



23 May 2017

## Annual Report on fishing fleet capacity 2016 - Denmark

The format of the Danish capacity report concerning 2016 follows the headlines mentioned in article 14 of Commission Regulation (EEC) No. 1013/2010.

Fleet data used in the report are from 2016, whereas data on economic performance and technical indicators is from 2015.

Biological indicators provided by the Commission in 2016 include the time series of Danish catches from 2009-2014.

### Section A

#### **Description of fleets**

The statistics of table A.1 include all Danish vessels during the year and not only by the 31<sup>st</sup> of December as fleet statistics usually do. There was 2,412 vessels registered in the Danish vessel register during 2016, cf. Table A.1.

Out of these 2,412 vessels 141 of these were not registered at the end of 2016, but had been that during the year. In total 2,271 vessels were registered the 31<sup>st</sup> December 2016. Of these, 790 vessels had not been active during the year, i.e. did not have any registered landing. A total of 551 vessels are considered as commercial vessels, i.e. their total landings value was above the threshold level of € 36,000 in 2016, while the remaining 930 vessels were non-commercial vessels with landing values below € 36,000.

**Table A.1. Number of registered Danish fishing vessels in 2016**

Length	Gear	Commercial <sup>1)</sup>	Non-commercial <sup>2)</sup>	Inactive <sup>3)</sup>	Not registered 31 <sup>st</sup> December <sup>4)</sup>	Total
VL0010m	DTS	3	7	4	2	16
	PGP	94	789	711	88	1,682
	PMP	27	100	52	8	187
	Total	124	896	767	98	1,885
VL1012m	DRB	10	1	2	2	15
	DTS	10	1	1	1	13
	PGP	36	16	4	2	58
	PMP	25	7	0	4	36
	Total	81	25	7	9	122
VL1218m	DRB	28	0	2	1	31
	DTS	105	5	5	15	130
	PGP	24	1	2	2	29
	PMP	32	3	4	5	44
	TBB	11	0	0	0	11
	TM <sup>5)</sup>	12	0	0	0	12
	Total	212	9	13	23	257
VL1824m	DTS	40	0	2	5	47
	PMP	11	0	0	0	11
	TBB	16	0	1	0	17
	Total	67	0	3	5	75

VL2440m	DTS <sup>6)</sup>	33	0	0	2	35
	PMP	4	0	0	1	5
	Total	37	0	0	3	40
VL40XXm	DTS	13	0	0	0	13
	TM <sup>7)</sup>	17	0	0	3	20
	Total	30	0	0	3	33
Total		551	930	790	141	2,412

See Annex 1 for explanation of Gear Codes

Source: The Danish Agrifish Agency Vessel Register and Sales Notes Register 21<sup>st</sup> March 2017.

Notes: <sup>1)</sup> Includes vessels with a yearly catch value above € 36,000.

<sup>2)</sup> Includes vessels with a yearly catch value below € 36,000 but above € 0.

<sup>3)</sup> Includes vessels not having any catch value within the year.

<sup>4)</sup> Includes vessels not being active by the end of the year.

<sup>5)</sup> For discretionary purposes, VL1824m TM has been included in VL1218m TM.

<sup>6)</sup> For discretionary purposes, VL24XXm TBB has been included in VL2440m DTS.

<sup>7)</sup> For discretionary purposes, VL40XXm PS has been included in VL40XXm TM.

The distribution of tonnage and engine power is shown in Appendix 2. For both capacity measures, the commercial vessels make up the majority of these with 85% of total GT and 69% of total kW. These shares have been increasing over the years.

## Section A

### *Link with fisheries*

The linkages between the different fleet segments and the kind of fisheries they conduct are shown in Table A.2 based on landing value and Table A.3 based on landing quantity measured in live weight. A detailed overview for the commercial and non-commercial vessels can be found in Annex 3.

The fleet segments below 40 metres are primarily dependent on demersal species, with the exception of VL1218m TM that is mostly dependent on reduction species and pelagic consumption species (mackerel and herring). The fleet segments above 40 metres are solely dependent on mackerel, herring and reduction species. The VL40XXm is also dependent on an entry-restricted fishery, but this is attributable to one vessel catching shrimps in the waters around Greenland. The DRBs and TBBs are in entry-restricted fisheries for mussels and shrimps.

**Table A.2. Distribution landing value in 2016 on overall fisheries (%)**

Length	Gear	Round fish	Flatfish	Lobster and shrimp	Mackerel and herring	Other species	Reduction species <sup>1)</sup>	Entry-restricted <sup>2)</sup>	Total landings value <sup>6)</sup>	
									€ 1,000	%
VL0010m	DTS	31	52	16	0	1	0	0	1,014	0.2
	PGP	28	25	10	2	35	0	1	12,894	2.4
	PMP	33	41	15	0	8	0	1	3,454	0.6
VL1012m	DRB	1	1	0	0	0	0	97	3,590	0.7
	DTS	38	22	26	2	0	12	0	1,683	0.3
	PGP	45	42	0	0	12	0	1	5,569	1.0
	PMP	32	50	11	1	2	5	0	3,763	0.7
VL1218m	DRB	0	0	0	0	0	0	100	8,906	1.7
	DTS	21	19	49	2	1	8	0	39,517	7.4
	PGP	35	60	0	0	4	0	0	8,838	1.7
	PMP	29	36	34	0	0	2	0	9,496	1.8
	TBB	1	11	0	0	0	0	88	5,819	1.1
	TM <sup>3)</sup>	12	11	11	33	0	33	0	7,894	1.5
VL1824m	DTS	23	32	28	2	1	14	0	42,473	8.0
	PMP	18	46	20	0	1	15	0	13,122	2.5
	TBB	0	14	0	0	0	0	85	10,071	1.9
VL2440m	DTS <sup>4)</sup>	51	27	14	0	0	8	0	73,123	13.7
	PMP	76	24	0	0	0	0	0	12,404	2.3

VL40XXm	DTS	0	0	0	17	0	48	35	50,207	9.4
	TM <sup>5)</sup>	0	0	0	72	0	27	0	219.646	41.2

See Annex 1 for explanation of Gear Codes

Source: The Danish Agrifish Agency Vessel Register and Sales Notes Register 21<sup>st</sup> March 2017.

Notes: <sup>1)</sup> Species such as sandeel, blue whiting, sprat, horse mackerel and Norway pout.

<sup>2)</sup> Species that can only be caught with an authorization, i.e. mussels, oysters, brown shrimps and shrimps in the waters around Greenland.

<sup>3)</sup> For discretionary purposes, VL1824m TM has been included in VL1218m TM.

<sup>4)</sup> For discretionary purposes, VL24XXm TBB has been included in VL2440m DTS.

<sup>5)</sup> For discretionary purposes, VL40XXm PS has been included in VL40XXm TM.

<sup>6)</sup> Based on the average Euro exchange rate for 2016 being 7.4452 DKK / €.

**Table A.3. Distribution landing live weight in 2016 on overall fisheries (%)**

Length	Gear	Round fish	Flatfish	Lobster and shrimp	Mackerel and herring	Other species	Reduction species <sup>1)</sup>	Entry-restricted <sup>2)</sup>	Total landings live weight	
									tonnes	%
VL0010m	DTS	26	69	4	0	0	0	0	416	0.1
	PGP	37	32	2	8	21	0	1	4,121	0.6
	PMP	36	56	4	1	2	0	1	1,326	0.2
VL1012m	DRB	0	0	0	0	1	0	99	9,504	1.3
	DTS	32	17	3	5	0	44	0	1,634	0.2
	PGP	44	48	0	1	7	0	0	2,241	0.3
	PMP	29	41	2	2	0	25	0	2,547	0.3
VL1218m	DRB	0	0	0	0	0	0	100	40,076	5.4
	DTS	21	16	8	7	1	46	0	26,353	3.6
	PGP	31	64	0	0	4	0	0	3,249	0.4
	PMP	42	39	7	0	0	12	0	4,900	0.7
	TBB	1	37	0	0	0	0	62	978	0.1
	TM <sup>3)</sup>	2	3	1	32	0	62	0	15,917	2.2
VL1824m	DTS	12	17	4	5	3	60	0	37,521	5.1
	PMP	7	21	4	0	1	68	0	10,893	1.5
	TBB	1	39	0	0	0	5	55	1,838	0.2
VL2440m	DTS <sup>4)</sup>	31	19	3	0	0	47	0	50,664	6.9
	PMP	74	26	0	0	0	0	0	5,130	0.7
VL40XXm	DTS	0	0	0	12	0	84	4	106,108	14.4
	TM <sup>5)</sup>	0	0	0	50	0	49	0	412,808	55.9

See Annex 1 for explanation of Gear Codes

Source: The Danish Agrifish Agency Vessel Register and Sales Notes Register 21<sup>st</sup> March 2017.

Notes: <sup>1)</sup> Species such as sandeel, blue whiting, sprat, horse mackerel and Norway pout.

<sup>2)</sup> Species that can only be caught with an authorization, i.e. mussels, oysters, brown shrimps and shrimps in the waters around Greenland.

<sup>3)</sup> For discretionary purposes, VL1824m TM has been included in VL1218m TM.

<sup>4)</sup> For discretionary purposes, VL24XXm TBB has been included in VL2440m DTS.

<sup>5)</sup> For discretionary purposes, VL40XXm PS has been included in VL40XXm TM.

## Section A

### *Developments in fleets*

The structure of the Danish fishing fleet has changed considerably since 2003, where the first ITQ regulation was implemented in the herring fishery. Since then, ITQs has gradually been introduced in other pelagic fisheries, and from 2007 demersal fisheries were also managed with vessel quota shares (VQS). These management changes are the major reason for the following reductions in the fishing capacity of the Danish fishing fleet, as displayed in Table A.4.

The number of registered vessels has been reduced with 21% from 2008 to 2016. The capacity of the Danish fishing fleet decreased 9% in GT and 20% in kW in the same period.

**Table A.4. Development in the capacity of registered Danish fishing vessels<sup>1) 2)</sup>**

Length	Gear	2008			2011			2014			2016		
		No.	GT	kW	No.	No.	No.	No.	GT	kW	No.	GT	kW
VL0010m	DTS	17	95	1,185	16	91	1,091	20	125	1,667	16	105	1,357
	PGP	2,108	4,512	50,124	2,018	4,259	49,744	1,874	3,939	47,272	1,682	3,699	45,911
	PMP	143	646	7,144	198	831	9,219	199	796	9,301	187	750	8,919
	Total	2,268	5,253	58,453	2,232	5,181	60,054	2,093	4,860	58,240	1,885	4,553	56,187
VL1012m	DRB	31	422	3,337	31	433	3,375	22	339	2,325	15	222	1,512
	DTS	14	173	1,747	10	143	1,231	12	175	1,572	13	189	1,727
	PGP	78	827	6,872	66	716	6,167	63	706	6,152	58	655	5,641
	PMP	31	361	3,126	33	395	3,346	41	499	4,471	36	447	3,875
	Total	154	1,783	15,082	140	1,686	14,119	138	1,718	14,520	122	1,514	12,755
VL1218m	DRB	35	1,095	5,228	34	1,257	5,326	29	981	4,226	31	1,168	4,563
	DTS	209	6,756	37,407	166	5,702	30,228	135	4,615	24,444	130	4,771	23,815
	PGP	80	2,378	11,778	57	1,762	8,579	41	1,375	6,426	29	954	4,435
	PMP	58	1,332	8,801	57	1,382	8,923	46	1,360	7,688	44	1,315	7,487
	TBB	18	752	3,231	11	548	2,126	11	548	2,126	11	548	2,126
	TM <sup>3)</sup>							15	764	3,023	12	629	2,280
	Total	400	12,313	66,445	325	10,650	55,182	277	9,643	47,933	257	9,384	44,706
VL1824m	DTS	90	7,634	27,585	68	6,721	21,110	60	6,100	17,940	47	4,864	13,685
	PMP	15	1,395	3,895	15	1,517	4,336	11	1,276	3,693	11	1,399	3,964
	TBB	13	827	2,393	17	1,137	3,087	16	1,094	2,877	17	1,137	3,087
	Total	118	9,856	33,873	100	9,374	28,533	87	8,470	24,510	75	7,400	20,736
VL2440m	DTS <sup>4)</sup>	74	18,578	48,035	46	12,760	28,547	36	10,398	22,984	35	10,761	22,978
	PMP	8	1,992	4,124	5	1,140	2,143	6	1,532	3,028	5	1,429	2,969
	Total	82	20,569	52,159	51	13,900	30,690	42	11,929	26,012	40	12,190	25,947
VL40XXm	DTS	32	22,615	45,932	25	21,189	41,564	15	11,140	20,945	13	9,534	18,503
	PS	7	9,911	22,625	4	6,526	16,738	4	5,697	12,343			
	TM <sup>5)</sup>							14	21,368	39,032	20	30,282	56,130
	Total	39	32,526	68,557	29	27,715	58,302	33	38,205	72,320	33	39,816	74,633
Total		3,061	82,299	294,569	2,877	68,506	246,880	2,670	74,825	243,535	2,412	74,856	234,964

See Annex 1 for explanation of Gear Codes

Source: The Danish Agrifish Agency Vessel Register and Sales Notes Register 21<sup>st</sup> March 2017.

Notes: <sup>1)</sup> Covers vessels in the register within a year, but does not include virtual capacity.

<sup>2)</sup> From 2008-2011, gear type TM was included in gear type DTS.

<sup>3)</sup> For discretionary purposes, VL1824m TM has been included in VL1218m TM.

<sup>4)</sup> For discretionary purposes, VL24XXm TBB has been included in VL2440m DTS.

<sup>5)</sup> For discretionary purposes, VL40XXm PS has been included in VL2440m TM in 2016.

## Section B

### **Statement of effort reduction schemes - impact of the cod recovery plans for the North Sea in 2016**

An overview of the data with respect to this section is presented in Annex 5. Data includes figures for activity concerning the cod recovery plan for the North Sea.

When describing the effects on the Danish fishing fleet for vessels involved in fishing with gear covered by rules for kilowatt days, it must be borne in mind that there were great variations in effort within each segment which to a large extent is caused by a clash between quota and effort management. The reason for the significant variation was that the Danish regulation with VQS (Vessel Quota Shares) from 2007 allowed vessels to pool their quotas on fewer vessels.

The description is based on the effort register kept by the Danish AgriFish Agency. While reading this presentation, it must be borne in mind that the Danish fleet in general conduct mixed fishery, both with regard to species and geography.

### **Fleet in cod recovery plan for the North Sea, Skagerrak, Kattegat, Irish Sea and West of Scotland**

In 2016, 331 vessels took part in fisheries using gears covered by the regulation, as opposed to 780 vessels in 2003. That corresponds to a reduction of 58%. In 2016, 36,612 days at sea were used as opposed to 86,962 days at sea in 2003, which corresponds to a reduction of 58%. The reduction, in terms of total kilowatt days used was 53%.

In the fishery with **trawl  $\geq$ 100 mm. (TR1)**, 7,121,732 kilowatt days were used in 2003 compared to 5,275,999 kilowatt days in 2016 – a 26% reduction. The number of vessels fishing in this category fell by 58% to 152 vessels. There was an increase in kilowatt days per vessel by 74%.

In the **trawl** fishery between **70 mm and 99 mm (TR2)**, 3,637,741 kilowatt days were used in 2016 as opposed to 10,808,334 kilowatt days in 2003 – a 66% reduction. The number of vessels were reduced by 62% to 161 vessels. The kilowatt days per vessel were 10% down compared with 2003.

In the **trawl** fishery between **16 mm and 31 mm (TR3)**, 1,722,050 kilowatt days were used in 2016 compared to 3,867,765 kilowatt days in 2003 – a reduction of 55%. The number of vessels in this fishery fell by 82% to 23 vessels. The kilowatt days per vessel were increased by 237%.

In the fishery with **beam trawl  $\geq$ 120 mm (BT1)**, 312,115 kilowatt days were used in 2016 as opposed to 1,342,965 kilowatt days in 2003 – a 77% reduction. The number of vessels fishing in this segment fell 75% to 3 vessels. The decrease in kilowatt days per vessel was 7%.

In the fishery with **beam trawl** between **80 mm and 119 mm (BT2)**, 34,043 kilowatt days were used in 2016 compared to 98,897 kilowatt days in 2003 – a 66% reduction. The number of vessels fishing in this segment fell 91% to 1 vessel. The increase in kilowatt days per vessel was 279%.

In the fishery with **nets (GN1)**, 693,661 kilowatt days were used in 2016 as opposed to 2,456,364 kilowatt days in 2003, which was a 72% reduction. The number of vessels fell by 69% to 72 vessels. There was a decrease in kilowatt days per vessel by 8%.

In the fishery with **trammel nets (GT1)**, 480,663 kilowatt days were used in 2016 as opposed to 170,865 kilowatt days in 2003, which was a 181% increase. The number of vessels was reduced by 14%. There was an increase in kilowatt days per vessel by 225%.

In the segment **liners (LL1)**, there was no activity in 2016.

*In summary, a substantial decrease of effort overall and for all types of gear, except trammel nets, has taken place since the cod recovery plan was adopted. The situation has "stabilized" in recent years with a tendency of fewer vessels conducting a more efficient fishery.*

## Section B

### **Impact on fishing capacity of effort reduction schemes**

An overview of the data with respect to this section is given in Annex 6. Data includes figures for activity concerning the cod recovery plan for the North Sea.

### **Fleet in cod recovery plan for the North Sea, Skagerrak, Kattegat, Irish Sea and West of Scotland**

Vessels that took part in fisheries using gears covered by the regulation represented 36,343 GT and 98,130 kW in 2016 as opposed to 63,225 GT and 204,356 kW in 2003. That corresponds to a reduction of 43% in GT and a reduction of 52% in kW. There was a reduction in all gear segments except for GT1 where the increase in GT was 4% although there was a reduction in kW by 4%.

*The situation has "stabilized" in recent years, although a minor tendency of increasing capacity in the trawl segment can be observed. However, the fleet capacity has been reduced with more than 50% in kW and more than 40 % in GT since 2003.*

## Section C

### **Statement of compliance with entry / exit scheme**

The present fleet capacity is below the entry-exit ceiling as laid down in annex II of regulation 1380/2013. The margin in terms of tonnage is 20,875 GT and 101,713 kW. In percentage the capacity in GT and kW is almost 25% in GT and more than 30% kW below the ceiling.

*Denmark is in compliance with the entry-exit levels for tonnage as well as engine power.*

**Table C1. Management of capacity according to Regulation 1380/2013**

		National register	
		GT	kW
1	Fleet ceiling according to annex II	88,762	313,333
2	Capacity of the fleet on 31 December 2015	67,887	211,620
3	<b>Capacity ceiling minus actual capacity</b>	20,875	101,713

Source: The Danish AgriFish Agency Vessel Register

Note 1: For National Register: Virtual capacity is not included in 2 and 3. Virtual capacity per 31<sup>st</sup> December 2016 is 19,102 GT and 96,263 kW.

Note 2: No exits financed with public aid in 2016.

## Section D

### **Summary of weaknesses and strengths of the management system**

#### **a. Fisheries management system**

The fisheries management underwent a change from a regime based on rations per period (individual non-transferable rations) to a regime based on primarily Individual Transferable Quotas (ITQ) and Vessel Quota Shares (VQS). This change caused a fall in the number of vessels as well as tonnage and engine power.

The purpose of the "New management" system was to create a new regulation of the Danish fishery to:

- initiate and develop a regulatory system (management model) that promotes a more sustainable exploitation of fish stocks, primarily by adapting the fishing capacity to fishing opportunities and reduce discards of fish.
- give the individual fishermen better opportunity to plan and run a fishery that fits his vessel and fishing activities,

- ensure basis for the fishery's total earnings,

The New management system divided the Danish fishing fleet into three segments:

- VQS – vessels that in the reference period 2003 - 2005 had been fishing for over 224,000 DKK<sup>1</sup>, and landing one or more selected species included in the “New management”. The vessels were assigned a Vessel Quota Share that can be transferred along with the vessel. Annual quotas based on Vessel Quota Shares can be transferred to other VQS vessels.
- LAV vessels - Less Active Vessels that in the reference period 2003 - 2005 had been fishing for under 224,000 DKK, and landing one or more of the VQS species included in the new management system. The vessels may enter the fishery of VQS species on ration terms.
- OV – Other vessels that in the reference period 2003-2005 did not land VQS species. The vessels may not land VQS species, unless that species is covered by the landing obligation.

The possibility to transfer quotas has resulted in a decrease in the number of vessels and in the capacity of the fleet without using decommission as a financial instrument.

### **b. Fleet management system**

The fleet management system in Denmark is based on an entry-exit regime.

All fishing vessels have to be registered in the vessel register of The Danish Maritime Authority as well as the vessel register of the Danish AgriFish Agency (Order no. 175 of 25th of February 2016 on vessels used for commercial fishery, § 3).

A vessel is only allowed to enter the fishing fleet if one or more other vessels have been removed from the above mentioned registers. It is a precondition that tonnage and engine power of the vessel used for fishery does not exceed the tonnage and engine power from that or those vessels, which were or are to be cancelled (§ 7).

It is not allowed to increase tonnage, size or engine power of a vessel without the permission of the Danish AgriFish Agency (§ 10). The Danish AgriFish Agency can only allow the increase in tonnage or engine power of a vessel if the owner of the vessel also withdraws the same quantity in the form of virtual capacity or as physical capacity from the fleet (§ 9).

Virtual capacity is defined as tonnage and engine power (measured in kW), which used to be connected to vessels now erased from the above mentioned registers (§ 2) and as such virtual capacity is held by persons as a legal right and not in physical vessels. It is allowed to sell virtual capacity. There is no virtual capacity on vessels which have received any subsidy regarding final exit of the fleet (§ 11).

The concept of virtual capacity means that the entitlement to capacity can be kept even when a vessel is scrapped (without economic aid) or sold outside the EU. So it works as an incentive to keep unnecessary capacity out of the physical fleet. On the other hand, the possibility to increase the fleet is limited by the market based system of fishing rights to the effect that holders of virtual capacity will only enter new capacity into the fleet if they have the fishing rights to keep the vessel active.

The vessel owners have to be able to forward documentation concerning the capacity involved in replacements and modernizations. This documentation is verified in the Danish AgriFish Agency's database for fleet management.

A general weakness concerning all EU fleets in the EU fleet management system is the verification of engine power. In the Danish management system the definition of engine power of Regulation 2930/86 is implemented and derating of engine power is not allowed.

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<sup>1</sup> The threshold for commercial vessels in 2005.

The regulation of capacity ensures that capacity can never increase over the level at the starting point.

*The administrative system as such, concerning the administration of the entries and exits in the fleet works satisfactorily.*

### **c. kW-days – effort regulation**

KW-days are defined as the number of days a vessel is at sea times the efficiency in kW of the vessel engine. In the kW-days regulation the Member States are allocated an effort ceiling for the involved gear categories, afterwards the kW regulation is administered nationally. A model for allocation to the fishermen was decided upon in 2009. The allocation was based on vessels effort in 2008 within the different gear segments. The regulation covered vessels over 10 meters in Kattegat and North Sea/Skagerrak. The KW-days management system was repealed as of January 1 2017 though requiring Member States to stay within the overall limits of the capacity ceiling in the geographical areas covered.

## **Section D**

### ***Plan for improvement in fleet management system***

The current Danish management system is at the moment considered to be well functioning in order to secure a balance between fishing opportunities and capacity. Therefore, there are no current plans for changing this. There is however a plan to introduce a new national rule, which will make it easier for young fishermen to obtain a fishing vessel. The plan is to allocate a part of the Danish allocation of kW and BT in a reserve, which can then be applied for on a temporary basis by young fishermen hoping to buy their first vessel. This will make it easier for them, since they will not have to buy all of the needed capacity (kW and BT) at market prize. The new rules are expected to enter into force in July 2017.

## **Section D**

### ***Information on general level of compliance with fleet policy instruments***

Respect of reference level and entry-exit level is ensured by the fleet management. Since permits for new capacity are only issued if there is a previous withdrawal of capacity, total physical capacity will never be higher than the ceilings. And since the system works with individual permits which can be kept as virtual capacity, physical capacity tends to be well below the ceilings.

Unused capacity, including safety capacity and the capacity premium for decommissioning, is not reallocated. In combination with the market based regulation of a substantial part of the fishery the fleet management will tend to create a long term balance between fishing capacity and fishing possibilities.

Compliance is ensured by an active fisheries inspection by control vessels, control units in the fishing port as well as administrative checks and control activity.

Below is a table showing information on infringements and inspections on the main management measures in 2016.

**Table D1. Number of infringements and accomplished inspections in 2016**

Number of infringement cases	Administrative controls	Inspections in port	Inspections at sea	Total
1.1. Registration – license, authorisation etc.	7	8	1	16
1.3. Quotas and quantitative rationing	2	1		3
1.4. Limitations relating to gear and catch method		5	7	12
1.5. Area restrictions	1	2	1	4
2.1 Refusal of control		3		3
3.1 Other information obligations	2			2



4. Illegal catch composition, undersized	1	12	1	14
5.1 Logbook Order and other matters	23	51	2	76
5.2. Control Order and other matters	2			2
5.3. Notifications	55	12		67
6.1. Infringements at the landing and marketing of fish	1	7	1	9
10.1 Illegal participation	1			1
<b>Total</b>	<b>96</b>	<b>102</b>	<b>13</b>	<b>209</b>
<b>Number of inspections</b>	<b>750</b>	<b>2.809</b>	<b>560</b>	<b>4.119</b>

## Section E

### **Information on changes of the administrative procedures relevant to fleet management**

In 2016 the rules regarding maximum ownership of fishing rights were expanded. In 2012 there was introduced a limit on how much quota could be placed on single vessel, and also limits on how much quota a single fisherman could own for many demersal and pelagic quotas. In 2016 these rules were expanded to 6 more quotas. The quotas added were Northern Prawn in three different quota areas, hake, turbot and brill, and salmon. A limit of quota ownership for part-time fishermen was also introduced to avoid so-called "slipperskippers". The limit for the value of quota was set at a value of 250.000 DKK.

## Section F

### **Estimation and discussion of balance indicators**

The technical, biological and economic indicators are calculated in accordance with the guidelines issued by the Commission, taking into account that data is available at fleet segment level. The results are presented for 19 fleet segments, according to the Data Collection Regulation. The fleets VL1218 TBB and VL1824 TBB that is fishing for brown shrimp in the Wadden Sea, and the VL1012m DRB and VL1218m DRB that is fishing mussels are included, but they are not subject to quotas set at the EU level. These four fleet segments are subject to specific entry restrictions. It should also be noted that the DTS gear type from 2008 to 2011 also included TM, while separate specification of TMs are included from 2012. Comparison of fleet performance between years should therefore be done with caution.

#### **i) Technical indicator(s)**

The two technical indicators recommended in the EC guidelines: 1) The inactive fleet indicator and 2) The vessel utilisation indicator are presented in the following.

#### **The Inactive fleet indicator**

The number (No.), gross tonnage (GT) and engine power (kW) of inactive vessels, total vessels and share of inactive vessels within each length group are presented in Table F.1. By taking the share between the inactive vessels and the total vessels, the inactive fleet indicator is calculated. The length group VL0010m has a relative high percentage of inactivity, regardless if measured in number of vessels (43%), gross tonnage (29%) or engine power (30%). According to the EC guidelines, an inactivity level more than 20% indicates technical inefficiency. If this measure is used, the VL0010m is technical inefficient, however it has been reduced over the years. The other length groups do have a lower share of inactivity than 10%, regardless of the measurement. Although the total Danish fleet has a high amount of inactive vessels (35%), the total inactivity of physical capacity is rather low with 3% of GT and 9% of kW, which in 2015 was 7% of GT and 12% of kW.

**Table F.1. Ratios between inactive and total number of vessels in 2016**

Length	Inactive <sup>1)</sup>			Total <sup>2)</sup>			Share of inactivity (%)		
	No.	GT	kW	No.	GT	kW	No.	GT	kW

VL0010m	767	1,225	15,632	1,787	4,277	52,866	43	29	30
VL1012m	7	69	526	113	1,408	11,717	6	5	4
VL1218m	13	234	1,632	234	8,650	41,018	6	3	4
VL1824m	3	219	619	70	7,040	19,553	4	3	3
VL2440m				37	11,323	23,895	0	0	0
VL40XXm				30	35,187	62,493	0	0	0
<b>Total</b>	<b>790</b>	<b>1,747</b>	<b>18,409</b>	<b>2,271</b>	<b>67,886</b>	<b>211,542</b>	<b>35</b>	<b>3</b>	<b>9</b>

Source: The Danish Agrifish Agency Vessel Register and Logbook Register 21<sup>st</sup> March 2017.

1) Includes vessels not having any catch value in 2016, but in the Vessel Register per 31<sup>st</sup> December 2016.

2) Includes vessels in the Vessel Register per 31<sup>st</sup> December 2016.

### The vessel utilisation indicator

The ratio between days at sea and maximum days at sea for each length group and gear type is presented in Table F.2. By taking the ratio between average and maximum number of sea days, an expression for technical capacity utilisation is calculated. The maximum number days at sea within a fleet segment has been set equal to the most active vessel within each year. This method is chosen, because there is a large variation in the maximum possible of days at sea between the fleet segments and within fleet segments. For example, the larger vessels will usually have more days at sea per year than the smaller vessels, operated only by one fisherman. By using the maximum observed days at sea for each fleet segment, this will be taken into account. At the same time, it ensures that the ratio between average days at sea and maximum days at sea does not exceed a value of 1.

**Table F.2. Ratios between average days at sea and maximum days at sea<sup>1) 2)</sup>**

Length	Gear	2008	2009	2010	2011	2012	2013	2014	2015
VL0010	DTS	0.42	0.59	0.34	0.30	0.54	0.46	0.29	0.29
	PGP	0.17	0.17	0.17	0.19	0.15	0.16	0.14	0.13
	PMP					0.25	0.23	0.21	0.23
VL1012	DRB	0.51	0.43	0.50	0.65	0.75	0.53	0.59	0.57
	DTS	0.45	0.53	0.83		0.81	0.73	0.58	0.55
	PGP	0.45	0.44	0.43	0.42	0.43	0.47	0.44	0.45
	PMP	0.54	0.49	0.58	0.56	0.48	0.56	0.42	0.43
VL1218	DRB	0.35	0.45	0.38	0.52	0.49	0.39	0.39	0.44
	DTS	0.50	0.44	0.42	0.45	0.47	0.47	0.49	0.43
	PGP	0.47	0.48	0.61	0.45	0.51	0.48	0.45	0.49
	PMP	0.54	0.55	0.48	0.52	0.37	0.35	0.43	0.45
	TBB	0.69	0.70	0.79	0.66	0.76	0.78	0.79	0.73
	TM					0.53	0.49	0.70	0.58
VL1824	DTS	0.47	0.52	0.50	0.47	0.48	0.47	0.55	0.54
	PMP	0.43	0.60	0.62	0.62	0.66	0.77	0.74	0.70
	TBB	0.87	0.85	0.79	0.66	0.76	0.72	0.78	0.72
VL2440	DTS	0.66	0.67	0.64	0.62	0.67	0.69	0.72	0.78
	PMP							0.72	0.63
VL40XX	DTS	0.77	0.69	0.90	0.64	0.63	0.74	0.76	0.92
	TM					0.67	0.66	0.65	0.68

Source: The Danish Agrifish Agency Vessel Register and Sales Notes Register 21<sup>st</sup> March 2017.

Notes: 1) Covers only active vessels

2) See Appendix 4 for the figures used for the calculations

From Table F.2, it is observed that both ratios are generally increasing with the vessel length. The major part of the vessels in the fleet segments above 24 meters has been managed with Individual Transferable Quotas (ITQ) since 2003, and a relative high ratio is observed for these vessels. All other fleets (except DRBs and TBBs) have since 2007 been managed with transferable Vessel Quota Shares (VQS), and an increasing ratio is expected in the coming years, and to some extent partly already reflected in the figures.

Making strong conclusions about presence of technical overcapacity are difficult, because each fleet segment is not very homogeneous, thereby having a large variation in the maximum observed days at sea. A value below 0.7 is in the Commission guidelines considered to indicate

the presence of technical overcapacity, and if this is applied to the above figures, technical overcapacity is present in 15 of the 20 fleet segments in 2015. The four fleets that do not indicate technical overcapacity in 2015 include two entry-restricted fisheries for mussels and shrimps (VL1218m TBB, and VL1824 TBB) as well as VL2440m DTS and VL40XXm DTS. The low technical utilisation rate of the smaller fleet segments generally below 12 metres, but specifically VL0010m PGP and VL0010m PMP is due to the presence of a relatively large amount of non-commercial vessels in these groups. A more appropriate way of estimating the technical efficiency of these segments will be to calculate the technical indicator based on only commercial vessels, which also have the largest impact on the stocks fished on. Especially for the fleet segments below 12 metres, this will lead to an improvement of the vessel utilisation indicator.

## ii) Biological indicators

The Sustainable Harvest Indicator (SHI) and Stock-at-risk Indicator (SAR) presented in this report are copied from the balance indicators for key fleet segments, reviewed by the STECF in plenum (PLEN-16-03), October 2016.

The SHI values for the individual segments in 2014 are mainly determined by the proportion of landings value from the North Sea and Western Baltic cod stocks (overfished), the flatfish (mainly North Sea plaice, fished at  $F_{MSY}$ ), Nephrops (mainly in Kattegat and Skagerrak at  $F_{MSY}$ ) and the pelagic stocks (mainly North Sea, and Western Baltic herring, North Sea sprat fished at  $F_{MSY}$ , plus mackerel and sprat in the Baltic fished above  $F_{MSY}$

**Table F.3. Sustainable Harvest Indicator (SHI)**

Length	Gear	2009	2010	2011	2012	2013	2014	Trend (5%)
VL0010	DTS	1.2	0.9	0.9	1.3	1.0	0.9	no trend
	PGP	2.0			1.9	1.9	1.8	no trend
	PMP	1.8	1.7		1.5	1.4	1.2	decreasing
VL1012	DTS	2.1	2.0		1.6	1.4	1.7	decreasing
	PGP	2.2	2.2	2.3	2.5	2.3	1.9	decreasing
	PMP	1.8	1.7		1.5	1.4	1.2	decreasing
VL1218	DTS	1.3	1.0	1.1	1.4	1.2	0.9	no trend
	PGP	1.8	1.6	1.5	1.4	1.2	1.2	decreasing
	PMP	1.6	1.4	1.3	1.6	1.4	1.4	no trend
	TM				1.0	1.2	1.0	no trend
VL1824	DTS	1.3	1.1	1.1	1.3	1.1	1.0	no trend
	PMP	1.7	1.5	1.3	1.3	1.0	1.0	decreasing
VL2440	DTS	1.4	1.2	1.2	1.1	1.1	1.0	no trend
VL40XX	DTS	1.1	1.1	1.1	0.9	0.9	0.9	decreasing
	TM				0.9	1.0	1.1	increasing

SHI for Danish fleet segment where on average more than 40% of the landings value are from stocks with estimated  $F$  and  $F_{MSY}$  and with SHI for 2014.

Ten of fifteen segments may not be in balance ( $SHI > 1$ ) with their fishing opportunities in 2014 (Table F3). The small vessels with a high proportion of North Sea cod or Western Baltic cod have a  $SHI > 1$  ("out of balance"). The large pelagic trawlers have  $SHI > 1$  due to their high proportion of mackerel. Most of the SHI indices by segment show no trend or a decreasing trend. Fishing mortalities have in general decreased for the individual stocks since 2014 and will probably decrease SHI more for most segments in the most recent years.

The SAR indicator (Table F4) for the Danish segments in 2014 is mainly determined by landings of the stocks-at-risk: Western Baltic cod, *Pandalus*, Baltic Salmon and two sandeel stocks (ns1 and ns2). There is no general trend in SAR values.

**Table F.4. Stocks-at-risk indicator (SAR)**

Length	Gear	2009	2010	2011	2012	2013	2014
VL0010	DTS	1	1	0	1	0	0
	PMP	1			3	2	1
VL1012	DRB	0	0	0	0	0	0
	DTS	0	1		0	0	1
	PGP	2	2	2	2	3	3
	PMP	1	1		0	0	0
VL1218	DRB	0	0	0	0	0	0
	DTS	4	5	4	3	7	6
	PGP	1	1	2	2	2	0
	PMP	0	1	2	1	1	1
	TBB	0	0	1	1	2	0
	TM				1	2	2
VL1824	DTS	6	4	8	6	6	5
	PMP	3	3	2	3	1	1
	TBB	0	0	2	1	2	0
VL2440	DTS	3	6	5	3	4	4
VL40XX	DTS	3	3	3	3	3	4
	TM				3	2	5

### iii) Economic indicators

The two indicators recommended in the EC guidelines: 1) Return on investment (ROI) per fleet segment and 2) Current revenue in proportion to break-even revenue per fleet segment are presented in the following.

#### Return on investment (ROI)

Return on investment (ROI) is defined as net profit, which is profit after capital stock depreciation, divided by the capital asset value, which consists of the vessel replacement value and the estimated value of fishing rights (net profit/capital asset value), according to EC guidelines. The ROI for the Danish fleet for the years 2008-2015 is shown in Table F.5.A.-F.5.D below for various approaches.

**Table F.5.A. Return on investments excl. income and costs from fishing rights**

Length	Gear	2008	2009	2010	2011	2012	2013	2014	2015
VL0010	DTS	-0.49	-0.12	-0.06	-0.09	-0.10	-0.05	-0.02	0.02
	PGP	-0.25	-0.13	-0.10	-0.10	-0.09	-0.07	-0.11	-0.10
	PMP	-0.22	-0.20	.	.	-0.08	-0.10	-0.12	-0.03
VL1012	DRB	-0.03	0.00	-0.03	-0.01	-0.01	0.07	0.15	0.29
	DTS	-0.05	-0.10	-0.05	.	-0.05	-0.05	-0.04	0.00
	PGP	-0.16	-0.08	-0.09	-0.06	-0.04	-0.04	-0.06	-0.03
	PMP	-0.26	-0.15	-0.05	-0.07	-0.06	-0.07	-0.07	0.00
VL1218	DRB	-0.03	-0.09	-0.07	-0.04	-0.03	-0.01	0.14	0.22
	DTS	-0.03	-0.03	0.01	0.00	-0.01	0.00	-0.01	0.02
	PGP	-0.09	-0.03	0.00	0.00	-0.02	-0.01	-0.04	-0.01

	PMP	-0.04	-0.03	0.00	-0.03	-0.01	-0.01	-0.01	0.01
	TBB	0.10	-0.15	-0.05	-0.11	0.06	0.06	0.01	-0.06
	TM	.	.	.	.	0.00	0.04	0.05	0.08
VL1824	DTS	0.01	-0.01	0.01	0.02	0.00	0.00	0.02	0.05
	PMP	-0.02	-0.03	0.02	0.02	0.01	0.03	0.03	0.06
	TBB	0.06	-0.09	-0.10	-0.09	0.05	0.04	0.01	0.01
VL2440	DTS	-0.02	0.00	0.03	0.01	0.00	0.02	0.03	0.06
VL40XX	DTS	0.01	0.01	0.12	0.12	0.08	0.05	0.03	0.12
	TM	.	.	.	.	0.10	0.08	0.04	0.08

Source: Call for fleet economic scientific data concerning 2008-2016, EC, Ref. Ares(2017)380592 - 24/01/2017

**Table F.5.B. Return on investments incl. income and costs from fishing rights**

Length	Gear	2008	2009	2010	2011	2012	2013	2014	2015
VL0010	DTS	-0.49	-0.12	-0.06	-0.09	-0.11	-0.03	-0.01	0.02
	PGP	-0.26	-0.14	-0.11	-0.08	-0.09	-0.06	-0.11	-0.09
	PMP	-0.23	-0.21	.	.	-0.09	-0.10	-0.12	-0.04
VL1012	DRB	-0.03	0.00	-0.03	-0.01	-0.01	0.07	0.15	0.30
	DTS	-0.05	-0.10	-0.06	.	-0.06	-0.05	-0.05	0.00
	PGP	-0.18	-0.08	-0.10	-0.05	-0.05	-0.03	-0.06	-0.04
	PMP	-0.26	-0.15	-0.05	-0.06	-0.07	-0.08	-0.08	-0.01
VL1218	DRB	-0.03	-0.09	-0.07	-0.04	-0.03	-0.01	0.13	0.23
	DTS	-0.03	-0.04	0.00	-0.02	-0.02	-0.01	-0.01	0.01
	PGP	-0.12	-0.05	-0.01	-0.01	-0.03	-0.01	-0.04	-0.02
	PMP	-0.04	-0.05	-0.02	-0.02	-0.02	-0.01	-0.02	0.01
	TBB	0.10	-0.15	-0.05	-0.10	0.05	0.05	0.04	-0.05
	TM	.	.	.	.	0.01	0.04	0.04	0.07
VL1824	DTS	-0.01	-0.02	-0.01	0.01	-0.01	-0.01	0.02	0.03
	PMP	-0.05	-0.04	0.00	0.00	0.00	0.01	0.00	0.04
	TBB	0.06	-0.09	-0.10	-0.08	0.04	0.03	0.01	0.02
VL2440	DTS	-0.04	0.00	0.03	0.00	-0.01	0.01	0.03	0.04
VL40XX	DTS	0.01	0.01	0.11	0.11	0.09	0.08	0.03	0.10
	TM	.	.	.	.	0.09	0.08	0.05	0.08

Source: Call for fleet economic scientific data concerning 2008-2016, EC, Ref. Ares(2017)380592 - 24/01/2017

According to the Commission guidelines, the indicator should be adjusted for the current long-term interest rate. This is done in Table F.5.C. and Table F.5.D. below.

**Table F.5.C. Return on investments (ROI) adjusted with long term interest rate\* and excl. income and costs from fishing rights**

Inte- rest rate		4.29	3.59	2.93	2.73	1.40	1.75	1.33	0.69
Length	Gear	2008	2009	2010	2011	2012	2013	2014	2015
VL0010	DTS	-0.54	-0.15	-0.09	-0.12	-0.11	-0.06	-0.03	0.02
	PGP	-0.30	-0.17	-0.13	-0.13	-0.10	-0.09	-0.12	-0.11
	PMP	-0.26	-0.23	.	.	-0.10	-0.12	-0.14	-0.04
VL1012	DRB	-0.07	-0.04	-0.06	-0.04	-0.02	0.05	0.14	0.29
	DTS	-0.09	-0.13	-0.08	.	-0.07	-0.07	-0.06	0.00

	PGP	-0.21	-0.11	-0.12	-0.09	-0.05	-0.06	-0.07	-0.04
	PMP	-0.31	-0.18	-0.08	-0.09	-0.07	-0.08	-0.08	-0.01
VL1218	DRB	-0.08	-0.13	-0.10	-0.07	-0.04	-0.03	0.13	0.22
	DTS	-0.07	-0.07	-0.02	-0.03	-0.02	-0.02	-0.02	0.01
	PGP	-0.13	-0.07	-0.03	-0.03	-0.03	-0.03	-0.05	-0.02
	PMP	-0.08	-0.07	-0.03	-0.05	-0.03	-0.03	-0.03	0.00
	TBB	0.06	-0.19	-0.08	-0.13	0.04	0.04	0.00	-0.06
	TM	.	.	.	.	-0.02	0.02	0.04	0.07
VL1824	DTS	-0.03	-0.04	-0.02	-0.01	-0.02	-0.01	0.01	0.04
	PMP	-0.06	-0.06	-0.01	-0.01	0.00	0.01	0.02	0.05
	TBB	0.02	-0.13	-0.13	-0.11	0.03	0.02	0.00	0.01
VL2440	DTS	-0.06	-0.03	0.01	-0.02	-0.02	0.00	0.02	0.05
VL40XX	DTS	-0.03	-0.03	0.09	0.09	0.07	0.03	0.02	0.11
	TM	.	.	.	.	0.09	0.06	0.03	0.07

Source: Call for fleet economic scientific data concerning 2008-2016, EC, Ref. Ares(2017)380592 - 24/01/2017

\* The long-term interest rate for convergence purposes, European Central Bank

**Table F.5.D. Return on investments (ROI) adjusted with long term interest rate\* and incl. income and costs from fishing rights**

Interest rate		4.29	3.59	2.93	2.73	1.40	1.75	1.33	0.69
Length	Gear	2008	2009	2010	2011	2012	2013	2014	2015
VL0010	DTS	-0.54	-0.15	-0.09	-0.12	-0.13	-0.05	-0.03	0.01
	PGP	-0.31	-0.17	-0.14	-0.11	-0.10	-0.08	-0.12	-0.10
	PMP	-0.27	-0.25	.	.	-0.10	-0.12	-0.13	-0.05
VL1012	DRB	-0.07	-0.04	-0.06	-0.04	-0.02	0.05	0.13	0.29
	DTS	-0.09	-0.13	-0.09	.	-0.08	-0.06	-0.07	-0.01
	PGP	-0.22	-0.12	-0.13	-0.08	-0.06	-0.05	-0.07	-0.04
	PMP	-0.31	-0.19	-0.08	-0.09	-0.08	-0.10	-0.09	-0.02
VL1218	DRB	-0.08	-0.13	-0.10	-0.07	-0.04	-0.03	0.12	0.22
	DTS	-0.08	-0.08	-0.03	-0.04	-0.03	-0.03	-0.02	0.01
	PGP	-0.16	-0.08	-0.04	-0.04	-0.04	-0.03	-0.05	-0.02
	PMP	-0.09	-0.08	-0.05	-0.05	-0.03	-0.02	-0.03	0.00
	TBB	0.06	-0.19	-0.08	-0.13	0.04	0.03	0.03	-0.06
	TM	.	.	.	.	-0.01	0.02	0.02	0.06
VL1824	DTS	-0.06	-0.06	-0.04	-0.02	-0.03	-0.03	0.00	0.03
	PMP	-0.09	-0.08	-0.03	-0.03	-0.01	-0.01	-0.01	0.03
	TBB	0.02	-0.13	-0.13	-0.11	0.02	0.01	0.00	0.01
VL2440	DTS	-0.08	-0.04	0.00	-0.03	-0.02	-0.01	0.02	0.03
VL40XX	DTS	-0.03	-0.03	0.08	0.08	0.07	0.07	0.01	0.09
	TM	.	.	.	.	0.08	0.07	0.03	0.08

Source: Call for fleet economic scientific data concerning 2008-2016, EC, Ref. Ares(2017)380592 - 24/01/2017

\* The long-term interest rate for convergence purposes, European Central Bank

When the long-term interest rate is included there is a stronger trend over time towards larger negative values or smaller positive values. Including any income or costs from renting fishing quantities within a year does not change the overall picture. This income or cost may vary from year to year.

Especially the fleets below 12 meters are seen to consistently have negative ROIs, thus indicating economic over-capitalisation. The dredgers (DRB) are an entry-restricted fishery, but negative ROIs are observed during almost the entire period from 2008 to 2012, but in 2013, 2014 and 2015 it is positive for vessels between 10-12 meter. For dredgers between 12-18 meters ROI is negative between 2009-2012, being positive in 2014 and 2015.

The other entry-restricted fisheries, the TBBs, did also experience negative ROIs from 2009-2011, while positive ROI was observed for 2008, 2012, 2013, and 2014. In 2015 ROI is negative for the TBBs between 12-18 meters but positive for the larger TBBs between 18 and 24 meters.

The remaining fleet segments between 12 and 24 meters has ROIs varying around zero, thus indicating a reasonable balance. The fleets above 40 meters, which for many years have been managed with ITQs, are having positive ROIs, thus indicating economic under-capitalisation.

It should be noted that vessels below 24 metres are operated by 1-3 crew members including the owner. The standard salary is often higher than the realistic income for fishermen working in the small scale fishery. Moreover, in many cases the owner does not have capital costs. The market value of the vessel is often lower than assumed in the calculation and the owner does not expect a return on his investment in fishing rights.

### Ratio between current revenue and break-even revenue

The ratio between current revenue and break-even revenue (CR/BER) is estimated as the current revenue divided by break-even revenue (fixed costs / 1 - (variable costs/current revenue)), according to the EC guidelines. Current revenue consists of income from fishing and other income while excluding any subsidies. The break-even revenue shows the level of revenue needed to cover all costs, thereby having a net profit of zero. Two versions of CR/BER are estimated. The first version includes opportunity cost of capital in the fixed costs (see Table F.6., right side), whereas the second version excludes the opportunity cost of capital (see Table F.6., left side). The opportunity cost of capital is calculated by the capital asset value and the long-term interest rate for Denmark. Both measures of CR/BER are good measures of economic sustainability. When the ratio is below 1, the current cash flow is not sufficient to cover the current costs, and so the activity is not economically balanced and sustainable.

**Table F.6. Ratio between current revenue and break-even revenue incl. opportunity cost of capital (CR/BER)**

Length	Gear	CR/BER, incl. opportunity cost of capital							
		2008	2009	2010	2011	2012	2013	2014	2015
VL0010	DTS	-1.47	-1.48	0.47	0.31	0.22	-0.02	0.33	1.32
	PGP	-0.20	-0.20	0.11	0.08	0.26	0.27	-0.14	-0.09
	PMP	0.13	-0.32	.	.	0.24	0.03	0.02	0.53
VL1012	DRB	0.59	0.64	0.59	0.74	0.77	1.44	2.22	3.55
	DTS	0.67	0.14	-0.38	.	0.39	0.31	0.38	0.96
	PGP	0.32	0.16	0.28	0.31	0.44	0.39	0.22	0.57
	PMP	-0.26	-0.19	0.44	0.30	0.34	0.16	0.27	0.92
VL1218	DRB	0.54	0.43	0.45	0.68	0.62	0.78	2.00	3.22
	DTS	0.67	0.40	0.86	0.70	0.64	0.73	0.75	1.14
	PGP	0.53	0.44	0.73	0.70	0.63	0.79	0.53	0.81
	PMP	0.39	0.34	0.75	0.50	0.59	0.68	0.61	1.04
	TBB	1.28	-0.10	0.54	0.28	1.26	1.23	0.99	0.58
	TM	.	.	.	.	0.79	1.32	1.56	2.68
VL1824	DTS	0.82	0.62	0.85	0.94	0.78	0.81	1.13	1.64

	PMP	0.66	0.42	0.92	0.87	0.95	1.14	1.19	1.84
	TBB	1.11	0.32	0.36	0.34	1.23	1.14	0.96	1.04
VL2440	DTS	0.72	0.70	1.05	0.81	0.82	1.01	1.21	1.78
VL40XX	DTS	0.82	0.76	1.76	1.63	1.96	1.42	1.22	2.58
	TM	.	.	.	.	1.77	1.62	1.40	1.98

Source: Call for fleet economic scientific data concerning 2008-2016, EC, Ref. Ares(2017)380592 - 24/01/2017  
\*Interest rate used to calculate the opportunity cost of capital is the long-term interest rate for convergence purposes, European Central Bank

**Table F.7. Ratio between current revenue and break-even revenue excl. opportunity cost of capital (CR/BER)**

Length	Gear	CR/BER, excl. opportunity cost of capital							
		2008	2009	2010	2011	2012	2013	2014	2015
VL0010	DTS	-1.84	-3.57	0.57	0.37	0.24	-0.03	0.47	1.54
	PGP	-0.25	-0.26	0.14	0.11	0.29	0.32	-0.16	-0.09
	PMP	0.15	-0.40	.	.	0.27	0.04	0.02	0.58
VL1012	DRB	0.78	0.99	0.74	0.90	0.89	1.71	2.52	3.79
	DTS	0.79	0.18	-0.73	.	0.44	0.38	0.45	1.04
	PGP	0.37	0.22	0.34	0.39	0.52	0.47	0.26	0.62
	PMP	-0.32	-0.25	0.55	0.38	0.39	0.19	0.31	1.00
VL1218	DRB	0.73	0.51	0.54	0.77	0.70	0.90	2.22	3.46
	DTS	0.84	0.57	1.13	0.95	0.81	0.96	0.91	1.28
	PGP	0.63	0.61	1.00	0.98	0.74	0.92	0.60	0.87
	PMP	0.59	0.52	0.98	0.68	0.74	0.85	0.77	1.12
	TBB	1.60	-0.13	0.65	0.33	1.38	1.37	1.09	0.61
	TM	.	.	.	.	0.96	1.69	1.92	3.17
VL1824	DTS	1.06	0.89	1.11	1.26	0.94	1.04	1.36	1.84
	PMP	0.87	0.62	1.29	1.22	1.12	1.41	1.40	2.06
	TBB	1.43	0.40	0.42	0.40	1.37	1.30	1.08	1.10
VL2440	DTS	0.90	1.06	1.46	1.10	0.95	1.23	1.43	1.99
VL40XX	DTS	1.11	1.10	2.35	2.02	2.42	1.92	1.50	2.85
	TM	.	.	.	.	2.03	1.96	1.67	2.18

Source: Call for fleet economic scientific data concerning 2008-2016, EC, Ref. Ares(2017)380592 - 24/01/2017  
\*Interest rate used to calculate the opportunity cost of capital is the long-term interest rate for convergence purposes, European Central Bank

There is a tendency that the CR/BER values increase with vessel size within each gear type, indicating that the larger vessels generally have better economic performance. This tendency is not observed for the entry-restricted fisheries, DRB and TBB. The TBBs had values below 1 for 2009-2011, but values around or above 1 for 2008, 2012, 2013, and 2014 for both vessel lengths. CR/BER was in 2015 above 1 for the larger vessels of 18-24 meters in TBB while it was below 1 for the 12-18 meter vessels. This indicates that the economic performance of this fishery has a large variation. The DRBs, fishing for mussels, below 12 metres have values below 1 for the first five years, but then becomes above 1 in 2013 and onwards. The DRBs between 12 and 18 metres have values below 1 until 2014.

A more unclear picture for the period 2008-2015 is seen for remaining fleet segments. The only fishery that is economically viable through the entire period and thus able to cover current costs is the VL40XX DTS, and that is only when looking at the CR/BER method that excludes opportunity cost of capital. Including opportunity cost of capital, the VL10-12 DTS has



a negative value in 2010, indicating that the variable costs are higher than the revenue. In 2012, 2013 and 2014, the CR/BER indicator was positive, and in 2015 close to but still below 1, indicating that the fleet has improved. Several other fisheries have experienced a negative CR/BER in some years, but in 2015, it was only VL0010 PGP.

*It can be observed that twelve fleet segments had a CR/BER above 1 in 2015, which is the highest number looking at the period from 2008-2015 indicating a tendency towards economic balance in the Danish fishery.*

#### **iv) Summary and evaluation**

According to Regulation 1380/2013, the report should include the annual assessment of fleet capacity and identify structural over-capacity for each segment. This assessment should be based on the balance between capacity and fishing possibilities.

According to the common guidelines as presented in a communication from the Commission (COM (2014) 545 final), the report should use a set of economic and biological indicators in combination to draw conclusions on imbalance for each fleet segment separately. The indicators are presented for the Danish fleet in section F.

The traffic light table, F8, includes indicators for 19 segments. The segments are numbered 1-19 to facilitate the understanding.

The segments 4, 8, 12, 16 are segments specialised in mussels and shrimps fisheries. These fisheries are restricted access and closely regulated and monitored.

The remaining segments are statistical categories defined by JRC. In this context, they are addressed in 4 groups which reflect the size and type of fishery as well as the mix of stocks fished by the statistically defined segments within the group. Over 24 metres, 12-24 metres and 0-12 metres. Within the group of small scale vessels is a subgroup consisting of non-commercial and inactive vessels.

So for the purpose of assessment of the balance the fleet is divided in the following fisheries relevant segments or groups:

- 1) Mussels
- 2) Brown shrimps
- 3) >24 metres
- 4) 12-24 metres
- 5) <12 metres
- 6) Inactive and non-commercial vessels

Explanations given for each group applies to all statistical segments within the group.

##### *1) Mussels fishery (4, 8)*

This fishery is restricted access and ITQ managed. Fisheries are limited to specific areas and quotas are set according to assessment of the local stock. Earnings are generally good and improving. **The situation is stable and there is no need for action which is indicated by a green colour in the traffic lights table.**

##### *2) Brown shrimps fishery (12, 16)*

This fishery is limited to vessels on the list of beam trawlers specialised in shrimp fishery in the Wadden Sea area. Restricted access fishery. **Although the situation is slightly worse for 12-18 meters, the situation is regarded stable and there is no need for action which is indicated by a green colour in the traffic lights table.**

##### *3) Vessels over 24 metres (17, 18 and 19)*

The vessels fish for pelagic and industrial species. The smaller ones also take some codfish, flatfish and prawn. Most of those stocks are in good condition which is also reflected in the SHI indicator for which is close to 1 for vessels over 24 metres. The SAR indicator is between 4 and 5, but this is due to stocks which are not critical to the performance of the fleet and some of

the SAR values are based on non-commercial monitoring fisheries. In conclusion, there is a good balance for these segments.

Economic indicators are also positive and have improved over time.

**There is a good balance for this group which is indicated by a green colour in the traffic lights table.**

*4) Vessels 12-24 metres (9, 10, 11, 13, 14, 15, 16)*

These vessels fish for a variety of species including cod fish, flat fish, prawn and industrial species. The SHI indicator is around 1 which shows that the vessels both fish on stocks with fishing mortality somewhat higher than the MSY based assessment, but also lower.

The SHI indicator is based on data from 2014 and for some stocks the situation has improved somewhat since then. Management of stocks is in transition to MSY based management and for this reason the SHI indicator exaggerates the imbalance. The SHI indicator only covers part of the fishery. It should also be taken into consideration that the capacity of this group of vessels has already been reduced considerably.

The economic indicators are acceptable. ROI minus current interest rate is close to zero and the current break even ratio is higher than 1 for all segments except no 10.

In assessing the economic indicators it should be taken into account that these vessels are operated by 1-3 crew members including the owner. The owner's remuneration is set at a standard salary which in many cases is higher than the real and realistic income for fishermen operating small vessels. At a more realistic pay to the owner the economic result would be higher. The earnings of these vessels are also strongly influenced by short term economic developments in prices and costs. It seems that prices are improving from late 2014 and fuel costs have fallen sharply in 2014.

**In conclusion, there is considered to be an acceptable balance between capacity and fishing possibilities which is indicated by a green colour in the traffic light table.**

*5) Vessels 0-12 metres including inactive and non-commercial vessels (1, 2, 3, 5, 6, 7)*

These vessels fish on demersal stocks for flatfish, codfish, and Norway lobster. The biological indicators reflect a negative situation for some of the stocks fished by these vessels, mainly for cod stocks in the North Sea and the Baltic. The distribution of landings values show that a variety of species are fished by the small scale vessels. Most of these stocks are in a biological good state:

There are unfished quotas available for i.e. flat fish and Norway lobster and the small vessels also have the possibility of fishing non quota species such as some flatfish and crab species. Although return on investment is negative, it must be kept in mind, that this is based on a high standard salary which is higher than the realistic income for fishermen operating small vessels.

The economic indicators cover active vessels with commercial earnings and these indicators have improved considerable recent years. Despite the modest earnings and dependency of some stock under rebuilding, it is considered that there is balance between capacity of the active commercial vessels and fishing possibilities.

As part of the EMFF programme for Denmark, a number of measures aim at improve the situation for small vessels. These include port facilities supporting small scale fishery, innovative project in the value chain (including for new species) and market promotion measures. In the regulatory system, coastal vessels are given special consideration and these vessels also receive special priority in the aid scheme for fishing ports as well as article 38 and article 42 investments.

The remaining non-commercial vessels less than 12 metres include about 1,800 vessels and many of these have no registered activity. Although the number of vessels is high they are not involved in fishery of any importance. Almost all the non-commercial and inactive vessels are less than 10 metres and the quantities fished are so small that they are not important for the stocks.

A great share of the small vessels is owned by part-time fishermen. Part time fishermen are allowed to continue their activity at a low level provided they can keep an income of 5 % from fishery. They are important for the regional development in Denmark in order to keep some activity in small ports and coastal communities. But their activity is low and has no significant impact on the stocks at all.

Many owners of small non-commercial vessels keep their boat for social and recreational purposes. Although they have the status of a fisherman or a part-time fisherman they are not economically dependent on the fishery. This is confirmed by a large number of inactive vessels under 10 metres and the inferior quantities landed by the non-commercial part of the small scale fleet (less than 1% of Danish landings). The potential capacity of the small scale fleet is around 1,900 vessels, 4,500 GT and 56,000 kW. In reality, in 2016 only 126 vessels in the small scale fleet were active at a commercial level. All the 1,885 vessels under 10 m, including the less active ones, fished around 5,800 tonnes of fish combined.

It is concluded that **the capacity of these vessels is not associated with commercial over-capacity and that they do not represent a real fishing capacity** which could lead to increased fishery. Even if they wanted to become commercial vessels they had to obtain quotas from other vessels and this is not believed to be a realistic scenario.

On the basis of the assessment above it is concluded that despite weaknesses in some segments, for the fleet in general there is **an acceptable balance between capacity and fishing possibilities. The traffic lights show the interpretation for each segment.**

**Table F. 8. Traffic lights**

No.	Length	Gear code	ROI	Current/Break-even		Sustainable Harvest Indicator	Stocks at Risk indicator	Technical indicators		Over all
				Incl. opp.	Excl. opp.			Inactivity	Utilisation	
1	VLOO10	DTS	0.02	1.32	1.54	0.9	0	43	0.29	Mainly inactive or less active vessels non commercial vessels
2	VL0010	PGP	-0.11	-0.09	-0.09	1.8			0.13	
3	VL0010	PMP	-0.04	0.53	0.58	1.2	1		0.23	
4	VL1012	DRB	0.29	3.55	3.79		0	6	0.57	Mussels
5	VL1012	DTS	0.00	0.96	1.04	1.7	1		0.55	Mixed Demersal
6	VL1012	PGP	-0.04	0.57	0.62	1.9	3		0.45	
7	VL1012	PMP	-0.01	0.92	1.00	1.2	0		0.43	
8	VL1218	DRB	0.12	3.22	3.46		0	6	0.44	Mussels
9	VL1218	DTS	0.01	1.14	1.28	0.9	6		0.43	Mixed Demersal
10	VL1218	PGP	-0.02	0.81	0.87	1.2	0		0.49	
11	VL1218	PMP	0.00	1.04	1.12	1.4	1		0.45	
12	VL1218	TBB	-0.06	0.58	0.61		0		0.73	Brown Shrimps
13	VL1218	TM	0.07	2.68	3.17	1.0	2		0.58	Pelagic
14	VL1824	DTS	0.04	1.64	1.84	1.0	5	4	0.54	Mixed
15	VL1824	PMP	0.05	1.84	2.06	1.0	1		0.70	Brown Shrimps
16	VL1824	TBB	0.01	1.04	1.10		0		0.72	
17	VL2440	DTS	0.05	1.78	1.99	1.0	4	0	0.78	Mixed
18	VL40XX	DTS	0.11	2.58	2.85	0.9	4	0	0.92	Pelagic +
19	VL40XX	TM	0.07	1.98	2.18	1.1	5		0.68	Industrial
			>0	>1	>1	<1	0	< 10	>0,9	
				>0<1	>0<1		>0			
	COM guideline		<0	<0	<0	>40% from assessed stocks >1 for 3 years	>10% from SAR	>20	<0,7	

## Annex 1. Gear Codes and length classes

### FISHING TECHNIQUE (Gear Codes)

DFN	=	Drift and/or fixed netters
DRB	=	Dredgers
DTS	=	Demersal trawlers and/or demersal seiners
PTS	=	Pelagic trawl and/or pelagic seiners
FPO	=	Vessels using pots and/or traps
HOK	=	Vessels using hooks
MGO	=	Vessel using other active gears
MGP	=	Vessels using polyvalent active gears only
PG	=	Vessels using passive gears only for vessels < 12m
PGO	=	Vessels using other passive gears
PGP	=	Vessels using polyvalent passive gears only
PMP	=	Vessels using active and passive gears
PS	=	Purse seiners
TM	=	Pelagic trawlers
TBB	=	Beam trawlers

### VESSEL LENGTH classes

VL0006	=	Vessel less than 6 meters in length. *For Supra region 2 only.
VL0010	=	Vessel between 0 meters and 10 meters in length. **For Supra region 1 and 3 only.
VL0612	=	Vessel between 6 meters and 12 meters in length. *For Supra region 2 only.
VL1012	=	Vessel between 10 meters and 12 meters in length. **For Supra region 1 and 3 only.
VL1218	=	Vessel between 10 meters and 18 meters in length. All regions.
VL1824	=	Vessel between 18 meters and 24 meters in length. All regions.
VL2440	=	Vessel between 24 meters and 40 meters in length. All regions.
VL40XX	=	Vessel greater than 40 meters in length. All regions.

## Annex 2. Capacity of registered Danish fishing vessels, 2016

### Tonnage in GT, 2016

Length	Gear	Commercial <sup>1)</sup>	Non-commercial <sup>2)</sup>	Inactive <sup>3)</sup>	Not registered 31 <sup>st</sup> December <sup>4)</sup>	Total
VL0010m	DTS	34	40	18	13	105
	PGP	556	1,823	1,095	225	3,699
	PMP	222	378	113	37	750
	Total	812	2,241	1,225	275	4,553
VL1012m	DRB	169	16	16	22	222
	DTS	158	11	5	16	189
	PGP	414	174	47	20	655
	PMP	317	82	0	48	447
	Total	1,057	282	69	105	1,514
VL1218m	DRB	1,126	0	31	12	1,168
	DTS	4,123	71	81	495	4,771
	PGP	792	42	38	82	954
	PMP	1,022	63	85	145	1,315
	TBB	548	0	0	0	548
	TM <sup>5)</sup>	629	0	0	0	629
	Total	8,240	176	234	733	9,384
VL1824m	DTS	4,346	0	158	360	4,864
	PMP	1,399	0	0	0	1,399
	TBB	1,076	0	61	0	1,137
	Total	6,821	0	219	360	7,400
VL2440m	DTS <sup>6)</sup>	10,137	0	0	624	10,761
	PMP	1,186	0	0	242	1,429
	Total	11,323	0	0	866	12,190
VL40XXm	DTS	9,534	0	0	0	9,534
	TM <sup>7)</sup>	25,653	0	0	4,629	30,282
	Total	35,187	0	0	4,629	39,816
Total		63,440	2,699	1,747	6,970	74,856

See Annex 1 for explanation of Gear Codes

Source: The Danish Agrifish Agency Vessel Register and Sales Notes Register 21<sup>st</sup> March 2017.

Notes: <sup>1)</sup> Includes vessels with a yearly catch value above € 36,000.

<sup>2)</sup> Includes vessels with a yearly catch value below € 36,000 but above € 0.

<sup>3)</sup> Includes vessels not having any catch value within the year.

<sup>4)</sup> Includes vessels not being active by the end of the year.

<sup>5)</sup> For discretionary purposes, VL1824m TM has been included in VL1218m TM.

<sup>6)</sup> For discretionary purposes, VL24XXm TBB has been included in VL2440m DTS.

<sup>7)</sup> For discretionary purposes, VL40XXm PS has been included in VL40XXm TM.

## Engine power in kW, 2016

Length	Gear	Commercial <sup>1)</sup>	Non-commercial <sup>2)</sup>	Inactive <sup>3)</sup>	Not registered 31 <sup>st</sup> December <sup>4)</sup>	Total
VL0010m	DTS	382	543	217	215	1,357
	PGP	6,443	22,882	13,898	2,688	45,911
	PMP	2,535	4,449	1,517	418	8,919
	Total	9,360	27,874	15,632	3,321	56,187
VL1012m	DRB	1,080	126	87	219	1,512
	DTS	1,394	120	87	126	1,727
	PGP	3,621	1,447	352	221	5,641
	PMP	2,797	606	0	472	3,875
	Total	8,892	2,299	526	1,038	12,755
VL1218m	DRB	4,231	0	217	115	4,563
	DTS	20,618	422	420	2,355	23,815
	PGP	3,712	140	286	297	4,435
	PMP	5,451	406	709	921	7,487
	TBB	2,126	0	0	0	2,126
	TM <sup>5)</sup>	2,280	0	0	0	2,280
	Total	38,418	968	1,632	3,688	44,706
VL1824m	DTS	12,104	0	398	1,183	13,685
	PMP	3,964	0	0	0	3,964
	TBB	2,866	0	221	0	3,087
	Total	18,934	0	619	1,183	20,736
VL2440m	DTS <sup>6)</sup>	21,358	0	0	1,620	22,978
	PMP	2,537	0	0	432	2,969
	Total	23,895	0	0	2,052	25,947
VL40XXm	DTS	18,503	0	0	0	18,503
	TM <sup>7)</sup>	43,990	0	0	12,140	56,130
	Total	62,493	0	0	12,140	74,633
Total		161,992	31,141	18,409	23,422	234,964

See Annex 1 for explanation of Gear Codes

Source: The Danish Agrifish Agency Vessel Register and Sales Notes Register 21<sup>st</sup> March 2017.

Notes: <sup>1)</sup> Includes vessels with a yearly catch value above € 36,000.

<sup>2)</sup> Includes vessels with a yearly catch value below € 36,000 but above € 0.

<sup>3)</sup> Includes vessels not having any catch value within the year.

<sup>4)</sup> Includes vessels not being active by the end of the year.

<sup>5)</sup> For discretionary purposes, VL1824m TM has been included in VL1218m TM.

<sup>6)</sup> For discretionary purposes, VL24XXm TBB has been included in VL2440m DTS.

<sup>7)</sup> For discretionary purposes, VL40XXm PS has been included in VL40XXm TM.

### Annex 3. Link with fisheries for commercial and non-commercial vessels

#### Distribution landing value in 2016 (%)

Group	Length	Gear	Round-fish	Flatfish	Lobster and shrimp	Mackerel and herring	Other species	Reduction species <sup>1)</sup>	Entry-restricted <sup>2)</sup>	Total landing value (€ 1,000) <sup>6)</sup>	
Commercial	VL0010m	DTS	33	52	15	0	0	0	0	952	
		PGP	34	24	9	2	29	0	1	7,342	
		PMP	33	43	19	0	5	0	0	2,612	
	VL1012m	DRB	1	1	0	0	0	0	0	97	3,565
		DTS	37	22	27	2	0	12	0	0	1,638
		PGP	45	42	0	0	12	0	1	0	5,269
		PMP	32	50	11	1	2	5	0	0	3,624
	VL1218m	DRB	0	0	0	0	0	0	0	100	8,906
		DTS	21	19	49	2	1	8	0	0	39,369
		PGP	35	60	0	0	4	0	0	0	8,838
		PMP	29	36	34	0	0	2	0	0	9,450
		TBB	1	11	0	0	0	0	0	88	5,819
		TM <sup>3)</sup>	12	11	11	33	0	33	0	0	7,894
	VL1824m	DTS	23	32	28	2	1	14	0	0	42,450
		PMP	18	46	20	0	1	15	0	0	13,122
		TBB	0	14	0	0	0	0	85	0	10,071
	VL2440m	DTS	51	27	14	0	0	8	0	0	73,123
		PMP	76	24	0	0	0	0	0	0	12,404
VL40XXm	DTS	0	0	0	17	0	48	35	0	50,207	
	TM <sup>5)</sup>	0	0	0	72	0	27	0	0	219,646	
Non-commercial	VL0010m	DTS	12	42	40	0	6	0	0	0	62
		PGP	20	25	11	2	42	0	1	0	5,552
		PMP	35	35	5	1	18	0	6	0	843
	VL1012m	DRB	0	0	0	0	0	0	0	100	25
		DTS	70	15	14	0	0	0	0	0	45
		PGP	40	43	2	0	13	0	1	0	299
		PMP	33	51	15	0	1	0	0	0	139
	1218m	DTS	24	16	54	0	0	0	6	0	148
		PGP	0	24	0	0	76	0	0	0	0
		PMP	47	28	25	0	0	0	0	0	46
1824m	DTS	98	2	0	0	0	0	0	0	23	

See Annex 1 for explanation of Gear Codes

Source: The Danish Agrifish Agency Vessel Register and Sales Notes Register 21<sup>st</sup> March 2017.

Notes: <sup>1)</sup> Species such as sandeel, blue whiting, sprat, horse mackerel and Norway pout.

<sup>2)</sup> Species that can only be caught with an authorization, i.e. mussels, oysters, brown shrimps and shrimps in the waters around Greenland.

<sup>3)</sup> For discretionary purposes, VL1824m TM has been included in VL1218m TM.

<sup>4)</sup> For discretionary purposes, VL24XXm TBB has been included in VL2440m DTS.

<sup>5)</sup> For discretionary purposes, VL40XXm PS has been included in VL40XXm TM.

<sup>6)</sup> Based on the average Euro exchange rate for 2016 being 7.4452 DKK / €.



## Distribution landing whole weight in 2016 (%)

Group	Length	Gear	Roundfish	Flatfish	Lobster and shrimp	Mackerel and herring	Other species	Reduction species <sup>1)</sup>	Entry-restricted <sup>2)</sup>	Total landing whole weight (tonnes)
Commercial	VL0010m	DTS	26	70	4	0	0	0	0	404
		PGP	41	29	2	8	20	0	1	2,257
		PMP	34	60	5	0	1	0	0	1,028
	VL1012m	DRB	0	0	0	0	1	0	99	9,500
		DTS	31	17	3	5	0	45	0	1,615
		PGP	43	48	0	1	7	0	0	2,116
		PMP	30	40	2	2	0	26	0	2,463
	VL1218m	DRB	0	0	0	0	0	0	100	40,076
		DTS	21	16	8	7	1	46	0	26,300
		PGP	31	64	0	0	4	0	0	3,249
		PMP	41	39	7	0	0	12	0	4,867
		TBB	1	37	0	0	0	0	62	978
		TM <sup>3)</sup>	2	3	1	32	0	62	0	15,917
	VL1824m	DTS	12	17	4	5	3	60	0	37,501
		PMP	7	21	4	0	1	68	0	10,893
		TBB	1	39	0	0	0	5	55	1,838
	VL2440m	DTS <sup>4)</sup>	31	19	3	0	0	47	0	50,664
		PMP	74	26	0	0	0	0	0	5,130
VL40XXm	DTS	0	0	0	12	0	84	4	106,108	
	TM <sup>5)</sup>	0	0	0	50	0	49	0	412,801	
Non-commercial	VL0010m	DTS	16	53	23	0	8	0	0	12
		PGP	31	37	2	8	22	0	1	1,864
		PMP	43	46	1	2	6	0	3	298
	VL1012m	DRB	0	0	0	0	0	0	100	4
		DTS	82	16	2	0	0	0	0	19
		PGP	49	42	0	0	4	4	0	125
		PMP	22	75	3	0	0	0	0	84
	1218m	DTS	44	39	14	0	0	0	3	53
		PGP	0	49	0	0	51	0	0	0
		PMP	72	25	3	0	0	0	0	33
1824m	DTS	98	2	0	0	0	0	0	19	

See Annex 1 for explanation of Gear Codes

Source: The Danish Agrifish Agency Vessel Register and Sales Notes Register 21<sup>st</sup> March 2017.

Notes: <sup>1)</sup> Species such as sandeel, blue whiting, sprat, horse mackerel and Norway pout.

<sup>2)</sup> Species that can only be caught with an authorization, i.e. mussels, oysters, brown shrimps and shrimps in the waters around Greenland.

<sup>3)</sup> For discretionary purposes, VL1824m TM has been included in VL1218m TM.

<sup>4)</sup> For discretionary purposes, VL24XXm TBB has been included in VL2440m DTS.

<sup>5)</sup> For discretionary purposes, VL40XXm PS has been included in VL40XXm TM.

## Annex 4. Figures used to calculate the technical indicator

Length	Gear	Days at sea <sup>1)</sup>								Number of vessels <sup>2)</sup>								Maximum obs. days at sea <sup>3)</sup>							
		2008	2009	2010	2011	2012	2013	2014	2015	2008	2009	2010	2011	2012	2013	2014	2015	2008	2009	2010	2011	2012	2013	2014	2015
VL0010	DTS	770	478	400	594	580	654	705	612	12	10	12	14	10	11	16	11	154	81	97	140	108	130	154	190
	PGP	40,776	38,072	39,457	41,032	30,245	28,903	29,212	26,469	1,041	1,000	1,024	1,012	855	824	928	883	231	223	221	214	229	225	220	226
	PMP	-	-	-	-	6,060	5,557	5,093	4,914	-	-	-	-	126	116	121	121	215	190	178	183	189	210	200	175
VL1012	DRB	1,645	1,781	1,183	1,702	1,640	1,317	1,163	1,295	30	32	24	25	21	24	19	16	107	130	99	105	104	103	103	141
	DTS	889	1,108	950	-	1,070	1,042	1,132	1,157	10	13	8	-	9	9	12	13	198	162	143	149	147	158	164	161
	PGP	7,640	7,738	7,026	6,492	5,903	6,388	5,942	5,834	66	67	65	56	50	56	54	50	257	264	253	275	273	242	250	260
	PMP	2,681	2,703	2,808	3,121	3,415	2,691	2,828	3,059	30	31	29	34	44	30	38	34	166	178	166	163	162	161	176	210
VL1218	DRB	1,628	1,608	1,441	2,086	2,543	2,017	2,141	1,826	33	34	30	27	27	25	26	24	140	106	126	149	193	206	210	172
	DTS	21,510	21,827	21,010	19,677	16,829	16,606	16,659	14,812	184	177	168	156	127	128	123	117	234	280	298	278	282	276	279	295
	PGP	6,646	6,322	6,412	5,818	4,682	4,669	3,913	3,793	59	57	45	48	35	37	31	29	242	230	235	270	261	265	282	265
	PMP	5,004	4,947	4,775	4,796	5,009	4,280	4,702	4,118	47	46	51	47	46	38	38	37	199	195	196	196	291	321	285	250
	TBB	2,309	2,463	1,748	1,185	1,731	1,662	1,901	1,644	16	14	11	11	11	11	11	12	210	253	200	164	207	194	219	188
	TM	-	-	-	-	1,506	1,326	1,848	1,499	-	-	-	-	16	14	15	13	0	0	0	0	177	194	176	199
VL1824	DTS	11,783	12,250	11,741	11,123	10,554	9,693	9,655	9,039	79	77	68	70	64	61	51	49	320	306	345	340	345	339	342	339
	PMP	1,789	2,027	2,300	2,348	2,281	3,363	2,104	2,089	16	15	16	15	12	16	10	10	263	225	232	254	287	272	283	300
	TBB	2,314	2,417	2,546	2,105	2,788	2,772	2,764	2,550	13	13	17	18	17	18	16	17	204	218	190	176	217	213	222	208
VL2440	DTS	11,198	11,128	9,550	8,564	8,664	7,851	7,782	7,579	51	46	42	39	38	34	34	30	333	363	353	356	340	336	320	323
	PMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VL40XX	DTS	5,483	5,628	6,025	5,321	1,440	2,762	2,073	2,005	32	32	29	31	12	17	14	11	223	254	232	268	190	219	195	198
	TM	-	-	-	-	2,496	2,607	2,538	3,439	-	-	-	-	17	13	15	18	-	-	-	-	219	303	262	282

Source: The Danish Agrifish Agency Vessel Register and Sales Notes Register 21<sup>st</sup> March 2017.

Call for fleet economic scientific data concerning 2008-2016, EC, Ref. Ares(2017)380592 - 24/01/2017

Notes: <sup>1)</sup> The days at sea is based on the Calendar Days method.

<sup>2)</sup> Covers only active vessels.

<sup>3)</sup> Based on the vessel with most observed days at sea within each year and fleet segment, using the 24 hours method.

## Annex 5. Development in effort in relation to cod recovery plan in the North Sea 2003, 2015 and 2016

### North Sea, Skagerrak, Kattegat, Irish Sea and West of Scotland:

Number of days at sea and kilowatt days for Danish vessels 10 metres and above in the regulated area 2004, 2015 and 2016. Note: The total is the actual number of vessels.

	Kattegat									North Sea									Irish Sea		
	Days at sea			kW-days			No. Vessels			Days at sea			kW-days			No. Vessels			Days at sea	kW-days	No. Vessels
	2003	2015	2016	2003	2015	2016	2003	2015	2016	2003	2015	2016	2003	2015	2016	2003	2015	2016	2003	2003	2003
<b>Total</b>	19.652	7.819	7.986	3.969.539	1.485.937	1.533.310	366	152	146	67.172	27.961	28.626	21.830.602	10.636.989	10.622.961	690	280	289	2	915	1
<b>TR1</b>	809	186	213	132.857	28.439	31.960	96	30	30	17.394	12.037	13.125	6.988.875	4.992.263	5.244.039	296	125	140	.	.	.
<b>TR2</b>	14.957	7.318	7.411	3.020.289	1.417.623	1.454.143	253	132	126	26.292	7.438	8.223	7.788.045	1.973.218	2.183.598	369	125	128	.	.	.
<b>TR3</b>	2.049	85	89	629.240	17.913	15.845	71	7	4	5.276	1.382	1.265	3.089.609	1.855.650	1.706.206	135	25	20	2	915	1
<b>BT1</b>	.	.	.	.	.	.	.	.	.	1.371	332	258	1.342.965	408.206	312.115	12	2	3	.	.	.
<b>BT2</b>	.	.	.	.	.	.	.	.	.	114	.	23	98.897	.	34.043	11	.	1	.	.	.
<b>GN1</b>	1.675	194	203	169.471	16.542	18.317	75	8	10	15.276	4.563	3.697	2.286.893	861.626	675.344	213	64	66	.	.	.
<b>GT1</b>	150	37	70	14.713	5.420	13.046	9	4	4	957	2.209	2.036	156.152	546.027	467.617	32	27	29	.	.	.
<b>LL1</b>	13	.	.	2.968	.	.	2	.	.	492	.	.	79.166	.	.	31	.	.	.	.	.

	West of Scotland			Total									Change (%) in kW-days 2003-2016								
	Days at sea	kW-days	No.	Days at sea			kW-days			No. Vessels			Days at sea			kW-days			No. Vessels		
				2003	2015	2016	2003	2015	2016	2003	2015	2016	Kattegat	North Sea	Total	Kattegat	North Sea	Total	Kattegat	North Sea	Total
<b>Total</b>	136	148.001	5	86.962	35.780	36.612	25.949.057	12.122.926	12.156.271	780	331	328	-59	-57	-58	-61	-51	-53	-60	-58	-58
<b>TR1</b>	.	.	.	18.203	12.222	13.338	7.121.732	5.020.702	5.275.999	358	139	152	-74	-25	-27	-76	-25	-26	-69	-53	-58
<b>TR2</b>	.	.	.	41.249	14.755	15.634	10.808.334	3.390.841	3.637.741	429	169	161	-50	-69	-62	-52	-72	-66	-50	-65	-62
<b>TR3</b>	136	148.001	5	7.463	1.467	1.354	3.867.765	1.873.562	1.722.050	174	28	23	-96	-76	-82	-97	-45	-55	-94	-85	-87
<b>BT1</b>	.	.	.	1.371	332	258	1.342.965	408.206	312.115	12	2	3	.	-81	-81	.	-77	-77	.	-75	-75
<b>BT2</b>	.	.	.	114	.	23	98.897	.	34.043	11	.	1	.	-80	-80	.	-66	-66	.	-91	-91
<b>GN1</b>	.	.	.	16.951	4.757	3.900	2.456.364	878.168	693.661	235	68	72	-88	-76	-77	-89	-70	-72	-87	-69	-69
<b>GT1</b>	.	.	.	1.107	2.246	2.106	170.865	551.447	480.663	37	30	32	-53	113	90	-11	199	181	-56	-9	-14
<b>LL1</b>	.	.	.	504	.	.	82.134	.	.	32	.	.	.	.	.	.	.	.	.	.	.

Source: The Danish AgriFish Agency Effort Register

**Annex 5. Continued...**

	Kattegat						North Sea						Irish Sea	
	Days/Vessel			Kw-days/vessel			Days/Vessel			Kw-days/vessel			Days/Vessel	Kw-days/vessel
	2003	2015	2016	2003	2015	2016	2003	2015	2016	2003	2015	2016	2003	2003
<b>Total</b>	53,69	51,44	54,7	10.846	9.776	10.502	97,35	99,86	99,05	31.639	37.989	36.758	1,71	915
<b>TR1</b>	8,43	6,19	7,09	1.384	948	1.065	58,76	96,29	93,75	23.611	39.938	37.457	.	.
<b>TR2</b>	59,12	55,44	58,82	11.938	10.740	11.541	71,25	59,5	64,24	21.106	15.786	17.059	.	.
<b>TR3</b>	28,86	12,07	22,25	8.863	2.559	3.961	39,08	55,3	63,23	22.886	74.226	85.310	1,71	915
<b>BT1</b>	.	.	.	.	.	.	114,25	166	85,95	111.914	204.103	104.038	.	.
<b>BT2</b>	.	.	.	.	.	.	10,36	.	23,14	8.991	.	34.043	.	.
<b>GN1</b>	22,33	24,25	20,3	2.260	2.068	1.832	71,72	71,3	56,02	10.737	13.463	10.232	.	.
<b>GT1</b>	16,67	9,25	17,5	1.635	1.355	3.262	29,91	81,82	70,2	4.880	20.223	16.125	.	.
<b>LL1</b>	6,25	.	.	1.484	.	.	15,87	.	.	2.554	.	.	.	.

	West of Scotland		Total						Change (%) in 2003-2016	
	Days/Vessel	Kw-days/vessel	Days/Vessel			Kw-days/vessel			Days/Vessel	Kw-days/vessel
	2003	2003	2003	2015	2016	2003	2015	2016		
<b>Total</b>	27,16	29.600	111,5	108,1	111,6	33.268	36.625	37.062	0	11
<b>TR1</b>	.	.	50,85	87,93	87,75	19.893	36.120	34.711	73	74
<b>TR2</b>	.	.	96,15	87,31	97,1	25.194	20.064	22.595	1	-10
<b>TR3</b>	27,16	29.600	42,89	52,39	58,85	22.229	66.913	74.872	37	237
<b>BT1</b>	.	.	114,3	166	85,95	111.914	204.103	104.038	-25	-7
<b>BT2</b>	.	.	10,36	.	23,14	8.991	.	34.043	123	279
<b>GN1</b>	.	.	72,13	69,96	54,17	10.453	12.914	9.634	-25	-8
<b>GT1</b>	.	.	29,92	74,88	65,81	4.618	18.382	15.021	120	225
<b>LL1</b>	.	.	15,76	.	.	2.567	.	.	.	.

Note: The total is the actual number of vessels.  
Source: The Danish Agrifish Agency Effort Register.

## Annex 6. Development in capacity in relation to cod recovery plan in the North Sea 2004, 2015 and 2016

### North Sea, Skagerrak, Kattegat, Irish Sea and West of Scotland:

Capacity fluctuations for Danish vessels 10 metres and above in the regulated area 2003, 2015 and 2016.

	Total									Change (%) in 2003-2016	
	GT			kW			No. Vessels			GT	kW
	2003	2015	2016	2003	2015	2016	2003	2015	2016		
<b>Total</b>	63.255	33.992	36.343	204.356	99.794	98.130	780	331	328	-43	-52
<b>TR1</b>	29.117	14.177	15.846	99.810	41.366	44.645	358	139	152	-46	-55
<b>TR2</b>	39.461	13.544	13.453	159.359	55.177	56.057	429	169	161	-66	-65
<b>TR3</b>	34.513	13.350	14.012	88.264	29.585	25.864	174	28	23	-59	-71
<b>BT1</b>	2.488	597	682	7.891	1.649	1.870	12	2	3	-73	-76
<b>BT2</b>	2.434	.	498	7.672	.	1.471	11	.	1	-80	-81
<b>GN1</b>	7.763	2.810	2.767	37.615	11.301	11.257	235	68	72	-64	-70
<b>GT1</b>	1.707	1.753	1.769	6.264	5.958	6.011	37	30	32	4	-4
<b>LL1</b>	1.128	.	.	5.433	.	.	32	.	.	.	.