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Report to the European Commission under Article 22 of Regulation (EU) No 1380/2013 on the balance between fishing capacity and fishing opportunities in the German fishing fleet in 2017

1.A: Fleet description and development

i. Fleet description

As at 31 December 2017 the German fishing fleet comprises 1 373 fishing vessels, which is 40 vessels fewer than in the previous year. Moreover, fishing capacity decreased by 2 396 kW, whereas tonnage increased by 1 976 GT. In the description below the vessels have been broken down into seven groups.

Static net vessels < 12 m (PG VL0010, PG VL1012)

The largest segment of the German fishing fleet is made up of 1 069 small-scale coastal fishing vessels with a total length overall of less than 12 metres. These vessels mainly operate with static nets in the Baltic Sea. Over a third of the vessels in this segment are used by fisheries undertakings in the context of a side business. It is also worth mentioning that about a third of all vessels in this segment (336 vessels) are second or third vessels, meaning that they log very few sea days. This results in a very low technical indicator value. The species fished are primarily herring and cod, but also include flounder.

Compared with the previous year there were 30 fewer vessels in this segment. Moreover, engine power decreased by 459 kW and tonnage by 44 GT.

Fishing vessels with passive fishing gear > 12 m (DFN VL1218, DFN VL1824, DFN VL2440)

A further segment of the fleet is made up of fishing vessels with a length overall of 12 metres or more operating with passive fishing gear. During the reporting period, 16 fishing vessels fell into this category. Some of these vessels operate only in western waters, where they mainly fish Atlantic deep-sea red crab (*Chaceon affinis*) and anglerfish. Vessels in this segment also fish in the western Baltic Sea (herring and cod) and in the North Sea (cod, plaice and sole).

This segment counted two more vessels in 2017 than in 2016. Fishing capacity decreased by 361 GT and 148 kW.

Trawlers < 40 m (DTS VL0010, DTS VL1012, DTS VL1218, DTS VL1824, DTS VL2440, TM VL1218, TM VL1824, TM VL2440)

As at 31 December 2017 this trawler segment included 54 vessels. In the Baltic Sea they mainly targeted herring, cod and sprat, whereas in the North Sea they mainly caught saithe, cod and haddock and herring as well as some plaice and hake. A scrapping measure implemented in this segment in 2017 resulted in six fishing vessels withdrawing from the fishing fleet. These had a total capacity of 198 GT and 1 178 kW.

Overall Germany recorded a reduction of 13 vessels in this segment, which reduced tonnage by 622 GT and engine power by 2 416 kW.

Beam trawlers (TBB VL0010, TBB VL1218, TBB VL1824, TBB VL2440, TBB VL40XX)

Beam trawlers on lists 1 and 2 and larger beam trawlers of 24 metres or more are an important part of the German fishing industry. The listed vessels, whose engine power may not exceed 221 kW, mainly operate in the flatfish protection zone. Common shrimp (CSH) is the main species targeted. Large beam trawlers fish across the North Sea, mainly catching flatfish such as plaice and sole.

As in the past, ten vessels within this segment are equipped with electric pulse beam trawls (of these, two target shrimp and eight target flatfish). Germany therefore complies with Article 31a of Regulation (EC) No 850/1998, according to which a maximum of 5 % of vessels in this segment may be equipped with a pulse trawl.

As at 31 December 2017 the German fishing fleet comprised 215 beam trawlers with a total capacity of 10 773 GT and 46 124 kW. This represents an increase in tonnage of 65 GT and a decrease in engine power of 137 kW.

Deep-sea pelagic fisheries (TM VL40XX)

As at 31 December 2017 Germany had a total of five vessels in the deep-sea pelagic fisheries segment (total length of 40 metres or more). These vessels operate in many different areas. In the North Sea and in western British waters (ICES IV, VIa, VII) they mainly fished herring, blue whiting and mackerel, but also made significant catches of sprat and jack mackerel. Several fishing trips were carried out in Mauritanian waters and waters off western Sahara (FAO areas 34-131 and 34-132), where good catches of pilchard sardine (PIL) were made. Further catches were made in the eastern Baltic Sea (SPR), Faeroe Island waters (WHB) and NEAFC areas (WHB, HER, MAC).

Although the number of vessels did not change, fishing capacity increased by 214 GT and 860 kW compared to the previous year.

Deep-sea demersal fisheries (DTS VL40XX)
The seven vessels in the deep-sea demersal fisheries segment operated in the entire North Atlantic (including Svalbard, the Barents Sea, Greenland; ICES I, II and XIV and NAFO 1). The main catches in the northern North Sea, in Norwegian waters and in the waters around Svalbard were cod and saithe. Good catches of halibut and redfish were made in Greenland waters and to some extent also in NEAFC areas.

In this segment two vessels were replaced with new vessels. As a result, fishing capacity increased by 2 519 GT and 670 kW although the number of vessels remained unchanged.

Mussel dredgers (DRB VL1218, DRB VL1824, DRB VL40XX)
This segment is made up of seven vessels engaging in mussel dredging outside the aquaculture segment.

As at 31 December 2017 fishing capacity had been reduced by 3 GT and 202 kW compared to the previous year.

ii. Fisheries by fleet segment

The information presented below is broken down by DCF segment (Appendix III to Commission Decision 2010/93/EU). **Annex 1** sets out the fish stocks and invertebrate stocks fished by each segment in 2017. The listed stocks are the ones of greatest importance to the segment concerned. In general, stocks have been taken into account if at least 100 tonnes were landed by vessels in the segment concerned in 2017, or at least 500 tonnes in the case of pelagic trawlers measuring more than 40 metres (TM VL40XX).

The stock assessments (**Annex 2**) relate to 2016 as regards fishing mortality (F) and to the beginning of 2017 for estimated reproductive capacity. It should be noted that in most cases, fishing mortality for a given stock is the result of the fishing activities of several fleets from all the countries involved, and is therefore not attributable to fishing by German vessels alone. Complete data for 2017 will only become available in the course of 2018 after the deadline for submitting this fleet report. More recent data (collected in 2017) may result in significantly different assessments for certain stocks, which will have to be taken into account in the next annual report.

Vessels using passive fishing gear < 10 m (PG VL0010)

In 2017 the vessels in this segment mainly fished five marine stocks of four different species (cod, herring, flounder and plaice). The spawning stock biomass (SSB) of the western Baltic cod was below B_{lim} (reduced reproductive capacity), whereas fishing mortality F_C remains above F_{MSY}. At 318 tonnes, catches in this segment accounted for about half of the total catches in 2016 (629 tonnes). According to the latest ICES advice (June 2017), the state of the western Baltic cod stock remains poor and fishing opportunities in this segment have therefore not increased in 2018. It is currently not yet possible to predict the medium-term impact of one strong year (2016). For western Baltic herring the SSB was below MSY $B_{trigger}$ and F was above F_{MSY}. Catches in this segment totalled 2 185 tonnes. Due to weak offspring production the outlook for this stock is poor. This segment also makes important catches from two flounder stocks in the southern and western Baltic Sea (flounder west of Bornholm and in the central south-western Baltic Sea: 223 tonnes; Belt Sea and Øresund flounder: 159 tonnes). Given that there is no ICES-approved assessment for these stocks, their status cannot be given in relation to reference points. However, both stocks appear to be developing well. In addition, 147 tonnes of plaice were caught (Kattegat, Belt Sea and Øresund). This stock has full reproductive capacity and was fished at F_C below F_{MSY}. Apart from the main marine species, this segment also caught larger quantities of roach (562 tonnes), bream (391 tonnes), European perch (231 tonnes), zander (189 tonnes) and garfish (106 tonnes) in the Baltic Sea.

Vessels using passive fishing gear 10-12 m (PG VL1012)

Vessels in this segment mainly fished three stocks in the Baltic Sea in 2017. The spawning stock biomass (SSB) of the western Baltic cod (190 tonnes) was below B_{lim} (reduced reproductive capacity), whereas fishing mortality remains above F_{MSY}. According to the latest ICES advice (June 2017), the state of the western Baltic cod stock remains poor and fishing opportunities in this segment have therefore not increased in 2018; it is currently not yet possible to predict the medium-term impact of one strong year (2016). For western Baltic herring (1 723 tonnes) the SSB was below MSY $B_{trigger}$ and F was above F_{MSY}. Due to weak offspring production the outlook for this stock is poor. In addition, 157 tonnes of flounder were caught in the central south-western Baltic Sea and west of Bornholm. Given that there is no ICES-approved assessment for this stock, its status cannot be given in relation to reference points. However, a positive trend can be noted based on fish abundance indices from research surveys.

Drift or fixed netters 12-18 m (DFN VL1218)

Vessels in this segment mainly fished herring in the western Baltic Sea (463 tonnes) in 2017. For western Baltic herring the SSB is below MSY $B_{trigger}$ and F was above F_{MSY}. Due to weak offspring production the outlook for this stock is poor.

Drift or fixed netters 24-40 m (DFN VL2440)

This segment mainly fished anglerfish in the north-east Atlantic (980 tonnes) in 2017. There are no reference points or targets for anglerfish; however, qualitative data from ICES revealed a stable to growing trend. Lastly, 116 tonnes of North Sea cod were caught by vessels in this segment. The state of the North Sea cod stock has improved and the stock now has full reproductive capacity. However, fishing mortality F_C is still above F_{MSY}.

Mussel dredgers (DRB)

Vessels in this segment mainly fished mussels in the North Sea and the western Baltic Sea (ICES SD 22). No stock assessment is available for mussels.

Beam trawlers 0-10 m (TBB VL0010)

Beam trawlers in this segment caught almost exclusively common shrimp (*Crangon crangon*, 48 tonnes). There is no quota for this target species and no analytical stock calculation is made. Due to low catches (< 100 tonnes), this segment will not be further taken into account.

Beam trawlers 10-12 m (TBB VL1012)

Beam trawlers in this segment caught almost exclusively common shrimp (*Crangon crangon*, 42 tonnes). There is no quota for this target species and no analytical stock calculation is made. Due to low catches (< 100 tonnes), this segment will not be further taken into account.

Beam trawlers 12–18 m (TBB VL1218)

Beam trawlers in this segment caught almost exclusively common shrimp (4 678 tonnes). There is no quota for this target species and no analytical stock calculation is made.

Beam trawlers 18–24 m (TBB VL1824)

Beam trawlers in this segment caught almost exclusively common shrimp (3 898 tonnes). There is no quota for this target species and no analytical stock calculation is made.

Beam trawlers 24-40 m (TBB VL2440)

Beam trawlers in this segment mainly caught mussels (1 673 tonnes), plaice (1 078 tonnes), sole (532 tonnes), turbot (123 tonnes) and common shrimp (121 tonnes). Both plaice and sole have full reproductive capacity. For plaice, fishing mortality was below F_{MSY} while for sole it was above F_{MSY}. For turbot the SSB was above MSY $B_{trigger\ proxy}$, and for mussels and common shrimp no stock assessment is made.

Beam trawlers > 40 m (TBB VL40XX)

In the North Sea, beam trawlers in this segment mainly caught mussels (1 199 tonnes) and plaice (257 tonnes). Plaice has full reproductive capacity with fishing mortality at F_{MSY}, whereas no stock assessment is available for North Sea mussels.

Demersal trawlers 10-12 m (DTS VL1012)

Vessels in this segment mainly fished herring (364 tonnes) in the western Baltic Sea. For western Baltic herring the SSB was below MSY $B_{trigger}$ and F was above F_{MSY}. Due to weak offspring production the outlook for this stock is poor.

Demersal trawlers 12–18 m (DTS VL1218)

Vessels in this segment mainly fished in the western Baltic Sea, catching herring (1 044 tonnes), cod (318 tonnes), plaice (Kattegat and Belt Sea: 414 tonnes) and flounder (Belt Sea and Øresund: 182 tonnes). They also caught sprat (459 tonnes) and dab (451 tonnes) across the Baltic Sea and whiting (195 tonnes) in the Skagerrak and Kattegat. The spawning stock biomass (SSB) of the western Baltic cod was below B_{lim} (reduced reproductive capacity), and fishing mortality remained above F_{MSY}. According to the latest ICES advice (June 2017), the state of the western Baltic cod stock remains poor and fishing opportunities in this segment have therefore not increased in 2018. It is currently not yet possible to predict the medium-term impact of one strong year (2016). For western Baltic herring the SSB was below MSY $B_{trigger}$ and F_C was above F_{MSY}. Due to weak offspring production the outlook for this stock is poor. The sprat stock has full reproductive capacity and F is below F_{MSY}. For dab, flounder and whiting a stock status classification is currently not possible. The plaice stock has full reproductive capacity and F_C was below F_{MSY}.

Demersal trawlers 18–24 m (DTS VL1824)

Vessels in this segment mainly fished plaice (925 tonnes) and Norway lobster (722 tonnes) in the North Sea. In the western Baltic Sea the main catches were of cod (257 tonnes) and herring (591 tonnes). They also caught sprat (277 tonnes) and dab (195 tonnes) across the Baltic Sea and cod (115 tonnes) in the eastern Baltic Sea. In addition, two stocks of flounder were fished (Belt Sea and Øresund: 110 tonnes; west of Bornholm and central south-western Baltic Sea: 361 tonnes), as well as plaice in the Kattegat, Belt Sea and Øresund (215 tonnes). Of the main stocks fished, three have full reproductive capacity (North Sea plaice, Kattegat, Belt Sea and Øresund plaice and Baltic sprat). The western cod stock had reduced reproductive capacity, and for western Baltic herring the SSB is below MSY $_{Btrigger}$. For Norway lobster there are many sub-populations whose stock status varies. For eastern Baltic cod, Baltic dab and both flounder stocks in the south-west central Baltic Sea and the Belt Sea/Øresund, no ICES classification is available concerning reproductive capacity. For North Sea plaice, Baltic sprat and Kattegat, Belt Sea and Øresund plaice fishing mortality F_C was below or at F_{MSY}, whereas F was above F_{MSY} for western Baltic cod and herring.

Demersal trawlers 24-40 m (DTS VL2440)

Vessels in this segment mainly fished saithe (3 530 tonnes), cod (1 938 tonnes), haddock (670 tonnes), hake (670 tonnes), haddock (608 tonnes), plaice (385 tonnes), Norway lobster

(183 tonnes) and pollack (158 tonnes) in the North Sea. In addition, 104 tonnes of cod were caught in the western Baltic Sea. Of the main stocks fished, five have full reproductive capacity (plaice, saithe, haddock, cod and northern stock of hake).

Western Baltic cod had reduced reproductive capacity, whereas for North Sea pollack no ICES classification is available concerning reproductive capacity. For Norway lobster there are many sub-populations whose stock status varies.

Fishing mortality for North Sea plaice and saithe and the northern hake stock was below or at F_{MSY}. Fishing mortality for western Baltic cod and for North Sea cod and haddock was above F_{MSY}.

Demersal trawlers > 40 m (DTS VL40XX)

Vessels in this segment mainly fished saithe (4 385 tonnes), cod (204 tonnes) and pollack (105 tonnes) in the North Sea. In the Barents Sea and the Norwegian Sea, they mainly fished north-east Arctic cod (5 962 tonnes), saithe (1 154 tonnes) and haddock (155 tonnes). In West Greenland, catches of Greenland halibut totalled 1 861 tonnes in the NAFO area. The main catches in ICES sub-area 14 on the East Greenland Shelf and west of Iceland were Greenland halibut (4 411 tonnes), redfish (1 636 tonnes of *Sebastes mentella* and *S. norvegicus*) and cod (505 tonnes). Seven of the fished stocks have full reproductive capacity (north-east Arctic cod, saithe and haddock, North Sea saithe, North Sea cod, Greenland halibut and *S. norvegicus* redfish off East Greenland/Iceland). As regards cod off Greenland, halibut off West Greenland, North Sea pollack and north-east Arctic *S. mentella* redfish, no ICES classification is available concerning reproductive capacity.

With respect to redfish stocks, the reproductive capacity of *S. mentella* on the Greenland shelf is not known.

Fishing mortality was below F_{MSY} for north-east Arctic cod and haddock and North Sea saithe, and above F_{MSY} for *S. norvegicus* redfish off East Greenland/Iceland, North Sea cod and Greenland halibut off East Greenland/Iceland.

Pelagic trawlers 12-24 m (TM VL1218)

Vessels in this segment mainly fished herring (1 875 tonnes) in the western Baltic Sea and cod (112 tonnes) in the eastern Baltic Sea. For western Baltic herring the spawning stock biomass (SSB) was below MSY $_{Btrigger}$ and F_C was above F_{MSY}. Due to weak offspring production the outlook for this stock is poor. As regards eastern Baltic cod, no ICES classification is available concerning reproductive capacity.

Pelagic trawlers 18-24 m (TM VL1824)

Vessels in this segment mainly fished herring in the western Baltic Sea (3 629 tonnes). For western Baltic herring the SSB was below MSY $_{Btrigger}$ and F_C was above F_{MSY}. Due to weak offspring production the outlook for this stock is poor.

Pelagic trawlers 24-40 m (TM VL2440)

Vessels from this segment mainly fished sprat (2 705 tonnes), herring (1 355 tonnes) and sandeel (752 tonnes) in the North Sea. They also fished sprat (4 793 tonnes) in the Baltic Sea and herring in the western Baltic Sea (3 050 tonnes) and eastern Baltic Sea (1 537 tonnes). Of these stocks, sprat and eastern Baltic and North Sea herring have full reproductive capacity. For western Baltic herring the SSB is below $MSY_{Btrigger}$ and the outlook for this stock is poor due to weak offspring production. As regards North Sea sandeel there are many populations whose stock status varies. Fishing mortality F_C was below F_{MSY} for eastern Baltic and North Sea herring and for Baltic sprat, and above F_{MSY} for Baltic herring. For short-lived species such as North Sea sprat, which are managed on the basis of an escapement strategy, F does not provide any useful information and F_{MSY} is therefore not defined. For North Sea sprat F_C was above F_{CAP}, i.e. the fishing mortality derived from the escapement strategy that should not be exceeded.

Pelagic trawlers > 40 m (TM VL40XX)

The vessels in this segment mainly fished herring (42 630 tonnes), sandeel (5 798 tonnes), sprat (3 264 tonnes) and horse mackerel (962 tonnes) in the North Sea. They also caught 7 717 tonnes of sprat in the Baltic Sea and 2 052 tonnes of herring in the eastern Baltic Sea. The main catches in the north-east Atlantic were 45 486 tonnes of blue whiting, 24 598 tonnes of mackerel, 7 058 tonnes of horse mackerel, 785 tonnes of argentine, 583 tonnes of greater silver smelt and 7 058 tonnes of horse mackerel. Other catches included 5 164 tonnes of Atlanto-Scandian herring, 1 096 tonnes of sardine in the English Channel and the southern Celtic Sea and *S. mentella* beaked redfish in the Irminger Sea (734 tonnes) and the Norwegian Sea (761 tonnes). Catches in the eastern central Atlantic (CECAF area) included 21 505 tonnes of sardine, 1 557 tonnes of chub mackerel and 1 312 tonnes of horse mackerel.

Of the 18 stocks mentioned above, six have full reproductive capacity (North Sea herring, eastern Baltic herring, Baltic sprat, North Sea sprat, north-east Atlantic mackerel and north-east Atlantic blue whiting). For eight stocks no classification is available or is outdated (the three stocks fished in the eastern central Atlantic, English channel and Celtic Sea sardine, North Sea horse mackerel, greater silver smelt, argentine and north-east Arctic *S. mentella* redfish. For Atlanto-Scandian herring and north-east Atlantic horse mackerel the spawning stock biomass is below MSY $B_{trigger}$, and *S. mentella* redfish in the Irminger Sea has reduced reproductive capacity; this stock should currently not be fished according to ICES recommendations. For short-lived species such as North Sea sprat, which are managed on the basis of an escapement strategy, F does not provide any useful information and F_{MSY} is therefore not defined. Fishing mortality F_C was below F_{MSY} for Atlanto-Scandian herring, North Sea and eastern Baltic herring, Baltic sprat and north-east Atlantic horse mackerel, whereas for North Sea sprat F_C was above F_{CAP}, i.e. the fishing mortality derived from the escapement strategy that should not be exceeded. Fishing mortality was above F_{MSY} for north-east Atlantic mackerel, blue whiting and *S. mentella* redfish in the Irminger Sea.

iii. Fleet development

Overall, the German fishing fleet was reduced by 40 vessels (-2.83 %). As two deep-sea vessels were replaced by two new, considerably larger and more modern vessels, total tonnage capacity increased by 1 976 GT (3.15 %). In terms of engine power, however, capacity fell by 2 396 kW (-1.74 %).
Precise figures for changes in the German fishing fleet can be found in **Annex 3**, broken down by DCF segment.

1.B: Information on fishing effort limitations and their impact on fishing capacity

i. Fishing effort limitations

Fishing effort limitations were imposed on Germany by Regulation (EC) No 2016/2336 in respect of fishing for deep sea species and by Regulation (EC) No 1342/2008 in respect of demersal fisheries in the North Sea and adjacent areas. However, Regulation (EU) 2016/2094 largely abolished the allocation of days of fishing effort and the only restriction that still applies concerns beam trawling with a mesh size of 80 mm or more.

The overall fishing capacity allocated to Germany for fisheries targeting deep-sea species was not exceeded in 2017. Regulation (EU) 2016/2336 defines deep-sea fishing as targeted when deep-sea species make up at least 8 % of catches on any fishing trip and total catches in a calendar year are 10 tonnes or more. Under this definition of targeted deep-sea fishing, the only deep-sea species caught by German fishing vessels are greater silver smelt (ARU) and deep-water red crab (KEF).

ii. Impact of fishing effort limitations on fishing capacity

The existing fishing effort regulations (North Sea, western waters, deep sea) had only a small impact in terms of restricting catches. Due to the increased number of effort days allocated for the 2017 management period to fishing vessels engaged in beam trawling (BT2), Germany was largely able to manage its fishing efforts without resorting to internal or bilateral swaps.

It is seen as a major flaw in the management of access rights that producing the references required (for reference years 2006 and 2007) to obtain a fishing authorisation has proved very difficult, in particular for young fishermen or founders of new businesses. The way fishing capacities are tied to specific areas by the various effort regulations is also seen as a major drawback for the fisheries. As a result, Germany often has to manage its fleet in terms of Baltic Sea capacities and North Sea capacities.

1.C: Information on compliance with the entry/exit scheme

In Germany, compliance with the capacity ceilings laid down in Annex II to Regulation (EC) No 1380/2013 is ensured by means of ‘capacity assurance licences’ (‘Kapazitätssicherungslizenzen’) allowing a vessel to leave the fleet temporarily and be put back into operation at a later date.

Capacity ceilings for Germany under Annex II to Regulation (EC) No 1380/2013:	71 117 GT	167 078 kW
Status of fleet as at 1 January 2003:	66 844 GT	161 045 kW
Status of fleet as at 31 December 2017:	64 558 GT	135 056 kW

Capacity reductions (withdrawals from the fleet with public support) in 2017: **198 GT and 1 178 kW**

1.D: Fleet management

i. Assessment of the fleet management system (weaknesses, strengths)

The fleet structure as it currently stands is virtually unchanged. The reduction of the fleet by 40 fishing vessels is mainly due to the withdrawal of static net vessels <12 m (PG VL0010, PG VL1012) and trawlers in the Baltic Sea (DTS VL0010, DTS VL1012, DTS VL1218, DTS VL1824, DTS VL2440). As regards the latter fleet segment, six vessels were withdrawn due to scrapping with public support.
The overall fleet structure remains just as heterogeneous and diverse as before, as can be seen from the individual segments. Indeed, this has been expressly promoted by fleet management and is evident, for example, from the special emphasis put on maintaining traditional static net fishing when allocating fishing opportunities.

Another characteristic of the German fleet is its relatively high proportion of smaller vessels. In line with tradition these businesses often have several small-class vessels of various sizes that can be deployed as and when needed. For instance, a smaller vessel might be used to catch herring or fresh-water fish in a protected area near the coast (passive fishing), while a larger vessel is used to catch cod and flatfish further off the coast (passive or active fishing).

Fleet management in Germany is further characterised by the wish to uphold the tradition of fishing as a family-run side business, also to help prevent ports being abandoned in order to encourage tourism. This type of fishing has also acquired historical fishing rights that have to be taken into account when fishing opportunities are allocated under the German Marine Fisheries Act. It should be noted in this regard that although fishing as a side business generally involves very low catches, maintaining them is a stated aim.

ii. Plans to improve the fleet management system

An analysis of the trends in the German fleet shows an overall linear descending curve for the number of vessels and an associated drop in fishing capacity from 2 315 vessels in 2000 to 1 373 vessels in 2017, with a gradual levelling off of the curve.

Given the positive signs regarding the development of certain stocks of importance to Germany, fleet management must aim to ensure that growing fishing opportunities continue to be efficiently managed. The existing market mechanisms used by fleet management are currently regarded as sufficient.

iii. Information on the general status of compliance with fleet policy instruments

Firstly, it should be noted that with around 5 % of overall catches and 2 % of overall fleet capacity, Germany has a well-balanced fishing capacity to fishing opportunities ratio compared with other EU Member States. Before the upper reference limits were set in 2003, Germany always managed to meet the MAP targets in place at the time. In turn, this was reflected in the level set for the upper capacity limit.

1.E: Information on changes to the administrative procedures relevant to fleet management

In 2010, work began on setting up a new comprehensive fisheries database based on the new control regulations (Regulations (EC) No 1224/2009 and (EU) No 404/2011). With a view to meeting the extensive cross-checking obligations laid down in Article 109 of Regulation (EC) No 1224/2009, the following are integrated into a standardised IT application at the Fisheries Data Centre: all areas of administration such as the fishing vessel register, catch data entry, sales data entry, quota and fishing effort entry and allocation, along with all monitoring functions across all areas of administration, VMS data and inspection data plus the reporting procedure. The register of fishing vessels is now operational and structures are in place to implement catch data entry.

2. Analysis of balance indicators and balance assessment

The balance indicators have been analysed by DCF segment (Annex III to Commission Decision 2010/93/EU). The various indicators are set out in detail for each segment below. The technical indicator was established by Germany, whereas the STECF values were used for the biological and economic indicators (https://stecf.jrc.ec.europa.eu/documents/43805/1716169/STECF+17-18+-+Balance+capacity+-+Indicator+table.xlsx). For the pelagic fishing segments (TM VL1824, TM VL2440 and TM VL40XX) the indicators used were calculated by Germany since no STECF biological indicator calculations are available. With respect to the biological indicators, the Sustainable Harvest Indicator (SHI) values relate to 2016, since the 2017 values for fishing mortality F were not available at the time of calculating the indicators and drawing up this report. The catches reported in this context also relate to 2016, unless otherwise indicated. Changes in the assessments have led to slight changes in historical SHI values. The SHI value for 2015 has therefore been adjusted in this report. The stock-at-risk (SAR) indicator also relates to 2016, and given that no SAR values are available from the STECF for 2016 the indicator values contained in this report have been set by Germany.

Vessels using passive fishing gear < 10 m (PG VL0010)

PG0010	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.26	0.31	0.26	0.35	0.33	0.25	0.36	0.36	0.42
SAR	1	2	4	3	3	3	1	1	
SHI	2.39	2.43	2.43	2.43	2.42	2.41	2.38	2.41	
CR/BER	0.16	1.01	0.72	0.82	0.44	1.36	1.00	1.23	
Rofta	-36.1	2.0	-14.6	-11.4	-27.8	18.9	0.26	12.4	
Number of vessels	172	161	155	144	132	130	129	135	116
GT	846	814	798	721	659	656	672	721	616
kW	8 135	7 824	7 894	7 263	6 818	6 722	6 779	7 407	6 420

(a) Technical indicator

Within the passive fishing gear segment (PG VL0010), the calculation includes all active vessels that are required to keep a fishing logbook. This applies to all vessels of 8 metres or more in the Baltic Sea (and all vessels of 10 metres or more in other fishing areas). The reasoning behind this is that sea days can only be calculated with confidence if there is a logbook. As in previous years, some very low values can be seen within this group of vessels. However, a positive trend has emerged over the past three years. The negative value is primarily down to the traditional and highly regionalised nature of this segment. Most of the vessels are used in the context of a side business, mostly just for a few of days, such as on weekends, or seasonally for just a few weeks. The segment is maintained on account of the political objective of keeping the German fisheries industry as diverse as possible, including fishing as a side business.

Vessels in this segment operated as a main business have a significantly higher number of sea days. As a result, poor technical indicator values, sometimes as low as 0.3, are calculated for the majority of side business vessels, whereas the values for fishing businesses operating as a main business (i.e. those that make a living from fishing) are significantly higher at 0.7 or above.

The indicator has improved slightly by 0.06 points.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Vessels in this segment mainly fished herring and cod in the western Baltic Sea, for which a stock assessment is available. For both of these stocks fishing mortality F_C was above F_{MSY}. For herring fishing mortality F_C was above F_{MSY} in 2016, whereas it was still below it in 2015. Cod in the western Baltic Sea continued to be fished at a fishing mortality well above F_{MSY} in 2016. Based on the most recent stock calculation, F_C fell only slightly in 2016 (0.93) compared to 2015 (0.948). This, and the higher F_C for herring, means that the already high SHI value has risen further to 2.41. An SHI value > 1 indicates that the fleet segment concerned is, on average, economically dependent on stocks with a fishing mortality that is currently higher than the maximum sustainable yield ($F_C > F_{MSY}$). However, the fleet report only indicates SHI values for segments for which the portion of the landings value that can be used to calculate the indicator exceeds 40 % of the total value of landings by that segment. In this case the value calculated by the STECF is 39.8 %, i.e. < 40 %, and is therefore not taken into account in the assessment.

Stocks at risk (SAR)
For this segment one stock was considered at risk in 2016, as in the previous year, whereas in 2014 three stocks had been considered at risk by the STECF. The stock in question is again the western Baltic cod, for which the spawning stock biomass is below B_{lim}. More than 10 % of the total landings in this segment are of this stock. According to the latest ICES advice (June 2017), the western Baltic cod stock remains in a poor condition. It is currently not yet possible to predict the medium-term impact of one strong year (2016). However, the expected deteriorating state of the western Baltic herring stock means that in the foreseeable future there will be at least one stock at risk in this segment.

(c) Economic indicators

In 2016 the CR/BER increased from 1 to 1.23 and the RoFTA increased sharply to 12.4. The economic indicators for this fleet segment do not, therefore, point to any overcapacity. Many vessels in this segment are not primarily operated for commercial reasons, but are used for amateur fishing or in the context of a side business. Different cost structures not related to the balance between fishing opportunities and capacity are at play here.

(d) Overall assessment

Overall this segment is in **imbalance** according to the indicators analysed. However, it needs to be taken into account, as argued in Sections 3 and 5 above, that the indicators are not particularly meaningful for this segment. As it is severely affected by the continuing poor state of the western Baltic cod stock and a possible negative trend for western Baltic herring (see Section 1.A.ii), the segment is included in the action plan (Section 5).

Vessels using passive fishing gear 10-12 m (PG VL1012)

PG1012	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.53	0.51	0.48	0.56	0.51	0.41	0.44	0.43	0.56
SAR	0	1	2	1	0	1	1	1	
SHI	2.35	2.36	2.29	2.31	2.12	2.13	2.24	2.28	
CR/BER	0.38	0.48	0.38	0.56	0.48	0.12	0.42	0.61	
Rofta	-30.9	-26.4	-29.6	-20.8	-24.0	-42.8	-28.4	-23.5	
Number of vessels	76	72	66	68	66	67	64	58	58
GT	840	790	719	750	717	723	695	646	668
kW	6 357	6 122	5 494	5 948	5 692	5 847	5 570	5 199	5 301

(a) Technical indicator

In the category static net vessels with a length of 10-12 metres, the indicator value has risen by 0.13 points, a considerable increase on previous years. Although the 2017 value remains negative, 0.56 is still a good result considering that for many vessels in this segment, too, fishing is a side business resulting in considerably fewer sea days than for vessels engaged in fishing as a main business.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Vessels in this segment mainly fished herring and cod in the western Baltic Sea, for which a stock assessment is available. Fishing mortality F_C for herring has risen since 2015 and was above F_{MSY}. This, together with an F_C well above F_{MSY} for cod in 2016, resulted in an SHI value of 2.28, which is even higher than before. According to the latest ICES advice (June 2017), the state of the western Baltic cod stock remains poor with a spawning stock biomass (SSB) below the $MSY_{Btrigger}$ reference value. SSB is also below $MSY_{Btrigger}$ for herring.

Stocks at risk (SAR)

For this segment one stock was considered at risk by the STECF in 2016, as was also the case in 2015 and 2014. The stock in question is the western Baltic cod, for which the spawning stock biomass is below B_{lim}. More than 10 % of the total landings in this segment are of this stock. According to the latest ICES advice (June 2017), the western Baltic cod stock remains in a poor condition; it is currently not yet possible to predict the medium-term impact of one strong year (2016). However, the expected deteriorating state of the western Baltic herring stock means that in the foreseeable future there will be at least one stock at risk in this segment.

(c) Economic indicators

Although both the CR/BER and the RoFTA improved for this fleet segment in 2016, their values remained below 1 (CR/BER) or negative (RoFTA). The economic indicators for this fleet segment thus seem to point to a possible overcapacity. However, it needs to be taken into account that many vessels in this segment are not primarily operated for commercial reasons but are used for amateur fishing or in the context of a side business. Different cost structures not related to the balance between fishing opportunities and capacity are at play here. Moreover, it should be borne in mind that these vessels account for a very small share of German catches and that the quantities fished are in any case limited by technical constraints. Also, a notable portion of their catches consists of fresh water species for which there is no quota and which are not subject to EU quota management.

(d) Overall assessment

Overall this segment is in **imbalance** according to the indicators analysed. However, it needs to be taken into account, as argued in Sections 3 and 5 above, that the indicators are not particularly meaningful for this segment. The segment is severely affected by the currently starkly deteriorated state of the western Baltic cod stock and could also be hard hit by deteriorations in the western Baltic herring stock (see Section 1.A.ii).

Drift or fixed netters 12-18 m (DFN VL1218)

DFN1218	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.48	0.46	0.51	0.72	0.44	0.57	0.48	0.58	0.40
SAR	1	1	2	2	1	1	0	0	
SHI	2.17	1.84	1.57	1.62	1.55	1.19	1.21	1.15	
CR/BER	1.47	2.42	0.50	7.54	3.85	1.85	-1.51	6.65	
Rofta	18.7	58.5	-18.5	178.9	98.4	36.8	-96.9	176.3	
Number of vessels	16	12	10	7	11	9	5	5	7
GT	365	273	237	147	272	220	121	132	193
kW	2 216	1 666	1 309	842	1 592	1 182	1 182	821	969

(a) Technical indicator

Only seven fishing vessels were taken into account to calculate the technical indicator in segment DFN VL1218 in the reporting year. The relatively poor value of 0.4 can be explained by the fact that one vessel logged a considerably higher number of sea days (245 days) than the other vessels in the segment, which logged only 48 days on average.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Vessels in this segment mainly fished sole and cod in the North Sea and herring in the western Baltic Sea. As F_C is just above F_{MSY} for cod and sole and, unlike in the previous year, above F_{MSY} for herring, the SHI remains low overall at 1.15.

Stocks at risk (SAR)

For this segment one stock was considered at risk by the STECF in 2016, as was also the case in 2015.

(c) Economic indicators

In 2016 both the CR/BER and the RoFTA turned positive again. As both economic indicators show an increasing trend, there is no indication of overcapacity. These values should be assessed with caution as they have varied significantly over the years.

(d) Overall assessment

Overall this segment is in **balance** according to the indicators analysed. The main reason for this assessment is the positive SHI trend. For the above reasons, and in view of the reservations discussed in points 3 and 5, the technical indicator values could not be taken into account for the overall assessment. No stock at risk is fished. In addition, the number of vessels in this segment dropped significantly (from 16 to 7) between 2009 and 2017.

Drift or fixed netters 24-40 m (DFN VL2440)

DFN2440	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.50	0.71	0.64	0.66	0.85	0.64	0.81	0.75	0.83
SAR	0	0	0	1	0	0	0	0	
SHI	2.06	1.91	1.67	1.50	1.25	1.20	1.21	1.10	
CR/BER	-0.82	1.63	0.73	-0.22	0.37	0.13	0.77	0.70	
Rofta	-59.5	45.9	-42.2	-91.7	-50.8	-53.2	-12.6	-19.8	
Number of vessels	5	5	4	5	5	5	4	4	5
GT	877	877	729	877	877	877	729	729	877
kW	1 897	1 897	1 475	1 897	1 897	1 897	1 475	1 475	1 897

(a) Technical indicator

Five vessels were taken into account to calculate the technical indicator. These achieved a good value of 0.83, which is an improvement of 0.08 compared to the previous year. Overall, a positive trend has emerged in this group over the past few years. The average number of sea days is 223, resulting in a theoretical indicator value of 1.02.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Fishing vessels in this segment mainly fished anglerfish in the north-east Atlantic, for which there is no assessment. The share of the value of landings in this segment that can be used to calculate the indicator was calculated by the STECF at 14 %, and the resulting SHI value of 1.10 cannot therefore be taken into account to assess the segment.

Stocks at risk (SAR)
For this segment no stock was considered at risk by the STECF in 2016, as has been the case since 2013.

(c) Economic indicators

The CR/BER and the RoFTA both show negative values. However, there is a moderately positive trend.

(d) Overall assessment

Overall this segment is **in balance** according to the indicators analysed. The indicators are on a positive trend. The technical indicator is fairly good, the SHI biological indicator cannot be taken into account and no stock at risk is fished. The economic indicators are negative but have improved over the past few years.

Fishing vessels using pots and/or traps 12–18 m (FPO VL1218)
Over the past few years this segment has consisted of only one fishing vessel with sporadic activity and is therefore not taken into account in the analysis of balance indicators.

Fishing vessels using pots and/or traps 24–40 m (FPO VL2440)
Over the past few years this segment has consisted of only one fishing vessel with sporadic activity and is therefore not taken into account in the analysis of balance indicators.

Beam trawlers 10-12 m (TBB VL1012)

TBB1012	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.33	0.45	0.31	0.48	0.64	0.48	0.76	0.79	0.54
SAR	0	0	0	0	0	0	0	0	
SHI	2.06	2.04	1.75	1.40	1.85	1.05	1.01	0.96	
CR/BER	2.27	1.11	-0.35	3.19	3.31	1.08	0.13	1.28	
Rofta	46.7	8.2	-75.0	124.0	133.1	6.6	-67.5	9.26	
Number of vessels	5	7	6	5	5	5	5	5	7
GT	61	85	74	63	63	63	63	63	78
kW	457	624	564	515	515	515	515	515	676

(a) Technical indicator

The value of 0.54 calculated for 2017 is lower than the good results of the past two years. One reason for this are seasonal periods of inactivity in the common shrimp fisheries. It should also be noted that two vessels in this category engage in fishing as a side business and therefore have considerably fewer sea days than vessels for which fishing is a main business.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Fishing vessels in this segment fished almost exclusively for common shrimp, for which there is no stock assessment. The SHI value of 0.96 calculated by the STECF cannot therefore be taken into account to assess the segment.

Stocks at risk (SAR)

In this segment no stock was considered at risk by the STECF in 2016, as was also the case in previous years.

(c) Economic indicators

Both economic indicators are positive, meaning that the segment is in balance.

(d) Overall assessment

Overall this segment is in **balance** according to the indicators analysed. The technical indicator deteriorated in the past year for the reasons set out above. The SHI biological indicator is on a positive trend but cannot be taken into account for the reasons set out above. No stock at risk is fished. The economic indicators again improved considerably in 2016.

Beam trawlers 12–18 m (TBB VL1218)

TBB1218	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.64	0.65	0.60	0.60	0.56	0.60	0.60	0.58	0.54
SAR	0	0	0	0	0	0	0	0	
SHI	2.62	2.92	2.64	3.28	3.32	2.99	1.99	2.61	
CR/BER	1.23	1.42	0.97	2.74	2.57	1.79	1.50	1.91	
Rofta	15.1	22.7	-1.3	87.7	92.9	45.1	35.0	56.2	
Number of vessels	140	134	127	118	120	117	112	111	108
GT	4 268	4 075	3 876	3 597	3 663	3 627	3 457	3 479	3 451
kW	26 791	25 650	24 308	22 678	22 962	22 651	21 597	21 671	21 234

(a) Technical indicator

The calculation is based on 108 fishing vessels. At 0.54 the value is similar to that of previous years but has fallen slightly. One reason for this is the seasonal nature of shrimp fisheries. Another feature characterising this segment is that some of the cutters engage in day fishing close to their home port, suspending activities when catches within this limited area of operation are poor, while other vessels carry out fishing trips over several days covering much larger areas, and therefore log many more sea days.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Fishing vessels in this segment fished almost exclusively for common shrimp, for which there is no stock assessment. The SHI value of 2.60 calculated by the STECF cannot therefore be taken into account to assess the segment.

Stocks at risk (SAR)

In this segment no stock was considered at risk by the STECF in 2016, as was also the case in previous years.

(c) Economic indicators

Both the CR/BER and the RoFTA indicate that this fleet segment is in balance, as has been the case for several years.

(d) Overall assessment

Overall this segment is in **balance** according to the indicators analysed. The technical indicator is 0.6, the SHI biological indicator cannot be taken into account, no stock at risk is fished, and the economic indicators are positive.

Beam trawlers 18–24 m (TBB VL1824)

TBB1824	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.56	0.60	0.58	0.63	0.65	0.62	0.69	0.57	0.67
SAR	0	0	0	0	0	0	0	0	
SHI	2.42	2.48	2.28	2.53	3.30	1.85	1.15	1.1	
CR/BER	0.84	1.11	0.59	1.91	1.98	1.43	1.20	2.06	
Rofta	-4.2	6.3	-16.2	36.2	39.4	19.5	10.1	60.7	
Number of vessels	63	61	62	63	67	63	63	65	67
GT	3 892	3 521	3 679	3 756	4 104	3 850	3 706	3 976	4 045
kW	13 652	13 175	13 394	13 616	14 537	13 653	13 477	14 278	14 619

(a) Technical indicator

The sea days of 67 fishing vessels were taken into account to calculate the indicator. The result achieved in the 18-24 metre length class was a clear improvement on the previous year. Compared to the previous year the value increased by 0.1 points to 0.67.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Fishing vessels in this segment fished almost exclusively for common shrimp, for which there is no stock assessment. The positive SHI value of 1.1 calculated by the STECF cannot therefore be taken into account to assess the segment.

Stocks at risk (SAR)
In this segment no stock was considered at risk by the STECF in 2016, as was also the case in previous years.

(c) Economic indicators

Both the CR/BER and the RoFTA indicate that this fleet segment is in balance, as has been the case for several years.

(d) Overall assessment

Overall this segment is in **balance** according to the indicators analysed. The technical indicator and the economic indicators are positive or on a positive trend. The SHI biological indicator cannot be taken into account for the reasons set out above. No stock at risk is fished.

Beam trawlers 24-40 m (TBB VL2440)

TBB2440	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.77	0.83	0.54	0.78	0.85	0.82	0.68	0.91	0.80
SAR	0	0	0	0	0	0	1	0	
SHI	1.89	1.81	1.51	1.48	1.26	1.12	1.08	1.04	
CR/BER	1.98	1.04	0.69	1.00	2.03	1.33	2.02	1.74	
Rofta	39.4	3.5	-12.2	-0.6	41.7	12.2	35.1	44.5	
Number of vessels	7	8	8	9	8	10	10	9	10
GT	1 424	1 693	1 693	1 752	1 559	2 021	2 021	1 828	2 021
kW	4 874	5 867	5 867	5 971	5 411	6 721	6 721	6 161	5 788

(a) Technical indicator

The sea days of ten vessels were taken into account to calculate the indicator. At 0.8 a good result was achieved, although it is below the value of the previous year. The fact that smaller beam trawlers (24-25 metres) are compared with larger trawlers (35-40 metres) has a negative impact on the calculation of the indicator value. Although there are significant variations in fishing activity, the segment appears entirely homogeneous based on the 2017 result.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Fishing vessels in this segment mainly caught plaice, mussels, sole and common shrimp in the North Sea. For plaice and sole a stock assessment is available which shows that fishing mortality F_C was below F_{MSY} for plaice and slightly above it for sole, resulting in a slightly increased SHI value of just above 1 (1.04).

Stocks at risk (SAR)

For this segment no SAR assessment was made by the STECF for 2016. The analysis carried out by Germany based on the relevant criteria showed no stock at risk in this segment. For 2015 one stock at risk, identified as 'Portuguese dogfish (*Centroscymnus coelolepis*), cyo27.nea', was indicated by the STECF. Assessing this as a stock at risk is questionable since the species was caught accidentally just once in this segment. Also, an error in the Alpha Code cannot be ruled out since cyo27.nea may not even be landed. In 2016 there was no stock at risk, as was the case in all preceding years. Germany therefore sees no need for further action.

(c) Economic indicators

Both the CR/BER and the RoFTA indicate that this fleet segment is in balance.

(d) Overall assessment

Overall this segment is in **balance** according to the indicators analysed. The technical indicator can be taken into account only partially. The SHI biological indicator is on a positive trend, and no stock at risk was fished in 2016. The economic indicators are positive.

Beam trawlers > 40 m (TBB VL40XX)

TBB40XX	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.61	1.00	0.63	0.54	0.53	0.62	1.00	0.94	0.95
SAR						0	0	0	
SHI						1.18	0.97	1.01	
CR/BER									
Rofta									
Number of vessels	1	2	1	2	2	2	2	2	2
GT	446	791	446	791	791	791	791	791	791
kW	1 471	2 221	1 471	2 221	2 221	2 221	2 221	1 853	1 853

(a) Technical indicator

The two vessels taken into account in this segment achieved a very good value of 0.95. However, the indicator value is not particularly meaningful due to the small number of vessels.

(b) Biological indicators

Sustainable harvest indicator (SHI)
As no STECF calculation is available for this segment, a German calculation value has been used. Vessels in this segment mainly fished mussels in the North Sea, for which there is no stock assessment, in addition to plaice and sole in the North Sea. For plaice fishing mortality F_C was below F_{MSY} and for sole slightly above F_{MSY}, resulting in a SHI value just above 1 (1.01).

Stocks at risk (SAR)
For this segment no SAR assessment was made by the STECF for 2016. The analysis carried out by Germany based on the relevant criteria showed no stock at risk in this segment.

(c) Economic indicators

For reasons of data protection, economic data from this segment are grouped together with data for segment TBB VL2440.

(d) Overall assessment

No clear assessment can be made for this segment. The indicators are not pertinent because they are based on only two vessels. No stock at risk is fished.

Demersal trawlers 10-12 m (DTS VL1012)

DTS1012	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.54	0.56	0.58	0.59	0.42	0.48	0.45	0.34	0.31
SAR	0	1	2	1	1	1	1	1	
SHI	2.59	2.78	3.05	2.50	2.77	2.62	2.29	2.06	
CR/BER	-0.08	1.18	0.67	0.56	0.66	0.39	0.41	0.29	
Rofta	-70.8	12.3	-19.5	-29.0	-23.6	-47.6	-57.7	-4.7	
Number of vessels	13	15	15	10	12	11	10	10	6
GT	213	244	233	146	183	169	154	156	94
kW	2 055	2 202	2 202	1 441	1 803	1 608	1 425	1 433	744

(a) Technical indicator

The six vessels in this segment achieved a value of 0.31, which is even worse than in 2016. One reason for this is that one vessel in this segment logged a significantly higher number of sea days than other vessels in the segment (the highest number of days recorded is 150 and the lowest 21). This can also be explained by the fact that some smaller vessels in this category are used only as second or replacement vessels. This results in a high baseline of 150 days, which produces a much lower value in the calculation of the 'registered' indicator.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Vessels in this segment mainly fished cod and herring in the western Baltic Sea and dab across the Baltic Sea. Fishing mortality F_C for the two most important stock in this segment, western cod and herring, is well above F_{MSY}. However, since F_C was well below F_{MSY} for Belt Sea plaice, the fourth most important stock in this segment, the SHI value fell from 2.29 in 2015 to 2.06 in 2016.

Stocks at risk (SAR)
Our analysis shows that, based on the relevant criteria, one stock must be considered at risk in this segment, as was already the case in previous years. The stock in question is the western Baltic cod, for which the spawning stock biomass is below B_{lim}. More than 10 % of the total landings in this segment are of this stock. According to the latest ICES advice (June 2017), the western Baltic cod stock remains in a poor condition. It is currently not yet possible to predict the medium-term impact of one strong year (2016). However, the expected deteriorating state of the western Baltic herring stock means that in the foreseeable future there will be at least one stock at risk in this segment.

(c) Economic indicators

Both the CR/BER and the RoFTA have been unfavourable in this segment for years.

(d) Overall assessment

Overall this segment is in **imbalance** according to the indicators analysed. However, it needs to be taken into account, as argued in Sections 3 and 5 above, that the indicators are not particularly meaningful for this segment. The segment is severely affected by the continuing poor state of the western Baltic cod stock and the negative changes affecting western Baltic herring.

Demersal trawlers 12–18 m (DTS VL1218)

DTS1218	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.49	0.47	0.60	0.71	0.53	0.53	0.52	0.53	0.57
SAR	1	1	2	1	2	1	1	1	
SHI	2.67	2.53	2.67	2.54	2.52	2.51	2.67	2.32	
CR/BER	0.68	0.81	0.60	1.00	0.82	0.80	0.74	0.57	
Rofta	-9.4	-7.6	-16.7	-0.7	-7.5	-8.1	-10.7	-18.9	
Number of vessels	39	37	33	27	30	29	28	27	20
GT	1 310	1 239	1 129	923	1 024	1 008	826	866	655
kW	7 283	6 767	6 088	4 960	5 514	5 414	4 694	4 918	3 765

(a) Technical indicator

The sea days of 20 vessels were taken into account to calculate the indicator. The value of 0.57 is a slight improvement on the previous year and thus confirms the positive trend in this segment.

A far-reaching capacity scrapping measure was implemented in this segment in 2017. A total of seven vessels withdrew from the fleet, and six of those were scrapped. These had a total capacity of 198 GT and 1 178 kW.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Vessels in this segment mainly fished cod and herring in the western Baltic Sea and sprat across the Baltic Sea. In addition, they made considerable catches of plaice in the Belt Sea. Fishing mortality F_C for western cod, the most important stock in this segment in value terms, was well above F_{MSY} and the SHI is therefore high at 2.32. The value has fallen slightly since

2015 (2.67) due to catches of Belt Sea plaice, a stock fished at a fishing mortality well below F_{MSY}, resulting in a lower indicator value.

Stocks at risk (SAR)
Our analysis shows that, based on the relevant criteria, one stock must be considered at risk in this segment for 2016, as was already the case in previous years. The stock in question is the western Baltic cod, for which the spawning stock biomass is below B_{lim}. More than 10 % of the total landings in this segment are of this stock. According to the latest ICES advice (June 2017), the western Baltic cod stock remains in a poor condition. It is currently not yet possible to predict the medium-term impact of one strong year (2016). However, the expected deteriorating state of the western Baltic herring stock means that in the foreseeable future there will be at least one stock at risk in this segment.

(c) Economic indicators

Both the CR/BER and the RoFTA have been unfavourable in this segment for years.

(d) Overall assessment

Overall this segment is in **imbalance** according to the indicators analysed. The segment is severely affected by the continuing poor state of the western Baltic cod stock. Germany has acted on this state of affairs by scrapping nearly 30 % of the fleet with the use of public funds (see the Action Plan).

Demersal trawlers 18–24 m (DTS VL1824)

DTS1824	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.64	0.58	0.60	0.62	0.60	0.59	0.60	0.65	0.68
SAR	1	0	2	1	1	1	1	1	
SHI	2.14	1.65	1.79	1.92	1.62	1.54	1.50	1.47	
CR/BER	0.90	1.19	0.91	0.51	2.84	2.22	1.32	2.91	
Rofta	-0.5	9.0	-3.0	-15.9	50.9	37.6	12.3	66.2	
Number of vessels	28	30	29	20	18	17	16	13	13
GT	3 045	3 215	3 169	2 231	2 064	1 847	1 724	1 444	1 544
kW	6 122	6 525	6 347	4 330	3 925	3 704	3 485	2 824	3 118

(a) Technical indicator

The indicator is calculated on the basis of the sea days of 13 fishing vessels. The value of 0.68 confirms the positive trend of previous years and is the best result achieved since 2009. It is worth noting that one vessel in this segment recorded a relatively high number of 293 sea days, whereas for many of the other vessels the number of sea days was far lower. This resulted in a slight imbalance in the ‘registered’ indicator value presented here. However, if the theoretical approach is taken to assess this segment (based on a maximum of 220 days), a very good value of 0.90 is achieved, which would seem to point to high homogeneity overall in this vessel category.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Vessels in this segment fished a number of different stocks in the North Sea and the Baltic Sea. The most important stock, in both volume and value terms, the North Sea plaice, is fished sustainably and fishing mortality F_C is just under F_{MSY}. The resulting SHI for this segment is 1.47, which is only a slight change on the previous year (1.50).

Stocks at risk (SAR)

Our analysis shows that, based on the relevant criteria, one stock must be considered at risk in this segment for 2016, as was already the case in previous years. The stock in question is the western Baltic cod, for which the spawning stock biomass is below B_{lim}. More than 10 % of the total landings in this segment are of this stock. According to the latest ICES advice (June 2017), the western Baltic cod stock remains in a poor condition. It is currently not yet possible to predict the medium-term impact of one strong year (2016). However, the expected deteriorating state of the western Baltic herring stock means that in the foreseeable future there will be at least one stock at risk in this segment.

(c) Economic indicators

Both the CR/BER and the RoFTA have improved considerably compared to previous years and remain at a level that does not indicate overcapacity.

(d) Overall assessment

No clear assessment can be made for this segment. The technical indicator and the SHI are on a positive trend, but stock at risk is fished. The economic indicators are positive. The number of vessels has more than halved, having dropped from 30 (in 2010) to 13 (in 2016 and 2017).

Demersal trawlers 24-40 m (DTS VL2440)

DTS2440	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.62	0.50	0.57	0.65	0.68	0.59	0.66	0.70	0.70
SAR	1	1	0	1	0	0	1	0	
SHI	1.58	1.40	1.27	1.17	1.07	1.08	1.17	1.09	
CR/BER	1.02	1.51	1.87	1.05	1.36	1.30	2.02	2.24	
Rofta	4.1	20.4	32.5	3.2	12.6	8.8	31.1	31.2	
Number of vessels	16	16	13	10	11	12	10	9	8
GT	3 439	3 431	3 033	2 523	2 660	2 981	2 768	2 343	2 172
kW	7 409	6 821	5 994	4 683	4 830	5 361	5 295	4 275	3835

(a) Technical indicator

The calculation is based on the sea days of eight fishing vessels. The average value of 0.70 has stabilised itself at the high level recorded in 2016, reflecting a positive trend in demersal trawling. It is worth noting that, as in the two preceding years, two vessels in this segment logged a relatively high number of sea days, i.e. more than 300, whereas one vessel had no more than two. According to the relevant producers' cooperative, the vessel in question had difficulties finding qualified crew. This then resulted in a slight imbalance in the 'registered' indicator. Had the theoretical value been used, the segment would have achieved an excellent value of 1.11.

(b) Biological indicators

Sustainable harvest indicator (SHI)
The main stocks fished by this segment were North Sea saithe, cod, haddock, plaice and hake. As fishing mortality F_C for saithe, plaice and hake is below or at F_{MSY}, the SHI stands at a low 1.09.

Stocks at risk (SAR)
Our analysis shows that, based on the relevant criteria, there was no stock at risk in this segment in 2016. In 2015 North Sea and Skagerrak/Kattegat pollack was assessed as a stock at risk in this segment because the stock should not be directly targeted in area 3a (Skagerrak and Kattegat) according to the ICES advice of June 2014 for pollack and because the segment accounted for more than 10 % of total catches (in tonnes) of this species. However, the recommendation only concerned Skagerrak and Kattegat, where vessels in this segment account for less than 10 % of total catches, and the classification of pollack as a stock at risk in this segment by the STECF is therefore questionable. For the above reasons Germany does

not, contrary to the STECF, consider pollack as a stock at risk in this segment. Moreover, as from 2017 the ICES advice does not refer to any species meeting the SAR criteria.

(c) Economic indicators

Both the CR/BER and the RoFTA indicate that this fleet segment is in balance.

(d) Overall assessment

Overall this segment is in **balance** according to the indicators analysed. The theoretical technical indicator and the SHI are close to 1. No stock at risk is fished. The economic indicators are positive. Moreover, the number of fishing vessels has dropped from 16 in 2010 to eight in 2017.

Demersal trawlers > 40 m (DTS VL40XX)

DTS40XX	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.82	0.84	0.92	0.83	0.78	0.73	0.70	0.80	0.78
SAR	1	1	2	2	1	1	2	0	
SHI	1.05	1.02	1.10	1.02	1.00	0.93	1.16	1.17	
CR/BER	0.47	0.81	0.68	0.75	0.62	0.86	0.98	1.50	
Rofta	-17.6	-4.7	-9.1	-8.5	-13.5	-4.4	-0.2	11.0	
Number of vessels	8	8	8	8	7	6	7	7	7
GT	13 215	13 215	13 215	13 215	10 247	8 650	12 898	12 898	15 417
kW	18 651	18 651	18 651	18 651	14 151	11 724	15 724	15 724	16 394

(a) Technical indicator

The calculation is based on the sea days of seven fishing vessels. The value of 0.78 is similar to that of the previous year and above the value achieved in 2014 and 2015. This indicator is negatively affected by the fact that vessels engaged in large-scale deep-sea fisheries are grouped together with larger vessels engaged in cutter fisheries. Naturally, the considerable differences that exist between these two types of fishery are reflected in the number of sea days. Moreover, two replacement measures were made in this segment which took several months to complete. This too had a negative impact on the calculation of the indicator.

(b) Biological indicators

Sustainable harvest indicator (SHI)

For many of the main stocks fished in this segment, fishing mortality F_C was either below F_{MSY} (North Sea saithe, north-east Arctic cod, north-east Arctic haddock) or slightly above it (North Sea cod, East Greenland/Iceland halibut), resulting in a SHI just above 1 (1.17).

Stocks at risk (SAR)

Our analysis shows that, based on the relevant criteria, there was no stock at risk in this segment in 2016. In 2015 red perch (*Sebastes norvegicus*) in the north-east Arctic and cod on the east Greenland shelf were classified as stocks at risk by the STECF for this segment. We agree with this assessment for Greenland cod, but the assessment for red perch appears questionable. Although the ICES advice for 2015 was that this species should not be directly targeted, catches were too insignificant in this segment (there were by-catches only) to meet the criteria required for a species to be classified as a stock at risk.

In 2016 we did not consider Greenland cod as a stock at risk although the segment met one of the criteria (accounting for >10 % of total catches). The ICES issued new catch advice for 2016 and the recommendation not to target the species which still applied in 2015 was not maintained.

(c) Economic indicators

In this segment both the CR/BER and the RoFTA have been on a positive trend for years. The values give no indication of overcapacity. About half of the vessels in this segment are being replaced by new vessels, which is another sign of a favourable economic situation.

Moreover, the vessels concerned mostly belong to vertically integrated businesses where catches undergo further processing, and this is where most of the value is created. According to the operators, the vessels' fishing activities are profitable when account is taken of the processing activity.

(d) Overall assessment

Overall this segment is in **balance** according to the indicators analysed. The technical indicator is good and the SHI value is 1. No stock at risk is fished. The economic indicators are positive. The vessels concerned belong to vertically integrated businesses making their profit not so much from fishing as from fish processing.

Pelagic trawlers 12-24 m (TM VL1218)

TM1218	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator							0.88	0.89	0.85
SAR							0	0	
SHI							1.16	1.52	
CR/BER									
Rofta									
Number of vessels	0	0	0	0	0	0	2	2	3
GT	–	–	–	–	–	–	122	122	163
kW	–	–	–	–	–	–	439	439	659

(a) Technical indicator

The vessels in this segment achieved a value of 0.85 in 2017. This result is, however, not particularly meaningful since only three vessels could be included in the calculation.

(b) Biological indicators

Sustainable harvest indicator (SHI)

As no STECF calculation is available for this segment, a German calculation value has been used. Vessels in this segment fish practically only herring in addition to some cod in the western Baltic Sea. The SHI has risen to 1.52 since fishing mortality F_C was above F_{MSY} for both stocks, whereas in 2015 it was still below this level for herring.

Stocks at risk (SAR)

For this segment no SAR assessment is made by the STECF. Our analysis shows that, based on the relevant criteria, there was no stock at risk in this segment in 2016.

(c) Economic indicators

For reasons of data protection, no economic data can be published with respect to this segment.

(d) Overall assessment

No clear assessment can be made for this segment. The indicators are not pertinent because they are based on only 2-3 vessels and a short time series. No stock at risk is fished.

Pelagic trawlers 18-24 m (TM VL1824)

TM1824	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	–	0.85	1.00	1.00	1.00	0.88	0.67	0.70	0.59
SAR						0	0	0	
SHI						1.19	0.86	1.31	
CR/BER									
Rofta									
Number of vessels	0	2	1	1	1	2	2	4	4
GT	–	239	107	107	107	239	207	354	354
kW	–	442	221	221	221	442	441	882	882

(a) Technical indicator

The vessels in this segment achieved a value of 0.59, which is below that of the previous year. However, the result is not very meaningful in terms of assessing the balance for this category, since the calculation is based on only four vessels.

(b) Biological indicators

Sustainable harvest indicator (SHI)
As no STECF calculation is available for this segment, a German calculation value has been used. Vessels in this segment mainly fished herring in the western and cod in the eastern Baltic Sea. Fishing mortality F_C was above F_{MSY} for the most important stock in quantity terms, the western herring, resulting in an SHI of 1.31. This is well above the SHI value of 0.86 in the previous year (2015), when F_C was still below F_{MSY}.

Stocks at risk (SAR)
For this segment no SAR assessment is made by the STECF. Our analysis shows that, based on the relevant criteria, there was no stock at risk in this segment in 2016.

(c) Economic indicators

For reasons of data protection, no economic data can be published with respect to this segment.

(d) Overall assessment

No clear assessment can be made for this segment. The indicators are not pertinent because they are based on only four vessels. No stock at risk is fished.

Pelagic trawlers 24-40 m (TM VL2440)

TM2440	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.52	0.98	0.71	0.99	1.00	1.00	0.69	0.89	0.84
SAR						0	0	0	
SHI						1.31	1.05	1.24	
CR/BER									
Rofta									
Number of vessels	2	2	4	2	1	1	3	3	3
GT	495	873	1 149	529	374	374	655	655	655
kW	884	1 435	1 840	921	700	700	1 105	1 105	1 105

(a) Technical indicator

The result achieved in 2017 by the three vessels in this segment was 0.84, which is close to that of the previous year. Again, the indicator value is not very pertinent due to the low number of vessels in this segment.

(b) Biological indicators

Sustainable harvest indicator (SHI)
As no STECF calculation is available for this segment, a German calculation value has been used. Vessels in this segment mainly fished sprat in the North Sea and the Baltic Sea, herring in the North Sea and the western and eastern Baltic Sea and Atlanto-Scandian herring. For most of these stocks, fishing mortality F_C was below F_{MSY}. However, as fishing mortality F_C was below F_{MSY} for the western Baltic herring, the most important stock in both volume and value terms, a higher SHI (compared to the previous year) of 1.24 was reached.

Stocks at risk (SAR)
For this segment no SAR assessment is made by the STECF. Our analysis shows that, based on the relevant criteria, there was no stock at risk in this segment in 2016.

(c) Economic indicators

For reasons of data protection, no economic data can be published with respect to this segment.

(d) Overall assessment

No clear assessment can be made for this segment. Because there are only three vessels the indicators are not pertinent. No stock at risk is fished.

Pelagic trawlers > 40 m (TM VL40XX)

TM40XX	2009	2010	2011	2012	2013	2014	2015	2016	2017
Technical indicator	0.82	0.81	0.86	0.86	0.80	0.85	0.94	0.88	0.87
SAR	0	0	0	0	0	0	2	1	
SHI						1.09	1.1	1.01	
CR/BER									
Rofta									
Number of vessels	5	5	5	5	5	5	5	5	5
GT	27 565	26 801	26 801	26 922	26 922	26 922	26 922	26 922	27 136
kW	23 274	23 537	23 537	23 537	23 537	23 537	23 537	23 537	24 397

(a) Technical indicator

This pelagic fishing segment counts five vessels with a total length overall of 40 metres or more, which in 2017 continued to record high levels of activity. This is reflected in the indicator value of 0.87, which is comparable to the results of the past few years, pointing to a homogeneous segment. Again, it should be noted that for this segment, the calculation involves comparing vessels engaged in cutter fisheries to vessels engaged in large-scale deep-sea fisheries.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Vessels in this segment fished a wide range of pelagic stocks in the Baltic Sea, the North Sea and the rest of the North Atlantic. For many of the herring stocks fished (Atlanto-Scandian, North Sea, eastern Baltic) and north-east Atlantic horse mackerel, fishing mortality F_C was below F_{MSY}, resulting in an SHI close to 1 (1.01).

Stocks at risk (SAR)

Our analysis shows that, based on the relevant criteria, there was one stock at risk in this segment in 2016. As in 2015, the stock concerned is herring in divisions 6a N, 7b and 7c, for which the spawning stock biomass was below B_{lim}. ICES recommends that this stock should not be targeted, and more than 10 % of overall landings in this segment come from this stock. In addition, the western stock of horse mackerel (*Trachurus trachurus*) was classified as a stock at risk in this segment. This assessment is disputed. While the stock as such is above B_{lim}, this limit was set well below the hitherto lowest value in the time series, which is unusual for the ICES. Although there are reasons for considering it a stock at risk, the indicator rules were applied in a way that was not entirely correct.

(c) Economic indicators

For reasons of data protection, no economic data can be published with respect to this segment.

(d) Overall assessment

No clear assessment can be made for this segment. The technical indicator is good and the SHI is close to 1. One stock at risk is fished.

General comments on the indicators

1. Technical indicator

The technical indicator has been indicated for all segments except mussel dredging.

The calculated values are not very meaningful for the individual size categories as there are often only one to four vessels registered in each segment. Mussel dredging nevertheless achieved balanced and good values. The relative exploitation of sea days is explained in more detail above.

2. Biological indicators

The biological indicator results are summarised in **Annex 4**.

Two biological indicators were calculated by the STECF to assess the extent to which the various fleet segments are dependent on overfished stocks, and the degree to which their fishing activities affect stocks beyond biologically safe limits. These indicators are the ‘sustainable harvest indicator’ (SHI) and the ‘stocks-at-risk indicator’ (SAR). The indicators relate to catches and fishing mortality in 2016 and the state of stocks as at the beginning of 2017, since the results of the 2017 stock assessments were not yet available when this fleet report was submitted.

The 2016 sustainable harvest indicator for fleet segments TTBB VL40XX, TM VL 1218, TM VL1824 and TM VL2440 was calculated by Germany, since no calculations are available from the STECF for these segments. The SAR indicators for 2016 were also calculated by Germany as they were not available at the time of submitting the fleet report. The SAR indicators for 2015 are also discussed in this report for some segments where the STECF assessments are disputed.

2.1 Sustainable harvest indicator (SHI)

The SHI values for the various segments are only included in the fleet report if the share of the landings value for a given segment that can be used to calculate the indicator exceeds 40 %.

The indicator values for the various segments range between 2.32 and 1.01. An SHI value > 1 indicates that the fleet segment concerned is, on average, economically dependent on stocks with a fishing mortality that is currently higher than the maximum sustainable yield ($F_C > F_{MSY}$).

It is a welcome development that the medium-sized and large trawlers (TM VL2440, TM VL40XX and DTS VL40XX) achieved some of the lowest SHI values, ranging from 1.01 to 1.24. Segment TM VL40XX, which at 1.01 has the lowest SHI value, can be held up as a good example as it was also the segment with the highest value of landings (28 % in 2016).

Overall, those segments that make a substantial contribution to German landings (TM VL2440, TM VL40XX and DTS VL40XX) achieved **good indicator values**. In 2015 and 2016 these segments accounted for **73 % and 74 %**, respectively, of landings in tonnes. For smaller vessels the values give more reasons for concern, but their landings in 2015 and 2016 were relatively small. The main problem identified can also be narrowed down geographically to the western Baltic Sea, and more specifically to fleet segments fishing western Baltic cod or western Baltic herring.

Generally speaking, however, this indicator should be viewed critically as the calculation relies on biological data (exploitation level) and economic data (prices fetched for individual fish species), collated with information on the composition of landings by individual fleet segments. This makes it complicated to interpret the results in terms of the biological status of the resources fished. The indicator is thus neither purely economic, nor purely biological. However, since the indicator is presented as a biological indicator, it might seem as if some German fleet segments were putting the fished stocks at risk. Current fishing pressure (fishing mortality F_C) is considered in relation to what is regarded as optimal fishing pressure (fishing mortality F_{MSY}), which appears to be a reasonable approach. This ratio is then offset against the value (€) of the landings of stocks and fleets, not against the weight of the landings. If account were taken of landed weight, together with fishing pressure, it would be possible to draw conclusions about the impact of individual fleet segments on various stocks. By contrast, the highly dynamic prices of certain fish species make it more difficult to interpret the biological impact.

The STECF has also levelled criticism against this indicator. In its assessment of the indicators used (STECF-15-02), it drew attention to various problems and shortcomings regarding the calculation and interpretation of the SHI. Below is a selection of key points quoted directly from the assessment:

- *The SHI, used in isolation, merely provides the average ratio of F/FMSY for those stocks caught by a specific fleet segment, weighted by the value of the landed catch from each of those stocks by that fleet segment. The resulting value simply indicates whether a particular fleet segment may be economically dependent on stocks that are estimated to be fished at a rate not consistent with fishing at FMSY.* ***To use this indicator to assess whether a particular fleet segment is in balance with its fishing opportunities could be wholly misleading.***
- *The SHI and its utility for assessing the balance between fishing capacity and fishing opportunities is not well understood;*
- *The SHI integrates information on the harvest rate of the stocks, the landings composition, and the prices of the various fish species, which makes it difficult to draw clear conclusions.*
- *The SHI may deliver a value of less than 1 for fleet segments which partly rely on individual stocks harvested at rates above F_{MSY}, hence masking instances of unsustainable fishing;*
- *The SHI may deliver a value of more than 1 for fleet segments which are not over-capacity with regards to their permitted harvest opportunities;*
- *The SHI may flag problems with a certain fleet segment despite the fact that the main problem lies with another fleet segment, which in turn may not necessarily be flagged;*
- *The limited number of fleet segments for which a representative indicator coverage can be achieved severely limits the usefulness of the SHI indicator.*

Germany supports the STECF's criticism of the SHI and would encourage the Commission to arrange for this indicator to be reviewed or adjusted as soon as possible.

2.2 Stocks at risk (SAR) indicator

The SAR indicator is a measure of the extent to which the activities of individual fleet segments impact on stocks in a poor condition (i.e. with a low spawning stock biomass). A stock must meet the following conditions to be classed as a stock at risk:

a) assessed as being below the B_{lim} ; or

b) subject to an advice to close the fishery, to prohibit directed fisheries, to reduce the fishery to the lowest possible level, or similar advice from an international advisory body, even where such advice is given on a data - limited basis; or *c) subject to a fishing opportunities regulation which stipulates that the fish should be returned to the sea unharmed or that landings are prohibited; or*

d) a stock which is on the IUCN 'red list' or is listed by CITES.

AND for which either:

1 - the stocks make up to 10% or more of the catches by the fleet segment; or

2 - the fleet segment takes 10% or more of the total catches from that stock.

An analysis of recent years shows that between 2009 and 2011 the number of stocks at risk fished on a large scale by German fleet segments increased from five to 12. However, a positive trend has since become apparent, with the number of stocks at risk falling constantly to six in 2014. As no SAR indicator values were available from the STECF for 2015, the values have been calculated or established by Germany. For 2015 six stocks at risk were again identified, five of which are cod stocks in the western Baltic Sea.

Although the STECF (STECF-15-02) also criticises the SAR indicator on several points and provides suggestions for improvement, its use as a biological indicator seems more appropriate as it does not take account of economic data.

3. Economic indicators

The economic indicators were calculated by the Joint Research Centre on the basis of figures provided by Germany under the Data Collection Framework (DCF). The pelagic trawler segment is dominated by a single business owner, which means that the associated figures cannot be published for data protection reasons.

The CR/BER indicator (current revenue to break-even revenue ratio) was calculated taking account of the opportunity costs of capital. In Germany's case leaving out the opportunity cost would not make any notable difference due to the low interest rate. This indicator includes depreciation values that are significantly higher than the figures actually applied by businesses. This is due to the method laid down for determining the value of the vessels ('perpetual inventory method', PIM), which results in considerable overestimation. A rising trend can be observed in relation to most fleet segments.

The way the vessels are valued also strongly affects the return on investment (RoFTA) indicator. The actual value of the vessels and the costs actually incurred by the businesses are usually lower than the mathematical depreciation levels and opportunity costs embedded in the indicators. Therefore, the indicator is not well suited to comprehensively assessing the balance between fleet capacity and fishing opportunities.

Unfortunately, the guidelines make no provision for assessing this on the basis of an indicator which is not linked to the value of the vessels.

Apart from the fact that the absolute indicator values are not particularly meaningful for the reasons outlined above, it should be noted that smaller vessels using mainly passive fishing gear (PG<12 m) often fail to break even. However, it needs to be taken into account that many vessels in these segments are not primarily operated for commercial reasons but are used for amateur fishing or in the context of a side business. Different cost structures not related to the balance between fishing opportunities and capacity are at play here. Moreover, it should be borne in mind that these vessels account for a very small share of German catches and that the quantities fished are in any case limited by technical constraints. Also, a notable portion of their catches consists of fresh water species for which there is no quota and which are not subject to EU quota management. Any form of overfishing by these vessels can thus be technically ruled out.

4. Overall assessment of the balance

Overall, in Germany's view, fishing capacity and fishing opportunities are well balanced in the main fleet segments with the biggest share of catches. This is also reflected, in particular, by the fact that fishing opportunities allocated to German fisheries under EU law are generally not exceeded.

5. Action plan to redress structural imbalances in the German fishing fleet based on the indicator results

Problems were identified in relation to small-scale coastal fishing in particular. However, such fishing typically involves part-time fishermen whose catches account for a very small portion of total catches. The economic indicators are not particularly meaningful for this segment, as many of those involved do not engage in fishing with a view to maximising profit. Furthermore, this segment has been constantly shrinking in recent years. Irrespective of the indicators, it can be assumed that the small size and thus the low fishing capacity of these vessels make it highly unlikely that they could be the cause of any overfishing.

The indicator values for the larger vessels were more positive. The economic situation has fluctuated considerably in recent years, but this is nothing out of the ordinary. This cannot be taken as a sign of permanent overcapacity in an economic sense. Moreover, there are some issues with the methods used that lead to an overly negative assessment of the economic situation. An action plan has been in place for segments PG VL1012, DFN VL1218, DTS VL1012, DTS VL1218, DTS VL1824 and DTS VL2440 since the 2014 reporting period.

Segment PG VL0010 was included in the 2016 action plan due to its dependence on cod stocks in the western Baltic Sea, the condition of which has deteriorated sharply (see section 1.A.ii). Due to the positive indicators for segments DFN VL1218 and DTS VL2440, these are not included in the action plan for the 2016 report. Segment DTS VL1824 is on a positive trend and is included in the action plan only on account of the biological indicators. For segments PG VL0010, PG VL1012, DTS VL1012 and DTS VL1218, further measures have been launched, including a scrapping campaign in 2017 aimed at reducing fleet capacity. As a result, a total of six vessels were scrapped in segment DTS VL1218, with an overall fishing capacity of 198 GT and 1 178 kW. This means that quotas can be allocated to fishing businesses with a need for them in 2018, and that young fishermen wishing to set up a business can be supported in their fishing activities in the future. The quotas involved are 32.2 tonnes of western Baltic cod, 108.1 tonnes of eastern Baltic cod, 100.3 tonnes of western Baltic herring and 6.5 tonnes of Baltic sprat. Any impact of this measure on the relevant indicators will only make itself felt after 2018.

An updated action plan is enclosed with this report.

Annex 1: Overview of stocks fished in 2017 by vessels in the individual fleet segments. The figures in the table correspond to landings in tonnes. Stocks are only listed if catches were ≥ 100 tonnes (≥ 500 tonnes in the case of TM VL40XX). + = Catches in DRB segments not shown for data protection reasons

Fished stock				**Segment**									
Code	**ICES/NAFO area**	**Stock**	**PG VL0010**	**PG VL1012**	**DFN VL1218**	**DFN VL2440**	**DRB VL1218**	**DRB VL2440**	**DRB VL 40XX**	**TBB VL1218**	**TBB VL1824**	**TBB VL2440**	**TBB VL40XX**
ANF	SA 4, 6, Div. 3a	Anglerfish				980							
ARU	Div. 5b, 6a	Greater silver smelt											
ARY	6a (North)	Argentine											
COD	SA 1, 2	North-east Arctic cod											
COD	SD 22-24	Western Baltic cod	318	190									
COD	SD 24-32	Eastern Baltic cod											
COD	SA 4, Div. 7d, SD 20	North Sea cod				116							
COD	SA 14, NAFO Div. 1D	Cod, east and south Greenland											
CSH	Div. 4b, c	North Sea Crangon								4 678	3 898	121	
DAB	SD 22-24	Baltic Sea dab											
FLE	SD 22-23	Belt Sea and Øresund flounder	159										
FLE	SD 24-25	Flounder west of Bornholm and in the central south-western Baltic Sea	223	157									
GHL	SA 5, 6, 12, 14	Greenland halibut off Iceland, Faeroe Islands, western Scotland, East Greenland											
GHL	NAFO Div. 1C	West Greenland halibut											
HAD	SA 4, Div. 6a, SD 20	North Sea haddock											
HAD	SA 1, 2	North-east Arctic haddock											
HER	SD 22-24	Western Baltic herring	2 185	1 723	463								
HER	SD 25-29, 32	Eastern Baltic herring											
HER	SA 4, Div. 3a, 7d	North Sea herring (incl. Eastern Channel)											
HER	SA 1, 2, 5, Div. 4a, 14a	Atlanto-Scandian herring											
HKE	SA 4, 6, 7, Div. 3a, 8a-b, 8d	Hake (northern stock)											

HOM	SA 8, Div. 2a, 4a, 5b, 6a, 7a-c,e-k	North-east Atlantic horse mackerel											
HOM	Div. 3a, 4b,c, 7d	North Sea horse mackerel											
JAX	FAO area 34	Eastern central Atlantic horse mackerel											
MAC	SA 1-8, 14, Div. 9a	North-east Atlantic mackerel											
MAS	FAO area 34	Japanese mackerel, eastern central Atlantic											
MUS	Div. 4b	North Sea mussels						+	+			1 673	1 199
MUS	Div. 3a, 3b-d SD 22-24	Western Baltic mussels					+						
NEP	SA 4, Div. 3a	North Sea *Nephrops*											
PIL	FAO area 34	Eastern central Atlantic sardine											
PIL	SA 7	Sardine (southern Celtic Sea, English Channel)											
PLE	SA 4, SD 20	North Sea plaice										1 078	257
PLE	SD 21-23	Plaice (Kattegat, Belt Sea and Øresund)	147										
POK	SA 1, 2	North-east Arctic saithe											
POK	SA 4, 6, Div. 3a	North Sea saithe											
POL	SA 4, Div. 3a	North Sea pollack											
REB	SA 14, Div. 5 a	Redfish (*S. mentella)* Greenland and Iceland shelf + Irminger Sea											
REB	SA 1, 2	North-east Arctic redfish (*S. mentella*)											
REG	SA 5, 6, 12, 14	Redfish (*S. norvegicus)*) off Iceland, Faeroe Islands, western Scotland, East Greenland											
SAN	SA 4	North Sea sandeel											
SOL	SA 4	North Sea sole										532	
SPR	SA 4	North Sea sprat											
SPR	SD 22-32	Baltic sprat											
TUR	SA 4	North Sea turbot										123	
WHB	SA 1-9, 12, 14	North-east Atlantic Blue whiting											
WHG	Div. 3a	Whiting (Skagerrak, Kattegat)											

Annex 1 (cont.)

Fished stock			Segment									
Code	ICES/NAFO area	Stock	DTS VL1012	DTS VL1218	DTS VL1824	DTS VL2440	DTS VL40XX	TM VL1218	TM VL1824	TM VL2440	TM VL40XX	Number Segments
ANF	SA 4, 6, Div. 3a	Anglerfish										1
ARU	Div. 5b, 6a	Greater silver smelt									583	1
ARY	6a (North)	Argentine									785	1
COD	SA 1, 2	North-east Arctic cod					5 969					1
COD	SD 22-24	Western Baltic cod		318	257	104						5
COD	SD 24-32	Eastern Baltic cod			115			112				2
COD	SA 4, Div. 7d, SD 20	North Sea cod				1 938	204					3
COD	SA 14, NAFO Div. 1D	Cod, east and south Greenland					505					1
CSH	Div. 4b, c	North Sea Crangon										3
DAB	SD 22-24	Baltic Sea dab		451	195							2
FLE	SD 22-23	Belt Sea and Øresund flounder		182	110							3
FLE	SD 24-25	Flounder west of Bornholm and in the central south-western Baltic Sea			361							3
GHL	SA 5, 6, 12, 14	Iceland, Faeroe Islands, western Scotland, East Greenland					4 411					1
GHL	NAFO Div. 1C	West Greenland halibut					1 861					1
HAD	SA 4, Div. 6a, SD 20	North Sea haddock				608						1
HAD	SA 1, 2	North-east Arctic haddock					155					1
HER	SD 22-24	Western Baltic herring	364	1 044	591			1 875	3 629	3 050		9
HER	SD 25-29, 32	Eastern Baltic herring								1 537	2 052	2
HER	SA 4, Div. 3a, 7d	North Sea herring (incl. Eastern Channel)								1 355	42 630	2
HER	SA 1, 2, 5, Div. 4a, 14a	Atlanto-Scandian herring									5 164	1
HKE	SA 4, 6, 7, Div. 3a, 8a-b, 8d	Hake (northern stock)				670						1
HOM	SA 8, Div. 2a, 4a, 5b, 6a, 7a-c,e-k	North-east Atlantic horse mackerel									7 058	1
HOM	Div. 3a, 4b,c, 7d	North Sea horse mackerel									962	1
JAX	FAO area 34	Eastern central Atlantic horse mackerel									1 312	1

MAC	SA 1-8, 14, Div. 9a	North-east Atlantic mackerel									24 598	1
MAS	FAO area 34	Japanese mackerel, eastern central Atlantic									1 557	1
MUS	Div. 4b	North Sea mussels										4
MUS	Div. 3a, 3b-d SD 22-24	Western Baltic mussels										1
NEP	SA 4, Div. 3a	North Sea *Nephrops*			722	183						2
PIL	FAO area 34	Eastern central Atlantic sardine									21 505	1
PIL	SA 7	Sardine (southern Celtic Sea, English Channel)									1 096	1
PLE	SA 4, SD 20	North Sea plaice			925	385						4
PLE	SD 21-23	Plaice (Kattegat, Belt Sea and Øresund)		414	215							3
POK	SA 1, 2	North-east Arctic saithe					1 154					1
POK	SA 4, 6, Div. 3a	North Sea saithe				3 530	4 385					2
POL	SA 4, Div. 3a	North Sea pollack				158	105					2
REB	SA 14, Div. 5 a	Redfish (*S. mentella)* Greenland and Iceland shelf + Irminger Sea					1 078				734	2
REB	SA 1, 2	North-east Arctic redfish (*S. mentella*)									761	1
REG	SA 5, 6, 12, 14	Redfish (*S. norvegicus)*) off Iceland, Faeroe Islands, western Scotland, East Greenland					558					2
SAN	SA 4	North Sea sandeel								752	5 798	2
SOL	SA 4	North Sea sole										1
SPR	SA 4	North Sea sprat								2 705	3 264	2
SPR	SD 22-32	Baltic sprat		459	277				142	4 793	7 717	5
TUR	SA 4	North Sea turbot										1
WHB	SA 1-9, 12, 14	North-east Atlantic Blue whiting									45 486	1
WHG	Div. 3a	Whiting (Skagerrak, Kattegat)		195								1

Annex 2: Development of stocks fished by vessels from the various fleet segments in 2016. Stocks are only listed if catches were ≥ 100 tonnes (≥ 500 tonnes in the case of TM VL40XX)

Segment	Fished stock	Stock status at start of 2016
PG VL0010	Western Baltic cod Belt Sea and Øresund flounder Flounder west of Bornholm and in the central south-western Baltic Sea Western Baltic herring Kattegat, Belt Sea and Øresund plaice	SSB < B_{lim} , F_{curr} > F_{MSY} No classification possible No classification possible SSB < MSY $B_{trigger}$, F_{curr} > F_{MSY} Full reproductive capacity, Fcurr < F_{MSY}
PG VL1012	Western Baltic cod Flounder west of Bornholm and in the central south-western Baltic Sea Western Baltic herring	SSB < B_{lim}, F_{curr} > F_{MSY} No classification possible SSB < MSY $B_{trigger}$, F_{curr} > F_{MSY}
DFN VL1218	Western Baltic herring	SSB < MSY $B_{trigger}$, F_{curr} > F_{MSY}
DFN VL2440	North Sea, Celtic Sea and Western Scotland anglerfish North Sea cod	No classification possible Full reproductive capacity, Fcurr > F_{MSY}
DRB VL1218	Western Baltic mussels	No ICES stock assessment
DRB VL2440	North Sea mussels	No ICES stock assessment
DRB VL40XX	North Sea mussels	No ICES stock assessment
TBB VL1218	North Sea Crangon	No ICES stock assessment
TBB VL1824	North Sea Crangon	No ICES stock assessment
TBB VL2440	North Sea Crangon North Sea plaice North Sea sole North Sea turbot North Sea mussels	No ICES stock assessment Full reproductive capacity, F_{curr} = F_{MSY} Full reproductive capacity, F_{curr} > F_{MSY} SSB > MSY $B_{trigger\ proxy}$, $F_{curr\ rel}$ < $F_{MSY\ proxy}$ No ICES stock assessment
TBB VL40XX	North Sea plaice North Sea mussels	Full reproductive capacity, F_{curr} = F_{MSY} No ICES stock assessment
DTS VL1012	Western Baltic herring	SSB < MSY $B_{trigger}$, F_{curr} > F_{MSY}
DTS VL1218	Baltic Sea dab Baltic sprat Belt Sea and Øresund flounder Western Baltic cod Western Baltic herring Kattegat, Belt Sea and Øresund plaice Skagerrak and Kattegat whiting	No classification possible Full reproductive capacity, F_{curr} < F_{MSY} No classification possible SSB < B_{lim}, F_{curr} > F_{MSY} SSB < MSY $B_{trigger}$, F_{curr} > F_{MSY} Full reproductive capacity, F_{curr} < F_{MSY} No classification possible
DTS VL1824	Baltic Sea dab Baltic sprat Belt Sea and Øresund flounder Eastern Baltic cod North Sea Norway lobster North Sea plaice Flounder west of Bornholm and in the central south-western Baltic Sea Western Baltic cod Western Baltic herring Kattegat, Belt Sea and Øresund plaice	No classification possible Full reproductive capacity, F_{curr} < F_{MSY} No classification possible No classification possible Many sub-populations with varying stock status Full reproductive capacity, F_{curr} = F_{MSY} No classification possible SSB < B_{lim}, F_{curr} > F_{MSY} SSB < MSY $B_{trigger}$, F_{curr} > F_{MSY} Full reproductive capacity, F_{curr} < F_{MSY}
DTS VL2440	Western Baltic cod North Sea cod North Sea haddock North Sea saithe	SSB < B_{lim}, F_{curr} > F_{MSY} Full reproductive capacity, F_{curr} > F_{MSY} Full reproductive capacity, F_{curr} > F_{MSY} Full reproductive capacity, F_{curr} < F_{MSY}

	North Sea plaice	Full reproductive capacity, $F_{curr} = F_{MSY}$
	North Sea hake (northern stock)	Full reproductive capacity, $F_{curr} <= F_{MSY}$
	North Sea Norway lobster	Many sub-populations with varying stock status
		No classification possible
	North Sea pollack	
DTS VL40XX	North Sea cod	Full reproductive capacity, $F_{curr} > F_{MSY}$
	North-east Arctic cod	Full reproductive capacity, $F_{curr} < F_{MSY}$
	Greenland cod	No classification possible
	North Sea pollack	No classification possible
	North Sea saithe	Full reproductive capacity, $F_{curr} < F_{MSY}$
	North-east Arctic saithe	Full reproductive capacity F_{MSY} not defined
	North-east Arctic haddock	Full reproductive capacity, $F_{curr} < F_{MSY}$
	East Greenland/Iceland halibut	Full reproductive capacity, $F_{curr} > F_{MSY}$
	West Greenland halibut (NAFO)	No classification possible
	Redfish (*S. mentella)* Greenland and Iceland shelf + Irminger Sea	SSB < B_{lim}, $F_{curr} > F_{MSY}$ (Irminger Sea), No classification possible for East Greenland
	North-east Arctic redfish (*S. mentella*)	No classification possible
	Redfish (*S. norvegicus)*) off Iceland, Faeroe Islands, western Scotland, East Greenland	Full reproductive capacity, $F_{curr} > F_{MSY}$
TM VL1218	Eastern Baltic cod	No classification possible
	Western Baltic herring	SSB < MSY $B_{trigger}$, $F_{curr} > F_{MSY}$
TM VL1824	Western Baltic herring	SSB < MSY $B_{trigger}$, $F_{curr} > F_{MSY}$
TM VL2440	Eastern Baltic herring	Full reproductive capacity, $F_{curr} < F_{MSY}$
	North Sea herring (incl. Eastern Channel)	Full reproductive capacity, $F_{curr} < F_{MSY}$
	Western Baltic herring	SSB < MSY $B_{trigger}$, $F_{curr} > F_{MSY}$
	Baltic sprat	Full reproductive capacity, $F_{curr} < F_{MSY}$
	North Sea sprat	Full reproductive capacity, $F_{curr} > F_{CAP}$
	North Sea sandeel	Many sub-populations with varying stock status
TM VL40XX	Atlanto-Scandian herring	SSB < MSY $B_{trigger}$, $F_{curr} < F_{MSY}$
	North Sea herring (incl. Eastern Channel)	Full reproductive capacity, $F_{curr} < F_{MSY}$
	Eastern Baltic herring	Full reproductive capacity, $F_{curr} < F_{MSY}$
	Baltic sprat	Full reproductive capacity, $F_{curr} < F_{MSY}$
	North Sea sprat	Full reproductive capacity, $F_{curr} > F_{CAP}$
	North-east Atlantic mackerel	Full reproductive capacity, $F_{curr} > F_{MSY}$
	Blue whiting	Full reproductive capacity, $F_{curr} > F_{MSY}$
	North-east Atlantic greater silver smelt	No classification possible
	Argentine 6a North	No classification possible
	North Sea horse mackerel	No classification possible
	North-east Atlantic horse mackerel	SSB < MSY $B_{trigger}$, $F_{curr} < F_{MSY}$
	Eastern central Atlantic horse mackerel	No classification possible
	Deep-sea redfish (*S. mentella*) Irminger Sea	SSB < B_{lim}, $F_{curr} > F_{MSY}$
	North-east Arctic redfish (*S. mentella*)	No classification possible
	North Sea sandeel	Many sub-populations with varying stock status
		No classification possible
	Japanese mackerel, eastern central Atlantic	No classification possible
	Eastern central Atlantic sardine	No classification possible
	Biscay, Celtic Sea, English Channel sardine	

Annex 3: Overview of capacity changes in 2017

Status of the German fishing fleet as at 31.12.2016

	Number	GT	kW
Small-scale coastal fishing vessels < 12 m	**1 099**	**2 678**	**27 166**
VL0010 PG	1 030	1 934	21 092
VL1012 PG	69	744	6 074
Passive > 12 m	**14**	**1 319**	**3 569**
VL1218 DFN	7	175	1 099
VL1824 DFN	1	68	132
VL2440 DFN	6	1 076	2 338
Trawlers up to 40 m	**67**	**6 378**	**16 512**
VL0010 DTS	0	0	0
VL1012 DTS	10	156	1 382
VL1218 DTS	24	754	4 245
VL1824 DTS	13	1 444	2 824
VL2440 DTS	11	2 893	5 635
VL1218 TM	2	122	439
VL1824 TM	4	354	882
VL2440 TM	3	655	1 105
Beam trawlers	**213**	**10 708**	**46 261**
VL0010 TBB	12	37	482
VL1012 TBB	5	63	515
VL1218 TBB	115	3 596	22 285
VL1824 TBB	70	4 393	15 383
VL2440 TBB	9	1 828	5 743
VL40XX TBB	2	791	1853
Deepsea pelagic trawlers > 40 m	**5**	**26 922**	**23 537**
VL40XX TM	5	26 922	23 537
Deepsea demersal trawlers > 40 m	**7**	**12 898**	**15 724**
VL40XX DTS	7	12 898	15 724
Mussel dredgers	**8**	**1 839**	**4 848**
VL1218 DRB	1	53	252
VL2440 DRB	5	961	2 657
VL40XX DRB	2	825	1 939
Total	**1 413**	**62 742**	**137 617**

Status of the German fishing fleet as at 31.12.2017

	Number	GT	kW
Small-scale coastal fishing vessels < 12 m	**1 069**	**2 634**	**26 707**
VL0010 PG	1 002	1 887	20 778
VL1012 PG	67	747	5 929
Passive > 12 m	**16**	**1 380**	**3 717**
VL1218 DFN	9	236	1 247
VL1824 DFN	1	68	132
VL2440 DFN	6	1 076	2 338
Trawlers up to 40 m	**54**	**5 756**	**14 096**
VL0010 DTS	0	0	0
VL1012 DTS	6	94	744
VL1218 DTS	17	516	2 954
VL1824 DTS	12	1 377	2 897
VL2440 DTS	9	2 597	4 855
VL1218 TM	3	163	659
VL1824 TM	4	354	882
VL2440 TM	3	655	1 105
Beam trawlers	**215**	**10 773**	**46 124**
VL0010 TBB	13	38	487
VL1012 TBB	7	78	676
VL1218 TBB	113	3 565	22 083
VL1824 TBB	69	4 173	15 016
VL2440 TBB	11	2 128	6 009
VL40XX TBB	2	791	1 853
Deepsea pelagic trawlers > 40 m	**5**	**26 922**	**23 537**
VL40XX TM	5	27 136	24 397
Deepsea demersal trawlers > 40 m	**7**	**15 417**	**16 394**
VL40XX DTS	7	15 417	16 394
Mussel dredgers	**7**	**1 836**	**4 646**
VL1218 DRB	1	53	252
VL2440 DRB	3	581	1 381
VL40XX DRB	3	1 202	3 013
Total	**1 373**	**64 718**	**135 221**

Absolute changes in 2017 on previous year

	Number	GT	kW
Small-scale coastal fishing vessels < 12 m	**-30**	**-44**	**-459**
VL0010 PG	-28	-47	-314
VL1012 PG	-2	3	-145
Passive > 12 m	**2**	**61**	**148**
VL1218 DFN	2	61	148
VL1824 DFN	0	0	0
VL2440 DFN	0	0	0
Trawlers up to 40 m	**-13**	**-622**	**-2 416**
VL0010 DTS	0	0	0
VL1012 DTS	-4	-62	-638
VL1218 DTS	-7	-238	-1 291
VL1824 DTS	-1	-67	73
VL2440 DTS	-2	-296	-780
VL1218 TM	1	41	220
VL1824 TM	0	0	0
VL2440 TM	0	0	0
Beam trawlers	**2**	**65**	**-137**
VL0010 TBB	1	1	5
VL1012 TBB	2	15	161
VL1218 TBB	-2	-31	-202
VL1824 TBB	-1	-220	-367
VL2440 TBB	2	300	266
VL40XX TBB	0	0	0
Deepsea pelagic trawlers > 40 m	**0**	**0**	**0**
VL40XX TM	0	214	860
Deepsea demersal trawlers > 40 m	**0**	**2 519**	**670**
VL40XX DTS	0	2 519	670
Mussel dredgers	**-1**	**-3**	**-202**
VL1218 DRB	0	0	0
VL2440 DRB	-2	-380	-1 276
VL40XX DRB	1	377	1.074
Total	**-40**	**1 976**	**-2 396**

Annex 4: Sustainable harvest indicator (SHI) for 2016 The rows highlighted in grey were not included in SHI because less than 40 % of the fleet's landing value was used when calculating the indicator. Values marked with an 'a' are based on a calculation made by Germany, since no STECF assessment was available.

Fleet segment	Value of landings by a fleet segment with available F_c/F_{MSY}	Stocks used to calculate SHI	Number of stocks used to calculate SHI	Number of overfished stocks in indicator (marked with *)	SHI	Percentage of a fleet's landing value included in the indicator	Value of total landings by fleet
DTS VL1218	1 502 353	spr.27.22-32, sol.27.20-24, ple.27.21-23, *mac.27.nea, *her.27.20-24, *cod.27.22-24	6	3	**2.32**	72	2 096 642
PG VL1012	1 563 003	spr.27.22-32, sol.27.20-24, ple.27.21-23, *mac.27.nea, *her.27.20-24, *cod.27.22-24	6	3	**2.28**	76	1 931 846
DTS VL1012	376 266	spr.27.22-32, ple.27.21-23, *mac.27.nea, *her.27.20-24, *cod.27.22-24	5	3	**2.06**	72	519 638
TM VL 1218	560 627	spr.27.22-32, *her.27.20-24, *cod.27.22-24	3	2	**1.52**	87	643 676
DTS VL1824	3 929 388	*whg.27.47d, spr.27.22-32, *sol.27.4, sol.27.20-24, pok.27.3a46, ple.27.420, ple.27.21-23, nep.fu.8, *nep.fu.6, *mac.27.nea, hke.27.3a46-8abd, *her.27.20-24, *had.27.46a20, *cod.27.47d20, *cod.27.22-24	15	8	**1.47**	63	9 119 303
TM VL1824	1 067 774	spr.27.22-32, *her.27.20-24, *cod.27.22-24	3	2	**1.31**	73	1 469 504
TM VL2440	3 340 899	*spr.27.4, spr.27.22-32, her.27.1-24a514a, her.27.3a47d, her.27.25-2932, *her.27.20-24	6	2	**1.24**	95	3 514 247

DFN VL1218	1 134 514	*sol.27.4, sol.27.20-24, pok.27.3a46, ple.27.420, ple.27.21-2, *mac.27.nea, *her.27.20-24, *had.27.46a20, *cod.27.47d20, *cod.27.22-24, *bss.27.4bc7ad-h	11	7	**1.15**	96	1 184 813
DTS VL40XX	33 402 635	*whg.27.47d, *usk.27.5a14, reg.27.561214, *reb.2127.dp, pok.27.3a46, pok.27.1-2, ple.27.420, ple.27.21-23, *mac.27.nea, lez.27.4a6a, hom.27.2a4a5b6a7a-ce-k8, hke.27.3a46-8abd, her.27.1-24a514a, *had.27.46a20, had.27.1-2, *ghl.27.561214, dgs.27.nea, *cod.27.47d20, cod.27.1-2'	19	7	**1.17**	77	46 813 469
DTS VL2440	13 832 444	*whg.27.47d, *sol.27.4, pok.27.3a46, ple.27.420, ple.27.21-23, nep.fu.8 *nep.fu.6, *mac.27.nea, lez.27.4a6a, hom.27.2a4a5b6a7a-ce-k8, hke.27.3a46-8abd, her.27.3a47d, *her.27.20-24, her.27.1-24a514a, *had.27.46a20, *cod.27.47d20, *cod.27.22-24	17	8	**1.09**	87	17 203 865
TBB VL2440	9 670 137	*whg.27.47d, *sol.27.4, pok.27.3a46, ple.27.420, nep.fu.8, *nep.fu.6, *mac.27.nea, hke.27.3a46-8abd, *cod.27.47d20	9	5	**1.04**	78	11 461 454
TM VL40XX	56 560 107	whg.27.7b-ce-k, *whg.27.47d, *whb.27.1-91214, spr.27.4, spr.27.22-32, pok.27.3a46, ple.27.21-23, nop.27.3a4, *mac.27.nea, hom.27.2a4a5b6a7a-ce-k8, hke.27.3a46-8abd, *her.27.irls, her.27.6a7bc, her.27.3a47d, *her.27.28, her.27.25-2932, *her.27.20-24, her.27.1-24a514a, *had.27.46a20, dgs.27.nea, *cod.27.22-24, *bss.27.4bc7ad-h	22	9	**1.01**	80	70 409 226
TBB VL40XX	1 704 779	tur.27.4, *sol.27.4, ple2.27.420, *cod.27.47d20	4	2	**1.01**	55	3 105 911

TBB VL1218	19 102	*sol.27.4, ple.27.420, ple.27.21-23, hke.27.3a46-8abd, her.27.3a47d, *cod.27.47d20, *cod.27.22-24	7	3	**2.61**	0.09	24 604 281
PG VL0010	1 974 450	sol.27.20-24, ple.27.21-23, *mac.27.nea, her.27.3a47d, *her.27.20-24, *cod.27.22-24	6	3	**2.41**	39.8	5 272 704
DFN VL2440	780 703	*whg.27.47d, *sol.27.4, sol.27.20-24, pok.27.3a46, ple.27.420, ple.27.21-23, hke.27.3a46-8abd, *had.27.46a20, *cod.27.47d20, *bss.27.4bc7ad-h	10	5	**1.10**	13.6	1 594 533
TBB VL1824	1 169 458	*whg.27.47d, *sol.27.4, ple.27.420, ple.27.21-23, nep.fu.8, *nep.fu.6, hke.27.3a46-8abd,*had.27.46a20, *cod.27.47d20, *cod.27.22-24	10	6	**1.10**	6.1	25 239 230