31 May 2023

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 2022

1.A: Fleet description and development

i. Fleet description

As at 31 December 2022 the German fishing fleet comprised 1 184 fishing vessels with a total capacity of 54 292 GT and 125 002 kW. This is a reduction of 62 vessels compared to the previous year. Fishing capacity decreased by 689 kW in engine power and 2 273 GT in tonnage. In the description below the vessels have been broken down into seven groups.

Static net vessels < 12 m (PG VL0008A, PG VL0008L, PG VL0812A, PG VL0812L)
This segment comprises 913 small-scale coastal fishing vessels less than 12 metres in length, which makes it the largest of the German fleet in terms of numbers. The vessels mainly operate with passive gears (including static nets) in the Baltic Sea. About a third of the vessels in this segment are managed as a side business, some of them only as a second or third vessel, with only a few days of fishing effort. The species fished are mainly herring and plaice, but also include cod (inevitable bycatch), flounder, bream and roach. It is important to note that as some segments in this group have been restructured, no meaningful comparison can be made between the current reporting year and earlier years.

The number of vessels in this group decreased by 55, so specific engine power fell by 1 071 kW and tonnage by 149 GT.

Fishing vessels using passive fishing gear ≥ 12 m (FPO VL1824, FPO VL2440, DFN VL1218, DFN VL1824, DFN VL2440)
A further group is made up of fishing vessels with an overall length of more than 12 metres mainly fishing with passive gears. As at 31 December 2022 it comprised 16 vessels. The larger vessels in this group operate only in western waters, where they mainly fish anglerfish and Atlantic deep-sea red crab (*Chaceon affinis*). Some vessels fish in the North Sea and Skagerrak (anglerfish, plaice, cod, lobster, brown crab, pollack and sole). Smaller vessels in this group operate in the Baltic Sea, where they mainly catch flatfish.

The number of vessels in this segment increased by four. Fishing capacity increased by 167 GT and 602 kW. This is mainly due to the fact that two vessels from the beam trawler segment and two vessels from bottom trawler segment have shifted their activity to lobster and brown crab fishing using fish traps.

Trawlers < 40 m (DTS VL0812, DTS VL1218, DTS VL1824, DTS VL2440)

As at 31 December 2022 there were a total of 44 vessels in the trawler group with a total length up to 40 metres. In the North Sea these vessels mainly fish saithe, cod, haddock, Norway lobster, plaice and hake, whereas their main catches in the Baltic sea were of sprat, plaice, dab and flounder.

The number of vessels in this segment decreased by three. Fishing capacity increased by 61 GT and 524 kW.

Beam trawlers (TBB VL0010, TBB VL1012, TBB VL1218, TBB VL1824, TBB VL2440, TBB VL40XX)

Beam trawlers play a key role in the German fishing industry. For the majority of these vessels the target species is North Sea shrimp (CSH). However, the large beam trawlers mainly catch mussels and flatfish such as plaice and sole across the North Sea.

Fishing with electric pulse trawls has been prohibited in all EU waters since 1 July 2021 under point 1 of Part D of Annex V to Regulation (EU) 2019/1241.

A total of 193 beam trawlers, with a total capacity of 9 504 GT and 41 849 kW, were registered in the German fishing fleet as at 31 December 2022. Compared to the previous year this is a reduction of 1 306 GT in tonnage and 3 638 kW in engine power. The number of vessels decreased by 10.

Deep-sea pelagic fisheries (TM VL40XX)

A total of five deep-sea pelagic vessels (overall length 40 metres or more) were registered in the German fishing fleet as at 31 December 2022. Vessels in this segment are very heterogeneous in terms of size and areas of operation. They include both large deep-sea vessels more than 100 metres in overall length and with a tonnage of up to 9 000 GT and significantly smaller deep-seas cutters of 700-1 000 GT. The vessels operated in a great variety of fishing areas. In the North Sea and in western waters (ICES 4, 5b, 6a, 7) they mainly caught herring, mackerel and blue whiting. In the Baltic Sea they mainly caught sprat, but also herring in the eastern Baltic. One vessel made several trips to FAO area 34.1.3, mainly catching sardine (PIL), horse mackerel (HOM) and Atlantic chub mackerel (VMA).

There were five vessels in the reporting year, the same as in the previous year. Fishing capacity also remained unchanged in 2022 at 20 514 GT und 21 141 kW.

Deep-sea demersal fisheries (DTS VL40XX)

There were a total of five vessels in the deep-sea demersal fisheries segment as at 31 December 2022. These fished almost exclusively in the north Atlantic (including off Greenland, Norway and Svalbard and in ICES areas 1, 2 and 14). Catches in the northern North Sea, Norwegian waters and off Svalbard were mainly of cod and saithe. Fishing in Greenland waters and in NEAFC areas targeted Greenland halibut and redfish.

As before, five vessels were registered in the German fishing fleet as at 31 December 2022, with a total capacity of 12 849 GT and 14 275 kW.

Mussel dredgers (DRB VL2440, DRB VL40XX)

There were eight vessels in the mussel dredger segment as at 31 December 2022. These vessels mainly manage their own mussel farms but also have the right – unlike pure fish farm vessels – to catch wild mussels. They operate exclusively in the North Sea. The exploitation of shellfish resources in coastal waters is subject to a special permit from the respective federal state. The vessels in this fishery were grouped together in segment DRB VL2440 for the purpose of calculating the indicators.

The segment increased by two vessels. Also, fishing capacity increased by 538 GT and 1 310 kW.

ii. Fisheries by fleet segment

The presentation below is based on DCF segments (Table 8 of Commission Delegated Decision (EU) 2021/1167). **Annex 1** sets out the fish stocks and invertebrate stocks fished by each segment in 2022. The stocks listed are the most important stocks for the segment concerned. In general stocks were taken into account only if vessels in a given segment landed at least 100 tonnes in 2022, or at least 500 tonnes in the case of pelagic trawlers of more than 40 metres (TM VL40XX). However, for some segments, such as DFN VL1218, DTS VL1012 and the PG segments, the main stocks are listed even if landings were of less than 100 tonnes, as they are considered to be of importance to those segments.

Stock assessments (**Annex 2**) relate to 2021 for fishing mortality (F) and early 2022 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 2022 will only become available in the course of 2023, after the deadline for submitting this fleet

report. More recent data (collected in 2022) may result in significantly different assessments for certain stocks, which can only be taken into account in the next annual report.

Passive gear vessels < 8 m (PG VL0008A, PG VL0008L)

In terms of sea fishing, vessels in these segments mainly fished four stocks in the Baltic Sea and Kattegat in 2022. The main catches were of plaice (Kattegat, Belt Sea and Øresund) (PG VL0008A: 61 tonnes; PG VL0008L: 39 tonnes), followed by flounder (Belt Sea and Øresund; PG VL0008A: 20 tonnes, PG VL0008L: 29 tonnes). Catches of western Baltic herring were of 18 tonnes (PG VL0008A) and 27 tonnes (PG VL0008L). The spawning stock biomass (SSB) of this stock has been below B_{lim} for a number of years. Although F_C remained below F_{MSY} in 2021, the condition of this stock is considered to be so poor that the ICES recommends zero catches in 2023, as was also the case in the previous year. Moreover, the outlook for this stock remains poor due to weak offspring production. The plaice stock (Kattegat, Belt Sea and Øresund) has full reproductive capacity and was fished at F_C below F_{MSY}. For the flounder stocks fished there is no ICES-approved assessment allowing their status to be given in relation to reference points. Baltic flatfish catches and stocks have been developing favourably for years and currently account for a substantial share of catches, at least in ICES sub-division 22. As regards the historically very important western Baltic cod stock, only very small quantities were fished, as pure by-catch (3 tonnes and 2 tonnes, respectively). Apart from the main marine species, catches by these segments in the Baltic Sea and in bordering brackish waters also included considerable quantities of bream (PG VL0008A: 274 tonnes, PG VL0008L: 73 tonnes), roach (A: 220 tonnes, L: 30 tonnes), zander (A: 51 tonnes, L: 18 tonnes), European perch (A: 25 tonnes, L: 20 tonnes), and eel (A: 23 tonnes, L: 22 tonnes).

Passive gear vessels 8-12 m (PG VL0812A, PG VL0812L)

In 2022 vessels in these segments mainly fished five stocks in the Baltic Sea. The main catches in segment PG VL0812A were of plaice (Kattegat, Belt Sea and Øresund, 243 tonnes) and of western Baltic herring (101 tonnes), whereas segment PG VL0812L fished more western Baltic herring (42 tonnes) than plaice (16 tonnes). The SSB of western Baltic herring has been below B_{lim} for a number of years. Although F_C was below F_{MSY} in 2021, the condition of this stock is considered to be so poor that the ICES recommends zero catches in 2023, as was also the case in the 2 previous years. Moreover, the outlook for this stock remains poor due to weak offspring production. The plaice stock (Kattegat, Belt Sea and Øresund) has full reproductive capacity and was fished at F_C below F_{MSY}. Segment PG VL0812A also made considerable catches of dab (Baltic stock, 42 tonnes) and of flounder, both of the stock west of Bornholm and in the south-west central Baltic (57 tonnes) and of the Belt Sea and Øresund stock (87 tonnes). As there is no ICES-approved assessment of these stocks, their status cannot be given in relation to reference points. Baltic flatfish stocks and catches have been increasing for years and now account for a high share of overall catches, at least in ICES sub-area 22. As regards the

historically very important western Baltic cod stock, only very small quantities were fished, as pure by-catch (A: 6 tonnes, L: 1 tonne).

Driftnet or static net vessels 12-18 m (DFN VL1218)

In 2021 vessels in this segment mainly fished plaice (52 tonnes) and cod (22 tonnes) in the North Sea, in addition to brown crab in the North Sea, Kattegat and Skagerrak. The North Sea plaice stock has full reproductive capacity, with fishing mortality F_C in the North Sea below F_{MSY}. The North Sea cod stock is in a poor condition. Although SSB decreased from 2016 to 2020 and has been below B_{lim} (reduced reproductive capacity) since 2019, there was also a further decrease in fishing mortality to $F_C = 0.25$ in 2021, meaning it was below F_{MSY} (0.28) for the first time. There is no stock assessment for brown crab.

Driftnet or static net vessels 24-40 m (DFN VL2440)

In 2022 this segment mainly fished anglerfish (*Lophius piscatorius* and *L. budegassa*) in the north-east Atlantic (total catches: 620 tonnes), of which 354 tonnes in ICES areas 4 und 6 and Division 3a (anf.27.3a46) and 266 tonnes in ICES area 7 (mon.27.78abd and ank.27.78abd). The biomass index for anglerfish (anf.27.3a46) has been falling since 2017, but the stock size index is above MSY $B_{trigger\ proxy}$. There are two species of anglerfish in ICES areas 7 and 8 (*L. budegassa* and *L. piscatorius*), and both need to be considered as the species is not specified at landing (there is a combined TAC for both). L. *piscatorius* (mon.27.78abd) L. *budegassa* (ank.27.78abd) are both in a good condition. In 2021 the spawning stock biomass was above $MSY_{Btrigger}$ and fishing mortality F_C was below F_{MSY} for both stocks.

Mussel dredgers (DRB)

Vessels in this segment fish mussels in the North Sea. No ICES 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*, 30 tonnes). There is no quota for this target species and no analytical stock calculation is made. This segment will not be further taken into account due to low catches (< 50 tonnes).

Beam trawlers 10-12 m (TBB VL1012)

Beam trawlers in this segment caught almost exclusively common shrimp (28 tonnes). There is no quota for this target species and no analytical stock calculation is made. This segment will not be further taken into account due to low catches (< 50 tonnes).

Beam trawlers 12-18 m (TBB VL1218)

Beam trawlers in this segment caught almost exclusively common shrimp (4 544 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 (4 386 tonnes). There is no quota for this target species and no analytical stock calculation is made.

Beam trawlers 24-40 m (TBB VL2440)

Beam trawlers in this segment mainly caught plaice (129 tonnes), common shrimp (119 tonnes) and sole (45 tonnes) in the North Sea. Plaice has full reproductive capacity and fishing mortality F_C was below F_{MSY} in 2021, whereas the spawning stock biomass was below $MSY_{Btrigger}$ and F_C above F_{MSY} for sole. There is no stock assessment for common shrimp.

Beam trawlers > 40 m (TBB VL40XX)

Beam trawlers in this segment mainly caught plaice (87 tonnes), sole (79 tonnes) and haddock (36 tonnes) in the North Sea. Plaice and haddock have full reproductive capacity and fishing mortality was below F_{MSY} in 2021 for both stocks, whereas SSB was below $MSY_{Btrigger}$ and F_C above F_{MSY} for sole.

Demersal trawlers 10-12 m (DTS VL1012 / DTS VL0812)

Vessels in this segment mainly fished Baltic sprat (117 tonnes), flounder west of Bornholm and in the south-west Baltic (61 tonnes) and Baltic plaice (32 tonnes). Baltic sprat has full reproductive capacity, SSB for Baltic plaice (ple.27.24-32) is above $MSY_{Btrigger\ proxy}$, and for the flounder stock west of Bornholm and in the south-west central Baltic there is no ICES-approved assessment allowing its status to be given in relation to reference points. Fishing mortality for sprat was above F_{MSY} and for plaice below $F_{MSY\ proxy}$.

Demersal trawlers 12-18 m (DTS VL1218)

Vessels in this segments mainly fished Baltic sprat (615 tonnes), plaice (Kattegat, Belt Sea and Øresund: 170 tonnes) and flounder (west of Bornholm and south-west Baltic: 82 tonnes). Baltic sprat and the Kattegat, Belt Sea and Øresund plaice stock have full reproductive capacity, sprat was fished at F_C above F_{MSY} and plaice at F_C below F_{MSY}. For the flounder stock west of Bornholm and in the south-west central Baltic there is no ICES-approved assessment allowing its status to be given in relation to reference points.

Demersal trawlers 18-24 m (DTS VL1824)

Vessels in this segment mainly fished plaice (310 tonnes) and Norway lobster (FU 33: 209 tonnes; FU 5: 143 tonnes) in the North Sea. Catches in the Baltic Sea, Kattegat, Belt Sea and Øresund were mainly of sole (western Baltic, Kattegat, Skagerrak: 179 tonnes) and flounder (west of Bornholm and south-west central Baltic: 137 tonnes). Both plaice sole and have full reproductive capacity and were fished at fishing mortality F_C below F_{MSY} in 2021. For

flounder and the two Norway lobster units (FU 33 and FU 5) there is no stock status classification available.

Demersal trawlers 24-40 m (DTS VL2440)

Vessels in this segment mainly fished saithe (4 074 tonnes), cod (706 tonnes), cod (746 tonnes), haddock (516 tonnes), hake (382 tonnes) plaice (358 tonnes), pollack (185 tonnes) and Norway lobster FU 33 (124 tonnes) in the North Sea. In the Baltic Sea catches were mainly of sprat (710 tonnes). Of the main stocks fished, four have full reproductive capacity (North Sea and Skagerrak plaice, North Sea haddock, Baltic sprat and northern stock of hake).

The spawning stock biomass is below B_{lim} for North Sea cod and below $MSY_{Btrigger}$ for North Sea saithe. There is no ICES classification available as regards the reproductive capacity of North Sea pollack or Norway lobster FU 33.

The North Sea cod stock is currently in a poor condition. Although SSB has been in decline since 2016 and below B_{lim} (reduced reproductive capacity) since 2019, there was a further decrease in fishing mortality to F_C = 0.26 in 2021, meaning it was below F_{MSY} (0.28) for the first time.

Fishing mortality F_C was below F_{MSY} for North Sea plaice and haddock and the northern hake stock and above F_{MSY} for Baltic sprat and North Sea saithe. There is no clear management status for North Sea pollack or Norway lobster FU 33.

Demersal trawlers > 40 m (DTS VL40XX)

In the North Sea vessels in this segment mainly fished saithe (163 tonnes). Their catches in the Barents Sea and the Norwegian Sea were mainly of north-east Arctic cod (7 138 tonnes), redfish (*S. mentella*, 1 166 tonnes), saithe (474 tonnes) and haddock (269 tonnes). In the west Greenland NAFO area they caught 1 656 tonnes of Greenland halibut. Their main catches in ICES sub-area 14 on the east Greenland shelf and west of Iceland were of Greenland halibut (4 441 tonnes), redfish (*Sebastes mentella* 525 tonnes; *S. norvegicus* 696 tonnes) and cod (cod.21271f14: 1 969 tonnes). Six of the stocks fished have full reproductive capacity (saithe, haddock, *S. mentella* redfish, Greenland halibut, cod and *S. norvegicus* redfish off east Greenland/Iceland). For north-east Arctic cod there is no up-to-date ICES stock assessment, but the stock is believed to have full reproductive capacity. There is no ICES classification available concerning the reproductive capacity of Greenland halibut off west Greenland or *S. mentella* redfish on the Greenland shelf. The spawning stock biomass of North Sea saithe is below $MSY_{Btrigger}$.

Fishing mortality F_C was below F_{MSY} for Greenland halibut on the east Greenland shelf and west of Iceland and above F_{MSY} for *S. norvegicus* redfish off east Greenland/Iceland, cod off

east and south-west Greenland, north-east Arctic haddock and redfish and North Sea saithe. For north-east Arctic saithe F_{MSY} is not defined, and there is no clear management status for Greenland halibut off west Greenland or redfish (*S. mentella*) on the south-east Greenland shelf.

Pelagic trawlers 12-18 m (TM VL1218)
There were no active vessels in this segment in 2022.

Pelagic trawlers 18-24 m (TM VL1824)
There were no active vessels in this segment in 2022.

Pelagic trawlers 24-40 m (TM VL2440)
There were no active vessels in this segment in 2022.

Pelagic trawlers > 40 m (TM VL40XX)
In the North Sea vessels in this segment mainly fished herring (46 260 tonnes) and sprat (2 366 tonnes). They also caught 13 250 tonnes of Baltic sprat and 202 tonnes of eastern Baltic herring. Of the main north-east Atlantic species they fished 21 851 tonnes of blue whiting, 14 591 tonnes of mackerel, 5 379 tonnes of Atlanto-Scandian herring, 4 264 tonnes of horse mackerel and 728 tonnes of great silver smelt (*Argentina silus*). They also caught 592 tonnes of pelagic *S. mentella* redfish in the Norwegian Sea, 502 tonnes of boarfish (*Capros* ssp.), as well as 5 102 tonnes of Atlantic chub mackerel (*Scomber colias*), 3 450 tonnes of sardine and 646 tonnes of horse mackerel in the central-east Atlantic (CECAF area).

Of the 14 stocks mentioned, seven have full reproductive capacity (Atlanto-Scandian herring, Baltic sprat, North Sea herring, north-east Atlantic blue whiting and mackerel, north-east Arctic (*S. mentella*) redfish and great silver smelt (Faroe Island and west of Scotland), whereas for seven stocks a classification is not available or is outdated (sardine, chub mackerel and horse mackerel in the central-east Atlantic). The spawning stock biomass (SSB) is below MSY $B_{trigger}$ for eastern Baltic herring and below B_{lim} for north-east Atlantic horse mackerel. For North Sea sprat, the SSB is below MSY $B_{escapement.}$ 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 determined. Fishing mortality F_C was below F_{MSY} for North Sea herring and great silver smelt and above F_{MSY} for Atlanto-Scandian herring, eastern Baltic herring, Baltic sprat, blue whiting and mackerel.

iii. Fleet development

In the reporting year the German fleet was reduced by 45 vessels (-3.49%). Total capacity fell by 3 395 GT (-5.82%) in tonnage and 3 772 kW (-2.88%) in engine power.

Accurate 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 restrictions and their impact on fishing capacity

i. Fishing effort restrictions

Regulation (EC) No 2016/2336 lays down fishing effort regulations for Germany as regards the fishing of deep-sea species.

The overall fishing capacity allocated to Germany for fisheries targeting deep-sea species was not exceeded in 2022. Deep-sea fishing is defined 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. In 2022 only catches of deep-sea red crab (KEF) fell into this category.

ii. Impact of fishing effort restrictions on fishing capacity

German fishing vessels are no longer 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 total fishing capacity for Germany calculated on this basis 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 the fleet as at 1/1/2003:	71 117 GT	167 177 kW
Total German fishing capacity as at 31/12/2022:	70 176 GT	164 971 kW

Capacity reductions (withdrawals from the fleet with public support) in 2022: **425 GT and 1 465 kW.**

1.D: Fleet management

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

The fleet structure as it currently stands has remained virtually unchanged. In 2022 the fleet was reduced by 45 vessels mainly due to the withdrawal of static net vessels <12 m (segments PG VL0008 and PG VL0812).

The Fleet Regulation (Regulation (EU) 2017/218) is viewed favourably as it lays down some new parameters for recording fleet structure data. For example, the data bank now includes 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. As a result the European fleet register is now far more up to date, and 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.

In 2022 fishing capacity of 425 GT and 1 465 kW was scrapped with support from public funds in Germany. As this capacity is no longer available to the German fishing fleet, it is deducted from the reference value laid down in Annex II to Regulation (EU) No 1380/2013.

The overall fleet structure remains just as heterogeneous and diverse as before, as can be seen from the individual segments. Indeed, this is expressly fostered by fleet management policy, for example by favouring small-scale coastal fisheries when allocating fishing opportunities.

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

In 2022, due to the drastic Baltic Sea quota reductions for 'bread-and-butter' fish such as cod and herring, Germany allowed fishing businesses operating several vessels to part with individual vessels without losing the quotas associated with those vessels. These quotas would otherwise have had be returned to the State for redistribution among all fishing industry operators. This enabled businesses faced with a crisis to reorganise themselves and set up more profitably.

Furthermore, fleet management in Germany is characterised by the wish to uphold the tradition of fishing as a family-run side business and to prevent harbours being abandoned, also with the aim of encouraging 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 Sea Fisheries Act (*Seefischereigesetz*). 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.

In 2022 the fishing industry was severely affected by Russia's aggression against Ukraine, as it led to a significant increase in fishing businesses' operating costs. Support was made available to German fishing businesses.

ii. Plans to improve the fleet management system

Looking at the development of the German fleet, the number of vessels has fallen significantly – from 2 315 vessels in 2000 to 1 184 vessels in 2022 – with a corresponding drop in fishing capacity. To adapt fishing capacity to fishing opportunities, aid was provided for the decommissioning of Baltic Sea vessels during this period.

German policy emphasises that there must be room for efficient resource management if important stocks develop favourably. The mechanisms currently in place to manage the fleet are regarded as sufficient.

Germany will continue to put considerable effort into developing and improving 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 analysis of the balance indicators is based on DCF segments (Table 8 of Commission Delegated Decision (EU) 2021/1167). 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 values 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 2021 since the 2022 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 2021, unless otherwise stated.

Compared to earlier German fleet reports, there are changes to the fleet segmentation in the current report. The segmentation changes slightly as from 2021 in accordance with Commission Decision (EU) 2021/1167. Based on the requirement to keep a logbook, the smallest length class for Baltic Sea vessels is now up to 8 m instead of 10 m. Moreover, in accordance with Commission Implementing Decision (EU) 2022/39, for passive gear vessels below 12 metres a distinction is made according to level of activity, based on an annual turnover of EUR 10 000. Vessels in segment ‘A’ are above this limit, while vessels in segment ‘L’ are below it. As from the 2021 reference year, the following segmentation will be used:

- DTS VL0812 will be included in DTS VL1012 as, in any case, there are no DTS vessels between 8 and 10 metres in length in the German commercial fishing fleet.
- PG VL0010 will be included in the data for PG VL0008A. A new table with indicators for segment PG VL0008L is introduced as from 2021.
- PG VL1012 will be included in the data for PG VL0812A. A new table for segment PG VL0812 is introduced as from 2021.

Passive gear vessels < 8 m (PG VL0008A, formerly PG VL0010)

PG VL0008A	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.35	0.33	0.25	0.36	0.36	0.42	0.46	0.45	0.42	0.36	0.00
SAR	1	2	1	1	2	1	1	2	2	1	
SHI	2.63	2.53	2.64	2.56	2.60	2.12	2.36	2.28	1.96	1.34	
CR/BER	0.82	0.44	1.36	1.00	1.23	1.14	0.45	0.13	0.06	-3.28	
RoFTA	-11.4	-27.8	18.9	0.26	12.4	7.3	-32.2	-60.0	-59.3	-351.1	
Number of vessels	809	783	768	743	729	691	666	650	631	617	66
GT	1 615	1 544	1 521	1 516	1 527	1 398	1 317	1 311	1 271	1238	102
kW	17 175	16 832	17 000	16 993	17 202	16 268	15 361	15 477	15 227	15 143	1 592
Number of log vessels*	144	132	130	129	135	116	107	106	100	98	0
GT log*	721	659	656	672	721	616	560	565	541	527	0
kW log*	7 263	6 818	6 722	6 779	7 407	6 420	5 893	5 854	5 346	5 471	0

Log vessels* = vessels required to keep a logbook

(a) Technical indicator

As vessels in this segment are not subject to the logbook requirement, the technical indicator need not be calculated. No sea day or fishing effort records are available for these vessels.

Inactivity indicator:
Inactive vessels in segment VL0008 PG have been included in segment VL008PG-L.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Vessels in this segment mainly fished western Baltic plaice in addition to herring and cod, for which a stock assessment is available. Fishing mortality F_C 2021 was below F_{MSY} for herring and plaice, but well above F_{MSY} for western Baltic cod. The overall SHI value fell from 2.28 in 2019 to 1.96 in 2020, and in 2021 it fell further to 1.34 due to reduced fishing mortality for two of the main stocks and a parallel reduction in the total catches of western Baltic cod. An SHI value >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 ($F_C > F_{MSY}$). Note, however, that the fleet report only indicates SHI values for segments for which the share of the landings value that can be used to calculate the indicator exceeds 40% of the total value of landings by that segment. As this value is calculated to be 13% here, i.e. < 40%, it is not taken into account in the assessment.

Stocks at risk (SAR)

For this segment one stock was considered at risk in 2021. The stock in question is the European eel, classified as critically endangered by the IUCN (International Union for Conservation of Nature). However, the 27 tonnes of eel caught by this segment account for less than 10% of the total EU catches of this stock, so classifying it as a stock at risk for this segment appears questionable.

(c) Economic indicators

In 2021 both the CR/BER and the RoFTA fell significantly. The economic indicators therefore remained very low, pointing to overcapacity in this fleet segment in the short term.

(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 little 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).

Passive gear vessels < 8 m (PG VL0008L)

PG VL0008L	2021	2022
Technical indicator	0	0
SAR	1	
SHI	1.23	
CR/BER	0.02	
RoFTA	-56.4	
Number of vessels		451
GT		608
kW		8 230
Number of log vessels*		0
GT log*		0
kW log*		0

Log vessels* = vessels required to keep a logbook

(a) Technical indicator

As vessels in this segment are not subject to the logbook requirement, the technical indicator need not be calculated. No sea day or fishing effort records are available for these vessels.

Inactivity indicator:
In segment PG VL0008L a total of 291 vessels were inactive and therefore had no landings to report. These account for a capacity of 386 GT and engine power of 4 046 kW.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Vessels in this segment mainly fished western Baltic plaice in addition to herring and cod, for which a stock assessment is available. Fishing mortality F_C 2021 was below F_{MSY} for herring and plaice, but well above F_{MSY} for western Baltic cod. As fishing mortality was relatively low for two of the main stocks, a relatively low overall SHI value of 1.23 was achieved in 2021 despite the high fishing mortality for cod. However, as the share of the value of landings that can be taken into account to calculate the indicator is 23% of the value of the segment's total landings, the SHI is not included in the assessment.

Stocks at risk (SAR)
For this segment one stock was considered at risk in 2021. The stock in question is western Baltic herring, which has a spawning stock biomass below B_{lim} and accounts for 10% of the total landings in this segment.

(c) Economic indicators
In 2021 both the CR/BER and the RoFTA pointed to a highly unprofitable situation. The economic indicators thus remained very low, pointing to overcapacity in this fleet segment in the short term. Many vessels in this segment are not primarily operated on commercial basis but are used for amateur fishing or as a side business. Different cost structures are at play here which are not linked to the balance between fishing opportunities and fleet capacity.

(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 little 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).

Passive gear vessels 8-12 m (PG VL0812A, formerly PG VL1012)

PG VL0812A	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.56	0.51	0.41	0.44	0.43	0.56	0.54	0.55	0.53	0.54	0.55
SAR	1	2	1	1	2	1	2	2	2	1	
SHI	2.52	2.28	2.37	2.44	2.49	2.12	2.16	2.13	1.91	1.04	
CR/BER	0.56	0.48	0.12	0.42	0.61	0.04	-0.15	0.16	-0.12	0.28	
RoFTA	-20.8	-24.0	-42.8	-28.4	-23.5	-79.2	-70.3	-51.1	-67.5	-38.5	
Number of vessels	68	66	67	64	58	58	50	49	45	45	50
GT	750	717	723	695	646	668	579	577	549	532	462
kW	5 948	5 692	5 847	5 570	5 199	5 301	4 751	4 722	4 369	4 323	4 267

(a) Technical indicator

The segment consisting of active 8-12 m static net vessels was recalculated in 2022 and now includes vessels as from an overall length of 8 metres. No clear comparison can be made with earlier years. However, the score obtained is similar to that of the years 2017 to 2021 (+ 0.01 points compared to 2021).

Inactivity indicator:
Inactive vessels in segment VL0812 PG have been included in segment VL0812PGL.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Vessels in this segment mainly fished western Baltic herring and cod, for which a stock assessment is available, as well as plaice (Kattegat, Belt Sea and Øresund). Fishing mortality F_C 2021 was below F_{MSY} for herring and plaice and well above F_{MSY} for western Baltic cod. Due to reduced fishing mortality for two of the main stocks and a parallel reduction in cod catches, the overall SHI value fell further from 1.91 in 2020 to 1.04 in 2021.

Stocks at risk (SAR)
For this segment one stock was considered at risk in 2020. The stock in question is western Baltic herring, which has a spawning stock biomass below B_{lim} and accounts for more than 10% of the total landings in this segment.

(c) Economic indicators

Both the CR/BER and the RoFTA improved slightly in 2021 for this fleet segment, but the indicator values remained well below 0 (CR/BER) or negative (RoFTA). The economic indicators for this fleet segment thus point to 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 little 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).

Passive gear vessels 8-12 m (PG VL0812L)

PG VL0812L	2021	2022
Technical indicator		0.35
SAR	1	
SHI	0.63	
CR/BER	0.02	
RoFTA	-44.3	
Number of vessels		84
GT		584
kW		5430

(a) Technical indicator

Inactivity indicator:
In segment PG VL0812L a total of 52 vessels were inactive and therefore had no landings to report. These account for a capacity of 323 GT and engine power of 2 642 kW.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Vessels in this segment mainly fished western Baltic herring and cod, for which a stock assessment is available, as well as plaice (Kattegat, Belt Sea and Øresund). For herring, the most important stock by far in this segment, fishing mortality F_C 2021 was well below F_{MSY}, resulting in a very low SHI value of 0.63 in 2021.

Stocks at risk (SAR)

For this segment one stock was considered at risk in 2021. The stock in question is western Baltic herring, which has a spawning stock biomass below B_{lim} and accounts for more than 10% of the total landings in this segment.

(c) Economic indicators

In 2021 the CR/BER was close to zero and the RoFTA had a value of -44.3. The economic indicators were thus very low in 2021, pointing to overcapacity in this fleet segment in the short term. Some vessels in this segment are not primarily operated on a commercial basis but are used for amateur fishing or as a side business. Different cost structures are at play here which are not linked to the balance between fishing opportunities and fleet capacity.

(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 little 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).

Driftnet or static net vessels 12-18 m (DFN VL1218)

DFN VL1218	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.72	0.44	0.57	0.48	0.58	0.40	0.47	0.43	0.34	0.29	0.42
SAR	3	3	1	1	1	1	2	3	2	2	
SHI	1.97	1.84	1.63	1.71	1.79	1.84	1.97	1.74	1.18	0.85	
CR/BER	7.54	3.85	1.85	-1.51	6.65	4.46	0.36	9.19	2.31	-1.98	
RoFTA	178.9	98.4	36.8	-96.9	176.3	107.9	-18.4	197.2	57.1	-136.8	
Number of vessels	7	11	9	5	5	7	5	4	5	5	5
GT	147	272	220	121	132	193	150	124	152	131	119
kW	842	1 592	1 182	1 182	821	969	690	590	809	854	690

(a) Technical indicator

In 2022, as in the previous year, only five fishing vessels could be taken into account to establish the technical indicator for segment DFN VL1218. The results are therefore not very pertinent. The value of 0.42 is an improvement of 0.13 points on the previous year. However, vessels in this group were able to log very few sea days, which is reflected in the poor indicator value.

Inactivity indicator:

Two vessels were inactive in segment DFN VL1218 and therefore had no landings to report.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Vessels in this segment mainly fished cod, sole and plaice in the North Sea, herring in the western Baltic and sole in the western Baltic, Skagerrak and Kattegat. Of these stocks, F_C was below F_{MSY} for herring, plaice, cod and sole (Skagerrak, Kattegat and western Baltic), resulting in a lower overall SHI value of 0.85 in 2021 compared to the 1.18 achieved in 2020.

Stocks at risk (SAR)
For this segment two stocks were considered at risk in 2021. The stocks in question are North Sea cod and sole, for which the spawning stock biomass was below B_{lim}, with each stock accounting for more than 10% of the segment's total landings. According to the most recent stock assessment, the SSB for North Sea sole was again above B_{lim} at the beginning of 2021. The classification of North Sea sole as a stock at risk for this segment should therefore be viewed critically.

(c) Economic indicators

For data protection reasons, the indicators for 2021 cannot be reported separately for this small segment. The economic indicator values are therefore included in the indicators for segment DFN VL2440. In 2021 the CR/BER fell well below zero, and the RoFTA was deep in the red. However, as these values fluctuate widely over the years and apply to vessel segments where economic performance varies considerably, they should not be given too much weight.

(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 values cannot be taken into account for the overall assessment. Two stocks at risk are fished. The economic indicators for 2021 point to an imbalance. The number of vessels in this segment has decreased by half (from 11 to 5) since 2013.

Driftnet or static net vessels 18-24 m (DFN VL1824)
As this segment has consisted of only one vessel with sporadic activity in the past few years, it is not taken into account in the analysis of balance indicators.

Driftnet or static net vessels 24-40 m (DFN VL2440)

DFN VL2440	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.66	0.85	0.64	0.81	0.75	0.83	0.88	0.77	0.54	0.92	0.89
SAR	1	0	0	0	0	0	1	0	0	0	
SHI	1.5	1.2	1.17	1.07	1.19	1.34	1.58	1.19	0.7	0.72	
CR/BER	-0.22	0.37	0.13	0.77	0.70	1.85	6.78	-0.28	0.24	-1.98	
RoFTA	-91.7	-50.8	-53.2	-12.6	-19.8	23.9	168.0	-83.7	48.1	-136.8	
Number of vessels	5	5	5	4	4	5	5	5	5	2	4
GT	877	877	877	729	729	877	877	877	877	461	708
kW	1 897	1 897	1 897	1 475	1 475	1 897	1 897	1 897	1 897	853	1 515

(a) Technical indicator

The value of 0.89 is not very pertinent as there were only four active vessels in this segment. Nevertheless, the indicator result of 0.89 and the relatively high number of days at sea – 213 days – indicate a certain homogeneity.

Inactivity indicator:
Two vessels were inactive in segment DFN VL2440 and therefore had no landings to report. These account for a total fishing capacity of 233 GT and engine power of 640 kW.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Vessels in this segment mainly fished two stocks of anglerfish in the north-east Atlantic (anf.27.3a46, mon.27.78abd) and turbot in the North Sea. For North Sea turbot, fishing mortality F_C was below F_{MSY}. The SHI value remains low, at 0.72, as F_C was below F_{MSY} also for one the anglerfish stocks (mon.27.78abd) according to an ICES stock assessment and F_C 2021 decreased compared to 2020.

Note, however, that the fleet report only indicates SHI values for segments for which the share of the landings value that can be used to calculate the indicator exceeds 40% of the total value of landings by that segment. As this value is calculated to be around 25% here, i.e. < 40%, it is not taken into account in the assessment.

Stocks at risk (SAR)
For this segment no stock was considered at risk in 2021.

(c) Economic indicators

There is an indication of overcapacity in the short term, as both economic indicators (CR/BER and RoFTA) have deteriorated sharply and remain at a level indicating poor profitability. The indicator values should not be given too much weight in the overall assessment since they are subject to high annual fluctuations and, as from 2021, are set jointly for several segments for reasons of data protection.

(d) Overall assessment

No clear assessment can be made for this segment. The technical indicator is not pertinent, the SHI shows a positive trend and no stock at risk is fished. The economic indicators improved considerably for a number of years up to 2020, but the 2021 values point to poor profitability.

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

As this segment has consisted of only one vessel with sporadic activity in the past few years, it is not taken into account in the analysis of balance indicators. As this vessel is almost fully dependent on 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 18–24 m (FPO VL1824)

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

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

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

Beam trawlers 10-12 m (TBB VL1012)

TBB VL1012	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.48	0.64	0.48	0.76	0.79	0.54	0.88	0.85	0.92	0.88	0.47
SAR	0	0	0	0	0	0	0	0	0	0	
SHI	1.31	1.47	1.03	1.06	0.88	0.95	n/a	n/a	1.32	n/a	
CR/BER	3.19	3.31	1.08	0.13	1.28	0.98	1.43	-0.07	1.15	0.66	
RoFTA	124.0	133.1	6.6	-67.5	9.26	-3.8	32.1	-67.7	5.47	-18.0	
Number of vessels	5	5	5	5	5	7	5	4	4	4	6
GT	63	63	63	63	63	78	63	53	53	53	57
kW	515	515	515	515	515	676	515	424	424	424	501

(a) Technical indicator

The indicator value of 0.47 calculated for 2022 has deteriorated considerably compared to the previous year. In the reporting year, the VL 10-12 m beam trawler segment consisted of only six active fishing vessels, most of which had very few days at sea. This is what led to this poor result.

Inactivity indicator:
11 vessels in segment TBB VL1012 were inactive (as per their fleet status on 31 December 2022) and therefore had no catches to report. These account for a capacity of 40 GT and 456 kW.

(b) Biological indicators

Sustainable harvest indicator (SHI)
No SHI value was calculated for 2021 as vessels in this segment fished practically only common shrimp, for which there is no stock assessment.

Stocks at risk (SAR)
In this segment no stock was considered at risk in 2021, as was also the case in previous years.

(c) Economic indicators

In 2021 both economic indicators deteriorated considerably compared to the previous year, but overall there is no indication of overcapacity. In this type of fishery such variations are not unusual. 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 value is very good. The SHI biological indicator cannot be taken into account for the reasons set out above. No stock at risk is fished. Based on the economic indicators there is currently no overcapacity.

Beam trawlers 12-18 m (TBB VL1218)

TBB VL1218	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.60	0.56	0.60	0.60	0.58	0.54	0.67	0.67	0.57	0.60	0.62
SAR	0	0	0	0	0	0	0	0	0	0	
SHI	3.48	3.22	3.06	2.23	2.80	n/a	1.18	1.53	1.24	n/a	
CR/BER	2.74	2.57	1.79	1.50	1.91	1.45	2.25	0.14	0.89	0.98	
RoFTA	87.7	92.9	45.1	35.0	56.2	45.5	75.4	-46.7	-6.7	1.6	
Number of vessels	118	120	117	112	111	108	109	105	100	97	89
GT	3 597	3 663	3 627	3 457	3 479	3 451	3 472	3 346	3 227	3 160	2 899
kW	22 678	22 962	22 651	21 597	21 671	21 234	21 510	20 770	19 946	19 487	17 903

(a) Technical indicator

The value for 2022 was calculated on the basis of 89 fishing vessels. The value of 0.62 is a slight improvement on the previous year (+0.02 points).

Inactivity indicator:
11 vessels were inactive in segment TBB VL1218 and therefore had no landings to report in 2022. These account for a fishing capacity of 316 GT and 1 984 kW.

(b) Biological indicators

Sustainable harvest indicator (SHI)
As vessels in this segment fished practically only common shrimp, for which there is no stock assessment, no SHI value was calculated for 2021.

Stocks at risk (SAR)
In this segment no stock was considered at risk in 2021, 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. The figures deteriorated sharply in 2019, but improved again in 2020. The 2021 values point to a profitable fishery. In this type of fishery such variations are not unusual.

(d) Overall assessment

Overall, this segment is **in balance** according to the indicators analysed. The technical indicator is 0.6, the SHI biological indicator cannot be taken into account and no stock at risk is fished. The economic indicators are strongly influenced by adverse market effects in the short term, and short-lasting weaker phases are therefore only marginally taken into account in the overall assessment.

Beam trawlers 18-24 m (TBB VL1824)

TBB VL1824	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.63	0.65	0.62	0.69	0.57	0.67	0.70	0.65	0.66	0.68	0.70
SAR	0	0	0	1	0	0	0	0	0	0	
SHI	2.52	3.24	2.17	1.7	1.56	1.27	1.6	1.56	1.42	0.87	
CR/BER	1.91	1.98	1.43	1.20	2.06	1.17	2.41	0.14	1.29	0.73	
RoFTA	36.2	39.4	19.5	10.1	60.7	13.7	64.7	-36.5	12.2	-9.6	
Number of vessels	63	67	63	63	65	67	70	69	70	70	66
GT	3 756	4 104	3 850	3 706	3 976	4 045	4 403	4 314	4 504	4 523	4 014
kW	13 616	14 537	13 653	13 477	14 278	14 619	15 428	15 242	15 462	15 464	14 434

(a) Technical indicator

The value for 2022 was calculated on the basis of 66 active fishing vessels in total. A slightly better result was achieved than in the previous year (+0.02 points). The value of 0.70 is a slight improvement also in relation to the past 10 years.

Inactivity indicator:
5 vessels were inactive in segment TBB VL1824 and therefore had no landings to report in 2022. These account for a fishing capacity of 318 GT and 1 059 kW.

(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 0.87 for 2021 is therefore not very pertinent.

Stocks at risk (SAR)
In this segment no stock was considered at risk in 2021, 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. In 2020 the values improved considerably compared to a weak 2019 and can be seen as a sign that fishing is profitable, although the values fell again in 2021. In this type of fishery such variations are not unusual.

(d) Overall assessment

Overall, this segment is **in balance** according to the indicators analysed. The technical indicator is on a positive trend. The economic indicators currently point to a balanced segment. 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)

TBB VL2440	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.78	0.85	0.82	0.68	0.91	0.80	0.85	0.89	0.82	0.87	0.39
SAR	1	0	1	1	1	1	1	1	1	2	
SHI	1.52	1.45	1.52	1.52	1.73	1.92	1.93	1.8	1.41	0.94	
CR/BER	1.00	2.03	1.33	2.02	1.74	1.52	4.95	1.56	1.20	0.74	
RoFTA	-0.6	41.7	12.2	35.1	44.5	22.3	130.0	15.2	6.1	-6.8	
Number of vessels	9	8	10	10	9	10	10	6	6	7	4
GT	1 752	1 559	2 021	2 021	1 828	2 021	2 201	1 448	1 448	1 389	1 061
kW	5 971	5 411	6 721	6 721	6 161	5 788	5 788	3 765	3 765	4 278	3 286

(a) Technical indicator
A value of 0.39 was calculated for the four vessels in this segment, which is a much worse result than in previous years. This is because the fishing activity of these vessels varies greatly in relation to their number of days at sea. The most active vessel logged close to 200 sea days, whereas the other three were active on only 65 days on average. Given the small number of vessels the indicator value is not very pertinent, however.

Inactivity indicator:
Two vessels were inactive in segment TBB VL2440. These account for a capacity of 357 GT and 970 kW.

(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. Fishing mortality F_C was below F_{MSY} for plaice and turbot and above F_{MSY} for sole according to the available stock assessments. Since fishing mortality for sole, the economically most important stock in this segment, decreased from F_C 2020 = 0.33 to F_C 2021 = 0.21, the SHI also fell from 1.41 in 2020 to 0.94 in 2021.

Stocks at risk (SAR)
For this segment two stocks were considered at risk in 2021, but both assessments are questionable. One of the stocks in question is the North Sea sole, which according to the most recent International Council for the Exploration of the Sea (ICES) stock assessment has a spawning stock biomass below $MSY_{Btrigger}$, but not below B_{lim}. Classifying it as a stock at risk for this segment therefore makes no sense. The second stock is the rabbit fish (*Chimaera monstrosa*), of which the segment landed 46 kg, meaning that the SAR classification should not be considered relevant for this stock either.

(c) Economic indicators

Both the CR/BER and the RoFTA indicate a fleet segment in balance in the medium term, although the figures for 2021 have fallen considerably.

(d) Overall assessment

Overall, this segment is **in balance** according to the indicators analysed. All indicators are positive, and the SAR classification is not clear or not relevant.

Beam trawlers > 40 m (TBB VL40XX)

TBB VL40XX	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.54	0.53	0.62	1.00	0.94	0.95	0.84	0.74	0.78	0.76	0.84
SAR			0	0	0	0	0	0	0	0	
SHI			1.18	1.52	1.65	1.81	1.79	1.71	1.39	0.93	
CR/BER											
RoFTA											
Number of vessels	2	2	2	2	2	2	2	3	3	3	2
GT	791	791	791	791	791	791	791	1 219	1 219	1 219	874
kW	2 221	2 221	2 221	2 221	1 853	1 853	1 853	3 293	3 293	3 293	2 543

(a) Technical indicator

The calculated value of 0.84 is not pertinent as it is based on just two vessels.

Inactivity indicator:
No vessels in segment TBB VL40XX were inactive (as per their fleet status on 31 December 2022).

(b) Biological indicators

Sustainable harvest indicator (SHI)
Fishing vessels in this segment mainly fished mussels, plaice, sole and turbot in the North Sea. Fishing mortality F_C was below F_{MSY} for plaice and turbot and above F_{MSY} for sole. Due to a drop in fishing mortality for sole, the economically most important stock in this segment, from F_C 2020 = 0.33 to F_C 2021 = 0.21, and a parallel decrease in fishing mortality also for plaice, the SHI fell from 1.39 in 2020 to 0.93 in 2021.

Stocks at risk (SAR)
For this segment no stock was considered at risk in 2021.

(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 m (DTS VL0010)

As this segment has consisted of only one vessel with sporadic activity in the past few years, it is not taken into account in the analysis of balance indicators. As that vessel is dependent on western Baltic cod, which is in a poor condition, the segment is currently **in imbalance**.

Demersal trawlers 10-12 m (DTS VL0812, formerly DTS VL1012)

DTS VL0812	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.59	0.42	0.48	0.45	0.34	0.31	0.71	0.80	0.51	0.53	0.43
SAR	2	2	1	1	2	1	2	2	2	1	
SHI	2.69	2.81	2.83	2.55	2.38	1.94	1.61	2.00	2.22	0.48	
CR/BER	0.56	0.66	0.39	0.41	0.29	0.81	0.97	0.41	-0.14	-1.04	
RoFTA	-29.0	-23.6	-47.6	-57.7	-4.7	-21.7	-2.1	-31.1	-54.9	-114.4	
Number of vessels	10	12	11	10	10	6	8	4	7	7	7
GT	146	183	169	154	156	94	112	52	96	107	89
kW	1 441	1 803	1 608	1 425	1 433	744	853	358	686	706	707

(a) Technical indicator

A result of 0.43 was obtained, which is a deterioration on the previous year (-0.10 points). These rather small vessels have a relatively low number of sea days, with only 30 days on average. This leads to a poor indicator value. The calculated value is not very pertinent, however, as it is based on just seven vessels.

Inactivity indicator:
In 2022 only one vessel was inactive in segment DTS VL0812.

(b) Biological indicators

Sustainable harvest indicator (SHI)

Vessels in this segment mainly fished cod and herring as well as plaice in the western Baltic. Fishing mortality F_C 2021 decreased compared to 2020 for both western Baltic herring (F_C 2020 = 0.19 and F_C 2021 = 0.149) and for Kattegat, Belt Sea and Øresund plaice (F_C 2020 = 0.29 and F_C 2021 = 0.27), and both species were therefore fished below F_{MSY}. Due to the decrease in

fishing mortality, but mainly due to the drop in catches of western Baltic cod, which is fished far above F_{MSY} (2020 landings: 44 tonnes, 2021 landings: 2 tonnes), the SHI value has fallen well below 1 to 0.48 (down from 2.22 in 2020).

Stocks at risk (SAR)
For this segment, one stock was considered at risk in 2021. The stock in question is western Baltic herring, which had a spawning stock biomass below B_{lim} and accounted for more than 10% of the segment's total landings.

(c) Economic indicators

The CR/BER fell further and remained negative in 2021. The RoFTA again fell sharply and remains negative. In this segment both indicators have been unfavourable for years.

(d) Overall assessment

Overall, this segment is **in imbalance** according to the indicators analysed. However, it needs to be taken into account, as argued in Sections 3 and 5 above, that the indicators are of little relevance. The segment is affected by the poor condition of the western Baltic herring stock, which is classified as a stock at risk.

Demersal trawlers 12-18 m (DTS VL1218)

DTS VL1218	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.71	0.53	0.53	0.52	0.53	0.57	0.68	0.66	0.62	0.59	0.60
SAR	2	2	1	1	2	1	1	2	2	0	
SHI	2.71	2.6	2.71	2.86	2.63	2.26	1.88	1.77	1.85	0.90	
CR/BER	1.00	0.82	0.80	0.74	0.57	0.81	1.37	1.54	0.25	0.14	
RoFTA	-0.7	-7.5	-8.1	-10.7	-18.9	-18.9	17.7	24.0	-41.2	-35.5	
Number of vessels	27	30	29	28	27	20	17	18	19	19	15
GT	923	1 024	1 008	826	866	655	548	623	649	649	533
kW	4 960	5 514	5 414	4 694	4 918	3 765	3 109	3 328	3 428	3 378	2 778

(a) Technical indicator

The fishing activity of 15 fishing vessels were taken into account to calculate the value for 12-18 m trawlers in 2022. The value improved slightly (+0.01) to 0.60. Many smaller vessels in this segment are operated only as a side business or as a second vessel. This results in a low number of sea days in the reporting year and to a poor indicator value.

Inactivity indicator:
One vessel was inactive in segment DTS VL1218 and therefore had no landings to report in 2022.

(b) Biological indicators

Sustainable harvest indicator (SHI)
Vessels in this segment mainly fished western Baltic herring and flounder. In addition, they made considerable catches of plaice in the Belt Sea and of sprat and dab across the Baltic Sea. The SHI fell sharply from 1.85 in 2020 to 0.90 in 2021. As in the case of DTS VL0812, this is due to a decrease in fishing mortality for herring and plaice (Kattegat, Belt Sea and Øresund) and a parallel reduction in catches of western Baltic cod, which is fished significantly above F_{MSY}.

Stocks at risk (SAR)
For this segment no stock was considered at risk in 2021.

(c) Economic indicators

The CR/BER was close to zero in 2021. The RoFTA has remained well below zero. 2018 and 2019 were very weak years, but both economic indicators have since developed positively in this segment. 2020 and 2021 were, however, very weak years economically. There is no clear overall trend for the economic indicators.

(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. In the past Germany therefore provided funds to scrap vessels in this segment. The number of vessels has been halved since 2013.

Demersal trawlers 18-24 m (DTS VL1824)

DTS VL1824	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.62	0.60	0.59	0.60	0.65	0.68	0.66	0.60	0.60	0.59	0.56
SAR	2	1	0	0	1	1	1	2	2	0	
SHI	1.7	1.46	1.51	1.41	1.46	1.4	1.21	1.55	1.45	0.75	
CR/BER	0.51	2.84	2.22	1.32	2.91	1.59	3.49	2.93	0.57	0.95	
RoFTA	-15.9	50.9	37.6	12.3	66.2	33.6	82.4	60.7	-19.5	1.1	
Number of vessels	20	18	17	16	13	13	11	14	11	10	11
GT	2 231	2 064	1 847	1 724	1 444	1 544	1 293	1 621	1 276	1 144	1 370
kW	4 330	3 925	3 704	3 485	2 824	3 118	2 529	3 192	2 529	2 308	2 676

(a) Technical indicator

The sea days of 11 fishing vessels were taken into account to calculate the indicator in 2022. The value of 0.56 is at a similar level (-0.03) as in previous years. In this segment, too, the vessels saw their fishing activity decline compared to 2017 and 2019. However, a few cutters continued to be considerably more active, logging more sea days than the majority of vessels belonging to this segment. This again led to an imbalance in the 2022 reporting year.

Inactivity indicator:
One vessel in segment DTS VL1824 was inactive and therefore had no fishing activity report.

(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 (mainly dab, plaice and cod in the western Baltic, plaice in the North Sea, Kattegat, Belt Sea and Øresund and Norway lobster and turbot in the North Sea). The most important stocks, in terms of tonnes caught, were North Sea and Skagerrak plaice and Baltic dab. The SHI fell sharply from 1.45 in 2020 to 0.75 in 2021. This is mainly due to the reduction in catches of western Baltic cod, which is fished well above F_{MSY}, and a parallel relative increase in catches of both the North Sea place stocks and the Kattegat, Belt Sea and Øresund plaice stock, which are fished below F_{MSY}.

Stocks at risk (SAR)
For this segment no stock was considered at risk in 2021.

(c) Economic indicators

Both the CR/BER and the RoFTA increased compared to 2021. Based on the overall positive time series there is currently no assumption of overcapacity.

(d) Overall assessment

This segment is now **in balance** overall. The technical indicator fluctuates in the mid-range. The SHI has improved considerably and no stocks at risk are fished. The economic indicators are positive. The number of vessels has fallen by about half since 2012. If Baltic Sea vessels are considered separately, these are in imbalance due to the poor condition of the western Baltic cod and herring stocks.

Demersal trawlers 24-40 m (DTS VL2440)

DTS VL2440	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.65	0.68	0.59	0.66	0.70	0.70	0.51	0.57	0.76	0.75	0.79
SAR	1	1	1	1	0	0	0	0	0	1	
SHI	1.27	1.19	1.24	1.22	1.23	1.3	1.35	1.36	1.21	0.94	
CR/BER	1.05	1.36	1.30	2.02	2.24	1.25	1.18	1.06	0.87	1.06	
RoFTA	3.2	12.6	8.8	31.1	31.2	23.6	5.5	0.7	-6.2	5.6	
Number of vessels	10	11	12	10	9	8	11	14	12	11	11
GT	2 523	2 660	2 981	2 768	2 343	2 172	2 992	4 410	3 947	3 685	3 814
kW	4 683	4 830	5 361	5 295	4 275	3 835	5 505	7 822	8 048	8 075	8 979

(a) Technical indicator

The indicator was calculated taking into account the sea days of 11 fishing vessels. The value increased to 0.79, up 0.04 points compared to 2021, confirming the positive trend of the previous years. The fact that large deep-sea cutters with engine power of up to 1 700 kW and smaller cutters with at most 221 kW are grouped together continues to have a negative impact on this segment.

Inactivity indicator:
One vessel in segment DTS VL2440 was inactive (as per its fleet status on 31 December 2022) and therefore had no landings to report in 2022.

(b) Biological indicators

Sustainable harvest indicator (SHI)
North Sea saithe, cod, plaice and hake were the main stocks fished by this segment. As fishing mortality F_C was below F_{MSY} for hake and cod and fell considerably compared to the previous year for the most important stock by far, the North Sea saithe, the SHI value fell from 1.21 in 2020 to 0.94 in 2021.

Stocks at risk (SAR)
One stock was considered by the STEFC to be at risk in this segment. The stock in question is North Sea cod. The spawning stock biomass of North Sea cod is currently estimated to be below B_{lim}, but as catches in this segment do not account for 10% of the total catches of this stock, nor 10% of the total catches of this segment, its classification a stock at risk for segment DTS VL2440 is considered questionable.

(c) Economic indicators

The CR/BER and the RoFTA both fell sharply in 2020, but improved considerably in 2021. In principle this fleet segment would appear to be in balance based on the time series for both indicators.

(d) Overall assessment

This segment is now **in balance** overall. The technical indicator is in the middle to good range and the SHI has improved considerably. One stock at risk is fished, but the assessment is questionable. The economic indicators have improved considerably. If Baltic Sea vessels are considered separately, these are in imbalance due to the poor condition of the western Baltic cod and herring stocks.

Demersal trawlers > 40 m (DTS VL40XX)

DTS VL40XX	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.83	0.78	0.73	0.70	0.80	0.78	0.85	0.83	0.84	0.74	0.91
SAR	5	2	2	3	4	5	5	6	7	9	
SHI	1.34	1.48	1.13	1.34	1.44	1.63	1.37	1.61	1.5	1.43	
CR/BER	0.75	0.62	0.86	0.98	1.50	0.44	0.91	1.10	1.16	0.3	
RoFTA	-8.5	-13.5	-4.4	-0.2	11.0	-12.9	-2.2	0.5	2.1	-13	
Number of vessels	8	7	6	7	7	7	7	6	5	6	4
GT	13 215	10 247	8 650	12 898	12 898	15 417	15 417	14 962	14 470	16 818	12 390
kW	18 651	14 151	11 724	15 724	15 724	16 394	16 394	15 610	14 875	17 875	13 600

(a) Technical indicator

The calculation is based on the sea days of four fishing vessels. The indicator value of 0.91 improved considerably from the previous year (+0.17). The vessels in this segment have a high level of fishing activity, resulting in a very good value.

Inactivity indicator:
One vessel in segment DTS VL40XX had no fishing activity (as per its fleet status on 31 December 2022).

(b) Biological indicators

Sustainable harvest indicator (SHI)
The main stocks fished by this segment were north-east Arctic cod and saithe, halibut off Iceland and east Greenland and North sea saithe. As there were no major changes in fishing mortality for the two economically most important stocks, north-east Arctic cod and Greenland halibut off Iceland and east Greenland (there is currently no approved stock assessment for north-east Arctic cod), nor any substantial changes in fishing mortality for the other stocks, the SHI decreased only slightly from 1.50 in 2020 to 1.43 in 2021.

Stocks at risk (SAR)
The STECF analysis shows that, based on the relevant criteria, there were nine stocks at risk in this segment in 2021. The stocks in question are the roughhead grenadier (*Macrourus berglax*) across the north-east Atlantic, Norwegian coastal cod, the shallow and deep stock of redfish (*Sebastes mentella*) in the Irminger Sea, the north-east Arctic gold perch (*Sebastes norvegicus*), redfish (*S. mentella*) on the east Greenland shelf, the northern wolffish, rabbit fish (*Chimaera monstrosa*) and blue ling. For some of these species the SAR classification should be viewed

critically. The two *S. mentella* stocks should not even appear in this segment as they are fished with pelagic trawls only (no catches reported for 2021). In the first quarter some Norwegian coastal cod was caught together with north-east Arctic cod in the Lofoten area. 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 north-east Arctic and Norwegian coastal cod. It appears questionable, therefore, to list coastal cod as a stock at risk. The same applies to the north-east Arctic golden redfish (*S. norvegicus)*. Catches of golden redfish by this segment came to 85 tonnes, which is less than 0.1% of the overall catches of ~ 10 193 tonnes, meaning it should not be listed as a stock at risk for this segment either, although the ICES recommends zero catches of this stock.

(c) Economic indicators

In this segment both the CR/BER and the RoFTA have been on a positive trend for years, although the 2021 values have dropped compared to 2020, to below 1 (CR/BER) and below zero (RoFTA).

(d) Overall assessment

No clear assessment can be made for this segment. Both the technical indicator and the SHI have good values. Nine stocks at risk are fished according to the STECF estimate. The economic indicators are good and point to a balance between capacity and fishing opportunities overall.

Pelagic trawlers 10-12 m (TM VL1012)

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

Pelagic trawlers 12-18 m (TM VL1218)

TM VL1218	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator				0.88	0.89	0.85	1.00	1.00	0	0	0
SAR				0	0	1	2	1	n/a	n/a	
SHI				1.16	1.52	1.71	1.67	0.99	n/a	n/a	
CR/BER											
RoFTA											
Number of vessels	0	0	0	2	2	3	1	1	0	0	0
GT	–	–	–	122	122	163	75	26	0	0	0
kW	–	–	–	439	439	659	219	100	0	0	0

(a) Technical indicator

There were no vessels in 2022.

(b) Biological indicators

No biological indicators could be calculated for this segment as there were no active vessels, and therefore no landings, in 2021.

(c) Economic indicators

No economic data can be published with respect to this segment.

(d) Overall assessment

No assessment can be made for this segment as there are no active vessels.

Pelagic trawlers 18-24 m (TM VL1824)

TM VL1824	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	1.00	1.00	0.88	0.67	0.70	0.59	0.65	1.00	0.51	0.78	0
SAR			0	0	0	1	1	1	1	1	
SHI			1.19	1.44	1.61	1.66	1.69	1.07	0.91	0.48	
CR/BER											
RoFTA											
Number of vessels	1	1	2	2	4	4	3	1	2	2	0
GT	107	107	239	207	354	354	279	40	147	172	0
kW	221	221	442	441	882	882	662	220	441	441	0

(a) Technical indicator

There were no vessels in 2022.

Inactivity indicator:
No vessels in segment TM VL1824 were inactive (as per their fleet status on 31 December 2022).

(b) Biological indicators

Sustainable harvest indicator (SHI)
The two vessels that were still active in this segment in 2021 fished almost exclusively western Baltic herring. As fishing mortality F_C for western herring was well below F_{MSY}, the segment's SHI value was well below 1, at 0.48, which is even lower than the 2020 value of 0.91.

Stocks at risk (SAR)
Our analysis shows that, according to the relevant criteria, western Baltic herring must be classified as a stock at risk in this segment for 2021, as the SSB was below B_{lim} and more than 10% of the total landings in this segment came from this stock (nearly 100%).

(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 not more than 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)

TM VL2440	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.99	1.00	1.00	0.69	0.89	0.84	0.83	1.00	1	0	0
SAR			0	0	0	1	1	1	1	n/a	
SHI			1.31	1.42	1.51	1.41	1.57	1.02	0.91	n/a	
CR/BER											
RoFTA											
Number of vessels	2	1	1	3	3	3	2	1	1	0	0
GT	529	374	374	655	655	655	281	126	126	0	0
kW	921	700	700	1 105	1 105	1 105	405	184	184	0	0

(a) Technical indicator

There were no vessels in 2022.

(b) Biological indicators

No biological indicators could be calculated for this segment as there were no active vessels, and therefore no landings, in 2021.

(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 no more than three vessels (and none in the past 2 years).

Pelagic trawlers > 40 m (TM VL40XX)

TM VL40XX	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Technical indicator	0.86	0.80	0.85	0.94	0.88	0.87	0.77	0.89	0.88	0.84	0.77
SAR	1	2	3	4	3	1	1	0	0	0	
SHI	1.06	1.2	1.05	0.99	0.89	0.98	0.95	0.97	1.05	1.04	
CR/BER										0.41	
RoFTA										-20.0	
Number of vessels	5	5	5	5	5	5	5	5	5	5	5
GT	26 922	26 922	26 922	26 922	26 922	27 136	20 622	20 254	20 514	20 514	20 514
kW	23 537	23 537	23 537	23 537	23 537	24 397	21 128	20 427	21 141	21 141	21 141

(a) Technical indicator

German vessels in the segment of pelagic trawlers of an overall length of 40 metres or more recorded a slight deterioration in 2022 compared to the previous year (-0.07). However, a high theoretical value of 0.93 points to a homogeneous segment overall. Again, it should be noted that the calculation involves comparing sea-going cutters to large deep-sea fishing vessels. There is a difference of sometimes 150 days or more in the number of sea days logged by the vessels being compared. This results in an indicator value which is not fully balanced.

Inactivity indicator:
No vessels in segment TM VL40XX were inactive (as per their fleet status on 31 December 2022).

(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 Baltic Sea, the North Sea and across the North Atlantic. The commercially most important stocks were blue whiting, North Sea herring and north-east Atlantic mackerel. F_C remained below F_{MSY} for North Sea herring. Although F_C for mackerel was above F_{MSY}, a good and practically unchanged SHI value of 1.04 was achieved in 2021 (SHI 2020 =1.05) as fishing mortality for blue whiting fell although it was still fished above F_{MSY}.

Stocks at risk (SAR)
For this segment no stock was considered at risk in 2021.

(c) Economic indicators

Economic indicators are available for the first time for 2021, representing all pelagic trawlers, although deep-sea vessels are in the majority. A time series is therefore not yet available. For 2021 the CR/BER is below 1 and the RoFTA is below zero. In 2021 the sector was heavily affected by Brexit. Due to the particular situation in 2021 and the absence of a time series, the figures should not be given too much weight in the overall assessment.

(d) Overall assessment

This segment is **in balance**. The technical indicator and SHI values are good and no stocks at risk are fished.

General comments on the indicators

An overview of all indicator values is given in **Annex 5**.

1. Technical indicator

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

The values calculated for the individual size categories are not very pertinent as there are often just one to four vessels in each segment. Mussel dredging nevertheless achieved good and balanced results. 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 'stock-at-risk indicator' (SAR). The indicators relate to catches and fishing mortality in 2021 and the state of stocks in early 2022, since the results of the 2022 stock assessments were not yet available when this fleet report was submitted.

The SHI and SAR indicator results for 2021 were mainly provided by the STECF but were calculated by Germany for some segments. The biological indicator results are summarised in **Annex 4**.

2.1 Sustainable harvest indicator (SHI)

The SHI values 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 values for the various segments range between 0.48 and 1.43. An SHI value >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 ($F_C > F_{MSY}$). The indicator values fell for all segments compared to the previous year. One reason for this is a further decrease in fishing mortality (F_C) for western Baltic herring, a very important stock for several segments operating in the Baltic Sea, but considerably lower catches of western Baltic cod, a stock fished well above F_{MSY}, also play a part. For the most important segment in terms of volume and revenue (TM VL40XX), a good and practically unchanged SHI value close to 1 was achieved in 2021 (1.04, compared to 1.05 in 2020).

Also, in recent years there has been a significant drop in the values for smaller vessels, which in the past have been rather problematic. The highest value calculated, 1.35 for PG VL0008A, is therefore the lowest in the time series.

A positive picture emerges if SHI values are considered over the period from 2008 to 2021, as calculated by the STECFA, and to some extent by Germany (see Graph 1). The SHI has decreased over that period for most segments, with the curves approaching a value of 1 or already at a value below 1 in many cases. The SHI was below 1 for nine of the 12 segments where an assessment could be made.

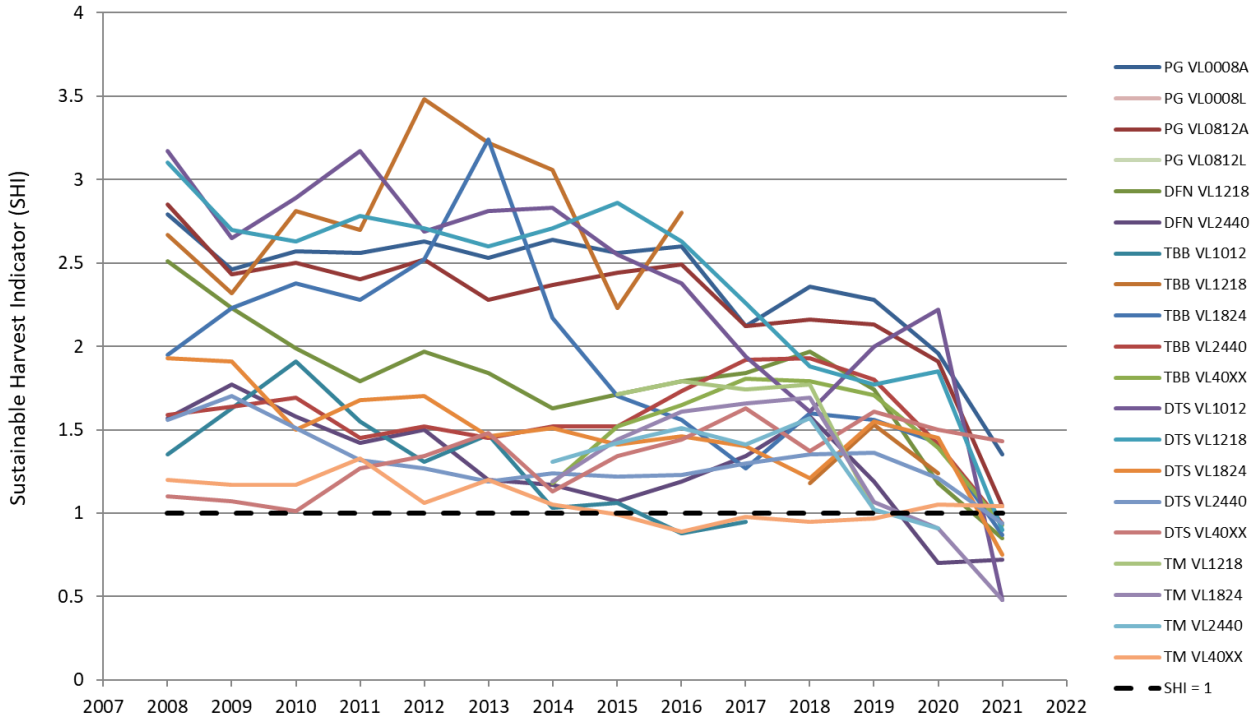

Figure 1: SHI trends in the various fleet segments, 2008-2021. The target value of 1 is shown as a dotted line.

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. It is therefore neither a purely economic, nor a purely biological indicator. Yet, as it 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, highly dynamic prices of certain fish species make it 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 see to it that this indicator is reviewed or adjusted as soon as possible.

2.2 Stock-at-risk (SAR) indicator

The SAR indicator is a measure of the extent to which the activities of individual fleet segments affect stocks in a poor condition (i.e. with a low spawning stock biomass). A stock must meet the following criteria 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.

Looking at stocks identified as stocks at risk by the STECF (and in some cases by Germany) and fished on a large scale by German fleet segments from 2009 to 2021 (see Graph 2), no clear trend can be established. The highest number of stocks at risk was observed in 2019, with a total of 23. However, as already mentioned above with regard to segment DTS VL40XX, for some stocks classified as stocks at risk by the STECF this assessment appears questionable.

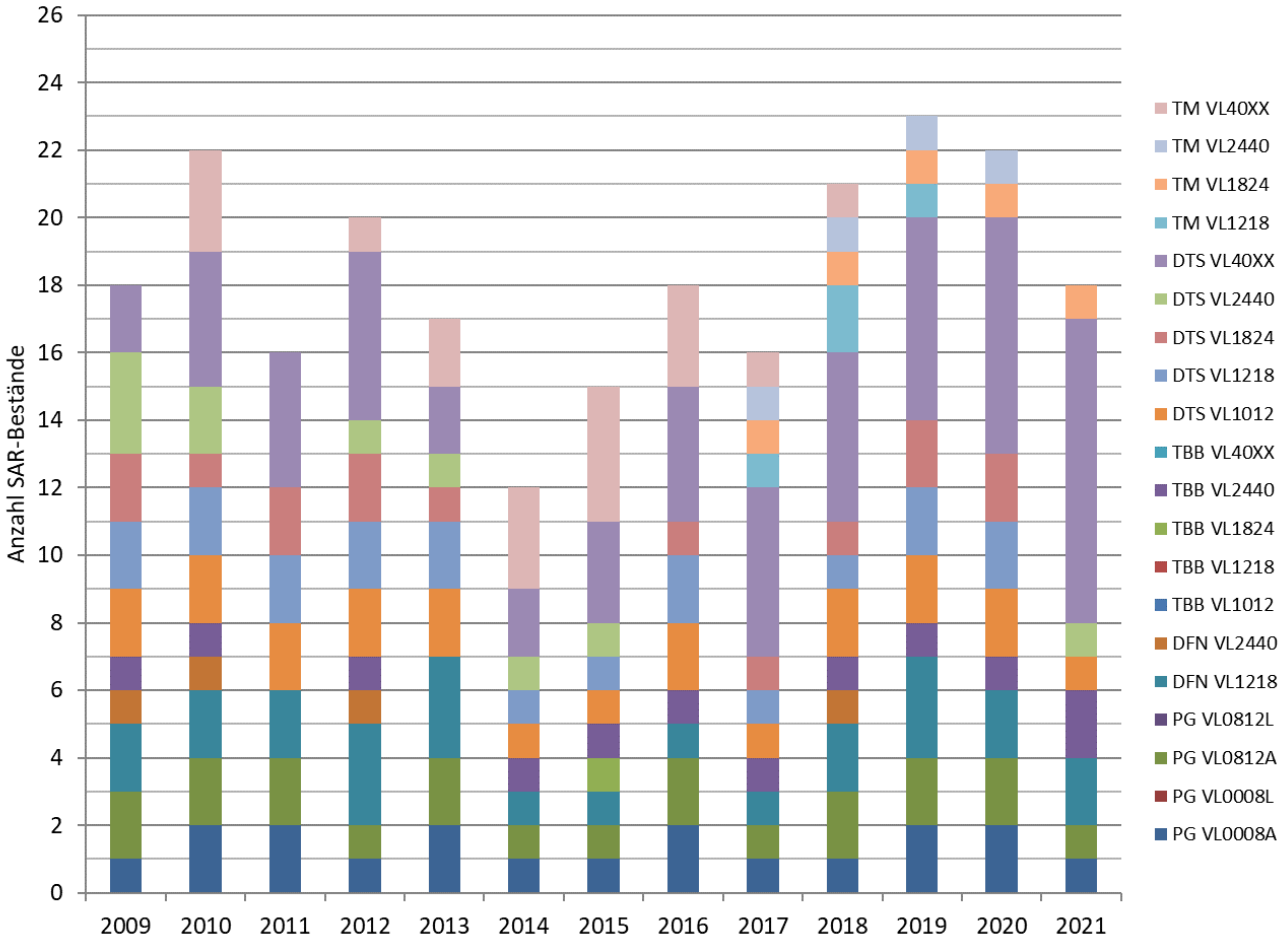

Figure 2: Number of stocks at risk in the various fleet segments, 2009 to 2021.

Although the STECF (STECF-15-02) also criticises the SAR indicator in several respects, 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).

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.

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 using an indicator not linked to the value of the vessels.

Irrespective of the fact that the absolute indicator values are not very pertinent 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 on a commercial basis but are used for amateur fishing or as a side business. Different cost structures are at play here which are not linked to the balance between fishing opportunities and fleet capacity. 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. Therefore, any form of overfishing by these vessels can 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 most important fleet segments with the biggest share of catches. This is also corroborated by the fact that fishing opportunities allocated to German fisheries under EU law are generally not exceeded.

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

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 pertinent 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 and an uncertain outlook for the future compound existing problems.

The indicator values for larger Baltic Sea vessels were more favourable, although the economic situation has been very unstable 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 fewer alternative options. The coronavirus pandemic also affected the fishing businesses' economic results.

To protect and restore cod and herring stocks in the Baltic Sea, it was again necessary to adopt emergency measures in 2022. Closure periods were put in place, in three 10-day blocks for cod (1 to 31 January, 1 April to 14 May and 1 November to 31 December 2022) and in three 10-day blocks for herring (in the period from 16 August to 31 October and 1 October to 31 December 2022). 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 western Baltic cod, which remain in a critical condition (see Section 1.A.ii). Positive indicators allowed segments DFN VL1218 and DTS VL2440 to be removed from the action plan as from 2016. 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. In segment DTS VL1218 this resulted in six vessels (with a total fishing capacity of 198 GT and 1 178 kW) being scrapped. Baltic Sea fishing businesses in need of support for their activities were able to receive this over the past fishing years. 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. Scrapping measures were again implemented in 2021 and 2022. In the years 2017 to 2022 fishing capacity was scrapped which, in total, is the equivalent of the following catch volumes in fishing year 2023: 15.9 tonnes of western Baltic cod, 11.3 tonnes of eastern Baltic cod, 59.3 tonnes of western Baltic herring and 139.8 tonnes of Baltic sprat.

The segments included in the 2022 action plan were adapted in line with adjustments in the fleet report.

An updated action plan is enclosed with this report.

Annex 1: Overview of stocks fished in 2022 by vessels in the various fleet segments (* formerly PG VL0010; # formerly PG VL1012; + formerly DTS VL1012). The figures refer to landings in tonnes. Stocks are generally listed if catches were ≥ 100 tonnes (≥ 500 tonnes for TM VL40XX).

Stock fished		Segment								
ICES stock	**Stock and region**	**PG VL0008A***	**PG VL0008L**	**PG VL0812A#**	**PG VL0812L**	**DFN VL1218**	**DFN VL2440**	**DRB VL40XX**	**TBB VL1218**	**TBB VL1824**
Baltic Sea										
cod.27.22-24	Western Baltic cod									
dab.27.22-32	Baltic dab			42						
fle.27.2425	Flounder: west of Bornholm and south-west central Baltic		22	57						
fle.27.2223	Belt Sea and Øresund flounder	20	29	87						
her.27.20-24	Western Baltic, Kattegat and Skagerrak herring	18	27	101	42					
her.27.25-2932	Eastern Baltic herring									
ple.27.21-23	Kattegat, Belt Sea and Øresund plaice	61	39	243	16					
ple.27.24-32	Baltic plaice									
spr.27.22-32	Baltic sprat									
sol.27.20-24	Western Baltic, Kattegat and Skagerrak sole									
North Sea										
anf.27.3a46	Anglerfish: North Sea, Rockall and west of Scotland, Skagerrak and Kattegat						354			
cod.27.47d20	North Sea, eastern English Channel and Skagerrak cod					22				
csh.27.4	North Sea *Crangon*								4 544	4 386
had.27.46a20	Haddock: North Sea, west of Scotland and Skagerrak									
her.27.3a47d	Herring: North Sea, Skagerrak and Kattegat, eastern English Channel									
lin.27.3a4a6-91214	North-east Atlantic and Arctic Ocean common ling									
MUS	North Sea mussels							456		

Stock fished		Segment								
ICES stock	**Stock and region**	**PG VL0008A***	**PG VL0008L**	**PG VL0812A#**	**PG VL0812L**	**DFN VL1218**	**DFN VL2440**	**DRB VL40XX**	**TBB VL1218**	**TBB VL1824**
nep.fu.33	Norway lobster: central North Sea (Functional Unit 33)									
nep.fu.5	Norway lobster: central/southern North Sea (Functional Unit 5)									
ple.27.420	North Sea and Skagerrak plaice					52				
pok.27.3a46	Saithe: North Sea, Rockall and west of Scotland, Skagerrak and Kattegat									
pol.27.3a4	North Sea, Skagerrak and Kattegat pollack									
sol.27.4	North Sea sole									
spr.27.3a4	Skagerrak, Kattegat and North Sea sprat									
North-east Arctic and Greenland										
cod.27.1-2	North-east Arctic cod									
cod.2127.1f14	East and south-west Greenland cod									
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	North-east Arctic haddock									
pok.27.1-2	North-east Arctic saithe									
reb.27.14b dem	Redfish (*S. mentella*): east Greenland shelf									
reb.27.1-2	Redfish (*S. mentella*): north-east 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										
aru.27.5b6a	Great silver smelt (*Argentina silus*), off Faeroe Islands and west of Scotland									
boc.27.6-8	Celtic Sea, English channel and Bay of Biscay boarfish									
her.27.1-24a514a	Atlanto-Scandian herring (Norwegian spring spawner)									

Stock fished		Segment								
ICES stock	**Stock and region**	**PG VL0008A***	**PG VL0008L**	**PG VL0812A#**	**PG VL0812L**	**DFN VL1218**	**DFN VL2440**	**DRB VL40XX**	**TBB VL1218**	**TBB VL1824**
hke.27.3a46-8abd	Hake (northern stock)									
hom.27.2a4a5b6a7a-ce-k8	North-east Atlantic horse mackerel									
HOM FAO area 34	Central-east Atlantic horse mackerel									
mac.27.nea	North-east Atlantic mackerel									
mon.27.78abd	Anglerfish: southern Celtic Sea and Bay of Biscay						266			
PIL FAO area 34	Central-east Atlantic sardine									
VMA FAO area 34	Atlantic chub mackerel: central-east Atlantic									
whb.27.1-91214	North-east Atlantic blue whiting									

Annex 1 (cont.)

Stock fished		Segment							
ICES stock	**Stock and region**	**TBB VL2440**	**TBB VL40XX**	**DTS VL0812+**	**DTS VL1218**	**DTS VL1824**	**DTS VL2440**	**DTS VL40XX**	**TM VL40XX**
Baltic Sea									
cod.27.22-24	Western Baltic cod								
dab.27.22-32	Baltic dab								
fle.27.2425	Flounder: west of Bornholm and south-west central Baltic			61	82	137			
fle.27.2223	Belt Sea and Øresund flounder								
her.27.20-24	Western Baltic, Kattegat and Skagerrak herring								
her.27.25-2932	Eastern Baltic herring								222
ple.27.21-23	Kattegat, Belt Sea and Øresund plaice				170				
ple.27.24-32	Baltic plaice			32					
spr.27.22-32	Baltic sprat			117	615		710		13 250

Stock fished		Segment							
ICES stock	**Stock and region**	**TBB VL2440**	**TBB VL40XX**	**DTS VL0812+**	**DTS VL1218**	**DTS VL1824**	**DTS VL2440**	**DTS VL40XX**	**TM VL40XX**
sol.27.20-24	Western Baltic, Kattegat and Skagerrak sole					179			
North Sea									
anf.27.3a46	Anglerfish: North Sea, Rockall and west of Scotland, Skagerrak and Kattegat								
cod.27.47d20	North Sea, eastern English Channel and Skagerrak cod						706		
csh.27.4	North Sea *Crangon*	119							
had.27.46a20	Haddock: North Sea, west of Scotland and Skagerrak		36				516		
her.27.3a47d	Herring: North Sea, Skagerrak and Kattegat, eastern English Channel								46 260
lin.27.3a4a6-91214	North-east Atlantic and Arctic Ocean common ling								
MUS	North Sea mussels								
nep.fu.33	Norway lobster: central North Sea (Functional Unit 33)					209	124		
nep.fu.5	Norway lobster: central/southern North Sea (Functional Unit 5)					143			
ple.27.420	North Sea and Skagerrak plaice	129	87			310	358		
pok.27.3a46	Saithe: North Sea, Rockall and west of Scotland, Skagerrak and Kattegat						4 074	163	
pol.27.3a4	North Sea, Skagerrak and Kattegat pollack						185		
sol.27.4	North Sea sole	45	79						
spr.27.3a4	Skagerrak, Kattegat and North Sea sprat								2 366
North-east Arctic and Greenland									
cod.27.1-2	North-east Arctic cod							7 138	
cod.2127.1f14	East and south-west Greenland cod							1 969	
ghl.27.561214	Greenland halibut: Iceland and Faroe Islands, west of Scotland, north of the Azores, east Greenland							4 441	
ghl NAFO Div. 1A-1F	Greenland halibut: west Greenland							1 656	
had.27.1-2	North-east Arctic haddock							269	
pok.27.1-2	North-east Arctic saithe							474	

Stock fished		Segment							
ICES stock	**Stock and region**	**TBB VL2440**	**TBB VL40XX**	**DTS VL0812+**	**DTS VL1218**	**DTS VL1824**	**DTS VL2440**	**DTS VL40XX**	**TM VL40XX**
reb.27.14b dem	Redfish (*S. mentella*): east Greenland shelf							525	
reb.27.1-2	Redfish (*S. mentella*): north-east Arctic							1 166	592
reg.27.561214	Redfish (*S. norvegicus*): Iceland and Faroe Islands, west of Scotland, north of the Azores, east Greenland							696	
Widely distributed stocks and other areas									
aru.27.5b6a	Great silver smelt (*Argentina silus*), off Faeroe Islands and west of Scotland								728
boc.27.6-8	Celtic Sea, English channel and Bay of Biscay boarfish								502
her.27.1-24a514a	Atlanto-Scandian herring (Norwegian spring spawner)								5 379
hke.27.3a46-8abd	Hake (northern stock)						382		
hom.27.2a4a5b6a7a-ce-k8	North-east Atlantic horse mackerel								4 264
HOM FAO area 34	Central-east Atlantic horse mackerel								646
mac.27.nea	North-east Atlantic mackerel								14 591
mon.27.78abd	Anglerfish: southern Celtic Sea and Bay of Biscay								
PIL FAO area 34	Central-east Atlantic sardine								3 450
VMA FAO area 34	Atlantic chub mackerel: central-east Atlantic								5 102
whb.27.1-91214	North-east Atlantic blue whiting								21 851

Annex 2: Development of stocks fished by the various fleet segments in 2021. Stocks are generally listed if catches were ≥ 100 tonnes (≥ 500 tonnes for TM VL40XX).

Segment	Stock fished	Stock status early 2022
PG VL0008A formerly PG VL0010	Belt Sea and Øresund flounder	No classification of stock status
	Western Baltic, Kattegat and Skagerrak herring	SSB < B_{lim}, F_{curr} > F_{MSY}
	Kattegat, Belt Sea and Øresund plaice	Full reproductive capacity, F_{curr} < F_{MSY}
PG VL0008L	Flounder: west of Bornholm and south-west central Baltic	No classification of stock status
	Belt Sea and Øresund flounder	No classification of stock status
	Western Baltic, Kattegat and Skagerrak herring	SSB < B_{lim}, F_{curr} > F_{MSY}
	Kattegat, Belt Sea and Øresund plaice	Full reproductive capacity, F_{curr} < F_{MSY}
PG VL0812A Formerly PG VL1012	Baltic dab	No classification possible
	Flounder: west of Bornholm and south-west central Baltic	No classification of stock status
	Belt Sea and Øresund flounder	No classification of stock status
	Western Baltic, Kattegat and Skagerrak herring	SSB < B_{lim}, F_{curr} > F_{MSY}
	Kattegat, Belt Sea and Øresund plaice	Full reproductive capacity, F_{curr} < F_{MSY}
PG VL0812L	Western Baltic, Kattegat and Skagerrak herring	SSB < B_{lim}, F_{curr} > F_{MSY}
	Kattegat, Belt Sea and Øresund plaice	Full reproductive capacity, F_{curr} < F_{MSY}
DFN VL1218	North Sea, eastern English Channel and Skagerrak cod	SSB < B_{lim}, F_{curr} > F_{MSY}
	North Sea and Skagerrak plaice	Full reproductive capacity, F_{curr} < F_{MSY}
DFN VL2440	Anglerfish: North Sea, Celtic Sea and western Scotland	Stock size index > MSY $B_{trigger\ proxy}$, F_{proxy} > $F_{MSY\ proxy}$
	Anglerfish: southern Celtic Sea and Bay of Biscay (mon.27.78abd)	Full reproductive capacity, F_{curr} < F_{MSY}
DRB VL40XX	North Sea mussels	No ICES stock assessment
TBB VL1218	North Sea *Crangon*	No ICES stock assessment
TBB VL1824	North Sea *Crangon*	No ICES stock assessment
TBB VL2440	North Sea *Crangon*	No ICES stock assessment
	North Sea and Skagerrak plaice	Full reproductive capacity, F_{curr} < F_{MSY}
	North Sea sole	SSB < MSY $_{Btrigger}$, F_{curr} > F_{MSY}
TBB VL40XX	North Sea and Skagerrak plaice	Full reproductive capacity, F_{curr} < F_{MSY}
	North Sea sole	SSB < MSY $_{Btrigger}$, F_{curr} > F_{MSY}
	Haddock: North Sea, west of Scotland and Skagerrak	Full reproductive capacity, F_{curr} < F_{MSY}
DTS VL0812 Formerly DTS VL1012	Flounder: west of Bornholm and south-west central Baltic	No classification of stock status
	Baltic plaice	SSB > MSY $_{Btrigger\ proxy}$, F_{curr} < $F_{MSY\ proxy}$
	Baltic sprat	Full reproductive capacity, F_{curr} > F_{MSY}
DTS VL1218	Flounder: west of Bornholm and south-west central Baltic	No classification of stock status

Segment	Stock fished	Stock status early 2022
	Kattegat, Belt Sea and Øresund plaice	Full reproductive capacity, $F_{curr} < F_{MSY}$
	Baltic sprat	Full reproductive capacity, $F_{curr} > F_{MSY}$
DTS VL1824	Flounder: west of Bornholm and south-west central Baltic	No classification of stock status
	Kattegat, Belt Sea and Øresund plaice	Full reproductive capacity, $F_{curr} < F_{MSY}$
	Skagerrak and Kattegat sole	Full reproductive capacity, Fcurr < F_{MSY}
	Norway lobster: North Sea (FU 33)	No classification possible
	Norway lobster: North Sea (FU 5)	No classification possible
	North Sea and Skagerrak plaice	Full reproductive capacity, $F_{curr} < F_{MSY}$
DTS VL2440	Baltic sprat	Full reproductive capacity, $F_{curr} < F_{MSY}$
	North Sea, eastern English Channel and Skagerrak cod	SSB < B_{lim}, $F_{curr} > F_{MSY}$
	Haddock: North Sea, west of Scotland and Skagerrak	Full reproductive capacity, $F_{curr} < F_{MSY}$
	Norway lobster: North Sea (FU 33)	No classification possible
	North Sea and Skagerrak plaice	Full reproductive capacity, $F_{curr} < F_{MSY}$
	Saithe: North Sea, Rockall and west of Scotland, Skagerrak and Kattegat	SSB < $MSY_{Btrigger}$, $F_{curr} > F_{MSY}$
	North Sea hake (northern stock)	Full reproductive capacity, Fcurr < F_{MSY}
	North Sea, Skagerrak and Kattegat pollack	No classification possible; management status unclear
DTS VL40XX	Saithe: North Sea, Rockall and west of Scotland, Skagerrak and Kattegat	SSB < $MSY_{Btrigger}$, $F_{curr} > F_{MSY}$
	North-east Arctic cod	No current stock assessment
	Cod: east and south-west Greenland	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
	North-east Arctic haddock	Full reproductive capacity, $F_{curr} > F_{MSY}$
	North-east Arctic saithe	Full reproductive capacity, F_{MSY} not defined but $F_{curr} < F_{MGT}$
	Redfish (*S. norvegicus*): Iceland and Faroe Islands, west of Scotland, north of the Azores, east Greenland	Full reproductive capacity, $F_{curr} > F_{MSY}$
	Southeast Greenland S. *mentella* redfish (demersal)	No classification possible
	S. *mentella* redfish, 1 and 2	Full reproductive capacity, $F_{curr} > F_{MSY}$
TM VL1218	No catches in 2022	
TM VL1824	No catches in 2022	
TM VL2440	No catches in 2022	
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	SSB < $MSY_{Btrigger}$, $F_{curr} > F_{MSY}$
	Baltic sprat	Full reproductive capacity, $F_{curr} > F_{MSY}$

Segment	Stock fished	Stock status early 2022
	Skagerrak, Kattegat and North Sea sprat	SSB < MSY $_{Besc}$, F_{MSY} not defined
	North-east Atlantic mackerel	Full reproductive capacity, Fcurr > F_{MSY}
	North-east Atlantic blue whiting	Full reproductive capacity, Fcurr > F_{MSY}
	Great silver smelt (*Argentina silus*), off Faeroe Islands and west of Scotland	Full reproductive capacity, F_{curr} > F_{MSY}
	North-east Atlantic horse mackerel	SSB < B_{lim}, F_{curr} > F_{MSY}
	S. *mentella* redfish, 1 and 2	Full reproductive capacity, F_{curr} > F_{MSY}
	Celtic Sea, English channel and Bay of Biscay boarfish	No classification possible; management status unclear
	Central-east Atlantic horse mackerel	No classification possible
	Central-east Atlantic sardine	No classification possible
	Atlantic chub mackerel: central-east Atlantic	No classification possible

Annex 3: Overview of capacity changes in 2022

Status of the German fishing fleet as at 31 December 2021

Fleet segment	Number	GT	kW
Small-scale coastal fishing vessels < 12 m	**968**	**2 370**	**25 138**
VL0010 PG	911	1 734	20 056
VL1012 PG	57	636	5 082
Passive > 12 m	**12**	**1 098**	**3 077**
VL1218 + VL1824 + VL2440 DFN/FPO	12	1 098	3 077
Trawlers up to 40 m	**47**	**5 557**	**14 543**
VL0812 DTS	7	107	706
VL1218 DTS	19	653	3 333
VL1824 DTS	9	995	2 088
VL2440 DTS	11	3 670	8 195
VL1824 TM	1	132	221
Beam trawlers	**203**	**10 810**	**45 487**
VL0010 TBB + VL1012 TBB	18	100	1 111
VL1218 TBB	102	3 301	20 385
VL1824 TBB	73	4 706	16 081
VL2440 TBB + VL40XX TBB	10	2 703	7 910
Deep-sea pelagic trawlers > 40 m	**5**	**20 514**	**21 141**
VL40XX TM	5	20 514	21 141
Deep-sea demersal trawlers > 40 m	**5**	**12 849**	**14 275**
VL40XX DTS	5	12 849	14 275
Mussel dredgers	**6**	**1 783**	**3 614**
VL1218 DRB	0	0	0
VL2440 DRB + VL40XX DRB	6	1 783	3 614
Grand total	**1 246**	**54 981**	**127 275**

Status of the German fishing fleet as at 31 December 2022

Fleet segment	Number	GT	kW
Small-scale coastal fishing vessels < 12 m	**913**	**2 221**	**24 067**
VL0008 PG (ex. VL0010PG)	751	1 020	13 140
VL0812 PG (ex. VL1012PG)	162	1 201	10 927
Passive > 12 m	**16**	**1 265**	**3 679**
VL1218 + VL1824 + VL2440 DFN/FPO	16	1 265	3 679
Trawlers up to 40 m	**44**	**5 618**	**15 067**
VL0812 DTS	8	93	776
VL1218 DTS	15	542	2 736
VL1824 DTS	9	1 044	2 236
VL2440 DTS	12	3 939	9 319
VL1824 TM	0	0	0
Beam trawlers	**193**	**9 504**	**41 849**
VL0010 TBB + VL1012 TBB	19	103	1 169
VL1218 TBB	97	3 129	19 357

VL1824 TBB	70	4 261	15 273
VL2440 TBB + VL40XX TBB	7	2 011	6 050
Deep-sea pelagic trawlers > 40 m	**5**	**20 514**	**21 141**
VL40XX TM	5	20 514	21 141
Deep-sea demersal trawlers > 40 m	**5**	**12 849**	**14 275**
VL40XX DTS	5	12 849	14 275
Mussel dredgers	**8**	**2 321**	**4 924**
VL1218 DRB	0	0	0
VL2440 DRB + VL40XX DRB	8	2 321	4 924
Grand total	**1 184**	**54 292**	**125 002**

Absolute changes in 2022 compared to previous year

Fleet segment	Number	GT	kW
Small-scale coastal fishing vessels < 12 m	**-55**	**-149**	**-1 071**
VL0008 PG (ex. VL0010PG)	-160	-714	-6 916
VL0812 PG (ex. VL1012PG)	105	565	5 845
Passive > 12 m	**4**	**167**	**602**
VL1218 + VL1824 + VL2440 DFN/FPO	4	167	602
Trawlers up to 40 m	**-3**	**61**	**524**
VL0812 DTS	1	-14	70
VL1218 DTS	-4	-111	-597
VL1824 DTS	0	49	148
VL2440 DTS	1	269	1 124
VL1824 TM	-1	-132	-221
Beam trawlers	**-10**	**-1 306**	**-3 638**
VL0010 TBB + VL1012 TBB	1	3	58
VL1218 TBB	-5	-172	-1 028
VL1824 TBB	-3	-445	-808
VL2440 TBB + VL40XX TBB	-3	-692	-1 860
Deep-sea pelagic trawlers > 40 m	**0**	**0**	**0**
VL40XX TM	0	0	0
Deep-sea demersal trawlers > 40 m	**0**	**0**	**0**
VL40XX DTS	0	0	0
Mussel dredgers	**2**	**538**	**1 310**
VL1218 DRB	0	0	0
VL2440 DRB + VL40XX DRB	2	538	1 310
Grand total	**-62**	**-689**	**-2 273**

Annex 4: Sustainable harvest indicator (SHI), 2021. Rows highlighted in grey in the lower part of the table were not taken into account because the indicator was calculated on the basis of less than 40% of a fleet's landings value. Values marked with an 'a' are based on a calculation made by Germany, since no STECF assessment was available.

Fleet segment	Value of landings by fleet segment with available F_c/F_{MSY}	Stocks used to calculate the SHI	Number of stocks used to calculate the SHI	Number of overfished stocks in indicator (marked with *)	SHI	Percentage of a fleet's landings value included in the indicator	Value of total landings by fleet
DTS VL40XX	27917716	whg.27.47d, *wit.27.3a47d, *pok.27.3a46, *reb.2127.dp, *reg.27.1-2, ple.27.420, lez.27.4a6a, hke.27.3a46-8abd, had.27.46a20, *had.27.1-2, ghl.27.561214, cod.27.47d20, *cod.27.1-2, *cod.2127.1f14, *reg.27.561214, *usk.27.5a14	16	9	1.43	84	33253380
TM VL40XX	53372319	cjm-sth, cjm-nth, aru.27.5b6a, hom.27.2a4a5b6a7a-ce-k8, hke.27.3a46-8abd, her.27.irls, her.27.3a47d, *whg.27.7b-ce-k, whg.27.47d, *whb.27.1-91214, *spr.27.22-32, pra.27.3a4a, *pok.27.3a46, ple.27.24-32, *her.27.25-2932, her.27.20-24, *her.27.1-24a514a, *had.27.7b-k, had.27.46a20, *had.27.1-2, cod.27.47d20, pil_34.1.3_34.3.1, mac.27.nea, *cod.27.22-24, *hom_34	25	10	1.04	94	57079203
PG VL0812A (formerly PG VL1012)	547886	sol.27.20-24, ple.27.24-32, *cod.27.22-24, her.27.20-24, mac.27.nea, ple.27.21-23, nep.fu.3-4, *wit.27.3a47d	8	2	1.04	59	930954

Fleet segment	Value of landings by fleet segment with available F_c/F_{MSY}	Stocks used to calculate the SHI	Number of stocks used to calculate the SHI	Number of overfished stocks in indicator (marked with *)	SHI	Percentage of a fleet's landings value included in the indicator	Value of total landings by fleet
TBB VL2440	7659932	ple.27.420, *sol.27.4, tur.27.4, had.27.46a20, whg.27.47d, *wit.27.3a47d, cod.27.47d20, bss.27.4bc7ad-h, hke.27.3a46-8abd, mac.27.nea, *nep.fu.6 nep.fu.8	12	3	0.94	87	8802432
DTS VL2440	13813154	*spr.27.22-32, *ple.27.7d, *pok.27.3a46, sol.27.20-24, *sol.27.4, *sol.27.7d, lez.27.4a6a, mac.27.nea, nep.fu.8, mon.27.78abd, tur.27.4, whg.27.47d, *wit.27.3a47d, ank.27.78abd, bss.27.4bc7ad-h, *cod.27.22-24, *nep.fu.6, hom.27.2a4a5b6a7a-ce-k8, hke.27.3a46-8abd, her.27.3a47d, *her.27.25-2932, her.27.20-24, *her.27.1-24a514a, had.27.46a20, cod.27.47d20, ple.27.24-32, ple.27.420, ple.27.21-23	28	10	0.94	85	16226958
TBB VL40XX	2694534	ple.27.420, *sol.27.4, tur.27.4	3	1	0.93[a]	78.9	3415679
DTS VL1218	1012091	sol.27.20-24, *cod.27.22-24, cod.27.47d20, had.27.46a20, her.27.20-24, *her.27.25-2932, hke.27.3a46-8abd, mac.27.nea, nep.fu.3-4, *nep.fu.6, *wit.27.3a47d, whg.27.47d, tur.27.4, *spr.27.22-32, nep.fu.8, *pok.27.3a46, ple.27.420, ple.27.24-32, ple.27.21-23	19	6	0.9	72	1401559
DFN VL1218	540197	ple.27.21-23, *pok.27.3a46, sol.27.20-24, *sol.27.4, tur.27.4, *wit.27.3a47d, had.27.46a20, her.27.20-24, cod.27.47d20, *cod.27.22-24, hke.27.3a46-8abd, mac.27.nea, ple.27.420	13	4	0.85	92	588312

Fleet segment	Value of landings by fleet segment with available F_c/F_{MSY}	Stocks used to calculate the SHI	Number of stocks used to calculate the SHI	Number of overfished stocks in indicator (marked with *)	SHI	Percentage of a fleet's landings value included in the indicator	Value of total landings by fleet
DTS VL1824	2032971	*pok.27.3a46, *nep.fu.6, nep.fu.8, sol.27.20-24, mac.27.nea, hke.27.3a46-8abd, had.27.46a20, cod.27.47d20, *cod.27.22-24, ple.27.21-23, *sol.27.4, tur.27.4, whg.27.47d, *wit.27.3a47d, ple.27.24-32, nep.fu.3-4, ple.27.420	17	5	0.75	72	2833514
DTS VL0812 (formerly DTS VL1012)	96014	*spr.27.22-32, *cod.27.22-24, her.27.20-24, mac.27.nea, ple.27.21-23, ple.27.24-32	6	2	0.48	45	211612
TM VL1824	77645	her.27.20-24, *spr.27.22-32, *cod.27.22-24	3	2	0.48[a]	100	77776
PG VL0812L	57504	sol.27.20-24, ple.27.24-32, *cod.27.22-24, her.27.20-24, mac.27.nea, ple.27.21-23, nep.fu.3-4, *wit.27.3a47d	8	2	0.63[a]	45	129148
PG VL008A (formerly PG VL0010)	759335	ple.27.21-23, sol.27.20-24, ple.27.24-32, mac.27.nea, her.27.20-24, *cod.27.22-24	6	1	1.35	20	3716658
PG VL0008L	200190	ple.27.21-23, sol.27.20-24, ple.27.24-32, mac.27.nea, her.27.20-24, *cod.27.22-24	6	1	1.23	23	882220
TBB VL1824	2034173	bss.27.4bc7ad-h, ple.27.420, nep.fu.8, *nep.fu.6, hke.27.3a46-8abd, had.27.46a20, cod.27.47d20, *wit.27.3a47d, whg.27.47d, tur.27.4, *sol.27.4	11	3	0.87	10	19492179
DFN VL2440	851244	ank.27.78abd, mon.27.78abd, tur.27.4	3	0	0.72	24.60	3459857
TM VL1218 TM VL2440	**No catches in 2021**						

Annex 5: Indicator values for the various segments (Log*= vessels required to keep a logbook), 2009-2022.

Segment	Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
PG VL0008A **Formerly PG VL0010**	**Technical indicator**	0.26	0.31	0.26	0.35	0.33	0.25	0.36	0.36	0.42	0.46	0.45	0.42	0.36	0.00
	SAR	1	2	2	1	2	1	1	2	1	1	2	2	1	
	SHI	2.46	2.57	2.56	2.63	2.53	2.64	2.56	2.6	2.12	2.36	2.28	1.96	1.35	
	CR/BER	0.16	1.01	0.72	0.82	0.44	1.36	1	1.23	1.14	0.45	0.13	0.06	-3.28	
	RoFTA	-36.1	2	-14.6	-11.4	-27.8	18.9	0.26	12.4	7.3	-32.2	-60	-59.3	-351.1	
	Number of vessels	1766	841	838	809	783	768	743	729	691	666	650	631	617	66
	GT	3 564	1 715	1 702	1 615	1 544	1 521	1 516	1 527	1 398	1 317	1 311	1 271	1238	102
	kW	35 786	17 435	17 809	17 175	16 832	17 000	16 993	17 202	16 268	15 361	15 477	15 227	15 143	1 592
	Number of log vessels*	172	161	155	144	132	130	129	135	116	107	106	100	98	0
	GT log*	846	814	798	721	659	656	672	721	616	560	565	541	527	0
	kW log*	8 135	7 824	7 894	7 263	6 818	6 722	6 779	7 407	6.42	5 893	5 854	5 346	5 471	0
PG VL0008L	**Technical indicator**													0	0
	SAR													1	
	SHI													1.23	
	CR/BER														

Segment	Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	RoFTA														
	Number of vessels														451
	GT														608
	kW														8 230
	Number of log vessels*														0
	GT log*														0
	kW log*														0
PG VL0812A **Formerly PG VL1012**	**Technical indicator**	0.53	0.51	0.48	0.56	0.51	0.41	0.44	0.43	0.56	0.54	0.55	0.53	0.54	0.55
	SAR	2	2	2	1	2	1	1	2	1	2	2	2	1	
	SHI	2.43	2.5	2.4	2.52	2.28	2.37	2.44	2.49	2.12	2.16	2.13	1.91	1.04	
	CR/BER	0.38	0.48	0.38	0.56	0.48	0.12	0.42	0.61	0.04	-0.15	0.16	-0.12		
	RoFTA	-30.9	-26.4	-29.6	-20.8	-24	-42.8	-28.4	-23.5	-79.2	-70.3	-51.1	-67.5		
	Number of vessels	76	72	66	68	66	67	64	58	58	50	49	45	45	50
	GT	840	790	719	750	717	723	695	646	668	579	577	549	532	462
	kW	6 357	6 122	5 494	5 948	5 692	5 847	5.57	5 199	5 301	4 751	4 722	4 369	4323	4267
PG VL0812L	**Technical indicator**														0.35
	SAR													1	
	SHI													0.63	

Segment	Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	CR/BER													0.02	
	RoFTA													-56.4	
	Number of vessels														84
	GT														584
	kW														5430
DFN VL1218	**Technical indicator**	0.48	0.46	0.51	0.72	0.44	0.57	0.48	0.58	0.4	0.47	0.43	0.34	0.29	0.42
	SAR	2	2	2	3	3	1	1	1	1	2	3	2	2	
	SHI	2.23	1.99	1.79	1.97	1.84	1.63	1.71	1.79	1.84	1.97	1.74	1.18	0.85	
	CR/BER	1.47	2.42	0.5	7.54	3.85	1.85	-1.51	6.65	4.46	0.36	9.19	2.31	-1.98	
	RoFTA	18.7	58.5	-18.5	178.9	98.4	36.8	-96.9	176.3	107.9	-18.4	197.2	57.1	136.8	
	Number of vessels	16	12	10	7	11	9	5	5	7	5	4	5	5	5
	GT	365	273	237	147	272	220	121	132	193	150	124	152	131	119
	kW	2 216	1 666	1 309	842	1 592	1 182	1 182	821	969	690	590	809	854	690
DFN VL2440	**Technical indicator**	0.5	0.71	0.64	0.66	0.85	0.64	0.81	0.75	0.83	0.88	0.77	0.54	0.92	0.89
	SAR	1	1	0	1	0	0	0	0	0	1	0	0	0	
	SHI	1.77	1.58	1.42	1.5	1.2	1.17	1.07	1.19	1.34	1.58	1.19	0.70	0.72	
	CR/BER	-0.82	1.63	0.73	-0.22	0.37	0.13	0.77	0.7	1.85	6.78	-0.28	0.24	-1.98	
	RoFTA	-59.5	45.9	-42.2	-91.7	-50.8	-53.2	-12.6	-19.8	23.9	168	-83.7	48.1	-136.8	

Segment	Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	Number of vessels	5	5	4	5	5	5	4	4	5	5	5	5	2	4
	GT	877	877	729	877	877	877	729	729	877	877	877	877	461	708
	kW	1 897	1 897	1 475	1 897	1 897	1 897	1 475	1 475	1 897	1 897	1 897	1 897	853	1 515
TBB VL1012	**Technical indicator**	0.33	0.45	0.31	0.48	0.64	0.48	0.76	0.79	0.54	0.88	0.85	0.92	0.88	0.47
	SAR	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SHI	1.63	1.91	1.55	1.31	1.47	1.03	1.06	0.88	0.95	n/a	n/a	1.32	n/a	
	CR/BER	2.27	1.11	-0.35	3.19	3.31	1.08	0.13	1.28	0.98	1.43	-0.07	1.15	0.66	
	RoFTA	46.7	8.2	-75	124	133.1	6.6	-67.5	9.26	-3.8	32.1	-67.7	5.47	-18.0	
	Number of vessels	5	7	6	5	5	5	5	5	7	5	4	4	4	6
	GT	61	85	74	63	63	63	63	63	78	63	53	53	53	57
	kW	457	624	564	515	515	515	515	515	676	515	424	424	424	501
TBB VL1218	**Technical indicator**	0.64	0.65	0.6	0.6	0.56	0.6	0.6	0.58	0.54	0.67	0.67	0.57	0.6	0.62
	SAR	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SHI	2.32	2.81	2.70	3.48	3.22	3.06	2.23	2.80	n/a	1.18	1.53	1.24	n/a	
	CR/BER	1.23	1.42	0.97	2.74	2.57	1.79	1.5	1.91	1.45	2.25	0.14	0.89	0.98	
	RoFTA	15.1	22.7	-1.3	87.7	92.9	45.1	35	56.2	45.5	75.4	-46.7	-6.7	1.6	
	Number of vessels	140	134	127	118	120	117	112	111	108	109	105	100	97	89
	GT	4 268	4 075	3 876	3 597	3 663	3 627	3 457	3 479	3 451	3 472	3 346	3 227	3.16	2 899

Segment	Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	kW	26 791	25.65	24 308	22 678	22 962	22 651	21 597	21 671	21 234	21.51	20.77	19 946	19 487	17 903
TBB VL1824	**Technical indicator**	0.56	0.6	0.58	0.63	0.65	0.62	0.69	0.57	0.67	0.7	0.65	0.66	0.68	0.70
	SAR	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SHI	2.23	2.38	2.28	2.52	3.24	2.17	1.7	1.56	1.27	1.6	1.56	1.42	0.87	
	CR/BER	0.84	1.11	0.59	1.91	1.98	1.43	1.2	2.06	1.17	2.41	0.14	1.29	0.73	
	RoFTA	-4.2	6.3	-16.2	36.2	39.4	19.5	10.1	60.7	13.7	64.7	-36.5	12.2	-9.6	
	Number of vessels	63	61	62	63	67	63	63	65	67	70	69	70	70	66
	GT	3 892	3 521	3 679	3 756	4 104	3.85	3 706	3 976	4 045	4 403	4 314	4 504	4 523	4 014
	kW	13 652	13 175	13 394	13 616	14 537	13 653	13 477	14 278	14 619	15 428	15 242	15 462	15 464	14 434
TBB VL2440	**Technical indicator**	0.77	0.83	0.54	0.78	0.85	0.82	0.68	0.91	0.8	0.85	0.89	0.82	0.87	0.39
	SAR	1	1	0	1	0	1	1	1	1	1	1	1	2	
	SHI	1.64	1.69	1.45	1.52	1.45	1.52	1.52	1.73	1.92	1.93	1.8	1.41	0.94	
	CR/BER	1.98	1.04	0.69	1	2.03	1.33	2.02	1.74	1.52	4.95	1.56	1.2	0.74	
	RoFTA	39.4	3.5	-12.2	-0.6	41.7	12.2	35.1	44.5	22.3	130	15.2	6.1	-6.8	
	Number of vessels	7	8	8	9	8	10	10	9	10	10	6	6	7	4
	GT	1 424	1 693	1 693	1 752	1 559	2 021	2 021	1 828	2 021	2 201	1 448	1 448	1 389	1 061
	kW	4 874	5 867	5 867	5 971	5 411	6 721	6 721	6 161	5 788	5 788	3 765	3 765	4 278	3 286

Segment	Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
TBB VL40XX	**Technical indicator**	0.61	1	0.63	0.54	0.53	0.62	1	0.94	0.95	0.84	0.74	0.78	0.76	0.84
	SAR						0	0	0	0	0	0	0	0	
	SHI						1.18	1.52	1.65	1.81	1.79	1.71	1.39	0.93	
	CR/BER														
	RoFTA														
	Number of vessels	1	2	1	2	2	2	2	2	2	2	3	3	3	2
	GT	446	791	446	791	791	791	791	791	791	791	1 219	1 219	1 219	874
	kW	1 471	2 221	1 471	2 221	2 221	2 221	2 221	1 853	1 853	1 853	3 293	3 293	3 293	2 543
DTS VL0812 **Formerly DTS VL1012**	**Technical indicator**	0.54	0.56	0.58	0.59	0.42	0.48	0.45	0.34	0.31	0.71	0.8	0.51	0.53	0.43
	SAR	2	2	2	2	2	1	1	2	1	2	2	2	1	
	SHI	2.65	2.89	3.17	2.69	2.81	2.83	2.55	2.38	1.94	1.61	2	2.22	0.48	
	CR/BER	-0.08	1.18	0.67	0.56	0.66	0.39	0.41	0.29	0.81	0.97	0.41	-0.14	-1.04	
	RoFTA	-70.8	12.3	-19.5	-29	-23.6	-47.6	-57.7	-4.7	-21.7	-2.1	-31.1	-54.9	-114.4	
	Number of vessels	13	15	15	10	12	11	10	10	6	8	4	7	7	7
	GT	213	244	233	146	183	169	154	156	94	112	52	96	107	89
	kW	2 055	2 202	2 202	1 441	1 803	1 608	1 425	1 433	744	853	358	686	706	707
DTS VL1218	**Technical indicator**	0.49	0.47	0.6	0.71	0.53	0.53	0.52	0.53	0.57	0.68	0.66	0.62	0.59	0.60
	SAR	2	2	2	2	2	1	1	2	1	1	2	2	0	

Segment	Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	SHI	2.7	2.63	2.78	2.71	2.6	2.71	2.86	2.63	2.26	1.88	1.77	1.85	0.9	
	CR/BER	0.68	0.81	0.6	1	0.82	0.8	0.74	0.57	0.81	1.37	1.54	0.25	0.14	
	RoFTA	-9.4	-7.6	-16.7	-0.7	-7.5	-8.1	-10.7	-18.9	-18.9	17.7	24	-41.2	-35.5	
	Number of vessels	39	37	33	27	30	29	28	27	20	17	18	19	19	15
	GT	1.31	1 239	1 129	923	1 024	1 008	826	866	655	548	623	649	649	533
	kW	7 283	6 767	6 088	4.96	5 514	5 414	4 694	4 918	3 765	3 109	3 328	3 428	3 378	2 778
DTS VL1824	**Technical indicator**	0.64	0.58	0.6	0.62	0.6	0.59	0.6	0.65	0.68	0.66	0.6	0.6	0.59	0.56
	SAR	2	1	2	2	1	0	0	1	1	1	2	2	0	
	SHI	1.91	1.5	1.68	1.7	1.46	1.51	1.41	1.46	1.4	1.21	1.55	1.45	0.75	
	CR/BER	0.9	1.19	0.91	0.51	2.84	2.22	1.32	2.91	1.59	3.49	2.93	0.57	0.95	
	RoFTA	-0.5	9	-3	-15.9	50.9	37.6	12.3	66.2	33.6	82.4	60.7	-19.5	1.1	
	Number of vessels	28	30	29	20	18	17	16	13	13	11	14	11	10	11
	GT	3 045	3 215	3 169	2 231	2 064	1 847	1 724	1 444	1 544	1 293	1 621	1 276	1 144	1 370
	kW	6 122	6 525	6 347	4.33	3 925	3 704	3 485	2 824	3 118	2 529	3 192	2 529	2 308	2 676
DTS VL2440	**Technical indicator**	0.62	0.5	0.57	0.65	0.68	0.59	0.66	0.7	0.7	0.51	0.57	0.76	0.75	0.79
	SAR	3	2	0	1	1	1	1	0	0	0	0	0	1	
	SHI	1.7	1.51	1.32	1.27	1.19	1.24	1.22	1.23	1.3	1.35	1.36	1.21	0.94	
	CR/BER	1.02	1.51	1.87	1.05	1.36	1.3	2.02	2.24	1.25	1.18	1.06	0.87	1.06	

Segment	Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	RoFTA	4.1	20.4	32.5	3.2	12.6	8.8	31.1	31.2	23.6	5.5	0.7	-6.2	5.6	
	Number of vessels	16	16	13	10	11	12	10	9	8	11	14	12	11	11
	GT	3 439	3 431	3 033	2 523	2.66	2 981	2 768	2 343	2 172	2 992	4.41	3 947	3 685	3 814
	kW	7 409	6 821	5 994	4 683	4.83	5 361	5 295	4 275	3 835	5 505	7 822	8 048	8 075	8 979
DTS VL40XX	**Technical indicator**	0.82	0.84	0.92	0.83	0.78	0.73	0.7	0.8	0.78	0.85	0.83	0.84	0.74	0.91
	SAR	2	4	4	5	2	2	3	4	5	5	6	7	9	
	SHI	1.07	1.01	1.27	1.34	1.48	1.13	1.34	1.44	1.63	1.37	1.61	1.5	1.43	
	CR/BER	0.47	0.81	0.68	0.75	0.62	0.86	0.98	1.5	0.44	0.91	1.1	1.16	0.3	
	RoFTA	-17.6	-4.7	-9.1	-8.5	-13.5	-4.4	-0.2	11	-12.9	-2.2	0.5	2.1	-13.0	
	Number of vessels	8	8	8	8	7	6	7	7	7	7	6	5	6	4
	GT	13 215	13 215	13 215	13 215	10 247	8.65	12 898	12 898	15 417	15 417	14 962	14.47	16 818	12 390
	kW	18 651	18 651	18 651	18 651	14 151	11 724	15 724	15 724	16 394	16 394	15.61	14 875	17 875	13 600
TM VL1218	**Technical indicator**							0.88	0.89	0.85	1	1	0	0	0
	SAR							0	0	1	2	1	n/a	n/a	
	SHI							1.16	1.52	1.71	1.67	0.99	n/a	n/a	
	CR/BER														
	RoFTA														

Segment	Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	Number of vessels	0	0	0	0	0	0	2	2	3	1	1	0	0	0
	GT	–	–	–	–	–	–	122	122	163	75	26	0	0	0
	kW	–	–	–	–	–	–	439	439	659	219	100	0	0	0
TM VL1824	**Technical indicator**	–	0.85	1	1	1	0.88	0.67	0.7	0.59	0.65	1	0.51	0.78	
	SAR						0	0	0	1	1	1	1	n/a	
	SHI						1.19	0.86	1.31	1.63	1.6	1.04	0.92	n/a	
	CR/BER														
	RoFTA														
	Number of vessels	0	2	1	1	1	2	2	4	4	3	1	2	2	
	GT	–	239	107	107	107	239	207	354	354	279	40	147	172	
	kW	–	442	221	221	221	442	441	882	882	662	220	441	441	
TM VL2440	**Technical indicator**	0.52	0.98	0.71	0.99	1	1	0.69	0.89	0.84	0.83	1	1	0	0
	SAR						0	0	0	1	1	1	1	n/a	
	SHI						1.31	1.05	1.24	1.41	1.52	0.99	0.92	n/a	
	CR/BER														
	RoFTA														
	Number of vessels	2	2	4	2	1	1	3	3	3	2	1	1	0	0
	GT	495	873	1 149	529	374	374	655	655	655	281	126	126	0	0

Segment	Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	kW	884	1 435	1.84	921	700	700	1 105	1 105	1 105	405	184	184	0	0
TM VL40XX	**Technical indicator**	0.82	0.81	0.86	0.86	0.8	0.85	0.94	0.88	0.87	0.77	0.89	0.88	0.84	0.77
	SAR	0	3	0	1	2	3	4	3	1	1	0	0	0	
	SHI	1.17	1.17	1.33	1.06	1.2	1.05	0.99	0.89	0.98	0.95	0.97	1.05	1.04	
	CR/BER													0.41	
	RoFTA													-20.0	
	Number of vessels	5	5	5	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	20 514	20 514	20 514
	kW	23 274	23 537	23 537	23 537	23 537	23 537	23 537	23 537	24 397	21 128	20 427	21 141	21 141	21 141