



Hellenic Republic  
Ministry of Rural Development and Food  
**Directorate-General for Sustainable Fisheries**

## Greek Fishing Fleet **2016 Annual Report**

pursuant to Article 22 of Regulation (EU) No 1380/2013  
of the European Parliament and of the Council



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## SUMMARY

The Greek fishing fleet consists of a large number of fishing vessels (**15 183 vessels as at 31 December 2016**) with small overall tonnage (**71 762.13 GT**) and engine power (**430 812.49 kW**) engaged in fishing coastal stocks along the extensive shoreline of the Greek mainland and the numerous Greek islands.

The largest segment of the fleet (95.13 %) is made up of vessels fishing multiple species near the coast with static gear. Only 1.61 % of the fleet (245 vessels) target pelagic species, mainly anchovy and sardine, with purse seines (PS) as their principal gear and 1.7 % (258 vessels) target demersal species, mainly striped mullet, red mullet, hake and crustaceans, with bottom otter trawls (OTB) as their principal gear.

To assess the state of fish stocks and quantify the impact of fishing activities, account was taken of older data combined with data obtained by means of the 2014, 2015 and 2016 National Fisheries Data Collection Programme and other available scientific data. It should be noted that the implementation of the National Fisheries Data Collection Programme was gradually resumed from 2012 after an interruption between 2009 and 2011.

The resulting estimates as regards fishing activities and the state of fishable biological stocks are set out by fleet segment in the individual chapters of this report.

Since 2003 the Greek fishing fleet has grown significantly smaller as a result of applying the rules of the Common Fisheries Policy, and in particular the measure providing for permanent cessation of fishing activities with financial assistance from the Operational Programmes for Fisheries. As set out in Section 3, the greatest reduction concerns smaller vessels (overall length <12 m).

Moreover, as can be seen from Section 4, the Greek fishing fleet has complied fully with the entry-exit regime and the reference levels.

## CHAPTER I FLEET DESCRIPTION

### 1. DESCRIPTION OF THE FISHING FLEET

According to the National Register of Fishing Vessels (**extract taken on 18 May 2017**), on 31 December 2016 the Greek fishing fleet consisted of **15 183** active fishing vessels, with a total gross tonnage of **71 762.13 GT** and total engine power of **430 812.49 kW**.

The situation of the Greek fishing fleet as at 31 December 2016, broken down according to OECD-approved length categories, is illustrated in the table below.

OVERALL LENGTH (m)	NUMBER OF VESSELS	GROSS TONNAGE (GT)
0.00-5.99	5 320	3 582.49
6.00-11.99	8 989	25 295.23
12.00-17.99	450	7 950.92
18.00-23.99	246	11 987.65
24.00-29.99	147	15 737.84
30.00-35.99	28	5 969.00
36.00-44.99	3	1 239.00
45.00-59.99	–	–
60.00-74.99	–	–
75 or more	–	–
No engine (of the above)	207	103.05

The Greek fishing fleet, which operates almost exclusively in the Mediterranean, is the EU's largest fleet in terms of the number of vessels. It falls into three broad categories according to the fishing gear used:

#### A. Vessels fishing with static gear

These are mainly fishing vessels operating year-round along the coast of the Greek mainland and around the islands with a variety of gear depending on the time of year and the target species. However, some large, seagoing vessels that are fully equipped to carry out fishing trips lasting for several days even outside Greek territorial waters also operate with static gear.

#### B. Vessels fishing with towed gear

These are vessels fishing with bottom otter trawls (OTB) and operating in Greek and international waters of the Aegean, Ionian and Cretan Seas, in particular in FAO/GFCM GSAs 20, 22 and 23, and in the waters of third countries under bilateral fisheries partnership agreements between the EU and third countries and under private agreements.

#### C. Vessels fishing with encircling nets

These are vessels operating in Greek and international waters of the Aegean and Ionian Seas, fishing with purse seines and targeting various pelagic species.

## DETAILED INFORMATION

### A. VESSELS FISHING WITH STATIC GEAR

Vessels in this category operate mostly in coastal waters and account for most of the Greek fleet (**95.13 %**) in terms of the number of vessels (**14 443**).

The vessels can be broken down as follows in terms of overall length:

- *Small vessels: 14 108 coastal fishing vessels of an overall length of less than 12 metres, with a total gross tonnage of 27 852.17 GT and total engine power of 263 743.87 kW.*
- *Larger vessels: 335 coastal fishing vessels of an overall length of 12 metres or more with a total gross tonnage of 5 877.02 GT and total engine power of 30 540.20 kW.*

Coastal fishing is carried out by small-capacity vessels fishing coastal stocks with relatively high-selectivity and low-yield fishing methods and gear (such as nets, longlines, traps and dredges). These fishing activities are vital for coastal areas of Greece as they help maintain the socio-economic fabric of coastal and island communities.

Fishing is carried out by professional fishermen holding a professional fishing licence for vessels they own.

Moreover, **242** fishing vessels in this category have a licence that additionally includes 'seine nets operated from a vessel at anchor', 'trawls' or 'winch trawls' (SB), though in practice such gear is not used, since Document No 1648/35785 issued by the Ministry of Rural Development and Food on 23 March 2016 suspended its use pending the adoption of a management plan for the use of such gear as required by the Mediterranean Regulation. The vessels operate using other types of (static) gear entered on their licence.

### B. VESSELS FISHING WITH TOWED GEAR

#### – Vessels fishing with bottom otter trawls

In 2016 there were **258** vessels operating mainly with bottom otter trawls, with a total gross tonnage on 31 December 2016 of **24 155.20 GT** and total engine power of **74 717.19 kW**.

Although these vessels represent a small portion of the Greek fishing fleet (**only 1.7 %**), they account for some **25 %** of the total annual fishing yield.

Bottom trawling is a widespread method of fishing in all three GSAs, i.e. the Ionian Sea (GSA 20), the Aegean Sea (GSA 22) and the Cretan Sea (GSA 23), mainly in fishing grounds covering the continental shelf and the first section of the slope (to a depth of around 300 metres) in Greek and international waters of the Mediterranean.

Species found mainly or exclusively on the continental shelf (at depths of 150-200 metres), such as striped mullet (*Mullus barbatus*), striped red mullet (*Mullus surmuletus*), hake (*Merluccius merluccius*), various cephalopods (*Octopus vulgaris*, *Eledona moschata*, *Loligo vulgaris*), crustaceans (*Peneus kerathurus*, *Nephrops norvegicus*), sea bream (*Diplodus annularis*) etc. constitute a significant proportion of the catch (15-20 %).

Around a third of the vessels in this category (**95 fishing vessels**) carry a purse seine as a second set of gear, which is used only in exceptional cases.

The management rules are based on EU Common Fisheries Policy (CFP) regulations, and additional measures regarding temporary bans or area restrictions are laid down under national legislation to ensure sustainable exploitation and the protection of fish stocks.

A management plan for fishing with bottom otter trawls, implemented since early 2014 and approved by the European Commission, applies throughout Greece. The following is laid down in the management plan:

Rules for fishing with the gear in question, additional time restrictions, annual scientific monitoring of the state of the target species in relation to reference indicators, based on a monitoring programme, to ensure they are kept within safe biological limits, and the granting of licences to fish with bottom otter trawls in addition to the vessel's general fishing licence.

**A total of 237 annual fishing licences** were granted in **2016** for the use of bottom otter trawls.

Moreover, a management plan has been established with effect from 1 January 2017 with the aim of reducing discards of demersal species subject to minimum sizes (e.g. species of Mediterranean hake, mullet and prawn) as required by Regulation (EU) No 2017/86 of 20 October 2016 (OJ L 14, 18.1.2017, p. 4).

#### **– Vessels fishing in third-country and international waters of the Mediterranean**

This is the smallest segment of the Greek fishing fleet. According to the National Register of Fishing Vessels, as at 31 December 2016 it consisted of **seven (7) vessels** of an overall length of more than 20 metres fishing with bottom otter trawls, with a total gross tonnage of **1 984.00 GT** and total engine power of **4 156.35 kW**.

Each vessel has a fishing licence supplemented by an appropriate licence to fish in the waters of third countries, typically issued for three months, under a fisheries partnership agreement between the EU and the third country or under a private agreement with the authorities of a third country.

This part of the fleet has shrunk considerably in recent years and continues to do so, as fishing opportunities for such vessels have declined significantly.

Under such fisheries partnership agreements Greece currently has fishing opportunities to catch fish and cephalopods using bottom otter trawls only in the fishing areas of Guinea Bissau. The agreement was not implemented in 2013 because of the political situation in that country, but was reactivated in October 2014 and in 2016 **two vessels** engaged in fishing there. In addition, in 2016 **one vessel** started operating in Sierra Leone under a private agreement.

The fishing vessels operating in international waters of the Mediterranean mainly use bottom otter trawls, purse seines and drift longlines.

Fishing licences are granted under the proviso that national and EU legislation, as well as international rules on the maintenance and management of fish stocks, are complied with.

Specifically with regard to fishing with bottom otter trawls, licences to fish in international waters cannot be used in the geographical sub-regions FAO/GFCM/GSA 20, 22 and 23:

- from 24 May to 15 July every year in all sub-regions; and
- from 16 July to 1 October in part of sub-region 22.

For **2016** a total of **365** annual fishing licences were granted for international waters of the Mediterranean.

#### C. VESSELS FISHING WITH ENCIRCLING NETS

##### – Vessels fishing with purse seines

This segment is made up of **245** vessels fishing mainly with purse seines, with a total gross tonnage of **10 440.79 GT** and total engine power of **44 341.86 kW**.

Vessels using purse seines as their principal gear target mainly small pelagic species, operate only in good weather and, due to the vulnerability of the main target species, do not make long fishing trips (rarely more than 48 hours).

The management rules are based on EU Common Fisheries Policy (CFP) regulations, and additional measures regarding temporary bans or area restrictions are laid down under national legislation to ensure sustainable exploitation and the protection of fish stocks.

A management plan for fishing small pelagic species, i.e. anchovy (*Engraulis encrasicolus*) and sardine (*Sardina pilchardus*), using purse seines was put in place as early as February 2012.

The following is laid down by the management plan:

Rules for fishing with the gear in question, a plan for scientific monitoring of the target species based on reference indicators in order to assess the state of the target stocks, and the granting of a 'fishing licence for small pelagic species (anchovy - sardine)' in addition to the vessel's general fishing licence.

In **2016** a total of **287** annual fishing licences were granted for small pelagic species (anchovy - sardine).

A management plan is being implemented with the aim of reducing discards of small pelagic species (anchovy and sardine) as required by Regulation (EU) No 1392/2014 of 20 October 2014 (OJ L 370, 30.12.2014, p. 21).

#### D. FISHING WITH ANNUAL FISHING LICENCES

##### **D1. CORAL FISHING**

A licence to collect coral in a specific fishing zone, valid for nine months, is issued each year. For 2016, one vessel with a total capacity of **41.0 GT** and total engine power of **202.15 kW** was granted a fishing licence which was not activated by the owner, and in the end the fishing vessel did not engage in coral fishing.

## D2. FISHERIES TARGETING LARGE PELAGIC SPECIES

Fisheries targeting large pelagic species, i.e. bluefin tuna (*Thunnus thynnus*), swordfish (*Xiphias gladius*) and albacore (*Thunnus alalunga*), which are covered by a specific management scheme, are fished by vessels which, in addition to a general fishing licence, have also been granted a licence to fish the species in question with specific authorised fishing gear.

In 2016 a total of 270 licences were granted for catching swordfish (*Xiphias gladius*) and albacore (*Thunnus alalunga*) using LLD, LHM and PS gear, 14 of which concerned albacore using only purse seines (PS).

In **2016** Greece's fishing quota for bluefin tuna (*Thunnus thynnus*) was **182.15 tonnes**. Thirty-seven (**37**) fishing licences were issued for using hooks and lines.

This specific fishing activity was carried out in the period from **1 March 2016** to **8 April 2016**, during which nearly **98.5 %** of the available quota for Greece was caught, i.e. **179.42 tonnes** (live landing weight).

Following an exchange of cod against tuna quotas with Cyprus (**35 tonnes**) and Spain (**60 tonnes**), a total of **95 tonnes** of bluefin tuna were additionally made available to Greece under an agreement concluded at the beginning of December. The fishing activity took place from **5 to 31 December 2016**.

Greece's overall bluefin tuna fishing quota in **2016** was therefore **277.15 tonnes**, and close to **78.5 %** of the total quota was caught.

Our department has cross-checked the total live landed weight with the data entered in the Port Authorities' landing inspection reports, first buyers' sales notes and the tuna catch document (BCD) to ascertain that the quota was not exceeded.

## 2. ANALYSIS OF THE BALANCE BETWEEN FISHING CAPACITY AND FISHING OPPORTUNITIES

### Comments on the state of fish stocks

It should be noted that it has been particularly difficult to assess the balance between fishing capacity and fishing opportunities due to missing relevant data as a result of time series interruptions.

The conclusions for the main fleet segments set out below are thus based on a comparative analysis of available data from recent years and source data obtained by means of the 2016 National Fisheries Data Collection Programme, also taking into account biological and socio-economic factors.

### Small pelagic species

Acoustic surveys carried out in June 2016 in the Aegean Sea and in September 2016 in the Ionian Sea produced the following results as regards the distribution and state of stocks of **small pelagic species**:



### Aegean Sea:

Anchovy stock levels were considerably higher in June 2016 than in June 2014 (up 70 %) and September 2013. However, due to the lack of data for 2015 and other relevant data as well as the short time series, no conclusion can be reached as to whether this is a stable rising trend or just down to temporary fluctuations. A breakdown by length and age shows 1 to be the predominant age of the anchovy stock. The spatial distribution of the anchovy stock appears to be quite extensive, with the largest biomass concentrations mainly found in the Thracian Sea, the Strymonic Gulf, the Thermaic Gulf and the North Evian Gulf.

Sardine stock biomass levels were higher in June 2016 than in June 2014 (up 47 %) and September 2013. Due to the lack of data for 2015 combined with the short time series and the absence of data on year-on-year changes, no firm conclusions can be reached on the state of the stock. As regards the spatial distribution of the sardine stock, the largest biomass concentrations are in the Thracian Sea, in particular east and west of Thassos, the Inner Thermaic Gulf and the northern part of the Evian Gulf. A breakdown by length and age shows 1 to be the predominant age of the sardine stock.

### Ionian Sea:

In 2016 the largest biomass concentrations of anchovy were mainly found in the Ambracian Gulf, the Gulf of Patras, the Inner Ionian sea towards the mainland and the Gulf of Corfu. The largest concentrations of sardine were mainly found in the Ambracian Gulf, and to a much lesser extent in the Gulf of Corfu and the Gulf of Patras.

Anchovy stock levels were higher in September 2016 than in 2015, 2014 and 2013, but the increase is not as significant as that seen in the Aegean. The anchovy stock thus seems to have remained largely stable over the three-year period, whereas sardine stocks were as abundant in September 2016 as they were in 2015, but lower than in 2014 and at levels similar to 2013. A breakdown by length and age of the anchovy and sardine stocks shows a small age range for both species (0-3 years), with 0-1 the predominant age. Larger variations were observed for the sardine stock than for the anchovy stock. The state of the stocks cannot be reliably assessed, as four years of estimates are not sufficient and no surveys had been conducted in the area previously.

In the Ambracian Gulf, great abundance and shoal density were observed down to a depth of 15 m in 2016, as was also the case in the three previous years. No shoals were observed at greater depths. As in 2014, reduced oxygen levels or even hypoxia were observed at greater depths, which means that any concentration of fish is necessarily found at more shallow depths.

**Table A3.1b.4.** Estimated anchovy biomass in the Aegean and Ionian Seas by age group, based on the results of acoustic surveys carried out in June and September 2016, respectively.

Aegean Sea			Ionian Sea		
Age	Number of fish	Biomass (t)	Age	Number of fish	Biomass (t)
0	4 602 312	9.79	0	7 212 225	27.00
1	14 839 527 721	75 876.17	1	2 662 211 994	19 980.51
2	163 711 022	1 644.53	2	9 246	0.14
3	30 440	0.64	3	0	0.00
Total	15 007 871 495	77 531.13	Total	2 669 433 465	20 007.64

**Table A3.1b.6.** Estimated sardine biomass in the Aegean and Ionian Seas by age group, based on the results of acoustic surveys carried out in June and September 2016, respectively.

Aegean Sea			Ionian Sea		
Age	Number of fish	Biomass (t)	Age	Number of fish	Biomass (t)
0	966 972 951	9 860.10	0	138 747 942	1 249.11
1	1 066 843 733	13 852.79	1	156 220 986	1 926.70
2	486 774 409	7 364.39	2	29 602 203	581.87
3	0	0.00	3	0	0.00
Total	2 520 591 093	31 077.28	Total	324 571 131	3 757.68

For a complete assessment of the state of the stocks compared to the reference points, the acoustic survey data needs to be assessed in relation to data on monthly landings and discards, including the demographic composition of the landings, which is not available for 2015 but only for 2014 and 2016.

#### Demersal species

Estimates show that the hake stock is in a precarious state, as according to the preliminary estimates of experts of the National Fisheries Data Collection Programme regarding the biological indicators for demersal species in the Aegean (GSA 22), the F/F<sub>msy</sub> ratio for this species is higher than 1 (maximum permissible exploitation ratio).

An indicator value above 1 means that, on average, a fleet segment depends for its revenue on fishing opportunities which in structural terms have been set above the levels of exploitation allowing maximum sustainable yields (MSY) to be achieved. This may be a sign of imbalance if it appears for three successive years.

In accordance with the precautionary approach, which is a basic principle of the Common Fisheries Policy, and to pursue the CFP objectives of conserving living aquatic resources, protecting marine ecosystems and promoting their sustainable exploitation, appropriate management measures should be taken based on adequate scientific evidence.

***Reducing fishing capacity by scrapping vessels that use net and longline and bottom otter trawls as fishing gear and that target this specific species among others, could help achieve this objective.***

In this context, the economic viability of the fleet segment consisting of small coastal vessels (less than 12 m in length), irrespective of gear, has been analysed based on data available under the National Fisheries Data Collection Programme, with 2015 as the year of reference. The results of the analysis show that, based on the return on investment indicator versus the next best alternative (RoFTA), return on investment for this segment of the fleet is negative.

Over time, the 'observation-based' technical indicator shows a downward trend for small-scale coastal fishing in the period from 2009 to 2016. Prices fetched in 2016, compared to 2009 prices, have fallen by 13.49 %, 13.68 % and 33.08 %, respectively, for fleet segments VL0006, VL0612 and VL1218.

For 2016 the 'observation-based' indicator value for fleet segment VL0006 is 0.65, which is a sign of under-exploitation ('red light') and possibly of redundant technical capacity.

For fleet segment VL0612 the indicator value for 2016 is 0.73, which is largely considered to correspond to a consistent level of activity ('green light').

It should be noted that this specific indicator fluctuates at values close to 'red light' levels.

The economic crisis in Greece (reduced fishing effort due to the cost of fuel and the fall in sales prices for catches) is likely to have contributed to the above indicator values.

Another factor that is likely to have influenced the indicator's negative trend is the higher age of the fishermen, who may therefore be less able or motivated to make regular fishing trips.

## VESSEL USE INDICATORS

Year	Fleet cat.	Length class	TECHNICAL INDICATOR (obs.)	TECHNICAL INDICATOR (theor.)
2016	OTB	VL1218	0.34	0.25
		VL1824	0.80	0.73
		VL2440	0.84	0.80
	PS	VL1218	0.40	0.30
		VL1824	0.58	0.53
		VL2440	0.79	0.68
	Coastal	VL0006	0.66	0.45
		VL0612	0.73	0.59
		VL1218	0.24	0.20
2015	OTB	VL1218	0.41	0.25
		VL1824	0.83	0.74
		VL2440	0.86	0.81
	PS	VL1218	0.41	0.32
		VL1824	0.65	0.55
		VL2440	0.88	0.71
	Coastal	VL0006	0.68	0.43
		VL0612	0.75	0.56
		VL1218	0.25	0.19
2014	OTB	VL1218	0.36	0.23
		VL1824	0.74	0.68
		VL2440	0.76	0.75
	PS	VL1218	0.36	0.29
		VL1824	0.61	0.50
		VL2440	0.73	0.64
	Coastal	VL0006	0.72	0.41
		VL0612	0.81	0.53
		VL1218	0.34	0.18
2013	OTB	VL1218	0.38	0.24
		VL1824	0.77	0.70
		VL2440	0.77	0.79
	PS	VL1218	0.38	0.30
		VL1824	0.63	0.51
		VL2440	0.74	0.66
	Coastal	VL0006	0.75	0.42
		VL0612	0.83	0.55
		VL1218	0.35	0.19

2012	OTB	VL1218	0.37	0.24
		VL1824	0.77	0.71
		VL2440	0.79	0.76
	PS	VL1218	0.38	0.30
		VL1824	0.63	0.52
		VL2440	0.75	0.66
	Coastal	VL0006	0.75	0.42
		VL0612	0.85	0.56
		VL1218	0.36	0.19
2011	OTB	VL1218	0.38	0.24
		VL1824	0.77	0.70
		VL2440	0.78	0.76
	PS	VL1218	0.37	0.30
		VL1824	0.63	0.53
		VL2440	0.74	0.68
	Coastal	VL0006	0.75	0.43
		VL0612	0.85	0.56
		VL1218	0.35	0.19
2010	OTB	VL1218	0.37	0.24
		VL1824	0.76	0.72
		VL2440	0.80	0.79
	PS	VL1218	0.37	0.30
		VL1824	0.64	0.51
		VL2440	0.76	0.66
	Coastal	VL0006	0.76	0.42
		VL0612	0.84	0.54
		VL1218	0.35	0.19
2009	OTB	VL1218	0.38	0.24
		VL1824	0.76	0.72
		VL2440	0.78	0.78
	PS	VL1218	0.37	0.30
		VL1824	0.64	0.53
		VL2440	0.74	0.68
	Coastal	VL0006	0.76	0.43
		VL0612	0.85	0.56
		VL1218	0.35	0.19

### 3. REDUCTION IN FISHING CAPACITY

The overall number of Greek fishing vessels has dropped sharply in recent years.

The withdrawal of vessels with financial support, as provided for by Council Regulation (EC) No 1198/2006, is the main reason the number of vessels in the Greek fleet has fallen over the past years.

In 2016, according to data provided by the Managing Authority for the 2007-2013 Fisheries Operational Programme (Measure 1.1), no fishing vessels were withdrawn from the Greek fishing fleet with financial support, meaning there was no reduction in fleet capacity for this reason.

Overall, between 1 January 2003 and 31 December 2016 the size of the fishing fleet was reduced, with and without financial support, by 3 777 vessels (**19.92 %**), and fishing capacity fell by **29.26 %** in terms of gross tonnage (GT) and **26.83 %** in terms of engine power (kW).

In accordance with the Common Fisheries Policy, Greece manages the fishing capacity of its fleet in such a way that engine power (kW) and tonnage (GT) are kept in check in relation to the reference levels.

Any new fishing capacity added to the fleet, for which no financial support is given, is always accompanied by the mandatory withdrawal of corresponding capacity without financial support.

#### 4. COMPLIANCE WITH THE ENTRY-EXIT REGIME AND FLEET REFERENCE LEVELS

Compliance with the entry-exit regime provided for in Article 7 of Regulation (EC) No 1013/2010 is assessed on the basis of the following tables, which show the calculated baseline of the entry-exit regime and the reference levels as at **31 December 2016**, based on the most recent update of the National Register of Fishing Vessels kept by the Directorate for Fisheries Control of the Ministry of Shipping and Island Policy.

##### A. Calculation of the baseline (GT<sub>03</sub> and kW<sub>03</sub>) on 1 January 2003

GT <sub>FR</sub> (1.1.2003)	GT <sub>1</sub>	GT <sub>2</sub>	GT <sub>3</sub>	GT <sub>4</sub>	GT <sub>03</sub>
101 438	0	0	4 526	0	105 964

kW <sub>FR</sub> (1.1.2003)	kW <sub>1</sub>	kW <sub>2</sub>	kW <sub>3</sub>	kW <sub>4</sub>	kW <sub>03</sub>
588 762	0	0	1 234	0	589 996

##### B. Management of entries/exits as at 31 December 2016

		GT		kW	
1	Fishing capacity on 1.1.2003	GT <sub>FR</sub>	101 438	kW <sub>FR</sub>	588 762
2	Fishing capacity under the entry-exit regime	GT <sub>03</sub>	105 964	kW <sub>03</sub>	589 996
3	Entry of vessels of over 100 GT with public support	GT <sub>100</sub>	0	kW <sub>100</sub>	0
4	Other entries or capacity increase (not included in 3 or 5)		34 098		176 488
5	Increase in GT tonnage for safety reasons	GT <sub>s</sub>	13		
6	<b>TOTAL ENTRIES (3+4+5)</b>		34 111		176 488
7	Exit with public support before 1.1.2007	*GT <sub>a1</sub>	12 628	kW <sub>a</sub>	71 372

8	Exits with public support after 1.1.2007	*GT <sub>a2</sub>	16 540		77 110
9	Other exits (not included in 7 or 8)		34 622		185 952
10	<b>TOTAL EXITS (7+8+9)</b>		63 789		334 434
11	Engine power replaced with public support and involving a reduction in power			kWr	0
12	<b>Fleet fishing capacity on 31.12.2016 (1+6-10)</b>	GTt	<b>71 760</b>	kWt	<b>430 817</b>
13	<b>Upper limit (ceiling) on 31.12.2016</b>		<b>77 598</b>		<b>441 515</b>

Rows 1, 3, 4, 5, 7, 8, 9, 11, 12: data entered in the National Register of Fishing Vessels

Row 13: GT ceiling = 2-35%3+5-99%7-96%8 and kW ceiling = 2-35%3-7-8-20%11

Based on the table, the available fishing capacity of the Greek fishing fleet is 5 838 GT and 10 698 kW.

### C. Reference levels on 31 December 2016

		GT		kW	
1	Reference levels on 1.1.2003	R(GT) <sub>03</sub>	119 910	R(kW) <sub>03</sub>	653 497
2	Entry of vessels of over 100 GT with public support	GT <sub>100</sub>	0	kW <sub>100</sub>	0
3	Tonnage increase in GT for safety reasons	GTs	13		
4	Exit with public support up to 31.12.2006	GTa1	12 628	kWa	71 372
5	Exit with public support after 1.1.2007	GTa2	16 540		77 110
6	Engine power replaced			kWr	0
7	<b>Fleet fishing capacity on 31.12.2016</b>	GTt	<b>71 760</b>	kWt	<b>430 817</b>
8	<b>Reference levels as at 31 December 2016</b>	R(GT)t	<b>91 544</b>	R(kW)t	<b>505 016</b>

Situation according to data in the National Register of Fishing Vessels

Row 8: R(GT)t=1-35%2+3-99%4-96%5 and R(kW)t=1-35%2-4-5-20%6

It should be noted that the National Fisheries Register (NFR) is updated by entering data from a large number of local port authorities; any changes approved by the administration may therefore appear in the CFR with a certain delay. The process is being constantly improved to minimise delays.

Based on the above table, the Greek fishing fleet was in compliance with the reference levels on 31 December 2016.

The table also shows that the fishing capacity of the Greek fleet does not exceed the maximum fishing capacity limits set out in Annex II to Regulation (EU) No 1380/2013 (84 123 GT and 469 061 kW).

## 5. FLEET MANAGEMENT SYSTEM

In terms of numbers the Greek fishing fleet is the largest in the EU. It is mainly made up of small coastal vessels that largely use selective gear, although the gear varies significantly depending on time and location.

Inspecting the fishing activity of small coastal vessels is particularly challenging and costly, as vessels are spread widely across the country's coastal and island regions.

To ensure compliance with the requirements of the revised Common Fisheries Policy and the provisions on the control of fishing activities (Council Regulation (EC) No 1224/2009), the organisational structure of the inspection services is frequently updated with a view to modernising the national penalty system and improving/extending the use of new technologies.

*The action plan on inspections launched in 2011 focuses on the following priority areas:*

- modernising the structure and organisation of inspection authorities and improving their coordination; participation of fishery authorities in inspections, especially in markets, and therefore increasing the number of inspectors and means of inspection (patrol vessels); providing information and training to inspectors;
- updating fishery legislation;
- using IT and modern technology systems to ensure the completeness and reliability of data on vessel fishing activities, inspections, the point system, exchange of data with other registers and their use in real time, improving the monitoring and control system for tuna catches and implementing the monitoring and control system for swordfish catches;
- financing actions, systems, means, equipment, organisations and training of inspectors;
- designing and implementing programmes for the monitoring of fishing activities, tuna and swordfish species and marketing, and performing administrative checks on the import and re-export of fishery products from and to third countries.

## 6. ADAPTING ADMINISTRATIVE FLEET MANAGEMENT PROCEDURES

Since 2015 improvements have been made with respect to the organisational structure and competences of the single control authority and the fisheries inspection authorities of this Ministry and the Ministry of Shipping and Island Policy; upgrade of the Fisheries Monitoring Centre (FMC); full operation of the integrated fisheries monitoring system (IFMS) for the electronic registration and monitoring of data on fishing activities and marketing, which is currently being extended and upgraded; continued procurement and financing of VMS and ERS equipment for fishing vessels; preparation and/or harmonisation with EU rules on the marketing control and the setting up of a points system; implementation of electronic registration and monitoring of tuna catches and information/training on new systems provided to users at inspection authorities and other institutions.

Action was also taken with regard to:



- Inspection and control programmes relating to fishing activities on board the vessels, in port, at ports where fish products are landed and traded and in auction halls operating throughout Greece. Where infringements were found, penalties were imposed as provided for in each case, such as fines, suspension of the vessel's and master's fishing licence for a certain number of days and confiscation of products.
- A special control and inspection programme for tuna and participation in the joint programme for the use of instruments coordinated by the European Fisheries Control Agency (EFCA), performing checks and inspections on fishing activities carried out by fishing vessels and other economic operators and implementing joint inspection and monitoring activities. The aforementioned actions were carried out using a sufficient number of operational means (sea/air/land) and a corresponding number of inspectors, responsible for the monitoring, control and surveillance of fishing activities.

### **Improving the management system**

Apart from setting up and operating an effective and reliable management system, which to a large extent has been achieved, improving the management of the fishing fleet also requires continuous recording of data to allow management measures to be designed in such a way that they respond to actual needs.

An example of a measure implemented with this in mind is Decision No 6719/146097 of 29 December 2016 of the Ministry of Rural Development and Food (Government Gazette, Series II, No 4348), which established a management plan for fishing with 'boat seines' or 'winch trawls' (SB) targeting picarel (*Spicara smaris*) and bogue (*Boops boops*) in specific areas of Greece. However, the procedure for publishing the relevant Commission implementing regulation establishing, by way of derogation, the minimum distance from the coast and the minimum depths for use of this gear in the Official Journal of the EU has not yet been completed.

The problem encountered at this stage of our endeavours to improve the management of the fishing fleet is that - due to the delay in implementing the National Fisheries Data Collection Programme over the past few years – the available data is not complete because they do not include the time series required for full scientific documentation.

In addition, also due to the administrative procedure in place for the submission and official receipt of the relevant report, the results from the previous year are not available at the time of assessing the situation of the fleet. This means that the action plan is not included when the annual fleet report is submitted, although the results are later assessed in order to draw up the relevant measures.

Against this background, please note that the financial results and economic indicators presented in this analysis have been calculated on the basis of the latest available information, obtained from a survey collecting socio-economic data.

Under Commission Decision 2010/93/EU and the National Fisheries Data Collection Programme, data on the value of landings (weight and price of catches) and the fishing effort (days at sea) must be collected on a monthly basis using the transversal variables methodology.

Due to the delay in implementing the national programme, the data in question is incomplete as neither the recorded landings nor the fishing effort correspond to a full year. The data in question cannot therefore be used to draw up the relevant chapter.

This creates a major problem when it comes to drawing up the chapter on Greece to be included in the annual STECF report<sup>1</sup>. The report mentions the fact that the data submitted by Greece is incomplete, which creates difficulties in terms of further analysis.

Data on the value of landings collected by means of the questionnaire on socio-economic issues cannot be used in those reports since it was not collected in line with the transversal variables methodology.

We are trying to find a solution to these problems, as we managed to do when the 2014 programme was carried out, as pointed out by the responsible Commission department. Moreover, the programme is expected to be included for financing in the 2014-2020 Fisheries and Maritime OP, which will ensure its smooth application from the start of each year, considerably improving sector mapping and fishing fleet management.

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<sup>1</sup> See the 2016 report: Scientific, Technical and Economic Committee for Fisheries (STECF), The 2016 Annual Economic Report on the EU Fishing Fleet (STECF 16-11); Publications Office of the European Union, Luxembourg, EUR 27428 EN, JRC 97371, 434 pp.

## CHAPTER II

### SOCIO-ECONOMIC DATA CONCERNING THE SEA FISHERIES SECTOR

The data presented in this report is the most recent available, based on the 2016 report of the National Fisheries Data Collection Programme combined with an analysis of data from previous years.

The economic indicators for the Greek sea fishing fleet presented below have been calculated on the basis of economic data collected under the National Programme for the Collection, Processing and Use of Data in the Fisheries Sector and pertain to 2015. The detailed economic data used to calculate the economic indicators has already been sent to the Ministry of Rural Development and Food and is included in the 2016 annual report for that Programme.

The socio-economic data collected mainly concerns fishing vessel expenditure, in particular energy (cost of fuel) and labour costs. Labour costs are made up of crew salaries and wages and the imputed value of unpaid labour carried out on board by the vessel's owner(s). Moreover, account is taken of socio-economic data pertaining to repair and maintenance costs, variable costs other than fuel and labour costs (such as expenses for food and bait, marketing costs etc.), non-variable costs (accountant fees, vessel insurance costs, etc.) and the cost of annual depreciation.

#### 1. Return on investment versus the next best alternative

The RoFTA (Return on Fixed Tangible Assets) indicator has been calculated as follows for each fleet segment:

$$RoFTA (\%) = \text{net profits} / \text{value of fixed assets}$$

The net profit is obtained by subtracting crew expenses, unpaid labour, energy costs, repair and maintenance costs, other variable costs, non-variable costs and depreciation from landing revenue<sup>2</sup>. The value of fixed assets is the replacement value of the vessel, since there are no estimates for intangible assets.

As shown in the table below, the return on investment is then compared to the long-term, low-risk interest rate calculated by the European Central Bank (in accordance with the guidelines set out in COM(2014) 545).

Due to high interest rate volatility over the past few years, the arithmetic mean for 2010-2014 (12.86 %) is used.

As can be seen from the figures in the table, return on investment is positive and above the long-term, low-risk interest rate for the following segments: demersal trawls 18-24 (DTS 18-24), pots and traps 12-18 (FPO 12-18), longlines 12-18 (HOK 12-18), purse seines 12-18 (PS 12-18) and purse seines 24-40 (PS 24-40). For the purse seines 18-24 (PS 18-24) segment, return on investment is positive but below the long-term, low-risk interest rate.

<sup>2</sup> It should be noted that under the National Programme for the Collection, Processing and Use of Data in the Fisheries Sector, the stratified random sampling method is used to collect economic data. For some segments of the fleet the data eventually collected is based on a very small sample of vessels. The number of questionnaires collected is shown in detail in the table. Also, the data regarding the vessels' revenue was not obtained using the transversal variables methodology provided for by the programme, due to the significant delay in implementing it. The economic indicators concerning the revenue of the various segments of the fleet are based on data from an annual estimate obtained by means of a survey to collect economic variables under the above programme, for which the Rural Economy and Sociology Institute of ELGO-Dimitra is responsible.

Lastly, for the other fleet segments the indicator is negative (Table 1).

## **2. Current income to non-profit income ratio**

Non-profit income (NPI) is calculated as follows:

$$\text{NPI} = (\text{fixed costs}) / (1 - [\text{variable costs} / \text{current income}])$$

Variable costs include crew expenses, unpaid labour, energy costs, repair and maintenance costs and other variable costs. Fixed costs include non-variable costs and depreciation. Finally, current income refers to revenue from landings.

As a next step the current income to NPI ratio is calculated.

The NPI and the current income to NPI ratio have also been calculated net of depreciation.

As can be seen from the table, the ratio is positive for most fleet segments, with the exception of pots and traps 0-6 (FPO 0-6), pots and traps 6-12 (FPO 6-12), longlines 0-6 (HOK 0-6) and longlines 6-12 (HOK 6-12). For the fleet segments bottom otter trawls 18-24 (DTS 18-24), pots and traps 12-18 (FPO 12-18), longlines 12-18 (HOK 12-18) and all purse seine segments, the ratio is above 1.

The current income/NPI ratio (net of depreciation) is also above 1 for two other fleet segments, that is demersal trawls 24-40 (DTS 24-40) and nets 6-12 (DFN 6-12).

For all other fleet segments the ratio is positive but below 1.

**Table 1: Estimated economic indicator values for segments of the Greek fishing fleet in 2015\***

Vessel category	DTS 18-24	DTS 24-40	DFN 0-6	DFN 6-12	DFN 12-18	FPO 0-6	FPO 6-12	FPO 12-18	HOK 0-6	HOK 6-12	HOK 12-18	PS 12-18	PS 18-24	PS 24-40
RoFTA (%)	43.97	-4.99	-39.08	-18.05	-29.49	-172.39	-55.81	214.48	-48.83	-34.88	45.07	45.09	4.86	96.32
Return on investment - long-term risk-free interest rate	31.10	-17.85	-51.95	-30.91	-42.36	-185.25	-68.68	201.61	-61.69	-47.74	32.21	32.23	-8.01	83.45
NPI	10 695 230	58 897 846	2 294 093 993	238 167 007	398 159 640	-275 344	-37 083 280	108 142	-59 051 015	-398 798 826	4 967 783	6 452 114	29 841 008	4 235 191
Ratio (current income/NPI)	2.18	0.84	0.02	0.46	0.01	-3.65	-0.21	7.93	-0.29	-0.12	2.55	2.08	1.15	3.81
NPI (net of depreciation)	2 745 410	10 574 488	814 562 789	53 319 807	60 768 400	-71 793	-15 960 047	15 696	-14 956 104	-57 010 175	548 897	1 974 330	5 770 606	1 195 152
Ratio (current income/NPI net of depreciation)	8.51	4.68	0.04	2.08	0.09	-13.99	-0.49	54.66	-1.14	-0.87	23.08	6.81	5.93	13.52
Collected questionnaires	22	38	162	260	38	21	57	3	180	126	30	23	31	8

\* The indicators are based on estimates, given that the data concerning the vessels' revenue was not obtained using the transversal variables methodology provided for by the programme due to the delay in implementing it.

### Structure of the Greek fleet, fishing effort, employment and fishing yield

As can be seen from the data in Table A.1.a.3, in 2015 the Fishing Vessels Register comprised 15 624 vessels with a total capacity of 74 699 GT and total engine power of 446 239 kW, the average age of the vessels being 29.06 years. Compared to 2014, the number of vessels and total capacity and engine power have increased, and the average age of the vessels has risen by 2.84 %. Compared to 2012, however, all the above variables, with the exception of the average age of the vessels, have fallen slightly (between 2 % and 2.7 %).

**Table A.1.a.3. Structure of the Greek fishing fleet, fishing effort, employment and fishing yield, 2012-2015**

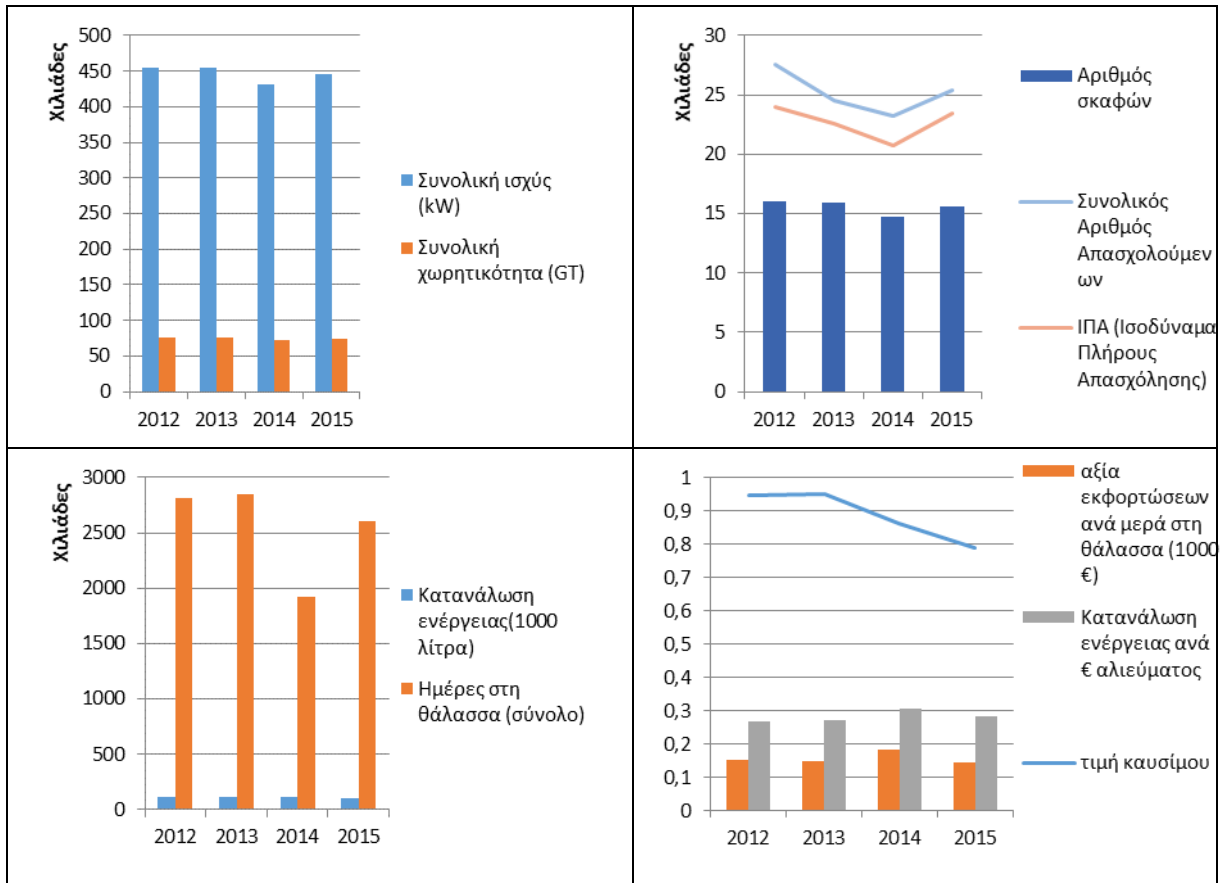
Variable		2012	2013	2014	2015	% change 2015-14	% change 2015-12
Structure	Number of vessels	16 063	15 954	14 755	15 624	5.89 %	↗ -2.7 %
	Number of inactive vessels	1 531	1 202	1 155	1 210	4.76 %	↗ -21.0 %
	Average age of vessel (years)	26.78	27.61	28.26	29.06	2.83 %	↗ 8.5 %
	Gross tonnage (GT)	76 211	75 566	72 843	74 699	2.55 %	↗ -2.0 %
	Total capacity (kW)	455 640	454 565	431 166	446 239	3.5 %	↗ -2.1 %
	Number of businesses	13 918	13 871	13 666	12 594	-7.84 %	↘ -9.5 %
Employment	Total number of employees	27 559	24 486	23 232	25 407	9.36 %	↗ -7.8 %
	FTE (full-time equivalents)	23 945	22 546	20 780	23 431	12.76 %	↗ -2.1 %
	Average yearly wages per employee (€)	5 967	7 575	6 127	6 274	2.40 %	↗ 5.1 %
	Wages per FTE	6 868	8 227	6 850	6 803	-0.69 %	↔ -0.9 %
Fishing effort	Days at sea (total)	2 815 808	2 843 714	1 921 836	2 603 840	35.49 %	↗ -7.5 %
	Energy costs (€)	109 056 322	108 188 604	92 446 711	84 432 443	-8.67 %	↘ -22.6 %
	Fuel consumption (litres)	115 096 554	113 673 414	107 319 701	107 015 700	-0.28 %	↔ -7.0 %
	Energy cost relative to catch value (€)	0.2549	0.2588	0.2639	0.2232	-15.42 %	↘ -12.4 %
	Energy consumption relative to catch value (€)	0.2690	0.2719	0.3064	0.2828	-7.70 %	↘ 5.1 %
Fishing yield	Value of landings (€)	427 837 048	418 072 659	350 261 580	378 350 308	8.02 %	↗ -11.6 %

As can also be seen from the above table, in 2015 the Greek fleet comprised 12 594 businesses. Comparing the number of businesses with the number of vessels shows that 86 % of the businesses own only one vessel. The table also shows that the number of businesses has fallen by 7.8 % compared to previous years, but that there is no major change as regards the number of vessels owned by each business. The total number of employed persons stands at 25 407, which is an increase on the previous year despite the downward trend seen over the past few years (down by 7.5 % compared to 2012). It is also worth noting that according to the figures in Table A.1.a.3, underemployment in the sea fisheries sector has fallen considerably given the significantly smaller decrease in FTE terms (down 2.1 % from 2012) than in terms of the number of employees.

As regards the fishing effort, the data collected shows that the number of days at sea recorded by the Greek fishing fleet as a whole in 2015 totalled 2 603 840. It should be noted that the increase compared to 2014 is not accurate, since in 2014 this variable was based on only nine months of the year.

The number of sea days can only be compared to 2013 and 2012, when the variable concerned the whole year and the relevant data was collected, as in 2015, by means of the questionnaire on socio-economic issues. Compared to 2012, the number of days at sea has fallen by 7.5 %. The overall quantity of fuel consumed by the Greek fleet the same year is estimated at 107 015 700 litres, which is a marginal decrease compared to 2014 and a 7 % decrease compared to 2012.

**Figure A.1.a.1. Structure, employment, fishing effort and fishing yield of the Greek fleet, 2012-2015**



**Key:** Συνολική ισχύς (kW) = total engine power (kW), Συνολική χωρητικότητα (GT) = total capacity (GT), χιλιάδες = thousands, Αριθμός σκαφών = number of vessels, Συνολικός αριθμός Απασχολούμενων = total number of employees, ΙΠΑ (Ισοδύναμα Πλήρους Απασχόλησης) = FTE (full-time equivalents), Κατανάλωση ενέργειας (1000 λίτρα) = energy consumption (1 000 litres), Ημέρες στη θάλασσα (σύνολο) = days at sea (total), αξία εκφορτώσεων ανά μέρα στη θάλασσα (€ 1 000) = value of landings per day at sea (€ 1 000), Κατανάλωση ενέργειας ανά € αλιεύματος = energy consumption relative to catch value (€), τιμή καυσίμου = cost of fuel

The cost of fuel for the fleet as a whole reached €84 432 443 in 2015. This is a significant drop in relation to both 2014 and 2012 (down 8.67 % and 22.6 %, respectively), mainly due to lower fuel prices but also to reduced fishing effort. The fall in fuel prices in the period from 2012 to 2015 is also reflected in Figure A.1.a.1. Moreover, the data in Table A.1.a.3 shows that the cost of energy relative to catch value fell significantly (by 12.5 %) compared to 2012, as opposed to energy consumption relative to catch value which increased by 5.1 % over the same period.

The value of landings is estimated at €378 350 308. It should be noted that, as in the case of the 'days at sea' variable, the value of landings can only be compared with the corresponding figures

for 2012 and 2013. Compared to 2012 the value of landings fell by 11.6 %, due either to the lower weight of landings or to lower prices. The exact reasons why the value of landings has fallen cannot be determined, as this would require the relevant transversal variables to be collected in accordance with the prescribed procedure for all the relevant years, in order for all the data regarding the species, weight and price of landings to be known.

#### *Expenditure and financial results*

As can be seen from Table A.1.a.4, the sea fishing fleet draws its revenue primarily from the sale of catches and secondly from direct subsidies. Direct subsidies make up less than 1 % of the total revenues and relate to petroleum duty refunds in cases where petroleum is not purchased directly at a duty-free price. Note that, in accordance with Commission Decision 2010/93/EU, reduced duties on inputs such as fuel are not regarded as direct subsidies, whereas refunds of fuel duties are counted as such. Please also note that there is no revenue from using the vessel for activities other than fishing, as this would require a special licence.

The overall revenue of the Greek fishing fleet in 2015 amounted to €380 986 244. As can be seen from the figures in Table A.1.a.4, the vessels did not achieve net profits in 2015. However, the fleet's financial results have improved considerably compared to previous years. The improved profitability compared to 2014, as can be seen from the table, is due primarily to the increased value of landings and secondly to a reduction in certain expenses. It should be noted that the value of landings has not been calculated using the procedure provided for, but by means of the questionnaire on socio-economic issues. It is also worth noting that, as in previous years, revenue more than covers expenditure, not counting the (imputed) value of unpaid labour, resulting in a positive income for the fishermen.

The fleet's expenses totalled €388 411 979 in 2015. The figures in Table A.1.a.4 show that energy is the main cost item for the Greek fleet, accounting for €84 432 443 or 22 % of the overall costs. As already mentioned, energy costs have fallen compared to previous years. Labour costs, in the form of crew salaries and wages and the (imputed) value of unpaid labour, are also significant cost items. These costs total €159 405 192 and account for 41 % of the fleet's overall expenses. Labour costs have increased compared to 2014, especially with regard to crew salaries and wages. The imputed value of unpaid labour, on the other hand, has fallen by nearly 10 % compared to 2012.

Other variable costs, including vessel consumables and marketing costs, are also a significant expenditure item for the fleet as a whole, after crew salaries and wages.

These expenses amount to €78 249 174 and account for 20 % of the fleet's total expenses in 2015. Other variable costs have increased slightly compared to 2014 but have fallen by 7 % compared to 2012. Repair and maintenance costs totalled €35 636 500, which is a slight increase on 2014 although the general trend is falling. Their share of the overall costs remains more or less stable at around 9 %. The annual depreciation of capital value amounts to €24 206 436, or about 6 % of total fishing expenses. Lastly, non-variable costs are a significantly smaller expenditure item at €6 482 234 or 2 % of the fleet's overall expenses and have fallen considerably compared to previous years.



**Table A.1.a.4. Expenditure and financial results in the fisheries sector 2012-2015**

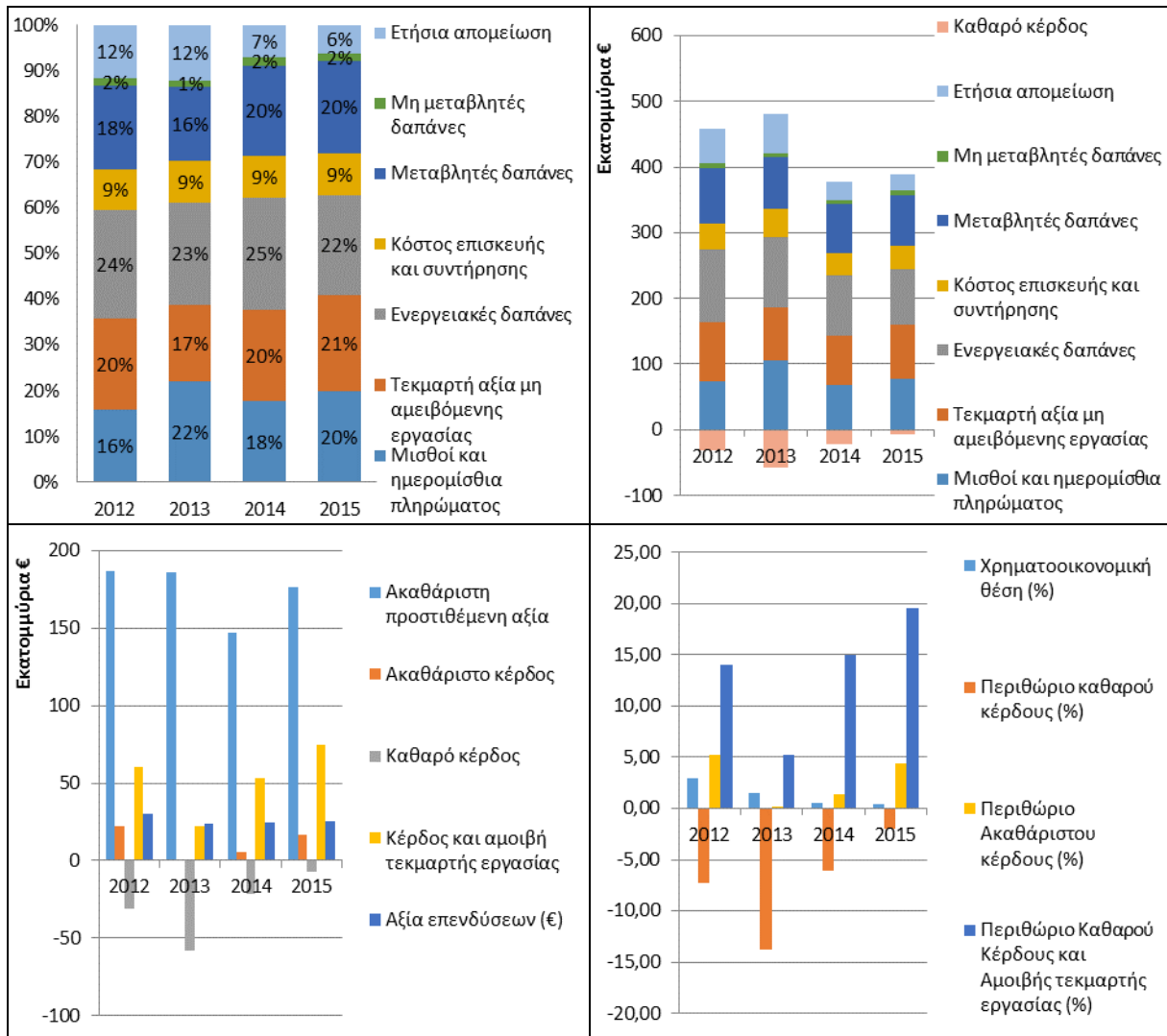
Variable		2012	2013	2014	2015	% 2014-2015	% 2012-2015
Revenue	Value of landings	427 837 048	418 072 659	350 261 580	378 350 308	8.02	↗ -11.57
	Direct subsidies	0	3 747 195	5 075 829	2 635 936	-48.07	↘
Expenses	Crew wages and salaries	73 367 684	105 420 429	67 278 063	77 354 959	14.98	↗ 5.43
	Imputed value of unpaid labour	91 089 486	80 058 019	75 062 991	82 050 233	9.31	↗ -9.92
	Energy costs	109 056 322	108 188 604	92 446 711	84 432 443	-8.67	↘ -22.58
	Repair and maintenance costs	40 144 431	43 168 187	34 308 680	35 636 500	3.87	↗ -11.23
	Other variable costs	83 917 813	77 604 070	74 033 627	78 249 174	5.69	↗ -6.75
	Non-variable costs	7 749 586	6 747 994	7 139 387	6 482 234	-9.20	↘ -16.35
	Annual depreciation	53 514 201	58 675 084	26 844 329	24 206 436	-9.83	↘ -54.77
Financial results	Gross value added	186 968 896	186 110 999	147 409 004	176 185 893	19.52	↗ -5.77
	Gross profit	22 511 726	632 551	5 067 950	16 780 701	231.11	↗ -25.46
	Net profit	-31 002 475	-58 042 533	-21 776 379	-7 425 735	65.90	↗ 76.05
	Profit and remuneration for imputed value of labour	60 087 011	22 015 486	53 286 612	74 624 498	40.04	↗ 24.19
Capital value	Depreciated replacement value of physical capital (€)	226 071 892	242 619 052	113 968 237	99 787 479	-12.44	↘ -55.86
	Value of investments (€)	30 207 167	24 111 423	26 140 333	27 767 435	3.75	↗ -16.13
	Financial position (%)	2.92	1.54	0.55	0.37	-33.17	↘ -87.36
Economic indicators	Net profit margin (%)	-7.25	-13.76	-6.13	-1.95	68.20	↗ 73.10
	RoFTA (%)	-13.71	-23.92	-19.11	-7.44	61.05	↗ 45.74
	Gross value added/(FTE)	27 223	22 622	21 520	25 898	20.34	↗ -4.86
	Gross profit margin (%)	5.26	0.15	1.43	4.40	208.82	↗ -16.29
	Gross value added/revenue	0.44	0.44	0.41	0.46	11.48	↗ 5.82
	Net profit margin and remuneration for imputed value of labour (%)	14.04	5.22	15.00	19.59	30.62	↗ 39.47

As regards other financial results, gross added value has increased by 20.6 % on the previous year but fallen slightly compared to the period from 2012 to 2015. Gross profit amounts to €16 780 701, which is a considerable improvement compared to 2014.

Capital invested in fisheries (total depreciated replacement value of physical capital) amounts to €99 787 479, which is a 12.4 % decrease compared to 2014. The fleet's financial position, i.e. the debt to capital value ratio for all active vessels of the fleet, is 0.37 %, with total investments in 2015 estimated at €25 334 681. This is a slight increase (3.75 %) compared to 2014, despite the general downward trend since 2012.

Lastly, the other economic indicators in Table A.1.a.4 have improved compared to 2014. Specifically, a significant increase compared to the previous year can be observed with regard to net profit margin, gross profit margin, gross added value relative to FTE and revenue, net profit margin and imputed value of unpaid labour. Compared to 2012 there is also an improvement in gross added value relative to revenue, net profit margin, RoFTA and net profit margin and remuneration for imputed value of labour. The revenue, expenditure and financial results of the Greek sea fishing fleet and some other economic indicators are also shown in Figure A.1.a.2.

Figure A.1.a.2. Revenue, expenditure and financial results of the Greek fishing fleet, 2012-2015



**Key:** Ετήσια απομείωση = Annual depreciation, Μη μεταβλητές δαπάνες = Non-variable costs, Μεταβλητές δαπάνες = Variable costs, Κόστος επισκευής και συντήρησης = Repair and maintenance cost, Ενεργειακές δαπάνες = Energy costs, Τεκμαρτή αξία μη αμειβόμενης εργασίας = Imputed value of unpaired labour, Μισθοί και ημερομίσθια πληρώματος = Crew salaries and wages, Καθαρό κέρδος = Net profit, Ακαθάριστη προστιθέμενη αξία = Gross added value, Ακαθάριστο κέρδος = Gross profit, Κέρδος και αμοιβή τεκμαρτής εργασίας = Profit and remuneration for imputed value of labour, Αξία επενδύσεων (€) = value of investments (€), Χρηματοοικονομική θέση (%) = Financial position (%), Περιθώριο καθαρού κέρδους (%) = Net profit margin (%), Περιθώριο ακαθάριστου κέρδους (%) = Gross profit margin (%), Περιθώριο καθαρού κέρδους και αμοιβής τεκμαρτής εργασίας (%) = Net profit margin and remuneration for imputed value of labour (%)

Structure and financial data concerning small and large-scale fishing in Greece

Tables A.1.a.5 and A.1.a.6 sum up information regarding the structure, fishing effort, employment and yield of small-scale and large-scale fishing in Greece, respectively<sup>3</sup>. As can be seen from the tables, 94 % of all the vessels in the fleet engage in small-scale fishing. The figures also reveal a downward trend in the number of vessels in the period from 2012 to 2015, which is clearer for small-scale fishing. In addition, the number of inactive vessels in large-scale fishing is increasing.

<sup>3</sup> Small-scale fishing involves vessels less than 12 m in length. Large-scale fishing involves vessels with a length of 12 m and above.

Vessels engaging in small-scale fishing are older on average, whereas in terms of total capacity and engine power the trend is largely the same for all vessels.

The overall number of employed persons has fallen slightly in small-scale fishing but remains largely stable in large-scale fishing. It is worth noting that in the period from 2012 to 2015, underemployment in large-scale fishing was largely eradicated as FTEs increased steadily until they virtually equalled the overall number of employed persons in 2015.

This is of particular importance as it reflects the efforts made to improve the use of available resources during the crisis years. We would point out that large-scale fishing is mainly based on salaried employment and not unpaid labour by vessel owners as is the case for small-scale fishing. This means that saving resources is of even greater importance in this segment of the fleet (see also Table A.1.a.6). On the other hand, the average salary per employee and FTE fell in the period between 2012 and 2015 for medium-distance vessels.

As regards fishing effort, both the consumption and the cost of energy fell in small-scale fishing and especially in large-scale fishing, as did energy costs relative to the value of catches. Finally, the value of landings dropped significantly in the period from 2012 to 2015, in particular with respect to large-scale fishing. Figure A.1.a.3 shows the price trend for the two main species caught by vessels engaged in large-scale fishing from 2011 to 2016.

The graphs show a downward price trend for both species, which could to a certain extent explain the drop in the value of landings shown by the data collected through the survey.

**Table A.1.a.5. Structure, fishing effort, employment and fishing yield of the Greek small-scale fishing fleet, 2012-2015**

Variable		2012	2013	2014	2015	% change 2015-14	% change 2015-12
Structure	Number of vessels	15 139	15 038	13 850	14 708	6.2	↗ -2.8
	Number of inactive vessels	1 488	1 159	1 088	1 141	4.9	↗ -23.3
	Average age of vessel (years)	27	28	28	29	3.6	↗ 8.5
	Gross tonnage (GT)	30 138	29 897	27 613	29 406	6.5	↗ -2.4
	Total capacity (kW)	287 564	285 456	265 919	280 366	5.4	↗ -2.5
Employment	Total number of employees	22 529	19 708	18 222	20 420	12.1	↗ -9.4
	FTE (full-time equivalents)	19 724	17 885	15 782	18 490	17.2	↗ -6.3
	Average yearly wages per employee	5 744	7 599	6 260	6 218	-0.7	↔ 8.2
	Average yearly wages per FTE	5 029	6 896	5 421	5 630	3.9	↔ 12.0
Fishing effort	Days at sea (total)	–	–	1 828 137	2 443 417	33.7	↗
	Energy costs	57 557 178	60 246 282	52 567 939	49 009 374	-6.8	↘ -14.9
	Energy consumption (litres)	50 283 598	48 705 410	45 752 146	47 823 940	4.5	↗ -4.9
	Energy cost relative to catch value (€)	0.244	0.259	0.259	0.220	-15.0	↘ -9.8
	Energy consumption relative to catch value (€)	0.213	0.210	0.226	0.215	-4.7	↘ 0.8
Fishing yield	Value of landings	235 877 167	232 288 624	202 868 115	222 546 553	9.7	↗ -5.7

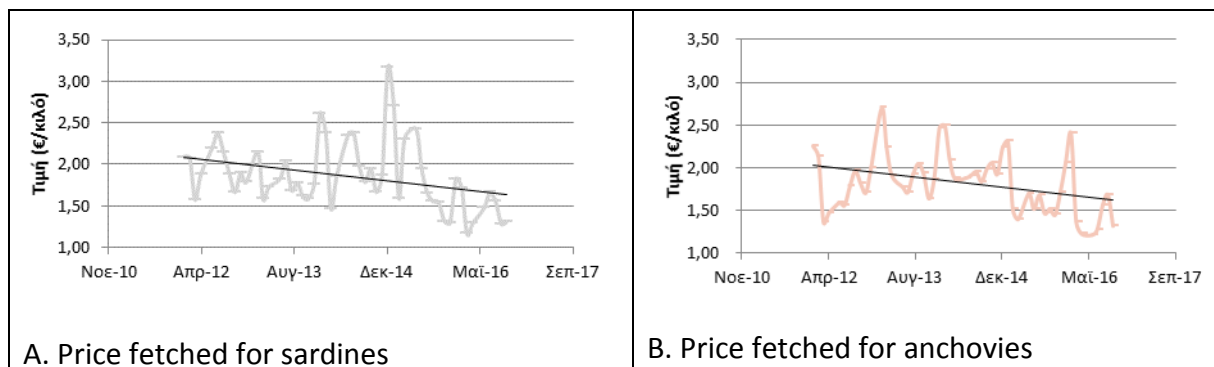
The main expenditure items for small-scale fisheries are the imputed value of unpaid labour, followed by energy costs. These two categories of expenditure, which show a decreasing trend over the past few years, cover more than 50 % of the annual expenditure of vessels engaged in small-scale fishing.

The overall labour costs, on the other hand (crew salaries and wages and the imputed value of unpaid labour) have remained largely stable.

**Table A.1.a.6. Structure, fishing effort, employment and fishing yield of the Greek small-scale fishing fleet, 2012-2015**

Variable		2012	2013	2014	2015	% change 2015-14	% change 2015-12
Structure	Number of vessels	924	916	905	916	1.2 ↗	-0.9
	Number of inactive vessels	43	43	67	69	3.0 ↗	60.5
	Average age of vessel (years)	24	25	26	27	6.3 ↗	11.9
	Gross tonnage (GT)	46 072	45 669	45 231	45 292	0.1 ↔	-1.7
	Total capacity (kW)	168 076	169 109	165 246	165 873	0.4 ↔	-1.3
Employment	Total number of employees	5 031	4 778	5 010	4 987	-0.5 ↔	-0.9
	FTE (full-time equivalents)	4 221	4 661	4 998	4 941	-1.1 ↘	17.1
	Average yearly wages per employee	12 119	10 635	8 714	8 992	3.2 ↗	-25.8
	Average yearly wages per FTE	10 168	10 375	8 693	8 910	2.5 ↗	-12.4
Fishing effort	Days at sea (total)			93 699	160 423	71.2 ↗	
	Energy costs	51 499 144	47 942 322	39 878 772	35 423 069	-11.2 ↘	-31.2
	Energy consumption (litres)	64 812 957	64 968 004	61 567 555	59 191 759	-3.9 ↘	-8.7
	Energy cost relative to catch value (€)	0.268	0.258	0.271	0.227	-16.0 ↘	-15.3
	Energy consumption relative to catch value (€)	0.338	0.349	0.418	0.380	-9.0 ↘	12.5
Fishing yield	Value of landings	191 959 881	185 784 659	147 393 465	155 803 754	5.7 ↗	-18.8

**Figure A.1.a.3. Price fetched for sardines and anchovies at the Piraeus fish market, 2011-2016**



As regards large-scale fishing, the main expenditure items are variable costs, followed by crew salaries and wages and energy costs. It should be noted that while nearly all categories of expenditure (with the exception of the imputed value of unpaid labour) have fallen by more than 25 %, variable costs have fallen only slightly in the period from 2012 to 2015. This means that vessels in this category are unable to limit their expenses by reducing other variable costs (apart from energy costs and salaries).

Finally, it is worth noting that financial results and economic indicators have improved considerably over the past few years in large-scale fishing especially, but also in small-scale fishing. In large-scale fishing in particular, net profit is now achieved (with the exception of 2014 for which, as already noted above, the recorded revenue covers a period of less than a year). For small-scale fishing, on the other hand, net losses are recorded although the situation improved in the period from 2012 to 2015. Positive values were recorded for gross profit and profit plus remuneration for the imputed value of labour, indicating that fishermen engaged in small-scale fishing are securing a positive and rising income from their activities.

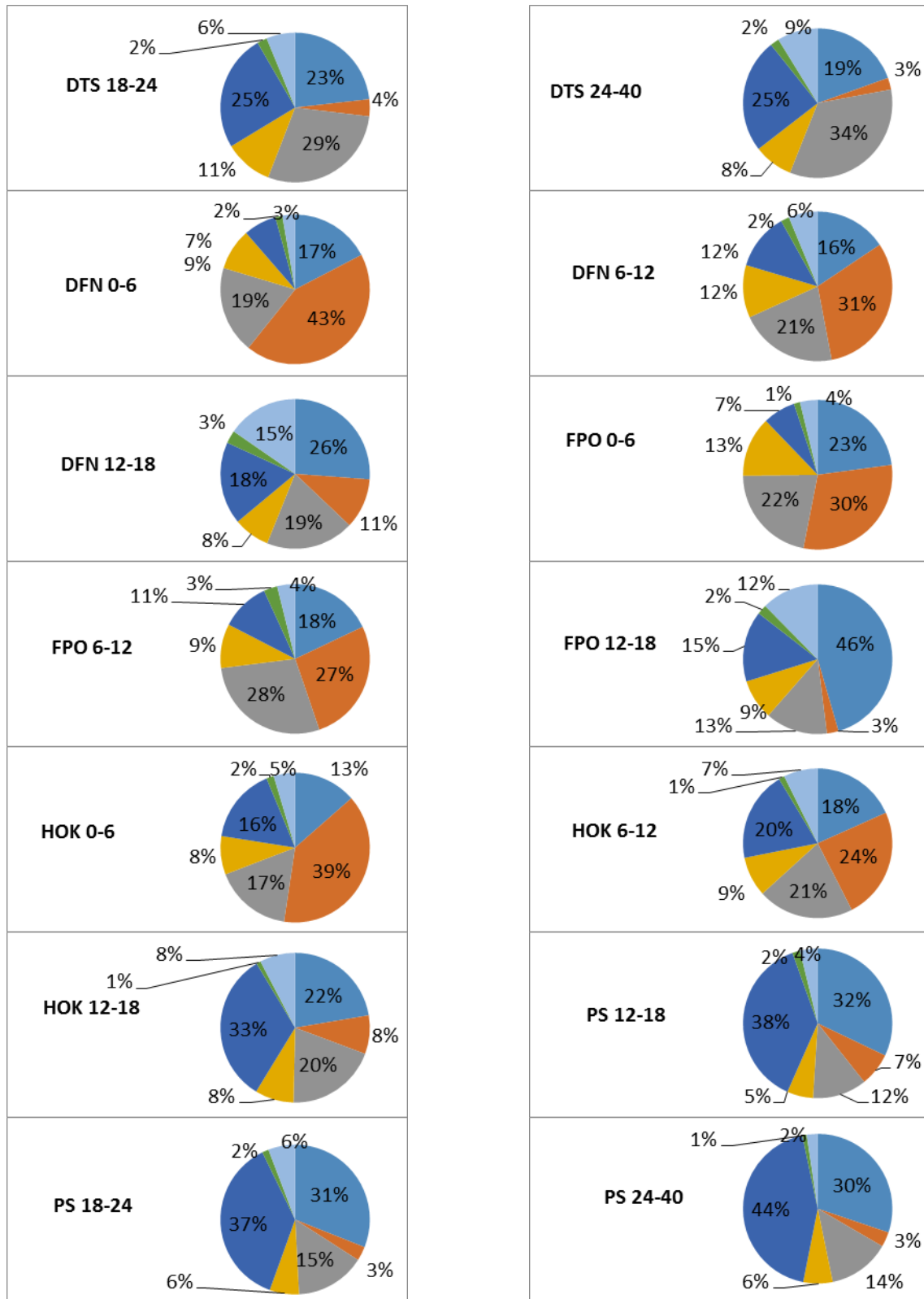
Table A.1.a.7. Expenditure and financial results, small-scale fishing 2012-2015

Variable		2012	2013	2014	2015	% change 2014-2015	% change 2012-2015
Revenue	Value of landings	235 877 167	232 288 624	202 868 115	222 546 553	9.7	↗ -5.7
	Direct subsidies	–	3 611 349	4 476 639	2 402 045	-46.3	↘
Expenses	Crew wages and salaries	24 613 785	61 542 925	29 542 208	39 096 183	32.3	↗ 58.8
	Imputed value of unpaid labour	88 688 818	74 366 188	69 244 763	75 875 157	9.6	↗ -14.4
	Energy costs	57 557 178	60 246 282	52 567 939	49 009 374	-6.8	↘ -14.9
	Repair and maintenance costs	26 488 344	30 462 503	22 393 893	23 808 484	6.3	↗ -10.1
	Variable costs	34 739 510	32 643 116	30 393 627	31 660 887	4.2	↗ -8.9
	Non-variable costs	3 854 803	4 163 533	4 182 432	3 923 889	-6.2	↘ 1.8
	Annual depreciation	31 792 823	34 181 973	13 109 737	13 670 111	4.3	↗ -57.0
Financial results	Gross value added	113 237 333	108 384 539	97 806 863	116 545 964	19.2	↗ 2.9
	Gross profit	-65 270	-27 524 574	-980 108	1 574 625		↗
	Net profit	-31 858 093	-61 706 547	-14 089 845	-12 095 487	14.2	↗ 62.0
	Profit and remuneration for imputed value of labour	56 830 725	12 659 641	55 154 918	63 779 670	15.6	↗ 12.2
Capital value	Depreciated replacement value of physical capital (€)	137 536 291	143 896 490	58 234 707	57 740 682	-0.8	↔ -58.0
	Value of investments (€)	25 069 059	19 024 071	20 829 880	21 254 460	2.0	↗ -15.2
	Financial position (%)	0.25	0.08	0.44	0.34	-22.6	↘ 33.9
Economic indicators	Net profit margin (%)	-13.51	-26.16	-6.80	-5.38	20.9	↗ 60.2
	RoFTA (%)	-23.16	-42.88	-24.19	-20.95	13.4	↗ 9.6
	Gross value added / FTE	22 516	15 717	18 041	20 699	14.7	↗ -8.1
	Gross profit margin (%)	-0.03	-11.67	-0.47	0.70		↗
	Gross value added / revenue	0.48	0.46	0.47	0.52	9.8	↗ 7.9
	Net profit margin and remuneration for imputed value of labour (%)	24.09	5.37	26.60	28.35	6.6	↔ 17.7

Table A.1.a.8. Expenditure and financial results, large-scale fishing 2012-2015

Variable		2012	2013	2014	2015	% change 2014-2015	% change 2012-2015
Revenue	Value of landings	191 959 881	185 919 881	147 393 465	155 803 754	5.7	↗ -18.8
	Direct subsidies	–	135 846	599 190	233 892	-61.0	↘
Expenses	Crew wages and salaries	48 753 899	43 877 504	37 735 856	38 258 777	1.4	↗ -21.5
	Imputed value of unpaid labour	2 400 668	5 691 831	5 818 228	6 175 076	6.1	↗ 157.2
	Energy costs	51 499 144	47 942 322	39 878 772	35 423 069	-11.2	↘ -31.2
	Repair and maintenance costs	13 656 087	12 705 684	11 914 787	11 828 015	-0.7	↔ -13.4
	Variable costs	49 178 303	44 960 954	43 640 001	46 588 287	6.8	↗ -5.3
	Non-variable costs	3 894 783	2 584 461	2 956 955	2 558 345	-13.5	↘ -34.3
	Annual depreciation	21 721 379	24 493 111	13 734 592	10 536 324	-23.3	↘ -51.5
Financial results	Gross value added	73 731 564	77 862 306	49 602 141	59 639 929	20.2	↗ -19.1
	Gross profit	22 576 998	28 292 971	6 048 057	15 206 077	151.4	↗ -32.6
	Net profit	855 619	3 799 861	-7 686 535	4 669 752		↗ 445.8
	Profit and remuneration for imputed value of labour	3 256 287	9 491 692	-1 868 306	10 844 828		↗ 233.0
Capital value	Depreciated replacement value of physical capital (€)	88 535 601	98 722 562	55 733 531	42 046 797	-24.6	↘ -52.5
	Value of investments (€)	5 138 108	5 087 352	5 310 453	6 512 975	22.6	↗ 26.8
	Financial position (%)	11.60	3.93	1.91	0.54	-71.5	↘ -95.3
Economic indicators	Net profit margin (%)	0.45	2.04	-5.19	2.99		↗ 571.4
	RoFTA (%)	0.97	3.85	-13.79	11.11		↗ 1 049.2
	Gross value added / FTE	7 251	7 505	5 706	6 693	17.3	↗ -7.7
	Gross profit margin (%)	11.76	15.21	4.09	9.75	138.5	↗ -17.1
	Gross value added / revenue	0.38	0.42	0.34	0.38	14.0	↗ -0.5
	Net profit margin and remuneration for imputed value of labour (%)	1.70	5.10	-1.26	6.95		↗ 309.7

Figure A.1.a.4. Distribution of expenses for each segment of the Greek fleet



- Μισθοί και ημερομίσθια πληρώματος
- Τεκμαρτή αξία μη αμειβόμενης εργασίας
- Ενεργειακές δαπάνες
- Κόστος επισκευής και συντήρησης
- Μεταβλητές δαπάνες
- Μη μεταβλητές δαπάνες
- Ετήσια απομείωση

**Key:** Μισθοί και ημερομίσθια πληρώματος = Crew salaries and wages, Τεκμαρτή αξία μη αμειβόμενης εργασίας = Imputed value of unpaid labour, Ενεργειακές δαπάνες = Energy costs, Κόστος επισκευής και συντήρησης = Repair and maintenance costs, Μεταβλητές δαπάνες = Variable costs, Μη μεταβλητές δαπάνες = Non-variable costs, Ετήσια απομείωση = Annual depreciation

## **Conclusions**

This report sets out the basic economic variables for the Greek fishing fleet, collected as part of the implementation of the National Fisheries Data Collection Programme. The available socio-economic data concerns the year **2015**, as it is processed a year later compared to the reference year for the other data (2016).

The economic variables were collected using the data from a sample of fishing vessels given in response to a structured questionnaire on socio-economic issues.

The sample was selected by stratified random sampling in accordance with the national programme. The Register of Fishing Vessels for 2015 was used as a sampling frame and stratification of the population was based on vessel length and main fishing gear. The Greek fishing fleet was divided into 14 segments, six of which concern vessels engaged in small-scale fishing, i.e. less than 12 metres in length.

From the above analysis we draw the conclusion that in the period from 2012 to 2015 there was a downward trend in the fisheries sector in terms of the number of vessels, overall number of employed persons, fishing effort and fishing yield, despite considerable improvement with respect to net profit as well as most economic indicators.

This result could be interpreted to mean that the least profitable vessels have left the fleet, or that the vessels that remain active have become more efficient.

The financial results and economic indicators have improved for both small-scale and large-scale fishing, although small-scale fishing still continues to record a net loss.

Besides, as already mentioned above, vessels engaged in small-scale fishing achieve positive values for both gross profit and remuneration for the imputed value of labour, which means that the fishermen draw a positive income from their fishing activities.

It is also worth mentioning that, based on an analysis of the economic data for 2015, energy costs have fallen significantly compared to 2014, mainly due to lower fuel prices. This is a positive development for the sector's viability, especially as regards large-scale fishing.

### CHAPTER III BIOLOGICAL SUSTAINABILITY INDICATORS

Based on the Regulation (Chapter 10 on biological sustainability) we have attempted to calculate sustainability indicators for demersal and small pelagic species. The final weighted biological F/F<sub>msy</sub> indicator for trawl, coastal and purse seine fishing is 0.97, 1 and 1.756, respectively.

The F/F<sub>msy</sub> values are shown below for the species taken into account, along with the weighting given to each species based on its catch value. For coastal vessels in particular, the species taken into account (three species) clearly do not account for the 60 % of the overall catch value required by the Regulation. As provided for by the Regulation, we should therefore specify that the indicator is 'unavailable' for the fleet segment in question.

#### Purse seine (PS)

GSA	Species	F <sub>cur</sub> /F <sub>msy</sub>	Catch value
22	Anchovy	1.793428729	38 813 353.58
22	Sardine	1.718531217	39 665 467.6
20	Anchovy	1.781104471	981 680.83
20	Sardine	1.75420354	1 461 139.46

F<sub>msy</sub>1-3 (E=0.4)

#### Bottom Otter Trawl (OTB)

GSA	Species	F/F <sub>msy</sub>	Catch value
22	Hake	1.364	17 509
22	Red mullet	0.759	11 706
22	Striped mullet	0.748	4 462
22	Pink shrimp	0.759	17 483

#### Coastal vessels

GSA	Species	F/F <sub>msy</sub>	Catch value
22	Hake	1.364	20 374
22	Red mullet	0.759	16 256
22	Striped mullet	0.748	12 679

We would like to underline that the calculations are based on stock estimates, and that certain methods had to be used and certain assumptions made to fill significant gaps in time series data due to the Data Collection Framework (DCF) not having been implemented. The calculations may therefore change as a result of estimates made by the relevant working groups. The current estimates include a large degree of uncertainty and considerable error margins due to the significant gaps in time series data and the use of a number of assumptions.

The indicators for demersal species were calculated on the basis of analyses carried out under a European cooperation programme aimed at developing 'data poor' methods for the estimation of stocks (six months remain until the 18-month programme is completed).

The methodology makes use of data from the last 25 years, and the weighted indicator refers to 2016 given that it is weighted on the basis of the value of specific landings in 2016.



The results presented here only concern the Aegean (GSA 22), as it is currently not possible to estimate stocks in other areas.

The above does not in itself require taking any technical management measures in the form of targeted restrictions on fishing activities (such as temporary bans or area restrictions, quotas, etc.).

### Fishing effort

The following section presents the most recent available data on fishing effort records and monitoring, based on the National Fisheries Data Collection Programme implemented in **2015** at ports in the 12 regions of Greece where the Greek fishing fleet lands most of its catches. The data was collected during the last quarter of 2015 through interviews with the owners of vessels that were randomly selected.

The sampling network covers the entire Greek area of production.

Table A.2.a.2.

Έτος αναφοράς	Γεωγραφική υποπεριοχή	Είδος εργαλείου	Στόχος αλιείας	Κωδικός ΕΑΔ	Αλιευτική προσπάθεια (ημέρες)	Συνολικές εκφορτώσεις (τόνοι)	Συνολική αξία (€)	Επιλογή λόγω αλιευτικής προσπάθειας	Επιλογή λόγω εκφορτώσεων	Επιλογή λόγω αξίας αλιευμάτων
2014	GSA 22	Γρι-γρι νύχτας	Μικρά πελαγικά ψάρια	PS_SPF >=14_0_0	21638	14437	48787343	N	Y	Y
2014	GSA 22	Τράτα βυθού	Βενθοπελαγικά είδη	OTB_DES >=40_0_0	39153	11595	66292349	N	Y	Y
2014	GSA 22	Απλάδια δίχτυα	Βενθοπελαγικά είδη	GNS_DES >=16_0_0	513923	6152	43125733	Y	Y	Y
2014	GSA 22	Μανωμένα δίχτυα	Βενθοπελαγικά είδη	GTR_DES >=16_0_0	802003	8319	70542991	Y	Y	Y
2014	GSA 22	Παραγάδι βυθού	Βενθοπελαγικά ψάρια	LLS_DEF 0_0_0	346656	3385	35752853	Y	Y	Y
2014	GSA 22	Παγίδες	Βενθοπελαγικά είδη	FPO_DES 0_0_0	112607	2071	11022800	Y	N	N
2014	GSA 20	Απλάδια δίχτυα	Βενθοπελαγικά είδη	GNS_DES >=16_0_0	105807	1041	6892853	Y	Y	Y
2014	GSA 20	Γρι-γρι νύχτας	Μικρά πελαγικά ψάρια	PS_SPF >=14_0_0	3318	1498	3559262	N	Y	N
2014	GSA 20	Μανωμένα δίχτυα	Βενθοπελαγικά είδη	GTR_DES >=16_0_0	412227	2997	25209869	Y	Y	Y
2014	GSA 20	Παραγάδι βυθού	Βενθοπελαγικά ψάρια	LLS_DEF 0_0_0	80788	548	6294212	Y	Y	Y
2014	GSA 20	Τράτα βυθού	Βενθοπελαγικά είδη	OTB_DES >=40_0_0	7008	1121	9797059	N	Y	Y
2014	GSA 23	Μανωμένα δίχτυα	Βενθοπελαγικά είδη	GTR_DES >=16_0_0	56160	529	4008931	Y	Y	Y
2014	GSA 23	Τράτα βυθού	Βενθοπελαγικά είδη	OTB_DES >=40_0_0	1498	540	3742459	N	Y	Y
2014	GSA 23	Γρι-γρι νύχτας	Μικρά πελαγικά ψάρια	PS_SPF >=14_0_0	924	730	2627856	N	N	Y
2014	GSA 23	Παραγάδι βυθού	Βενθοπελαγικά ψάρια	LLS_DEF 0_0_0	18901	112	1388308	Y	Y	Y
2014	GSA 23	Απλάδια δίχτυα	Βενθοπελαγικά είδη	GNS_DES >=16_0_0	15896	73	393481	Y	Y	Y
2014	BIL95	Παραγάδι αφρού	Μεγάλα πελαγικά ψάρια	LLD_LPF 0_0_0 (SWO)	8596	1344	19730056	N	Y	Y

Key: Έτος αναφοράς = reference year, Γεωγραφική υποπεριοχή = geographical sub-region, Είδος εργαλείου = type of gear, Γρι-γρι νύχτας = nocturnal purse seines, Τράτα βυθού = bottom trawl, Απλάδια δίχτυα = gillnets, Μανωμένα δίχτυα = trammel nets, Παραγάδι βυθού = bottom-set longline, Παγίδες = traps, Παραγάδι αφρού = surface longline, Στόχος αλιείας = targeted species, Μικρά πελαγικά ψάρια = small pelagic fish, Βενθοπελαγικά είδη = demersal species, Βενθοπελαγικά ψάρια = demersal fish, Μεγάλα πελαγικά ψάρια = large pelagic fish, Κωδικός ΕΑΔ = metier code, Αλιευτική προσπάθεια (ημέρες) = fishing effort (days), Συνολικές εκφορτώσεις (τόνοι) = total landings (tonnes), Συνολική αξία (€) = total value (€), Επιλογή λόγω αλιευτικής προσπάθειας = Selection based on fishing effort, Επιλογή λόγω εκφορτώσεων = Selection based on landings, Επιλογή λόγω αξίας αλιευμάτων = selection based on catch value, N = No, Y = Yes

Table A.1.b.1.2 presents the fishing effort of the coastal fleet and medium-distance fleet (days at sea, days \* GT, days \* kW), by area and fleet segment.

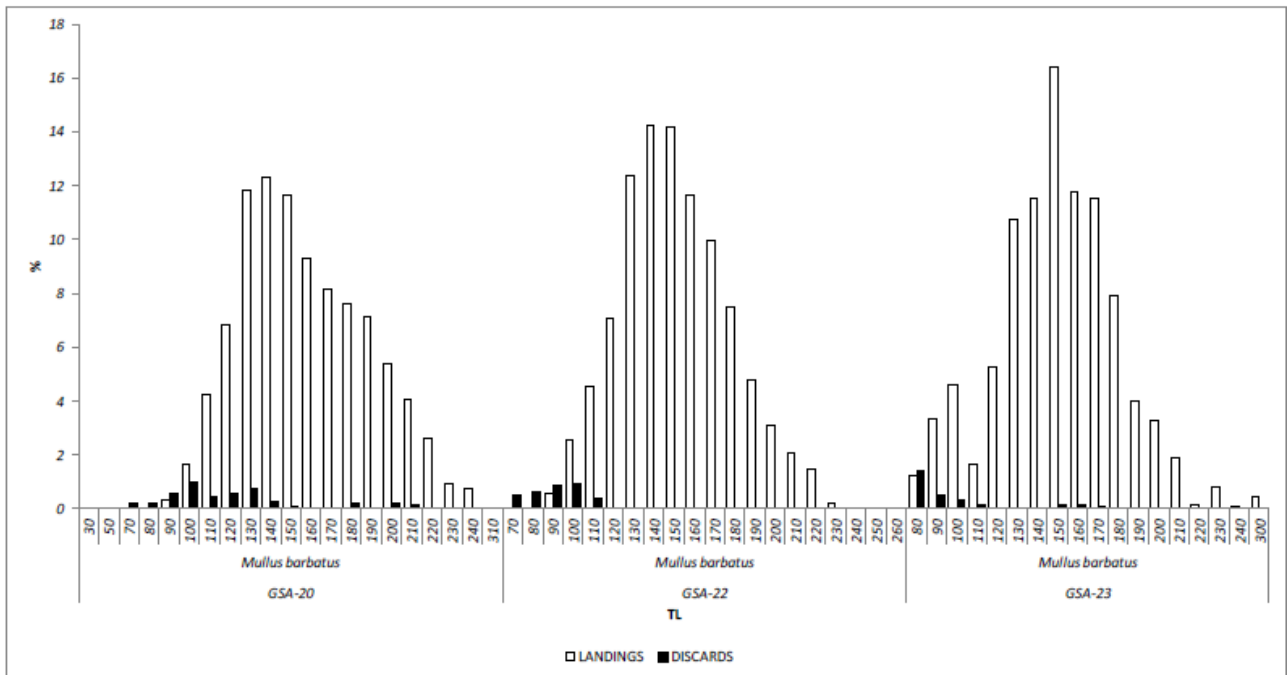
The fishing effort of medium-distance fishing vessels was estimated on the basis of vessel monitoring system (VMS) data and covers the year 2015 in full.

Estimates for the fishing effort of coastal fisheries concern the quarter October-December 2015.

**Table A.1.b.1.2. Fishing effort of the coastal fleet and fishing gear  
(days at sea, days \* GT, days \* kW) by geographic area and fleet segment**

GEAR	LENGTH CLASS	QUARTER	GSA-20			GSA-22			GSA-23		
			DAYS	DAY*GT	DAYS*KW	DAYS	DAY*GT	DAYS*KW	DAYS	DAY*GT	DAYS*KW
FPO	VL0006	4	36	29	397	1198	881	15423			
	VL0612	4	3600	10728	47628	12407	26177	443303			
	VL1824	4				32	1344	2235			
<b>FPO Total</b>			<b>3636</b>	<b>10757</b>	<b>48025</b>	<b>13637</b>	<b>28402</b>	<b>460960</b>			
GNS	VL0006	4	1152	922	12711	32927	24588	359993	738	974	9759
	VL0612	4	26052	114801	720344	79285	297230	2912179	125	375	3040
	VL1218	4	707	13662	42819	2808	43236	256301			
<b>GNS Total</b>			<b>27910</b>	<b>129384</b>	<b>775873</b>	<b>115019</b>	<b>365055</b>	<b>3528474</b>	<b>863</b>	<b>1348</b>	<b>12799</b>
GTR	VL0006	4	52886	47417	384867	68058	49211	826024	2192	2894	29005
	VL0612	4	59223	176855	1638027	87161	313673	2761056	9064	40480	237236
	VL1218	4	334	5225	30885	5562	93807	459677	271	3930	23600
<b>GTR Total</b>			<b>112443</b>	<b>229496</b>	<b>2053779</b>	<b>160781</b>	<b>456690</b>	<b>4046757</b>	<b>11528</b>	<b>47304</b>	<b>289841</b>
LLS	VL0006	4	11078	9875	57509	32293	23736	207376	274	219	5037
	VL0612	4	7822	27957	206660	64305	332348	2569321	9173	44167	214571
	VL1218	4	297	6570	27724	3173	48828	270192	916	17178	68721
<b>LLS Total</b>			<b>19196</b>	<b>44402</b>	<b>291892</b>	<b>99771</b>	<b>404912</b>	<b>3046889</b>	<b>10363</b>	<b>61564</b>	<b>288329</b>
OTB	VL1218	1				148	5107	32606			
		2				120	4505	19426			
		4				139	3876	23862			
	VL1824	1	1266	65473	336082	4563	243538	1292553	148	6264	26905
		2	548	28748	143547	2696	144620	758115	65	2892	10953
		4	1089	55191	279237	4635	242294	1300122	85	4068	12570
	VL2440	1	906	95733	251262	10042	1380318	3186598	487	68692	149321
		2	467	50935	129561	6244	861271	1993838	296	41953	91208
		3				9175	1216710	2935055			
		4	726	80475	207522	9175	1216710	2935055	496	70107	152717
<b>OTB Total</b>		<b>5002</b>	<b>376555</b>	<b>1347211</b>	<b>37762</b>	<b>4102239</b>	<b>11542175</b>	<b>1581</b>	<b>193976</b>	<b>443674</b>	
PS	VL1218	1	258	4415	31220	1390	28056	168817	68	1917	12724
		2	645	13584	97642	3066	67071	402932	200	5656	37724
		3	698	14172	107344	3653	81840	487373	239	6720	45418
		4	409	7850	53460	2249	47633	289436	87	2373	16914
	VL1824	1	100	3922	17363	1532	75651	327803	43	2149	6384
		2	734	29348	151328	5511	268185	1174280	74	3705	10714
		3	971	38286	201593	6431	314406	1374277	97	5010	14205
		4	422	17346	80151	3017	149000	629465	78	4135	11429
	VL2440	1				555	51130	137302	15	1740	2646
		2				2054	185141	510858	64	7426	11291
		3	31	3441	9685	2670	241519	699116	63	7310	11114
		4				1042	95862	252216	29	3365	5116
<b>PS Total</b>		<b>4268</b>	<b>132364</b>	<b>749786</b>	<b>33170</b>	<b>1605494</b>	<b>6453875</b>	<b>1057</b>	<b>51506</b>	<b>185679</b>	
<b>Grand Total</b>		<b>172456</b>	<b>922958</b>	<b>5266567</b>	<b>460141</b>	<b>6962792</b>	<b>29079131</b>	<b>25391</b>	<b>355698</b>	<b>1220322</b>	

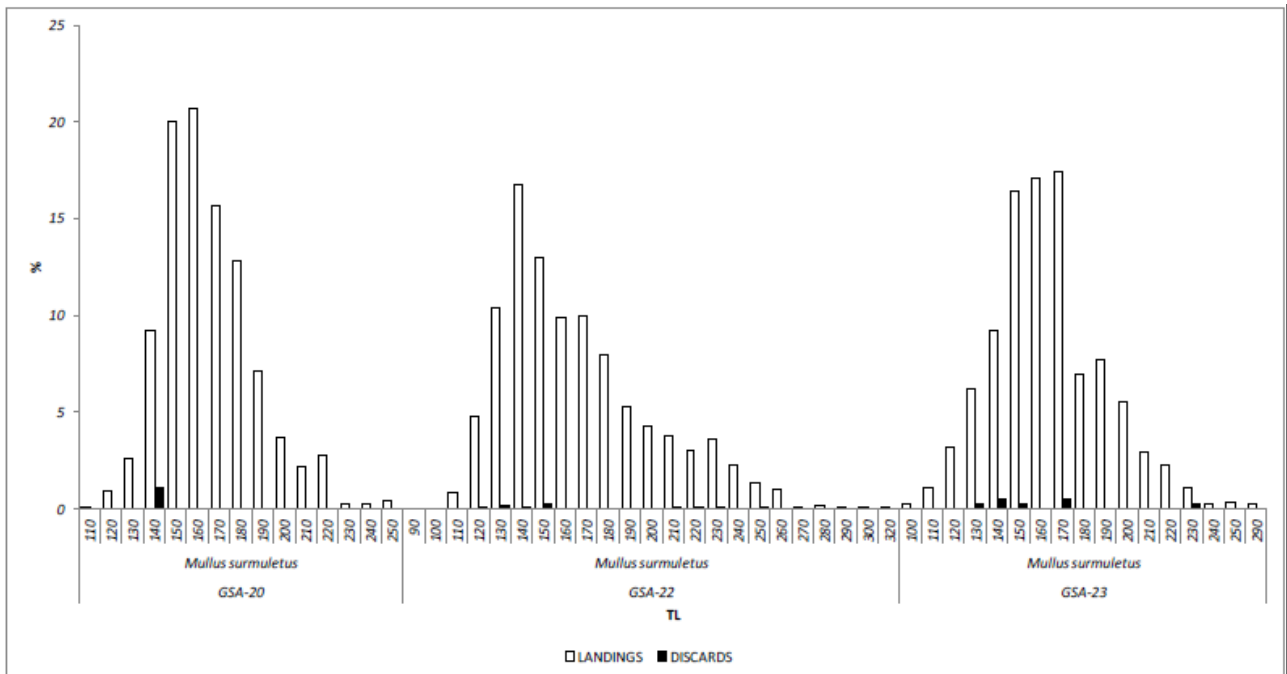
Please find below the most recent available figures, collected in **2015**, on the main species targeted by vessels fishing with bottom otter trawls, which are subject to a monitoring programme under the bottom otter trawl (OTB) management plan to establish the state of the stocks based on specific reference points for each species.



**Breakdown by length of the species *Mullus barbatus* by geographical sub-region.**

White bars = landed catches, black bars = discarded catches,

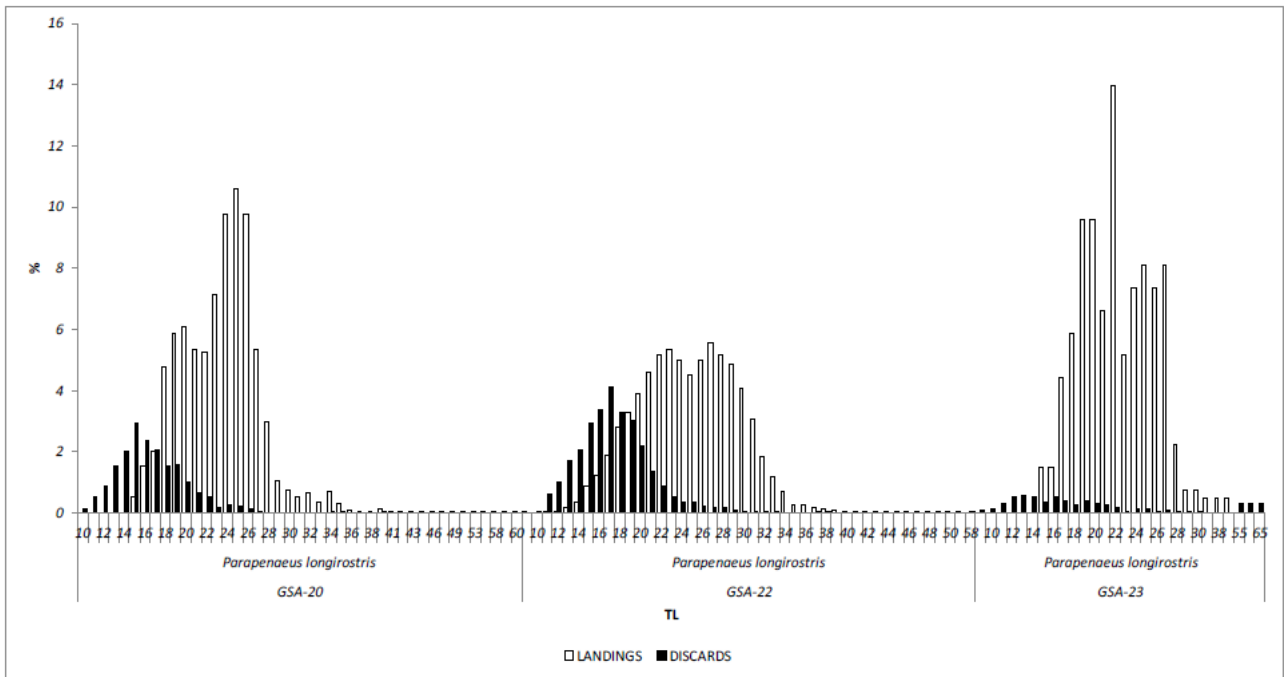
TL = total length in mm



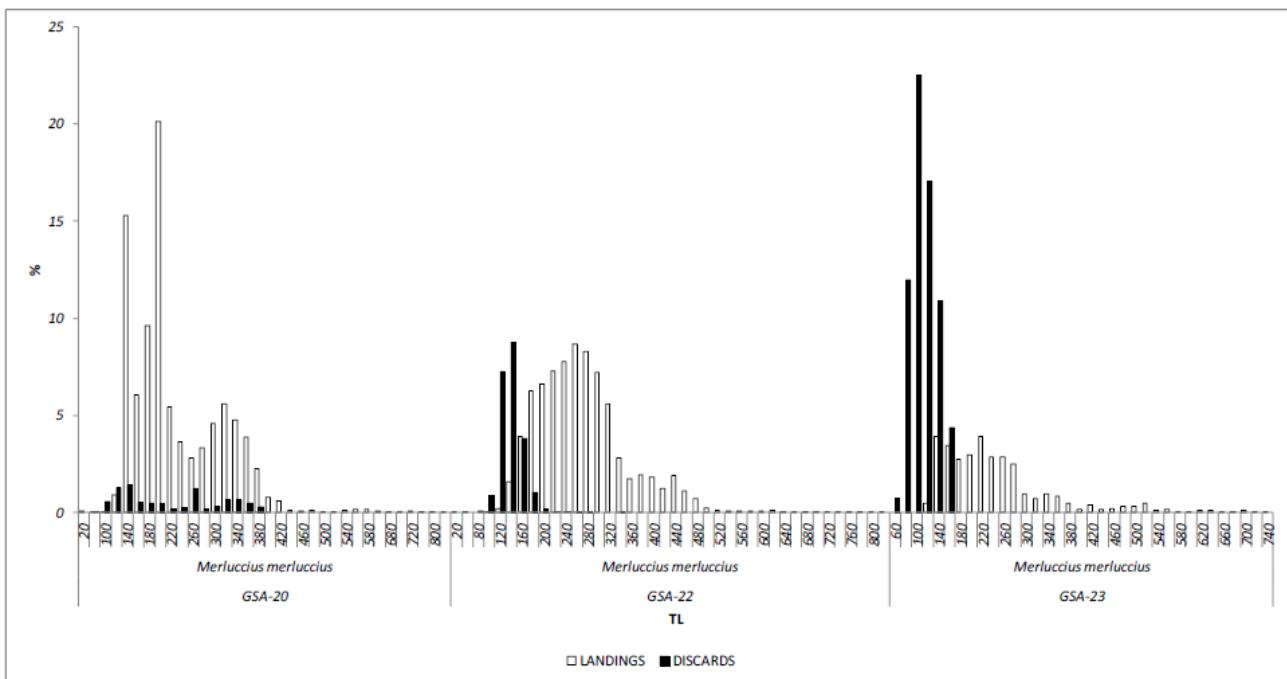
**Breakdown by length of the species *Mullus surmuletus* by geographical sub-region.**

White bars = landed catches, black bars = discarded catches,

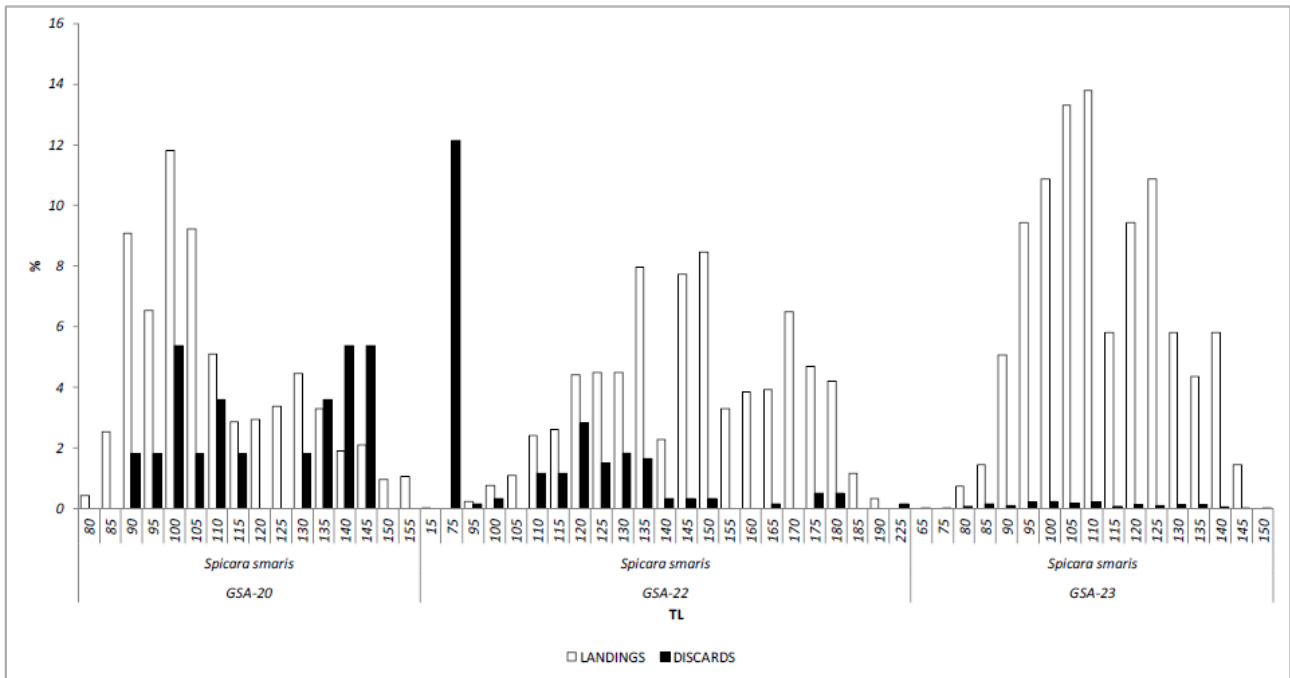
TL = total length in mm



**Breakdown by length of the species *Parapenaeus longirostris* by geographical sub-region.**  
 White bars = landed catches, black bars = discarded catches,  
 TL(ML) = cephalothorax length in mm



**Breakdown by length of the species *Merluccius merluccius* by geographical sub-region.**  
 White bars = landed catches, black bars = discarded catches,  
 TL = total length in mm



**Breakdown by length of the species *Spicara smaris* by geographical sub-region.**  
 White bars = landed catches, black bars = discarded catches,  
 TL = total length in mm