	2016		2017		2018	
15-18m	Beam trawl	1	2%				
	Netters and liners	1	2%	3	6%	3	6%
	Multi-purpose gears	1	2%	1	2%		
	Danish seine	1	2%	1	2%		
	Trawl	1	2%			1	2%
	Subtotal	5	10%	5	10%	4	8%
18-24m	Beam trawl	1	2%				
	Netters and liners	4	8%	4	8%	4	8%
	Multi-purpose gears	1	2%	1	2%	1	2%
	Danish seine	3	6%	4	8%	5	10%
	Trawl	4	8%	5	10%	6	12%
	Subtotal	13	26%	14	27%	16	31%
24-40m	Beam trawl	2	4%	2	4%	2	4%
	Multi-purpose gears	3	6%	2	4%	2	4%
	Trawl mixed			1	2%	1	2%
	Trawl consumption	22	44%	23	45%	24	47%
	Subtotal	27	54%	28	55%	29	57%
>40	Purse seine	2	4%	1	2%		
	Trawl mixed	1	2%				
	Subtotal	3	6%	1	2%		
Licensed fishery				1	2%		
Decommissioned vessels		2	4%	2	4%	2	4%
Total		50	100%	51	100%	51	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11th February 2019.

Table II.24 shows the implications on landings by introducing the 15%-threshold, and thereby reducing the number of vessels included in the following description. On average, the threshold implies that 12% of the landings value, i.e. 58 million DKK from the NOR-EEZ are excluded from the description and 25% of the landings weight. In section 2.1, it was observed that the 15%-vessels cover 98% of the total landings from the UK-EEZ, while the 15%-vessels in the NOR-EEZ cover a lower share, equal to 88%.

**Table II.24** Landings from the NOR-EEZ distributed on NOR-EEZ 15%-vessels and non-15%-vessels

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Total NOR-EEZ 15%-vessels	501,497	94%	422,886	86%	402,225	85%	442,203	88%
Total NOR-EEZ non-15%-vessels	34,569	6%	66,551	14%	72,049	15%	57,723	12%
Total	536,065	100%	489,437	100%	474,274	100%	499,925	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Total NOR-EEZ 15%-vessels	42,788	93%	25,998	70%	19,581	56%	29,456	75%
Total NOR-EEZ non-15%-vessels	3,239	7%	11,362	30%	15,241	44%	9,947	25%
Total	46,028	100%	37,359	100%	34,822	100%	39,403	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

The NOR-EEZ 15%-vessels totally landed for around 1 billion DKK annually, comprising thus between one fourth and one third of the total Danish landings value of 3.5 billion DKK, as shown in Table II.25. 45% of their landings value are from their fishery in the NOR-EEZ, 29% from UK-EEZ, while 26% are from NEW-EU-EEZ. Thus, if the agreements with United Kingdom and Norway are cancelled, these vessels will accordingly get a reduction of 74% in their landings value, everything else being equal.

**Table II.25 Landings by the NOR-EEZ 15%-vessels distributed on zones**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ	484,710	39%	245,663	26%	103,942	14%	278,105	29%
NEW-EU-EEZ	258,964	21%	263,469	28%	223,237	30%	248,557	26%
NOR-EEZ	501,497	40%	422,886	45%	402,225	55%	442,203	45%
FRO-EEZ	1,115	0%					372	0%
Other zones*	8,635	1%			5,281	1%	4,639	0%
Total	1,254,921	100%	932,019	100%	734,685	100%	973,875	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ	76,007	51%	45,188	51%	5,564	14%	42,253	46%
NEW-EU-EEZ	30,321	20%	17,457	20%	13,569	35%	20,449	22%
NOR-EEZ	42,788	28%	25,998	29%	19,581	50%	29,456	32%
FRO-EEZ	470	0%					157	0%
Other zones*	654	0%			304	1%	319	0%
Total	150,240	100%	88,642	100%	39,018	100%	92,634	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: \* Other EEZ includes the exclusive economic zone around Greenland, the zone around Svalbard and Bear Island, the international zone, and the waters adjacent to the territory of Western Sahara.

The above 15%-vessels on average take 45% of their landings value and 32% of their landings weight in NOR-EEZ, cf. Table II.26. The lowest dependency of 21% of landings value taken in NOR-EEZ, is seen for vessels greater than 40 meters, while the highest of 59% is observed for trawlers for consumption 24-40 meters.

**Table II.26 Landings dependency on NOR-EEZ by fleets for 15%-vessels**

Landings value (1,000 DKK)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		NOR-EEZ	Other EEZ	NOR-EEZ	Other EEZ	NOR-EEZ	Other EEZ	NOR-EEZ	Other EEZ	% in NOR-EEZ
15-18m	Total	37,687	34,612	18,326	41,233	20,345	35,298	25,453	37,048	41%
18-24m	Total	50,834	67,346	50,442	95,823	51,008	86,714	50,761	83,294	38%
24-40m	Total	300,583	223,433	325,322	267,047	330,873	210,447	318,926	233,642	58%
	- Trawl consumption	239,710	161,270	258,234	207,949	262,166	166,108	253,370	178,442	59%
>40m	Total	112,393	428,033	28,796	105,030			47,063	177,688	21%
Total		501,497	753,424	422,886	509,133	402,226	332,459	442,203	531,672	45%

Landings live weight (tonnes)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		NOR-EEZ	Other EEZ	NOR-EEZ	Other EEZ	NOR-EEZ	Other EEZ	NOR-EEZ	Other EEZ	% in NOR-EEZ
15-18m	Total	3,862	6,984	1,125	2,031	1,038	3,402	2,008	4,139	33%
18-24m	Total	2,524	2,827	2,215	3,666	2,255	3,321	2,331	3,271	42%
24-40m	Total	16,645	11,413	16,728	18,771	16,288	12,715	16,554	14,300	54%
	- Trawl consumption	12,788	8,046	12,987	9,644	13,012	7,798	12,929	8,496	60%
>40m	Total	19,755	86,229	5,928	38,177			8,561	41,469	17%
Total		42,786	107,453	25,996	62,645	19,581	19,438	29,454	63,178	32%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Definitions: *Trawl consumption* are vessels landing above 80% consumption species.

Note: For confidentiality reasons decommissioned vessels, and vessels conducting licensed fishery have been included in length group 15-18 meters.

Table II.27 shows the composition of landings by species from the NOR-EEZ by the 15%-vessels. Plaice, cod and herring are the most important species in each of the three years, based on value. Together these three species account for around 48% of the total landings value from the NOR-EEZ.

**Table II.27 Landings of top 10 species in 2018 from the NOR-EEZ by the 15%-vessels, measured by value, and share of total landings from the NOR-EEZ by the 15%-vessels in Table II.26**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Plaice	86,741	17%	78,905	19%	86,006	21%	83,884	19%
Cod	75,293	15%	81,234	19%	86,872	22%	81,133	18%
Herring	116,966	23%	29,575	7%	2	0%	48,848	11%
Monkfish	35,254	7%	37,612	9%	44,302	11%	39,056	9%
Hake	26,024	5%	34,863	8%	48,046	12%	36,311	8%
Northern prawn	42,817	9%	38,116	9%	18,360	5%	33,098	7%
Saithe	24,185	5%	27,579	7%	30,480	8%	27,415	6%
Lemon sole	22,974	5%	25,460	6%	20,131	5%	22,855	5%
Haddock	10,624	2%	10,658	3%	10,712	3%	10,665	2%
Turbot	9,119	2%	11,215	3%	8,063	2%	9,466	2%
Total	449,997	90%	375,216	89%	352,975	88%	392,729	89%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Plaice	7,506	18%	5,935	23%	4,452	23%	5,964	20%
Cod	3,246	8%	3,269	13%	3,502	18%	3,339	11%
Herring	21,408	50%	6,166	24%	0	0%	9,191	31%
Monkfish	1,156	3%	1,226	5%	1,334	7%	1,239	4%
Hake	1,643	4%	1,870	7%	2,659	14%	2,057	7%
Northern prawn	963	2%	914	4%	404	2%	760	3%
Saithe	2,088	5%	2,722	10%	3,488	18%	2,766	9%
Lemon sole	681	2%	738	3%	574	3%	664	2%
Haddock	867	2%	850	3%	838	4%	852	3%
Turbot	119	0%	152	1%	93	0%	121	0%
Total	39,678	93%	23,841	92%	17,345	89%	26,955	92%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Table II.28 shows the composition of landings at the fleet level. Codfish and flatfish are mainly landed by vessels between 24 and 40 meters, especially by the trawlers for human consumption. Herring is mainly landed by vessels above 40 meters. The smaller vessels primarily land codfish and flatfish.

**Table II.28 Landings composition in NOR-EEZ by fleets for 15%-vessels, average 2016-2018**

Landings value (1,000 DKK)								
Length	Gear type	Codfish	Flatfish	Mackerel	Herring	Reduction species	Other species	Total
15-18m	Total	7,902	7,767	27	5,551		4,203	25,452
18-24m	Total	17,403	24,004	5			9,350	50,762
24-40m	Total	189,196	98,885	21	1	2	30,820	318,926
	- Trawl consumption	151,294	72,988	19	1	2	29,066	253,370
>40m	Total	0		3,766	43,296	0		47,063
Total		214,501	130,656	3,819	48,848	2	44,373	442,203

Landings live weight (tonnes)								
Length	Gear type	Codfish	Flatfish	Mackerel	Herring	Reduction species	Other species	Total
15-18m	Total	405	434	4	1,075		92	2,010
18-24m	Total	745	1,356	0			231	2,331
24-40m	Total	10,304	5,552	2	0	1	697	16,553
	- Trawl consumption	8,333	3,946	2	0	1	649	12,929
>40m	Total	1	0	435	8,116	9	0	8,561
Total		11,455	7,342	441	9,191	10	1,020	29,455

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Definitions: *Trawl consumption* are vessels landing above 80% consumption species.

Note: For confidentiality reasons decommissioned vessels, and vessels conducting licensed fishery have been included in length group 15-18 meters.

In which part of the NOR-EEZ the fishery by the NOR-EEZ 15%-vessels is conducted is shown in Table II.29. Around 59% of the landings originate from the northern part of the North Sea (4A). The middle part of the North Sea (4B) constitutes the second most important area, while the Danish vessels only to a small degree go further north.

**Table II.29 Landings distributed on ICES subdivisions by the 15%-vessels in NOR-EEZ**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
2A	41,915	8%	25,491	6%	0	0%	22,469	5%
3AN	49,255	10%	48,148	11%	33,802	8%	43,735	10%
4A	289,690	58%	228,082	54%	267,969	67%	261,914	59%
4B	120,638	24%	121,165	29%	100,453	25%	114,085	26%
Total	501,497	100%	422,886	100%	402,225	100%	442,203	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
2A	7,060	16%	5,091	20%	0	0%	4,050	14%
3AN	1,345	3%	1,517	6%	1,181	6%	1,348	5%
4A	26,560	62%	12,734	49%	13,881	71%	17,725	60%
4B	7,823	18%	6,655	26%	4,518	23%	6,332	21%
Total	42,788	100%	25,998	100%	19,581	100%	29,456	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: See Annex 1 for location of ICES subdivisions.

Turning attention to where the 15%-vessels land their fish, Table II.30 shows the countries, where the landings happen. While Danish ports are the most important, it is observed that landings in ports in Norway only account for 4% of the landings value, despite that the vessels catch the fish in the NOR-EEZ.

**Table II.30 Landings from the NOR-EEZ to countries by the 15%-vessels**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Denmark	449,861	90%	382,783	91%	394,548	98%	409,064	93%
Norway	36,051	7%	21,841	5%	1,465	0%	19,786	4%
United Kingdom	130	0%			174	0%	101	0%
Sweden	15,012	3%	14,956	4%	6,038	2%	12,002	3%
Germany	443	0%	3,305	1%			1,249	0%
Total	501,497	100%	422,886	100%	402,225	100%	442,203	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Denmark	36,752	86%	20,694	80%	19,352	99%	25,599	87%
Norway	5,583	13%	4,057	16%	56	0%	3,232	11%
United Kingdom	2	0%			7	0%	3	0%
Sweden	371	1%	409	2%	166	1%	315	1%
Germany	80	0%	837	3%			306	1%
Total	42,788	100%	25,998	100%	19,581	100%	29,456	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

The specific Danish harbours, where the landings are done, are presented in Table II.31. The majority of landings are done in Hanstholm and Thyborøn, while smaller parts of the landings from NOR-EEZ are done in other harbours in Northern Jutland.

**Table II.31** Landings from the NOR-EEZ to Danish harbours by the 15%-vessels

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Hanstholm	136,323	30%	140,829	37%	149,149	38%	142,100	35%
Havneby	119	0%					40	0%
Hirtshals	54,803	12%	14,611	4%	9,001	2%	26,138	6%
Hvide Sande	37,216	8%	45,066	12%	48,866	12%	43,716	11%
Skagen	58,420	13%	12,976	3%	4,503	1%	25,300	6%
Strandby (Northern Jutland)	172	0%	404	0%			192	0%
Thorsminde	6,057	1%	8,917	2%	9,344	2%	8,106	2%
Thyborøn	156,751	35%	159,961	42%	173,615	44%	163,443	40%
Østerby			20	0%	70	0%	30	0%
Total	449,861	100%	382,783	100%	394,548	100%	409,064	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Hanstholm	6,660	18%	7,289	35%	7,757	40%	7,236	28%
Havneby	8	0%					3	0%
Hirtshals	7,265	20%	688	3%	316	2%	2,757	11%
Hvide Sande	2,389	7%	2,461	12%	2,184	11%	2,345	9%
Skagen	10,436	28%	1,323	6%	167	1%	3,975	16%
Strandby (Northern Jutland)	5	0%	15	0%			7	0%
Thorsminde	224	1%	285	1%	371	2%	293	1%
Thyborøn	9,765	27%	8,631	42%	8,554	44%	8,983	35%
Østerby			1	0%	3	0%	1	0%
Total	36,752	100%	20,694	100%	19,352	100%	25,599	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.



Above, it was observed that the landings in harbours in Norway were around 4% of the landings value from the NOR-EEZ. In Table II.32, all landings in harbours in Norway by the 15%-vessels are included. Out of an average yearly landings value of 1 billion DKK, 7% or 65 million DKK are landed in Norwegian harbours.

**Table II.32 Landings in Norwegian harbours by the 15%-vessels and percentage of total landings by the 15%-vessels**

<b>Landings value (1,000 DKK)</b>								
	<b>2016</b>		<b>2017</b>		<b>2018</b>		<b>Average 2016-2018</b>	
Landings in NOR harbours from non NOR-EEZ	106,974	9%	25,515	3%	5,832	1%	46,107	5%
Landings in NOR harbours from NOR-EEZ	36,051	3%	21,841	2%	1,465	0%	19,786	2%
Total landings in NOR harbours	143,025	11%	47,356	5%	7,297	1%	65,893	7%
Total landings by 15%-vessels	1,254,921	100%	932,019	100%	734,685	100%	973,875	100%

<b>Landings live weight (tonnes)</b>								
	<b>2016</b>		<b>2017</b>		<b>2018</b>		<b>Average 2016-2018</b>	
Landings in NOR harbours from non NOR -EEZ	5,583	4%	4,057	5%	56	0%	3,232	3%
Landings in NOR harbours from NOR -EEZ	13,404	9%	6,512	7%	325	1%	6,747	7%
Total landings in NOR harbours	18,987	13%	10,569	12%	381	1%	9,979	11%
Total landings by 15%-vessels	150,240	100%	88,642	100%	39,018	100%	92,634	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Thirteen harbours are used by Danish fishermen, when they land in Norway, cf. Table II.33. Ålesund, Ellingsøyfjorden and Hareid are the most important. The landings in Norwegian harbours are considerably smaller in 2018 compared to 2017 and 2016.

**Table II.33** Landings in specified Norwegian harbours by the 15%-vessels and percentage of the landings in Norwegian harbours

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Egersund	309	0%	4,201	9%	1,221	17%	1,910	3%
Ellingsøyfjorden	37,581	26%					12,527	19%
Florø	1,357	1%					452	1%
Frøya	1,647	1%					549	1%
Hareid	12,302	9%	20,810	44%			11,037	17%
Honningsvåg	8,264	6%			5,281	72%	4,515	7%
Karmøy			2,943	6%			981	1%
Kristiansand	5	0%	234	0%	282	4%	174	0%
Måløy	14	0%	10,611	22%			3,541	5%
Selje	10,920	8%	5,421	11%			5,447	8%
Skudesneshavn	4,145	3%	629	1%	312	4%	1,695	3%
Stavanger			2,508	5%	201	3%	903	1%
Ålesund	66,480	46%					22,160	34%
Total	143,025	100%	47,356	100%	7,297	100%	65,893	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Egersund	16	0%	439	4%	46	12%	167	2%
Ellingsøyfjorden	4,275	23%					1,425	14%
Florø	160	1%					53	1%
Frøya	290	2%					97	1%
Hareid	1,835	10%	3,560	34%			1,798	18%
Honningsvåg	497	3%			304	80%	267	3%
Karmøy			380	4%			127	1%
Kristiansand	0	0%	6	0%	7	2%	4	0%
Måløy	1	0%	3,552	34%			1,184	12%
Selje	1,465	8%	700	7%			722	7%
Skudesneshavn	730	4%	32	0%	13	4%	259	3%
Stavanger			1,900	18%	11	3%	637	6%
Ålesund	9,717	51%					3,239	32%
Total	18,987	100%	10,569	100%	381	100%	9,979	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Table II.34 shows the top five species (with respect to value averaged over 2016-2018) landed in Norway by the 15%-vessels. Out of the total landings value and weight, these constitute only very small percentages.

**Table II.34** Landings in Norwegian harbours specified by species by the 15%-vessels, top five species averaged over 2016-2018 measured by value, and percentage of total landings by 15%-vessels

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Mackerel	108,522	9%	20,420	2%			42,981	4%
Herring	25,038	2%	20,032	2%			15,023	2%
Cod	7,750	1%	322	0%	5,358	1%	4,477	0%
Sandeel			5,083	1%			1,694	0%
Northern prawn	23	0%	1,071	0%	631	0%	575	0%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Mackerel	14,005	9%	2,661	3%			5,555	6%
Herring	4,332	3%	4,000	5%			2,777	3%
Cod	460	0%	13	0%	304	1%	259	0%
Sandeel			3,850	4%			1,283	1%
Northern prawn			19	0%	13	0%	11	0%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Turning attention to the vessels with a dependency of the NOR-EEZ below 15% of their total landings value, Table II.35 shows the number of vessels and the distribution on fleets. Twenty-nine, 28 and 33 vessels fished in the NOR-EEZ.

**Table II.35** *Number of Danish fishing vessels by fleets fishing in NOR-EEZ with below 15%-dependency*

Length	Gear type	2016		2017		2018	
12-15m	Netters and liners	1	3%	1	4%		
	Subtotal	1	3%	1	4%		
15-18m	Netters and liners	2	7%	1	4%	1	3%
	Trawl	3	10%	3	11%	5	15%
	Subtotal	5	17%	4	14%	6	18%
18-24m	Netters and liners			1	4%	1	3%
	Multi-purpose gears	2	7%	2	7%	1	3%
	Danish seine	1	3%	2	7%	3	9%
	Trawl	10	34%	7	25%	7	21%
	Subtotal	13	45%	12	43%	12	36%
24-40m	Multi-purpose gears	1	3%	1	4%		
	Trawl mixed	1	3%	1	4%	1	3%
	Trawl reduction	1	3%				
	Trawl consumption	3	10%	3	11%	5	15%
	Subtotal	6	21%	5	18%	6	18%
>40	Purse seine	1	3%	2	7%	3	9%
	Trawl mixed	3	10%	3	11%	3	9%
	Subtotal	4	14%	5	18%	6	18%
Licensed vessels						1	3%
Decommissioned vessels				1	4%	2	6%
Total		29	100%	28	100%	33	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11th February 2019.

As Table II.36 shows, these vessels only fished in the NOR-EEZ to a minor extent. On average 2016-2018, the NOR-EEZ constituted 7% of their total landings value, while landings from the NEW-EU-EEZ and UK-EEZ made up the major part of their fishery.

**Table II.36** Landings by the below 15% NOR-EEZ vessels distributed on zones

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ	232,052	40%	565,596	62%	547,640	54%	448,430	54%
NEW-EU-EEZ	312,295	54%	256,125	28%	378,778	38%	315,733	38%
NOR-EEZ	34,569	6%	66,551	7%	72,049	7%	57,723	7%
Other zones*			21,279	2%	8,817	1%	10,032	1%
Total	578,916	100%	909,551	100%	1,007,285	100%	831,917	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ	47,887	44%	197,852	65%	153,699	55%	133,146	58%
NEW-EU-EEZ	57,179	53%	85,267	28%	106,913	38%	83,120	36%
NOR-EEZ	3,239	3%	11,362	4%	15,241	5%	9,947	4%
Other zones*			8,987	3%	2,311	1%	3,766	2%
Total	108,305	100%	303,468	100%	278,164	100%	229,979	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: \* Other EEZ includes the exclusive economic zone around Greenland, the zone around Svalbard and Bear Island, the international zone, and the waters adjacent to the territory of Western Sahara.

Broadening the picture on fleets, it is observed from Table II.37 that the average importance with specific length groups and gear types are all below 10%, i.e. less than 10 % of the landings value is from activities in NOR-EEZ.

**Table II.37 Landings dependency on NOR-EEZ by fleets for below 15%-vessels**

Landings value (1,000 DKK)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		NOR-EEZ	Other EEZ	NOR - EEZ	Other EEZ	NOR - EEZ	Other EEZ	NOR - EEZ	Other EEZ	% in NOR - EEZ
15-18m	Total	3,241	36,215	1,249	67,095	7,359	82,253	3,950	61,854	6%
18-24m	Total	11,946	133,618	10,711	120,245	9,995	120,704	10,884	124,856	8%
	- Trawl	10,272	104,547	8,050	79,303	8,173	71,621	8,832	85,157	9%
24-40m	Total	5,716	72,961	1,127	35,194	2,844	55,510	3,229	54,555	6%
>40m	Total	13,665	301,553	53,462	620,466	51,850	676,768	39,659	532,929	7%
Total		34,568	544,347	66,549	843,000	72,048	935,235	57,722	774,194	7%

Landings live weight (tonnes)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		NOR-EEZ	Other EEZ	NOR - EEZ	Other EEZ	NOR - EEZ	Other EEZ	NOR - EEZ	Other EEZ	% in NOR - EEZ
15-18m	Total	192	2,872	131	22,431	1,671	24,662	665	16,655	4%
18-24m	Total	524	18,626	484	14,267	450	7,512	486	13,468	3%
	- Trawl	444	10,778	369	2,943	381	5,620	398	6,447	6%
24-40m	Total	303	12,715	44	7,340	86	3,381	144	7,812	2%
>40m	Total	2,221	70,853	10,704	248,069	13,034	227,369	8,653	182,097	5%
Total		3,239	105,066	11,362	292,106	15,241	262,923	9,947	220,032	4%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: For confidentiality reasons vessels 12-15meters, decommissioned vessels and vessels conducting licensed fishery have been included in length group 15-18 meters.

Based on the above detailed description of the below 15%-vessels, it is observed that their volume of landings and their dependency on the NOR-EEZ is low. Therefore, their activity will not be described in more detail.

## 2.3. Activity in the FRO-EEZ

Danish fishermen have not had fishing activity in the exclusive economic zone around the Faroe Islands every year. Before 2000, landings from the FRO-EEZ consisted primarily of mackerel; from 2000 to 2015 of blue whiting and in 2016 herring was primary. However, in several years, no activity was registered in the FRO-EEZ. This was for instance the case in the period from 2009 to 2013 and in 2017. The development is shown in Table II.38.

**Table II.38 Landings value from the FRO-EEZ (1,000 DKK)**

	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2014	2015	2016	2018
Blue whiting	477	1,233	5,875	9,279	4,777	3,751	4,873	6,392	9,736	5,318	670	1,576	1,115	389
Mackerel	25,788	11,581	13,364	2,556										
Saithe								39						
Herring	1,129	1,418	1,617	700			1,803	5				3,541	12,991	
Total	27,395	14,232	20,856	12,535	4,777	3,751	6,676	6,436	9,736	5,318	670	5,117	14,106	389

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

The number of vessels active in the FRO-EEZ was in total over the years below five vessels and none of these were more than 15% dependent on their fishery in the FRO-EEZ.

Thus, the direct dependency of the FRO-EEZ is considered to of limited importance for Danish fishermen. This is also the case for the fishermen being active in FRO-EEZ, as seen in Table II.39. They primarily fish in the UK-EEZ.

**Table II.39 Landings by the FRO-EEZ vessels distributed on exclusive economic zones**

Landings value (1,000 DKK)				
	2016		2018	
UK-EEZ	302,322	77%	122,316	74%
NEW-EU-EEZ	35,300	9%	24,301	15%
NOR-EEZ	38,342	10%	18,051	11%
FRO-EEZ	14,106	4%	389	0%
Other zones*	1,871	0%		
Total	391,941	100%	165,057	100%

Landings live weight (tonnes)				
	2016		2018	
UK-EEZ	62,621	75%	37,015	66%
NEW-EU-EEZ	10,879	13%	13,780	25%
NOR-EEZ	7,276	9%	4,750	9%
FRO-EEZ	2,440	3%	251	0%
Other zones*	382	0%		
Total	83,598	100%	55,796	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: \* Other EEZ includes the exclusive economic zone around Greenland, the zone around Svalbard and Bear Island, the international zone, and the waters adjacent to the territory of Western Sahara.

## 2.4. Activity in the UK-EEZ, NOR-EEZ and FRO-EEZ

Having described the activity by Danish fishermen in each of the three exclusive economic zones, UK-EEZ, NOR-EEZ and FRO-EEZ, it is relevant to consider the three zones as one combined EEZ and make a description of the activity altogether. Some vessels may fish in one zone, others in two of them and only a few in all three. However, a combined closure of the fishery in the UK-EEZ, NOR-EEZ and FRO-EEZ will have a potential high impact on the economic performance of the vessels involved. In the tables below, the COMBined EEZ of the UK-EEZ, NOR-EEZ and FRO-EEZ is referred to as COM-EEZ.

Table II.40 shows the number of vessels having fishing activity in the COM-EEZ. As expected, the total number of vessels increases, compared to the individual EEZ analyses. The majority of vessels are above 24 meters, and primarily trawlers. The number of vessels with activity in the COM-EEZ is seen to be stable around 107-111, depending on the year.

**Table II.40** Number of Danish fishing vessels fishing in COM-EEZ

Length	Gear type	2016		2017		2018	
12-15m	Netters and liners	1	1%	2	2%		
	Subtotal	1	1%	2	2%		
15-18m	Beam trawl	1	1%				
	Netters and liners	4	4%	4	4%	4	4%
	Multi-purpose gears	1	1%	1	1%		
	Danish seine	1	1%	1	1%		
	Trawl	4	4%	3	3%	6	5%
	Subtotal	11	10%	9	8%	10	9%
18-24m	Beam trawl	1	1%				
	Netters and liners	5	5%	5	5%	5	5%
	Multi-purpose gears	3	3%	3	3%	3	3%
	Danish seine	5	5%	6	6%	8	7%
	Trawl	15	14%	13	12%	14	13%
	Subtotal	29	26%	27	25%	30	27%
24-40m	Beam trawl	2	2%	2	2%	2	2%
	Multi-purpose gears	4	4%	3	3%	3	3%
	Trawl consumption	25	23%	26	24%	29	26%
	Trawl reduction	3	3%	2	2%	2	2%
	Trawl mixed	2	2%	2	2%	2	2%
	Subtotal	36	32%	35	33%	38	34%
>40	Purse seine	4	4%	4	4%	4	4%
	Trawl reduction	14	13%	14	13%	13	12%
	Trawl mixed	11	10%	9	8%	10	9%
	Subtotal	29	26%	27	25%	27	24%
Licensed fishery				1	1%	1	1%
Decommissioned vessels		5	5%	6	6%	5	5%
Total		111	100%	107	100%	111	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.



In total, the vessels active in the COM-EEZ accounted for 70% of the total landings value, taken by Danish fishermen from 2016 to 2018, and 81% of the total landings live weight, cf. Table II.41. It can also be observed, by summing the activity in the UK-EEZ, the NOR-EEZ and the FRO-EEZ, that the fishing activity in the COM-EEZ accounts for 44% of the total landings value and 43% of the total landings live weight.

**Table II.41 Landings by Danish vessels, their dependency on COM-EEZ and COM-EEZ active vessels' landings on exclusive economic zones**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ by COM-EEZ active vessels	1,018,173	28%	1,052,818	31%	1,071,390	30%	1,047,461	30%
NEW-EU-EEZ by COM-EEZ active vessels	956,538	26%	773,395	23%	960,578	27%	896,837	25%
NOR-EEZ by COM-EEZ active vessels	536,065	15%	489,437	14%	474,274	13%	499,925	14%
FRO-EEZ by COM-EEZ active vessels	14,106	0%			389	0%	4,832	0%
Other EEZ* by COM-EEZ active vessels	10,232	0%	21,279	1%	13,710	0%	15,074	0%
Total by COM-EEZ vessels	2,535,115	69%	2,336,929	68%	2,520,341	71%	2,464,128	70%
Total by all Danish vessels	3,675,217	100%	3,419,293	100%	3,541,027	100%	3,545,179	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ by COM-EEZ active vessels	208,608	31%	396,918	44%	308,262	39%	304,596	38%
NEW-EU-EEZ by COM-EEZ active vessels	266,493	40%	289,244	32%	311,276	39%	289,005	37%
NOR-EEZ by COM-EEZ active vessels	46,028	7%	37,359	4%	34,822	4%	39,403	5%
FRO-EEZ by COM-EEZ active vessels	2,440	0%			251	0%	897	0%
Other EEZ* by COM-EEZ active vessels	4,099	1%	8,987	1%	2,364	0%	5,150	1%
Total by COM-EEZ vessels	527,668	78%	732,508	81%	656,975	83%	639,050	81%
Total by all Danish vessels	674,322	100%	907,517	100%	792,404	100%	791,414	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: \* Other EEZ includes the exclusive economic zone around Greenland, the zone around Svalbard and Bear Island, the international zone, and the waters adjacent to the territory of Western Sahara.

Table II.42 gives a more detailed description of the fleets active in the COM-EEZ, and their economic dependency on COM-EEZ, compared to their remaining activity in other EEZ. On average the dependency is 63% measured in landings value, but it varies between fleets. Some fleets have a dependency down to 18%, while others are up to 74% dependent. Again, because the fishing grounds are generally far from Danish harbours, few small vessels are fishing there, and the dependency is therefore increasing with vessel length.

**Table II.42 Landings dependency on COM-EEZ by fleets for COM-EEZ active vessels**

Landings value (1,000 DKK)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		COM-EEZ	Other EEZ	COM-EEZ	Other EEZ	COM-EEZ	Other EEZ	COM-EEZ	Other EEZ	% in COM-EEZ
15-18m	Total	24,531	54,385	10,702	53,694	9,213	67,441	14,816	58,507	20%
18-24m	Total	69,192	212,145	68,745	222,441	65,933	239,336	67,958	224,641	23%
	- Netters and liners	14,470	27,840	17,536	36,783	16,110	36,563	16,039	33,729	32%
	- Danish seine	16,048	13,783	15,292	18,745	14,704	37,402	15,348	23,310	40%
	- Trawl	26,648	134,296	29,364	128,286	31,964	126,271	29,326	129,618	18%
24-40m	Total	416,617	208,029	481,508	163,204	440,617	191,161	446,247	187,465	70%
	- Trawl consumption	318,465	113,818	372,877	108,667	337,328	137,993	342,890	120,159	74%
>40m	Total	1,008,544	460,115	916,484	308,642	982,238	446,579	969,089	405,112	71%
	- Trawl reduction	54,429	161,838	81,146	100,476	80,745	131,347	72,107	131,220	35%
	- Trawl mixed	607,113	229,612	475,515	146,098	552,411	219,883	545,013	198,531	73%
Decommissioned vessels		49,459	32,094	64,815	46,694	48,052	29,769	54,109	36,186	60%
Total		1,568,343	966,768	1,542,254	794,675	1,546,053	974,286	1,552,219	911,911	63%

Landings live weight (tonnes)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		COM-EEZ	Other EEZ	COM-EEZ	Other EEZ	COM-EEZ	Other EEZ	COM-EEZ	Other EEZ	% in COM-EEZ
15-18m	Total	1,048	3,650	565	5,532	394	6,525	670	5,235	11%
18-24m	Total	4,599	22,930	4,797	23,441	4,166	26,386	4,520	24,252	16%
	- Netters and liners	702	1,110	697	1,261	644	1,197	681	1,189	36%
	- Danish seine	1,029	538	804	837	684	1,755	839	1,043	45%
	- Trawl	1,195	14,336	2,088	11,090	2,083	14,030	1,788	13,152	12%
24-40m	Total	27,137	23,171	36,349	20,505	27,076	18,641	30,186	20,773	59%
	- Trawl consumption	17,054	5,275	18,936	4,985	17,030	5,534	17,673	5,265	77%
>40m	Total	214,179	203,399	364,612	222,765	296,639	247,755	291,810	224,639	57%
	- Trawl reduction	26,319	79,612	65,484	82,419	44,601	78,077	45,468	80,036	36%
	- Trawl mixed	127,567	94,357	175,678	96,008	164,766	115,573	156,004	101,979	60%
Decommissioned vessels		10,114	17,442	27,955	25,990	15,060	14,333	17,709	19,255	48%
Total		257,077	270,592	434,278	298,233	343,335	313,640	344,895	294,154	54%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Definitions: *Trawl consumption* are vessels landing above 80% consumption species, *Trawl reduction* are vessels landing above 80% reduction species (i.e. sand eel, Norway pout, sprat etc.), and *Trawl mixed* are the remaining trawl vessels within that length group.

Note: For confidentiality reasons, vessels 12-15 meters and vessels conducting licensed fishery have been included in 15-18 meters.

Concentrating the focus to the vessels with a dependency of the COM-EEZ of at least 15% of their total landings value, Table II.43 shows that the number of vessels increased from 76 in 2016 to 84 in 2017 and then reduced to 82 in 2018. Again, it is primarily vessels above 24 meters that are represented.

**Table II.43** Number of Danish fishing vessels fishing in COM-EEZ with a 15%-dependency

Length	Gear type	2016		2017		2018	
15-18m	Beam trawl	1	1%				
	Netters and liners	1	1%	3	4%	3	4%
	Multi-purpose gears	1	1%	1	1%		
	Danish seine	1	1%	1	1%		
	Trawl	1	1%			1	1%
	Subtotal	5	7%	5	6%	4	5%
18-24m	Beam trawl	1	1%				
	Netters and liners	4	5%	4	5%	4	5%
	Multi-purpose gears	1	1%	1	1%	1	1%
	Danish seine	5	7%	5	6%	5	6%
	Trawl	4	5%	6	7%	6	7%
	Subtotal	15	20%	16	19%	16	20%
24-40m	Beam trawl	2	3%	2	2%	2	2%
	Multi-purpose gears	3	4%	2	2%	2	2%
	Trawl consumption	22	29%	23	27%	24	29%
	Trawl reduction	2	3%	2	2%	2	2%
	Trawl mixed			1	1%	1	1%
	Subtotal	29	38%	30	36%	31	38%
>40	Purse seine	3	4%	4	5%	4	5%
	Trawl reduction	10	13%	14	17%	13	16%
	Trawl mixed	10	13%	9	11%	10	12%
	Subtotal	23	30%	27	32%	27	33%
Licensed fishery				1	1%		
Decommissioned vessels		4	5%	5	6%	4	5%
Total		76	100%	84	100%	82	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11th February 2019.

With the 15% threshold, it is observed from Table II.44 that 99% of the total landings value and live weight from the COM-EEZ on average 2016-2018 is covered by these vessels, while only 1% originates from vessels that takes less than 15% of their landings value in COM-EEZ.

**Table II.44** Landings from the COM-EEZ distributed on COM-EEZ 15%-vessels and non-15%-vessels

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Total COM-EEZ 15%-vessels	1,533,291	98%	1,527,821	99%	1,528,565	99%	1,529,892	99%
Total COM-EEZ non-15%-vessels	35,054	2%	14,433	1%	17,488	1%	22,325	1%
Total	1,568,345	100%	1,542,255	100%	1,546,053	100%	1,552,218	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Total COM-EEZ 15%-vessels	249,398	97%	431,317	99%	341,352	99%	340,689	99%
Total COM-EEZ non-15%-vessels	7,677	3%	2,960	1%	1,982	1%	4,207	1%
Total	257,076	100%	434,277	100%	343,334	100%	344,896	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

The COM-EEZ 15%-vessels totally landed for around 2.2 billion DKK annually, comprising thus almost two-thirds of the total Danish landings value of 3.5 billion DKK as shown in Table II.45. Forty-eight percent of the landings value were from the UK-EEZ, 22% from the NOR-EEZ, while the remaining 30% primarily was from the NEW-EU-EEZ. It is observed that the FRO-EEZ and other zones, as it was also the case previously, have a very little importance for these vessels.

**Table II.45 Landings by the COM-EEZ 15%-vessels distributed on zones**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ	1,003,159	47%	1,049,441	49%	1,067,902	48%	1,040,167	48%
NEW-EU-EEZ	576,983	27%	578,204	27%	700,578	31%	618,588	29%
NOR-EEZ	516,026	24%	478,380	22%	460,274	21%	484,893	22%
FRO-EEZ	14,106	1%			389	0%	4,832	0%
Other zones*	10,134	0%	21,279	1%	13,710	1%	15,041	1%
Total	2,120,408	100%	2,127,304	100%	2,242,853	100%	2,163,522	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ	201,890	48%	394,419	57%	306,860	49%	301,056	52%
NEW-EU-EEZ	170,733	41%	248,467	36%	280,846	45%	233,349	40%
NOR-EEZ	45,068	11%	36,898	5%	34,241	5%	38,736	7%
FRO-EEZ	2,440	1%			251	0%	897	0%
Other zones*	879	0%	8,987	1%	2,364	0%	4,077	1%
Total	421,010	100%	688,771	100%	624,562	100%	578,115	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: \* Other EEZ includes the exclusive economic zone around Greenland, the zone around Svalbard and Bear Island, the international zone, and the waters adjacent to the territory of Western Sahara.

The overall dependency of COM-EEZ for the 15%-vessels is 71% on average for 2016 to 2018. This varies with the length of the vessels. Generally, the dependency increases with increasing vessel length, but as observed in Table II.46, the dependencies can vary between the length groups. E.g. in the group of vessels above 40 meters, Trawl reduction has a 39% dependency on COM-EEZ, while Trawl mixed has 74%.

**Table II.46 Landings dependency on COM-EEZ by fleets for 15%-vessels**

Landings value (1,000 DKK)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		COM-EEZ	Other EEZ	COM-EEZ	Other EEZ	COM-EEZ	Other EEZ	COM-EEZ	Other EEZ	% in COM-EEZ
15-18m	Total	21,259	13,276	9,818	27,461	8,387	28,571	13,155	23,103	36%
18-24m	Total	55,413	71,172	57,455	103,141	53,555	84,168	55,474	86,160	39%
	- Danish seine	16,048	13,783	14,778	14,014	14,280	11,381	15,035	13,059	54%
24-40m	Total	410,249	135,127	480,026	128,363	436,667	128,287	442,314	130,592	77%
	- Trawl consumption	316,464	84,515	371,913	94,269	334,603	93,671	340,993	90,819	79%
>40m	Total	996,966	352,598	916,485	308,641	982,238	446,579	965,230	369,273	72%
	- Trawl reduction	48,297	100,442	81,146	100,476	80,745	131,347	70,063	110,755	39%
	- Trawl mixed	605,715	211,878	475,515	146,098	552,411	219,883	544,547	192,619	74%
Decommissioned vessels		49,403	14,943	64,039	31,877	47,717	26,683	53,720	24,501	69%
Total		1,533,291	587,117	1,527,821	599,483	1,528,565	714,288	1,529,892	633,629	71%

Landings live weight (tonnes)										
Length	Gear type	2016		2017		2018		Average 2016-2018		
		COM-EEZ	Other EEZ	COM-EEZ	Other EEZ	COM-EEZ	Other EEZ	COM-EEZ	Other EEZ	% in COM-EEZ
15-18m	Total	855	627	534	1,165	357	3,034	582	1,609	27%
18-24m	Total	2,803	2,935	2,549	4,043	2,369	3,206	2,574	3,395	43%
	- Danish seine	1,029	538	787	717	667	519	828	591	58%
24-40m	Total	26,662	12,454	36,284	13,187	26,936	14,956	29,960	13,532	69%
	- Trawl consumption	16,987	3,847	18,900	3,731	16,947	3,863	17,611	3,814	82%
>40m	Total	208,989	149,004	364,611	222,765	296,639	247,754	290,080	206,508	58%
	- Trawl reduction	23,830	49,076	65,484	82,419	44,601	78,077	44,638	69,857	39%
	- Trawl mixed	126,854	85,099	175,678	96,008	164,766	115,573	155,766	98,893	61%
Decommissioned vessels		10,089	6,591	27,338	16,295	15,052	14,259	17,493	12,382	59%
Total		249,398	171,612	431,317	257,454	341,352	283,210	340,689	237,425	59%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Definitions: *Trawl consumption* are vessels landing above 80% consumption species, *Trawl reduction* are vessels landing above 80% reduction species (i.e. sand eel, Norway pout, sprat etc.), and *Trawl mixed* are the remaining trawl vessels within that length group.

Note: For confidentiality reasons, vessels conducting licensed fishery have been included in 15-18 meters.

Looking at the individual species landed from the UK-EEZ, NOR-EEZ and FRO-EEZ, Table II.47 illustrates the importance of the top 10 most important species based on value. Most important for the above 15%-vessels are herring followed by mackerel and sandeel, accounting on average for above 50% of the total landings value, and 78% of the landings live weight of the landings from the COM-EEZ.

**Table II.47 Landings of top 10 species in 2018 from the COM-EEZ by the 15%-vessels, measured by value, and share of total landings from the COM-EEZ by the 15%-vessels in Table II.46**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Herring	635,172	41%	396,574	26%	472,825	31%	501,524	33%
Mackerel	272,557	18%	281,019	18%	278,528	18%	277,368	18%
Sandeel	26,500	2%	240,679	16%	173,284	11%	146,821	10%
Cod	106,180	7%	121,165	8%	123,082	8%	116,809	8%
Plaice	92,176	6%	86,541	6%	90,725	6%	89,814	6%
Monkfish	52,392	3%	67,741	4%	66,102	4%	62,079	4%
Hake	55,459	4%	71,214	5%	59,665	4%	62,113	4%
Saithe	34,206	2%	42,646	3%	44,767	3%	40,540	3%
Blue whiting	50,278	3%	18,515	1%	40,966	3%	36,586	2%
Lemon sole	24,692	2%	27,719	2%	21,309	1%	24,573	2%
Total	1,349,612	88%	1,353,813	89%	1,371,255	90%	1,358,227	89%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Herring	121,754	49%	114,660	27%	135,945	40%	124,120	36%
Mackerel	36,268	15%	37,445	9%	29,902	9%	34,538	10%
Sandeel	13,304	5%	212,149	49%	103,422	30%	109,625	32%
Cod	4,613	2%	4,926	1%	4,983	1%	4,841	1%
Plaice	7,982	3%	6,460	1%	4,704	1%	6,382	2%
Monkfish	1,712	1%	2,207	1%	2,009	1%	1,976	1%
Hake	3,486	1%	3,814	1%	3,280	1%	3,527	1%
Saithe	2,962	1%	4,211	1%	5,134	2%	4,102	1%
Blue whiting	21,389	9%	14,279	3%	25,244	7%	20,304	6%
Lemon sole	734	0%	807	0%	610	0%	717	0%
Total	214,202	86%	400,958	93%	315,234	92%	310,131	91%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Table II.48 shows the composition of landings at the fleet level. Codfish and flatfish are mainly landed by vessels between 24 and 40 meters, especially by the trawlers for human consumption. Herring is landed by the group above 40 meters, especially by the mixed trawlers. The smaller vessels primarily land codfish and flatfish.

**Table II.48 Landings composition in COM-EEZ by fleets for the 15%-vessels, average 2016-2018**

Landings value (1,000 DKK)								
Length	Gear type	Codfish	Flatfish	Mackerel	Herring	Reduction species	Other species	Total
15-18m	Total	2,147	6,916				4,092	13,155
18-24m	Total	17,960	28,056	4		5	9,448	55,474
	- Danish seine	5,899	9,024	3		5	105	15,035
24-40m	Total	292,251	107,333	74	893	10,186	31,578	442,314
	- Trawl consumption	231,146	80,101	20	1	2	29,724	340,993
>40m	Total	1,582	52	265,177	482,824	215,244	350	965,230
	- Trawl reduction	994	39	219	4,329	64,150	332	70,063
	- Trawl mixed	314	2	145,314	287,785	111,114	18	544,547
Decommissioned vessels		8,135	945	12,113	17,807	14,595	125	53,720
Total		322,075	143,303	277,368	501,524	240,030	45,593	1,529,892

Landings live weight (tonnes)								
Length	Gear type	Codfish	Flatfish	Mackerel	Herring	Reduction species	Other species	Total
15-18m	Total	95	399				88	582
18-24m	Total	772	1,568	0		0	233	2,574
	- Danish seine	271	549	0		0	7	828
24-40m	Total	15,809	6,019	8	274	7,126	724	29,960
	- Trawl consumption	12,606	4,333	2	0	1	670	17,611
>40m	Total	217	6	32,717	119,329	137,795	16	290,080
	- Trawl reduction	117	4	31	1,273	43,202	11	44,638
	- Trawl mixed	55	0	18,180	72,694	64,832	5	155,766
Decommissioned vessels		440	41	1,812	4,516	10,679	5	17,493
Total		17,335	8,032	34,538	124,120	155,599	1,065	340,689

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Definitions: *Trawl consumption* are vessels landing above 80% consumption species, *Trawl reduction* are vessels landing above 80% reduction species, and *Trawl mixed* are the remaining trawl vessels within that length group.

Note: For confidentiality reasons, vessels conducting licensed fishery have been included in 15-18 meters.

In which part of the COM-EEZ the fishery by the COM-EEZ 15%-vessels is conducted is shown in Table II.49. Around 60% of the landings originate from the northern part of the North Sea (4A). The middle part of North Sea (4B) constitutes the second most important area, while the Danish vessels only to a small degree go further north.

**Table II.49 Landings distributed on ICES subdivisions by the 15%-vessels**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
2A	59,104	4%	69,335	5%	58,251	4%	62,230	4%
3AN	49,276	3%	48,396	3%	33,802	2%	43,825	3%
4A	1,002,508	65%	855,358	56%	900,178	59%	919,348	60%
4B	247,049	16%	421,909	28%	413,467	27%	360,808	24%
4C	1,531	0%	1,884	0%	742	0%	1,386	0%
5B	3,420	0%			1,133	0%	1,518	0%
6A	154,590	10%	128,747	8%	120,412	8%	134,583	9%
6B	12,858	1%					4,286	0%
7B			141	0%			47	0%
7C	286	0%	1,852	0%	513	0%	883	0%
7E	2,431	0%	42	0%	49	0%	840	0%
7H	238	0%	158	0%	18	0%	138	0%
Total	1,533,291	100%	1,527,821	100%	1,528,565	100%	1,529,892	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
2A	9,740	4%	13,216	3%	14,156	4%	12,371	4%
3AN	1,346	1%	1,524	0%	1,181	0%	1,351	0%
4A	152,492	61%	136,743	32%	137,636	40%	142,290	42%
4B	43,739	18%	247,870	57%	151,364	44%	147,658	43%
4C	734	0%	1,214	0%	369	0%	772	0%
5B	1,443	1%			731	0%	725	0%
6A	32,923	13%	29,355	7%	35,601	10%	32,626	10%
6B	5,550	2%					1,850	1%
7B			44	0%			15	0%
7C	140	0%	1,215	0%	275	0%	543	0%
7E	1,181	0%	26	0%	29	0%	412	0%
7H	111	0%	109	0%	9	0%	76	0%
Total	249,398	100%	431,317	100%	341,352	100%	340,689	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: See Annex 1 for location of ICES subdivisions.



Turning attention to where the 15%-vessels land their fish, Table II.50 shows the countries, where the fish are landed. Danish ports are the most important, covering 82% of the landed value. Eleven percent of the landed value is landed in the UK, Norway and the Faroe Islands. Minor parts are landed in other harbours within the EU.

**Table II.50 Landings from the COM-EEZ to countries by the 15%-vessels**

<b>Landings value (1,000 DKK)</b>								
	<b>2016</b>		<b>2017</b>		<b>2018</b>		<b>Average 2016-2018</b>	
Denmark	730,786	74%	553,828	83%	495,562	98%	593,392	82%
Faroe Islands	17,163	2%					5,721	1%
The Netherlands			715	0%	1,073	0%	596	0%
Ireland	15,319	2%					5,106	1%
Norway	124,868	13%	44,758	7%	1,909	0%	57,179	8%
United Kingdom	37,845	4%	4,413	1%	1,585	0%	14,614	2%
Sweden	15,012	2%	15,046	2%	6,038	1%	12,032	2%
Germany	46,329	5%	49,580	7%			31,970	4%
Unknown			209	0%			70	0%
<b>Total</b>	<b>987,322</b>	<b>100%</b>	<b>668,550</b>	<b>100%</b>	<b>506,167</b>	<b>100%</b>	<b>720,679</b>	<b>100%</b>

<b>Landings live weight (tonnes)</b>								
	<b>2016</b>		<b>2017</b>		<b>2018</b>		<b>Average 2016-2018</b>	
Denmark	82,014	69%	45,061	63%	24,778	99%	50,618	70%
Faroe Islands	2,559	2%					853	1%
The Netherlands			39	0%	57	0%	32	0%
Ireland	2,925	2%					975	1%
Norway	16,921	14%	8,617	12%	75	0%	8,538	12%
United Kingdom	5,980	5%	3,160	4%	69	0%	3,070	4%
Sweden	371	0%	441	1%	166	1%	326	0%
Germany	8,496	7%	13,856	19%			7,451	10%
Unknown			11	0%			4	0%
<b>Total</b>	<b>119,265</b>	<b>100%</b>	<b>71,185</b>	<b>100%</b>	<b>25,145</b>	<b>100%</b>	<b>71,865</b>	<b>100%</b>

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

The specific Danish harbours, where the landings from COM-EEZ are done, are presented in Table II.51. The majority is landed in Thyborøn, Skagen, Hanstholm, and Hirtshals, together covering 94% of the value landed from COM-EEZ in Danish harbours by the 15%-vessels.

**Table II.51 Landings from the COM-EEZ to Danish harbours by the 15%-vessels**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Hanstholm	213,806	20%	270,258	25%	237,500	21%	240,521	22%
Havneby	119	0%					40	0%
Hirtshals	215,934	21%	120,121	11%	147,465	13%	161,173	15%
Hvide Sande	40,998	4%	52,815	5%	51,898	5%	48,570	4%
Skagen	309,726	29%	275,350	26%	310,618	27%	298,565	27%
Strandby (Northern Jutland)	172	0%	404	0%			192	0%
Thorsminde	6,127	1%	8,945	1%	9,344	1%	8,139	1%
Thyborøn	265,510	25%	344,389	32%	378,347	33%	329,415	30%
Østerby			20	0%	70	0%	30	0%
Total	1,052,392	100%	1,072,302	100%	1,135,243	100%	1,086,646	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Hanstholm	15,752	9%	49,297	15%	30,001	11%	31,683	12%
Havneby	8	0%					3	0%
Hirtshals	35,042	20%	32,340	10%	25,504	10%	30,962	12%
Hvide Sande	2,592	1%	2,862	1%	2,317	1%	2,591	1%
Skagen	70,624	41%	130,404	39%	109,022	41%	103,350	40%
Strandby (Northern Jutland)	5	0%	15	0%			7	0%
Thorsminde	225	0%	286	0%	371	0%	294	0%
Thyborøn	49,157	28%	121,860	36%	99,066	37%	90,028	35%
Østerby			1	0%	3	0%	1	0%
Total	173,406	100%	337,066	100%	266,284	100%	258,919	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Above, it was observed that the landings in harbours in the EU, Norway and the Faroe Islands were around 11% of the landings value from the COM-EEZ from the 15%-vessels. In Table II.52, all landings in harbours in the UK, Norway and the Faroe Islands by the 15%-vessels are included. Out of an average yearly landings value of 2.2 billion DKK, 13% or 282 million DKK are landed in these countries.

**Table II.52 Landings in harbours in the United Kingdom, Norway and the Faroe Islands by the 15%-vessels and percentage of total landings by the 15%-vessels**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Landings in UK, NOR and FRO harbours from non COM-EEZ	35,100	2%	21,531	1%	24,391	1%	27,007	1%
Landings in UK, NOR and FRO harbours from COM-EEZ	269,812	13%	280,670	13%	217,078	10%	255,854	12%
Total landings in UK, NOR and FRO harbours	304,912	14%	302,201	14%	241,469	11%	282,861	13%
Total landings by 15%-vessels	2,120,408	100%	2,127,304	100%	2,242,853	100%	2,163,522	100%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Landings in UK, NOR and FRO harbours from non COM-EEZ	5,441	1%	12,589	2%	8,148	1%	8,726	2%
Landings in UK, NOR and FRO harbours from COM-EEZ	39,767	9%	51,017	7%	35,269	6%	42,018	7%
Total landings in UK, NOR and FRO harbours	45,209	11%	63,607	9%	43,417	7%	50,744	9%
Total landings by 15%-vessels	421,010	100%	688,771	100%	624,562	100%	578,115	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Table II.53 shows in which harbours in the UK, Norway and the Faroe Islands the COM-EEZ 15%-vessels land. Five harbours are used in the UK, 19 harbours in Norway and 3 harbours in the Faroe Islands. The 15%-vessels primarily uses harbours in Norway when landing outside Denmark; 69% of the landed value is landed in Norwegian harbours. Ellingsøyfjorden is the most important Norwegian harbour for the 15%-vessels.

**Table II.53 Landings in harbours in the United Kingdom, Norway and the Faroe Islands by the 15%-vessels and percentage of the total landings in all harbours in these countries**

Landings value (1,000 DKK)									
Country	Harbour	2016		2017		2018		Average 2016-2018	
United Kingdom	Aberdeen	287	0%			91	0%	126	0%
	Fraserburgh	2,924	1%	603	0%	195	0%	1,241	0%
	Grimsby	297	0%			18	0%	105	0%
	Lerwick	40,312	13%	6,025	2%	13,432	6%	19,923	7%
	Peterhead	27,905	9%	12,802	4%	7,561	3%	16,089	6%
Norway	Austevoll					660	0%	220	0%
	Brattvåg					31	0%	10	0%
	Egersund	17,784	6%	27,135	9%	40,502	17%	28,474	10%
	Ellingsøyfjorden	37,581	12%	93,698	31%	81,232	34%	70,837	25%
	Florø	1,357	0%					452	0%
	Frøya	1,647	1%					549	0%
	Hareid	12,302	4%	20,810	7%			11,037	4%
	Honningsvåg	8,264	3%			5,281	2%	4,515	2%
	Karmsund			3,777	1%			1,259	0%
	Karmøy			3,910	1%	3,377	1%	2,429	1%
	Kristiansand	5	0%	234	0%	282	0%	174	0%
	Kristiansund					2,662	1%	887	0%
	Måløy	5,518	2%	21,676	7%	28,722	12%	18,639	7%
	Selje	24,024	8%	26,106	9%	4,404	2%	18,178	6%
	Skudesneshavn	12,293	4%	629	0%	1,240	1%	4,721	2%
	Stavanger			2,508	1%	201	0%	903	0%
	Sund, Iofoten					4,959	2%	1,653	1%
	Træna					8,448	3%	2,816	1%
Ålesund	66,480	22%	16,718	6%			27,733	10%	
Faroe Islands	Fuglafjørður	17,139	6%	27,019	9%	38,170	16%	27,443	10%
	Kollefjord	24,596	8%	38,549	13%			21,048	7%
	Tvøroyri	4,198	1%					1,399	0%
Total		304,912	100%	302,201	100%	241,469	100%	282,861	100%

Landings live weight (tonnes)									
Country	Harbour	2016		2017		2018		Average 2016-2018	
United Kingdom	Aberdeen	6	0%			1	0%	3	0%
	Fraserburgh	610	1%	464	1%	99	0%	391	1%
	Grimsby	25	0%			1	0%	9	0%
	Lerwick	6,206	14%	2,801	4%	3,163	7%	4,057	8%
	Peterhead	4,865	11%	8,245	13%	4,246	10%	5,785	11%
Norway	Austevoll					96	0%	32	0%
	Brattvåg					5	0%	2	0%
	Egersund	3,661	8%	8,064	13%	9,790	23%	7,172	14%
	Ellingsøyfjorden	4,275	9%	14,169	22%	8,451	19%	8,965	18%
	Florø	160	0%					53	0%
	Frøya	290	1%					97	0%
	Hareid	1,835	4%	3,560	6%			1,798	4%
	Honningsvåg	497	1%			304	1%	267	1%
	Karmsund			3,504	6%			1,168	2%
	Karmøy			1,230	2%	1,430	3%	887	2%
	Kristiansand			6	0%	7	0%	4	0%
	Kristiansund					651	1%	217	0%
	Måløy	801	2%	4,996	8%	6,775	16%	4,191	8%
	Selje	3,160	7%	3,520	6%	685	2%	2,455	5%
	Skudesneshavn	1,780	4%	32	0%	148	0%	654	1%
	Stavanger			1,900	3%	11	0%	637	1%
	Sund, lofoten					1,301	3%	434	1%
Træna					2,131	5%	710	1%	
Ålesund	9,717	21%	2,325	4%			4,014	8%	
Faroe Islands	Fuglafjørður	2,591	6%	3,340	5%	4,121	9%	3,351	7%
	Kollefjord	4,018	9%	5,450	9%			3,156	6%
	Tvøroyri	710	2%					237	0%
Total		45,209	100%	63,607	100%	43,417	100%	50,744	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Table II.54 shows the top five species (with respect to value averaged over 2016-2018) landed in Norway, the UK and the Faroe Islands by the 15%-vessels. Mackerel is the most important species in landings in these countries, but out of the total landings value and weight, it constitutes only a very small percentage.

**Table II.54** Landings in harbours in the United Kingdom, Norway and the Faroe Islands specified by species by the 15%-vessels, top 5 species averaged over 2016-2018 measured by value, and percentage of total landings by 15%-vessels

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
Mackerel	212,492	10%	236,152	11%	160,295	7%	202,979	9%
Herring	75,520	4%	50,168	2%	160,944	7%	53,648	2%
Sandeel			5,693	0%	24,252	1%	8,084	0%
Cod	7,753	0%	5,886	0%	13,964	1%	4,655	0%
Blue whiting	1	0%	6,151	0%	13,079	1%	4,360	0%

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
Mackerel	28,893	7%	31,562	5%	17,921	3%	26,125	5%
Herring	13,333	3%	9,347	1%	13,546	2%	12,075	2%
Cod			15,733	2%	3,395	1%	6,376	1%
Sandeel	461	0%	13	0%	325	0%	266	0%
Northern prawn	22	0%	4,767	1%	3,703	1%	2,831	0%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Turning attention to the vessels with a dependency of the COM-EEZ below 15%-of their total landings value, Table II.55 shows the number of vessels and the distribution on fleets. Thirty-five, 23 and 29 vessels fished in the COM-EEZ with a dependency on less than 15%-on this area.

**Table II.55** *Number of Danish fishing vessels by fleets fishing in COM-EEZ with below 15%-dependency*

Length	Gear type	2016		2017		2018	
12-15m	Netters and liners	1	3%	2	9%		
	Subtotal	1	3%	2	9%		
15-18m	Netters and liners	3	9%	1	4%	1	3%
	Trawl	3	9%	3	13%	5	17%
	Subtotal	6	17%	4	17%	6	21%
18-24m	Netters and liners	1	3%	1	4%	1	3%
	Multi-purpose gears	2	6%	2	9%	2	7%
	Danish seine			1	4%	3	10%
	Trawl	11	31%	7	30%	8	28%
	Subtotal	14	40%	11	48%	14	48%
24-40m	Multi-purpose gears	1	3%	1	4%	1	3%
	Trawl consumption	3	9%	3	13%	5	17%
	Trawl reduction	1	3%				
	Trawl mixed	2	6%	1	4%	1	3%
	Subtotal	7	20%	5	22%	7	24%
>40	Purse seine	1	3%				
	Trawl reduction	4	11%				
	Trawl mixed	1	3%				
	Subtotal	6	17%				
Licensed vessels						1	3%
Decommissioned vessels		1	3%	1	4%	1	3%
Total		35	100%	23	100%	29	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11th February 2019.

As Table II.56 shows, the below 15%-vessels only fished in the COM-EEZ to a minor extend. On average from 2016 to 2018, the COM-EEZ constituted 7% of their total landings value, while landings from the NEW-EU-EEZ made up the major part of their fishery. These vessels do not have activity in the FRO-EEZ.

**Table II.56 Landings by the below 15%-vessels distributed on zones**

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ	15,015	4%	3,377	2%	3,488	1%	7,293	2%
NEW-EU-EEZ	379,555	92%	195,191	93%	260,000	94%	278,249	93%
NOR-EEZ	20,039	5%	11,057	5%	14,000	5%	15,032	5%
Other zones*	97	0%	0	0%	0	0%	32	0%
<b>Total</b>	<b>414,707</b>	<b>100%</b>	<b>209,625</b>	<b>100%</b>	<b>277,488</b>	<b>100%</b>	<b>300,606</b>	<b>100%</b>

Landings live weight (tonnes)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ	6,718	6%	2,498	6%	1,402	4%	3,539	6%
NEW-EU-EEZ	95,761	90%	40,778	93%	30,430	94%	55,656	91%
NOR-EEZ	959	1%	462	1%	580	2%	667	1%
Other zones*	3,220	3%	0	0%	0	0%	1,073	2%
<b>Total</b>	<b>106,658</b>	<b>100%</b>	<b>43,738</b>	<b>100%</b>	<b>32,412</b>	<b>100%</b>	<b>60,936</b>	<b>100%</b>

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: \* Other EEZ includes the exclusive economic zone around Greenland, the zone around Svalbard and Bear Island, the international zone, and the waters adjacent to the territory of Western Sahara.



Broadening the picture on fleets, it is from Table II.57 observed that the average importance of the COM-EEZ is below 10% for all length groups. The highest dependency is seen for the above 40 meters-group.

**Table II.57 Landings dependency on COM-EEZ by fleets for below 15%-vessels**

Landings value (1,000 DKK)										
Length	Gear type	2016		2017		2018		Average 2016-2018		% in NOR - EEZ
		NOR-EEZ	Other EEZ	NOR - EEZ	Other EEZ	NOR - EEZ	Other EEZ	NOR - EEZ	Other EEZ	
15-18m	Total	3,273	41,109	884	26,233	826	38,871	1,661	35,404	4%
18-24m	Total	13,779	140,974	11,291	119,301	12,378	155,168	12,483	138,481	8%
	- Trawl	10,300	112,144	7,517	82,808	9,300	87,713	9,039	94,222	9%
24-40m	Total	6,367	72,902	1,482	34,840	3,949	62,875	3,933	56,872	6%
>40m	Total	11,578	107,517					3,859	35,839	10%
Decommissioned vessels		56	17,151	777	14,817	335	3,086	389	11,685	3%
Total		35,054	379,653	14,433	195,191	17,488	260,000	22,325	278,281	7%

Landings live weight (1,000 DKK)										
Length	Gear type	2016		2017		2018		Average 2016-2018		% in NOR - EEZ
		NOR-EEZ	Other EEZ	NOR - EEZ	Other EEZ	NOR - EEZ	Other EEZ	NOR - EEZ	Other EEZ	
15-18m	Total	192	3,023	31	4,367	37	3,490	87	3,627	2%
18-24m	Total	1,796	19,995	2,248	19,399	1,797	23,181	1,947	20,858	9%
	- Trawl	458	13,316	1,103	9,269	1,044	12,508	868	11,697	7%
24-40m	Total	475	10,717	65	7,318	140	3,686	227	7,240	3%
>40m	Total	5,190	54,394					1,730	18,131	9%
Decommissioned vessels		25	10,851	616	9,695	8	74	216	6,873	3%
Total		7,677	98,980	2,960	40,778	1,982	30,430	4,207	56,729	7%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Definitions: *Trawl consumption* are vessels landing above 80% consumption species, *Trawl reduction* are vessels landing above 80% reduction species, and *Trawl mixed* are the remaining trawl vessels within that length group.

Note: For confidentiality reasons, vessels below 15 meters and vessels conducting licensed fishery have been included in 15-18 meters.

Based on the above detailed description of the below 15%-vessels, it is observed that their volume of landings and their dependency on the COM-EEZ is low. Therefore, their activity will not be described in more detail.

### 3. Economic consequences of no fishing activity in the UK-EEZ, NOR-EEZ and FRO-EEZ

The description in section 2 gives an overview of the dependency for Danish fishermen's fishing activity in the exclusive economic zone of the United Kingdom, Norway and the Faroe Islands.

In this section, the economic consequences will be analysed for the following situations:

- 1) Danish fishermen are excluded from any fishing activity in the UK EEZ, but can still fish in the NOR-EEZ and FRO-EEZ
- 2) Danish fishermen are excluded from any fishing activity in the UK EEZ, NOR-EEZ and FRO-EEZ

The analysis will be static-comparative thus answering the question of what would have happened in each of the three years, if 1) or 2) had been the situation in those years. No dynamics are considered, i.e. no structural adjustments in the fleet will be accounted for, and no behavioural adjustments will be included, such as for instance changes in fishing grounds. Thus, the two analysed situations mentioned above will have two direct economic effects for the fishing vessels affected:

- 1) Landings value will be reduced with the amount related to the UK-EEZ, NOR-EEZ and FRO-EEZ respectively
- 2) Operating (variable) costs related to the activity in the UK-EEZ, NOR-EEZ and FRO-EEZ respectively will also be reduced

The economic consequences in each of the two situations will be described using three economic measures:

- 1) Landings value
- 2) Gross profit defined as landings value minus operating costs
- 3) Net profit defined as gross profit minus crew payments

The gross profit gives a measure for the amount left to pay for labour and capital, while net profit is then the remaining amount left for payment of capital and any excess payments to the owner.

With respect to the operating costs, fuel costs and costs for provisions and ice/chilled sea water are assumed to depend on the number of days at sea, thus fewer days at sea implies lower costs for this. Sales costs and crew payments are assumed to depend on the value of landings.

The remaining costs are assumed to be fixed and are thus not related to the fishing activity level. These costs include insurance costs, maintenance costs and various other costs. These costs will not change due to any lower fishing activity in the UK-EEZ, NOR-EEZ or FRO-EEZ. Thus, no matter how much the landings' values are reduced for the vessels, the fixed costs have to be paid.

In order to calculate the cost structure and cost levels for the individual fleets, the latest available fisheries account statistics from Statistics Denmark are used. The cost structure observed in the statistics for an average vessel in a fleet is used as a starting point for the cost structure of a vessel

fishing in the UK-EEZ, NOR-EEZ and/or FRO-EEZ. However, in order to account for the specific activity levels of the vessels fishing in the UK-EEZ, NOR-EEZ and/or FRO-EEZ, the cost levels are scaled up/down using the proportion between the landings value of the latter vessels compared to the average vessel in the specific fleet observed in the statistics.

It is noted that the assumption about equal cost structures as well as scaling cost levels up/down using the landings value can be discussed. However, with the current information available, the approach selected gives a transparent and understandable approach.

The latest information available in the fisheries account statistics covers 2015, 2016 and 2017. Thus, the cost structures and cost levels for 2018 have to be estimated. For this, the method described in Andersen (2000) is used. Thus, fuel costs are projected using an oil price index, sales and crew costs using the observed 2018 average landings value within each fleet, and the remaining costs are projected using a weighted three-year average and the yearly harmonized consumer price index from Statistics Denmark.

The economic consequences are calculated for each of the fleets affected, if credible account information is available for the individual fleets. For some fleets, it has not been possible for various reasons to obtain sufficient observations in order to produce credible and reliable cost information. Furthermore, due to confidentiality reasons, the number of vessels within a fleet may be so low that it is not possible to present the economic consequences. However, as in the tables in Section 2, the economic consequences will be presented for totals on length groups, and at the fleet level, if the number of vessels within a fleet is sufficient to do this without compromising the confidentiality of these.

In the two sections below, the economic performance is presented in the two situations mentioned above. It must be mentioned that comparing the results from section 3.1 with the results in section 3.2 should be done with caution. Due to the inclusion and coverage of different fleets, the figures are not comparable, and cannot for instance, be deducted from each other in order to isolate the consequences of closing the NOR-EEZ and FRO-EEZ and not simultaneously closing the UK-EEZ.

### **3.1. Economic consequences from closure of UK-EEZ**

This section will present and comment on the economic (financial) effects of closure of the UK-EEZ for the fishing fleets described in section 2.1. Landings value, gross profit and net profit are shown as three-year averages over the period 2016-2018. The tables include the total values for each fleet group as well as the average value per vessel. Detailed yearly tables have been included in annexes.

With the current Common Fisheries Policy (CFP), where the United Kingdom is included, Danish fishermen can fish in the UK-EEZ. Table III.1 shows that for the fleets, where economic consequences can be calculated, these will have an average yearly total landings value 2016-2018 of 1.6 billion DKK. However, if fishing is prohibited in the UK-EEZ, the total landings value will be reduced to 0.6 billion DKK, i.e. a reduction of 61%. Andersen, Andersen, Hoff and Ståhl (2017) an almost similar reduction was observed from 1.4 billion DKK to 0.6 billion DKK, i.e. 57% on the average for 2014 to 2016.

**Table III.1 Landings value 2016-2018 for fleets fishing in UK-EEZ with 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP	Scenario 2 No landings from UK-EEZ	
Total	24-40m	Total	281,923	174,108	-38%
		- Trawl consumption	199,003	121,890	-39%
	>40m	Total	1,334,502	460,826	-65%
		- Trawl reduction	180,818	110,755	-39%
		- Trawl mixed	737,166	233,224	-68%
	Total		1,616,425	634,934	-61%
Per vessel	24-40m	Total	21,250	13,079	-38%
		- Trawl consumption	25,044	15,339	-39%
	>40m	Total	52,324	18,126	-65%
		- Trawl reduction	14,721	9,108	-38%
		- Trawl mixed	76,019	23,970	-68%

Source: Own calculations.

Note: For confidentiality reasons, vessels below 24 meters have been included in length group 24-40 meters. Moreover, Beam trawlers 24-40 meters have been omitted from the results, because reliable cost information is missing for this segment.

Note: See Annex 2 for a detailed table.

Looking at the economic performance measures, i.e. gross profit in Table III.2 and net profit in Table III.3, the reduction in gross profit is 81% from 1.1 billion DKK to 0.2 billion DKK, while it for net profit is 91% from 0.7 billion DKK to 0.1 billion DKK. Thus, the reduction in both gross profit and net profit is higher than the reduction in landings value of 61%.

Compared to the results in Andersen, Andersen, Hoff and Ståhl (2017), the reductions in both gross profit and net profit are higher using 2016 to 2018 data. For 2014 to 2016, the reduction in gross profit was 75% compared to 81% based on 2016 to 2018, while it was 82% compared to 91% in net profit.

**Table III.2 Gross profit 2016-2018 for fleets fishing in UK-EEZ with 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP	Scenario 2 No landings from UK-EEZ	
Total	24-40m	Total	151,501	67,316	-56%
		- Trawl consumption	113,951	53,495	-53%
	>40m	Total	931,253	133,831	-86%
		- Trawl reduction	70,227	17,103	-76%
- Trawl mixed		532,905	68,046	-87%	
	Total	1,082,754	201,147	-81%	
Per vessel	24-40m	Total	11,478	5,095	-56%
		- Trawl consumption	14,453	6,853	-53%
	>40m	Total	36,588	5,337	-85%
		- Trawl reduction	5,768	1,496	-74%
- Trawl mixed		54,945	6,943	-87%	

Source: Own calculations.

Note: For confidentiality reasons, vessels below 24 meters have been included in length group 24-40 meters. Moreover, Beam trawlers 24-40 meters have been omitted from the results, because reliable cost information is missing for this segment.

Note: See Annex 3 for a detailed table.

**Table III.3 Net profit 2016-2018 for fleets fishing in UK-EEZ with 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP	Scenario 2 No landings from UK-EEZ	
Total	24-40m	Total	67,108	15,083	-78%
		- Trawl consumption	53,689	16,586	-69%
	>40m	Total	716,191	56,103	-92%
		- Trawl reduction	29,512	-7,701	-126%
- Trawl mixed		417,181	31,553	-92%	
	Total	783,299	71,186	-91%	
Per vessel	24-40m	Total	5,139	1,186	-77%
		- Trawl consumption	6,868	2,208	-68%
	>40m	Total	28,177	2,289	-92%
		- Trawl reduction	2,477	-529	-121%
- Trawl mixed		42,985	3,185	-93%	

Source: Own calculations.

Note: For confidentiality reasons, vessels below 24 meters have been included in length group 24-40 meters. Moreover, Beam trawlers 24-40 meters have been omitted from the results, because reliable cost information is missing for this segment.

Note: See Annex 4 for a detailed table.

Looking at the average figures for the individual fleets in the three tables, it is generally observed, that prohibiting fishing in the UK-EEZ will reduce the economic performance to a probably not economically viable level, unless behavioural changes in their fishery and/or capacity adjustments become possible. This is especially the case for the vessels above 40 meters, but a reduction in net

profit for the trawl consumption 24-40 meters of 69% must be considered to have serious economic consequences.

For the vessels with lower dependency of the UK-EEZ, the effects on the economic performance measures are less severe than for the more dependent vessels discussed above. As is seen in Table III.4, the value of landings is expected on average 2016-2018 to be reduced by 6% or 20 million DKK from 0.33 billion DKK to 0.31 billion DKK.

**Table III.4** Landings value 2016-2018 for fleets fishing in UK-EEZ with below 15%-dependency (1,000 DKK)

	Length	Gear type	Scenario 1 Given the current CFP	Scenario 2 No landings from UK-EEZ	
Total	18-24m	Total	83,254	80,704	-3%
	24-40m	Total	202,203	189,196	-6%
		- Trawl consumption	172,419	161,907	-6%
	>40m	Total	39,698	35,839	-10%
	Total		325,156	305,738	-6%
Per vessel	18-24m	Total	9,583	9,284	-3%
	24-40m	Total	17,031	15,936	-6%
		- Trawl consumption	18,097	16,974	-6%
	>40m	Total	6,616	5,973	-10%

Source: Own calculations.

Note: For confidentiality reasons, vessels below 18 meters have been included in length group 18-24 meters. Moreover, Beam trawlers 24-40 meters and multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

Note: See Annex 5 for a detailed table.

Moreover, it is seen from Table III.5 and III.6 that gross profit and net profit are reduced with 8% and 12% respectively. The maximum reduction is observed for the >40 meter vessels with 14% in gross profit and 17% in net profit.

**Table III.5** Gross profit 2016-2018 for fleets fishing in UK-EEZ with below 15%-dependency (1,000 DKK)

	Length	Gear type	Scenario 1 Given the current CFP	Scenario 2 No landings from UK-EEZ	
Total	18-24m	Total	48,728	46,634	-4%
	24-40m	Total	113,822	103,514	-9%
		- Trawl consumption	98,268	89,999	-8%
	>40m	Total	23,196	19,840	-14%
	Total		185,746	169,988	-8%
Per vessel	18-24m	Total	5,610	5,364	-4%
	24-40m	Total	9,563	8,696	-9%
		- Trawl consumption	10,380	9,492	-9%
	>40m	Total	3,866	3,307	-14%

Source: Own calculations.

Note: For confidentiality reasons, vessels below 18 meters have been included in length group 18-24 meters. Moreover, Beam trawlers 24-40 meters and multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

Note: See Annex 6 for a detailed table.

**Table III.6 Net profit 2016-2018 for fleets fishing in UK-EEZ with below 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP	Scenario 2 No landings from UK-EEZ	
Total	18-24m	Total	17,740	16,617	-6%
	24-40m	Total	52,799	46,407	-12%
		- Trawl consumption	46,106	41,017	-11%
	>40m	Total	16,015	13,344	-17%
	Total		86,555	76,367	-12%
Per vessel	18-24m	Total	2,039	1,907	-6%
	24-40m	Total	4,418	3,881	-12%
		- Trawl consumption	4,900	4,353	-11%
	>40m	Total	2,669	2,224	-17%

Source: Own calculations.

Note: For confidentiality reasons, vessels below 18 meters have been included in length group 18-24 meters. Moreover, Beam trawlers 24-40 meters and multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

Note: See Annex 7 for a detailed table.

To conclude, a closure of the UK-EEZ will have a severe impact on the economic performance of the vessels getting at least 15% of their landings value from the UK-EEZ. The vessels with lower dependency of the UK-EEZ will also be influenced, but not at the same magnitude as the others.

### 3.2. Economic consequences from closing UK-EEZ, NOR-EEZ and FRO-EEZ

As also described in Section 2, the simultaneous closure of the UK-EEZ, NOR-EEZ and FRO-EEZ will have a larger impact for Danish fishery. The 15%-vessels included in the economic analysis undertaken in this section had on average, from 2016 to 2018, a yearly landings value of 2.0 billion DKK, cf. Table III.7. Closing all three EEZ at the same time will for these vessels imply a reduction in landings value of 71% to 0.6 billion DKK. Much of the reduction for the vessels above 24 meters is driven by closing the UK-EEZ, but especially closing the NOR-EEZ will have an impact on the demersal fishery as well, thus influencing the fleet more dependent on this type of fishery, i.e. vessels below 24 meters and the Trawl consumption 24-40 meters.

**Table III.7 Landings value 2016-2018 for fleets fishing in COM-EEZ with 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP	Scenario 2 No landings from COM-EEZ	
Total	15-18m	Total	34,903	22,334	-36%
	18-24m	Total	125,379	74,656	-40%
		- Danish seine	28,095	13,059	-54%
	24-40m	Total	530,969	114,912	-78%
		- Trawl consumption	431,812	90,819	-79%
	>40m	Total	1,334,502	369,273	-72%
- Trawl reduction		180,818	110,755	-39%	
- Trawl mixed		737,166	192,619	-74%	
	Total	2,025,753	581,174	-71%	
Per vessel	15-18m	Total	7,690	4,821	-37%
	18-24m	Total	8,712	5,170	-41%
		- Danish seine	5,619	2,612	-54%
	24-40m	Total	18,970	4,110	-78%
		- Trawl consumption	18,780	3,948	-79%
	>40m	Total	52,324	14,434	-72%
- Trawl reduction		14,721	9,108	-38%	
- Trawl mixed		76,019	19,803	-74%	

Source: Own calculations.

Note: For confidentiality reasons, vessels conducting licensed fishery have been included in 15-18 meters. Moreover, beam trawlers 15-18 meters, 18-24 meters and 24-40 meters together with multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

Note: See Annex 8 for a detailed table.



Including costs in the analyses and calculating gross profit as well as net profit, shows that the impact on economic performance will be severe and economically critical for the vessels with activity in these three EEZ. Total gross profit will be reduced with 96% and at the minimum with 50% per vessel for the 15-18 meter vessels, while the 24-40 meter vessels will face a potential reduction of 112% to a negative gross profit, cf. Table III.8.

**Table III.8** *Gross profit 2016-2018 for fleets fishing in COM-EEZ with 15%-dependency (1,000 DKK)*

	Length	Gear type	Scenario 1 Given the current CFP	Scenario 2 No landings from COM-EEZ	
Total	15-18m	Total	21,457	11,084	-48%
	18-24m	Total	72,150	30,742	-57%
		- Danish seine	13,736	1,748	-87%
	24-40m	Total	292,994	-35,118	-112%
		- Trawl consumption	246,909	-21,629	-109%
	>40m	Total	931,253	48,412	-95%
		- Trawl reduction	70,227	17,103	-76%
- Trawl mixed		532,905	30,022	-94%	
	Total		1,317,854	55,121	-96%
Per vessel	15-18m	Total	4,733	2,365	-50%
	18-24m	Total	5,014	2,122	-58%
		- Danish seine	2,747	350	-87%
	24-40m	Total	10,486	-1,241	-112%
		- Trawl consumption	10,766	-925	-109%
	>40m	Total	36,588	1,894	-95%
		- Trawl reduction	5,768	1,496	-74%
- Trawl mixed		54,945	3,040	-94%	

Source: Own calculations.

Note: For confidentiality reasons, vessels conducting licensed fishery have been included in 15-18 meters. Moreover, beam trawlers 15-18 meters, 18-24 meters and 24-40 meters together with multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

Note: See Annex 9 for a detailed table.

Taking crew payments into consideration in the net profit measure, the economic performance at the total level is reduced with 109% and becomes negative, compared to a surplus of 0.9 billion DKK before any closures. For the individual vessels, net profit is reduced to either levels close to zero or negative levels.

**Table III.9 Net profit 2016-2018 for fleets fishing in COM-EEZ with 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP	Scenario 2 No landings from COM-EEZ	
Total	15-18m	Total	7,359	1,897	-74%
	18-24m	Total	25,172	2,679	-89%
		- Danish seine	3,732	-2,903	-178%
	24-40m	Total	133,511	-69,164	-152%
		- Trawl consumption	116,196	-49,118	-142%
	>40m	Total	716,191	-15,859	-102%
		- Trawl reduction	29,512	-7,701	-126%
- Trawl mixed		417,181	-139	-100%	
	Total	882,233	-80,447	-109%	
Per vessel	15-18m	Total	1,622	375	-77%
	18-24m	Total	1,751	178	-90%
		- Danish seine	746	-581	-178%
	24-40m	Total	4,787	-2,459	-151%
		- Trawl consumption	5,080	-2,120	-142%
	>40m	Total	28,177	-613	-102%
		- Trawl reduction	2,477	-529	-121%
- Trawl mixed		42,985	-67	-100%	

Source: Own calculations.

Note: For confidentiality reasons, vessels conducting licensed fishery have been included in 15-18 meters. Moreover, beam trawlers 15-18 meters, 18-24 meters and 24-40 meters together with multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

Note: See Annex 10 for a detailed table.

Closing all three EEZs will also have a negative impact for vessels with a dependency of these EEZ below 15%. The landings value will be reduced with 20 million DKK, i.e. 7%, cf. Table III.10. It is primarily vessels (trawlers) between 18 and 24 meters that will get the absolute reduction - in total 9 million DKK per year. Gross profit and net profit are also reduced, cf. Table III.11 and III.12, but despite that there is an impact on the economic performance of these vessels, it is not at the magnitude observed for the vessels more dependent on the COM-EEZ

**Table III.10** Landings value 2016-2018 for fleets fishing in COM-EEZ with below 15%-dependency (1,000 DKK)

	Length	Gear type	Scenario 1	Scenario 2	
			Given the current CFP	No landings from COM-EEZ	
Total	15-18m	Total	37,065	35,404	-4%
	18-24m	Total	121,990	112,001	-8%
		- Trawl	103,261	94,222	-9%
	24-40m	Total	60,805	56,872	-6%
	>40m	Total	39,698	35,839	-10%
	Total		259,559	240,117	-7%
Per vessel	15-18m	Total	5,510	5,266	-4%
	18-24m	Total	11,131	10,216	-8%
		- Trawl	12,054	10,996	-9%
	24-40m	Total	9,378	8,788	-6%
	>40m	Total	6,616	5,973	-10%

Source: Own calculations.

Note: For confidentiality reasons, vessels conducting licensed fishery and vessels below 15 meters have been included in 15-18 meters. Moreover, multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

Note: See Annex 11 for a detailed table.

**Table III.11** Gross profit 2016-2018 for fleets fishing in COM-EEZ with below 15%-dependency (1,000 DKK)

	Length	Gear type	Scenario 1 Given the current CFP	Scenario 2 No landings from COM-EEZ	
Total	15-18m	Total	22,017	20,645	-6%
	18-24m	Total	71,978	64,089	-11%
		- Trawl	62,040	54,927	-11%
	24-40m	Total	33,520	30,470	-9%
	>40m	Total	23,196	19,840	-14%
	Total		150,711	135,043	-10%
Per vessel	15-18m	Total	3,267	3,065	-6%
	18-24m	Total	6,558	5,836	-11%
		- Trawl	7,202	6,371	-12%
	24-40m	Total	5,171	4,714	-9%
	>40m	Total	3,866	3,307	-14%

Source: Own calculations.

Note: For confidentiality reasons, vessels conducting licensed fishery and vessels below 15 meters have been included in 15-18 meters. Moreover, multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

Note: See Annex 12 for a detailed table.

**Table III.12** Net profit 2016-2018 for fleets fishing in COM-EEZ with below 15%-dependency (1,000 DKK)

	Length	Gear type	Scenario 1 Given the current CFP	Scenario 2 No landings from COM-EEZ	
Total	15-18m	Total	7,334	6,638	-9%
	18-24m	Total	29,741	25,297	-15%
		- Trawl	27,089	23,036	-15%
	24-40m	Total	14,870	13,026	-12%
	>40m	Total	16,015	13,344	-17%
	Total		67,960	58,305	-14%
Per vessel	15-18m	Total	1,082	980	-9%
	18-24m	Total	2,694	2,288	-15%
		- Trawl	3,105	2,633	-15%
	24-40m	Total	2,291	2,015	-12%
	>40m	Total	2,669	2,224	-17%

Source: Own calculations.

Note: For confidentiality reasons, vessels conducting licensed fishery and vessels below 15 meters have been included in 15-18 meters. Moreover, multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

Note: See Annex 13 for a detailed table.

## 4. Summary

The decision by the UK about leaving the European Union causes a range of negotiations about the future collaboration between the remaining EU Member States and the United Kingdom. Fisheries is one of the areas that will be a part of these negotiations.

This report describes the situation for the Danish fishery with focus on the fishery in the Exclusive Economic Zone of the United Kingdom (UK-EEZ), based on the latest available data from 2016, 2017 and 2018. Furthermore, a description of the importance of the Danish fishery in the exclusive economic zones of Norway (NOR-EEZ) and the Faroe Islands (FRO-EEZ) is included. The current fishing agreements between the European Union and Norway/the Faroe Islands give the fishermen from Norway and the Faroe Islands access to the UK-EEZ, and EU-fishermen access to NOR-EEZ and FRO-EEZ. However, this may not be the case in the future, depending on the agreements with the United Kingdom.

### Importance of the UK-EEZ, NOR-EEZ and FRO-EEZ for the Danish fishermen

Overall, the Danish fisheries obtained a substantial part of its landings from the UK-EEZ and NOR-EEZ in 2016-2018, cf. Table IV.1 below. The landings value from the UK-EEZ constituted on average 30% of the total Danish landings value, corresponding to 1 billion DKK, while the landings value from the NOR-EEZ constituted 14%, or 0.5 billion DKK over the period. Contrary to this, the contribution from the FRO-EEZ was of minor importance.

**Table IV.1** Economic importance of exclusive economic zones for Danish fishery (1,000 DKK)

Exclusive economic zone	2016		2017		2018		Average 2016-2018	
	Value	%	Value	%	Value	%	Value	%
NEW-EU-EEZ	1,959,503	53%	1,733,021	51%	1,852,417	52%	1,848,314	52%
UK-EEZ	1,018,173	28%	1,052,818	31%	1,071,390	30%	1,047,460	30%
NOR-EEZ	536,065	15%	489,437	14%	474,274	13%	499,925	14%
FRO-EEZ	14,106	0%	0	0%	389	0%	4,832	0%
Other EEZ*	147,370	4%	144,017	4%	142,557	4%	144,648	4%
Total by all Danish vessels	3,675,217	100%	3,419,293	100%	3,541,027	100%	3,545,179	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Note: \* Other EEZ includes the exclusive economic zone around Greenland, the zone around Svalbard and Bear Island, the international zone, and the waters adjacent to the territory of Western Sahara.

In all, 69 vessels in 2016, 69 vessels in 2017 and 69 vessels in 2018 fished in the UK-EEZ. Of these 36 vessels in 2016, 50 vessels in 2017 and 44 vessels in 2018 took at least 15% of their landings value from the UK-EEZ (in the following referred to as 'UK-15%' vessels). Correspondingly 79 vessels in 2016 and 2017 and 84 vessels in 2018 fished in the NOR-EEZ, of which 50 vessels in 2016 and 51 vessels in 2017 and 2018 took at least 15% of their landings value from the NOR-EEZ (in the following referred to as 'NOR-15%' vessels). The number of vessels active in the FRO-EEZ was in total over the years below five vessels and none of these were more than 15% dependent on their fishery in the FRO-EEZ.

The UK-15% vessels on average landed 98% of the Danish landings value and 99% of the Danish landings weight from the UK-EEZ in 2016-2018, and the NOR-15% vessels landed 88% of the Danish landings value and 75% of the landings weight from the NOR-EEZ in 2016-2018. The analysis has

focused on a detailed outline of the above 15%-vessels' activity but has also covered basic information on the activity of the below 15%-vessels.

The most important species taken by the UK-15% vessels in the UK-EEZ are herring, mackerel and sandeel that on average cover 81% of the Danish landings value and 83% of the landings weight over 2016-2018. These species are mainly caught in the Northern and central North Sea, with a smaller part caught in the fishing waters west of Scotland. The catches are mainly landed in Denmark, and to some degree in Norway and Germany, with only 3% of the landings value landed in the UK. In Denmark, the landings are mainly done in the harbours of Skagen, Thyborøn, Hirtshals and Hanstholm.

The most important species taken by the NOR-15% vessels in the NOR-EEZ are plaice, cod and herring that cover 48% of the Danish landings value and 62% of the landings weight over 2016-2018. These species are mainly caught in the northern and central North Sea and to some degree in the southern part of the Norwegian Sea. The catches are mainly landed in Denmark, while only 4% of the landings value is landed in Norway. In Denmark, the landings are mainly done in harbours of Thyborøn, Hanstholm and Hvide Sande.

The analysis has also considered vessels fishing in all three areas, considered as one combined EEZ (named 'COM-EEZ'). Some vessels may fish in one zone, others in two of them and only a few in all three. However, a combined closure of the fishery in the UK-EEZ, NOR-EEZ and FRO-EEZ will have a potentially high impact on the economic performance of the vessels involved. In all, 111 vessels in 2016, 107 in 2017 and 111 in 2018 fished in COM-EEZ. The landings value from the COM-EEZ, i.e. UK-EEZ, NOR-EEZ and FRO-EEZ, for these vessels constituted on average 44% of the total Danish landings value in 2016-2018 (cf. Table IV.2), corresponding to 1.5 billion DKK.

**Table IV.2** Landings by Danish vessels, their dependency on COM-EEZ and COM-EEZ active vessels' landings on exclusive economic zones

Landings value (1,000 DKK)								
	2016		2017		2018		Average 2016-2018	
UK-EEZ by COM-EEZ active vessels	1,018,173	28%	1,052,818	31%	1,071,390	30%	1,047,461	30%
NEW-EU-EEZ by COM-EEZ active vessels	956,538	26%	773,395	23%	960,578	27%	896,837	25%
NOR-EEZ by COM-EEZ active vessels	536,065	15%	489,437	14%	474,274	13%	499,925	14%
FRO-EEZ by COM-EEZ active vessels	14,106	0%			389	0%	4,832	0%
Other EEZ* by COM-EEZ active vessels	10,232	0%	21,279	1%	13,710	0%	15,074	0%
Total by COM-EEZ vessels	2,535,115	69%	2,336,929	68%	2,520,341	71%	2,464,128	70%
Total by all Danish vessels	3,675,217	100%	3,419,293	100%	3,541,027	100%	3,545,179	100%

Source: The Danish Fisheries Agency Vessel, Logbook and Sales Notes Register 11<sup>th</sup> February 2019.

Of the vessels fishing in the COM-EEZ, 76 in 2016, 74 in 2017 and 82 in 2018 took more than 15% of their landings value in the COM-EEZ (in the following named the 'COM-15%' vessels).

The COM-15% vessels on average landed 99% of the Danish landings value and weight from the COM-EEZ in 2016-2018. The analysis has focused on a detailed outline of the above 15%-vessels' activity, but has also covered information on the activity of the below 15%-vessels.

The most important species taken by the COM-15% vessels in the COM-EEZ were herring, mackerel and sandeel that on average covered 61% of the Danish landings value and 78% of the landings weight in COM-EEZ over 2016-2018. These species are mainly caught in the Northern and central North Sea, with a smaller part caught in the fishing waters west of Scotland and in the southern Norwegian Sea. The catches are mainly landed in Denmark (82% of the value and 70% of the weight), and to some degree in Norway and Germany. In Denmark, the landings are mainly done in the harbours of Skagen, Thyborøn, Hirtshals and Hanstholm.

### **Consequences of the United Kingdom leaving the European Union for Danish fishermen**

Based on landing and cost information, an economic analysis has been undertaken in order to show the effects for the Danish fishing fleet following the United Kingdom leaving the European Union. The analysis is data demanding, and various assumptions have therefore been set up in order to define the possible effects following different situations. The following situations have been investigated:

- 1) Continuation of the current CFP, i.e. the negotiations end up with unchanged access to the UK-EEZ respectively COM-EEZ
- 2) All Danish (and other EU) vessels are excluded from fishing in the UK-EEZ respectively the COM-EEZ. In both cases, it is assumed that there is no possibility to take some of the catches previously taken in UK-EEZ/COM-EEZ in the NEW-EU-EEZ after the United Kingdom has left the European Union.

The analyses have been performed for both vessels having a more than 15%-dependency on the two areas, and vessels having a less than 15%-dependency. The analysis has been based on the years 2016, 2017 and 2018, and it shows what would potentially have happened if Danish fishermen had not been able to fish in these areas in those years. The analysis is thus a short run analysis, without taking for instance any capacity adjustments into consideration.

The results of these scenarios are displayed in Table IV.3 and Table IV.4.

**Table IV.3 Closure of UK-EEZ: Aggregated landings value, gross profit and net profit, average of 2016-18 (1,000 DKK)**

		Given the current CFP	No landings from UK-EEZ	
<b>Vessels with more than 15% dependency</b>	Landings value	1,616,425	634,934	-61%
	Gross profit	1,082,754	201,147	-81%
	Net profit	783,299	71,186	-91%
<b>Vessels with less than 15% dependency</b>	Landings value	325,156	305,738	-6%
	Gross profit	185,746	169,988	-8%
	Net profit	86,555	76,367	-12%

Source: Own calculations.

Note: The gross profit gives a measure for the amount left to pay for labour and capital, while net profit is then the remaining amount left for payment of capital and any excess payments to the owner. With respect to the operating costs, fuel costs and costs for provisions and ice/chilled sea water are assumed to dependent on the number of days at sea, thus fewer days at sea implies lower costs for this. Sales costs and crew payments are assumed to depend on the value of landings. The remaining costs are assumed to be fixed and are thus not related to the fishing activity level. These costs include insurance costs, maintenance costs and various other costs.

**Table IV.4 Closure of COM-EEZ: Aggregated landings value, gross profit and net profit, average of 2016-18 (1,000 DKK)**

		Given the current CFP	No landings from COM-EEZ	
<b>Vessels with more than 15% dependency</b>	Landings value	2,025,753	581,174	-71%
	Gross profit	1,317,854	55,121	-96%
	Net profit	882,233	-80,447	-109%
<b>Vessels with less than 15% dependency</b>	Landings value	259,559	240,117	-7%
	Gross profit	150,711	135,043	-10%
	Net profit	67,960	58,305	-14%

Source: Own calculations.

Note: The gross profit gives a measure for the amount left to pay for labour and capital, while net profit is then the remaining amount left for payment of capital and any excess payments to the owner. With respect to the operating costs, fuel costs and costs for provisions and ice/chilled sea water are assumed to depend on the number of days at sea, thus fewer days at sea implies lower costs for this. Sales costs and crew payments are assumed to depend on the value of landings. The remaining costs are assumed to be fixed and are thus not related to the fishing activity level. These costs include insurance costs, maintenance costs and various other costs.

The overall picture is that the economic consequences for the above 15% fleet in all scenarios are significant, given that the basis is the situation in 2016-2018. The UK-15% vessels cover 98% of the landings value and 99% of the landings weight from the UK-EEZ, while the COM-15% vessels cover 99% of the landings weight and value from the COM-EEZ. Thus, unless the current CFP continues, the decision by the United Kingdom to leave EU will lead to a significant decline in landing values, gross profit, and net profit for the fleets involved. This is the case both if it is only the UK-EEZ that is closed, and if it is the COM-EEZ that is closed, with the latter scenario leading to more severe losses than the former scenario, as could be expected.

The gross profit and net profit are still positive for most UK-15% fleets in the case where only the UK-EEZ is closed, while the net profit is negative for most COM-15% fleets if the COM-EEZ is closed. It must be remembered that the analysis is based on the assumption that structural changes are not taking place in the fleets, i.e. that the fleet structure and capacity is unchanged in all situations. Furthermore, the analysis has not considered any price effects following any change in trade



agreements and consequences in trade patterns between the EU and UK. Fish prices are mainly determined by world prices, and therefore no major price effects can be expected following the decision by the United Kingdom to leave the European Union.

Looking at the Danish harbours and their landings from the UK-15% and COM-15% vessels, they primarily locate and land their fish in the harbours on the west coast of Northern Jutland. Skagen receives mostly herring and some reduction species, Hirtshals mostly receives herring and mackerel, while Thyborøn receives reduction species and some amounts of herring and some landings of demersal species. Hanstholm mostly receives demersal species. A small part of the landings from the UK-15% and the COM-15% vessels take place in the UK and in Norway.

Summarizing the findings in this report in short points, the primary ones are as follows:

### **Overall**

- Danish fishermen take 30% of their total landings value in the UK-EEZ and 14% in the NOR-EEZ while the FRO-EEZ is of only minor importance.

### **Fishing in the Exclusive Economic Zone of the United Kingdom**

- Of the Danish fleet fishing in the UK-EEZ, 36 vessels in 2016, 50 in 2017 and 44 in 2018 took more than 15% of their landings value in the UK-EEZ (named the UK-15% vessels). Together these vessels account for 98% of the landings value and 99% of the landings weight taken on average over 2016-2018 in the UK-EEZ
- The most important species caught in the UK-EEZ are herring, mackerel and sandeel, which account for 81% of the landings value and 83% of the landings weight for the UK-15% vessels
- The UK-15% vessels land 62% of their landings value and 75% of their landings weight from the UK-EEZ in Denmark, especially in the harbours of Skagen, Thyborøn, Hirtshals and Hanstholm
- If the UK-EEZ is closed the Danish UK-15% vessels will lose 61% of their total landings value, corresponding to a reduction of 81% in gross profit and 91% in net profit, assuming that the effort used in the UK-EEZ is not utilised in other fishing areas.

### **Fishing in the combined area of the Exclusive Economic Zone of the United Kingdom, Norway and the Faroe Islands**

- Of the Danish vessels fishing in either the UK-EEZ, the NOR-EEZ or the FRO-EEZ (named the COM-EEZ), 76 in 2016, 84 in 2017 and 82 in 2018 (named the COM-15% vessels) took more than 15% of their landings value from COM-EEZ. Together these vessels account for 99% of the landings value and 99% of the landings weight taken on average over 2016-2018 in the COM-EEZ
- The most important species caught by the COM-15% vessels in COM-EEZ are herring, mackerel and sandeel, which account for 61% of the landings value and 78% of the landings weight taken in the COM-EEZ

- The COM-15% vessels land 82% of their landings value and 70% of their landings weight from the COM-EEZ in Denmark, especially in Thyborøn, Skagen, Hanstholm and Hirtshals
- If the COM-EEZ is closed the Danish COM-15% vessels will lose 71% of their total landings value, corresponding to a reduction of 96% in gross profit and 109% in net profit, assuming that the effort used in the COM-EEZ is not utilised in other fishing areas.

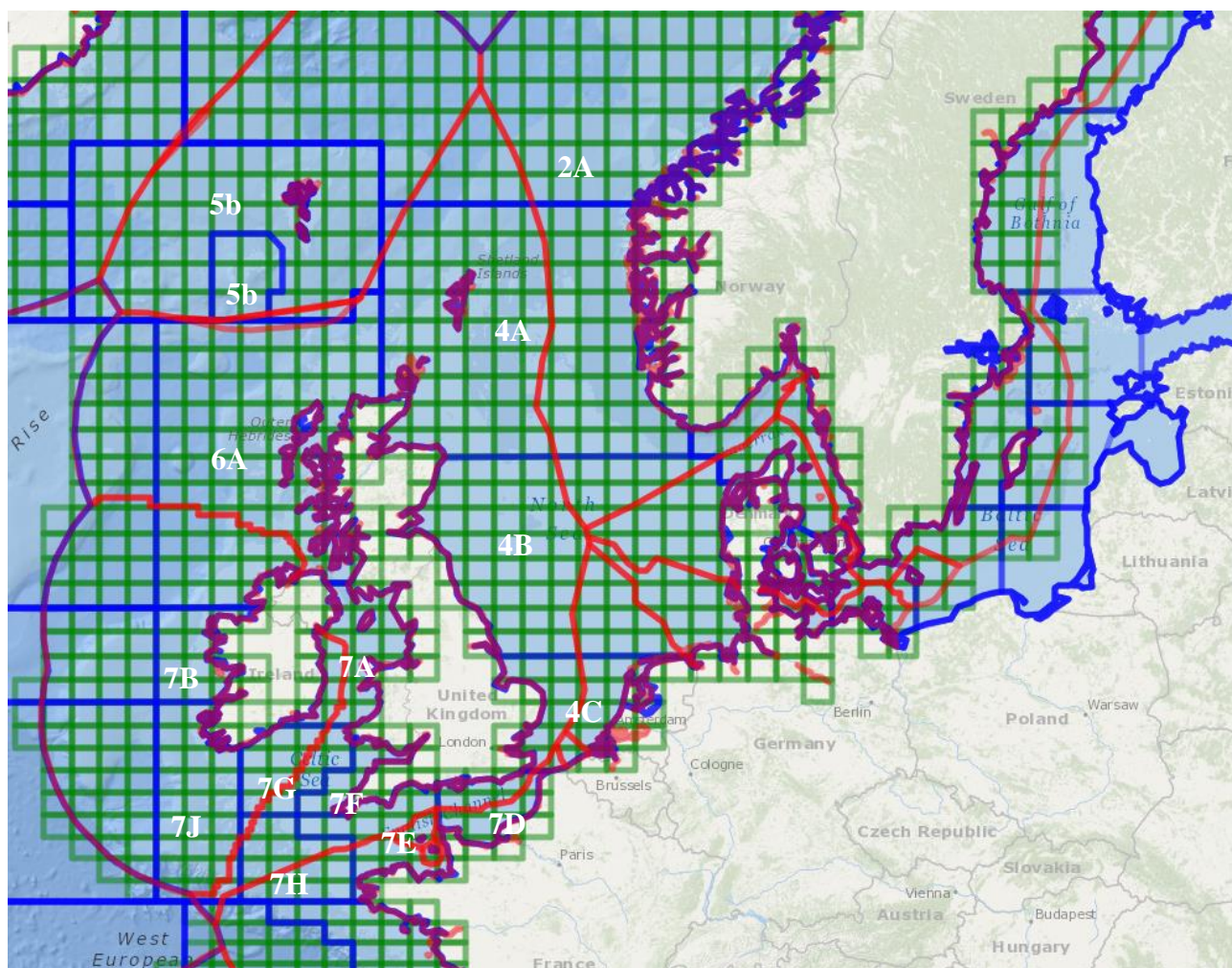
## 5. Literature

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## ANNEXES

**Annex 1 ICES statistical rectangles (square grid) FAO areas (blue bold lines) and country EEZ (red bold lines)**



Source: Danish Fisheries Agency

**Annex 2 Landings value 2016-2018 for fleets fishing in UK-EEZ with 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP				Scenario 2 No landings from UK-EEZ			
			2016	2017	2018	Average 2016-2018	2016	2017	2018	Average 2016-2018
Total	24-40m	Total	224,733	377,152	243,886	281,923	131,571	233,393	157,361	174,108
		- Trawl consumption	167,385	272,199	157,424	199,003	101,392	166,262	98,016	121,890
	>40m	Total	1,349,564	1,225,125	1,428,817	1,334,502	492,763	390,898	498,818	460,826
		- Trawl reduction	148,740	181,621	212,092	180,818	100,442	100,476	131,347	110,755
		- Trawl mixed	817,592	621,613	772,294	737,166	277,678	174,797	247,198	233,224
		Total	1,574,297	1,602,277	1,672,703	1,616,426	624,333	624,291	656,179	634,934
Per vessel	24-40m	Total	22,473	20,953	20,324	21,250	13,157	12,966	13,113	13,079
		- Trawl consumption	27,897	24,745	22,489	25,044	16,899	15,115	14,002	15,339
	>40m	Total	58,677	45,375	52,919	52,324	21,424	14,478	18,475	18,126
		- Trawl reduction	14,874	12,973	16,315	14,721	10,044	7,177	10,104	9,108
		- Trawl mixed	81,759	69,068	77,229	76,019	27,768	19,422	24,720	23,970

Source: Own calculations.

Note: For confidentiality reasons, vessels below 18 meters have been included in length group 18-24 meters. Moreover, beam trawlers 24-40 meters and multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

**Annex 3 Gross profit (1,000 DKK) 2016-2018 for fleets fishing in UK-EEZ with 15%-dependency**

	Length	Gear type	Scenario 1 Given the current CFP				Scenario 2 No landings from UK-EEZ			
			2016	2017	2018	Average 2016-2018	2016	2017	2018	Average 2016-2018
Total	24-40m	Total	129,198	201,412	123,894	151,501	54,260	88,192	59,495	67,316
		- Trawl consumption	105,494	153,795	82,563	113,951	52,132	69,460	38,892	53,495
	>40m	Total	976,520	844,856	972,384	931,253	176,951	90,756	133,786	133,831
		- Trawl reduction	64,278	70,335	76,069	70,227	25,776	9,662	15,872	17,103
	- Trawl mixed	601,015	446,634	551,065	532,905	94,406	37,303	72,429	68,046	
	Total	1,105,717	1,046,268	1,096,278	1,082,755	231,211	178,948	193,281	201,147	
Per vessel	24-40m	Total	12,920	11,190	10,325	11,478	5,426	4,900	4,958	5,095
		- Trawl consumption	17,582	13,981	11,795	14,453	8,689	6,315	5,556	6,853
	>40m	Total	42,457	31,291	36,014	36,588	7,694	3,361	4,955	5,337
		- Trawl reduction	6,428	5,024	5,851	5,768	2,578	690	1,221	1,496
	- Trawl mixed	60,102	49,626	55,107	54,945	9,441	4,145	7,243	6,943	

Source: Own calculations.

Note: For confidentiality reasons, vessels below 18 meters have been included in length group 18-24 meters. Moreover, beam trawlers 24-40 meters and multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

**Annex 4 Net profit 2016-2018 for fleets fishing in UK-EEZ with 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP				Scenario 2 No landings from UK-EEZ			
			2016	2017	2018	Average 2016-2018	2016	2017	2018	Average 2016-2018
Total	24-40m	Total	62,609	86,573	52,141	67,108	15,326	16,874	13,049	15,083
		- Trawl consumption	54,531	71,318	35,218	53,689	21,262	19,083	9,414	16,586
	>40m	Total	769,222	634,153	745,198	716,191	98,134	19,654	50,520	56,103
		- Trawl reduction	32,930	25,165	30,443	29,512	4,606	-15,327	-12,384	-7,701
	- Trawl mixed	477,187	342,094	432,262	417,181	52,350	7,907	34,402	31,553	
	Total		831,831	720,726	797,339	783,299	113,461	36,528	63,569	71,186
Per vessel	24-40m	Total	6,261	4,810	4,345	5,139	1,533	937	1,087	1,186
		- Trawl consumption	9,089	6,483	5,031	6,868	3,544	1,735	1,345	2,208
	>40m	Total	33,444	23,487	27,600	28,177	4,267	728	1,871	2,289
		- Trawl reduction	3,293	1,798	2,342	2,477	461	-1,095	-953	-529
	- Trawl mixed	47,719	38,010	43,226	42,985	5,235	879	3,440	3,185	

Source: Own calculations.

Note: For confidentiality reasons, vessels below 18 meters have been included in length group 18-24 meters. Moreover, beam trawlers 24-40 meters and multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

**Annex 5 Landings value 2016-2018 for fleets fishing in UK-EEZ with below 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP				Scenario 2 No landings from UK-EEZ			
			2016	2017	2018	Average 2016-2018	2016	2017	2018	Average 2016-2018
Total	18-24m	Total	76,081	71,933	101,748	83,254	74,569	68,470	99,073	80,704
	24-40m	Total	249,350	125,326	231,934	202,203	232,557	117,230	217,800	189,196
		- Trawl consumption	177,966	115,825	223,464	172,419	167,204	108,083	210,435	161,907
	>40m	Total	119,095			39,698	107,517			35,839
	Total		444,527	197,259	333,683	325,156	414,643	185,700	316,872	305,738
Per vessel	18-24m	Total	8,453	8,992	11,305	9,583	8,285	8,559	11,008	9,284
	24-40m	Total	16,623	17,904	16,567	17,031	15,504	16,747	15,557	15,936
		- Trawl consumption	17,797	19,304	17,190	18,097	16,720	18,014	16,187	16,974
	>40m	Total	19,849			6,616	17,919			5,973

Source: Own calculations.

Note: For confidentiality reasons, vessels below 18 meters have been included in length group 18-24 meters. Moreover, beam trawlers 24-40 meters and multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.



**Annex 6 Gross profit 2016-2018 for fleets fishing in UK-EEZ with below 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP				Scenario 2 No landings from UK-EEZ			
			2016	2017	2018	Average 2016-2018	2016	2017	2018	Average 2016-2018
Total	18-24m	Total	45,122	42,328	58,734	48,728	43,842	39,487	56,572	46,634
	24-40m	Total	149,503	70,168	121,794	113,822	135,813	63,755	110,974	103,514
		- Trawl consumption	112,163	65,442	117,199	98,268	103,400	59,305	107,291	89,999
	>40m	Total	69,588			23,196	59,519			19,840
		Total	264,213	112,496	180,529	185,746	239,174	103,242	167,547	169,988
Per vessel	18-24m	Total	5,014	5,291	6,526	5,610	4,871	4,936	6,286	5,364
	24-40m	Total	9,967	10,024	8,700	9,563	9,054	9,108	7,927	8,696
		- Trawl consumption	11,216	10,907	9,015	10,380	10,340	9,884	8,253	9,492
	>40m	Total	11,598			3,866	9,920			3,307

Source: Own calculations.

Note: For confidentiality reasons, vessels below 18 meters have been included in length group 18-24 meters. Moreover, beam trawlers 24-40 meters and multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

**Annex 7 Net profit 2016-2018 for fleets fishing in UK-EEZ with below 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP				Scenario 2 No landings from UK-EEZ			
			2016	2017	2018	Average 2016-2018	2016	2017	2018	Average 2016-2018
Total	18-24m	Total	16,417	14,685	22,118	17,740	15,765	13,172	20,912	16,617
	24-40m	Total	74,251	32,104	52,043	52,799	65,599	28,148	45,473	46,407
		- Trawl consumption	57,978	30,347	49,992	46,106	52,492	26,556	44,002	41,017
	>40m	Total	48,046			16,015	40,032			13,344
	Total		138,714	46,789	74,161	86,555	121,396	41,321	66,386	76,367
Per vessel	18-24m	Total	1,824	1,836	2,458	2,039	1,752	1,647	2,324	1,907
	24-40m	Total	4,950	4,586	3,717	4,418	4,373	4,021	3,248	3,881
		- Trawl consumption	5,798	5,058	3,846	4,900	5,249	4,426	3,385	4,353
>40m	Total	8,008			2,669	6,672			2,224	

Source: Own calculations.

Note: For confidentiality reasons, vessels below 18 meters have been included in length group 18-24 meters. Moreover, beam trawlers 24-40 meters and multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

**Annex 8 Landings value 2016-2018 for fleets fishing in COM-EEZ with 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP				Scenario 2 No landings from COM-EEZ			
			2016	2017	2018	Average 2016-2018	2016	2017	2018	Average 2016-2018
Total	15-18m	Total	30,471	37,279	36,958	34,903	10,969	27,461	28,571	22,334
	18-24m	Total	103,381	141,763	130,992	125,379	56,515	88,501	78,951	74,656
		- Danish seine	29,831	28,792	25,660	28,095	13,783	14,014	11,381	13,059
	24-40m	Total	504,438	563,986	524,483	530,969	119,957	110,710	114,071	114,912
		- Trawl consumption	400,980	466,183	428,274	431,812	84,515	94,269	93,671	90,819
	>40m	Total	1,349,564	1,225,125	1,428,817	1,334,502	352,598	308,641	446,579	369,273
- Trawl reduction		148,740	181,621	212,092	180,818	100,442	100,476	131,347	110,755	
- Trawl mixed		817,592	621,613	772,294	737,166	211,878	146,098	219,883	192,619	
	Total	1,987,855	1,968,154	2,121,250	2,025,753	540,039	535,313	668,171	581,174	
Per vessel	15-18m	Total	7,618	6,213	9,239	7,690	2,742	4,577	7,143	4,821
	18-24m	Total	7,952	9,451	8,733	8,712	4,347	5,900	5,263	5,170
		- Danish seine	5,966	5,758	5,132	5,619	2,757	2,803	2,276	2,612
	24-40m	Total	18,683	20,142	18,086	18,970	4,443	3,954	3,933	4,110
		- Trawl consumption	18,226	20,269	17,845	18,780	3,842	4,099	3,903	3,948
	>40m	Total	58,677	45,375	52,919	52,324	15,330	11,431	16,540	14,434
- Trawl reduction		14,874	12,973	16,315	14,721	10,044	7,177	10,104	9,108	
- Trawl mixed		81,759	69,068	77,229	76,019	21,188	16,233	21,988	19,803	

Source: Own calculations.

Note: For confidentiality reasons, vessels conducting licensed fishery have been included in 15-18 meters. Moreover, beam trawlers 15-18 meters, 18-24 meters and 24-40 meters together with multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

**Annex 9 Gross profit 2016-2018 for fleets fishing in COM-EEZ with 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP				Scenario 2 No landings from COM-EEZ			
			2016	2017	2018	Average 2016-2018	2016	2017	2018	Average 2016-2018
Total	15-18m	Total	17,794	22,714	23,864	21,457	1,694	14,606	16,953	11,084
	18-24m	Total	59,787	81,458	75,203	72,150	21,133	37,811	33,283	30,742
		- Danish seine	14,959	14,299	11,950	13,736	2,201	2,300	745	1,748
	24-40m	Total	301,101	307,464	270,418	292,994	-10,734	-50,785	-43,835	-35,118
		- Trawl consumption	252,717	263,397	224,614	246,909	-3,923	-31,115	-29,849	-21,629
	>40m	Total	976,520	844,856	972,384	931,253	46,983	13,184	85,070	48,412
- Trawl reduction		64,278	70,335	76,069	70,227	25,776	9,662	15,872	17,103	
- Trawl mixed		601,015	446,634	551,065	532,905	32,966	10,263	46,839	30,022	
	Total	1,355,202	1,256,492	1,341,869	1,317,854	59,076	14,816	91,471	55,121	
Per vessel	15-18m	Total	4,448	3,786	5,966	4,733	423	2,434	4,238	2,365
	18-24m	Total	4,599	5,431	5,014	5,014	1,626	2,521	2,219	2,122
		- Danish seine	2,992	2,860	2,390	2,747	440	460	149	350
	24-40m	Total	11,152	10,981	9,325	10,486	-398	-1,814	-1,512	-1,241
		- Trawl consumption	11,487	11,452	9,359	10,766	-178	-1,353	-1,244	-925
	>40m	Total	42,457	31,291	36,014	36,588	2,043	488	3,151	1,894
- Trawl reduction		6,428	5,024	5,851	5,768	2,578	690	1,221	1,496	
- Trawl mixed		60,102	49,626	55,107	54,945	3,297	1,140	4,684	3,040	

Source: Own calculations.

Note: For confidentiality reasons, vessels conducting licensed fishery have been included in 15-18 meters. Moreover, beam trawlers 15-18 meters, 18-24 meters and 24-40 meters together with multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

**Annex 10 Net profit 2016-2018 for fleets fishing in COM-EEZ with 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP				Scenario 2 No landings from COM-EEZ			
			2016	2017	2018	Average 2016-2018	2016	2017	2018	Average 2016-2018
Total	15-18m	Total	5,997	7,825	8,255	7,359	-2,808	3,594	4,907	1,897
	18-24m	Total	21,187	28,100	26,228	25,172	-62	4,500	3,598	2,679
		- Danish seine	4,412	3,935	2,850	3,732	-2,673	-2,745	-3,291	-2,903
	24-40m	Total	149,910	136,421	114,202	133,511	-46,066	-84,107	-77,321	-69,164
		- Trawl consumption	130,632	122,143	95,811	116,196	-29,655	-59,679	-58,021	-49,118
	>40m	Total	769,222	634,153	745,198	716,191	-11,754	-45,348	9,526	-15,859
		- Trawl reduction	32,930	25,165	30,443	29,512	4,606	-15,327	-12,384	-7,701
- Trawl mixed		477,187	342,094	432,262	417,181	876	-14,307	13,014	-139	
	Total	946,316	806,499	893,884	882,233	-60,691	-121,361	-59,290	-80,447	
Per vessel	15-18m	Total	1,499	1,304	2,064	1,622	-702	599	1,227	375
	18-24m	Total	1,630	1,873	1,749	1,751	-5	300	240	178
		- Danish seine	882	787	570	746	-535	-549	-658	-581
	24-40m	Total	5,552	4,872	3,938	4,787	-1,706	-3,004	-2,666	-2,459
		- Trawl consumption	5,938	5,311	3,992	5,080	-1,348	-2,595	-2,418	-2,120
	>40m	Total	33,444	23,487	27,600	28,177	-511	-1,680	353	-613
		- Trawl reduction	3,293	1,798	2,342	2,477	461	-1,095	-953	-529
- Trawl mixed		47,719	38,010	43,226	42,985	88	-1,590	1,301	-67	

Source: Own calculations.

Note: For confidentiality reasons, vessels conducting licensed fishery have been included in 15-18 meters. Moreover, beam trawlers 15-18 meters, 18-24 meters and 24-40 meters together with multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

**Annex 11 Landings value 2016-2018 for fleets fishing in COM-EEZ with below 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP				Scenario 2 No landings from COM-EEZ			
			2016	2017	2018	Average 2016-2018	2016	2017	2018	Average 2016-2018
Total	15-18m	Total	44,382	27,117	39,697	37,065	41,109	26,233	38,871	35,404
	18-24m	Total	129,705	104,243	132,023	121,990	119,405	95,313	121,286	112,001
		- Trawl	122,444	90,325	97,012	103,261	112,144	82,808	87,713	94,222
	24-40m	Total	79,269	36,322	66,824	60,805	72,902	34,840	62,875	56,872
	>40m	Total	119,095			39,698	107,517			35,839
	Total		372,452	167,683	238,543	259,559	340,933	156,387	223,031	240,117
Per vessel	15-18m	Total	6,340	4,520	5,671	5,510	5,873	4,372	5,553	5,266
	18-24m	Total	10,809	11,583	11,002	11,131	9,950	10,590	10,107	10,216
		- Trawl	11,131	12,904	12,127	12,054	10,195	11,830	10,964	10,996
	24-40m	Total	11,324	7,264	9,546	9,378	10,415	6,968	8,982	8,788
	>40m	Total	19,849			6,616	17,919			5,973

Source: Own calculations.

Note: For confidentiality reasons, vessels conducting licensed fishery and vessels below 15 meters have been included in 15-18 meters. Moreover, multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

**Annex 12 Gross profit 2016-2018 for fleets fishing in COM-EEZ with below 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP				Scenario 2 No landings from COM-EEZ			
			2016	2017	2018	Average 2016-2018	2016	2017	2018	Average 2016-2018
Total	15-18m	Total	26,253	15,358	24,441	22,017	23,529	14,634	23,770	20,645
	18-24m	Total	80,540	60,499	74,895	71,978	72,319	53,453	66,494	64,089
		- Trawl	76,218	52,580	57,321	62,040	67,998	46,703	50,080	54,927
	24-40m	Total	46,015	20,074	34,472	33,520	40,908	18,938	31,564	30,470
	>40m	Total	69,588			23,196	59,519			19,840
	Total		222,395	95,930	133,808	150,711	196,275	87,026	121,828	135,043
Per vessel	15-18m	Total	3,750	2,560	3,492	3,267	3,361	2,439	3,396	3,065
	18-24m	Total	6,712	6,722	6,241	6,558	6,027	5,939	5,541	5,836
		- Trawl	6,929	7,511	7,165	7,202	6,182	6,672	6,260	6,371
	24-40m	Total	6,574	4,015	4,925	5,171	5,844	3,788	4,509	4,714
	>40m	Total	11,598			3,866	9,920			3,307

Source: Own calculations.

Note: For confidentiality reasons, vessels conducting licensed fishery and vessels below 15 meters have been included in 15-18 meters. Moreover, multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.

**Annex 13 Net profit 2016-2018 for fleets fishing in COM-EEZ with below 15%-dependency (1,000 DKK)**

	Length	Gear type	Scenario 1 Given the current CFP				Scenario 2 No landings from COM-EEZ			
			2016	2017	2018	Average 2016-2018	2016	2017	2018	Average 2016-2018
Total	15-18m	Total	8,215	4,379	9,407	7,334	6,860	4,009	9,045	6,638
	18-24m	Total	36,900	23,283	29,039	29,741	32,083	19,438	24,370	25,297
		- Trawl	35,753	20,941	24,574	27,089	30,937	17,697	20,472	23,036
	24-40m	Total	21,656	8,750	14,203	14,870	18,524	8,069	12,484	13,026
	>40m	Total	48,046			16,015	40,032			13,344
	Total		114,817	36,413	52,650	67,960	97,499	31,516	45,899	58,305
Per vessel	15-18m	Total	1,174	730	1,344	1,082	980	668	1,292	980
	18-24m	Total	3,075	2,587	2,420	2,694	2,674	2,160	2,031	2,288
		- Trawl	3,250	2,992	3,072	3,105	2,812	2,528	2,559	2,633
	24-40m	Total	3,094	1,750	2,029	2,291	2,646	1,614	1,783	2,015
	>40m	Total	8,008			2,669	6,672			2,224

Source: Own calculations.

Note: For confidentiality reasons, vessels conducting licensed fishery and vessels below 15 meters have been included in 15-18 meters. Moreover, multi-purpose gears 18-24 meters have been omitted from the results, because reliable cost information is missing for these segments.