27 May 2020

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 2019

1.A: Fleet description and development

i. Fleet description

As at 31.12.2019 the German fishing fleet comprised 1,308 fishing vessels, which is 21 vessels fewer than in the previous year. Moreover, engine power decreased by 2,110 kW and tonnage by 457 GT. In the description below the vessels have been broken down into seven groups.

Static net vessels < 12 m (PG VL0010, PG VL1012)
This is the largest segment of the German fishing fleet in terms of numbers, with 1,013 coastal fishing vessels less than 12 metres in length engaged in small-scale fishing. These vessels mainly operate with static nets in the Baltic Sea. About one third of the vessels in this segment (388) are managed as a side business. The fact that so many vessels are operated in the context of a side business, sometimes involving the use of a second or third vessel, leads to a low technical indicator value. The species fished are primarily herring and cod, but also include plaice, flounder, bream and roach.

The segment has shrunk by 13 vessels compared to the previous year and thus accounts for more than half of all vessels withdrawn in 2019. Engine power increased by 91 kW and tonnage by 4 GT.

Fishing vessels using passive fishing gear ≥ 12 m (FPO VL1218, FPO VL2440, DFN VL1218, DFN VL1824, DFN VL2440)
This segment is made up of vessels with an overall length of at least 12 metres using passive fishing gear. As at 31.12.2019 it included 15 vessels. Some of these vessels operate only in western waters, where they mainly fish anglerfish and Atlantic deep-sea red crab (*Chaceon affinis*). Vessels in this segment also fish in the western Baltic Sea (herring) and in the North Sea (anglerfish, cod and sole).

There were no changes in this segment in the reporting year. However, fishing capacity increased by 121 kW and 23 GT due to replacement measures.

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

As at 31.12.2019 there were a total of 53 vessels in the segment made up of trawlers with a total length of up to 40 metres. In the North Sea, these vessels mainly fished saithe, cod, haddock, Norway lobster, plaice and hake, while their main catches in the Baltic sea were of herring, cod, plaice, dab, flounder and sprat.

The number of vessels was reduced by one, yet fishing capacity increased by 943 GT and 1,057 kW due to the replacement of cutters.

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 play an important role in the German fishing industry. The listed vessels, whose engine power may not exceed 221 kW, operate in the flatfish protection zone. Common shrimp (CSH) is the main species targeted. Large beam trawlers fish across the entire North Sea, but mainly catch mussels and flatfish such as plaice and sole.

There are also 10 vessels in this segment 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 31.12.2019 the German fishing fleet comprised 209 beam trawlers with a total capacity of 10,581 GT and 45,063 kW. This represents a decrease in tonnage of 389 GT and in engine power of 1,537 kW. The number of vessels was reduced by six.

Deep-sea pelagic fisheries (TM VL40XX)

As at 31.12.2019 Germany had a total of four vessels in the deep-sea pelagic fisheries segment (total length of 40 metres or more). In assessing vessels in this segment it needs to be taken into account that it includes large deep-sea vessels exceeding 100 metres in length and up to 9,000 GT as well as significantly smaller deep-seas cutters. These vessels operated in a great many different areas. In the North Sea and in western British waters (ICES 4, 6a, 7) they mainly caught herring, horse mackerel, sand eel, blue whiting and mackerel. As in previous years, several trips were made to Mauritanian and Western Sahara waters (FAO areas 34-131), with catches mainly of sardine and Atlantic chub mackerel (*Scomber colias*). They also caught Baltic sprat and herring and fished in NEAFC areas (WHB, HER, MAC).

The number of vessels in this segment was reduced by one. Fishing capacity in 2019 was reduced by 713 GT and 1,595 kW due to the withdrawal of one small deep-sea cutter.

Deep-sea demersal fisheries (DTS VL40XX)

The deep-sea demersal fisheries segment was made up of five deep-sea vessels. These fished almost exclusively in the North Atlantic (including Svalbard, the Barents Sea, Greenland; ICES 1, 2 and 14, NAFO 1). The main catches in the northern North Sea, Norwegian waters and off Svalbard were of cod, saithe and redfish. Fishing in Greenland waters and in NEAFC areas targeted Greenland halibut, cod and redfish.

The number of vessels was reduced by two. Fishing capacity in 2019 was reduced by 947 GT and 1,537 kW due to the withdrawal of deep-sea cutters.

Mussel dredgers (DRB VL1218, DRB VL1824, DRB VL40XX)

A total of nine vessels belong to the mussel dredger segment. While these vessels mainly manage their own mussel farms, they also have the right – unlike pure fish farm vessels – to catch wild mussels.

As at 31.12.2019 the total number of vessels had increased by two. As a result, fishing capacity increased by 622 GT and 1,272 kW.

ii. Fisheries by fleet segment

The presentation below is based on DCF segments (Table 5B in Commission Implementing Decision (EU) 2016/1251). **Annex 1** sets out the fish stocks and invertebrate stocks fished by each segment in 2019. The stocks mentioned are the ones of greatest importance to the segment concerned. Stocks have chiefly been taken into account only if at least 100 tonnes were landed by vessels in the segment concerned in 2019, or at least 500 tonnes in the case of pelagic trawlers of more than 40 metres (TM VL40XX). For segments DFN VL1218 and DTS VL1012 landings of less than 100 tonnes were included for the main stocks, as no landings of more than 100 tonnes were reported in these segments.

Stock assessments (**Annex 2**) relate to 2018 for fishing mortality (F) and to the beginning of 2019 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 2019 will only become available in the course of 2020, after the deadline for submitting this fleet report. More recent data (collected in 2019) 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 terms of sea fishing, vessels in this segment mainly fished five Baltic Sea stocks in 2019. For western Baltic cod the spawning stock biomass (SSB) increased and, unlike in the previous year, was above B_{lim} (reduced reproductive capacity), but still below $MSY_{Btrigger}$. Fishing mortality F_C fell again and remained, as in 2018, at a sustainable level based on the precautionary approach, but still above F_{MSY}. At 492 tonnes, catches in this segment were considerably higher than in the previous year (260 tonnes). According to the latest ICES advice (September 2019), the state of the western Baltic cod stock has improved. The SSB has increased steadily since 2017 and is now just below $MSY_{Btrigger}$. Between 2015 and 2019 there was only one good year (2016), but as it was very good it currently supports virtually the entire fishery. If offspring production does not pick up again in the next few years, the medium to long-term prospects for this stock are poor. For western Baltic herring the spawning stock biomass (SSB) has been below B_{lim} and F_C for several years, and in 2018 also remained above F_{MSY} and F_{pa}. The condition of this stock is considered to be so poor that the ICES advised zero catches for 2020, as was also the case in the previous year. Catches in this segment amounted to 853 tonnes. Moreover, the outlook for this stock remains poor due to weak offspring production. Flounder is also important in this segment, with catches of the stock west of Bornholm and in the southwest central Baltic (152 tonnes) and the Belt Sea and Øresund stock (118 tonnes). There is no ICES-approved assessment for these stocks allowing their status to be given in relation to reference points, but F_C is below $F_{MSY\text{-}proxy}$. In addition, 230 tonnes of plaice were caught (Kattegat, Belt Sea and Øresund). This stock has full reproductive capacity and was fished at F_C above F_{MSY}. Flatfish catches and stocks have been increasing for years in the Baltic Sea and, at least in ICES area 22, now account for a high share of overall catches. Apart from the main marine species, catches in this segment in the Baltic Sea also included larger quantities of bream (457 tonnes), roach (437 tonnes), zander (167 tonnes) and European perch (105 tonnes).

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

Vessels in this segment mainly fished three Baltic Sea stocks in 2019. For western Baltic cod (310 tonnes) the spawning stock biomass (SSB) increased and, unlike in the previous year, was above B_{lim} but still below $MSY_{Btrigger}$. Fishing mortality F_C fell again and remained, as in 2018, at a sustainable level based on the precautionary approach, but still above F_{MSY}. According to the latest ICES advice (September 2019), the state of the western Baltic cod stock has improved. The SSB has increased steadily since 2017 and is now just below $MSY_{Btrigger}$. Between 2015 and 2019 there was only one good year (2016), but as it was very good it currently supports virtually the entire fishery. Unless offspring production picks up again in the next few years the prospects for this stock are poor. For western Baltic herring the spawning stock biomass (SSB) has been below B_{lim} and F_C for several years, and in 2018 also remained above F_{MSY} and F_{pa}. The condition of this stock is considered to be so poor that the ICES advised zero catches for 2020, as was also the case in the previous year. Catches by this segment amounted to

812 tonnes. Moreover, the outlook for this stock remains poor due to weak offspring production. In addition, 142 tonnes of plaice were caught (Kattegat, Belt Sea and Øresund). This stock has full reproductive capacity and was fished at F_C above F_{MSY}.

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

Vessels in this segment mainly fished western Baltic herring (41 tonnes) and North Sea cod (48 tonnes) in 2019. For western Baltic herring the spawning stock biomass (SSB) has been below B_{lim} and F_C for several years, and in 2018 also remained above F_{MSY} and F_{pa}. The condition of this stock is considered to be so poor that the ICES advised zero catches for 2020, as was also the case in the previous year. Moreover, the outlook for this stock remains poor due to weak offspring production. The North Sea cod stock is currently in a poor condition. The SSB has been falling since 2015 and was again below B_{lim} (reduced reproductive capacity) in 2018. Fishing mortality has increased further and was above F_{lim} in 2018.

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

In 2019 this segment mainly fished anglerfish (*Lophius piscatorius* and *L. budegassa*) in the northeast Atlantic (total catches: 1,513 tonnes). 946 tonnes were caught in ICES areas 4 and 6 and in Div.3a (anf.27.3a46), and 567 tonnes were caught in ICES area 7 (mon.27.78abd and ank.27.78abd). There are no reference points or targets for anglerfish (anf.27.3a46); however, qualitative ICES data shows a falling trend since 2017. As there are two species of anglerfish in ICES areas 7 and 8 (*L. budegassa* and *L. piscatorius*) and the species is not specified at landing (there is a combined TAC for both), both species have to be considered. The *L. piscatorius* stock (mon.27.78abd) is in a good condition with an SSB well above $MSY_{Btrigger}$ and F_C below F_{MSY} in 2018. No ICES classification is available for *L. budegassa* (ank.27.78abd), but F_C was below $F_{MSY\text{-}proxy}$ in 2018.

Mussel dredgers (DRB)

Vessels in this segment engaged in mussels growing in the North Sea. 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*, 35 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 (40 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 (4,276 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 (4,007 tonnes). There is no quota for this target species and no analytical stock calculation is made. In addition, 157 tonnes of plaice were caught in the North Sea. This stock has full reproductive capacity and was fished at F_C below F_{MSY}.

Beam trawlers 24-40 m (TBB VL2440)

Beam trawlers in this segment mainly caught mussels (611 tonnes), sole (307 tonnes), plaice (303 tonnes) and common shrimp (178 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}. There is no stock assessment for mussels and common shrimp.

Beam trawlers > 40 m (TBB VL40XX)

Beam trawlers in this segment mainly caught mussels (1,051 tonnes), plaice (231 tonnes) and sole (126 tonnes) in the North Sea. Plaice and sole have full reproductive capacity, with fishing mortality below F_{MSY} for plaice and above F_{MSY} for sole. There is no stock assessment for North Sea mussels.

Demersal trawlers 10-12 m (DTS VL1012)

Vessels in this segment mainly fished cod (58 tonnes) and herring (53 tonnes) in the western Baltic Sea. For western Baltic cod the spawning stock biomass (SSB) increased and, unlike in the previous year, was above B_{lim}, but still below $MSY_{Btrigger}$. Fishing mortality F_C fell again and remained, as in 2018, at a sustainable level based on the precautionary approach, but still above F_{MSY}. According to the latest ICES advice (September 2019), the state of the western Baltic cod stock has improved. The SSB has increased steadily since 2017 and is now just below $MSY_{Btrigger}$. Between 2015 and 2019 there was only one good year (2016), but as it was very good it currently supports virtually the entire fishery. Unless offspring production picks up again in the next few years the prospects for this stock are poor. For western Baltic herring the spawning stock biomass (SSB) has been below B_{lim} and F_C for several years, and in 2018 also remained above F_{MSY} and F_{pa}. The condition of this stock is considered to be so poor that the ICES advised zero catches for 2020, as was also the case in the previous year. Moreover, the outlook for this stock remains poor due to weak offspring production.

Demersal trawlers 12-18 m (DTS VL1218)

Vessels in this segment mainly fished cod (326 tonnes) and flounder (fle.27.2425: 121 tonnes) in the western Baltic and plaice (533 tonnes), flounder (fle.27.2223: 133 tonnes) and whiting

(167 tonnes) in the Kattegat, Belt Sea and Øresund. In addition, dab (304 tonnes) was caught across the Baltic Sea. For western Baltic cod the spawning stock biomass (SSB) increased and, unlike in the previous year, was above B_{lim}, but still below $MSY_{Btrigger}$. Fishing mortality F_C fell again and remained, as in 2018, at a sustainable level based on the precautionary approach, but still above F_{MSY}. According to the latest ICES advice (September 2019), the state of the western Baltic cod stock has improved. The SSB has increased steadily since 2017 and is now just below $MSY_{Btrigger}$. Between 2015 and 2019 there was only one good year (2016), but as it was very good it currently supports virtually the entire fishery. Unless offspring production picks up again in the next few years the prospects for this stock are poor. No classification of stock status is currently possible for dab, flounder and whiting, but for the two flounder stocks F_C was below $F_{MSY\text{-}proxy}$. Plaice has full reproductive capacity and F_C was above F_{MSY}.

Demersal trawlers 18-24 m (DTS VL1824)

Vessels in this segment mainly fished plaice (557 tonnes) and Norway lobster (557 tonnes) in the North Sea (functional unit 33: 356 tonnes, functional unit 5: 148 tonnes). In the western Baltic Sea, the main catches were of cod (558 tonnes), whiting (120 tonnes) and flounder (fle.27.2223: 114 tonnes). There were also catches of dab (168 tonnes) and plaice (114 tonnes) across the Baltic Sea. In addition, these vessels caught flounder (west of Bornholm and in the southwest central Baltic: 165 tonnes) and plaice in the Kattegat, Belt Sea and Øresund (396 tonnes). Of the main stocks fished, three have full reproductive capacity (North Sea plaice, Kattegat, Belt Sea and Øresund plaice and Baltic plaice). For western Baltic cod the spawning stock biomass (SSB) increased and, unlike in the previous year, was above B_{lim}, but still below $MSY_{Btrigger}$. According to the latest ICES advice (September 2019), the state of the western Baltic cod stock has improved. The SSB has increased steadily since 2017 and is now just below $MSY_{Btrigger}$. Between 2015 and 2019 there was only one good year (2016), but as it was very good it currently supports virtually the entire fishery. Unless offspring production picks up again in the next few years the prospects for this stock are poor. For Norway lobster, no stock status classification is possible for functional units 5 and 33, which are the stocks mainly fished. No ICES classification is available for the reproductive capacity of Baltic dab, the two flounder stocks (west of Bornholm and southwest central Baltic) or western Baltic whiting. For North Sea plaice, fishing mortality F_C was below F_{MSY}, for the two Baltic flounder stocks and Baltic plaice F_C was below $F_{MSY\text{-}proxy}$ and for western Baltic cod F_C was above F_{MSY}.

Demersal trawlers 24-40 m (DTS VL2440)

Vessels in this segment mainly fished saithe (5,826 tonnes), plaice (800 tonnes), cod (699 tonnes), hake (662 tonnes), haddock (325 tonnes), pollock (132 tonnes) and Norway lobster (functional unit 33: 111 tonnes) in the North Sea. In the western Baltic they mainly caught cod (193 tonnes), in addition to flounder west of Bornholm and in the southwest central Baltic (115 tonnes) and cod (144 tonnes) in the eastern Baltic. In addition, 139 tonnes of plaice were caught in the Kattegat, Belt Sea and Øresund. Of the main stocks fished, five have full

reproductive capacity (North Sea and Skagerrak plaice, Kattegat, Belt Sea and Øresund plaice, North Sea saithe and haddock and northern stock of hake).
The spawning stock biomass (SSB) is below $MSY_{Btrigger}$ for western Baltic cod and below B_{lim} for eastern Baltic and North Sea cod. There is no ICES classification for the reproductive capacity of the flounder stock, North Sea pollock and Norway lobster (functional unit 33).
Fishing mortality for North Sea plaice and the northern hake stock was below F_{MSY}. Fishing mortality F_C was at F_{MSY} for North Sea saithe and below $F_{MSY\text{-}proxy}$ for the flounder stock. For North Sea cod and haddock, western Baltic cod and Kattegat, Belt Sea and Øresund plaice fishing mortality was above F_{MSY}. The management status is unclear for North Sea pollock.

Demersal trawlers > 40 m (DTS VL40XX)

In the North Sea, vessels in this segment mainly fished saithe (1,212 tonnes). In the Barents Sea and the Norwegian Sea they mainly fished northeast Arctic cod (8,472 tonnes), saithe (1,351 tonnes), haddock (205 tonnes) and redfish (*S. mentella*, 442 tonnes). In the west Greenland NAFO area, 1,881 tonnes of Greenland halibut were caught. The main catches in ICES sub-area 14 on the east Greenland shelf and west of Iceland were Greenland halibut (4,481 tonnes), redfish (1,232 tonnes of *Sebastes mentella* and 815 tonnes of *S. norvegicus*) and cod (1,768 tonnes). Eight of the stocks fished have full reproductive capacity (northeast Arctic cod, saithe, haddock and *S. mentella* redfish, North Sea saithe, Greenland cod, Greenland halibut and *S. norvegicus* redfish off east Greenland/Iceland). There is no ICES classification of reproductive capacity for Greenland halibut off west Greenland and *S. mentella* redfish on the Greenland shelf.
Fishing mortality was below F_{MSY} for Greenland cod and North Sea saithe and above F_{MSY} for *S. norvegicus* redfish off east Greenland/Iceland, northeast Arctic cod and haddock and Greenland halibut off east Greenland/Iceland. For northeast Arctic saithe and redfish (*S. mentella*) F_{MSY} is not defined, and a classification is not possible for Greenland halibut off west Greenland and redfish (*S. mentella*) on the southeast Greenland shelf.

Pelagic trawlers 12-18 m (TM VL1218)

Vessels in this segment mainly fished herring (893 tonnes) in the western Baltic Sea and sprat (260 tonnes) across the Baltic Sea. For western Baltic herring the spawning stock biomass (SSB) has been below B_{lim} and F_C for several years, and in 2018 also remained above F_{MSY} and F_{pa}. The condition of this stock is considered to be so poor that the ICES advised zero catches for 2020, as was also the case in the previous year. Moreover, the outlook for this stock remains poor due to weak offspring production. In contrast, Baltic sprat has full reproductive capacity and F_C was above F_{MSY}.

Pelagic trawlers 18-24 m (TM VL1824)

Vessels in this segment mainly fished herring (1,026 tonnes) in the western Baltic Sea and sprat (182 tonnes) across the Baltic Sea. For western Baltic herring the spawning stock biomass

(SSB) has been below B_{lim} and F_C for several years, and in 2018 also remained above F_{MSY} and F_{pa}. The condition of this stock is considered to be so poor that the ICES advised zero catches for 2020, as was also the case in the previous year. Moreover, the outlook for this stock remains poor due to weak offspring production. In contrast, Baltic sprat has full reproductive capacity and F_C was above F_{MSY}.

Pelagic trawlers 24-40 m (TM VL2440)

Vessels in this segment mainly fished herring in the western Baltic Sea (1,708 tonnes). For western Baltic herring the spawning stock biomass (SSB) has been below B_{lim} and F_C for several years, and in 2018 also remained above F_{MSY} and F_{pa}. The condition of this stock is considered to be so poor that the ICES advised zero catches for 2020, as was also the case in the previous year. Moreover, the outlook for this stock remains poor due to weak offspring production.

Pelagic trawlers > 40 m (TM VL40XX)

Vessels in this segment mainly fished herring (37,369 tonnes), sand eel (area 1r: 3,717 tonnes), sprat (3,604 tonnes) and horse mackerel (905 tonnes) in the North Sea. They also caught 14,161 tonnes of Baltic sprat and 1,752 tonnes of eastern Baltic herring. The main catches in the northeast Atlantic were 37,710 tonnes of blue whiting, 16,644 tonnes of mackerel, 7,567 tonnes of horse mackerel, 954 tonnes of greater silver smelt and 672 tonnes of argentine. In addition, 4,142 tonnes of Atlanto-Scandian herring and 1,157 tonnes of *S. mentella* redfish were caught in the Norwegian Sea and 531 tonnes of redfish (deep pelagic stock) in the Irminger Sea. 12,537 tonnes of sardine and 3,705 tonnes of Atlantic chub mackerel (*Scomber colias*) were caught in the Eastern Central Atlantic (CECAF area).

Of the 16 stocks mentioned, eight have full reproductive capacity (North Sea herring, eastern Baltic herring, Atlanto-Scandian herring, Baltic sprat, North Sea sprat, northeast Atlantic blue whiting and mackerel and northeast Arctic (*S. mentella*) redfish, and for five stocks a classification is not available or is outdated (sardine and Atlantic chub mackerel in the central eastern Atlantic, North Sea horse mackerel, greater silver smelt and argentine). The spawning stock biomass of northeast Atlantic horse mackerel is below MSY $B_{trigger}$, and North Sea sprat has full reproductive capacity with a spawning stock biomass above MSY $B_{escapement}$. In contrast, SSB was below MSY $B_{escapement}$ for sand eel (Area 1r) and below B_{lim} (relative) for pelagic redfish in the Irminger Sea. For short-lived species such as North Sea sprat and sand eel, which are managed by way of an escapement strategy, F is not relevant and F_{MSY} is therefore not defined. Fishing mortality F_C was below F_{MSY} for North Sea herring and Atlanto-Scandian herring, below $F_{MSY\text{-}proxy}$ for greater silver smelt and above F_{MSY} or $F_{MSY\text{-}proxy}$ for eastern Baltic herring, Baltic sprat, Atlantic mackerel, blue whiting and North Sea and northeast Atlantic horse mackerel.

iii. Fleet development

The German fleet was reduced by 21 vessels (-1.6 %) in the 2019 reporting year. Total capacity fell by 467 GT (-0.8%) in tonnage and 2,110 kW (-1.6%) in engine power.
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

Regulation (EC) No 2016/2336 imposed fishing effort regulations on Germany for deep-sea species.

The overall fishing capacity allocated to Germany for fisheries targeting deep-sea species was not exceeded in 2019. 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-sea red crab (KEF).

ii. Impact of fishing effort restrictions on fishing capacity

German fishing vessels have no longer been subject to kW-day regulation in the North Sea and adjacent areas since Regulations (EC) Nos 676/2007 and 1342/2008 were repealed by Regulation (EU) 2018/973 of 4 July 2018.
The aggregate fishing capacity measured in gross tonnage and in kilowatts of all EU fishing vessels to which a Member State has issued a targeted fishing authorisation may not at any time exceed the aggregate fishing capacity of the vessels of that Member State in the period from 2009 to 2011, whichever year provides the higher figure.
The resulting total fishing capacity for Germany has not led to any major restrictions on the German fleet in terms of capacity management.

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:	71,114 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 2019:	57,578 GT	128,643 kW

Capacity reductions (withdrawals from the fleet with public support) in 2019: **0 GT / 0 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 fleet has been reduced by 21 vessels mainly due to the withdrawal of static netters <12 m in length (segments PG VL0010 and PG VL1012).

Regulation (EU) 2017/218, the new fleet Regulation, is seen as positive as it lays down new parameters for recording data on fleet structure. For example, the data bank now includes criteria and information such as the IMO identification number, whether there is an automatic identification system (AIS) on board and several contact addresses. Transmission to the European Commission is now in the form of daily updates rather than 3-month snapshots. This means that the European fleet register is now far more up to date and that both the Commission and the Member States have better data at their disposal for administrative procedures (licences, checks) and for decisions to be taken at EU level.

There was no subsidised scrapping in Germany in 2019.

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 through 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 involves very low catches in nominal terms, maintaining them is a stated aim.

ii. Plans to improve the fleet management system

An analysis of trends in the German fleet shows a largely linear descending curve for the number of vessels and an associated drop in fishing capacity from 2,315 vessels in 2000 to 1,308 vessels in 2019.

German policy has always stressed that there must be room for efficient resource management if important stocks develop favourably. The existing market mechanisms used to manage the fleet are currently regarded as sufficient.

Germany will continue to make considerable efforts to develop and improve its fleet database.

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

First it should be noted that with around 5% of overall catches and 2% of overall fleet capacity in the European Union, 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.

2. Analysis of balance indicators and balance assessment

The balance indicators have been analysed by DCF segment (Table 5B in Commission Implementing Decision (EU) 2016/1251). The various indicators are set out in detail for each segment below. The technical indicators were established by Germany, while input provided by the STECF was used for the economic and biological indicators (some biological indicator scores were, however, calculated by Germany in segments where no STECF data was available). The biological indicators – Sustainable Harvest Indicator (SHI) and Stocks-at-Risk (SAR) – both relate to 2018 since the 2019 data for fishing mortality F was not yet available at the time of establishing the indicators and drawing up this report. Catches reported in this context also relate to 2018, unless otherwise indicated.

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

PG0010	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	0.26	0.31	0.26	0.35	0.33	0.25	0.36	0.36	0.42	0.46	0.45
SAR	1	2	2	1	1	1	1	2	1	2	
SHI	2.47	2.77	2.59	2.39	2.70	2.58	2.33	2.20	1.55	1.37	
CR/BER	0.16	1.01	0.72	0.82	0.44	1.36	1.00	1.23	1.14	0.45	
RoFTA	-36.1	2.0	-14.6	-11.4	-27.8	18.9	0.26	12.4	7.3	-32.2	
Number of vessels	1766	841	838	809	783	768	743	729	691	666	650
GT	3564	1715	1702	1615	1544	1521	1516	1527	1398	1317	1311
kW	35786	17435	17809	17175	16832	17000	16993	17202	16268	15361	15477
Number of Log vessels*	172	161	155	144	132	130	129	135	116	107	106
GT log*	846	814	798	721	659	656	672	721	616	560	565
kW log*	8,135	7,824	7,894	7,263	6,818	6,722	6,779	7,407	6,420	5,893	5,854

Log* = vessels required to keep a logbook

(a) Technical indicator

All active vessels in this passive fishing gear segment (PG VL0010) that are required to keep a fishing logbook were included in the calculation of the technical indicator. 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. The table shows capacity figures both for the whole segment and for vessels required to keep a logbook. As in previous years this group of vessels has very low scores, although a positive trend has emerged in recent years. The low scores are primarily due 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.

As a result, the calculation of the technical indicator produces a rather low score for the majority of side business vessels, whereas the score for fishing businesses operating as a main business (i.e. those that make a living from fishing) is significantly higher. The indicator has deteriorated marginally by 0.01 points.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Vessels in this segment mainly fished herring, cod and plaice in the western Baltic Sea, for which a stock assessment is available. For all three stocks fishing mortality F_C was above F_{MSY} in 2018. For herring, fishing mortality F_C increased from 0.332 in 2017 to 0.420 in 2018 and

remains above F_{MSY} = 0.31. For western Baltic cod, fishing mortality F_C fell significantly from 0.56 in 2017 to 0.370 in 2018 but remains above F_{MSY}. Catches of plaice in the Kattegat, Belt Sea and Øresund also had an impact on the SHI indicator, albeit very small due to their overall low value. For this stock F_C (0.41) was above F_{MSY}, unlike in the previous year (0.37). Mainly due to the higher fishing mortality of herring, the SHI increased slightly to 1.37 (from 1.31 in 2017). Note, however, that the above table gives a score of 1.55 for 2017. This is due to a retroactive correction of fishing mortality: because of the significantly higher F for herring, the SHI score for 2017 has also been adjusted upwards. An SHI score >1 generally indicates that, on average, the fleet segment concerned is economically dependent on stocks with a fishing mortality that is currently higher than the maximum sustainable yield ($FC > F_{MSY}$). However, the fleet report only indicates SHI scores 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 is calculated at 31%, i.e. < 40%, and is therefore not taken into account in the assessment.

Stocks-at-risk (SAR) indicator

For this segment two stocks were considered at risk in 2018. This concerns, firstly, the western Baltic herring, for which the spawning biomass is below B_{lim}. More than 10% of the total landings in this segment are of this stock. The second stock listed as a stock at risk is the European eel, classified as critically endangered by the IUCN (International Union for Conservation of Nature). As the 47 tonnes of eel caught by this segment account for less than 10% of the total EU catches of this stock, its classification as a stock at risk for this segment appears questionable. Western Baltic cod is no longer listed as a stock at risk as the spawning stock biomass is now above B_{lim}, but the short-term prospects for this stock are not good as there has been only one good year (2016) and poor offspring production since 2017.

(c) Economic indicators

In 2018 the CR/BER fell from 1.14 to 0.45 and the RoFTA dropped to -32.2. The economic indicators for this fleet segment thus fell drastically in 2018, pointing to overcapacity in the short term. 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. We refer to what has already been said about this segment and to Sections 3 and 5, where we explain why we consider the indicators to be of limited relevance. This segment is severely affected by the

currently poor condition of the cod and herring stocks in the western Baltic Sea (see Section 1.A.ii).

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

PG1012	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	0.53	0.51	0.48	0.56	0.51	0.41	0.44	0.43	0.56	0.54	0.55
SAR	0	2	2	1	1	1	1	2	1	1	
SHI	2.43	2.69	2.45	2.27	2.37	2.31	2.20	2.09	1.55	1.37	
CR/BER	0.38	0.48	0.38	0.56	0.48	0.12	0.42	0.61	0.04	-0.15	
RoFTA	-30.9	-26.4	-29.6	-20.8	-24.0	-42.8	-28.4	-23.5	-79.2	-70.3	
Number of vessels	76	72	66	68	66	67	64	58	58	50	49
GT	840	790	719	750	717	723	695	646	668	579	577
kW	6,357	6,122	5,494	5,948	5,692	5,847	5,570	5,199	5,301	4,751	4,722

(a) Technical indicator

In the 10-12 m static netters segment, the indicator score has hardly changed compared to previous years. Although the score of 0.55 is in the red area, it can nevertheless be seen as positive as many of the small-scale coastal and static net vessels in this segment fish as a side business. They sometimes log considerably fewer days at sea than vessels operated by commercial fishing businesses.

(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, as well as plaice (Kattegat, Belt Sea and Øresund). For herring, fishing mortality F_C increased from 0.332 in 2017 to 0.420 in 2018 and remains above F_{MSY} = 0.31. For western Baltic cod, fishing mortality fell considerably from F_C = 0.6 in 2017 to F_C = 0.370 in 2018 but remains above F_{MSY}. Catches of plaice in the Kattegat, Belt Sea and Øresund also had an impact on the SHI indicator, albeit very small due to their overall low value. For this stock F_C (0.41) was above F_{MSY}, unlike in the previous year (0.37). Mainly due to the higher fishing mortality of herring, the SHI score increased slightly to 1.37 (from 1.29 in 2017). Note, however, that the above table gives a score of 1.55 for 2017. This is due to a retroactive correction of fishing mortality: because of the significantly higher F for herring, the SHI score for 2017 has also been adjusted upwards.

Stocks-at-risk (SAR) indicator

In this segment one stock was considered at risk in 2018, as was also the case in previous years. This concerns the western Baltic herring, for which the spawning biomass is below B_{lim}. More than 10% of the total landings in this segment are of this stock. Western Baltic cod is no longer a stock at risk in this segment as the SSB is now above B_{lim}, but its short-term prospects are not good as there has been only one good year (2016) and poor offspring production since 2017.

(c) Economic indicators

Both the CR/BER and the RoFTA deteriorated for this fleet segment in 2018, with scores remaining below 1 (CR/BER) or negative (RoFTA). The economic indicators for this fleet segment thus point to a possible overcapacity.

(d) Overall assessment

Overall, this segment is **in imbalance** according to the indicators analysed. We refer to what has already been said about this segment and to Sections 3 and 5, where we explain why we consider the indicators to be of limited relevance. This segment is severely affected by the poor condition of the cod and herring stocks in the western Baltic Sea (see Section 1.A.ii).

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

DFN1218	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	0.48	0.46	0.51	0.72	0.44	0.57	0.48	0.58	0.40	0.47	0.43
SAR	1	3	3	2	1	1	1	2	3	2	
SHI	2.26	2.01	1.77	1.84	1.76	1.46	1.32	1.23	1.25	1.30	
CR/BER	1.47	2.42	0.50	7.54	3.85	1.85	-1.51	6.65	4.46	0.36	
RoFTA	18.7	58.5	-18.5	178.9	98.4	36.8	-96.9	176.3	107.9	-18.4	
Number of vessels	16	12	10	7	11	9	5	5	7	5	4
GT	365	273	237	147	272	220	121	132	193	150	124
kW	2,216	1,666	1,309	842	1,592	1,182	1,182	821	969	690	590

(a) Technical indicator

In segment DFN VL1218 only four fishing vessels could be taken into account to establish the technical indicators for the reporting year. The score of 0.43 is slightly lower than in the previous year, but is not very pertinent due to the low number of vessels.

(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 as well as some cod and flatfish. As F_C was above F_{MSY} for all three stocks and higher than in the previous year for cod, the overall SHI increased slightly to 1.30.

Stocks-at-risk (SAR) indicator

For this segment two stocks were considered at risk in 2018. This concerns the western Baltic herring and North Sea cod, for which the spawning biomass is below B_{lim}. More than 10% of the total landings in this segment are of these two stocks.

(c) Economic indicators

In 2018, CR/BER fell well below 1 and RoFTA turned negative. The positive trend observed in previous years was completely reversed in 2018, with both indicators pointing to overcapacity. These scores should be assessed with caution, however, as they have varied significantly over the years.

(d) Overall assessment

Overall, this segment is **in imbalance** according to the indicators analysed. For the reasons set out above and in view of the reservations discussed in points 3 and 5, the technical indicator scores could not be taken into account for the overall assessment. Two stocks at risk are fished. The economic indicators point to overcapacity. Also, the number of vessels in this segment dropped significantly (from 16 to 4) between 2009 and 2019.

Drift or static netters 18-24 m (DFN VL1824)

For the past few years this segment has consisted of only one vessel with sporadic activity, and is therefore not taken into account in the analysis of balance indicators.

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

DFN2440	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	0.50	0.71	0.64	0.66	0.85	0.64	0.81	0.75	0.83	0.88	0.77
SAR	0	0	0	1	0	0	0	0	0	1	
SHI	1.98	1.88	1.63	1.69	1.42	1.45	1.26	1.21	1.22	1.22	
CR/BER	-0.82	1.63	0.73	-0.22	0.37	0.13	0.77	0.70	1.85	6.78	
RoFTA	-59.5	45.9	-42.2	-91.7	-50.8	-53.2	-12.6	-19.8	23.9	168.0	
Number of vessels	5	5	4	5	5	5	4	4	5	5	5
GT	877	877	729	877	877	877	729	729	877	877	877
kW	1,897	1,897	1,475	1,897	1,897	1,897	1,475	1,475	1,897	1,897	1,897

(a) Technical indicator

Five vessels were again taken into account to calculate the technical indicator in this segment. Unfortunately, these were not able to sustain the good score of the previous year and the indicator dropped to 0.77. This is because two vessels in this segment were fishing almost daily (with up to 340 sea days), whereas the other three vessels were able to log 'only' around 200 days. Nevertheless, this vessel group has a very good theoretical indicator value of 1.19 points, pointing to a high degree of homogeneity.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Most vessels in this segment fished two stocks of anglerfish in the northeast Atlantic (anf.27.3a46, mon.27.78abd) and North Sea cod and sole. For North Sea cod and sole, fishing mortality F_C was above F_{MSY}. However, F_C is below F_{MSY} according to an ICES stock assessment for one of the anglerfish stocks (mon.27.78abd), resulting in a medium SHI score of 1.22.

Stocks-at-risk (SAR) indicator

For the first time since 2012, one stock was considered at risk in this segment. This concerns North Sea cod, for which the spawning biomass is below B_{lim}. More than 10% of the total landings in this segment are of this stock.

(c) Economic indicators

Both economic indicators have increased significantly and there is currently no sign of overcapacity.

(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 good, the SHI biological indicator shows a positive trend and one stock at risk is fished. The economic indicators have improved significantly in recent years.

Fishing vessels using pots and/or traps 12-18 m (FPO VL1218)

For the past few years this segment has consisted of only one vessel with sporadic activity, and is therefore not taken into account in the analysis of balance indicators. As this vessel is almost fully dependent on the western Baltic herring, which is in a poor condition (see TM VL1218), this segment is currently **in imbalance**.

Fishing vessels using pots and/or traps 24-40 m (FPO VL2440)

For the past few years this segment has consisted of only one 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	2018	2019
Technical indicator	0.33	0.45	0.31	0.48	0.64	0.48	0.76	0.79	0.54	0.88	0.85
SAR	0	0	0	0	0	0	0	0	0	0	
SHI	1.68	1.89	1.49	1.41	1.34	1.03	1.01	0.94	1.29	n/a	
CR/BER	2.27	1.11	-0.35	3.19	3.31	1.08	0.13	1.28	0.98	1.43	
RoFTA	46.7	8.2	-75.0	124.0	133.1	6.6	-67.5	9.26	-3.8	32.1	
Number of vessels	5	7	6	5	5	5	5	5	7	5	4
GT	61	85	74	63	63	63	63	63	78	63	53
kW	457	624	564	515	515	515	515	515	676	515	424

(a) Technical indicator

A score of 0.85 has been calculated for 2019, which is very good although slightly lower than in the previous year. However, the result is not very pertinent as the 10-12 m beam trawler segment consists of only four vessels.

(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, meaning that no SHI score was calculated by the STECF for 2018.

Stocks-at-risk (SAR) indicator

In this segment no stock was considered at risk by the STECF in 2018, as was also the case in previous years.

(c) Economic indicators

Both economic indicators improved significantly in 2018 and do not indicate any overcapacity. Due to the small number of vessels in this segment, figures are subject to significant fluctuations and therefore associated with considerable uncertainty. Overall, it can be deduced from the time series that the segment is in balance from an economic point of view.

(d) Overall assessment

Overall, this segment is **in balance** according to the indicators analysed. The technical indicator score is very good. The SHI biological indicator cannot be taken into account for the reasons set out above. No stock at risk is fished. The economic indicators fluctuate considerably but do not point to overcapacity overall.

Beam trawlers 12-18 m (TBB VL1218)

TBB1218	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	0.64	0.65	0.60	0.60	0.56	0.60	0.60	0.58	0.54	0.67	0.67
SAR	0	0	0	0	0	0	0	0	0	0	
SHI	2.41	2.95	2.61	3.12	3.54	2.94	1.86	2.26	n/a	0.95	
CR/BER	1.23	1.42	0.97	2.74	2.57	1.79	1.50	1.91	1.45	2.25	
RoFTA	15.1	22.7	-1.3	87.7	92.9	45.1	35.0	56.2	45.5	75.4	
Number of vessels	140	134	127	118	120	117	112	111	108	109	105
GT	4,268	4,075	3,876	3,597	3,663	3,627	3,457	3,479	3,451	3,472	3,346
kW	26,791	25,650	24,308	22,678	22,962	22,651	21,597	21,671	21,234	21,510	20,770

(a) Technical indicator

The indicator value for 2019 was calculated on the basis of 105 fishing vessels. The score of 0.67 is identical to the result of the previous year. In 2019, as in previous years, there were major differences in this segment between vessels logging a high number of sea days (around 200) and vessels logging very few sea days. The ten ‘weakest’ vessels had an annual capacity utilisation rate of not even 50 days, and this is reflected in the indicator value.

(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 calculated SHI score of 0.95 for 2018 is therefore not very relevant.

Stocks-at-risk (SAR) indicator

In this segment no stock was considered at risk by the STECF in 2018, 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 0.7, 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	2018	2019
Technical indicator	0.56	0.60	0.58	0.63	0.65	0.62	0.69	0.57	0.67	0.70	0.65
SAR	0	0	0	0	0	0	0	0	0	0	
SHI	2.32	2.44	2.22	2.34	3.62	1.95	1.24	1.12	1.11	0.99	
CR/BER	0.84	1.11	0.59	1.91	1.98	1.43	1.20	2.06	1.17	2.41	
RoFTA	-4.2	6.3	-16.2	36.2	39.4	19.5	10.1	60.7	13.7	64.7	
Number of vessels	63	61	62	63	67	63	63	65	67	70	69
GT	3,892	3,521	3,679	3,756	4,104	3,850	3,706	3,976	4,045	4,403	4,314
kW	13,652	13,175	13,394	13,616	14,537	13,653	13,477	14,278	14,619	15,428	15,242

(a) Technical indicator

The indicator value for 2019 was calculated on the basis of 69 active fishing vessels. The result achieved was marginally below that of the previous year (- 0.05 points). However, compared to the last 10 years the score of 0.65 can be considered as stable.

(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 calculated SHI score of 0.99 for 2018 is therefore not very relevant.

Stocks-at-risk (SAR) indicator

In this segment no stock was considered at risk by the STECF in 2018, 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	2018	2019
Technical indicator	0.77	0.83	0.54	0.78	0.85	0.82	0.68	0.91	0.80	0.85	0.89
SAR	0	0	0	0	0	0	1	0	0	0	
SHI	1.75	1.72	1.45	1.46	1.36	1.28	1.14	1.08	1.04	1.03	
CR/BER	1.98	1.04	0.69	1.00	2.03	1.33	2.02	1.74	1.52	4.95	
RoFTA	39.4	3.5	-12.2	-0.6	41.7	12.2	35.1	44.5	22.3	130.0	
Number of vessels	7	8	8	9	8	10	10	9	10	10	6
GT	1,424	1,693	1,693	1,752	1,559	2,021	2,021	1,828	2,021	2,201	1,448
kW	4,874	5,867	5,867	5,971	5,411	6,721	6,721	6,161	5,788	5,788	3,765

(a) Technical indicator

The six vessels in this segment achieved a very good result with a score of 0.89, up by 0.04 points from the previous year. Two mussel dredgers (farming) were not included in the calculation of the overall result.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Fishing vessels in this segment mainly caught plaice, mussels, sole, turbot and common shrimp in the North Sea. According to the available stock assessment for plaice, sole and turbot, fishing mortality F_C was below or at F_{MSY} for plaice and turbot and just above F_{MSY} for sole, resulting in an SHI score close to 1 (1.03). The time series shows that the SHI is steadily improving.

Stocks-at-risk (SAR) indicator

For this segment no stock was considered at risk in 2018.

(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. All indicators are positive, and no stock at risk was fished in 2018.

Beam trawlers > 40 m (TBB VL40XX)

TBB40XX	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	0.61	1.00	0.63	0.54	0.53	0.62	1.00	0.94	0.95	0.84	0.74
SAR						0	0	0	0	0	
SHI						1.18	0.97	1.01	1.00	1.01	
CR/BER											
RoFTA											
Number of vessels	1	2	1	2	2	2	2	2	2	2	3
GT	446	791	446	791	791	791	791	791	791	791	1,219
kW	1,471	2,221	1,471	2,221	2,221	2,221	2,221	1,853	1,853	1,853	3,293

(a) Technical indicator

The calculated indicator value of 0.74 is not pertinent as it is based on just three vessels.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Fishing vessels in this segment mainly fished plaice, sole and turbot in the North Sea. Fishing mortality F_C was below or at F_{MSY} for plaice and turbot and just above F_{MSY} for sole, resulting in an SHI score close to 1 (SHI=1.01).

Stocks-at-risk (SAR) indicator
For this segment no stock was considered at risk in 2018.

(c) Economic indicators

For reasons of data protection, economic data from this segment is 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 just two to three vessels. No stock at risk is fished.

Demersal trawlers 10-12 m (DTS VL1012)

DTS1012	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	0.54	0.56	0.58	0.59	0.42	0.48	0.45	0.34	0.31	0.71	0.80
SAR	0	2	2	1	1	1	1	2	1	1	
SHI	2.73	3.12	3.17	2.46	3.09	2.78	2.35	2.02	1.55	1.37	
CR/BER	-0.08	1.18	0.67	0.56	0.66	0.39	0.41	0.29	0.81	0.97	
RoFTA	-70.8	12.3	-19.5	-29.0	-23.6	-47.6	-57.7	-4.7	-21.7	-2.1	
Number of vessels	13	15	15	10	12	11	10	10	6	8	4
GT	213	244	233	146	183	169	154	156	94	112	52
kW	2,055	2,202	2,202	1,441	1,803	1,608	1,425	1,433	744	853	358

(a) Technical indicator

The result of 0.80 is a further improvement on previous years (+ 0.09 points compared to 2018). However, the result is not very pertinent as there are only four vessels in this segment.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Vessels in this segment mainly fished cod and herring as well as plaice and dab in the western Baltic Sea. For herring, fishing mortality F_C increased from 0.332 in 2017 to 0.420 in 2018 and remains above F_{MSY} = 0.31. For western Baltic cod fishing mortality remains above F_{MSY} although it fell considerably from F_C = 0.6 in 2017 to F_C = 0.370 in 2018. Catches of plaice in the Kattegat, Belt Sea and Øresund also had an impact on the SHI indicator value. For this stock F_C (0.41) was above F_{MSY}, unlike in the previous year (0.37). Mainly due to the higher fishing mortality of herring, the SHI score increased slightly to 1.37 (from 1.27 in 2017). However, the table above shows a score of 1.55 for 2017. This is due to a retroactive correction of fishing mortality: because of the significantly higher F for herring, the SHI score for 2017 has also been adjusted upwards.

Stocks-at-risk (SAR) indicator

Our analysis shows that, based on the relevant criteria, one stock must be considered at risk in this segment for 2018, as was already the case in previous years. This concerns the western Baltic herring, for which the spawning biomass is below B_{lim}. More than 10% of the total landings in this segment are of this stock. Western Baltic cod is no longer a stock at risk in this segment as the SSB is now above B_{lim}, but its short-term prospects are not good as there has been only one good year (2016) and poor offspring production since 2017.

(c) Economic indicators

In 2018 the CR/BER increased further to 0.97, but remains below 1. The RoFTA has also increased to -2.1, but remains negative. Both indicators have been unfavourable in this segment for years. However, a further CR/BER increase in 2018, to the highest level since 2010, is a positive sign.

(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 of limited relevance here as the segment is affected by the poor condition of the herring stock in the western Baltic Sea. Since 2011 the number of vessels has fallen from 15 to 4.

Demersal trawlers 12-18 m (DTS VL1218)

DTS1218	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	0.49	0.47	0.60	0.71	0.53	0.53	0.52	0.53	0.57	0.68	0.66
SAR	0	2	2	1	1	1	1	2	1	1	
SHI	2.79	2.83	2.78	2.48	2.82	2.66	2.65	2.24	1.63	1.33	
CR/BER	0.68	0.81	0.60	1.00	0.82	0.80	0.74	0.57	0.81	1.37	
RoFTA	-9.4	-7.6	-16.7	-0.7	-7.5	-8.1	-10.7	-18.9	-18.9	17.7	
Number of vessels	39	37	33	27	30	29	28	27	20	17	18
GT	1,310	1,239	1,129	923	1,024	1,008	826	866	655	548	623
kW	7,283	6,767	6,088	4,960	5,514	5,414	4,694	4,918	3,765	3,109	3,328

(a) Technical indicator

To calculate the score for 12-18 metre trawlers, the sea days of 18 fishing vessels were taken into account in 2019. The score of 0.66 is broadly at the level of the previous year (-0.02), confirming an overall positive trend over the past 5 years.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Vessels in this segment mainly fished herring and sprat in the western Baltic Sea. In addition, they made considerable catches of plaice in the Belt Sea. Between 2017 and 2018 the SHI score fell from 1.63 to 1.33. This is mainly because fishing mortality F_C remained stable at 0.42 for the western herring stock, which is the most important in terms of volume, but fell for the western cod stock, which is more important financially. Note that in last year's fleet report the SHI score for 2017 was already at this year's level of 1.33. However, as fishing mortality for

western Baltic herring has been adjusted upwards on the basis of more recent figures, a higher SHI score has also been set for 2017 in the most recent calculations.

Stocks-at-risk (SAR) indicator

Our analysis shows that, based on the relevant criteria, one stock must be considered at risk in this segment for 2018. This concerns the western Baltic herring, for which the spawning biomass was below B_{lim}. More than 10% of the total landings in this segment were of this stock. Western Baltic cod is no longer a stock at risk in this segment as the SSB is now above B_{lim}, but its short-term prospects are not good as there has been only one good year (2016) and poor offspring production since 2017.

(c) Economic indicators

In 2018 the CR/BER increased to above 1 for the first time in the period considered. At 17.7 the RoFTA also turned positive for the first time. In previous years both indicators were quite unfavourable in this segment. However, the increase in both indicators in 2018 is a positive sign. It is not yet possible to assess whether this is a stable trend.

(d) Overall assessment

Overall, this segment is **in imbalance** according to the indicators analysed. The segment is severely affected by the currently poor condition of the cod and herring stocks in the western Baltic Sea. Germany has therefore already scrapped vessels in this segment with public funds in the past. The number of vessels has more than halved, having dropped from 39 (in 2009) to 18 (in 2019).

Demersal trawlers 18-24 m (DTS VL1824)

DTS1824	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	0.64	0.58	0.60	0.62	0.60	0.59	0.60	0.65	0.68	0.66	0.60
SAR	1	2	2	1	0	0	1	1	1	1	
SHI	2.03	1.63	1.74	1.66	1.61	1.56	1.45	1.39	1.20	1.03	
CR/BER	0.90	1.19	0.91	0.51	2.84	2.22	1.32	2.91	1.59	3.49	
RoFTA	-0.5	9.0	-3.0	-15.9	50.9	37.6	12.3	66.2	33.6	82.4	
Number of vessels	28	30	29	20	18	17	16	13	13	11	14
GT	3,045	3,215	3,169	2,231	2,064	1,847	1,724	1,444	1,544	1,293	1,621
kW	6,122	6,525	6,347	4,330	3,925	3,704	3,485	2,824	3,118	2,529	3,192

(a) Technical indicator

The sea days of 14 vessels were taken into account to calculate the indicator. The score of 0.60 is again slightly lower than in previous years but is broadly at the level seen between 2009 and 2015. Again, it should be noted that, with 291 sea days, one vessel in this segment logged a much higher number than the other vessels, which reached an average of only 162 sea days and in some cases logged significantly fewer days than the 'best' vessel. 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 score of 0.79 is achieved, which would seem to indicate overall homogeneity in this segment.

(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. North Sea and Skagerrak plaice, the most important stock in terms of tonnes caught, is fished sustainably and fishing mortality F_C is well below F_{MSY}. As a result, the SHI for this segment has fallen further to 1.03, down from 1.20 in 2017. This improvement is mainly due to a further reduction in fishing mortality for North Sea and Skagerrak plaice (F_{2017} = 0.193, F_{2018} = 0.187).

Stocks-at-risk (SAR) indicator

Our analysis shows that, based on the relevant criteria, one stock must be considered at risk in this segment for 2018, as was already the case in previous years. This concerns the western Baltic herring, for which the spawning biomass is below B_{lim}. More than 10% of the total landings in this segment are of this stock. Western Baltic cod is no longer a stock at risk in this segment as the SSB is now above B_{lim}, but its short-term prospects are not good as there has been only one good year (2016) and poor offspring production since 2017.

(c) Economic indicators

Both the CR/BER and the RoFTA have improved further compared to the previous year and remain at a level that does not point to overcapacity.

(d) Overall assessment

No clear assessment can be made for this segment. The technical indicator fluctuates in the mid-range. Although the SHI has improved considerably, one stock at risk is fished. The economic indicators are positive. Since 2010 the number of vessels has fallen from 30 to 14. If only Baltic Sea vessels are taken into account, these are **in imbalance** due to the poor outlook for the western Baltic cod and herring stocks. If North Sea vessels are considered separately, these are **in balance** due to the favourable condition of the main stocks fished.

Demersal trawlers 24-40 m (DTS VL2440)

DTS2440	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	0.62	0.50	0.57	0.65	0.68	0.59	0.66	0.70	0.70	0.51	0.57
SAR	1	3	2	1	2	2	0	1	1	1	
SHI	1.69	1.54	1.39	1.30	1.23	1.30	1.27	1.24	1.28	1.25	
CR/BER	1.02	1.51	1.87	1.05	1.36	1.30	2.02	2.24	1.25	1.18	
RoFTA	4.1	20.4	32.5	3.2	12.6	8.8	31.1	31.2	23.6	5.5	
Number of vessels	16	16	13	10	11	12	10	9	8	11	14
GT	3,439	3,431	3,033	2,523	2,660	2,981	2,768	2,343	2,172	2,992	4,410
kW	7,409	6,821	5,994	4,683	4,830	5,361	5,295	4,275	3,835	5,505	7,822

(a) Technical indicator

The indicator calculation takes into account the sea days of 14 fishing vessels. The score of 0.57 is a slight improvement on 2018 (+ 0.06) but remains unfavourable. This is because one vessel in this segment logged a very high number of sea days (361) in 2019 as compared to just 14 sea days for the 'worst-performing' vessel. The result is also negatively affected by substantial differences in the vessels' size (and fishing areas). The calculation grouped deep-sea cutters with engine power exceeding 700 kW together with smaller cutters with an engine power of just 221 kW. This contrast led to a poor 'registered indicator' result. However, segment DTS VL2440 has a very high theoretical technical indicator score of 0.94.

(b) Biological indicators

Sustainable harvest indicator (SHI)

North Sea saithe, cod, plaice, hake and haddock were the main stocks fished by this segment. Fishing mortality F_C remained below or at F_{MSY} for saithe, plaice and hake (having fallen for plaice and hake compared to last year) and has increased slightly for North Sea cod, the economically most important stock in this segment, resulting in a slightly lower SHI of 1.25. Since 2012 the SHI has fluctuated between 1.24 and 1.30 in this segment.

Stocks-at-risk (SAR) indicator

In this segment one stock was considered at risk, as was also the case in the two previous years. This concerns North Sea cod, for which the spawning biomass is below B_{lim}. More than 10% of the total landings in this segment are of this stock.

(c) Economic indicators

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

(d) Overall assessment

No clear assessment can be made for this segment. The technical indicator is in the middle range and the SHI has hardly changed but remains positive. One stock at risk is fished. The economic indicators are positive. If only Baltic Sea vessels are taken into account, these are **in imbalance** due to the poor outlook for the western Baltic cod stock. If North Sea vessels are considered separately, these are **in balance** due to the favourable condition of the main stocks fished.

Demersal trawlers > 40 m (DTS VL40XX)

DTS40XX	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	0.82	0.84	0.92	0.83	0.78	0.73	0.70	0.80	0.78	0.85	0.83
SAR	1	4	5	5	2	2	2	2	3	4	
SHI	1.07	1.02	1.24	1.18	1.24	0.96	1.08	1.14	1.24	1.23	
CR/BER	0.47	0.81	0.68	0.75	0.62	0.86	0.98	1.50	0.44	0.91	
RoFTA	-17.6	-4.7	-9.1	-8.5	-13.5	-4.4	-0.2	11.0	-12.9	-2.2	
Number of vessels	8	8	8	8	7	6	7	7	7	7	6
GT	13,215	13,215	13,215	13,215	10,247	8,650	12,898	12,898	15,417	15,417	14,962
kW	18,651	18,651	18,651	18,651	14,151	11,724	15,724	15,724	16,394	16,394	15,610

(a) Technical indicator

The calculation is based on the sea days of six fishing vessels. The indicator value of 0.83 is roughly the same as in the previous year. Large deep-sea fishing vessels continue to be lumped together with the larger cutters in the calculation. This is unfortunate, as the activities of these vessels differ quite considerably. For example, deep-sea trawlers have far more days at sea than cutters. The result improved marginally by 0.02 compared to 2018. However, a theoretical score of 1.07 points to a well-balanced vessel segment.

(b) Biological indicators

Sustainable harvest indicator (SHI)

For three of the stocks fished in this segment, fishing mortality F_C was either below or at F_{MSY} (North Sea saithe, Greenland cod and North Atlantic hake), whereas some stocks (northeast Arctic cod and haddock, east Greenland/Iceland *S. norvegicus* redfish) were fished just above

and North Sea cod was fished well above F_{MSY}, resulting in an SHI of 1.25, which is nearly the same as that of the previous year (SHI_{2017} = 1.28).

Stocks-at-risk (SAR) indicator

The STECF analysis shows that, based on the relevant criteria, there were four stocks at risk in this segment in 2018. These are *S. norvegicus* redfish in the Barents and Norwegian Sea, Norwegian coastal cod and the shallow and deep stocks of *S. mentella* redfish in the Irminger Sea. Three of these should be viewed critically. The two *S. mentella* stocks should not even appear in this segment as they are only fished using pelagic trawls. Moreover, in 2018 no official catches of the shallow *S. mentella* stock (for which zero catches were recommended by the ICES) were reported. In the first quarter some Norwegian coastal cod was caught together with northeast Arctic cod in the Lofoten area. It appears questionable to list coastal cod as a stock at risk since the two stocks cannot be distinguished by external appearance (this is only possible by comparing their otoliths), and German catches are not broken down by northeast Arctic and Norwegian coastal cod.

(c) Economic indicators

In this segment both the CR/BER and the RoFTA have been on a positive trend for years. The scores fell significantly in 2018 from already low levels in the previous year, but only appear to indicate overcapacity due to the continued effect of a one-off event, i.e. the replacement of two deep-sea trawlers by new vessels in 2017. This led to high depreciation and transaction costs that affected operating results unfavourably. The industry has made substantial replacement investments, which shows that this segment is economically stable. Savings and efficiency gains can be expected in the coming years.

Moreover, these vessels mostly belong to vertically-integrated businesses that further process catches themselves, which is where most of the value added is created. According to the operators, the vessels' fishing activities are profitable when the processing activity is taken into account.

(d) Overall assessment

No clear assessment can be made for this segment. The technical indicator value is favourable. The SHI has deteriorated slightly. Four stocks at risk are fished according to the STECF estimate. The economic indicators are either positive or have fallen due to the one-off effect of investments. The vessels concerned belong to vertically integrated businesses making their profit not so much from fishing as from fish processing.

Pelagic trawlers 10-12 m (TM VL1012)

For the past few years this segment has consisted of only one vessel with sporadic activity, and is therefore not taken into account in the analysis of balance indicators. As that vessel is dependent on western Baltic herring, which is in a poor condition (see TM VL1218), the segment is currently **in imbalance**.

Pelagic trawlers 12-18 m (TM VL1218)

TM1218	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator							0.88	0.89	0.85	1.00	1.00
SAR							0	0	1	2	
SHI							1.16	1.52	1.40	1.36	
CR/BER											
RoFTA											
Number of vessels	0	0	0	0	0	0	2	2	3	1	1
GT	–	–	–	–	–	–	122	122	163	75	26
kW	–	–	–	–	–	–	439	439	659	219	100

(a) Technical indicator

Only one vessel was registered in this segment in 2019. The indicator is therefore not pertinent.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Vessels in this segment fish practically only herring, in addition to some cod in the eastern and western Baltic Sea. For western Baltic cod fishing mortality F_C fell compared to the previous year, while for western Baltic herring, the most important stock in this segment, fishing mortality F_C remained unchanged from the previous year at 0.42. This results in a SHI of 1.36, which is slightly lower than in 2017 (1.40). Note that in last year's fleet report a lower SHI score (1.13) was given for 2017. However, as fishing mortality for western Baltic herring has been adjusted upwards on the basis of more recent figures, a higher SHI score has also been set for 2017 in the most recent calculations.

Stocks at risk (SAR)

Our analysis shows that, based on the relevant criteria, two stocks must be considered at risk in this segment for 2018, as was already the case in previous years. This concerns the western Baltic herring and eastern Baltic cod, for which the spawning biomass is below B_{lim}. More than 10% of the total landings in this segment are of these stocks.

(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 on the basis of the indicators. The indicators are not pertinent because they are based on only one to three vessels and a short time series. Two stocks at risk are fished. This segment is **in imbalance** due to the poor outlook for western Baltic herring.

Pelagic trawlers 18-24 m (TM VL1824)

TM1824	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	–	0.85	1.00	1.00	1.00	0.88	0.67	0.70	0.59	0.65	1.00
SAR						0	0	0	1	1	
SHI						1.19	0.86	1.31	1.36	1.36	
CR/BER											
RoFTA											
Number of vessels	0	2	1	1	1	2	2	4	4	3	1
GT	–	239	107	107	107	239	207	354	354	279	40
kW	–	442	221	221	221	442	441	882	882	662	220

(a) Technical indicator

No score could be established as there was only one vessel this segment in 2019.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Vessels in this segment mainly fished herring in the western Baltic Sea, sprat across the Baltic Sea and cod in the eastern Baltic Sea. For the most important stock in volume terms, the western herring, fishing mortality F_C did not change in 2018 compared to the previous year (F_C = 0.42), resulting in a nearly identical SHI of 1.36. Note that in last year's fleet report a lower SHI score (1.09) was given for 2017. However, as fishing mortality for western Baltic herring has been adjusted upwards on the basis of more recent figures, a higher SHI score has also been set for 2017 in the most recent calculations.

Stocks at risk (SAR)

Our analysis shows that, based on the relevant criteria, one stock must be considered at risk in this segment for 2018. This concerns the western Baltic herring, for which the spawning biomass is below B_{lim}. More than 10% of the total landings in this segment are of this stock.

(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 just one to four vessels. One stock at risk is fished. This segment is **in imbalance** due to the poor outlook for western Baltic herring.

Pelagic trawlers 24-40 m (TM VL2440)

TM2440	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	0.52	0.98	0.71	0.99	1.00	1.00	0.69	0.89	0.84	0.83	1.00
SAR						0	0	0	1	1	
SHI						1.31	1.05	1.24	1.35	1.32	
CR/BER											
RoFTA											
Number of vessels	2	2	4	2	1	1	3	3	3	2	1
GT	495	873	1,149	529	374	374	655	655	655	281	126
kW	884	1,435	1,840	921	700	700	1,105	1,105	1,105	405	184

(a) Technical indicator

No score could be established as there was only one vessel this segment in 2019.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Vessels in this segment mainly fished Baltic sprat and western Baltic herring. Fishing mortality for these two main stocks has not changed compared to the previous year, resulting in a nearly identical SHI of 1.32 (compared to 1.35 in 2017). Note that in last year's fleet report a lower SHI score (1.25) was given for 2017. However, as fishing mortality for western Baltic herring has been adjusted upwards on the basis of more recent figures, a higher SHI score has also been set for 2017 in the most recent calculations.

Stocks at risk (SAR)

Our analysis shows that, based on the relevant criteria, one stock must be considered at risk in this segment for 2018. This concerns the western Baltic herring, for which the spawning biomass is below B_{lim}. More than 10% of the total landings in this segment are of this stock.

(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 just one to three vessels. One stock at risk is fished. This segment is **in imbalance** due to the poor outlook for western Baltic herring.

Pelagic trawlers > 40 m (TM VL40XX)

TM40XX	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Technical indicator	0.82	0.81	0.86	0.86	0.80	0.85	0.94	0.88	0.87	0.77	0.89
SAR	0	4	1	1	2	2	3	3	1	3	
SHI	1.17	1.09	1.25	1.05	1.09	1.10	1.12	1.01	1.18	1.17	
CR/BER											
RoFTA											
Number of vessels	5	5	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	20,622	20,254
kW	23,274	23,537	23,537	23,537	23,537	23,537	23,537	23,537	24,397	21,128	20,427

(a) Technical indicator

As regards pelagic trawlers with an overall length of 40 metres or more, German vessels saw a marked improvement in 2019 compared to the previous year (0.89). A high theoretical score of 1.11 also points to a very homogeneous segment. Again, it should be noted that the calculation involves comparing sea-going cutters to vessels engaged in large-scale deep-sea fisheries.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Vessels in this segment fished many different pelagic stocks (including herring, sprat, horse mackerel, mackerel, blue whiting and sardine) in the North Sea, the Baltic Sea and the North Atlantic. For most of the stocks taken into account to calculate the SHI, fishing mortality F_C was just above F_{MSY}, resulting in an SHI of 1.17 which is nearly identical to that of the previous year (F_{2017} = 1.18).

Stocks at risk (SAR)

According to the STECF analysis, three stocks at risk were fished in 2018. These are western Baltic herring and two stocks of sand eel (san.sa.2r, san.sa.5r, two management units in areas 2 and 5). However, classifying these as stocks at risk in this segment appears questionable. As

vessels in this segment did not report any catches of sand eel in areas 2r and 5r, nor any significant catches of western Baltic herring, these three stocks should not be classified as stocks at risk.

(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 and SHI scores are good; however, the STECF estimates that three stocks at risk SAR are 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 relevant for the individual size categories as there are often just 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

Two biological indicators were calculated 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 2018 and the state of stocks as at the beginning of 2019, since the results of the 2019 stock assessments were not yet available when this fleet report was submitted.

For 2018 the SHI was chiefly provided by the STECF but calculated by Germany for some segments, whereas the SAR indicator was calculated by Germany as no calculations were available from STECF at the time of drafting this report. The biological indicator results are summarised in **Annex 4**.

2.1 Sustainable harvest indicator (SHI)

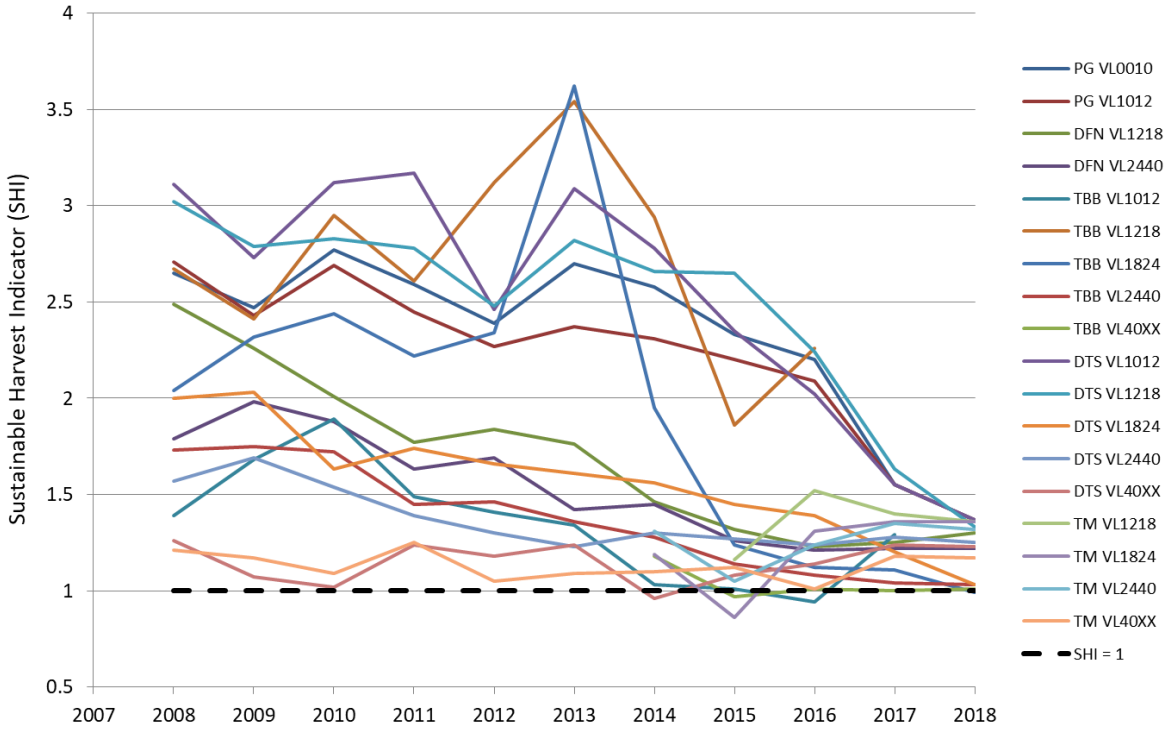
The SHI scores for the various segments are only taken into account in the fleet report if, in a given segment, the share of the landings value that can be used to calculate the indicator exceeds 40%

.

The indicator scores for the various segments range between 1.37 and 1.01. An SHI score >1 indicates that, on average, the fleet segment concerned is economically dependent on stocks with a fishing mortality that is currently higher than the maximum sustainable yield (FC > F_{MSY}). In some segments (e.g. DTS VL1218, PG VL1012, DTS VL1012) the indicator scores have fallen further compared to the previous year, which is a positive development. This is due to reduced fishing mortality (F_C) for western Baltic cod, a very important stock for several segments operating in the Baltic Sea. While this stock will continue to be fished above F_{MSY} and is therefore considered to be overfished, the lower F_C gives a lower SHI score in some segments. For the most important segment in terms of volume and revenue (TM VL40XX), the SHI score for 2018 (1.17) remains close to 1 and is nearly identical to that of 2017 (1.18).

The scores for smaller vessels are a reason for concern, but their landings in 2018 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 herring.

A positive picture emerges if SHI scores are considered over the period from 2008 to 2018, as calculated by the STECFA and to some extent by the Thünen Institute (see graph below). The SHI has fallen over the period considered and the curves are therefore close to a score of 1 for most segments. According to the latest data for 2018, all SHI scores are below 1.4.



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 give the impression that some German fleet segments are 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 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 repeatedly criticised 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

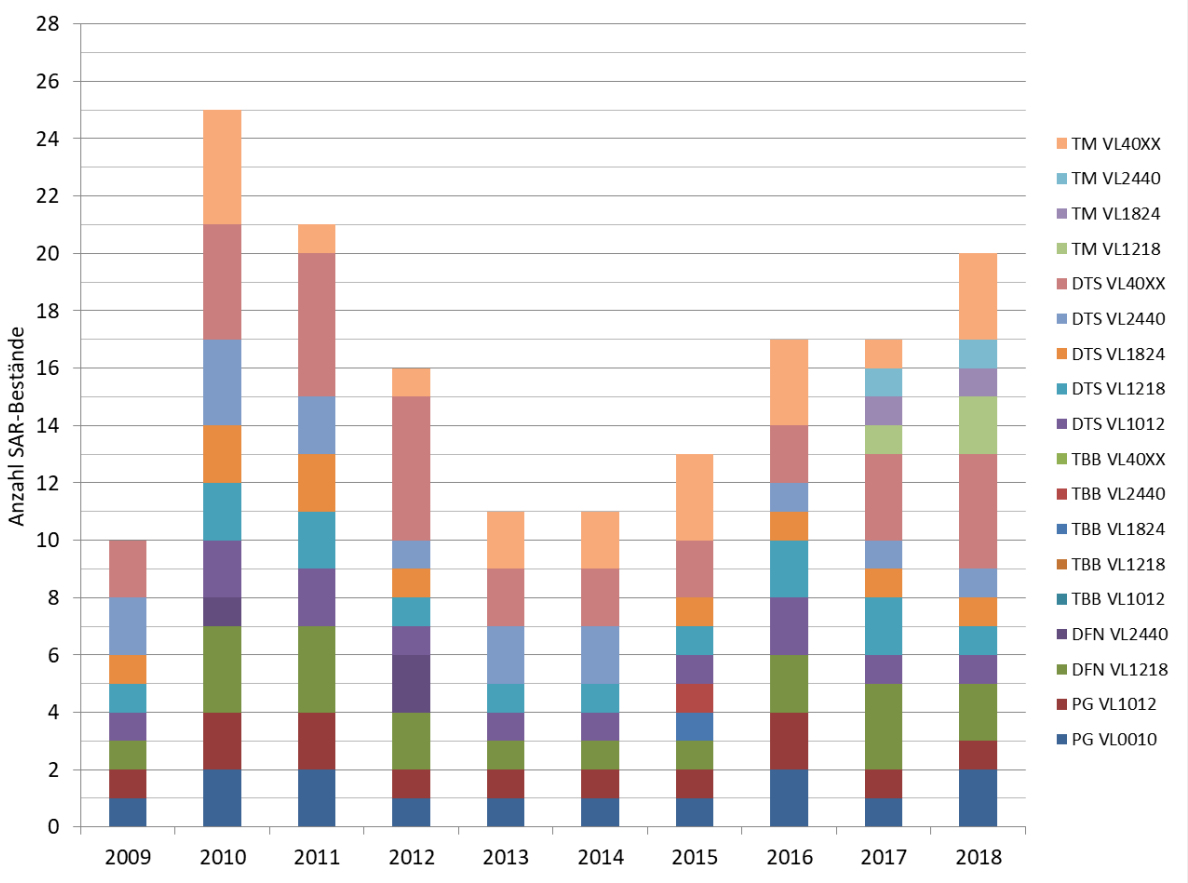
The SAR indicator is a measure of the extent to which the activities of individual fleet segments impact on stocks in a poor condition (i.e. with a low spawning stock biomass). A stock must meet the following conditions to be classed as a stock at risk:

(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.

A trend can be observed by looking at stocks identified as stocks at risk by the STECF (and in some cases by the Thünen Institute) and fished on a large scale by German fleet segments from 2009 to 2018 (see graph below). The total number of stocks at risk initially fell from 25 in 2010 to 11 in 2013/2014 and then increased again to 20 in 2018. However, as already mentioned with regard to segments TM VL40XX and DTS VL40XX above, some stocks at risk identified by the STECF appear questionable. The western Baltic herring, which is currently in a poor condition, accounted for 9 of the 20 stocks at risk in 2018.



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 on the basis of figures provided by Germany under the Data Collection Framework (DCF). For the pelagic trawler segment, which is dominated by a single business owner, the relevant 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 vessels ('perpetual inventory method', PIM), which results in considerable overestimation. A rising trend can be observed for 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 not linked to the value of the vessels.

Irrespective of the fact that the absolute indicator values are not very relevant for the reasons outlined above, it is clear that smaller vessels using mainly passive fishing gear (PG<12 m) often fail to break even. It needs to be taken into account, however, 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 that 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.

With regard to Baltic Sea fisheries, future fleet management will be affected by unprecedented reductions in fishing opportunities for herring and cod. The ICES estimates that these stocks will continue to develop slowly, with a falling trend compared to previous years. In the coming years fishing capacity in the segments concerned will therefore have to be adjusted.

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 the Baltic Sea in particular. However, such fishing typically involves part-time fishers whose catches account for a very small portion of total catches. The economic indicators are not very relevant for this segment, as many of the fishers involved do not engage in fishing with a view to maximising profit. Furthermore, this segment has been constantly shrinking in recent years. In commercial fishing, historically low quotas for the western Baltic Sea and an uncertain outlook for the future compound existing problems.

The indicator values for the larger vessels were more positive, although the economic situation has fluctuated considerably in recent years. These vessels regularly engage in pelagic herring fishing in the Baltic Sea. The low herring quotas in the western Baltic therefore also affect these segments' ability to exploit their fishing capacity. Moreover, dwindling demersal stocks mean that there are even fewer alternative options.

To protect and restore cod and herring stocks in the Baltic Sea, it was again necessary to adopt emergency measures in 2019. Closure periods were laid down, divided into two 10-day blocks (between 1 January and 31 May 2019) for cod and three 10-day blocks (between 1 August and 31 October 2019) for herring. The businesses concerned received support under Article 33 of the European Maritime and Fisheries Fund Regulation (EMFF Regulation) for the temporary laying-up of their fishing vessels.

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 action plan in 2016 due to its dependence on cod stocks in the western Baltic Sea, the condition of which remains critical (see Section 1.A.ii). Positive indicators allowed segments DFN VL1218 and DTS VL2440 to be removed from the action plan as from 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. This resulted in six vessels, with an overall fishing capacity of 198 GT and 1,178 kW, being scrapped in segment DTS VL1218. Baltic Sea fishing businesses in need of support for their activities were able to receive this in the 2018 and 2019 fishing years. For 2019 the quotas have been set at 54.8 tonnes for western Baltic cod, 91.8 tonnes for eastern Baltic cod, 52.2 tonnes for western Baltic herring and 6.7 tonnes for Baltic sprat. Any impact of this measure on the stated indicator values and on future support for young fishers will only become apparent once fishing quotas have stabilised at pre-2016 levels.

Due to much lower quotas also for western Baltic herring, further segments have been included again or for the first time in the 2019 Action Plan. Among other things, this is because the majority of fishing businesses based in the Baltic Sea operate vessels suited to this management area, and if catches of both main fish species are at historically low levels, there are few other species that can be commercially exploited to compensate for this.

An updated action plan is enclosed with this report.

Annex 1: Overview of stocks fished in 2019 by vessels in individual fleet segments. The figures in the table correspond to landings in tonnes. Stocks are chiefly 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**									
ICES stock	**Stock and region**	**PG VL0010**	**PG VL1012**	**DFN VL1218**	**DFN VL2440**	**DRB VL2440**	**DRB VL 40XX**	**TBB VL1218**	**TBB VL1824**	**TBB VL2440**	**TBB VL40XX**
Baltic Sea											
cod.27.22-24	western Baltic cod	492	310								
cod.27.24-32	eastern Baltic cod										
dab.27.22-32	Baltic dab										
fle.27.2425	flounder: west of Bornholm and southwest central Baltic Sea	152									
fle.27.2223	flounder: Belt Sea and Øresund	118									
her.27.20-24	herring: western Baltic, Kattegat and Skagerrak	853	812	41							
her.27.25-2932	eastern Baltic herring										
ple.27.21-23	plaice: Kattegat, Belt Sea and Øresund	230	142								
Ple.27.24-32	Baltic plaice (except Belt Sea and Øresund)										
spr.27.22-32	Baltic sprat										
whg.27.xx	western Baltic whiting (stock not clarified)										
North Sea											
anf.27.3a46	anglerfish: North Sea, Rockall and west of Scotland, Skagerrak and Kattegat				946						
cod.27.47d20	cod: North Sea, eastern English Channel and Skagerrak			48							
csh.27.4	North Sea common shrimp							4275	4007	178	
had.27.46a20	haddock: North Sea, west of Scotland and Skagerrak										
her.27.3a47d	herring: North Sea, Skagerrak and Kattegat, eastern English Channel										
hom.3a4bc7d	horse mackerel: Skagerrak and Kattegat, southern and central North Sea, eastern English Channel										
MUS	North Sea mussels					+	+			611	1051
nep.fu.5	Norway lobster: central and southern North Sea (Functional Unit 5)										
nep.fu.33	Norway lobster: central North Sea (Functional Unit 33)										

nep	Norway lobster: North Sea										
ple.27.420	plaice: North Sea and Skagerrak								157	303	231
pok.27.3a46	saithe: North Sea, Rockall and west of Scotland, Skagerrak and Kattegat										
pol.27.3a4	pollock: North Sea, Skagerrak and Kattegat										
san.sa.1r	sand eel: central and southern North Sea, Dogger Bank										
sol.27.4	North Sea sole									307	126
spr.27.3a4	sprat: Skagerrak, Kattegat and North Sea										
Northeast Arctic and Greenland											
aru.27.5b6a	greater silver smelt: Faroe Islands and west of Greenland										
cod.27.1-2	northeast Arctic cod										
cod.2127.1f14	cod: east and southwest Greenland										
ghl.27.561214	Greenland halibut: Iceland and Faroe Islands, west of Scotland, north of the Azores, east Greenland										
ghl NAFO Div. 1A-1F	Greenland halibut: west Greenland										
had.27.1-2	northeast Arctic haddock										
pok.27.1-2	northeast Arctic saithe										
reb.2127.dp	redfish (*S. mentella*): Irminger Sea, Iceland and Faroe Islands, north of the Azores, east Greenland and NAFO subareas 1 and 2 (deep pelagic)										
reb.27.14b	redfish (*S. mentella)*: southeast Greenland (demersal)										
reb.27.1-2	redfish (*S. mentella):*): northeast Arctic										
reg.27.561214	redfish (*S. norvegicus*): Iceland and Faroe Islands, west of Scotland, north of the Azores, east Greenland										
Widely distributed stocks and other areas											
ary.27.6.xx	argentine (*Argentina sphyraena*)										
her.27.1-24a514a	Atlanto-Scandian herring (Norwegian spring spawner)										
hke.27.3a46-8abd	hake (northern stock)										
hom.27.2a4a5b6a7a-ce-k8	northeast Atlantic horse mackerel										
mac.27.nea	northeast Atlantic mackerel										

mon.27.78abd	anglerfish: southern Celtic Sea and Bay of Biscay				567						
PIL FAO area 34	sardine: eastern central Atlantic										
VMA FAO area 34	Atlantic chub mackerel: eastern central Atlantic										
whb.27.1-91214	northeast Atlantic blue whiting										

Annex 1 (cont.)

Stock fished		**Segment**									
ICES stock	**Stock and region**	**DTS VL1012**	**DTS VL1218**	**DTS VL1824**	**DTS VL2440**	**DTS VL40XX**	**TM VL1218**	**TM VL1824**	**TM VL2440**	**TM VL40XX**	**Number Segments**
Baltic Sea											
cod.27.22-24	western Baltic cod	58	326	558	193						6
cod.27.24-32	eastern Baltic cod				144						1
dab.27.22-32	Baltic dab		304	168							2
fle.27.2425	flounder: west of Bornholm and southwest central Baltic		121	165	115						4
fle.27.2223	flounder: Belt Sea and Øresund		133	114							2
her.27.20-24	herring: western Baltic, Kattegat and Skagerrak	53					893	1026	1708		7
her.27.25-2932	eastern Baltic herring									1752	1
ple.27.21-23	plaice: Kattegat, Belt Sea and Øresund		533	396	139						5
Ple.27.24-32	Baltic plaice (except Belt Sea and Øresund)			114							1
spr.27.22-32	Baltic sprat						260	182	38	14161	4
whg.27.xx	western Baltic whiting (stock not clarified)		167	120							2
North Sea											
anf.27.3a46	anglerfish: North Sea, Rockall and west of Scotland, Skagerrak and Kattegat										1
cod.27.47d20	cod: North Sea, eastern English Channel and Skagerrak				699						2
csh.27.4	North Sea common shrimp			191							4
had.27.46a20	haddock: North Sea, west of Scotland and Skagerrak				325						1
her.27.3a47d	herring: North Sea, Skagerrak and Kattegat, eastern English Channel									37369	1
hom.3a4bc7d	horse mackerel: Skagerrak and Kattegat, southern and central North Sea, eastern English Channel									940	1
MUS	North Sea mussels										4
nep.fu.5	Norway lobster: central and southern North Sea (Functional Unit 5)			148							1
nep.fu.33	Norway lobster: central North Sea (Functional Unit 33)			356	107						2
nep	Norway lobster: North Sea			58							1
ple.27.420	plaice: North Sea and Skagerrak			557	800						5

pok.27.3a46	saithe: North Sea, Rockall and west of Scotland, Skagerrak and Kattegat				5826	1212					2
pol.27.3a4	pollock: North Sea, Skagerrak and Kattegat				132						1
san.sa.1r	sand eel: central and southern North Sea, Dogger Bank									3717	1
sol.27.4	North Sea sole										2
spr.27.3a4	sprat: Skagerrak, Kattegat and North Sea									3604	1
Northeast Arctic and Greenland											
aru.27.5b6a	greater silver smelt: Faroe Islands and west of Greenland									954	1
cod.27.1-2	northeast Arctic cod					8472					1
cod.2127.1f14	cod: east and southwest Greenland					1768					1
ghl.27.561214	Greenland halibut: Iceland and Faroe Islands, west of Scotland, north of the Azores, east Greenland					4481					1
ghl NAFO Div. 1A-1F	Greenland halibut: west Greenland					1881					1
had.27.1-2	northeast Arctic haddock					205					1
pok.27.1-2	northeast Arctic saithe					1351					1
reb.2127.dp	redfish (*S. mentella*): Irminger Sea, Iceland and Faroe Islands, north of the Azores, east Greenland and NAFO subareas 1 and 2 (deep pelagic)									531	1
reb.27.14b	redfish (*S. mentella)*: southeast Greenland (demersal)					1232					1
reb.27.1-2	redfish (*S. mentella):*): northeast Arctic					442				1157	2
reg.27.561214	redfish (*S. norvegicus*): Iceland and Faroe Islands, west of Scotland, north of the Azores, east Greenland					815					1
Widely distributed stocks and other areas											
ary.27.6.xx	argentine (*Argentina sphyraena*)									672	1
her.27.1-24a514a	Atlanto-Scandian herring (Norwegian spring spawner)									4142	1
hke.27.3a46-8abd	hake (northern stock)				662						1
hom.27.2a4a5b6a7a-ce-k8	northeast Atlantic horse mackerel									7567	1
mac.27.nea	northeast Atlantic mackerel									16644	1
mon.27.78abd	anglerfish: southern Celtic Sea and Bay of Biscay										1
PIL FAO area 34	sardine: eastern central Atlantic									12537	1
VMA FAO area 34	Atlantic chub mackerel: eastern central Atlantic									3705	1
whb.27.1-91214	northeast Atlantic blue whiting									37710	1

Annex 2: Development of stocks fished by vessels from the various fleet segments in 2019. Stocks are chiefly listed if catches were ≥ 100 tonnes (≥ 500 tonnes in the case of TM VL40XX)

Segment	Stock fished	Stock status at start of 2019
PG VL0010	western Baltic cod	SSB < MSY $_{Btrigger}$, $F_{curr} > F_{MSY}$
	flounder: west of Bornholm and southwest central Baltic	no classification of stock status, $F_{curr} < F_{MSY-proxy}$
	flounder: Belt Sea and Øresund	no classification of stock status, $F_{curr} < F_{MSY-proxy}$
	herring: western Baltic, Kattegat and Skagerrak	$SSB < B_{lim}$, $F_{curr} > F_{MSY}$
	plaice: Kattegat, Belt Sea and Øresund	full reproductive capacity, $F_{curr} > F_{MSY}$
PG VL1012	western Baltic cod	SSB < MSY $_{Btrigger}$, $F_{curr} > F_{MSY}$
	herring: western Baltic, Kattegat and Skagerrak	$SSB < B_{lim}$, $F_{curr} > F_{MSY}$
	plaice: Kattegat, Belt Sea and Øresund	full reproductive capacity, $F_{curr} > F_{MSY}$
DFN VL1218	herring: western Baltic, Kattegat and Skagerrak	$SSB < B_{lim}$, $F_{curr} > F_{MSY}$
	cod: North Sea, eastern English Channel and Skagerrak	$SSB < B_{lim}$, $F_{curr} > F_{MSY}$
DFN VL2440	anglerfish: North Sea, Celtic Sea and western Scotland	no classification possible; management status unclear
	anglerfish: southern Celtic Sea and Bay of Biscay (mon.27.78abd)	Full reproductive capacity, $F_{curr} < F_{MSY}$
DRB VL2440	North Sea mussels	no ICES stock assessment
DRB VL40XX	North Sea mussels	no ICES stock assessment
TBB VL1218	North Sea common shrimp	no ICES stock assessment
TBB VL1824	North Sea common shrimp	no ICES stock assessment
	North Sea and Skagerrak plaice	full reproductive capacity, $F_{curr} < F_{MSY}$
TBB VL2440	North Sea common shrimp	no ICES stock assessment
	North Sea mussels	no ICES stock assessment
	North Sea and Skagerrak plaice	full reproductive capacity, $F_{curr} < F_{MSY}$
	North Sea sole	full reproductive capacity, $F_{curr} > F_{MSY}$
TBB VL40XX	North Sea and Skagerrak plaice	full reproductive capacity, $F_{curr} < F_{MSY}$
	North Sea sole	full reproductive capacity, $F_{curr} > F_{MSY}$
	North Sea mussels	no ICES stock assessment
DTS VL1012	herring: western Baltic, Kattegat and Skagerrak	$SSB < B_{lim}$, $F_{curr} > F_{MSY}$
	western Baltic cod	SSB < MSY $_{Btrigger}$, $F_{curr} > F_{MSY}$
DTS VL1218	Baltic dab	no classification possible; management status unclear
	flounder: west of Bornholm and southwest central Baltic	no classification of stock status, $F_{curr} < F_{MSY-proxy}$
	flounder: Belt Sea and Øresund	no classification of stock status, $F_{curr} < F_{MSY-proxy}$
	western Baltic cod	SSB < MSY $_{Btrigger}$, $F_{curr} > F_{MSY}$
	plaice: Kattegat, Belt Sea and Øresund	full reproductive capacity, $F_{curr} > F_{MSY}$
	western Baltic whiting	stock classification status unclear

DTS VL1824	Baltic dab	no classification possible; management status unclear
	Norway lobster: North Sea (Functional Unit 33)	no classification possible
	Norway lobster: North Sea (Functional Unit 5)	no classification possible
	Norway lobster: North Sea	no classification possible
	flounder: west of Bornholm and southwest central Baltic	no classification of stock status, $F_{curr} < F_{MSY\text{-}proxy}$
	flounder: Belt Sea and Øresund	no classification of stock status, $F_{curr} < F_{MSY\text{-}proxy}$
	western Baltic cod	$SSB < MSY\ _{Btrigger}$, $F_{curr} > F_{MSY}$
	North Sea and Skagerrak plaice	full reproductive capacity, $F_{curr} < F_{MSY}$
	Kattegat, Belt Sea and Øresund plaice	full reproductive capacity, $F_{curr} > F_{MSY}$
	Baltic plaice (except Belt Sea and Øresund)	full reproductive capacity, $F_{curr} < F_{MSY\text{-}proxy}$
	western Baltic whiting	stock classification status unclear
DTS VL2440	western Baltic cod	$SSB < MSY\ _{Btrigger}$, $F_{curr} > F_{MSY}$
	eastern Baltic cod	$SSB < B_{lim}$, F_{MSY} not defined
	flounder: west of Bornholm and southwest central Baltic	no classification of stock status, $F_{curr} < F_{MSY\text{-}proxy}$
	Kattegat, Belt Sea and Øresund plaice	full reproductive capacity, $F_{curr} > F_{MSY}$
	cod: North Sea, eastern English Channel and Skagerrak	$SSB < B_{lim}$, $F_{curr} > F_{MSY}$
	haddock: North Sea, west of Scotland and Skagerrak	full reproductive capacity, $F_{curr} > F_{MSY}$
	saithe: North Sea, Rockall and west of Scotland, Skagerrak and Kattegat	full reproductive capacity, $F_{curr} = F_{MSY}$
	North Sea and Skagerrak plaice	full reproductive capacity, $F_{curr} < F_{MSY}$
	pollock: North Sea, Skagerrak and Kattegat	no classification possible; management status unclear
	hake (northern stock)	full reproductive capacity, $F_{curr} < F_{MSY}$
	Norway lobster: North Sea (Functional Unit33)	no classification possible
DTS VL40XX	northeast Arctic cod	full reproductive capacity, $F_{curr} > F_{MSY}$
	cod: east and southwest Greenland	full reproductive capacity, $F_{curr} < F_{MSY}$
	saithe: North Sea, Rockall and west of Scotland, Skagerrak and Kattegat	full reproductive capacity, $F_{curr} = F_{MSY}$
	northeast Arctic saithe	full reproductive capacity, F_{MSY} not defined but $F_{curr} < F_{MGT}$
	northeast Arctic haddock	full reproductive capacity, $F_{curr} > F_{MSY}$
	Greenland halibut: Iceland and Faroe Islands, west of Scotland, north of the Azores, east Greenland	full reproductive capacity, $F_{curr} > F_{MSY}$
	west Greenland halibut (NAFO)	no classification possible
	redfish (*S. mentella)*: southeast Greenland (demersal)	no classification possible
	redfish (*S. mentella):*): northeast Arctic	full reproductive capacity, F_{MSY} not defined
	redfish (*S. norvegicus*): Iceland and Faroe Islands, west of Scotland, north of the Azores, east Greenland	full reproductive capacity, $F_{curr} > F_{MSY}$
TM VL1218	herring: western Baltic, Kattegat and Skagerrak	$SSB < B_{lim}$, $F_{curr} > F_{MSY}$
	Baltic sprat	full reproductive capacity, $F_{curr} > F_{MSY}$
TM VL1824	herring: western Baltic, Kattegat and Skagerrak	$SSB < B_{lim}$, $F_{curr} > F_{MSY}$
	Baltic sprat	full reproductive capacity, $F_{curr} > F_{MSY}$

TM VL2440	herring: western Baltic, Kattegat and Skagerrak	SSB < B_{lim}, F_{curr} > F_{MSY}
	Baltic sprat	full reproductive capacity, F_{curr} > F_{MSY}
TM VL40XX	Atlanto-Scandian herring (Norwegian spring spawner)	full reproductive capacity, F_{curr} < F_{MSY}
	herring: North Sea, Skagerrak and Kattegat, eastern English 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}
	sprat: Skagerrak, Kattegat and North Sea	full reproductive capacity, F_{MSY} not defined
	northeast Atlantic mackerel	full reproductive capacity, F_{curr} > F_{MSY}
	northeast Atlantic blue whiting	full reproductive capacity, F_{curr} > F_{MSY}
	greater silver smelt: Faroe Islands and west of Greenland	no classification of stock status, F_{curr} < $F_{MSY\text{-}proxy}$
	argentine (*Argentina sphyraena*)	no classification possible
	horse mackerel: Skagerrak and Kattegat, southern and central North Sea, eastern English Channel	no classification possible, F_{curr} > $F_{MSY\text{-}proxy}$
	northeast Atlantic horse mackerel	SSB < $MSY_{Btrigger}$, F_{curr} > F_{MSY}
	redfish (*S. mentella*): Irminger Sea, Iceland and Faroe Islands, north of the Azores, east Greenland and NAFO subareas 1 and 2 (deep pelagic)	SSB < B_{lim} (relative), F_{curr} > F_{MSY} (relative)
	redfish (*S. mentella):*): northeast Arctic	full reproductive capacity, F_{MSY} not defined
	North Sea sand eel 1r	SSB < $MSY_{Bescapement}$, F_{MSY} not defined
	sardine: eastern central Atlantic	no classification possible
	Atlantic chub mackerel: eastern central Atlantic	no classification possible

Annex 3: Overview of capacity changes in 2019

Status of the German fishing fleet as at 31.12.2018

Description	Number	GT	kW
Small-scale coastal fishing vessels < 12 m	**1,026**	**2,562**	**26,149**
VL0010 PG	961	1,843	20,414
VL1012 PG	65	719	5,735
Passive > 12 m	**15**	**1,361**	**3,658**
VL1218 FPO	1	24	220
VL2440 FPO	1	199	441
VL1218 DFN	7	193	968
VL1824 DFN	1	68	132
VL2440 DFN	5	877	1,897
Trawlers up to 40 m	**54**	**5,635**	**13,659**
VL0010 DTS	1	4	57
VL1012 DTS	8	112	853
VL1218 DTS	17	548	3,109
VL1824 DTS	11	1,293	2,529
VL2440 DTS	11	3,043	5,825
VL1012 TM	0	0	0
VL1218 TM	1	75	219
VL1824 TM	3	279	662
VL2440 TM	2	281	405
Beam trawlers	**215**	**10,970**	**46,600**
VL0010 TBB	14	41	536
VL1012 TBB	4	53	424
VL1218 TBB	113	3,575	22,174
VL1824 TBB	72	4,489	15,825
VL2440 TBB	10	2,021	5,788
VL40XX TBB	2	791	1853
Deep-sea pelagic trawlers > 40 m	**5**	**20,254**	**20,427**
VL40XX TM	5	20,254	20,427
Deep-sea demersal trawlers > 40 m	**7**	**15,417**	**16,394**
VL40XX DTS	7	15,417	16,394
Mussel dredgers	**7**	**1,836**	**3,866**
VL1218 DRB	1	53	252
VL2440 DRB	3	581	1,381
VL40XX DRB	3	1,202	2,233
Grand total	**1,329**	**58,035**	**130,753**

Status of the German fishing fleet as at 31.12.2019

Description	Number	GT	kW
Small-scale coastal fishing vessels < 12 m	**1,013**	**2,566**	**26,240**
VL0010 PG	946	1,813	20,285
VL1012 PG	67	753	5,955
Passive > 12 m	**15**	**1,384**	**3,779**
VL1218 FPO	2	73	441
VL2440 FPO	1	199	441
VL1218 DFN	6	167	868
VL1824 DFN	1	68	132
VL2440 DFN	5	877	1,897
Trawlers up to 40 m	**53**	**6,578**	**14,716**
VL0010 DTS	0	0	0
VL1012 DTS	4	52	358
VL1218 DTS	18	623	3,328
VL1824 DTS	14	1,621	3,192
VL2440 DTS	13	4,072	7,234
VL1012 TM	1	18	100
VL1218 TM	1	26	100
VL1824 TM	1	40	220
VL2440 TM	1	126	184
Beam trawlers	**209**	**10,581**	**45,063**
VL0010 TBB	14	46	637
VL1012 TBB	5	63	515
VL1218 TBB	108	3,405	21,214
VL1824 TBB	71	4,400	15,639
VL2440 TBB	8	1,448	3,765
VL40XX TBB	3	1219	3293
Deep-sea pelagic trawlers > 40 m	**4**	**19,541**	**18,832**
VL40XX TM	4	19,541	18,832
Deep-sea demersal trawlers > 40 m	**5**	**14,470**	**14,875**
VL40XX DTS	5	14,470	14,875
Mussel dredgers	**9**	**2,458**	**5,138**
VL1218 DRB	1	53	252
VL2440 DRB	3	581	1,381
VL40XX DRB	5	1,824	3,505
Grand total	**1,308**	**57,578**	**128,643**

Absolute changes in 2019 on previous year

Description	Number	GT	kW
Small-scale coastal fishing vessels < 12 m	**-13**	**4**	**91**
VL0010 PG	-15	-30	-129
VL1012 PG	2	34	220
Passive > 12 m	**0**	**23**	**121**
VL1218 FPO	1	49	221
VL2440 FPO	0	0	0
VL1218 DFN	-1	-26	-100
VL1824 DFN	0	0	0
VL2440 DFN	0	0	0
Trawlers up to 40 m	**-1**	**943**	**1,057**
VL0010 DTS	-1	-4	-57
VL1012 DTS	-4	-60	-495
VL1218 DTS	1	75	219
VL1824 DTS	3	328	663
VL2440 DTS	2	1,029	1,409
VL1218 TM	0	-49	-119
VL1824 TM	-2	-239	-442
VL2440 TM	-1	-155	-221
Beam trawlers	**-6**	**-389**	**-1,537**
VL0010 TBB	0	5	101
VL1012 TBB	1	10	91
VL1218 TBB	-5	-170	-960
VL1824 TBB	-1	-89	-186
VL2440 TBB	-2	-573	-2,023
VL40XX TBB	1	428	1,440
Deep-sea pelagic trawlers > 40 m	**-1**	**-713**	**-1,595**
VL40XX TM	-1	-713	-1,595
Deep-sea demersal trawlers > 40 m	**-2**	**-947**	**-1,519**
VL40XX DTS	-2	-947	-1,519
Mussel dredgers	**2**	**622**	**1,272**
VL1218 DRB	0	0	0
VL2440 DRB	0	0	0
VL40XX DRB	2	622	1,272
Grand total	**-21**	**-457**	**-2,110**

Annex 4: Sustainable harvest indicator (SHI) for 2018 The rows highlighted in grey were not included because less than 40% of the fleet's landing value was used when calculating the indicator. Scores marked with an 'a' are based on a calculation made by Germany, since no STECF assessment was available.

Fleet segment	Value of landings by 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
PG VL1012	1095196	*ple.27.21-23, *mac.27.nea, *her.27.20-24, *cod.27.22-24, *spr.27.22-32, sol.27.20-24	6	5	1.37	77	1427720
DTS VL1012	275357	*her.27.20-24, *spr.27.22-32, sol.27.20-24, *ple.27.21-23, *cod.27.22-24	5	4	1.37	49	563899
TM VL1218	273864	*her.27.20-24, *spr.27.22-32, *cod.27.22-24	3	3	1.36[a]	70	389860
TM VL1824	843099	*her.27.20-24, *spr.27.22-32, *cod.27.22-24	3	3	1.36[a]	76	1114319
DTS VL1218	2086682	*mac.27.nea, *ple.27.21-23, ple.27.420, sol.27.20-24, *sol.27.4, *spr.27.22-32, tur.27.4, *wit.27.3a47d, hke.27.3a46-8abd, *her.27.20-24, *cod.27.47d20, *cod.27.22-24	12	8	1.33	76	2730688
TM VL2440	1400668	*her.27.20-24, *spr.27.22-32, *cod.27.22-24	3	3	1.32[a]	96	1456924
DFN VL1218	857348	*wit.27.3a47d, bss.27.4bc7ad-h, *cod.27.22-24, *cod.27.47d20, *had.27.46a20, *her.27.20-24, hke.27.3a46-8abd, *ple.27.21-23, ple.27.420, pok.27.3a46, sol.27.20-24, *sol.27.4, tur.27.4'	13	7	1.30	87	985039
DTS VL2440	13554178	ple.27.420, *ple.27.21-23, nep.fu.8, sol.27.20-24, *mac.27.nea, lez.27.4a6a, hom.27.2a4a5b6a7a-ce-k8, hke.27.3a46-8abd, her.27.3a47d, *her.27.25-2932, *her.27.1-24a514a, *had.27.46a20, *cod.27.47d20, *cod.27.22-24, *wit.27.3a47d, *whg.27.47d, tur.27.4, *spr.27.22-32, *sol.27.4, *nep.fu.6, pok.27.3a46	21	12	1.25	88	15344026

DTS VL40XX	45211026	lez.27.4a6a, *wit.27.3a47d, *whg.27.47d, *whb.27.1-91214, tur.27.4, *reg.27.561214, *reg.27.1-2, *reb.2127.dp, pok.27.3a46, pok.27.1-2, ple.27.420, *mac.27.nea, cod.2127.1f14, *cod.27.1-2, *cod.27.47d20, cod.27.5a, *ghl.27.561214, *had.27.1-2, *had.27.46a20, her.27.1-24a514a, hke.27.3a46-8abd, hom.27.2a4a5b6a7a-ce-k8	22	12	1.23	82.5	54789162
DFN VL2440	1283798	bss.27.4bc7ad-h, *her.27.20-24, hke.27.3a46-8abd, mon.27.78abd, ple.27.420, pok.27.3a46, *sol.27.4, tur.27.4, *had.27.46a20, *cod.27.47d20'	10	4	1.22	41	3139246
TM VL40XX	62307188	hom.27.2a4a5b6a7a-ce-k8, boc.27.6-8, *mac.27.nea, pok.27.3a46, *spr.27.22-32, *whb.27.1-91214, *whg.27.47d, hke.27.3a46-8abd, her.27.3a47d, *her.27.25-2932, *cod.27.22-24, *her.27.20-24, her.27.1-24a514a, *had.27.46a20	14	8	1.17	82	75834071
DTS VL1824	4935825	*whg.27.47d, tur.27.4, *spr.27.22-32, *nep.fu.6, nep.fu.8, *ple.27.21-23, ple.27.420, nep.fu.3-4, *mac.27.nea, hke.27.3a46-8abd, *her.27.20-24, *had.27.46a20, *cod.27.47d20, *cod.27.22-24, pok.27.3a46, sol.27.20-24, *sol.27.4, *wit.27.3a47d	18	11	1.03	71	6908609
TBB VL2440	10499937	tur.27.4, bss.27.4bc7ad-h, *cod.27.47d20, *had.27.46a20, hke.27.3a46-8abd, *mac.27.nea, *nep.fu.6, nep.fu.8, ple.27.420, *sol.27.4, *whg.27.47d, *wit.27.3a47d	12	7	1.03	87	12087926
TBB VL40XX	1637186	ple.27.420, *sol.27.4, tur.27.4	3	1	1.01[a]	81	2017748
PG VL0010	1662107	*ple.27.21-23, *mac.27.nea, *her.27.20-24, *cod.27.22-24, sol.27.20-24, *spr.27.22-32, *whb.27.1-91214	7	6	1.37	32	5128099
TBB VL1824	1348248	nep.fu.8, ple.27.420, *sol.27.4, *cod.27.47d20, tur.27.4, *had.27.46a20, *whg.27.47d, hke.27.3a46-8abd *nep.fu.6	9	5	0.99	5	29241755
TBB VL1218	2115	*sol.27.4, tur.27.4, ple.27.420	3	1	0.95	0.01	29544133