Annual report on the efforts made by Italy in 2020 to reach a sustainable balance between fishing capacity and fishing opportunities

(in accordance with Article 22 of Regulation (EC) No 1380/2013)

A.   Introduction

This report was drawn up pursuant to Article 22 of Regulation (EU) No 1380/2013 of the European Commission [*sic*] on the common fisheries policy (CFP). It assesses the balance in 2020 between the fishing capacity and fishing opportunities of the Italian fleet.

The indicators were calculated on the basis of data extracted from the national data collection programme (DCR/DCF), updated to 2019. The reported assessments of the status of resources in Italy's geographical sub-areas (GSAs) were made by GFCM, STECF and ICCAT working groups.

The report presents the annual capacity assessment of the national fleet, highlighting any structural overcapacity, and the viability in the short and long term of each segment assessed.

Specific points to note:

1. The report includes data on tuna catches by the various segments of the relevant fleet, see Annex B, Table B1.

2. As in previous years and in accordance with the EU guidelines[1], we used the sustainable harvest indicator (SHI), calculated on the basis of the FC/F_{MSY} ratio, to assess the exploitation of fish stocks by the various fleet segments. To assess economic performance we continued to use the return on fixed tangible assets (RoFTA) indicator and the current revenue/break-even revenue (CR/BER) ratio, as well as the inactive vessel indicator (IVI) and the vessel use indicator (VUI) in terms of activity rates and use of capacity.

3. All current fishing mortality (F_C) values, and the associated F_{MSY} values available for all stocks analysed from 2017 to 2019 in the various Italian GSAs, were taken into account to calculate the annual SHI. Where no up-to-date F_C/F_{MSY} ratio was available, we considered the value from previous years.

In 2020 Italy mainly focused on managing fishing effort in terms of days of fishing activity, seeing fishing effort reduction as a means to meeting the sustainability standards set by the common fisheries policy (Article 2 of Regulation (EU) No 1380/2013).

Italy stepped up its checks in the course of 2020 to better monitor fishing effort through the management of fishing days. Numerous regulatory measures have been adopted with the aim of reducing fishing effort in order to bring the exploitation rate down from current levels to a level compatible with the sustainability standards set by the common fisheries policy (Article 2 of Regulation (EU) No 1380/2013).

For example, Ministerial Decree No 13128 of 30 December 2019 lays down mandatory temporary closures for fishing with towed gears (bottom otter trawls (OTB), otter twin trawls (OTT) and/or beam/'rapido' trawls (TBB)) for 2020, and further increases the additional number of days where fishing is banned, broken down by GSA and length class. It also bans professional fishing with towed gears, i.e. bottom otter trawls (OTB), beam/'rapido' trawls (TBB), otter twin trawls (OTT), pelagic pair trawls (PTM), mid-water otter trawls (OTM) and boat dredges (DRB) (formerly mussel dredges) in nursery areas from 1 January to 31 December 2020 in GSAs 9, 10 and 11, as defined in Article 11(2) of Regulation (EU) 2019/1022, with the aim of reducing catches of juvenile hake by at least 20%.

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[1]   Communication from the Commission to the European Parliament and the Council: Guidelines for the analysis of the balance between fishing capacity and fishing opportunities according to Article 22 of Regulation (EU) No 1380/2013 of the European Parliament and the Council on the Common Fisheries Policy (COM(2014) 545 final).

The areas closed to fishing, with the possibility of extending the ban to other gears and metiers, were later defined in Decree No 1714 of 23 January 2020.

Without prejudice to Regulation (EC) No 1224/2009, masters of all fishing vessels operating in GSAs 9, 10 and 11 authorised to fish with bottom otter trawls (OTB), beam/'rapido' trawls (TBB), otter twin trawls (OTT), pelagic pair trawls (PTM), mid-water otter trawls (OTM) and boat dredges (DRB) (formerly mussel dredges), regardless of their overall length, must comply with current EU provisions on the electronic recording and reporting of catches and the associated landing/transhipment declarations.

Moreover, Italy has issued specific decrees establishing the lists of vessels authorised to fish demersal species across all GSAs (9 to 27).

A.1 Description of the fishing fleet

According to the register of fishing licences, the Italian fishing fleet comprised 11 926 vessels as at 31 December 2020. The total registered gross tonnage was 145 302 GT and total engine power was 928 127 kW. The size of the fleet, and the related fishing capacity, in terms of GT and engine power remained almost unchanged from 2019. Compared to 2019 the number of vessels fell by 0.48%, GT fell by 0.26% and engine power was reduced by 0.11% (Table 1).

Table 1 – Fishing fleet according to the register of fishing licences, 2019-2020

Year	Vessels	GT	kW
2019	11 984	145 678	929 144
2020	11 926	145 302	928 127
% change	**-0.48%**	**-0.26%**	**-0.11%**

The situation of the fleet operating outside the Mediterranean in 2020 had not changed from the previous year. This fleet consists of eight trawlers operating in FAO area 34_3 (Eastern Central Atlantic) and one purse-seiner operating in area 51_7 (Western Indian Ocean). Accordingly, the GT and kW of these nine vessels remained unchanged at 6 236 GT and 13 064 kW (Tab. 2).

Table 2 – Fishing fleet operating outside the Mediterranean, 2019-2020

Year	Vessels	GT	kW
2019	9	6 236	13 064
2020	9	6 236	13 064
% change	**0%**	**0%**	**0%**

The Mediterranean fleet (i.e. all vessels entered in the register of fishing licences less those operating outside the Mediterranean) consisted of 11 917 vessels in 2020, with a tonnage of 139 006 GT and engine power of 915 063 kW (Table 3). Fishing capacity fell only marginally from the previous year.

Table 3 – Fishing fleet operating in the Mediterranean, 2019-2020

Year	Vessels	GT	kW
2019	11 975	139 442	916 080
2020	11 917	139 066	915 063
% change	**-0.48%**	**-0.26%**	**-0.11%**

A.2 Structure of the fishing fleet in relation to fishing activity

The subdivision of the fishing fleet by fishing technique in 2020[2] (Table 4) confirms the structure noted in previous years. With 8 404 vessels, small-scale fishing (PGP) is by far the largest segment in terms of numbers, making up 70.5% of the total fleet. However, in terms of size the segment is much smaller, accounting for 13.0% of GT and 28.5% of engine power.

With 2 106 vessels (17.7% of the national total), the fleet operating with towed gears (DTS and TBB) is the second largest in terms of numbers and the largest in terms of size. Such gears account for 59.4% of overall GT and 47.0% of overall engine power.

The hydraulic dredgers (DRB) segment consists of 703 productive vessels, which is 5.9% of the national fleet in terms of numbers, 6.4% in terms of tonnage and 8.2% in terms of engine power. The pair-trawling (TM) fleet accounts for less than 1% of vessels and 4.4% of total GT in Italy.

The purse-seining (PS) segment consists of 343 vessels and accounts for 5.1% of overall national tonnage. The group of vessels mainly fishing with longlines consists of 251 vessels (2.1% of the Italian fleet), accounting for approximately 4.4% of overall tonnage and 5.0% of overall engine power . The tuna fleet comprises 20 vessels, a mere 0.2% of the Italian fleet in terms of numbers, but accounts for 3.0% of overall tonnage.

As in the previous year, the fleet operating outside the Mediterranean consists of nine vessels with an overall tonnage of 6 236 GT and engine power of 13 064 kW. Of these, eight are equipped with trawls and one with purse-seining gear (Table 4).

Table 4 – Fleet broken down by fishing technique, 2020

Fishing technique	Vessels	GT	kW	% Vessels	% GT	% kW
Bottom trawling and 'rapido' trawling (DTS and TBB)	2 106	86 380	436 453	17.7%	59.4%	47.0%
Hydraulic dredging (DRB)	703	9 297	76 150	5.9%	6.4%	8.2%
Pair trawling (TM)	90	6 365	33 061	0.8%	4.4%	3.6%
Purse-seining (PS)	343	7 361	44 764	2.9%	5.1%	4.8%
Longlines (HOK)	251	6 416	46 269	2.1%	4.4%	5.0%
Small-scale fishing (PGP)	8 404	18 952	264 504	70.5%	13.0%	28.5%
Tuna fleet	20	4 295	13 862	0.2%	3.0%	1.5%
Mediterranean fleet	**11 917**	**139 066**	**915 063**	**99.9%**	**95.7%**	**98.6%**

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[2]The segmentation of the fleet in this report is based on the main gear used in accordance with Council Regulation (EC) No 199/2008 of 25 February 2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy, and with Annex I 'Definition of data and description of a registration' to Commission Regulation (EC) No 26/2004 of 30 December 2003 on the Community fishing fleet register.

Bottom trawling (DTS)	8	4 099	9 374	0.1%	2.8%	1.0%
Purse-seining (PS)	1	2 137	3 690	0.0%	1.5%	0.4%
Long-distance fleet	**9**	**6 236**	**13 064**	**0.1%**	**4.3%**	**1.4%**
ITALY	**11 926**	**145 302**	**928 127**	**100.0%**	**100.0%**	**100.0%**

With regard to geographical distribution by GSA, most of the Italian fleet (2 899 vessels) is concentrated in GSA 17 (Northern Adriatic), a coastal area extending over more than 700 km from Molise to Friuli Venezia Giulia. Historically, the vessels operating there, using the full range of fishing techniques, make up the core of the Italian fishing fleet. The vessels operating in GSA 17 account for 24.3% of the Italian fleet in terms of numbers, and in terms of size they represent almost 30% of GT and engine power (Table 5).

The second largest fleet after the Northern Adriatic, in terms of the number of vessels, is the one operating in the Southern and Central Tyrrhenian Sea (GSA 10), which includes the Campania area, the Tyrrhenian coast of Calabria and Northern Sicily. This fleet comprises 2 477 vessels, 20.8% of the total fleet, accounting, in size terms, for 12.5% of GT and 14.5% of engine power (Table 5).

This is followed, in terms of the number of vessels, by GSA 9, GSA 19 and GSA 11. The fleets operating in these areas account for between 13.7% and 11.6% of the Italian fleet, while in terms of tonnage they account for between 9.9% and 6.4% (Table 5).

With 1 124 vessels, the fleet operating along the southern coast of Sicily (GSA 16) accounts for less than 10% in terms of the number of vessels, but this low figure is offset by their considerable average size of 26.0 GT (more than double the national average for vessels operating in the Mediterranean, which is 11.7 GT) (Table 6).

Finally, the fleet operating in GSA 18, which includes the northern part of Apulia, accounts for 8.2% of the total number of vessels and almost 10% of capacity expressed in GT and engine power (Table 5).

Table 5 – Fleet by GSA, 2020

GSA	Vessels	GT	kW	Vessels (%)	GT (%)	kW (%)
GSA 9 – Ligurian Sea and Northern Tyrrhenian Sea	1 637	14 325	116 872	13.7%	9.9%	12.6%
GSA 10 – Southern and Central Tyrrhenian Sea	2 477	18 193	134 459	20.8%	12.5%	14.5%
GSA 11 - Sardinia	1 378	9 314	76 203	11.6%	6.4%	8.2%
GSA 16 – Southern Sicily	1 124	29 228	125 433	9.4%	20.2%	13.5%
GSA 17 – Northern Adriatic Sea	2 899	42 580	278 832	24.3%	29.3%	30.0%
GSA 18 – Southern Adriatic Sea	972	13 638	90 288	8.2%	9.4%	9.7%
GSA 19 – Western Ionian Sea	1 430	11 788	92 975	12.0%	8.1%	10.0%
Mediterranean fleet	**11 917**	**139 066**	**915 063**	**99.9%**	**95.7%**	**98.6%**
Long-distance fleet	**9**	**6 236**	**13 064**	**0.1%**	**4.3%**	**1.4%**
ITALY	**11 926**	**145 302**	**928 127**	**100.0%**	**100.0%**	**100.0%**

Table 6 – Average vessel size by GSA, 2020

GSA	GT average	kW average
GSA 9 – Ligurian Sea and Northern Tyrrhenian Sea	8.8	71.4
GSA 10 – Southern and Central Tyrrhenian Sea	7.4	54.4
GSA 11 - Sardinia	6.8	55.3
GSA 16 – Southern Sicily	26.0	111.6
GSA 17 – Northern Adriatic Sea	14.7	96.3
GSA 18 – Southern Adriatic Sea	14.0	92.9
GSA 19 – Western Ionian Sea	8.2	65.0
Mediterranean fleet	**11.7**	**76.8**
Long-distance fleet	**692.9**	**1 451.6**
ITALY	**12.2**	**77.5**

Changes over time

Taking 2004 as a base reference year, there has been a clear and considerable decrease in the number of vessels of the Italian fleet, which shrunk from 14 873 vessels in 2004 to 11 926 in 2020, i.e. an overall reduction of more than 2 900 vessels. This significant decline (-19.8%) has mainly affected vessels of above-average size, as total GT fell by 27.6% and total kW by 23.5% (Table 7). As a result, the average tonnage of the fleet fell from 13.5 to 11.7 GT. This major downsizing of the production structure is a result of the common fisheries policy, which laid down targeted permanent cessation measures to support and encourage the spontaneous exit of fishing vessels. Table 8 shows the trend in the fleet's structural variables over the past year.

*Table 7 Change in fishing capacity, 2004-2020*

Year	Number of vessels	GT	kW
2004	14 873	200 561	1 212 532
2020	11 926	145 302	928 127
% change	**-19.8%**	**-27.6%**	**-23.5%**

Table 8 – Fleet trends in GT and kW by fishing technique, 2019-2020

Fishing technique	Vessels			GT			kW		
	2019	2020	%	2019	2020	%	2019	2020	%
Bottom trawling and 'rapido' trawling (DTS and TBB)	2 086	2 106	1.0%	85 600	86 380	0.9%	429 279	436 453	1.7%
Hydraulic dredging (DRB)	705	703	-0.3%	9 316	9 297	-0.2%	76 371	76 150	-0.3%
Pair trawling (TM)	108	90	-16.7%	7 174	6 365	-11.3%	36 681	33 061	-9.9%
Purse-seining (PS)	365	343	-6.0%	11 472	7 361	-35.8%	59 797	44 764	-25.1%
Longlines (HOK)	234	251	7.3%	5 530	6 416	16.0%	40 656	46 269	13.8%
Polyvalent passive and small-scale fishing (PGP)	8 477	8 404	-0.9%	20 350	18 952	-6.9%	273 297	264 504	-3.2%
Tuna fleet	n/a	20	n/a	n/a	4 295	n/a	n/a	13 862	n/a
Mediterranean fleet	**11 975**	**11 917**	**-0.5%**	**139 442**	**139 066**	**-0.3%**	**916 080**	**915 063**	**-0.1%**
Long-distance fleet	**9**	**9**	**0.0%**	**6 236**	**6 236**	**0.0%**	**13 064**	**13 064**	**0.0%**
ITALY	**11 984**	**11 926**	**-0.5%**	**145 678**	**145 302**	**-0.3%**	**929 144**	**928 127**	**-0.1%**

In recent years the number of vessels in the fleet has continued to fall at a very slow pace. Between 2004 and 2012, there was a decline of 15 percentage points, whereas between 2013 and 2020, the trend slowed down and 'only' 5% of vessels were withdrawn from the fleet (Fig. 1).

Figure 1 – Fishing fleet trend, 2004-2020
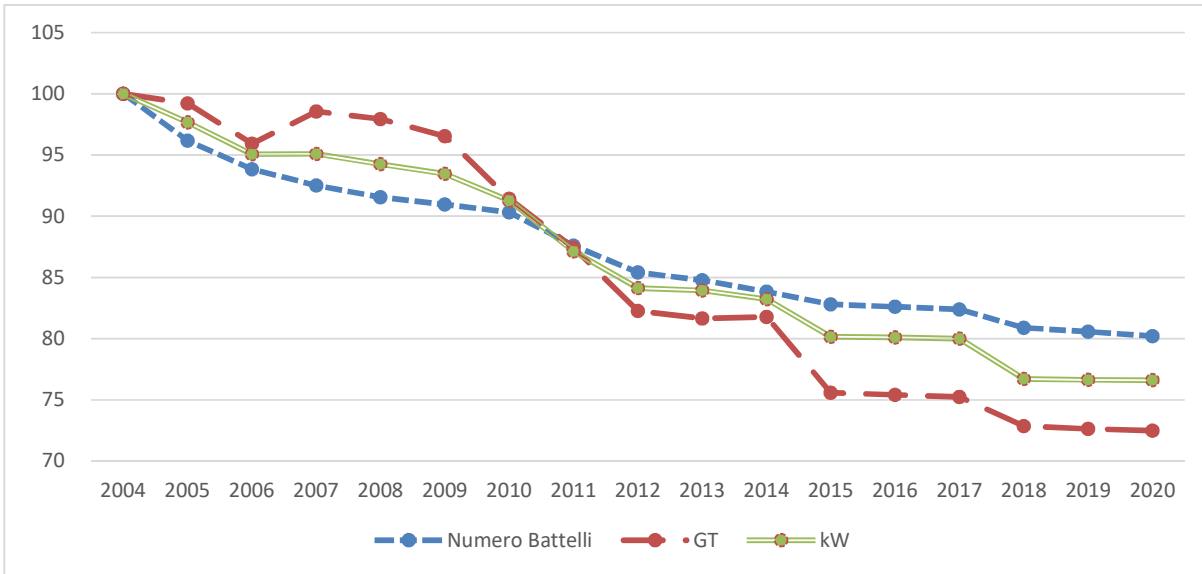
A3. Production

The Italian fleet landed 130 085 tonnes of fishery products in 2020[3], at an economic value of €642.45 million (Table 9). Bottom trawling (including with 'rapido' gear) is the largest segment, accounting for 40 944 tonnes or 31% of the total. The segment has an ever stronger position economically, accounting for €324.10 million, or 50%, of the turnover of the entire Italian fleet. This is due to the high commercial value of its target species, which include red shrimp and Norway lobster. The pair trawling segment has the second largest production at a little less than 24 000 tonnes (19% of the total). However, the lower commercial value of the target species, mainly small pelagic fish, resulted in a relatively low economic return of €27.61 million, or 4% of the total value of national landings. Purse-seining vessels recorded landings of 13 582 tonnes (accounting for 10% of the total) with an economic value of around €30 million (5% of the total). Small-scale fishing vessels landed almost 23 000 tonnes (18% of the national total), at a value of €166.20 million (26% of the national total). The longliner segment landed 3 814 tonnes (3% of the total) at a value of €26.37 million (4% of the total economic value). Lastly, the purse seining fleet with a quota for bluefin tuna, which also fishes small pelagic species in the course of the year, recorded catches of 4 533 tonnes, of a value of nearly €20 million, which is 3% of the national total for both variables.

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[3] The figure includes the bluefin tuna (BFT) production reported by purse seiners, but is net of the production of the fleet operating outside the strait, which is reported separately.

Table 9 – Catches and revenue by fishing technique, 2020

Fishing technique	Catch (t)	Catch %	Revenue (million €)	Revenue %
Purse-seining (PS)	13 582	10%	29.69	5%
Purse-seining (PS) BFT	4 533	3%	19.89	3%
Hydraulic dredging (DRB)	20 089	15%	48.58	8%
Longlines (HOK)	3 814	3%	26.37	4%
Small-scale fishing (PGP)	22 899	18%	166.20	26%
Bottom trawling and 'rapido' trawling (DTS and TBB)	40 944	31%	324.10	50%
Pair trawling (TM)	24 224	19%	27.61	4%
TOTAL	**130 085**	**100%**	**642.45**	**100%**

The long-distance fleet landed 6 305 tonnes of fishery products in 2020, accounting for 5% of the catches of the entire Italian fleet, with revenues of €8.70 million, which is 1.3% of the total. 11% of its catches, accounting for 26% of the economic value, came from fishing zone 34 off the coast of Senegal. In the Indian Ocean, large pelagic species such as yellowfin tuna and bigeye tuna make up most of the catches, accounting for 89% of the volume and 74% of revenues (Table B2).

In terms of the geographical distribution of production, the northern and central Adriatic (GSA 17) takes a leading position with 49% of the quantities landed. Fishing techniques which are particularly productive, such as pair trawling and hydraulic dredging, are widely used in this area, together accounting for more than one third of national landings. In terms of economic value, on the other hand, the area only accounts for 32% of the total due to the low commercial value of the target species, mainly small pelagics and clams. The southern Tyrrhenian (GSA 10) and the waters off northern Apulia (GSA 18) have a share of landings of 11%, at just under 14 000 tonnes each. This represents an economic value of €79 million for GSA 10 (12% of the total) and €69.5 million for GSA 18 (11%).

In the Sicilian Channel area there were landings of 12 782 tonnes, accounting for 10% of Italy's total. However, as catches in the area are of a high commercial value, including the shrimp fisheries typical of the trawling fleet operating there, total revenue, at some €100 million, accounts for 16% of the national total.

As in previous years, anchovy, sardine and clams were the three main species landed, together making up almost 44% of the overall landings of the national fleet operating in the Mediterranean. Anchovy is the top species by far at almost 24 000 tonnes, equivalent to 18.3% of total production, whereas clam catches amounted to 19 000 tonnes (14.7% of the total) and landings of sardines reached 13 899 tonnes (10.6%). For white shrimp and hake the quantities caught were considerably smaller, at 6 800 tonnes and 5 900 tonnes, respectively. Other species typically caught by the Italian fleet include mantis shrimp at 3 400 tonnes, red mullet and cuttlefish at 3 100 tonnes, and octopus at 3 000 tonnes (Table B3).

In terms of the economic value of landings, red shrimp is the top species at just under €54 million, followed by white shrimp at €45 million, clams at €44 million and hake at €42 million. Anchovy, cuttlefish, octopus, swordfish and blue and red shrimp are also among the top ten species. Overall, the data shows a larger spread of species than is the case for quantity, with the top ten species accounting for only 50% of total revenue (Table B4).

Changes over time

In 2020 events linked to the COVID-19 pandemic resulted in a strongly falling trend compared to 2019, with a 26% decrease in terms of quantity and a 28% decrease in revenue.

The bottom trawling segment, which has the highest level of production, was the worst hit with a drop of 38%. Pair trawling and purse seining contracted by 30% and longliners and small-scale fishing boats saw a 7% and 8% reduction, respectively. Only the dredger segment defied this trend, with a slight increase of 1% (Table 10).

Table 10 – Production trend in terms of quantity, broken down by fishing technique, Mediterranean fleet only

Fishing technique	Catch (t)		
	2019	2020	% change
Bottom trawling and 'rapido' trawling (DTS and TBB)	66 244	40 944	-38%
Hydraulic dredging (DRB)	19 810	20 089	1%
Pair trawling (TM)	35 814	24 224	-32%
Purse-seining (PS)	25 817	18 115	-30%
Longlines (HOK)	4 102	3 814	-7%
Small-scale fishing (PGP)	24 951	22 899	-8%
Total	**176 738**	**130 085**	**-26%**

The reduction in the economic value of landings was even greater, at -28%, than the reduction in catches. There are thus clear signs of a negative trend at the marketing stage, as evidenced by a 2% drop in average prices (Table 11).

Table 11 – Production trend in economic value by fishing technique

| Fishing technique	Revenue (million €)		
	2019	2020	% change
Bottom trawling and 'rapido' trawling (DTS and TBB)	480.1	324.1	-32%
Hydraulic dredging (DRB)	57.3	48.6	-15%
Pair trawling (TM)	68.3	27.6	-60%
Purse-seining (PS)	81.3	49.6	-39%
Longlines (HOK)	24.1	26.4	9%
Small-scale fishing (PGP)	180.6	166.2	-8%
Total	**891.7**	**642.5**	**-28%**

Specifically, the price trend broken down by fleet segment shows that the drop in prices affected the main species fished – small pelagics and clams – most, with prices falling by 40% for trawlers and by 13% for purse seiners. At the same time there was a sharp reduction in supply, in particular with respect to trawling. In the dredger segment prices fell by 16%. Vessels targeting higher-value demersal species saw a different trend, as prices increased by 9% in the trawling segment and by 18% in the longliner segment. There was no change in small-scale fishing (Table 12).

Table 12 – Trend in average prices by fishing technique

| Fishing technique	Price (€/kg)		
	2019	**2020**	**% change**
Bottom trawling and 'rapido' trawling (DTS and TBB)	7.25	7.92	9%
Hydraulic dredging (DRB)	2.89	2.42	-16%
Pair trawling (TM)	1.91	1.14	-40%
Purse-seining (PS)	3.15	2.74	-13%
Longlines (HOK)	5.88	6.91	18%
Small-scale fishing (PGP)	7.24	7.26	0%
Total	**5.05**	**4.94**	**-2%**

The closure of businesses due to the pandemic, including the catering sector and all related events, clearly had a significant impact on consumption. The data indicates that demand, which probably fell at least as much as supply, mainly concerned just a few species (Figure 2).

Figure 2 – Trend in average prices, 2013-2020
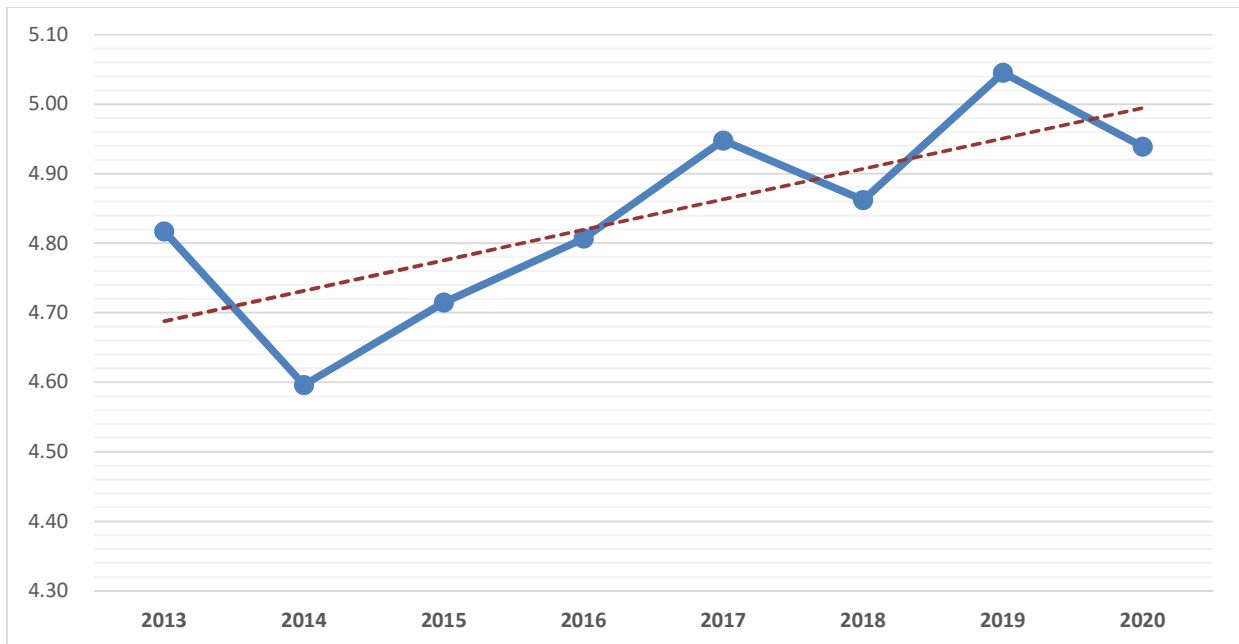
The following graph (Figure 3) shows a broadly stable trend in landings and revenue from 2013 to 2018, whereas in 2019 a negative trend emerges that worsens significantly in 2020. This is due to the application of EU legislation that imposed a considerable reduction in days of fishing activity and to the COVID 19 pandemic, an entirely unpredictable event beyond our control.

Figure 3 – Production trend, 2013-2020 (base year 2013)
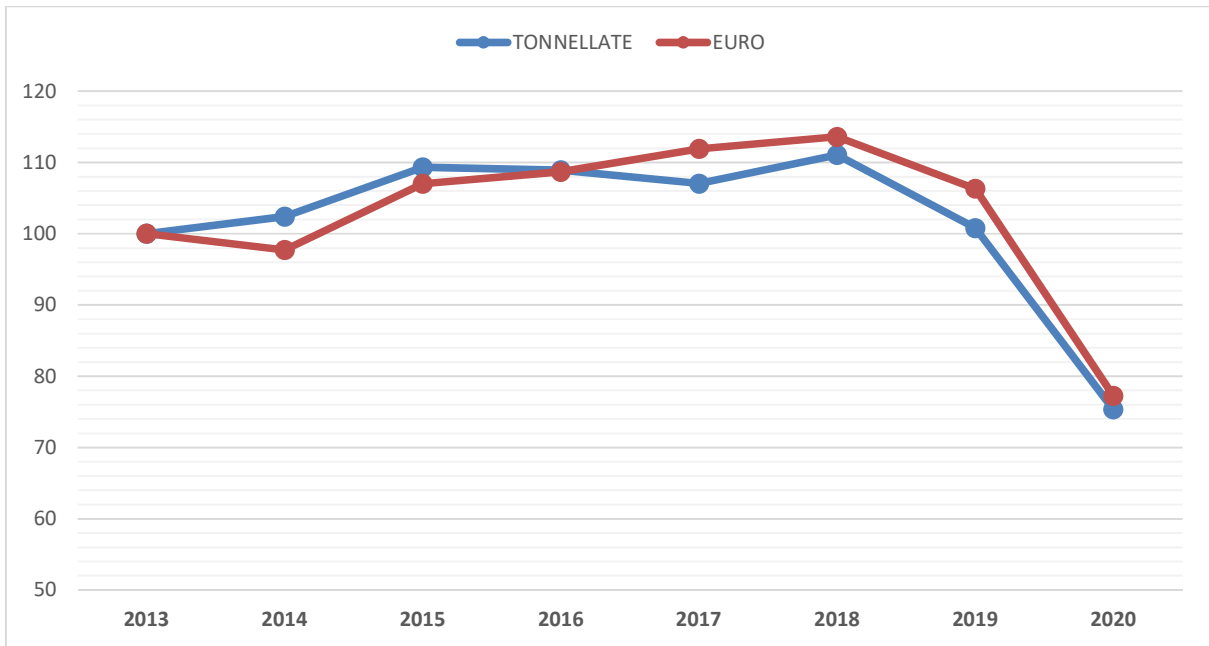
Our arguments above regarding the sharp drop in production are supported by the following graphs, which show a similar trend in terms of level of activity, expressed in fishing days in the period from 2013 to 2020, with respect to the trawling fleet (OTB) (Figure 4) and the entire Italian fleet irrespective of gear (Figure 5). Specifically, based on the average value calculated for the period from 2015 to 2017 (Regulation (EU) 2019/2236), the reduction in fishing days per year – as at 31 December 2020 – was around 25% for trawling and 30% for other fishing techniques.

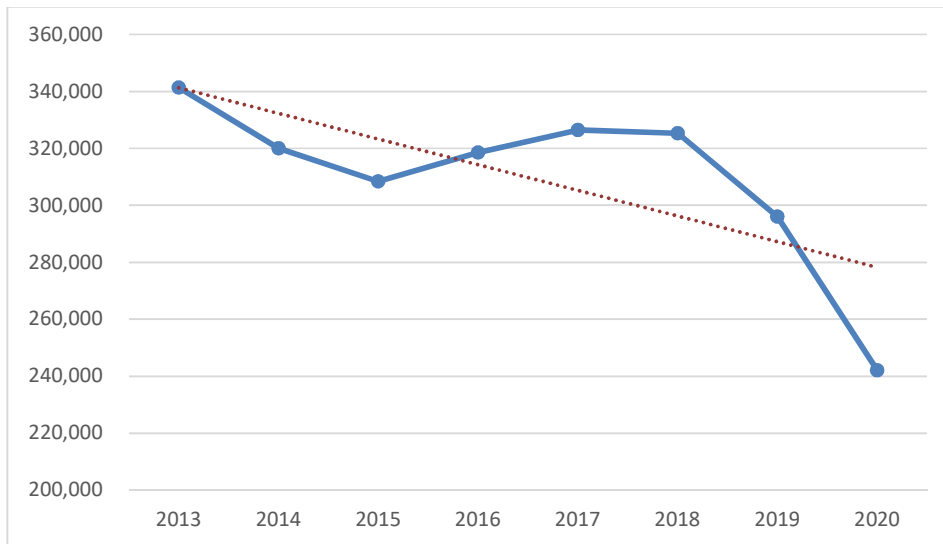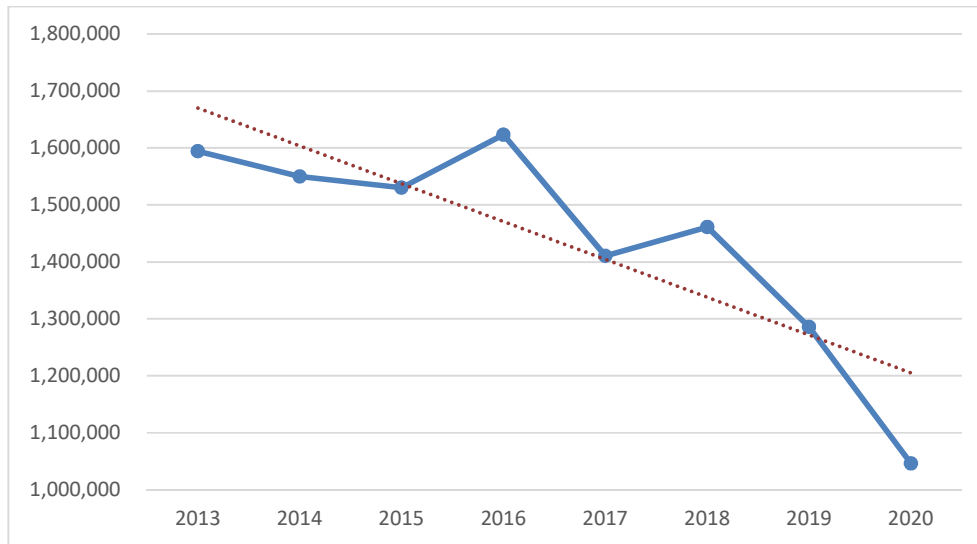*Figure 4 – Trend in fishing days for bottom trawling (OTB), 2013-2020*

Figure 5 – Trend in total fishing days of the entire fleet, 2013-2020

B. Impact on fishing capacity of fishing effort reduction schemes adopted under multiannual management or recovery plans or under any national plans

For vessels equipped with a VMS tracking system, the VMS data provides information about days of fishing activity, and this data can be checked against engine power data to obtain information about estimated fishing effort (number of fishing days × kW). The graph below (Figure 6) clearly shows a gradual, downward trend in fishing effort, with obvious effects in the long term, for bottom trawling in the period 2015-2020 (the blue line represents the linear data trend). The strategies employed to reduce fishing effort, in particular the fishing day quotas set by Italy for 2019, which were again implemented in 2020, exacerbated this trend.

Figure 6 – Trend in average fishing days by GSA, 2015-2019
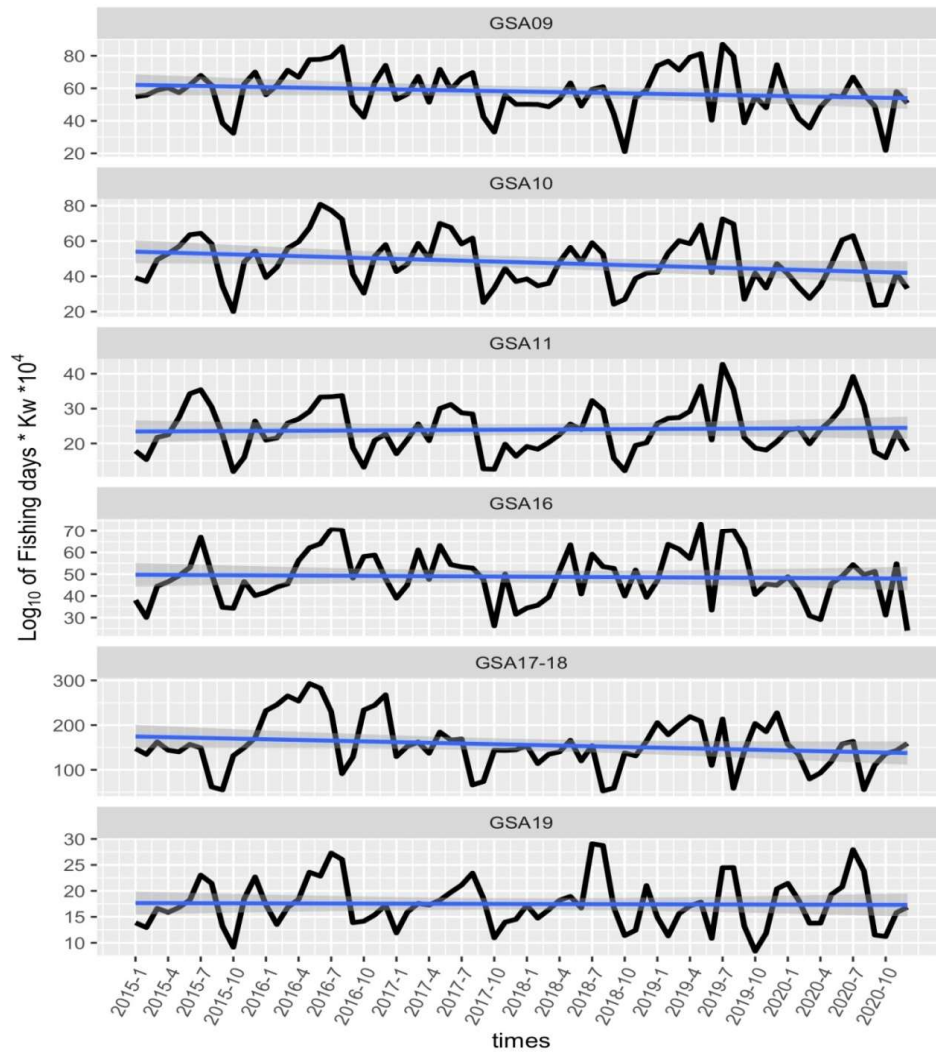
Using VMS data to monitor the zone in the Pomo Pit where all fishing is banned (zone A) gives a similar result. Similarly, in the fishing restricted areas (FRAs) of the Strait of Sicily (FRA GFCM1 – Levante Banco Avventura, FRA GFCM2 – Ponente Bacino di Gela and FRA GFCM3 – Levante Banco di Malta), established last year to protect hake and deep-water rose shrimp juveniles, VMS tracking data shows that the bottom trawling fishing effort has dropped substantially.

C.   Information on compliance with the entry/exit regime and the reference level

Compliance with the entry/exit scheme and the reference level as at 31 December 2020 was assessed on the basis of the overall situation of the fleet in May 2021. In accordance with Article 22(7) of Regulation (EU) No 1380/2013, the fishing capacity of the Italian fleet has never exceeded the limits laid down in Annex II to that regulation (Table13).

Table 13 – Calculation table for compliance with the entry/exit scheme and reference level

		GT	kW
Reference level, Regulation (EU) No 1380/2013	GT – kW	**173 506**	**1 070 028**
Exits with support, 2014-2020	$GT_a - kW_a$	17 358	85 042
Ceiling as at 31.12.2020	GT – kW	156 148	984 986
Situation as at 31.12.2020	GT – kW	**145 302**	**928 127**
Difference		**10 846**	**56 859**

D. Summary report on strengths and weaknesses of the fleet management system

Following on from the action already taken to protect certain stocks particularly at risk, taking account of past experience and data collected, Italy has adopted regulatory measures aimed at reducing fishing effort, laying down temporary and area closures to restrict fishing and drawing up exhaustive lists of vessels authorised to carry out specific fishing activities across the Mediterranean.

The main rules adopted in this regard include:

- Executive Decree of 23 January 2020 laying down a national discard management plan for striped venus clams (*Chamelea gallina*)
- Executive Decree No 9045689 of 6 August 2020 implementing Article 6(1) of Ministerial Decree No 13128 of 31 December 2019 setting out the areas closed to professional fishing with towed gears, specifically bottom otter trawls (OTB), beam/'rapido' trawls (TBB), otter twin trawls (OTT), pelagic pair trawls (PTM), mid-water otter trawls (OTM) and boat dredges (DRB) (formerly mussel dredges) in GSAs 9, 10 and 11, as defined in Article 11(2) of Regulation (EU) 2019/1022
- Executive Decree No 9045689 of 6 August 2020 laying down provisions on the targeted fishing, with towed gears, of demersal stocks in the western Mediterranean (GSAs 9, 10 and 11)
- Executive Decree No 9046936 of 7 August 2020 laying down implementing provisions for fishing in the Pomo Pit
- Executive Decree No 9141513 of 17 September 2020 laying down provisions on the targeted fishing, with towed gears, of demersal stocks in the Adriatic Sea (GSAs 17 and 18)
- Executive Decree No 9141521 of 17 September 2020 laying down provisions on the targeted fishing, with towed gears, of Argentine red shrimp (ARS) and blue and red shrimp (ARA) in the Ionian Sea (GSAs 19, 20 and 21)
- Executive Decree No 9141534 of 17 September 2020 laying down provisions on the targeted fishing, with towed gears, of Argentine red shrimp (ARS) and blue and red shrimp (ARA) in the Levantine Sea (GSAs 24, 25, 26 and 27)
- Executive Decree No 9141500 of 17 September 2020 laying down provisions on the targeted fishing, with towed gears, of Argentine red shrimp (ARS) and blue and red shrimp (ARA) in the Strait of Sicily (GSAs 12 , 13, 14, 15 and 16)
- Executive Decree No 9173488 of 25 September 2020 on the 2020 bluefin tuna fishing season – definitive closure for by-catches
- Executive Decree No 9140286 of 17 September 2020 amending the 2020 closure period for active fishing of small pelagic stocks (sardine) for vessels authorised to fish small pelagic species using

trawls and pair trawls, registered or operating in the sea areas from San Benedetto to Gallipoli (up to the limit of GSA 18)

- Executive Decree of 22 October 2020 adjusting the fishing opportunities for certain western Mediterranean stocks.

E.   Information on changes to administrative fleet management procedures

There were no changes to administrative fleet management procedures in the past year.

F.   Application of balance indicators

The indicators proposed for each geographical sub-area (GSA) are examined in detail below to identify overall trends by fishing technique and overall length (LOA) class. The indicators were calculated on the basis of data extracted from the national data collection programme (DCR/DCF).

The information is provided by GSA in order to capture geographical differences in economic and social performance and the state of the fisheries, as reflected by the overall status of resources and different fishing capacity levels.

F.1   Biological sustainability indicators

The sustainable harvest indicator (SHI) was used to identify fleet segments with overcapacity. Note that the stocks-at-risk (SAR) indicator could not be calculated for lack of biomass-based reference points for most of the stocks exploited by the Italian fleet (criterion 'a' of the EU guidelines). Stocks under criteria 'b', 'c' and 'd' of the guidelines always account for a small part of the catch by weight.

To calculate the annual SHI value, the F/F_{MSY} ratio was used for all stocks analysed from 2017 to 2019 in the various Italian GSAs, taking into account the results of the most recent GFCM, STEFC and ICCAT working groups (GFCM-SAC, 2019a, b; 2021a, b; STECF 2019a, b; 2020 b; ICCAT-SCRS 2020). The details are set out in Annex B (Table B5).

Where the estimated F/F_{MSY} ratio was not up to date, the 2018 or 2017 values were assumed to be constant for 2019 and for 2018 and 2019, respectively. Moreover, fish stocks for which the new assessment failed to provide F/F_{MSY} values considered reliable by the STECF and SAC-GFCM working groups were excluded from the SHI calculation. Finally, it should be noted that the assessments made by the SAC-GFCM have not yet been validated in plenary by the Scientific Advisory Committee and that F/F_{MSY} values are available only for 2019. These values were used to calculate the SHI also in 2017 and 2018.

To identify fleet segments in imbalance, segments that had an SHI value above 1 and a threshold above 40% for at least 2 years over the 2017-2019 period were considered.

29 of 47 segments with a threshold above 40% for at least 2 years over the 3-year period were found to be in imbalance (Table 14). It needs to be stressed that the improvement in the SHI estimates provided in this report compared with previous years is linked to the different analytical models used by the STECF and the GFCM in their new assessments. These new models, known as 'Statistical Catch at Age (SCAA)', produce fishing mortality estimates that are generally lower than the models used in previous years (e.g. 'eXtendedSurvival Analysis', XSA) and are generally considered to be more accurate (Radomski, et al., 2005). There was an overall improvement compared to previous years; last year overfishing concerned 32 of the 41 segments considered (78%).

Table 14 – SHI by fleet segment, 2017-2019

GSA	TECHNIQUE	SEGMENT	SHI 2017	SHI 2018	SHI 2019
9	DTS	VL1218	2.1	2.4	2.2
9	DTS	VL1824	2.1	2.3	2.0
9	DTS	VL2440	1.8	1.8	1.6
9	PGP	VL1218	1.7	2.1	1.8
9	PS	VL1218	0.5	0.5	0.6
9	PS	VL1824	0.5	0.5	0.5
9	PS	VL2440		0.5	0.5
10	DTS	VL1218	2.1	2.2	2.2
10	DTS	VL1824	2.3	2.4	2.5
10	HOK	VL1218	1.2	1.6	1.3
10	HOK	VL1824		0.7	0.9
10	PS	VL40XX	0.4	0.4	0.4
11	DTS	VL2440	3.1	3.7	4.0
11	PGP	VL1824		0.9	0.9
16	DTS	VL1824	1.5	1.4	
16	HOK	VL1218	0.9	0.8	0.8
16	HOK	VL1824	0.8	0.7	0.6
16	PS	VL40XX	0.4	0.4	
17	DTS	VL0612	1.0	0.9	1.0
17	DTS	VL1218	1.4	1.4	1.4
17	DTS	VL1824	2.0	1.8	1.9
17	DTS	VL2440	2.1	1.9	2.0
17	PGP	VL0006	0.9	0.9	0.9
17	PGP	VL0612	0.9	0.9	0.9
17	PGP	VL1218	0.9	0.6	0.7
17	PGP	VL1824		1.0	0.6
17	PS	VL1218	2.8	2.8	3.3
17	PS	VL2440	1.6	1.6	1.6
17	PS	VL40XX	0.5	0.5	
17	TBB	VL1218	1.1	1.2	1.2
17	TBB	VL1824	1.1	1.1	1.2
17	TBB	VL2440	1.0	1.1	1.1
17	TM	VL1218	2.0	2.4	2.6
17	TM	VL1824	2.5	3.3	3.3
17	TM	VL2440	1.8	2.7	2.5
18	DTS	VL1824	2.3	2.3	2.4
18	DTS	VL2440	2.6	2.3	2.5
18	HOK	VL1218	2.0	1.9	1.9
18	PS	VL2440	1.8	1.9	1.7
18	TM	VL1824		1.6	1.8
18	TM	VL2440	1.7	1.6	1.6
19	DTS	VL1218	1.8	2.1	2.3
19	DTS	VL1824	1.9	1.9	
19	HOK	VL1218	1.0	1.1	1.1

19	HOK	VL1824	0.9	0.9	
19	PS	VL2440	0.4	0.4	0.4
19	PS	VL40XX	0.4	0.4	0.4

F.2   Economic indicators

To identify fleet segments with overcapacity, the following indicators were used: RoFTA (long-term return) and CR/BER current revenue to break-even revenue ratio (short-term return).

- RoFTA

RoFTA is the per-unit return on capital invested in the fisheries sector. This indicator was compared with the arithmetic average of the harmonised long-term interest rate of the previous 5 years (2015-2019)[4]. A value below the long-term, low-risk interest rate available for other investments indicates possible overcapitalisation in a fleet segment. If the return on investment is negative and below the best available long-term risk-free interest rate, this is an indication of long-term economic inefficiency that could point to the existence of an imbalance.

The return on investment of a fleet is its net profit (after capital amortisation) divided by its total capital value. The permanent inventory method was used to calculate the value of the fleet in terms of investment goods.

Annex B (Table B6) shows the indicator values for all segments of the fleet by GSA, while Table 15 lists fleet segments with an indicator value below the target reference point in 2019.

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[4] Source: ECB http://www.ecb.int/stats/money/long/html/index.en.html

Table 15 – List of fleet segments with a RoFTA value below the TRP, 2019

GSA	Fishing technique	LOA class	RoFTA		
			2017	2018	2019
9	DRB	VL1218	-0.21	-0.24	-0.04
9	DTS	VL2440	-0.12	-0.04	-0.19
9	PGP	VL1824			-0.02
9	PS	VL0612		0.92	-0.01
9	TBB	VL1824			-0.41
10	HOK	VL1824		-0.01	-0.10
10	PGP	VL1218	0.24	-0.05	0.00
11	DTS	VL0612			-0.17
11	DTS	VL2440	0.00	0.00	-0.02
16	DTS	VL0612	0.09	0.44	-0.18
16	DTS	VL1824	0.07	0.01	-0.02
16	PS	VL0612			-0.24
16	PS	VL2440			-0.10
16	TM	VL1218			-0.47
17	DTS	VL0612	0.29	-0.13	-0.13
17	PGP	VL1824			-0.28
17	TBB	VL1218	0.66	0.55	-0.02
17	TBB	VL1824	0.01	0.20	-0.12
18	DRB	VL1218	-0.21	-0.13	-0.04
18	PS	VL1218			-0.41
18	TM	VL1218			-1.92
18	TM	VL1824		0.05	-0.23
18	TM	VL2440	0.68	0.36	-0.04
19	DTS	VL0612			-0.28
19	DTS	VL2440			-0.25
19	HOK	VL1218	0.15	-0.03	-0.07
19	HOK	VL1824	0.06	-0.08	-0.16
19	PGP	VL1218	0.00	-0.06	-0.11
19	PGP	VL1824			-0.38
19	PS	VL0612			-0.05

In 2019, 30 of the 102 segments in total had an indicator value below the target reference point, compared to 19 in 2018. Economic performance deteriorated in a number of trawling segments (in particular trawlers of 12-18 m overall length in GSA16 and trawlers of >24 m overall length in GSAs 11, 19 and 9).

With regard to passive gears, this negative trend concerned vessels of >12 m overall length in nearly all GSAs. Longliners in GSAs 19 and 10 performed particularly badly.
Purse seiners are considered to be in a situation of long-term profitability, with 19 out of 26 segments in balance. For pair and 'rapido' trawlers in GSAs 16 and 18 profitability fell considerably.

Lastly, hydraulic dredgers operating in the Tyrrhenian Sea and on Apulia's Adriatic coast are economically inefficient in the long term, as opposed to hydraulic dredgers in GSA 17, which perform well.

- CR/BER

Break-even revenue (BER) is the revenue needed to cover both fixed and variable costs, meaning that neither a loss nor a profit is made. Current revenue (CR) is the total operating income of a fleet segment, made up of income from landings and non-fishing income. As the calculation of the ratio does not take account of the opportunity cost, the calculated indicator shows financial viability in the short term.

Table B6 shows the indicator values of all fleet segments by GSA, whereas Table 16 lists fleet segments with an indicator value below 1 for the last year for which data is available.

Table 16 – List of fleet segments with a CR/BER value below 1, 2019

			CR/BER		
GSA	Fishing technique	LOA class	2017	2018	2019
9	DRB	VL1218	0.27	0.17	0.35
18	DRB	VL1218	0.23	0.52	0.88
11	DTS	VL0612			0.54
16	DTS	VL0612	1.33	2.42	0.48
17	DTS	VL0612	1.77	0.36	0.52
19	DTS	VL0612			-0.34
16	DTS	VL1824	1.28	1.08	0.97
9	DTS	VL2440	0.60	0.91	0.29
11	DTS	VL2440	1.03	1.07	0.96
19	DTS	VL2440			0.29
19	HOK	VL1218	1.54	-0.35	0.79
10	HOK	VL1824		1.00	0.75
19	HOK	VL1824	1.24	0.78	0.50
17	PGP > 12	VL1218	1.67	3.81	-4.68
19	PGP > 12	VL1218	0.99	0.80	0.64
9	PGP > 12	VL1824			0.99
17	PGP > 12	VL1824			-0.14
19	PGP > 12	VL1824			0.00
16	PS	VL0612			0.50
19	PS	VL0612			0.73
18	PS	VL1218			0.15
10	PS	VL1824	1.94	3.12	0.91
19	PS	VL1824			-0.01
10	PS	VL2440	1.61	0.60	-0.20
16	PS	VL2440			0.74
9	TBB	VL1824			-0.12
17	TBB	VL1824	1.05	1.50	0.39
16	TM	VL1218			0.07
18	TM	VL1218			-2.35
18	TM	VL1824		1.12	0.55
18	TM	VL2440	3.08	2.20	0.90

In 2019, of a total of 102 fleet segments examined, 31 had an indicator value below 1 and seven had a negative CR/BER ratio. The indicator shows a deterioration compared to the previous 2 years, with an increase in the number of segments scoring less than 1.

F.3 Vessel use indicators

The Guidelines on balance indicators (COM(2014)545) recommend using two different indicators to assess the rate of exploitation of the fleet: the inactive vessel indicator and the vessel use indicator.

The inactive vessel indicator expresses the proportion of inactive vessels of the overall fleet in terms of the number of vessels, tonnage (GT) and engine power (kW).

The vessel use indicator, on the other hand, considers the activity levels of vessels that have carried out fishing activities at least once during the year, taking into account the seasonal nature of fishing and other restrictions. It is calculated, for each segment of the fleet, as the ratio between the observed fishing effort (average number of days at sea per vessel) and the maximum recorded effort (maximum days at sea observed in one fleet segment).

According to the 'traffic light' system, a value above 0.9 gives a green light and is attributed only to fleet segments that record a broadly consistent level of activity. Values below 0.7 are potentially considered as a sign of under-utilisation, which in turn may point to technical overcapacity (red light).

Indicator values between these limit values are highlighted in yellow and indicate a relatively stable situation where the available technical capacity is moderately exploited on the whole. The details are set out in Table 17.

- Inactive vessel indicator (IVI)

The adverse impact of the COVID-19 pandemic is clearly reflected in this indicator, which measures the level of inactivity of the fleet. While the values remains below the threshold of 20% for all fleet segments, a sharp increase can be seen in particular in the lower length classes. The proportion of inactive vessels increased from 12% in 2019 to 16% for vessels up to 6 m, from 10.2% to 16.9% for vessels of 6-12 m and from 5.4% to 10.7% for vessels of 12-18 m in length. For the other length classes there was a moderate increase of less than 1 percentage point. The inactivity rate for the fleet as a whole went up from 9% to 14.4%.

Accordingly, there is also a higher rate of inactivity measured in tonnage and engine power, with an overall increase from 5.6% to 8.6% in GT and from 6% to 11% in engine power.

- Vessel use indicator (VUI)

The vessel use indicator expresses the rate of fishing capacity utilisation based on the average effort observed in a segment in relation to the maximum effort recorded. This indicator also deteriorated in 2020, with 59% of segments in the red band compared to 36% in 2019, pointing to potential technical under-utilisation of the vessels.

Table 17 – Vessel use indicator by length class, 2014-2020

Indicator	Number of cases per year (%)						
	2014	2015	2016	2017	2018	2019	2020
Full utilisation	15.8%	10.3%	16.3%	32.9%	28.0%	14.5%	15.7%
Moderate utilisation	39.5%	35.9%	45.0%	34.2%	37.8%	49.4%	25.5%
Under-utilisation	44.7%	53.8%	38.8%	32.9%	34.1%	36.1%	58.8%

A closer look at the individual fishing techniques shows a clear deterioration for trawlers, with 71% of segments in the red band and 29% in the yellow band. This contrasts with the situation in 2019, when 69% of vessels were in the moderate (yellow) band of fishing capacity utilisation and 27% were in the band indicating under-utilisation. Clearly, for the trawling segment, the impact of the pandemic comes on top of the reduction in fishing days imposed by management plans and the EU regulation on fishing opportunities.

Two important considerations must be made in how the indicator is read and interpreted:

1. the first relates to the fact that 2020 was a very particular year where almost all productive activity was suspended; this also had a severe impact on fishing, which took place on an on-and-off basis;
2. the second, linked to the first, concerns the method used to calculate the indicator, which is based on the maximum sea days recorded. Here it should be noted that some operators have been operating at levels defined as normal (more than 200 fishing days). Given the average reduction in activity, this clearly results in a wider range of values going into the calculation.

G. Conclusions: achieving a balance between fleet capacity and fishing opportunities

The biological, economic, social and technical indicators set out in the Commission's guidelines provide tools for the implementation of management measures which, over time, will help achieve a full balance between fishing capacity and fishing opportunities.

The indicators used are as follows:
– sustainable harvest indicator (SHI)
– return on fixed tangible assets (RoFTA)
– current revenue/break-even revenue (CR/BER)
– inactive vessel indicator (IVI)
– vessel use indicator (VUI).

The indicator values were calculated on the basis of the results of the national data collection programme (DCR/DCF) and are examined by geographical sub-area (GSA) with the aim of identifying overall trends with respect to fishing techniques and length classes.

SHI

To calculate the annual SHI value, the F/F_{MSY} ratio was used for all stocks analysed from 2017 to 2019 in the various Italian GSAs, taking into account the results of the most recent GFCM, STEFC and ICCAT working groups (GFCM-SAC, 2019a, b; 2021a, b; STECF 2019a, b; 2020 b; ICCAT-SCRS 2020). The details are set out in Annex B (Table B6).

29 of 47 segments with a threshold above 40% for at least 2 years over the 3-year period, or 62%, were found to be in imbalance (Table 14). There was an overall improvement compared to previous years; last year overfishing concerned 32 of the 41 segments considered (78%).

RoFTA

In 2019, 30 of the 102 segments in total had an indicator value below the target reference point, compared to 19 in 2018. Economic performance deteriorated in a number of trawling segments (in particular trawlers of 12-18 m overall length in GSA 16 and trawlers of >24 m overall length in GSAs 11, 19 and 9). With regard to passive gears, this negative trend concerned vessels of >12 m overall length in nearly all GSAs. Longliners in GSAs 19 and 10 performed particularly badly.

Purse seiners are considered to be in a situation of long-term profitability, with 19 out of 26 segments in balance. For pair and 'rapido' trawlers in GSAs 16 and 18 profitability fell considerably.

Lastly, hydraulic dredgers operating in the Tyrrhenian Sea and on Apulia's Adriatic coast are economically inefficient in the long term, as opposed to hydraulic dredgers in GSA 17, which perform well.

CR/BER

Break-even revenue (BER) is the revenue needed to cover both fixed and variable costs, meaning that neither a loss nor a profit is made. Current revenue (CR) is the total operating income of a fleet segment, made up of income from landings and non-fishing income. As the calculation of the ratio does not take account of the opportunity cost, the calculated indicator shows financial viability in the short term.

In 2019, out of a total of 102 fleet segments, 31 showed an indicator value below 1 and seven had a negative CR/BER ratio. The indicator shows a deterioration compared to the previous 2 years, with an increase in the number of segments scoring less than 1.

Inactive vessel indicator (IVI)

The adverse impact of the COVID-19 pandemic is clearly reflected in this indicator, which measures the level of inactivity of the fleet. While the values remains below the threshold of 20% for all fleet segments, a sharp increase can be seen in particular in the lower length classes. The proportion of inactive vessels increased from 12% in 2019 to 16% for vessels up to 6 m, from 10.2% to 16.9% for vessels of 6-12 m and from 5.4% to 10.7% for vessels of 12-18 m in length. For the other length classes there was a moderate increase of less than 1 percentage point. The inactivity rate for the fleet as a whole went up from 9% to 14.4%.

Accordingly, there is also a higher rate of inactivity measured in tonnage and engine power, with an overall increase from 5.6% to 8.6% in GT and from 6% to 11% in engine power.

Vessel use indicator (VUI)

The vessel use indicator expresses the rate of fishing capacity utilisation based on the average effort observed in a segment in relation to the maximum effort recorded. This indicator also deteriorated in 2020, with 59% of segments in the red band compared to 36% in 2019, pointing to potential technical under-utilisation of the vessels.

A closer look at the individual fishing techniques shows a clear deterioration for trawlers, with 71% of segments in the red band and 29% in the yellow band. This contrasts with the situation in 2019, when 69% of vessels were in the moderate (yellow) band of fishing capacity utilisation and 27% were in the band indicating under-utilisation. Clearly, for the trawling segment, the impact of the pandemic comes on top of the reduction in fishing days imposed by management plans and the EU regulation on fishing opportunities.

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Annex A

Action plan for fleet segments found to be in imbalance, setting out the adjustment objectives and tools for achieving a balance

The Italian action plan, which takes the EU guidelines into account, aims to significantly reduce current (F_C) fishing mortality through the combined effect of various measures. It should be pointed out, as shown in Table 14, that there are still 29 segments in imbalance. Of these, 18 concern the bottom trawling fleet, spread out across most of Italy. The measures proposed in this action plan therefore mainly aim to reduce fishing effort for demersal species, in the knowledge that extending the periods of closure and introducing new protected marine areas (especially nursery areas), which are among the actions proposed, will also have a positive effect on all other species under stress.

Extended periods of closure

Managing fishing days is key to achieving the Italy's objectives. In line with this, Ministerial Decree No 13128 of 11 January 2021 further increased the number of days of temporary closure also for 2021, on top of the usual days of inactivity. In some cases, more days were added than the number of days included the paid, mandatory closure period. A comparison with the previous year is shown in Table A1.

Table A1 *– Number of additional days of inactivity in 2021 compared to 2020*

GSA	LOA CLASS	Additional days 2020	Additional days 2021
GSA 9	LOA<=12	16	19
	LOA>12	31	37
GSA 10	LOA<=12	20	24
	LOA>12	26	30
GSA 11	LOA<=24	22	26
	LOA>24	31	36
GSA 16	LOA<=12	12	15
	12<LOA<=24	15	20
	LOA>24	22	30
GSA 17 to Ancona	LOA<=12	9	21
	12<LOA<=24	15	30
	LOA>24	21	39
GSA 17 and GSA 18	LOA<=12	14	21
	12<LOA<=24	20	30
	LOA>24	26	39
GSA 19	LOA<=18	28	41
	LOA>18	26	38

Measures in the Tyrrhenian Sea (GSAs 9, 10 and 11)

The SHI points to a highly critical situation in GSA 9 for the Argentine red shrimp (ARA) and the blue and red shrimp (ARS) fishery for vessels of >= 24 m overall length (GSA 9 – DTS – VL2440). Note that this area is subject to a maximum number of fishing days under Regulation (EU) 2021/90 both for demersal species (deepwater rose shrimp, hake, Norway lobster and red mullet) and for red and blue shrimp (GSAs 9 and 10 – DTS – VL1218 and VL1824). Italy monitors fishing days on an ongoing basis and decided already in June to close the fishery for bottom trawlers above 24 m in length, which mainly catch *Aristaeomorpha foliacea* (ARA) and *Aristeus antennatus* (ARS) (Circular No 272272 of 14 June 2021). Of course, this also applies to vessels in GSA 11 – DTS – VL244, another segment concerned by overfishing.

Measures in the Strait of Sicily (GSA 16)

For segments DTS – VL1824 in GSA 16, Italy has put into place automatic control and monitoring of fishing days for activities that can only be carried out by previously authorised vessels included in the official list published in Executive Decree No 9141500 of 17 September 2020, as provided for in Annex IV to Regulation (EU) 2021/90. We would point out that, in this area in particular, a sustainable level of fishing can only be achieved if agreement is reached on equal fishing opportunities between the EU and non-EU fleets operating there. As part of the action that needs to be taken, therefore, international bodies must be urged to regulate fishing in the area, in line with the GFCM recommendations for the Ionian Sea and the Levantine Sea, in order to give all countries involved (Italy, Tunisia, Egypt) equal fishing opportunities, with the common objective of achieving sustainable exploitation of shared resources.

Measures in the Adriatic Sea (GSAs 17 and 18) for trawlers and vessels fishing small pelagic species

Anchovies and sardines in GSAs 17 and 18 remain subject to the restrictive measures of Recommendation GFCM/42/2018/8, adopted in Italy by a Decree of the Ministry of Agricultural, Food and Forestry Policy of 26 July 2019 for the period from 2019 to 2021. They apply to fleet segments GSA 17 – PS – VL1218 and VL2440, where there is overfishing, imposing a mandatory closure period for the entire Adriatic coast, albeit with varying dates and details of implementation, capping he number of days per year and hours per day when fishing can take place.

For segments GSA 17 – DTS – VL0612, VL1218, VL1824 and VL2440 and GSA 17 – TBB – VL1218, VL1824 and VL2440, Italy has put into place automatic control and monitoring of fishing days for activities that can only be carried out by previously authorised vessels included in the official list published in Executive Decree No 9141513 of 17 September 2020, as provided for in Annex IV to Regulation (EU) No 2021/90.

Last year Italy began to look into the possible establishment of new FRAs for segments GSA 18 – DTS VL1824 and VL2440, taking into account the results of scientific research.

Measures in the Ionian Sea (GSA 19)

For segments GSA 19 – DTS – VL1218 and VL1824, in line with what applies to the other GSAs, a list of vessels authorised to catch Argentine red shrimp (ARA) and red and blue shrimp (ARS) has been drawn up and was published in Executive Decree No 9141521 of 17 September 2020.

For segment GSA 19 – HOK - VL1218, Italy intends to set up a pilot project introducing targeted measures (more selective gears, temporary closures and area closures, etc.), in particular as regards fishing activity specifically targeting hake (HKE).

More selective trawls (GSAs 16 and 19)

The national RITMARE project, and later the European MINOUW project, tested the use of sorting grids mounted on bottom trawls to minimise catches of undersized individuals of deepwater rose shrimp (*Parapenaeus longirostris*, DPS) and European hake (*Merluccius merluccius*, HKE). Excellent results were achieved for the three types of grids tested.

In this respect, Italy intends to promote large-scale use in commercial fishing of fishing techniques that ensure economic sustainability as well as biological sustainability for the species fished, providing incentives which, where possible, will include the use of EU funds (e.g. EMFF measure 1.39 – Innovation linked to conservation of marine biological resources).

Introducing obligatory use of the e-logbook

The accuracy of catch data is key to the correct management of fishing effort. The mathematical models used to calculate biological and economic indicators are based on this information, as are the automated procedures put in place by Italy to monitor the days of activity of each fleet segment subject to an effort regime. To ensure wider use of the e-logbook, in 2021 Italy extended the obligation to record catches electronically to all vessels, irrespective of overall length, that fish with trawls and observe closure periods. The obligation is laid down in the above-mentioned Ministerial Decree No 8994 of 11 January 2011.

Monitoring of fishing activity in the FRAs and the Pomo Pit.

Particular emphasis will be placed on monitoring and enforcing the absolute ban on fishing in the fishing restricted areas in the Strait of Sicily (FRA GFCM1 – Levante Banco Avventura, FRA GFCM2 – Ponente Bacino di Gela, and FRA GFCM3 – Levante Banco di Malta) and in the Pomo Pit.

Annex B

Reference tables

Table B1 – *Catch of bluefin tuna by fishing technique, 2020*

FISHING TECHNIQUE	Number	GT	Kg
PURSE-SEINING	21	4 541	3 538 128
LONGLINES	37	1 221	562 641
FIXED TUNA TRAP	5		360 261
By-catch			248 587
Recreational fishing			21 404
TOTAL CATCH			**4 731 022**

Table B2 – *Catch and revenue of the long-distance fleet, 2020*

Region	FAO catch area	Catch (t)	Revenue (million €)
CECAF	34.3.1.3	216	0.69
CECAF	34.3.3	509	1.53
IOTC	51.3	955	1.13
IOTC	51.4	295	0.34
IOTC	51.5	1 711	1.90
IOTC	51.6	1 320	1.72
IOTC	51.7	1 299	1.40
TOTAL		**6 305**	**8.70**

Table B3 – *2020 production, top 20 species by quantity*

Species code	Species	Catch (t)	% of total for Italy
ANE	*Engraulis encrasicolus*	23 736	18.25%
SVE	*Chamelea gallina*	19 092	14.68%
PIL	*Sardina pilchardus*	13 785	10.60%
DPS	*Parapenaeus longirostris*	6 841	5.26%
HKE	*Merluccius merluccius*	5 930	4.56%
BFT	*Thunnus thynnus*	4 349	3.34%
MTS	*Squilla mantis*	3 437	2.64%
MUT	*Mullus barbatus*	3 143	2.42%
CTC	*Sepia officinalis*	3 142	2.41%
OCC	*Octopus vulgaris*	3 062	2.35%
SWO	*Xiphias gladius*	2 250	1.73%
ARS	*Aristaeomorpha foliacea*	1 863	1.43%
MZZ	*Osteichthyes*	1 813	1.39%
MUL	*Mugilidae*	1 465	1.13%
SOL	*Solea solea*	1 446	1.11%
ALB	*Thunnus alalunga*	1 421	1.09%
SQM	*Illex coindetii*	1 339	1.03%
NSQ	*Nassarius mutabilis*	1 322	1.02%
BOY	*Bolinus brandaris*	1 243	0.96%
MUR	*Mullus surmuletus*	1 081	0.83%
Total for the 20 species		**101 759**	78.23%
Total for Italy		**130 085**	**100.00%**

Table B4 – *2019 production, top 20 species by value*

Species code	Species	Revenue (million €)	% of total for Italy
ARS	*Aristaeomorpha foliacea*	53.73	8.36%
DPS	*Parapenaeus longirostris*	44.88	6.99%
SVE	*Chamelea gallina*	43.57	6.78%
HKE	*Merluccius merluccius*	42.16	6.56%
ANE	*Engraulis encrasicolus*	39.22	6.10%
CTC	*Sepia officinalis*	32.66	5.08%
OCC	*Octopus vulgaris*	26.03	4.05%
SWO	*Xiphias gladius*	25.57	3.98%
BFT	*Thunnus thynnus*	24.17	3.76%
ARA	*Aristeus antennatus*	21.85	3.40%
MTS	*Squilla mantis*	20.00	3.11%
TGS	*Penaeus kerathurus*	16.27	2.53%
SOL	*Solea solea*	16.18	2.52%
NEP	*Nephrops norvegicus*	15.02	2.34%

MUT	*Mullus barbatus*	14.02	2.18%
PIL	*Sardina pilchardus*	13.76	2.14%
MUR	*Mullus surmuletus*	12.08	1.88%
SQM	*Illex coindetii*	7.55	1.17%
EOI	*Eledone cirrhosa*	6.26	0.97%
SQR	*Loligo vulgaris*	6.16	0.96%
Total for the 20 species		**481.15**	74.89%
Total for Italy		**642.45**	**100.00%**

Table B5 – *Stock assessments carried out over the last 3 years in Italian GSAs. The status of stocks per year (2017-2019) is shown as the current F (Fcur) to F ratio at maximum sustainable yield F (FMSY). Source: ICCAT-SCRS2020; GFCM2020a; b; 2021a,b; STECF 2019a; b; 2020 a, b.*

GSA	SPECIES	F/FMSY 2017	F/FMSY 2018	F/FMSY 2019
9	Norway lobster	1.00	1.55	0.98
	Red mullet	2.48	2.72	1.67
	Anchovy	0.52	0.52	0.52
	Sardines	0.34	0.34	0.34
10	Red mullet	1.20	1.20	1.20
16	Red mullet	2.24	2.24	2.24
17	Common cuttlefish	0.81	0.81	0.81
	Common sole	1.02	1.02	1.02
	Great Mediterranean scallop	2.86	2.86	2.86
	Purple dye murex	1.08	1.08	1.08
	Spot-tail mantis shrimp	0.91	0.91	0.91
18	Horned octopus	1.26	1.26	1.26
19	Hake	2.32	2.32	2.32
	Red mullet	1.51	1.51	1.51
8-9-10-11	Hake	3.56	3.56	3.56
9-10-11	Blue and red shrimps	5.39	5.39	5.39
	Deepwater rose shrimp	1.05	1.05	1.05
	Giant red shrimp	2.07	2.07	2.07
12-16	Deepwater rose shrimp	1.46	1.46	1.46
	Hake	1.72	1.72	1.72
17-18	Anchovy	1.51	1.51	1.51
	Hake	2.81	2.81	2.81
	Red mullet	2.03	2.03	2.03
	Sardines	4.34	4.34	4.34
17-18-19	Deepwater rose shrimp	2.98	2.98	2.98
18-19	Giant red shrimp	1.09	1.09	1.09
All	Bluefin tuna	0.43	0.43	0.43
	Swordfish	0.93	0.93	0.93

Table B6 – *ROFTA and CR/BER by fishing segment, 2017-2019*

GSA	Fishing technique	LOA class	2017		2018		2019	
			RoFTA	**CR/BER**	**RoFTA**	**CR/BER**	**RoFTA**	**CR/BER**
9	DRB	VL1218	-0.21	0.27	-0.24	0.17	-0.04	0.35
10	DRB	VL1218	-0.27	0.01	-0.11	0.66	0.34	2.33
17	DRB	VL1218	0.05	1.20	0.17	1.54	0.49	2.37
18	DRB	VL1218	-0.21	0.23	-0.13	0.52	-0.04	0.88
9	DTS	VL0612	0.16	1.44	0.22	1.73	0.22	1.63
10	DTS	VL0612					0.08	1.29
11	DTS	VL0612					-0.17	0.54
16	DTS	VL0612	0.09	1.33	0.44	2.42	-0.18	0.48
17	DTS	VL0612	0.29	1.77	-0.13	0.36	-0.13	0.52
18	DTS	VL0612	0.74	3.01	0.20	1.68	0.07	1.27
19	DTS	VL0612					-0.28	-0.34
9	DTS	VL1218	0.62	3.02	1.45	5.29	0.78	2.59
10	DTS	VL1218	0.35	2.11	0.42	2.21	0.47	2.32
11	DTS	VL1218	0.72	3.46	-0.09	0.83	0.03	1.06
16	DTS	VL1218	0.78	2.90	0.94	3.16	0.50	2.40
17	DTS	VL1218	0.52	2.52	0.96	2.84	0.61	2.36
18	DTS	VL1218	0.60	3.05	1.10	4.45	0.61	2.99
19	DTS	VL1218	0.62	3.08	0.32	2.22	0.32	2.05
9	DTS	VL1824	0.11	1.33	0.24	1.87	0.10	1.28
10	DTS	VL1824	0.14	1.48	0.12	1.50	0.10	1.34
11	DTS	VL1824	0.11	1.46	0.11	1.45	0.20	1.57
16	DTS	VL1824	0.07	1.28	0.01	1.08	-0.02	0.97
17	DTS	VL1824	0.16	1.56	0.09	1.33	0.11	1.35
18	DTS	VL1824	0.01	1.05	0.00	1.03	0.12	1.49
19	DTS	VL1824	0.19	1.69	0.35	2.19	0.22	1.92
9	DTS	VL2440	-0.12	0.60	-0.04	0.91	-0.19	0.29
10	DTS	VL2440					0.27	1.39
11	DTS	VL2440	0.00	1.03	0.00	1.07	-0.02	0.96
16	DTS	VL2440	0.28	1.93	0.34	2.21	0.25	1.80
17	DTS	VL2440	-0.03	0.86	0.14	1.49	0.10	1.35
18	DTS	VL2440	0.03	1.14	-0.06	0.84	0.09	1.34
19	DTS	VL2440					-0.25	0.29
10	HOK	VL1218	0.65	3.07	0.05	1.23	0.13	1.53
16	HOK	VL1218	0.57	2.54	0.13	1.45	0.42	2.41
18	HOK	VL1218	1.04	4.18	0.05	1.23	0.07	1.28
19	HOK	VL1218	0.15	1.54	-0.03	-0.35	-0.07	0.79
10	HOK	VL1824			-0.01	1.00	-0.10	0.75
16	HOK	VL1824	0.29	1.96	-0.01	1.01	0.25	1.87
18	HOK	VL1824					0.23	1.65
19	HOK	VL1824	0.06	1.24	-0.08	0.78	-0.16	0.50
9	PGP < 12	VL0006	1.04	2.66	1.31	3.91	0.84	2.82
10	PGP < 12	VL0006	0.90	2.68	0.63	2.51	0.60	2.57
11	PGP < 12	VL0006	0.71	2.73	0.93	2.63	0.77	2.25
16	PGP < 12	VL0006	0.79	2.55	0.81	2.73	0.93	2.79

17	PGP < 12	VL0006	0.52	0.68	0.35	1.79	1.10	2.74
18	PGP < 12	VL0006	1.27	2.79	1.51	3.71	0.82	2.85
19	PGP < 12	VL0006	1.03	3.43	0.88	3.42	0.74	3.09
9	PGP < 12	VL0612	0.15	1.43	0.16	1.45	0.28	1.85
10	PGP < 12	VL0612	0.22	1.66	0.16	1.51	0.12	1.39
11	PGP < 12	VL0612	0.17	1.53	0.08	1.28	0.04	1.14
16	PGP < 12	VL0612	0.31	1.84	0.20	1.65	0.18	1.57
17	PGP < 12	VL0612	0.62	2.60	0.39	2.03	0.79	2.75
18	PGP < 12	VL0612	-0.01	1.01	0.09	1.39	0.04	1.21
19	PGP < 12	VL0612	0.17	1.58	0.08	1.33	0.01	1.08
9	PGP > 12	VL1218	0.02	1.12	0.20	1.70	0.62	3.08
10	PGP > 12	VL1218	0.24	1.81	-0.05	0.82	0.00	1.19
11	PGP > 12	VL1218	0.31	1.98	-0.12	0.69	0.12	1.35
16	PGP > 12	VL1218	0.62	2.73	0.03	1.16	0.16	1.54
17	PGP > 12	VL1218	0.24	1.67	0.77	3.81	0.17	-4.68
18	PGP > 12	VL1218			0.03	1.14	0.15	1.53
19	PGP > 12	VL1218	0.00	0.99	-0.06	0.80	-0.11	0.64
9	PGP > 12	VL1824					-0.02	0.99
17	PGP > 12	VL1824					-0.28	-0.14
19	PGP > 12	VL1824					-0.38	0.00
9	PS	VL0612			0.92	3.69	-0.01	1.02
10	PS	VL0612	0.62	2.89	0.73	3.68	0.22	1.76
16	PS	VL0612					-0.24	0.50
17	PS	VL0612					0.10	1.30
19	PS	VL0612					-0.05	0.73
9	PS	VL1218	1.23	5.33	0.30	1.50	0.46	2.56
10	PS	VL1218	0.93	3.77	0.30	2.19	0.23	1.84
11	PS	VL1218					1.08	4.79
16	PS	VL1218	0.63	2.67	0.30	1.86	1.96	5.84
17	PS	VL1218	0.72	3.05	1.34	4.86	0.43	2.39
18	PS	VL1218					-0.41	0.15
19	PS	VL1218	0.61	2.90	0.02	1.36	0.11	1.29
9	PS	VL1824	0.48	2.47	0.67	2.76	0.66	1.71
10	PS	VL1824	0.28	1.94	0.17	3.12	0.19	0.91
11	PS	VL1824	0.61	2.90	1.01	4.18	0.81	3.75
16	PS	VL1824	0.66	2.62	0.18	1.51	0.46	2.43
17	PS	VL1824						
19	PS	VL1824					0.09	-0.01
9	PS	VL2440			0.50	2.63	0.32	1.67
10	PS	VL2440	0.12	1.61	-0.09	0.60	0.20	-0.20
16	PS	VL2440					-0.10	0.74
17	PS	VL2440	0.09	1.34	-0.07	0.79	0.30	1.57
18	PS	VL2440	0.13	1.50	0.98	5.43	0.19	1.96
19	PS	VL2440	0.69	4.64	-0.17	300.27	0.74	3.48
10	PS	VL40XX	0.62	3.65	0.35	2.07	1.69	6.52
16	PS	VL40XX	0.77	4.28	1.54	6.14		
17	PS	VL40XX	0.53	2.94	2.08	10.17		
18	PS	VL40XX					2.51	11.20

19	PS	VL40XX	1.19	5.03	1.66	8.31	3.60	16.36
17	TBB	VL1218	0.66	2.63	0.55	1.74	-0.02	10.52
9	TBB	VL1824					-0.41	-0.12
17	TBB	VL1824	0.01	1.05	0.20	1.50	-0.12	0.39
17	TBB	VL2440	0.19	1.69	0.00	1.02	0.01	1.03
16	TM	VL1218					-0.47	0.07
17	TM	VL1218	1.31	2.18	1.71	2.15	6.48	11.74
18	TM	VL1218					-1.92	-2.35
16	TM	VL1824	0.25	1.74	0.32	1.88	0.64	2.54
17	TM	VL1824	0.50	2.05	1.21	3.15	0.75	2.27
18	TM	VL1824			0.05	1.12	-0.23	0.55
17	TM	VL2440	0.18	1.58	0.45	2.41	0.13	1.43
18	TM	VL2440	0.68	3.08	0.36	2.20	-0.04	0.90

Table B8 – *Inactive vessel indicator by length class, 2014-2020*

Inactive vessel indicator

VESSELS							
Length class	2014	2015	2016	2017	2018	2019	2020
VL0006	13.50%	13.40%	13.10%	12.10%	12.00%	11.82%	15.65%
VL0612	9.50%	9.60%	10.30%	10.10%	10.20%	10.21%	16.88%
VL1218	4.70%	4.60%	1.80%	1.90%	2.30%	5.44%	10.73%
VL1824	3.50%	3.60%	3.10%	2.70%	8.40%	3.07%	3.76%
VL2440	4.50%	3.20%	8.20%	8.80%	11.90%	6.14%	6.90%
VL40XX	28.60%	7.70%	15.40%	7.10%	4.80%	13.64%	14.29%
Total	8.90%	8.80%	8.50%	8.30%	8.80%	9.07%	14.38%
GT							
Length class	2014	2015	2016	2017	2018	2019	2020
VL0006	13.50%	13.50%	13.10%	12.10%	12.00%	11.85%	15.67%
VL0612	9.00%	9.20%	10.90%	8.50%	9.00%	8.95%	19.04%
VL1218	4.80%	4.50%	2.40%	3.10%	4.00%	5.24%	8.94%
VL1824	3.50%	3.50%	2.70%	2.30%	8.60%	2.97%	3.87%
VL2440	5.50%	3.70%	8.80%	8.50%	11.90%	6.52%	7.51%
VL40XX	23.20%	8.20%	16.40%	5.40%	2.00%	8.58%	14.04%
Total	5.50%	4.60%	5.20%	4.80%	7.90%	5.62%	8.58%
kW							
Length class	2014	2015	2016	2017	2018	2019	2020
VL0006	13.00%	13.00%	12.30%	11.90%	11.60%	11.67%	21.47%
VL0612	9.40%	9.50%	10.90%	8.80%	9.20%	8.96%	19.36%
VL1218	5.00%	4.80%	2.10%	2.90%	3.10%	5.18%	10.27%
VL1824	3.50%	3.60%	2.70%	2.60%	9.00%	3.21%	4.20%
VL2440	4.90%	3.20%	8.20%	8.00%	11.30%	5.99%	7.00%
VL40XX	20.40%	7.30%	21.80%	5.90%	2.70%	8.21%	12.22%
Total	6.10%	5.60%	5.40%	5.10%	7.20%	6.03%	11.06%

Table B8 – *Vessel use indicator by GSA, fishing technique and length class, 2015-2020*

GSA	System	LOA class	2015	2016	2017	2018	2019	2020
9	DRB	VL0612						1
9	DRB	VL1218	0.31	0.84	0.92	0.85	0.34	
9	DTS	VL0612	0.52	0.54	0.63	0.6	0.62	0.42
9	DTS	VL1218	0.79	0.74	0.76	0.76	0.78	0.57
9	DTS	VL1824	0.89	0.86	0.8	0.86	0.85	0.59
9	DTS	VL2440	0.85	0.89	0.92	0.91	0.89	0.88
9	PGP	VL0006	0.44	0.42	0.45	0.57	0.56	0.76
9	PGP	VL0612	0.46	0.39	0.48	0.5	0.48	0.4
9	PGP	VL1218	0.48	0.52	0.52	0.59	0.54	0.38
9	PS	VL1218	0.52	0.47	0.72	0.62	0.56	0.53
9	PS	VL1824	0.98	0.96	0.99	0.92	0.96	0.79
9	PS	VL2440	0.91	0.97		0.91	0.94	0.68
10	DRB	VL1218	0.77	0.65	0.38	0.65		
10	DTS	VL0612	0.55	0.62			0.55	0.57
10	DTS	VL1218	0.66	0.72	0.74	0.7	0.7	0.5
10	DTS	VL1824	0.62	0.81	0.77	0.74	0.73	0.56
10	DTS	VL2440					0.91	0.5
10	HOK	VL1218	0.75	0.58	0.79	0.68	0.73	0.45
10	HOK	VL1824						0.52
10	PGP	VL0006	0.55	0.59	0.48	0.61	0.59	0.64
10	PGP	VL0612	0.54	0.57	0.54	0.58	0.52	0.79
10	PGP	VL1218	0.65	0.51	0.61	0.69	0.7	0.38
10	PGP	VL1824						1
10	PS	VL0612			1	1	0.89	0.44
10	PS	VL1218	0.64	0.66	0.75	0.68	0.71	0.53
10	PS	VL1824	0.63	0.79	0.73	0.68	0.75	0.41
10	PS	VL2440	0.33	1	0.52	0.63	0.7	0.47
10	PS	VL40XX	0.29	0.8	0.7	0.84	0.44	0.2
11	DTS	VL0612						0.51
11	DTS	VL1218	0.76	0.54	0.71	0.63	0.69	0.51
11	DTS	VL1824	0.68	0.72	0.63	0.74	0.71	0.74
11	DTS	VL2440	0.81	0.8	0.75	0.75	0.86	0.72
11	PGP	VL0006	0.62	0.61	0.6	0.73	0.56	0.59
11	PGP	VL0612	0.56	0.43	0.53	0.52	0.48	0.55
11	PGP	VL1218	0.52	0.64	0.58	0.69	0.68	0.35
11	PGP	VL1824						0.78
11	PS	VL1218						0.76
11	PS	VL1824			0.91	0.91	0.96	1
16	DTS	VL0612	0.73	0.67	0.86	0.95	0.75	0.79
16	DTS	VL1218	0.65	0.71	0.7	0.7	0.71	0.65
16	DTS	VL1824	0.63	0.73	0.67	0.6	0.77	0.59
16	DTS	VL2440	0.68	0.79	0.75	0.74	0.73	0.7
16	HOK	VL1218	0.73	0.71	0.98	0.78	0.81	0.61
16	HOK	VL1824	0.83	0.89	0.73	0.86	0.92	0.55
16	PGP	VL0006	0.68	0.75	0.65	0.67	0.69	0.85
16	PGP	VL0612	0.62	0.63	0.58	0.64	0.57	0.95

16	PGP	VL1218	0.84	0.77	0.74	0.7	0.52	0.42
16	PS	VL0612						0.4
16	PS	VL1218	0.82	0.77	0.93	0.91	0.94	0.56
16	PS	VL1824	0.82	0.99	0.94	0.92	0.79	0.61
16	PS	VL2440	0.64	0.5		1	0.83	0.6
16	PS	VL40XX		1	1	1		
16	TM	VL1218						0.98
16	TM	VL1824	0.78	0.93	0.99	0.99	1	0.94
17	DRB	VL0612						0.57
17	DRB	VL1218	0.63	0.59	0.42	0.6	0.6	0.45
17	DRB	VL1824						1
17	DTS	VL0612	0.4	0.41	0.8	0.7	0.66	0.88
17	DTS	VL1218	0.54	0.51	0.56	0.59	0.58	0.59
17	DTS	VL1824	0.81	0.72	0.7	0.71	0.7	0.46
17	DTS	VL2440	0.55	0.77	0.76	0.7	0.76	0.6
17	PGP	VL0006	0.38	0.32	0.33	0.34	0.45	0.75
17	PGP	VL0612	0.42	0.37	0.42	0.4	0.39	0.76
17	PGP	VL1218	0.49	0.68	0.88	0.8	0.78	0.38
17	PGP	VL1824				1	0.76	1
17	PGP	VL2440						1
17	PS	VL0612						0.83
17	PS	VL1218	0.86	0.88	0.94	0.89	0.52	1
17	PS	VL2440	0.73	0.91	0.94	0.91	0.88	0.97
17	PS	VL40XX	0.93	1	1	1		
17	TBB	VL0612						0.7
17	TBB	VL1218	0.95	0.86	0.86	1.09	0.92	0.62
17	TBB	VL1824	0.88	0.89	0.75	0.77	0.84	0.73
17	TBB	VL2440	0.94	0.98	0.92	0.92	0.91	0.62
17	TM	VL1218	0.79	0.9	0.91	0.97	1	0.82
17	TM	VL1824	0.87	0.93	0.96	0.93	0.88	0.89
17	TM	VL2440	0.93	1	1	0.97	0.94	0.8
18	DRB	VL0612						0.3
18	DRB	VL1218	0.56	0.9	0.92	0.89	0.87	0.26
18	DTS	VL0612	0.75	0.78	0.95	0.88	0.86	0.59
18	DTS	VL1218	0.66	0.77	0.6	0.66	0.69	0.45
18	DTS	VL1824	0.91	0.87	0.65	0.74	0.85	0.6
18	DTS	VL2440	0.91	0.91	0.92	0.94	0.9	0.8
18	HOK	VL1218	0.73	0.9	0.98	0.99	0.85	0.67
18	HOK	VL1824						1
18	PGP	VL0006	0.54	0.52	0.66	0.68	0.57	0.52
18	PGP	VL0612	0.66	0.48	0.59	0.69	0.74	0.69
18	PGP	VL1218						0.38
18	PS	VL2440	0.74	0.82	0.91	0.87	0.62	0.8
18	PS	VL40XX					0.78	
18	TM	VL1218						1
18	TM	VL1824						0.99
18	TM	VL2440	0.9	0.89	1	0.92	0.89	0.9
19	DTS	VL0612						0.54

19	DTS	VL1218	0.85	0.78	0.85	0.78	0.82	0.44
19	DTS	VL1824	0.71	0.73	0.72	0.73	0.68	0.63
19	DTS	VL2440					0.87	0.76
19	HOK	VL1218	0.72	0.77	0.93	0.8	0.81	0.47
19	HOK	VL1824	0.62	0.8	0.82	0.74	0.77	0.52
19	HOK	VL2440						1
19	PGP	VL0006	0.64	0.68	0.67	0.69	0.63	0.77
19	PGP	VL0612	0.69	0.64	0.61	0.65	0.63	0.8
19	PGP	VL1218	0.76	0.59	0.83	0.88	0.79	0.58
19	PS	VL0612						0.45
19	PS	VL1218	0.61	0.76	0.93	0.79	0.72	0.42
19	PS	VL1824						0.54
19	PS	VL2440	0.33	0.67	0.71	0.7	0.56	1
19	PS	VL40XX		1	1	1	0.94	