

## Introduction

This report is drawn up in accordance with Article.22 of Regulation (EC) No1380/2013 of the European Commission on the Common Fisheries Policy (Common Fisheries Policy) and indicating the assessment of the balance between the fishing capacity of the Italian fleet and the fishing opportunities for 2017.

The data used to calculate the indicators are from the national data collection programme (DCR/DCF) updated in 2016. The assessments of the state of resources in the Italian GSA are those carried out in the GFCM, STECF and ICCAT working groups.

The report sets out the annual assessment of the capacity of the national fleet, and for each of the *segments* concerned by it, possible structural overcapacity and short-term and long-term profitability have been highlighted.

In particular:

1. the data on the tuna catch data for the various segments of the fleet have been entered in this report, see Table 1.1 of Annex B;
2. As in previous years and taking into account the provisions of the Community guidelines<sup>1</sup>, the SHI (Sustainable Harvest Indicator) index (SHI) calculated on the basis of the F/FMSY ratios, was used to assess the exploitation of fish stocks by fleet segments. As regards economic indicators, the ROFTA (Return of Fixated Assets) and the CR/BER ratio (Current revenue/Break-Even Revenue) continued to be considered, in addition to the indicators of activity (Inactive Vessel Indicator) and AVA ('Average' Vessel Activity);
3. the SHI annual calculation has been calculated taking into account all values of current fishing mortality (F<sub>c</sub>) and the related FMSY available for stocks analysed from 2014 to 2016 in the different Italian GSAs. If it were not available, the latest F/FMSY report was available as the previous years' value.

During 2017, the Italian authorities prepared the scientific documents which led to drawing up the National Management Plans for the demersal fisheries to catch the demersal resources in GSA 9 (Ligurian and Central North Sea), GSA 10 (Central and Southern Tyrrhenian Sea), GSA 11 (Sardinia), GSA 16 (Strait of Sicily), GSA 17 (Southern Adriatic Sea) and GSA 18 (Western Adriatic Sea) and GSA 19 (Western Ionian Sea)).

In drawing up these plans, resources from target species were taken into account, those which were the most important fraction in terms of volumes and value of landings that were available, and the by-catch species, i.e. those which contributed to reach 75 % of the landed volume of demersal fisheries in the different GSAs.

The overall objective of these management plans is to recover the stocks to safe biological limits in 2020, in accordance with Regulation (EU) No 1380/2013.

As provided for in the action plan presented last year, the Italian administration gave continuity to the administrative activities linked to the complete implementation of the 2016 final stop plan (Ministerial Decree of 29 September 2016, OJ.No 268 of 16/11/2016), which was drawn up in a selective way on grounds of overfishing.

Around 50 % of the fishing vessels that have joined the plan have already been scrapped today, and the remainder will be scrapped by the end of 2018.

The effect on the state of the stocks will certainly be positive, since a comparison between the planned dismantling plan and the result of the processing of the data on the applications received, the reduction percentage foreseen (8 %) has been respected in almost all the segments, and in many cases it was largely exceeded, reaching a maximum of 21 % in the GSA 10-18 < = LOA, < 24 m.

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<sup>1</sup>CQM (2014) 545 final.Commission to now.Guidelines for then analysis of this balance range of fishing opportunities and fishing opportunities according to Article22 of Regulation (EU) No 1380/2013 of this is a European Parliament and this Council on the Common Fisheries Policy.

## A.1 Description of fishing fleet

The Italian fishing fleet entered in the Fisheries Licence Register at 31 December 2017 was 12.263 vessels. The tonnage in GT is 157.143, while the engine power is 983.115 kW. In 2017, essentially as in 2016, the process of reducing the productive structure provided for under national measures v Community aimed at striking the balance between fishing capacity and fish resources was reduced. Indeed, the comparison with 2016 shows that the number of boats carried by 0.26 %, GT fall by 0.2 %, while the engine power is down by 0.12 % (Tab.1).

*Table1 — Fishing fleet entered in the Fisheries Licence Office 2016-2017.*

Year	Vessels	GT	kW
2016	12.295	157.465	984.377
2017	12.263	157.143	983.115
Change as%	— 0.26 %	— 0.20 %	— 0.12 %

The scenario for the fleet operating outside the Mediterranean is fully similar to last year, consisting of eight operational trawling units in FAO area 34\_3 (Atlantic, East Central) and one active purse seine active in the area 51\_7 (Indian Ocean, West).

It is, of course, also unchanged, the consistency in GT and kW, of these nine units: 6.236 GT and 13.064 kW.

The Mediterranean fleet in 2017 consists of 12.254 vessels, 151.229 GT and 970.051 kW (Table.2).

*Table2 — Fishing fleet in the Mediterranean Sea 2016-2017.*

Year	Vessels	GT	kW
2016	12.286	151.229	971.203
2017	12.254	150.907	970.051
Change as%	— 0.26 %	— 0.21 %	— 0.11 %

The Italian fleet decreased slightly from 2016 to 2017, in terms of both number of vessels and GT and kW. This contraction is strictly physiological, and concerns only units operating in the Mediterranean. At the end of 2018, as a result of the dismantling plan, there will be a significant decrease in fishing effort.

## A.2 Description of the fishing fleets in relation to fishing activities.

The fleet divided in fishing systems<sup>2</sup> confirms in 2017 the structure recorded in the past few years by a number of small-scale fishing (i.e. passive gear and a < 12 m length) equal to 8.662 motor fishing equivalent to 70.6 % of the total, the weight is significantly reduced in terms of dimensional and 13.4 % of the GT and 29 % of engine power. The fleet operating with trawl gear ('bottom otter'), with 2.251 vessels (18.4 % in terms of numbers) is predominant in the size of 59.5 % of the GT and 47.3 % of the engine power.

The hydraulic dredges segment (Child Restraint System) remains pegged to 705 vessels, equivalent to 5.7 % of the national number, 5.9 % of tonnage and 7.8 % of engine power. A large share of total national tonnage of 18.4 % is accounted for by the purse seine fleet (SP), including vessels fishing for bluefin tuna. Finally, the fleet using, in the main way, the steering wheel (TM) pair represents 5.6 % of the total Italian GT (Table) (Table 2).3).

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The segmentation of the fleet used in this Report is based on the identification of the prevailing gear, as laid down in Council Regulation (EC) No.199/2008 establishing a Community framework for the collection and management of the data needed to conduct the common fisheries policy (CFP) and Commission Regulation (EC) No26/2004 of 30 December 2003 on the Community fishing fleet register, Annex I "Definition of data and description of a registration".

Table3 Control by fishing method, year 2017

Fishing method	No. of boats	GT	KW	% Battalelli	% GT	% kW
Demersal tunnel (DTS)	2.251	93.569	464.811	18.4 %	59.5 %	47.3 %
Dredi (Child Restraint System)	705	9.277	76.382	5.7 %	5.9 %	7.8 %
Winagioc trwers (TM)	123	8.773	44.272	1.0 %	5.6 %	4.5 %
Purse seiners (PS)	332	13.264	63.120	2.7 %	8.4 %	6.4 %
Fishing using hookis (Hok)	181	4.992	34.229	1.5 %	3.2 %	3.5 %
Vessel using POLYVALENT passive Gears only (PGP) < 12 mt.	8.662	21.032	287.237	70.6 %	13.4 %	29.2 %
<b>A Sub Total Mediterranea</b>	<b>12.254</b>	<b>150.907</b>	<b>970.051</b>	<b>99.9 %</b>	<b>96.0 %</b>	<b>98.7 %</b>
B Sub Total In addition of Stretti	9	6.236	13.064	0.1 %	4.0 %	1.3 %
<b>ITALY</b>	<b>12.263</b>	<b>157.143</b>	<b>983.115</b>	<b>100.0 %</b>	<b>100.0 %</b>	<b>100.0 %</b>

Referring to the geographical distribution for GSAs, it is noted that the majority of the Italian fleet is concentrated in GSA 17 (Northern Adriatic), with more than 3.000 units. Indeed, the fleets included in this area, including the coastal strip from Molise to Friuli Venezia Giulia with an extension of more than 700 km, constitute a historic core of the Italian fisheries, where all the possible fishing techniques are present. The number of units accounts for 25 % of Italy's total, in terms of size, 31 % of the GT and engine power. As a texture and importance, the Adriatic area is following GSA 16 in the South of Sicily with 1.175 units, which is reduced by the large average size of more than 27 GT (more than twice the average in the country). The share of national GT concentrated in the GSA is 20.54 % while engine power is 13.8 %. Finally, to be reported the fleet of the small Tyrrhenian Sea, which includes Campania, Calabria Tyrrhenian and northern Sicily, where 2.542 units are concentrated, 20.7 % in terms of numbers; the size of the contribution is 11.5 % in GT and 13.8 % in engine power (Table).4).

Table4 Fight against Geographical Sub-Areas (GSAs), 2017

GSA	Vessels	GT	KW	% Battalelli	% GT	% KW
09 — Ligurian and North Tyrol, Sea Sea	1.675	15.580	125.139	13.7 %	9.9 %	12.7 %
10 — South and Central to Tyrrhenian Sea	2.542	18.081	135.782	20.7 %	11.5 %	13.8 %
11 — Sardinia	1.338	9.473	77.325	10.9 %	6.0 %	7.9 %
16 — South of Sicily	1.175	32.205	135.866	9.6 %	20.5 %	13.8 %
17 — Northern Adriatic	3.049	48.827	306.412	24.9 %	31.1 %	31.2 %
18 — Southern Adriatic	1.003	14.764	95.556	8.2 %	9.4 %	9.7 %
19 — Western Ionian Sea	1.472	11.977	93.971	12.0 %	7.6 %	9.6 %
<b>A Sub Total Mediterranea</b>	<b>12.254</b>	<b>150.907</b>	<b>970.051</b>	<b>99.9 %</b>	<b>96.0 %</b>	<b>98.7 %</b>
B Sub Total In addition of Stretti	9	6.236	13.064	0.1 %	4.0 %	1.3 %
<b>ITALY</b>	<b>12.263</b>	<b>157.143</b>	<b>983.115</b>	<b>100.0 %</b>	<b>100.0 %</b>	<b>100.0 %</b>

### Production 2017

The volume of fishery products landed by the Italian fleet in 2017 amounted to 188.963 tonnes, representing an economic value of EUR 967 million (Table).B2 Annex B).In technical terms, the bottom trawling segment (including the quick bottom) is dominant, with more than 70 tonnes representing 37 % of the total production. The contribution in economic terms is all the more important, because of the high commercial value of the catch composition of red shrimp and Norway lobster, which is a target for excellence, is between EUR 25 and EUR 30 per kilogram. Total revenue is EUR 505 million or 52 % of the turnover of the Italian fleet. The pair of the steering wheel is the second largest producer at 38 tonnes and contributes 20 % of the total landed. However, the low commercial value of the target products, especially small pelagics, results in a relatively small economic return of EUR 47 million, 5 % of the total value of the landings. Fishing vessels using passive gears report a total landing of 28 thousand tonnes (15 %) with revenue of EUR 242 million, 25 % of the total. Therefore, in economic terms the value produced by this segment is only bottom trawling, which is the reason for the economic value of the target species. Finally, the purse seine vessels recorded a landing volume of 30 tonnes (16 % of the total) and the economic value was EUR 84 million (8.7 % of the total).

As far as the geographical distribution of the production is concerned, as has been said in relation to the fleet, a predominant Adriatic and a Canal of Sicily are predominant. The first concerned 40 % of landings with 74.600 tons compared with an economic value of EUR 263 million, representing 27 % of the national total. In southern Sicily the volume of landings stands at 12.6 %, while revenues of EUR 182 million represent 19 % of the total. The important role of registered production in the area of the Adriatic (GSA 18) area where the landings of 25.400 (13.5 %) tonnes are also higher than those in southern Sicily. The large pelagic component present in the catch composition reduces their economic merit so that turnover comes to EUR 100 million with a share of 10 % of the total (Table).B3 Annex B)

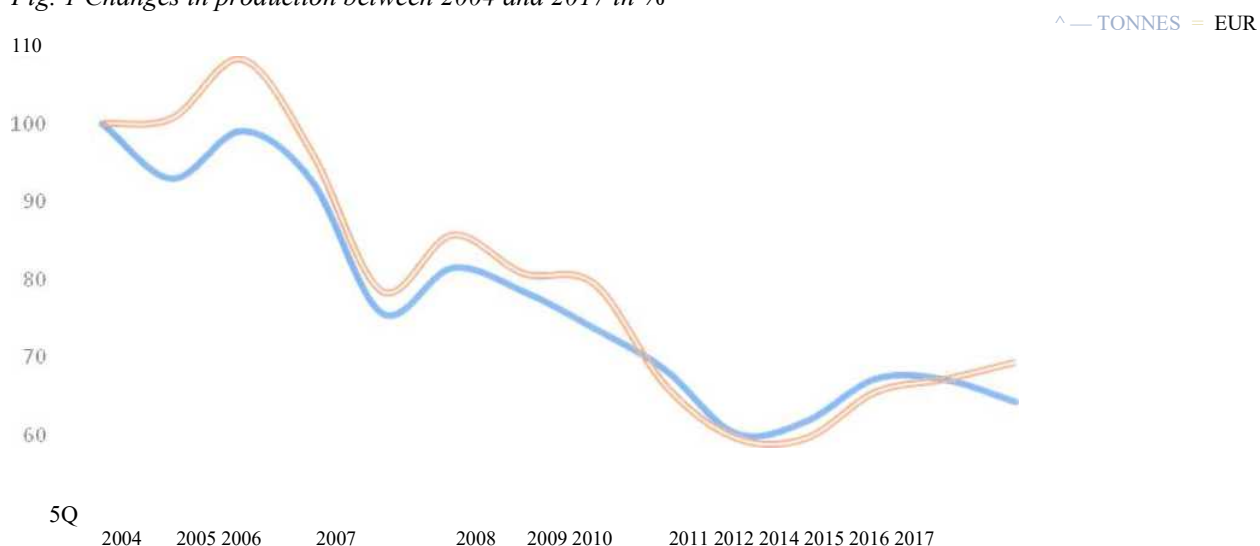
11 includes the production of the fleet in excess of the Strait, but is net of the production of bluefin tuna (BIT) in the cages.

The composition of the catch is structurally concentrated on anchovies and sardines that together account for more than 34 % of the Italian landings. The first species is slightly above 39 tonnes, slightly up on 2016 (+ 2.8 %), accounting for 22 % of the total catch. The volume of landings of sardines is 21 % down on 2016, with 22.700 tonnes, contributing 12.7 % to the total national value. Below these two species the landings of clams and white shrimp are recorded. The quantities of clams taken in 2017 are around 12.000 tonnes. White shrimp was 9.210 tonnes, an increase of 4.3 % on 2016. Other species include hake with 7.600 tonnes, a decrease on 2016. cuttlefish with 6.200 tonnes and striped mullet with 5.900 tonnes (Tab. B4 Annex B)

While the anchovies were sold to the economic value of their landings from the first twenty species in question, the anchovies were in 2016 ranked first with just under EUR 76 million, but their contribution to the total is reduced to 8 %.Red shrimp and hake have many similar values, around EUR 63 million with a share of around 6.8 %.It follows the value of white shrimp with EUR 56,7 million representing 6.1 % of the total. Cuttlefish with 55 million turnover contribute 6 % to the national total (Table).B5 Annex B)

The comparison with 2016 shows that anchovies due to positive variation of landings and good price developments increase the economic value by 15 %, with a positive balance of almost EUR 10 million. Sardines are reduced in quantities and even more in value (-35 %).Hake declined both landings (-8 %) and revenues (-6 %).White crayfish are growing in quantities and, to a lesser extent, in value (+ 1.4 %).

Fig. 1 Changes in production between 2004 and 2017 in %



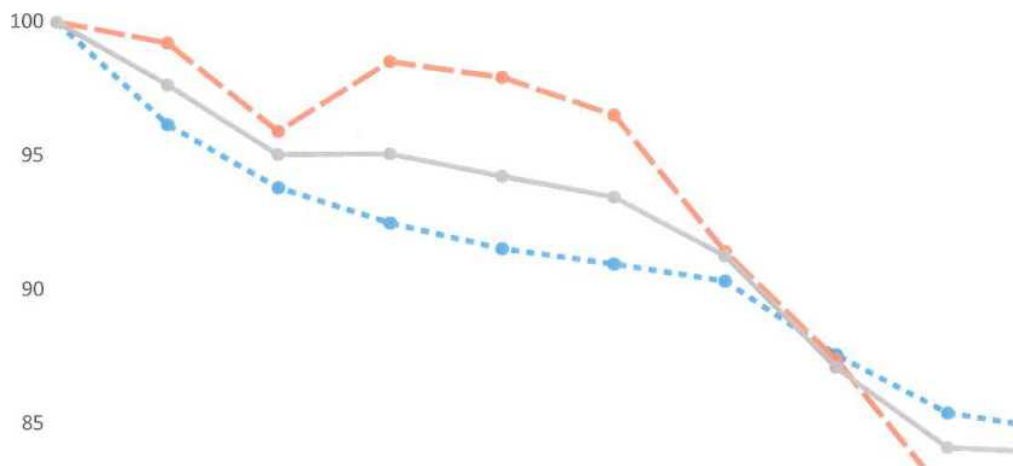
### A.3 Developments during the previous year

The fleet present in the Fisheries Licence Register on 31 December 2017, as stated, is 12.263 fishing vessels for a tonnage of 157.143 gross tonnage (GT) and one engine power of 983.115 kW. The number of vessels operating outside the Mediterranean remains the same as 2016: 9 vessels, 6.236 GT and 13.064 kW. Therefore, the operational fleet in the Mediterranean waters is 12.254 fishing, 150.907 GT and 970.051 kW.

Using 2004 as the base year, there is a clear and continuous fall in fleet size from 14.873 in 2004 to 12.295 in 2016, a decline of close to 2.600 fishing vessels and 50.000 GT. A reduction of 17 % in the number, 25 % in GT and 20 % in engine power, which affected more motor fishing with more than average fishing size, as the average GT fell from 13,5 to 12,3. The process of major downsizing of the productive structure is attributable to the measures laid down in the Common Fisheries Policy, which has supported and encouraged the spontaneous leakage of fishing vessels through specific permanent cessation measures.

Fig. 2. development of the fishing fleet from 2004 to 2017.

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The reduction in the number of fleets, as anticipated, has continued very slightly in recent years. Between 2004 and 2012 there was a drop of 15 points, since 2013 the trend has been reduced and the number of boats leaving the fleet increase by slightly more than 3 %.

Table5 — Evolution of the fleet GT and kW per fishing fleet — comparison 2016/2017

Fisheries Systems	No. of boats			GT			KW		
	2016	2017	%	2016	2017	%	2016	2017	%
Demersal tunnel (DTS)	2285	2251	-1.5 %	93.650	93.569	-0.1 %	463.684	464.811	0.2 %
Dredi (Child Restraint System)	704	705	0.1 %	9.327	9.277	-0.5 %	76.277	76.382	0.1 %
Winagioc trwers (TM)	126	123	-2.4 %	8.965	8.773	-2.1 %	45.313	44.272	-2.2 %
Purse seiners (PS)	217	332	53.0 %	12.431	13.264	6.7 %	55.778	63.120	13.2 %
Fishing using hookis (Hok)	169	181	7.1 %	4.977	4.992	0.3 %	33.345	34.229	2.7 %
Vessel using POLYVALENT passive Gears only (PGP)	8785	8662	-1.4 %	21.879	21.032	-3.9 %	296.915	287.237	-3.3 %
Subtotal Mediterranean	12.286	12.254	-0.3 %	151.229	150.907	-0.2 %	971.313	970.051	-0.1 %

In terms of activity and production, a comparison with 2016 reveals a significant reduction in overall activity in terms of days at sea, — 5 %, which, in average terms, translates into almost 6 days fishing in less per single fishing boat, from 119 days in 2016 to 113,6 in 2017. The fall in business days is particularly relevant to the fleet of passive vessels, which decreases by 4 % to 4 days per vessel. Decreasing for purse seining and the steering wheel. The activity of the trawling fleet remained more or less stable, while they recorded a significant growth of rapidly (+ 6 %) and longlines (+ 9 %).

Table6 — Evolution of production in quantities and by fishing method, in relation to the only Mediterranean fleet.

Fishing Technique	TONNES			Var 2017/2016
	2015	2016	2017	
Demersal tunnel (DTS)	63.546	61.383	70.094	14.19 %
Dredi (Child Restraint System)	16.127	17.773	12.900	— 27.42 %
Winagioc trwers (TM)	49.541	45.939	38.341	— 16.54 %
Purse seiners (PS)	21.895	26.288	30.325	15.36 %
Stationary and passive Gears (PMP) *	690	673	-	— 100.00 %
Fishing using hookis (Hok)	4.005	4.061	4.206	3.56 %
Vessel using POLYVALENT passive Gears only (PGP)	32.947	31.903	28.391	— 11.01 %
TOTAL	188.752	188.020	181.825	— 3.29 %

\* The multi-purpose active part no longer exists as all vessels could be allocated in specific segments in 2017.

By comparing the landings volume achieved by the technical segments in 2016 and 2017, it is possible to point out that bottom trawlers grow somewhat more than 14 percentage points. The flying pair's catches are reduced by 16 % and there is a positive change in the positive range (15 %) in the case of the purse seine fleet. The growth also includes longlines (+ 3.6 %), while the passive gear fleet represents a drop of 11 percentage points.

The total value of disembarkation shows a significant change of 3,3 points in the positive field, compared to 2016. Good economic development, with a growth of 9 points for trawling. In the positive field, the relative changes surrounding purse seining (+ 14 %) and longlines (+ 17 %) are also positive. The values recorded by liabilities and steering wheels (Tab) are substantially stable (Tab.7).

Table 7 — Evolution of production in economic value by way of fishing method

Fishing Technique	EURO (000)			Var2017/2016
	2015	2016	2017	
Demersal tunnel (DTS)	461.184	463.489	504.825	8,92 %
Dredi (Child Restraint System)	40.406	46.993	32.824	— 30.15 %
Winagioc trwers (TM)	54.618	46.358	47.229	1.88 %
Purse seiners (PS)	56.367	73.649	84.141	14.25 %
Stationary and passive Gears (PMP).	4.698	4.022	—	— 100.00 %
Fishing using hookis (Hok)	24.558	24.715	28.864	16.78 %
Vessel using POLYVALENT passive Gears only (PGP)	248.103	244.567	242.378	— 0.89 %
TOTAL	889.933	903.794	934.071	3.35 %

The trend in landings and revenue on 2004 follows the particular reductive trend shown for the fleet. However, the intensity of the phenomenon is significantly higher, as the quantities have fallen by 36 % compared to 2004, while the economic value of the figure is 32 percentage points. The total balance for the period 2004-2017 marks a loss of more than 100000 tonnes and — EUR 440 million — an annual average of almost 8.000 tonnes of landings for an economic value of EUR 34 million.



## B. Effects on fishing capacity, of programmes to reduce fishing effort adopted in the context of multi-annual management or recovery plans or, where appropriate, national plans —

During 2017, the Italian administration provided for in the action plan presented last year gave continuity to the administrative activities linked to the complete implementation of the 2016 final stop plan (Ministerial Decree of 29 September 2016, OJ.No 268 of 16/11/2016).

To date, the units admitted to the permanent cessation premium can be quantified and the respective actual reduction quotas for each fleet segment identified in overlap.

As can be seen in the table below, comparing the reduction plan expected with the result of data processing for applications received, the projected reduction percentage (8 %) has been respected in almost all segments, and in many cases it was largely exceeded reaching 21 % in GSA 10 18 <= LOA, < 24 m.

N<sub>GT</sub> from GT GTIN GT: % vessels to be scrapped for scrapping and scrap total reduction

GSA 17-18	LOA < 12 Total	194	588	53	—	—	—	—
	12 <= LOA < 18	218	4.348	391	186	110	296	6,8
	18 <= LOA < 24	107	7.365	663	826	86	912	12,4
	24 <= LOA < 40	101	11.290	1.016	491	794	1.285	11,4

N<sub>GT</sub> from GT GT into GT vessels to reduce dismantling demolition by total GT

GSA 9	18 <= LOA < 24	124	6.507	521	424	422	846	13,0
	24 <= LOA < 40	16	1.522	122	—	204	204	13,4
GSA 10	LOA < 12 Total	28	135	11	—	—	—	—
	12 <= LOA < 18	171	3.045	244	323	127	450	14,8
	18 <= LOA < 24	82	4.654	372	433	574	1.007	21,6
GSA 11	24 <= LOA < 40	26	4.069	326	130	212	342	8,4
GSA 16	12 <= LOA < 18	134	2.738	219	255	46	301	11,0
	18 <= LOA < 24	148	8.840	707	601	371	972	11,0
	24 <= LOA < 40	96	14.307	1.145	923	109	1.032	7,2
GSA 17	LOA < 12 Total	193	1.131	90	48	25	73	6,5
	12 <= LOA < 18	516	9.955	796	380	370	750	7,5
	18 <= LOA < 24	214	14.986	1.199	312	1.051	1.363	9,1
	24 <= LOA < 40	103	12.203	976	517	501	1.018	8,3
GSA 18	LOA < 12 Total	56	401	32	32	5	37	9,2
GSA 19	12 <= LOA < 18	192	3.136	251	335	33	368	11,7
	18 <= LOA < 24	24	1.266	101	77	86	163	12,9

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

For the assessment of compliance with the entry/exit scheme, the snapshot of March 2018 was taken as the snapshot of and the processing was carried out as provided for in Article.7 of Regulation (EC) No 1013/2010 as shown in the table below.

Table8 — Calculation table for compliance with the entry-exit regime

		GT	KW
Situation as at 1/1/2003	ICW <sub>FR</sub>	217.295	1.279.948
At 31/12/2017	TI — kW <sub>1</sub>	1.520	4.717
At 31/12/2017	GT <sub>2</sub> — kW <sub>2</sub>	784	2.348
At 31/12/2017	GT <sub>3</sub> — kW <sub>3</sub>	6.200	21.218
At 31/12/2017	GT <sub>4</sub> — kW <sub>4</sub>		
At 31/12/2017	GT <sub>03</sub> — kW <sub>03</sub>	224.741	1.305.061
Aided exits 2003-2006	GT <sub>a</sub> — kW <sub>a</sub>	12.457	63.486
Aided exits 2007-2017	GT <sub>a2</sub> — kW <sub>at</sub>	46.812	203.286
At 31/12/2017	GT <sub>ioo</sub> - kW <sub>iovo</sub>	1.227	2.735
At 31/12/2017	GTS	17	
kW sost with 20 % rid	kW <sub>r</sub>		
At 31/12/2017	GT <sub>t</sub> -kW <sub>t</sub>	167.056	1.037.332
Situation as at 31/12/2017		157.143	983.115
Difference		9.913	54.217

In the light of the results of the above table, as of 31/12/2017, there is a available capacity of approximately 9.900 GT and about 54.000 kW.

As regards compliance with the reference levels, the following table is provided:

Table9 — Calculation table for compliance with the reference level

		GT/GRT	KW
Reference level 1/1/2003	GT <sub>FR</sub> — kW <sub>FR</sub>	229.862	1.338.971
Vessels with GT > 100	GT <sub>ioo</sub> - kW <sub>iovo</sub>	1.227	2.735
Aided exits 2003-2006	GT (a) (a) (kW) (a)	12.457	63.486
Aided exits 2007-2017	GT <sub>a2</sub> — kW <sub>at</sub>	46.812	203.286
At 31/12/2017	GTS	17	
kW sost with 20 % rid	kW <sub>r</sub>		0
Baseline	GT-kW	172.178	1.071.242
Situation as at 31/12/2017	GT-kW	157.143	983.115
Difference		15.035	88.127

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

In continuity with the actions already undertaken to safeguard certain stocks at particular risk, taking into account the previous experience and the data collected, the Italian administration has put in place measures which aim to reduce fishing effort not only by scrapping vessels but also by reducing activity, with spatio-temporal closures, and by establishing lists of units specifically authorised for specific peaches.

The main regulatory measures in this regard are the following:

- PitBy means of Ministerial Decree No.466 of 1 June 2017, in synergy with the Croatian authorities, regulates fishing in the area, and with the Ministerial Decree of 21 July 2017 on ‘the fishing effort of Pomo’ a special fishing authorisation is introduced for this sea area.
- Fishing for Alalunga (*Thunnus alalunga*).By means of the Ministerial Decree of 16 February 2017 (Gazzetta Ufficiale No.53 of 4/3/2017) regulates the professional fishing activity in Alalunga through the issuing of a special authorisation only to fishing vessels with specific requirements. By the Ministerial Decree of 31 July 2017 is defined as a list of authorised vessels.
- Small pelagics. The Ministerial Decree has been issued.10 August 2017 ‘Measures for small pelagic fisheries in the Mediterranean Sea and Adriatic specific measures’, amending Ministerial Decree 25 January 2016 and for the years 2017 and 2018 a specific fisheries for sardines (*Sardina pilchardus*) and anchovies (*Engraulis encrasicolus*) in GSA17 and GSA18, differentiating between fishing areas and timing.
- Swordfish (*Xiphias gladius*).Fishing is managed through a close and constant monitoring of the activity carried out by the units authorised and entered in the specific list set up by the Ministerial Decree of 29/02/2016, as provided for by European Commission Decision No. C (2013) 8635 of 6/12/2013. MINISTERIAL DECREE 16 February 2017, “closed periods for swordfish”.
- Fishing for Rosseptum (*Aphia's fishing*) and the Cicerello (*Gymnamotes received*).MINISTERIAL DECREE 14 December 2017. Fishing authorisation to a list of vessels authorised under the scientific supervision of an international research organisation.
- Temporary cessation 2017. By Ministerial Decree On 26 July 2017, rules and periods for the compulsory temporary detention of all units with bottom trawling systems are to be defined.

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

No changes have been made to the administrative procedures for the management of the fleet in the last year.

## **F. Application of equilibrium indicators**

The following pages provide a detailed analysis of the indicators proposed at the level of Geographical Sub Area (GSA) with the aim of identifying overall trends at system level and LOA classes. The data used to calculate the indicators are from the National Data Collection Programme (DCR/DCF).

The choice to provide information for the GSA responds to the need to seize the differences that exist geographically with regard to economic and social performance, the overall state of resources reflecting on the state of the fisheries and on a different level of fishing capacity.

### **Relies on biological sustainability indicators**

SHI (*Sustainable Harvest Indicator*) index was used to identify fleet segments in excess capacity. It should be noted that due to the lack of *reference points* based on biomass for most of the stocks exploited by the Italian fleets, it has not been possible to estimate the SAR based on the criterion “a” of the Community guidelines. Stocks covered by criteria “b”, “c<sup>E</sup>” and “d” of these guidelines always represent a small proportion of the catch in weight.

The ratios F/FMSY for all stocks analysed since 2014 in the various Italian GSAs have been used for the SHI annual calculation. The detailed description is given in Annex B (Table). (B6).

In case the estimated F/FMSY ratio was not updated the 2015 or 2014 values were assumed constant for 2016 and 2015 respectively and 2016.

For the selection of fleet segments showing an imbalance, segments with upper threshold SHI threshold values higher than 40 % for at least two out of three in the period 2014-2016 have been considered. The increase in the number of segments which are found to be in imbalance does not per se show a general deterioration of the state of the resources as the new segments relate to fishing units on the same stocks, although in some cases they use gears other than those previously detected and reported in the final stop plan. In the light of the above, it is appropriate to consider that for the same target species the catch volumes can be different percentages depending on the gear used. The final shutdown plan, which will be completed by the end of 2018, will therefore lead to a reduction of fishing effort which will also have a positive effect on the state of the target stocks of other non-performing segments. In addition, it is already possible to see SHI declining trend in many cases.

The 78 segments examined were considered to be 38 in imbalance (Table).10).

**Table10 — List of segments of conduct showing a value of SHI > 1 for at least 2 years on three years from 2014 to 2016**

GSA	SYSTEM	VESSEL	2014		2015		2016	
			SHI LV	PERC LV	SHI IV	PERC LV	SHI LV	PERC LV
9	DTS	VL1218	2,54	38,20	1,90	45,29	1,86	
9	DTS	VL2440	2,79	44,60	2,00	59,23	2,05	54,33
9	SP	VL1218	1,62	54,50	1,50	58,40	1,49	66,68
9	SP	VL1824	1,58	90,55	1,48	86,96	1,48	88,52
9	SP	VL2440	1,58	53,85	1,48	76,77	1,48	73,46
10	DTS	VL1218	2,19	29,48	1,99	45,16	1,90	45,76
10	DTS	VL1824	2,73	27,06	2,19	44,06	2,32	42,26
10	HOK	VL1218	2,07	76,92	2,06	67,32	2,06	68,93
10	SP	VL40XX	1,10	100,00	1,10	94,84	1,10	90,94
16	DTS	VL1218	2,66	43,57	1,80	43,27	1,78	42,31
16	DTS	VL1824	2,69	56,87	1,80	52,47	1,80	52,08
16	HOK	VL1218	1,45	76,42	1,45	81,12	1,44	83,53
16	HOK	VL1824	2,04	96,41	5,65	99,97	5,51	99,99
16	SP	VL40XX	1,10	100,00	1,10	88,74	1,10	87,79
17	DTS	VL0612	2,13	54,91	1,22	62,59	0,68	61,58
17	DTS	VL1218	2,07	44,10	1,73	47,16	1,65	44,68
17	DTS	VL1824	1,97	54,92	1,61	54,64	1,50	51,15
17	DTS	VL2440	2,10	50,06	1,60	49,32	1,36	55,79
17	SP	VL1218	1,89	83,96	1,89	79,69	1,91	82,61
17	SP	VL2440	1,58	99,91	1,88	96,50	1,77	96,91
17	TBB	VL1824	1,47	44,58	1,28	63,62	1,50	55,01
17	TBB	VL2440	1,48	51,64	1,36	59,52	1,56	53,30
17	TM	VL1218	1,71	80,02	2,04	92,90	1,74	87,04
17	TM	VL1824	1,65	98,74	1,73	96,69	1,60	98,98
17	TM	VL2440	1,69	97,88	1,77	96,93	1,96	99,66
18	DTS	VL0612	2,08	43,68	2,18	44,02	1,44	52,21
18	DTS	VL1218	2,00	49,51	1,95	49,86	1,58	52,09
18	DTS	VL1824	2,13	52,54	2,19	48,75	1,97	55,14
18	DTS	VL2440	1,86	44,72	1,81	67,01	1,66	70,35
18	HOK	VL1218	1,83	71,41	1,73	74,86	2,42	59,45
18	SP	VL2440	1,81	88,23	1,76	91,91	1,78	97,00
18	TM	VL2440	1,82	85,06	1,85	88,65	1,86	92,24
19	DTS	VL1218	5,63	18,75	2,59	71,41	2,08	70,39
19	DTS	VL1824	6,52	40,46	1,64	54,45	3,34	66,74
19	HOK	VL1218	3,24	53,32	1,80	37,18	1,79	45,64
19	HOK	VL1824	1,84	57,84	1,87	51,94	1,88	58,84
19	SP	VL2440	1,10	100,00	1,10	90,40	1,10	85,01
19	SP	VL40XX	1,10	100,00			1,10	100,00

## F.2 Economic indicators

Following the methodology proposed in the guidelines, two economic indicators have been calculated: ROFTA (long-term viability) and the ratio between current revenue and break-even revenue CR/BER (short-term profitability).

- ROFTA

The ROFTA represents the profitability per unit (percentage) of the capital invested in the fishing industry. The

ROFTA was compared with an arithmetic average of the five-year harmonised interest rate over the past five years (2012-2016)<sup>3</sup>. A return on investment less than zero and the best long-term interest rate at zero risk is a sign of long-term economic inefficiency that could indicate the existence of an imbalance. In Annex B (Tab)B7), the values of the indicator are reported for all fleet segments at GSA level; in the Table,11 The list of fleet segments which shows a value of the indicator lower than the Target Reference Point in 2016 is shown below.

*Table11 — List of fleet segments showing a lower ROFTA value in 2016*

GSA	Fishing technique	Length class	ROFTA — Long-term interest rate		
			2014	2015	2016
9	RESTRAINT	VL0Ó12	n.a.	— 17 %	— 3 %
10	RESTRAINT	VL1218	— 5 %	— 4 %	0 %
11	DTS	VL2440	— 11 %	— 10 %	— 2 %
17	DTS	VL2440	— 10 %	— 7 %	— 7 %
18	DTS	VL1824	8 %	2 %	0 %
18	DTS	VL2440	— 18 %	0 %	— 10 %
10	IIOK	VL1218	— 12 %	— 5 %	— 1 %
19	IIOK	VL 1824	— 17 %	— 8 %	— 3 %
17	113B	¥1,2440	— 9 %	— 16 %	— 7 %

In 2016, out of a total of 77 fleet segments, only 9 showed a lower indicator value than TRP. The average profitability of the fishing fleet has improved since 2013; the daily revenue levels per vessel (just over EUR 620 in 2016) benefited from a positive trend in average productivity and average output prices. In 2016, after years of substantial stability, the average price increased slightly (+ 3 %) and was the result of several trade strategies launched in recent years, aimed at improving the traceability and quality of the fresh local product. At national level, there are many cases of local operators that have adopted quality labels, created or strengthened the role of producers' organisations, or undertaken directly selling activities. Compared to 2015, despite a slight increase in fishing activity (+ 2 %), operational costs have been declining (by 2 %, or around EUR 7 million). In particular, the reduction covered fuel expenditure representing the largest part of the total costs (53 %); after the peak recorded in 2013, the price of fuel contracted sharply and was broadly stable in 2016 compared to 2015 (EUR 0,48/litre).

The recovery of turnover levels coupled with lower operating costs led to an increase in the average labour cost per employee and gross profit; this is estimated to be around EUR 285 million in 2016. compared with the previous year, the average gross profit achieved by one fishing unit was recovered. from EUR 24 thousand in 2015 to today's EUR 25, an increase of almost 5 %.

This positive trend did not concern all the production segments; bottom trawlers with a class length of more than 24 m in GSA 11,17 and 18 are included. They also result in longlines operating in GSA 10 and 19, although it should be considered that ROFTA has improved substantially in 2016 compared to 2015 and 2014.

#### • CR/BER

The break even revenue (BER) is the revenue required to cover both fixed and variable costs so that no losses are incurred and no profits are generated. The current revenue (CR) is the total operating income of the fleet segment, which consists of income from landings and non fishing income. The calculation of the ratio does not take into account the opportunity cost for which the calculated indicator provides a short-term framework of the financial viability.

In Annex B (Tab)B7) shows the values of the indicator for all fleet segments at GSA level, while in Tab.12 The list of fleet segments showing an indicator value of less than 1 is reported for the last available year.

*Table12- List of fleet segments which show a figure of CR/BER less than 1 in 2016*

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ECB source: [www.ecb.int/statistics/money/long/html/mdex.en.html](http://www.ecb.int/statistics/money/long/html/mdex.en.html)

GSA	Fishing technique	Length class	CR/BER		
			2014	2015	2016
9	RESTRAINT	VL0612	n.a.	0,42	0,91
10	HOK	VL1218	0,53	0,82	0,97
11	DTS	VL2440	0,54	0,56	0,94
17	DTS	VL2440	0,60	0,73	0,66
17	TBB	VL2440	0,63	0,45	0,74
18	DTS	VL1824	1,31	1,06	0,96
18	DTS	VL2440	0,34	0,99	0,64
19	HOK	VL1824	0,36	0,69	0,91

In 2016, out of a total of 77 fleet segments, only 8 show a value of the indicator less than 1. No segment has a negative CR/BER ratio. The indicator shows an improvement compared to the previous two years. In 2014 fleet segments with a value of less than 1 were 19, down to 15 in 2015. The indicator expresses the short-term profitability of the fishing fleet; the general improvement already noted in 2015 and continued in 2016 is largely to be seen in relation to the reduction of operating costs, in particular the cost of fuel and an increase in production in quantity and value.

The segments with short term profitability that are not satisfactory coincide with those with ROFTA below the reference point, excluding dredgers operating in GSA10, with a satisfactory short-term profitability.

### F.3 Vessel utilisation indicators

The Guidelines for equilibrium indicators (COM 2014, 545), in order to assess the intensity of fleet utilisation, propose two different indicators to measure the fleet inactivity and the use of vessels (Vessel Use Indicator).

The first indicator describes the proportion of inactive vessels of the total fleet, as regards the number of vessels, the tonnage (GT) and engine power (kW).

Instead, the second indicator takes into account the average activity levels of vessels that have been fishing at least once during the year, taking into account the seasonal nature of the fisheries and other restrictions. It is given by the average for each fleet segment of the ratio between

10 observed fishing effort (average days at sea per vessel) and maximum effort found (maximum sea days observed in a fleet segment).

According to the 'traffic signalling' system, one indicator higher than 0,9 was observed only for the fleet segments that have a broadly homogeneous level of activity, which can be given a green light. Values below 0,7 were seen as potentially an index of under-execution which in turn could indicate a technical overcapacity (red light).

Indicators between the limit values indicated are highlighted in yellow and reported on a relative stability underlining that the technical capacity available is overall moderately exploited. The detail is set out in the Annex B Tab. B9

#### Application and interpretation

The indicator measuring the capacity utilisation rate on the whole shows a substantial balance as the inactivity of the fleet is below the 20 % threshold for all fleet segments.

At the overall level, the proportion of inactive vessels in 2016 is 8.5 % of the total number, and 5.2 % in terms of capacity (GT) and 5.4 % in engine power (kW). B Tab.(B8). This, albeit close to registration in 2015, marks a reduction in the indicator in the number and in engine power, while an increase in tonnage. In substance, it seems that there is a larger share of medium or large fishing vessels that have been inactive compared to the previous year. If the comparison with the average of the previous years is widened, there has been a significant reduction in activity from 9 % to 8.5 %, in numerical terms; 6.4 % to 5.4 % for engine power; for GT, there is a stable trend, ranging from 5.3 % in 2012/2015 to 5.2 % today.

In summary, it can be said that the activity indicator is maintained at 'physiological levels', as it is normal to expect that 10 % of the vessels in a fleet segment will be inactive, for repairs, adjustments, conversions or ongoing transfers.

Looking further ahead to a higher level of detail, the analysis of individual annual values shows divergent behaviour in smaller classes of fleet, with class 0/6 increasing the activity and category 6/12 decreases that decrease. The intermediate segments between 12 and 24 meters show a significant increase in the activity rate, while the largest segments mark a sharp rise in activity. Class 24/40 is subject to a reduction in operation. Class 40XX consists of 22 units of which 9 ocean, and 13 are fishing purse seiners (12 are allowed to fish for bluefin tuna used in the cages. this activity takes place around 2 months a year).

11 according to indicator, there are diverse situations, and the scenario that emerges is characterised by extreme variability for fishing segments and geographical areas.

In 2016, of a total of 82 fleet segments (All. B Tab. B9), 14 recording a full utilisation of the fishing capacity, 35 segments show a moderate utilisation rate and, finally, 33 segments corresponding to 40 % of those examined have an indicator reflecting a potential technical underutilisation of vessels.

The indicator shows a moderate improvement compared to 2015 when in the 80 segments analysed, 41 % were in red area below the threshold of 0,7 and only 15 % exceeded the value of Green Zone 0,9. In terms of



numbers, the segments of red and yellow bands remain the same, but there is an increase from 12 to 14 segments in green areas.

Specifically, it should focus on the areas of GSA 16 and 19 with the increase of a segment in the range of full utilisation of fishing capacity. In technical terms and dimensions the increase of the green band covers the surrounding segment and class 40XX.

For a more accurate and more thorough reading of the data it is necessary to consider certain aspects specific to the Italian fleet:

- 1) There are frequent cases where the ownership of 0/10 meters of passive fishing vessels is made up of older persons carrying out reduced activity.
- 2) Some 0/10 metres segment boats belong to the same owners of larger units, which also use a small boat to cope with any stress periods in the segment where the largest boat is operating.
- 3) As regards the hydraulic dredges, the level of activity and the amounts to be collected are decided by the management consortia set up mainly at the level of the district, due to the size of the resource (clams, sprains) and market trends. For this reason, it is possible to consider as a unit segments which belong to several consortia there may be a distortion of the data. In GSA 17, there are 15 consortia whose levels of business decisions can be very different from each other during the year.

## **G. Conclusions: achievement of a balance between the fleet and the available fishing opportunities**

The biological, economic, social and technical indicators proposed in the guidelines presented by the European Commission constitute the means by which management measures which, over time, will achieve the full balance of capacity and fishing opportunities have been implemented.

The indicators used are as follows:

- Sustainable Harvest Indicator (SHI),
- Return of Fixand tanly Assets (ROFTA)
- Current revenue/Break-Even Revenue (CR/BER)
- Vessel Indicator (VI)
- Vessel utiarion Indicator (IUV)

The calculation of the indicators was done taking into account the results of the National Data Collection Programme (DCR/DCF), by presenting an analysis of the indicators at the level of Geographical Sub Area (GSA), with the aim of identifying overall trends at system level and LOA classes. The choice of providing information for the GSA responds to the need to capture the economic/social performance differences that exist geographically and the overall state of resources, which are reflected in the fishing status and on a different Hvee of fishing capacity.

### **ROFTA**

In 2016, out of a total of 77 fleet segments, only 9 showed a lower indicator value than TRP. The average profitability of the fishing fleet has improved since 2013; the daily revenue levels per vessel (just over EUR 620 in 2016) benefited from a positive trend in average productivity and average output prices. In 2016, after years of substantial stability, the average price increased slightly (+ 3 %) and was the result of several trade strategies launched in recent years, aimed at improving the traceability and quality of the fresh local product. This positive trend did not concern all the production segments; bottom trawlers with a class length of more than 24 m in GSA 11,17 and 18 are included. They also result in longlines operating in GSA 10 and 19, although it should be considered that ROFTA has improved substantially in 2016 compared to 2015 and 2014.

### **CR/BER**

In 2016, out of a total of 77 fleet segments, only 8 show a value of the indicator less than 1. No segment has a negative CR/BER ratio. The indicator shows an improvement compared to the previous two years. The segments showing short-term profitability that are not satisfactory coincide with those with ROFTA's below the reference point, excluding dredges operating in GSA 10, which provide satisfactory short-term profitability.

### **IUV**

The indicator measuring the capacity utilisation rate on the whole shows a substantial balance as the inactivity of the fleet is below the 20 % threshold for all fleet segments.

At this level, in 2016, the proportion of inactive vessels is 8.5 % of the total number, and 5.2 %, in terms of capacity (GT) and 5.4 % (kW) of the engine power (AE).B Tab.(B8). This trend, although close to that in 2015, marks a decline in the indicator for a number of digital components and new engine power, while an increase in tonnes in terms of tonnes. In substance, it appears that a share of medium to large fishermen has been inactive to a greater extent than during the previous year. If you hit Earga and compare it with the average over the previous years, there has been a significant reduction in activity from 9 % to 8.5 %, in terms of numbers.6.4 % to 5.4 % for engine power; for E GT, there is a trend which is free from 5.3 % in 2012/2015 to now 5.2 %.

In summary, it can be said that the activity indicator is kept at 'physiological levels', as it is normal to expect that 10 % of the vessels in one segment of the fleet should be inactive, for repairs, adjustments, conversions or ongoing transfers.

### **IDEM**

In 2016, of a total of 82 fleet segments (All. B Tab. B9), 14 recording a full utilisation of the fishing capacity, 35 segments show a moderate utilisation rate and, finally, 33 segments corresponding to 40 % of those examined have an indicator reflecting a potential technical underutilisation of vessels.

The indicator shows a moderate improvement compared to 2015 when in the 80 segments analysed, 41 % were in red area below the threshold of 0,7 and only 15 % exceeded the value of Green Zone 0,9. In terms of numbers, the segments of red and yellow bands remain the same, but there is an increase from 12 to 14 segments in green areas. Specifically, it should focus on the areas of GSA 16 and 19 with the increase of a segment in the range of full utilisation of fishing capacity. In technical terms and dimensions the increase of the green band covers the surrounding segment and class 40XX.

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It is important to point out that in 2017 the available assessments, which were used to estimate the state of resources, allowed a SHI index available for several fleet segments (GFCM-SAC, 2017; STECF, 2017). The increase in the number of segments which are found to be in imbalance does not per se show a general deterioration of the state of the resources as the new segments relate to fishing units on the same stocks, although in some cases they use gears other than those previously detected and reported in the final stop plan. In the light of the above, it is appropriate to consider that for the same target species the catch volumes can be different percentages depending on the gear used. The final shutdown plan, which will be completed by the end of 2018, will therefore lead to a reduction of fishing effort which will also have a positive effect on the state of the target stocks of other non-performing segments. In addition, it is already possible to see SHI declining trend in many cases.

In conclusion, in order to achieve a sustainable balance between fishing capacity and fishing opportunities, the primary objective remains 1' objective of reduction of the fleet through the completion of the procedures launched by the Ministerial Decree of 29 September 2016 (OJ.No 268 of 16/11/2016) on permanent cessation. The further reduction in fishing mortality will take place, taking the time horizon 2020 to reach the maximum sustainable yield (MSY) for all stocks of commercial interest, by reducing the activity of the fleet and improving the exploitation pattern of the catch obtained with the adoption of space/time closures and increasing the selectivity of towed gears.

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## **Annex A**

Action plan presenting the adjustment targets and the means to achieve equilibrium for the fleet segments for which there is evidence of equilibrium

The Italian Action Plan, taking into account the Community guidelines, is intended to achieve a significant reduction in fishing mortality (F<sub>c</sub>) through the synergy action of a number of different measures.

### *• Final stop plan*

In the course of 2017, as provided for in the action plan presented last year, the Italian administration gave continuity to the administrative activities linked to the complete implementation of the 2016 final stop plan (Ministerial Decree of 29 September 2016, OJ.No 268 of 16/11/2016).

During the year 2018, all units eligible for the permanent stop premium shall be dismantled, broken down by fleet segment in overlap. In the Tab. The following figure shows the total number of GT already demolished and those which will be dismantled by the end of the current year, broken down by GSA and fishing method.

Comparing the reduction scheme planned with the result of data processing for applications received, the planned reduction percentage (8 %) has been respected in almost all segments, and in many cases it was largely exceeded, reaching the maximum value of 21 % in the GSA 10-18 <= LOA < 24 m.

Table A1

N <sub>GT</sub> from GT		GT% vessels to withdraw dismantling scrapping total reduction						
GSA 17-18	LOA < 12 Total	194	588	53	—	—	—	—
	12 <= LOA < 18	218	4.348	391	186	110	296	6,8
	18 <= LOA < 24	107	7.365	663	826	86	912	12,4
	24 <= LOA < 40	101	11.290	1.016	491	794	1.285	11,4
N <sub>GT</sub> from GT		GT into GT vessels to reduce dismantling demolition by total GT						
GSA 9	18 <= LOA < 24	124	6.507	521	424	422	846	13,0
	24 <= LOA < 40	16	1.522	122	—	204	204	13,4
GSA 10	LOA < 12 Total	28	135	11	—	—	—	—
	12 <= LOA < 18	171	3.045	244	323	127	450	14,8
	18 <= LOA < 24	82	4.654	372	433	574	1.007	21,6
GSA 11	24 <= LOA < 40	26	4.069	326	130	212	342	8,4
GSA 16	12 <= LOA < 18	134	2.738	219	255	46	301	11,0
	18 <= LOA < 24	148	8.840	707	601	371	972	11,0
	24 <= LOA < 40	96	14.307	1.145	923	109	1.032	7,2
GSA 17	LOA < 12 Total	193	1.131	90	48	25	73	6,5
	12 <= LOA < 18	516	9.955	796	380	370	750	7,5
	18 <= LOA < 24	214	14.986	1.199	312	1.051	1.363	9,1
	24 <= LOA < 40	103	12.203	976	517	501	1.018	8,3
GSA 18	LOA < 12 Total	56	401	32	32	5	37	9,2
GSA 19	12 <= LOA < 18	192	3.136	251	335	33	368	11,7
	18 <= LOA < 24	24	1.266	101	77	86	163	12,9

The achievement of such a high reduction percentage will certainly have a stronger effect on all the assessments and forecasts of the scientific studies in place linked to the activities to be undertaken for the conservation of the stocks at risk.

## New Management Plans

During 2017, the Italian administration prepared the scientific documents which led to the drawing up of the National Management Plans for the fishing fleets to catch demersal resources in GSA 9 (Ligurian and Central North Sea), GSA 10 (Central and Southern Tyrrhenian Sea), GSA 11 (Sardinia), GSA 16 (Strait of Sicily), GSA 17 (Southern Adriatic Sea) and GSA 18 (Western Adriatic Sea) and GSA 19 (Western Ionian Sea).

The total resources of the target species were taken into consideration when drawing up the plans, the most important part in terms of volume and value of the landings for which assessments of the state of exploitation were available, and the by-catch species, i.e. those contributing to 75 % of the landed volume of demersal fisheries in the different GSAs.

The overall objective of the management plans is to recover the stocks to safe biological limits in 2020, in accordance with Regulation (EU) No 1380/2013. The scientific analysis of the exploitation status of the stocks of the main species revealed a general condition of overfishing and, therefore, the need to make the arrangements and intensity of the fishery levy more compatible with the biological potential of the species and communities supporting it. The Plans aim to achieve an improvement of the spawning stock biomass (SSB) in the case of demersal species by reducing the exploitation rate (weighed for the target species pool) from the current level to a level compatible with the new Common Fisheries Policy (Article.2, Regulation (EU) No 1380/2013). The process of approaching the targets has taken into account the capacity reduction foreseen for 2017 in the Action Plan for the fleet segments in which a structural overcapacity has been detected, in accordance with the report on the balance between fleet capacity and fishing opportunities established on the basis of Article 22 of Regulation (EU) No 1380/2013.

Compared with previous versions of the management plans, where the main management technical measure was the

reduction of fishing capacity, implemented through a decommissioning scheme, in the plans drawn up in 2017, the objectives are achieved through fishing effort regulation implemented through a reduction in fishing days as follows:

- 2018: no changes and quantification of fishing days carried out during that period.
- 2019: 5 % reduction in the number of fishing days quantified in 2018;
- 2020: 10 % reduction in the number of fishing days quantified in 2018.

Table A2 shows the target species, the percentage of the landed species, the by-catch species, the by-catch species, the fisheries under management, and the main technical ancillary measures in terms of the closure to bottom trawls of critical areas. In particular, the number of existing Biological Protection Zones (ZTB) and the proposals for the creation of new areas for the closure of the trawling gear (nurseries) are summarised below.

reducing the capture of undersised fish of hake and deep-water rose shrimp, in accordance with Article 14 by the EU Reg. 1380/2013.

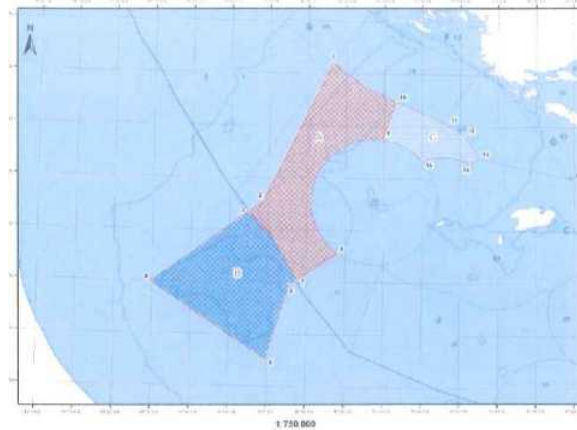
*Table A2 — Target species, ancillary species, managed fisheries, and main additional technical measures in terms of closing bottom trawls of critical areas to improve the sustainability of demersal fisheries in the different GSAs.*

GSA	Target species	By-catch species	Fishing method	Additional technical measures
9	Hake, red mullet, red mullet, deep-water rose shrimp and Dublin Bay prawn	White musky octopus and shrimp red and red shrimp	Bottom trawling, and polyvalent	2 ZTB in force and 5 new proposals (hake and deep-water rose shrimp)
10	Hake, red mullet and deep-water shrimp	Giant red shrimp	Bottom trawling, and polyvalent	4 ZTB in force and 2 new proposals (hake and deep-water rose shrimp)
11	Hake, red mullet and red shrimp	Red mullet, purple shrimp musky octopus, common octopus and common squid	Bottom trawling, and polyvalent institutions	3 ZTB in force and 3 new proposals (black hake, deep-water rose shrimp and red shrimp)
16	Hake and deep-water rose shrimp	Blue and red shrimp, musky octopus, red mullet, red mullet, Norway lobster	Bottom trawling, and polyvalent institutions	3 ZTB in force and 3 new proposals (hake and deep-water rose shrimp)
17 & 18	Hake, red mullet, common sole (GSA 17) and deep-water rose shrimp	Red mullet (17), canas, white curled octopus, Norway lobster, cuttlefish municipality (17) and monkfish (18)	Bottom trawling (17), polyvalent institutions (17) and longlines (18)	7 ZTB in force, including the Fossa di Pomo. Other proposals for the protection of hake and rose shrimp.
19	hake, white shrimp and deep-water rose shrimp	Deep red shrimp, red mullet and red mullet	Bottom trawls, longline and polyvalent	1 FRA GFMC (Santa Maria di Leuca) for the protection of white coral and 2 proposed for protection of native hake and white shrimp.

### Pomo fossa (GSA 17)

As far as the area named fossa di Pomo was concerned, a ministerial decree was issued since 2015 prohibiting fishing with bottom otter trawl, fast beam trawl and otter twin trawl. In the course of 2016, further ministerial decrees are followed relating to the management of the resources of the area and Ministerial Decree No.466 of 1 June 2017, which entered into force on 1 September 2017, establishes a specific, well identified and controlled ZTB, which consists of three areas; one of the total closure for demersal fisheries and two areas where the fishing effort is regulated (Figure 1). Area A is independent of any activity in the area of professional and recreational background. Zone B is subject to a temporary fishing stop on 1 September of each year. In other months fisheries may not be more than two days per week in those vessels specifically authorised by the Member States as a result of the historical use of the area. Zone C is subject to a temporary fishing stop on 1 September of each year. In other months, fishing is permitted for those vessels specifically authorised for the historical use of the area and identified by a special list issued by the Italian authorities.

Figure 1 — ZTB introduced and Fisheries Restricted Area provided for by the GFCM. The three areas under different management measures are distinguished.



### New technologies to improve selectivity of towed gears

The introduction of new technologies to improve the selectivity of fishing gears combined with the decline of fishing activities in nursery areas is considered as a promising strategy for the cost-effective reduction of discards. Taking into account the reduction targets set out in Regulation EU 1380/2013 during 2017, investigations have been carried out on a number of issues related to discarding.

In the context of the Horizon 2020 MINOUW project, which started in 2015 and is still ongoing, experiments were carried out to assess the effect of using selection grids on the commercial networks in order to minimise the catches of under-sized species such as deep-water rose shrimp (*Parapenaeus longirostris*) and European hake (*Merluccius merluccius*), which together with horse mackerel (*Trachurus* spp.) are the most important unwanted catches in the deep-water rose fishing in the Sicilian channel. Three different grid configurations were assessed and the results obtained so far showed that the proportion of pink shrimps of less than 20 mm in length of the carapace length in the codend, equal to 51 % without a grid, is reduced by up to 20 % using grids. In the case of hake, specimens of less than 20 cm in total length, i.e. 40 % of the catch without grids, have been reduced by up to 20 % using grids. Although additional fishing experiments are necessary to maximise the selection efficiency of the grids using the grids, the results clearly show that these technological solutions can contribute to a substantial reduction in unwanted catches of undersized fish of species.

Since the landing obligation does not apply to species for which scientific evidence demonstrates high survival rates, another relevant issue in relation to discards is the measurement of survival after capture. Always as part of the European MINOW European project in the Strait of Sicily, the Ligurian and Upper Tyrrhenian Sea, experiments have started to study the survival of the species caught by the trawling gear in order to assess the advisability of the release of the unwanted catches (species of little or no commercial interest).

The preliminary results suggest a low viability of hake, horse mackerel and anglerfish in the face of a high level of vitality of the gutter, of triglidi, of redfish and redfish in general. With regard to the survival of crustaceans, the surveys carried out so far have shown a low survival of deep-water shrimps and of Norway lobster while deep survival is high, such as *Paromola cuvieri*.

# Annex B

## Reference tables

*TableB1- Fishing by species for bluefin tuna: 2017.*

FISHING TECHNIQUE	NO	GT	KG
PURSE SEINERS	12	3029	2.409.315
LONGLINE	30	991	409.234
TRAP	3	//	271.507
By Catch catch			91.102
Sport/recreational fishing			14.837
<b>TOTAL CATCH</b>			<b>3.195.995</b>

*TableB2 — Production 2017 by Fisheries Technique, in tonnes and euro*

Fishing Technique	TONNES	EURO (000)	% TONNES	% Euro
Demersal tunnel (DTS)	70.094	504.825	37.1 %	52.2 %
Dredi (Child Restraint System)	10.468	26.634	5.5 %	2.8 %
Winagioc trwers (TM)	38.341	47.229	20.3 %	4.9 %
Purse seiners (PS)	30.325	84.141	16.0 %	8.7 %
Vessi using hookis (Hok)	4.206	28.864	2.2 %	3.0 %
Vessel using POLYVALENT passive Gears only (PGP)	28.391	242.378	15.0 %	25.1 %
Other Fishing Regions	7.138	33.364	3.8 %	3.4 %
<b>TOTAL</b>	<b>188.963</b>	<b>967.434</b>	<b>100.0 %</b>	<b>100.0 %</b>

*TableB3 — Production 2017 per GSA, in tonnes and euro*

GSA	TONNES	EURO (000)	% TONNES	% Euro
09 — Ligurian and North Tyrol, Sea Sea	17.748	108.930	9.4 %	11.3 %
10 — South and Central to Tyrrhenian Sea	21.711	129.493	11.5 %	13.4 %
11 — Sardinia	7.111	57.090	3.8 %	5.9 %
16 — South of Sicily	23.787	181.693	12.6 %	18.8 %
17 — Northern Adriatic	74.624	262.687	39.5 %	27.2 %
18 — Southern Adriatic	25.463	100.079	13.5 %	10.3 %
19 — Western Ionian Sea	11.381	94.100	6.0 %	9.7 %
Other Fishing Regions	7.138	33.364	3.8 %	3.4 %
<b>TOTAL</b>	<b>188.963</b>	<b>967.434</b>	<b>100.0 %</b>	<b>100.0 %</b>

TableB4 – Production 2017, first 20 species in quantities

Year	3A CODE	Species	Tonnes	%
2017	ANE	Engraulis encrasicolus	39.039	21.76 %
2017	GDP	Pihargardus	22.700	12.65 %
2017	EVS	Chamlea hen	9.426	5.25 %
2017	VLO	Parapenaeus longirostris	9.210	5.13 %
2017	HKE	Euphausia superba	7.598	4.23 %
2017	CTC	Sepia officinalis	6.202	3.46 %
2017	MUT	Mullus barbatus	5.895	3.29 %
2017	CTG	Squilla mantis	4.421	2.46 %
2017	EDT	Eledone moschata	3.289	1.83 %
2017	SWO	Xiphias gladius	2.987	1.66 %
2017	SQM	Illex Ailintii	2.945	1.64 %
2017	RHM	Donax spp. edible crab	2.668	1.49 %
2017	MUR	Mullus surmuletus	2.527	1.41 %
2017	OCC	Octopus vulgaris	2.393	1.33 %
2017	SOL	Solea solea	2.276	1.27 %
2017	HOM	Trachurus trachurus	2.272	1.27 %
2017	EOI	Eledone cirrhosa	2.265	1.26 %
2017	SFS	Lepidopus caudatus	2.143	1.19 %
2017	BOG	Boops boops	2.105	1.17 %
2017	NSQ	Nassarius mutabilis	2.011	1.12 %
TOTAL			134370	74.89 %



TableB5 — Production 2017, first 20 species in value

Year	3A_CODE	Species	EURO (000)	%
2017	ANE	Engraulis encrasicolus	75.559,63	8.12 %
2017	RHM	Donax spp. edible crab	63.261,74	6.80 %
2017	HKE	Euphausia superba	62.675,68	6.74 %
2017	VLO	Parapenaeus longirostris	56.712,15	6.10 %
2017	CTC	Sepia officinali	54.916,28	5.90 %
2017	SPR	Nephrops norvegicus	38.967,82	4.19 %
2017	SWO	Xiphias gladius	29.579,80	3.18 %
2017	MUR	Mullus surmuletus	28.579,15	3.07 %
2017	MSM	Aristeus antennatus	28.335,39	3.05 %
2017	CTG	Squilla mantis	27.372,44	2.94 %
2017	MUT	Mullus barbatus	26.725,52	2.87 %
2017	SOL	Solea solea	24.478,65	2.63 %
2017	GS	Penaeus kerathurus	22.687,41	2.44 %
2017	EVS	Chamlea hen	21.706,32	4.75 %
2017	OCC	Octopus vulgaris	20.721,63	2.23 %
2017	SQR	Loligo vulgaris	20.168,52	2.17 %
2017	EDT	Eledone moschata	15.534,39	1.67 %
2017	EOI	Eledone cirrhosa	15.034,74	1.62 %
2017	GDP	Sardina pilchardus	14.368,78	1.54 %
2017	SQM	Ilex co-indetii	13.824,21	1.49 %
	TOTAL		661.210,24	73.51 %

TableB6 — Stocks in the last three years in the Italian GSAs. The stock status for each year (2014-2016) is reported

as a current  $F$ 's ratio ( $Fr$ ) and  $F$  to the maximum sustainable yield  $F$  (FMSY).

GSA	SPECIES	3A_CODE	FMSY	F/FMSY 2014	F/F <sub>M</sub> SY 2015	F/FMSY 2016
9	Anchor	ANE	0.40	1.58	1.48	1.48
	Great scallop SJA	MSM	0.32	1.03	0.84	0.84
	Blue whiting	WHB	0.33	1.16	1.16	1.16
	Epwater pink shrimp	VLO	0.67	1.07	1.06	1.06
	Giant red shrimp	RHM	0.59	0.14	0.78	0.78
	Wake	HKE	0.24	4.63	3.75	3.75
	Guinea shrimp	SPR	0.19	2.21	1.79	1.79
	Red mullite	MUT	0.59	2.63	2.34	2.34
10	Lined red muleet	MUR	0.44	1.34	1.11	1.11
	Epwater pink shrimp	VLO	0.92	1.35	1.35	1.35
	Giant red shrimp	RHM	0.65	1.40	1.40	1.40
	Wake	HKE	0.20	5.51	5.51	5.51
11	Red mullite	MUT	0.50	0.95	0.95	0.95
	Giant red shrimp	RHM	0.31	1.61	1.61	1.61
	Wake	HKE	0.17	9.47	9.47	9.47
16	Guinea shrimp	SPR	0.19	1.58	2.05	2.05
	Epwater pink shrimp	VLO	0.83	1.19	1.46	1.46
	Wake	HKE	0.12	7.42	6.83	6.83
	Red mullite	MUT	0.45	0.98	1.71	1.71
17	Sardines	GDP	0.17	0.55	0.55	0.55
	Red mullite	MUT	0.52	1.81	0.96	0.33
	Solca	SOL	0.26	1.58	1.65	1.81
18	Spotail mantis shrimp	CTG	0.38	2.29	2.18	1.71
	Giant red shrimp	RHM	0.42	1.10	1.10	1.10
	Red mullite	MUT	0.52	1.81	0.96	0.33
	Spotail mantis shrimp	CTG	0.38	2.29	2.18	1.71
19	Epwater pink shrimp	VLO	0.70	2.24	2.06	2.06
	Giant red shrimp	RHM	0.42	1.10	1.10	1.10
	Wake	HKE	0.16	7.75	8.19	8.83
	Red mullite	MUT	0.44	2.25	2.25	2.25
17-18	Anchor	ANE	0.55	1.73	1.80	1.80
	Epwater pink shrimp	VLO	0.70	2.24	2.06	2.06
	Wake	HKE	0.21	2.08	2.62	2.62
	Guinea shrimp	SPR	1.00	1.36	1.25	1.50
	Sardines	GDP	0.72	2.15	2.07	2.07
ALL	Blue fin tana	BFT	0.42	1.10	1.10	1.10
	Smooth hammerhead SPZ	SWO	0.25	1.84	1.84	1.84

TableB7 — ROFTA and CR/BER for fishing segments, 2014, 2015 and 2016

GSA	Fishing technique	Class of TFT	2014		2015		2016	
			ROFTA	CR/BER	ROFTA	CR/BER	ROFTA	CR/BER
9	RESTRAINT	VL0612	n.a.	n.a.	— 17 %	0,42	— 3 %	0,91
9	RESTRAINT	VL1218	— 14 %	0,53	— 4 %	0,88	11 %	1,36
9	DTS	VL0612	69 %	2,68	22 %	1,71	3 %	1,08
9	DTS	VL1218	34 %	2,15	61 %	3,07	72 %	3,26
9	DTS	VL1824	2 %	1,03	22 %	1,76	29 %	2,04
9	DTS	VL2440	— 4 %	0,82	6 %	1,21	6 %	1,22
9	PGP < 12	VL0006	65 %	2,15	122 %	4,23	133 %	4,01
9	PGP < 12	VL0612	12 %	1,17	33 %	1,94	19 %	1,55
9	PGP > 12	VL1218	50 %	2,64	55 %	2,81	23 %	1,72
9	SP	VL1218	53 %	2,25	41 %	1,74	50 %	2,21
9	SP	VL1824	23 %	1,67	35 %	2,03	48 %	2,51
9	SP	VL2440	4 %	1,14	18 %	1,58	34 %	2,10
10	RESTRAINT	VL1218	— 5 %	0,83	— 4 %	0,86	0 %	1,00
10	DTS	VL0612	77 %	3,80	17 %	1,55	44 %	2,46
10	DTS	VL1218	7 %	1,23	3 %	1,09	17 %	1,61
10	DTS	VL1824	2 %	0,95	— 4 %	0,76	12 %	1,38
10	HOK	VL1218	— 12 %	0,53	— 5 %	0,82	— 1 %	0,97
10	PGP < 12	VL0006	62 %	2,33	48 %	1,99	87 %	3,02
10	PGP < 12	VL0612	17 %	1,48	19 %	1,51	20 %	1,63
10	PGP > 12	VL1218	0 %	0,98	20 %	1,66	10 %	1,40
10	PMP	VL0612	82 %	4,81	98 %	5,31	45 %	2,81
10	PMP	VL1218	62 %	2,86	87 %	3,89	64 %	3,17
10	SP	VL1218	8 %	1,21	56 %	2,69	95 %	3,65
10	SP	VL1824	48 %	2,53	62 %	2,95	37 %	2,09
10	SP	VL40XX	47 %	2,92	16 %	1,68	36 %	2,57
11	DTS	VL1218	0 %	0,99	57 %	2,85	33 %	2,17
11	DTS	VL1824	— 1 %	0,98	0 %	1,00	5 %	1,20
11	DTS	VL2440	— 11 %	0,54	— 10 %	0,56	— 2 %	0,94
11	PGP < 12	VL0006	24 %	1,63	37 %	1,86	61 %	2,51
11	PGP < 12	VL0612	11 %	1,37	14 %	1,46	22 %	1,71
11	PGP > 12	VL1218	3 %	1,09	26 %	1,88	21 %	1,70
16	DTS	VL0612	20 %	1,58	18 %	1,51	35 %	2,07
16	DTS	VL1218	11 %	1,34	27 %	1,82	32 %	1,93
16	DTS	VL1824	— 6 %	0,80	3 %	1,08	19 %	1,63
16	DTS	VL2440	— 9 %	0,65	4 %	1,14	2 %	1,08
16	HOK	VL1218	58 %	2,69	67 %	2,91	38 %	2,19
16	HOK	VL1824	53 %	2,66	19 %	1,66	17 %	1,56
16	PGP < 12	VL0006	65 %	2,47	81 %	2,32	31 %	1,60
16	PGP < 12	VL0612	17 %	1,49	24 %	1,62	19 %	1,53
16	PGP > 12	VL1218	48 %	2,68	23 %	1,75	49 %	2,63

16	SP	VL1218	72 %	3,29	48 %	2,60	38 %	2,26
16	SP	VL1824	20 %	1,68	— 4 %	0,87	21 %	1,65
16	TM	VL1824	— 11 %	0,65	12 %	1,36	16 %	1,48
17	RESTRAINT	VL1218	17 %	1,84	6 %	1,16	14 %	1,44
17	DTS	VL0612	5 %	1,09	21 %	— 0,85	29 %	1,47
17	DTS	VL1218	50 %	2,57	49 %	2,19	45 %	2,16
17	DTS	VL1824	1 %	0,98	3 %	1,08	5 %	1,13
17	DTS	VL2440	— 10 %	0,60	— 7 %	0,73	— 7 %	0,66
17	PGP < 12	VL0006	60 %	2,20	47 %	2,17	39 %	1,98
17	POP < 12	VL0612	26 %	— 0,75	34 %	1,89	38 %	2,04
17	PGP > 12	VL1218	— 20 %	0,17	20 %	1,76	35 %	2,16
17	SP	VL1218	144 %	5,24	81 %	3,31	228 %	6,37
17	SP	VL2440	— 3 %	0,78	— 8 %	0,73	8 %	1,25
17	TBB	VL1218	11 %	1,22	125 %	3,36	57 %	2,37
17	TBB	VL1824	— 7 %	0,79	9 %	1,27	15 %	1,47
17	TBB	VL2440	— 9 %	0,63	— 16 %	0,45	— 7 %	0,74
17	TM	^ GL1218	188 %	4,88	313 %	5,01	189 %	3,71
17	TM	VL1824	13 %	1,42	27 %	2,01	19 %	1,46
17	TM	VL2440	— 4 %	0,82	— 5 %	0,80	12 %	1,44
18	RESTRAINT	VL1218	— 20 %	0,21	35 %	2,39	23 %	1,88
18	DTS	VL0612	13 %	1,40	130 %	5,34	103 %	4,39
18	DTS	VL1218	38 %	2,41	113 %	5,18	123 %	5,47
18	DTS	VL1824	8 %	1,31	2 %	1,06	0 %	0,96
18	DTS	VL2440	— 18 %	0,34	0 %	0,99	— 10 %	0,64
18	HOK	VL1218	138 %	4,69	153 %	4,15	139 %	3,53
18	PGP < 12	VL0006	230 %	5,18	186 %	4,65	177 %	4,72
18	PGP < 12	VL0612	11 %	1,00	— 1 %	0,89	9 %	1,24
18	SP	VL2440	— 3 %	0,89	2 %	1,09	10 %	1,33
18	TM	VL2440	— 7 %	0,76	30 %	2,11	10 %	1,35
19	DTS	VL1218	43 %	2,48	22 %	1,45	27 %	1,87
19	DTS	VL1824	— 10 %	0,58	— 7 %	0,71	8 %	1,25
19	HOK	VL1218	12 %	1,41	9 %	1,30	32 %	2,04
19	HOK	VL1824	— 17 %	0,36	— 8 %	0,69	— 3 %	0,91
19	PGP < 12	VL0006	126 %	3,90	98 %	3,35	110 %	3,75
19	PGP < 12	VL0612	25 %	1,75	19 %	1,51	20 %	1,73
19	PGP > 12	VL1218	12 %	1,44	1 %	1,02	8 %	1,37
19	SP	VL1218	2 %	1,07	11 %	1,10	26 %	1,81
19	SP	VL2440	29 %	2,38	— 1 %	0,97	17 %	1,83
19	SP	VL40XX	36 %	2,84			39 %	2,14

the ab.B8 — Performance of the relative indicator aU`utigaigne on vessels by class length of 2012-2016

		NO. OF BOATS					
Class of LENGTH	2012	2013	2014	2015	2016	Trend	
VLQ006	13.7 %	13.7 %	13.5 %	13.4 %	13.1 %		
VL0612	9.5 %	9.7 %	9.5 %	9.6 %	10.3 %		
VL1218	4.6 %	6.9 %	4.7 %	4.6 %	1.8 %		
VL1824	3.8 %	3.8 %	3.5 %	3.6 %	3.1 %		
VL2440	2.8 %	4.3 %	4.5 %	3.2 %	8.2 %		
VL40XX	0.0 %	28.6 %	28.6 %	7.7 %	15.4 %		
Total	8.8 %	9.4 %	8.9 %	8.8 %	8.5 %		
		GT					
Class of LENGTH	2012	2013	2014	2015	2016	Trend	
VL0006	13.7 %	13.7 %	13.5 %	13.5 %	13.1 %		
VL0612	9.0 %	9.5 %	9.0 %	9.2 %	10.9 %		
VL1218	4.8 %	6.3 %	4.8 %	4.5 %	2.4 %		
VL1824	3.9 %	3.8 %	3.5 %	3.5 %	2.7 %		
VL2440	3.6 %	5.4 %	5.5 %	3.7 %	8.8 %		
VL40XX	0.0 %	23.1 %	23.2 %	8.2 %	16.4 %		
Total	4.6 %	6.0 %	5.5 %	4.6 %	5.2 %		
		KW					
Class of LENGTH	2012	2013	2014	2015	2016	Trend	
VL0006	13.2 %	13.2 %	13.0 %	13.0 %	12.3 %		
VL0612	9.3 %	9.7 %	9.4 %	9.5 %	10.9 %		
VL1218	5.0 %	6.9 %	5.0 %	4.8 %	2.1 %		
VL1824	3.8 %	3.7 %	3.5 %	3.6 %	2.7 %		
VL2440	2.9 %	4.8 %	4.9 %	3.2 %	8.2 %		
VL40XX	0.0 %	20.4 %	20.4 %	7.3 %	21.8 %		
Total	5.6 %	6.8 %	6.1 %	5.6 %	5.4 %		

TableB9 — Dissemination Ratio for GSA., Fishing Technique, TFT, 2102-2016

GSA	SIS199	LFT199	Vessel Utilisation				
			2012	2013	2014	2015	2016
9	RESTRAINT	VL1218	0,44			0,31	
9	DTS	VL0612	0,48	0,58		0,52	0,54
9	DTS	VL1218					
9	DTS	VL1824					
9	DTS	VL2440		1,00	0,94		
9	PGP	VL0006	0,32	0,62	0,37	0,44	0,42
9	PGP	VL0612	0,49	0,48	0,41	0,46	0,39
9	PGP	VL1218	0,49	0,59	0,42	0,48	0,52
9	SP	VL0612					
9	SP	VL1218	0,64		0,46	0,52	0,47
9	SP	VL1824		0,93		0,98	0,96
9	SP	VL2440	0,90		0,94	0,91	0,97
10	RESTRAINT	VL1218	0,92	0,36			0,65
10	DTS	VL0612				0,55	0,62
10	DTS	VL1218			0,69	0,66	
10	DTS	VL1824				0,62	0,81
BIO (I)	HOK	VL1218	0,62	0,95			0,58
BIO (I)	PGP	VL0006	0,56	0,44	0,46	0,55	0,59
10	PGP	VL0612	0,58	0,56	0,50	0,54	0,57
10	PGP	VL1218	0,38	0,52	0,40	0,65	0,51
10	PMP	VL0612		0,61	0,46		0,53
10	PMP	VL1218		0,57	0,54	0,61	0,56
10	SP	VL1218	0,68	0,44	0,59	0,64	0,66
10	SP	VL1824			0,48	0,63	
10	SP	VL2440				0,33	1,00
10	SP	VL40XX	0,93	0,95	1,56	0,29	
11	DTS	VL0612	0,33				
11	DTS	VL1218	0,54	0,63	0,64		0,54
11	DTS	VL1824				0,68	
11	DTS	VL2440		0,50			
11	PGP	VL0006	0,38	0,52	0,62	0,62	0,61
11	PGP	VL0612	0,63	0,59	0,60	0,56	0,43
11	PGP	VL1218	0,58	0,53	0,66	0,52	0,64
16	DTS	VL0612	0,56	0,68			0,67
16	DTS	VL1218		0,68	0,64	0,65	
16	DTS	VL1824		0,69		0,63	
16	DTS	VL2440				0,68	
16	HOK	VL1218			0,54		0,71
16	HOK	VL1824		0,97			
16	PGP	VL0006	0,57		0,47	0,68	
16	PGP	VL0612	0,60	0,51	0,42	0,62	0,63
16	PGP	VL1218	0,68	0,69			



16	SP	VL0612					
16	SP	VL1218					
16	SP	VL1824					0,99
16	SP	VL2440		0,93		0,64	0,50
16	SP	VL40XX	1,00	1,00	1,00		1,00
16	TM	VL1824			0,99		0,93
17	RESTRAINT	VL1218	0,01	0,43	0,55	0,63	0,59
17	DTS	VL0612	0,38	0,54	0,35	0,40	0,41
17	DTS	VL1218	0,64	0,64	0,67	0,54	0,51
17	DTS	VL1824					
17	DTS	VL2440	0,54	0,66		0,55	
17	PGP	VL0006	0,40	0,41	0,38	0,38	0,32
17	PGP	VL0612	0,58	0,41	0,34	0,42	0,37
17	PGP	VL1218	0,09		0,33	0,49	0,68
17	SP	VL0612	1,00	1,00			
17	SP	VL1218					
17	SP	VL2440	0,54		0,55		0,91
17	SP	VL40XX				4,30	1,00
17	TBB	VL1218		0,92	0,65	0,95	
17	TBB	VL1824					
17	TBB	VL2440		0,53	0,95	0,94	0,98
17	TM	VL1218	0,68				0,90
17	TM	VL1824	0,98		0,95		0,93
17	TM	VL2440			0,93	0,93	1,00
18	RESTRAINT	VL1218	0,67	0,38	0,45	0,56	
18	DTS	VL0612	0,95	0,98	0,68		
18	DTS	VL1218			0,62	0,66	
18	DTS	VL1824			0,69	0,91	
18	DTS	VL2440	0,96		0,70	0,91	0,91
18	HOK	VL1218	0,93				0,90
18	PGP	VL0006		0,95	0,67	0,54	0,52
18	PGP	VL0612	0,64			0,66	0,48
18	SP	VL2440		0,92	0,94		
18	TM	VL2440			0,94		
19	DTS	VL0612	0,66	1,00			
19	DTS	VL1218					
19	DTS	VL1824	0,91	0,84			
19	HOK	VL1218	0,69		0,70		
19	HOK	VL1824		0,97		0,62	
19	PGP	VL0006	0,45		0,58	0,64	0,68
19	PGP	VL0612	0,62		0,63	0,69	0,64
19	PGP	VL1218			0,68		0,59
19	SP	VL1218				0,61	
19	SP	VL2440	0,93		1,27	0,33	0,67
9	SP	VL40XX	0,93		1,56	1,00	1,00