



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

Greek Fishing Fleet 2020 Annual Report

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



May 2021
Athens

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SUMMARY

The Greek fishing fleet is characterised by a very large number of vessels (**13 950 as at 31 December 2020**) but with small overall tonnage (**66 255.40 GT**) and engine power (**391 402.44 kW**). The fleet engages in fishing coastal stocks along the extensive shoreline of Greece's mainland and numerous islands.

The largest segment of the fleet (**96.51%**) is made up of vessels fishing multiple species near the coast using static gear. Only **1.78%** of fishing vessels (248 vessels) target benthic species (striped mullet, red mullet, hake and crustaceans) using bottom otter trawls (OTB) as their main gear, while **1.71%** (239 vessels) target pelagic species, mainly anchovy and sardine, using purse seines (PS) as their main gear.

To assess the condition of fish stocks and quantify the impact of fishing activities, account was taken of older data combined with data obtained through the national fisheries data collection programme for the years 2014 to 2019, **provisional data for 2021** and other available scientific data. Due to various problems, data collection under the programme was interrupted in the period from 2009 to 2011 but gradually resumed from 2012.

The resulting estimates regarding fishing activity and the condition of biologically fishable stocks are set out by fleet segment in the individual chapters of this report.

The report takes into account, as far as possible, the findings of the most recent STECF report assessing balance indicators and reviewing national reports, entitled '*Scientific, Technical and Economic Committee for Fisheries (STECF) – Assessment of balance indicators for key fleet segments and review of national reports on Member States' efforts to achieve balance between fishing capacity and fishing opportunities (STECF-20-11)*', published in November 2020.

It should be noted that since 2003 the Greek fishing fleet has declined significantly as a result of applying common fisheries policy rules, in particular the measure regarding permanent cessation of fishing activities with financial assistance provided for in the operational programmes for fisheries. The greatest reduction concerns smaller vessels (overall length <12 m), as set out in more detail in section 3.

Moreover, the Greek fishing fleet has complied fully with both the entry-exit regime and the reference levels (see section 4).

CHAPTER I FLEET DESCRIPTION

1. DESCRIPTION OF THE FISHING FLEET

According to the national register of fishing vessels (**extract taken on 28 May 2021**), on 31 December 2020 the Greek fishing fleet comprised **13 950 active** fishing vessels with a total gross tonnage of **66 255.40 GT** and total engine power of **391 402.44 kW**.

The situation of the Greek fishing fleet as at 31 December 2020, 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	4 848	3 282.64
6.00-11.99	8 294	22 621.89
12.00-17.99	390	6 951.51
18.00-23.99	240	11 715.65
24.00-29.99	146	15 775.84
30.00-35.99	24	5 092.00
36.00-44.99	2	807.00
45.00-59.99	-	-
60.00-74.99	-	-
+75.00	-	-
No engine (of the above)	194	106.72

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, there are some large vessels operating with static gear that are fully equipped to carry out fishing trips lasting for several days in Greek waters of the Aegean, Ionian and Cretan Seas and beyond, including most of the international waters of the Eastern Mediterranean.

B. Vessels fishing with towed gear

These are vessels fishing with bottom otter trawls and operating in Greek and international waters of the Aegean, Ionian and Cretan Seas, mainly in FAO/GFCM geographical sub-areas (GSAs) 20, 22 and 23, and in third country waters under bilateral fisheries partnership agreements between the EU and third countries or by virtue of 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 fishing fleet (**96.51%**) in terms of the number of vessels (**13 463**).

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

– *Small vessels: **13 148** fishing vessels of an overall length of less than 12 metres, with a total gross tonnage of **25 913.40 GT** and total engine power of **242 789.41 kW**.*

– *Larger vessels: **306** fishing vessels of an overall length of 12 metres or more with a total gross tonnage of **5 272.81 GT** and total engine power of **29 241.00 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 fishers holding a professional fishing licence for vessels they own.

Moreover, **218** fishing vessels in this category have a licence that additionally includes ‘seine nets operated from a vessel at anchor’, ‘trawls’ or ‘**winch trawls**’ (**SB**). For 3 years fishing with winch trawls was allowed under a management plan laid down by Ministerial Decision No 6719/146097 of 29 December 2016 (Government Gazette [GG], Series II, No 4348), as amended by Ministerial Decision 4065/330700 of 30 December 2019 (GG, Series II, No 6), pursuant to Article 19 of Regulation (EC) No 1967/2006 which provides for certain technical measures in the Mediterranean Sea.

The use of this gear was authorised by derogation, applicable for 3 years from 3 June 2017, from the provisions of Article 13 of the above Regulation, as provided for by Commission Implementing Regulation (EU) 2017/929 of 31 May 2017 establishing a derogation from Council Regulation (EC) No 1967/2006 as regards the minimum distance from coast and the minimum sea depth for boat seine fishing in territorial waters of Greece.

A positive opinion was issued for **162** of the **218** vessels referred to above. These engaged in fishing in the period from 9 January to 31 March 2020.

Greece is constantly making every effort to implement the objectives of MedFish4Ever and the common fisheries policy and is developing initiatives regarding rational stock management measures, use of more selective gear, the protection of nurseries and support for coastal fishers.

One such measure was a decision to grant *de minimis* financial support, of €25 000 per vessel, to **108** vessels equipped with boat seines (SB) for **voluntarily giving up** this gear. The **procedures for paying the beneficiaries have been completed** and the register of fishing vessels is in the process of being updated.

B. VESSELS FISHING WITH TOWED GEAR

– Vessels fishing with bottom otter trawls

In 2020 there were **248** vessels operating **mainly** with bottom otter trawls, with a total gross tonnage as at 31 December 2020 of **24 368.20 GT** and total engine power of **73 723.20 kW**.

Although these vessels make up a small portion of the Greek fishing fleet (**only 1.78%**), they account for some **25%** of the total annual fishing yield.

Bottom trawling is a widely used 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 (to depths of 150-200 metres) account for a significant portion (some 15-20%) of catches, and include striped mullet (*Mullus barbatus*), red mullet (*Mullus surmuletus*), hake (*Merluccius merluccius*), various cephalopods (*Octopus vulgaris*, *Eledona moschata*, *Loligo vulgaris*), crustaceans (*Peneus kerathurus*, *Nephrops norvegicus*) and sea bream (*Diplodus annularis*).

Around a third of the fishing vessels in this category (**84 vessels**) carry purse seines (PS) as a second set of gear, which is used only exceptionally.

Management rules are based on EU common fisheries policy (CFP) regulations, and additional measures in the form of temporary bans or area restrictions are laid down under national legislation to ensure sustainable exploitation and the protection of fish stocks.

(a) A **management plan** for fishing with bottom otter trawls, approved by the European Commission, has been in force since early 2014 (Ministerial Decision 271/2576 of 9 January 2014, GG, Series I, No 58). The plan is being implemented throughout Greece and covers the following:

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

A total of **233 annual fishing licences** were granted **in 2020** for the use of bottom otter trawls.

(b) A discard plan, in force since 1 January 2017, has been established with the aim of reducing discards of benthic species subject to minimum sizes (e.g. Mediterranean hake, striped mullet and prawn) as required by Regulation (EU) No 2017/86 of 20 October 2016 (OJ L 14, 18.1.2017, p. 4), as amended.

(c) A multiannual management plan has been put in place for giant red shrimp and blue and red shrimp in accordance with GFCM recommendation 42/2018/4. The management plan provides for sustainable fishing of giant red shrimp (*Aristaeomorpha foliacea*) and blue and red shrimp (*Aristeus antennatus*) with bottom otter trawls in the Ionian Sea (sub-areas 19, 20 and 21).

Under Decision 1921/134933 of 7 June 2019 of the Ministry of Rural Development and Food (GG, Series II, No 2346), fishing licences are granted until 31 December of each year to vessels with a valid general fishing licence and a licence to fish with bottom trawls, and are valid for 1 year, i.e. from 1 January until 31 December the following year, unless withdrawn at an earlier date. Licences are issued on condition that the vessels have a functioning satellite tracking device (vessel monitoring system, VMS) and electronic reporting system (ERS) on board.

In **2020** a total of **115 licences** were granted, for the duration of 1 year, to fish giant red shrimp and blue and red shrimp (ARA-ARS) using bottom otter trawls.

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

Vessels fishing in third-country waters are the smallest segment of the Greek fleet. According to the national register of fishing vessels, as at 31 December 2020 it consisted of **three vessels** of an overall length of more than 20 metres fishing with bottom otter trawls, with a total gross tonnage of **846.00 GT** and total engine power of **1 872.39 kW**.

Each vessel has a fishing licence supplemented by an appropriate licence to fish in the waters of third countries, typically issued for 3 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.

No vessels in this category engaged in fishing in 2020.

Fishing vessels operating in international waters of the Mediterranean mainly use **bottom otter trawls, purse seines** and **drifting longlines**. Fishing licences are granted on the condition that national and EU legislation, as well as international rules on the preservation 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 FAO/GFCM/GSA sub-areas 20, 22 and 23:

- from 24 May to 15 July each year in all sub-areas; and
- from 16 July to 1 October in part of sub-area 22.

For **2020** a total of **392 licences** were granted, for all types of gear, to fish in international waters of the Mediterranean.

C. VESSELS FISHING WITH ENCIRCLING NETS

– Vessels fishing with purse seines

This segment is made up of **239** vessels fishing with purse seines as their **main gear**, with a total gross tonnage of **10 491.73 GT** and total engine power of **44 493.07 kW**. Vessels using purse seines as their main 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).

Management rules are based on EU common fisheries policy (CFP) regulations, and additional measures in the form of 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 (Ministerial Decision 9131 of 4 February 2012, GG, Series I, No 1519).

The management plan covers the following:

- rules for fishing with the gear in question;
- a plan for scientific monitoring of the target species based on reference indicators to assess the condition of the target stocks;
- a 'licence to fish for small pelagic species (anchovy and sardine)' granted in addition to the vessel's general fishing licence.

A total of **277 licences**, valid for 1 year, to fish for small pelagic species (anchovy and sardine) were granted for 2020, including, in some cases, to vessels equipped with a purse seine without this being their main gear.

A management plan is in place to reduce discards in small pelagic fishing (anchovy and sardine), as required by Commission Delegated Regulation (EU) 2018/161 of 23 October 2017 establishing a *de minimis* exemption to the landing obligation for certain small pelagic fisheries in the Mediterranean Sea (OJ L 30, 2.2.2018), as amended.

D. FISHING WITH ANNUAL FISHING LICENCES

D1. Corals

Under the national institutional framework in place, a 9-month licence may be granted to fish in a given fishing area, and the areas are rotated every 5 years.

No fishing licence was granted for harvesting red corals in 2020, as no applications were submitted.

D2. Large pelagic species

Fishing targeting large pelagic species: Bluefin tuna (*Thunnus thynnus*), swordfish (*Xiphias gladius*) and albacore (*Thunnus alalunga*), which are covered by a specific management regime, 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 **2020** a total of **246 licences** were granted for catching **swordfish** (*Xiphias gladius*) and albacore (*Thunnus alalunga*) using LLD, LHM and PS gear. Of these, **8 licences** were issued for albacore using purse seines (PS) only.

In **2020** Greece's initial fishing quota for **bluefin tuna** (*Thunnus thynnus*) was 314.77 tonnes (quota BFT/AE45WM) plus 4.50 tonnes for the Ionian Islands (quota BFT/AVARCH). An exchange of 20.50 tonnes was later agreed with Spain, while 8.58 tonnes were deducted for overfishing in previous years (under Regulation (EU) 2020/1247). **93 licences** were issued for fishing with hooks and lines.

Nearly 90% of Greece's available quota was caught between February and September 2020. To meet the fishers' needs, an exchange with Croatia was agreed of initially 25.00 tonnes, to which another 12.50 tonnes were later added, bringing Greece's total available tuna quota to **368.69 tonnes**.

Lastly, to ensure that the quota is not exceeded, we cross-check 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).

D3. Sea cucumbers

Regulatory measures for fishing sea cucumbers of the genus '*Holothuria spp*', which may be caught by professional fishers only, for use as bait in professional and recreational fishing, or for human consumption, are laid down in Presidential Decree 48/2018 (GG, Series I, No 90), as amended by Article 78(4) of Law 4582/2018 (GG, Series I, No 208) and subsequently by Article 52(1) and (2) of Law 4647/2019 (GG, Series I, No 204) and Article 77(1) of Law 4745/2020 (GG, Series I, No 214). The Decree entered into force on 22 May 2018.

The Decree lays down rational management measures for sea cucumber stocks of the genus *Holothuria spp*, terms and conditions for the fishing activity, authorised periods and fishing grounds, minimum weight, maximum number of individuals that may be caught, data recording requirements, conservation measures and penalties.

For all of Greece, a total of **143 licences** were issued to fish sea cucumbers of the genus *Holothuria spp* for the fishing season starting on 1 November 2018 and ending on 30 April 2019, and **117 licences** were issued for the season starting on 1 November 2019 and ending on 30 April 2020.

D4. Narwal shrimp (*Plesionika narval*)

Regulatory measures for fishing narwal shrimp (*Plesionika narval*) are laid down in Decision 1935/128000 of 26 May 2020 (GG, Series II, No 2032, 28.5.2020). The Decision establishes rational management measures for the species (also taking into account socio-economic

parameters), terms and conditions for the fishing activity, the authorised gear (FPO) and maximum number of pots and traps that may be used, marking of gear, haul conditions, authorised periods and fishing grounds, data recording and submission requirements and penalties.

Only professional fishers who own a professional fishing vessel may fish narwal shrimp. The vessel must have a fishing licence to carry out this activity. The fishing licence is granted on condition that the vessel has a valid licence to fish with pots and traps (FPO).

For all of Greece a total of **55 licences** were issued to fish narwal shrimp (*Plesionika narval*) for the fishing season starting on 28 May 2020 and ending on 28 September 2020.

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

Stock status assessment

Assessing the balance between fishing capacity and fishing opportunities has been particularly difficult 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 data obtained through the national fisheries data collection programme, also taking into account biological and socio-economic factors. These have, as far as possible, been updated based on more recent available data from the national fisheries data collection programme for the years 2018-2020.

The following section also includes information from the 2020 report on the implementation of the landing obligation under Regulation (EU) 2015/812.

Small pelagic species

Estimation of anchovy and sardine biomass in the Aegean and Ionian Seas (*Research surveys at sea - MEDIAS*)

The body carrying out MEDIAS surveys in Greek waters is the Hellenic Centre for Marine Research (HCMR). The data collected was used to estimate the abundance and biomass of anchovy and sardine stocks with a methodology unrelated to fishing, i.e. the acoustic method.

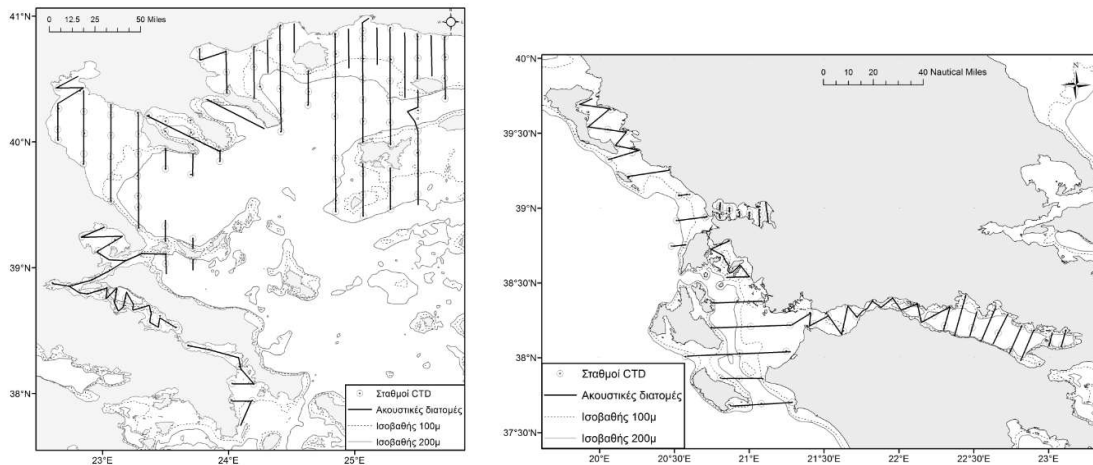
Use of acoustic sampling to estimate the abundance of anchovy and sardine stocks

In 2020 an acoustic survey (MEDIAS) was carried out in the North Aegean (Greek waters of **GSA 22**) on a trip that took place in June-July 2020 with the HCMR research vessel R/V Filia. No acoustic survey was carried out with the R/V Filia in the Ionian Sea (Greek waters of **GSA 20**) because the vessel was not in active service as from September 2020. Attempts to carry out the survey in the Ionian with a similarly equipped fishing vessel instead were unsuccessful.

The data collected was used to:

- Estimate the abundance and biomass of **anchovy (*Engraulis encrasicolus*)** and **sardine (*Sardina pilchardus*)** stocks with the acoustic method, which is unrelated to fishing.
- Estimate the abundance and spawning biomass of **anchovy (*Engraulis encrasicolus*)** stocks using the daily egg production method, which is unrelated to fishing.
- Estimate the biomass of **anchovy (*Engraulis encrasicolus*)** and **sardine (*Sardina pilchardus*)** stocks and determine their distribution in the North Aegean.

The methodology followed in the survey is in line with the MEDIAS protocol, ensuring compatibility with acoustic surveys carried out elsewhere in the Mediterranean and comparability of the results. Estimating the abundance of anchovy and sardine using the acoustic method requires knowledge of the length-weight ratio and the species breakdown by length in each area.



Predefined acoustic transects in the Aegean (GSA 22) and the Ionian (GSA 20)

Key to tables	
Σταθμοί CTD	CTD station
Ακουστικές διατομές	Acoustic transects
Ισοβαθής 100μ	100 m isobath
Ισοβαθής 200μ	200 m isobath

The average frequencies of each length class were estimated using the following formula:

$$f_j = \frac{\sum_{k=1}^M \left(\frac{n_{jk}}{t_k} \right)}{\sum_{k=1}^M \left(\frac{N_k}{t_k} \right)}$$

where f_j is the mean frequency of anchovy [sic] of length class j ; n_{jk} is the number of anchovy/sardine of length class j in haul k ; N_k is the total number of anchovy/sardine in haul

k; t_k is the duration of haul k and M is the number of hauls in the area (MacLennan and Simmonds, 1992).

For each sub-area the following ratio was also calculated: $\dot{W} = a\dot{L}^b$

where W is the total weight; L is the total length and a and b are constants that are estimated by regression analysis.

Subsequently, the density of targets (F) from the observed echo integrals was estimated according to the equation $F=(K/\langle\sigma\rangle)E$, where K is the calibration factor, $\langle\sigma\rangle$ is the mean acoustic transect and E is the echo integral after partitioning the anchovy and sardine echo (MacLennan and Simmonds, 1992).

$\langle\sigma\rangle$ was calculated for the mean total fish length of each sub-area according to the equation

$$\langle\sigma\rangle = 4\pi \sum_i f_i 10^{TS/10}$$

where f_i is the corresponding length frequency as deduced from the fishing samples (MacLennan and Simmonds, 1992).

The abundance Q was estimated separately for each sub-area. The abundance Q in each statistical sampling area was calculated from the average density within each sub-area according to the equation:

$$Q = A_k \sum_i F_i / N_k$$

where F_i is the i sample; A_k is the area of each sampling area and N_k the transects in A_k . The variance V was estimated as

$$V = \sum_i (AF_i - Q)^2 / [N_i(N_i - 1)]$$

The data was log transformed and the means and variances of F estimated according to the following equations:

$$F = \exp(m) \mathbf{G}_N [0.5 S / (n-1)]; \quad V = F^2 - \exp(2m) \mathbf{G}_N [S(n-2) / (n-1)^2];$$

where m = average (lnF); S = variance (lnF) and n = independent observations of F.

Total abundance Q_t and its variance were obtained by summing the results for each region $Q_t = Q_1 + Q_2 + \dots$, and $V_t = V_1 + V_2 + \dots$. The standard error of Q_t is the square root of V (MacLennan and Simmonds, 1992).

Presentation of the results

Condition of the stocks

It is difficult to reliably assess the condition of the stocks due to the small size of and gaps in the time series, which result in a high degree of uncertainty in the estimation models.

MEDIAS survey in the Aegean (GSA 22)

The size and geographical distribution of anchovy (*Engraulis encrasicolus*) and sardine (*Sardina pilchardus*) stocks in the North Aegean (GSA 22) were estimated using the acoustic method.

The methodology used in the acoustic survey is in line with the MEDIAS protocol, ensuring that the results are compatible and comparable with those of other regions of the Mediterranean. Acoustic signals were recorded continuously with a Simrad ES38-7.38 kHz split beam echo sounder converter along 59 predefined transects in the North Aegean in June-July 2020 (Figure 1, section A; no transects covered in section B, GSA 20 – Ionian Sea).

The size of the elementary sampling distance unit (ESDU) was one nautical mile. The integrated deviation was broken down by comparing audiograms at corresponding times. The audiograms were examined for the characteristic signs of anchovy and sardine schools, based on the acoustic target strength of each species.

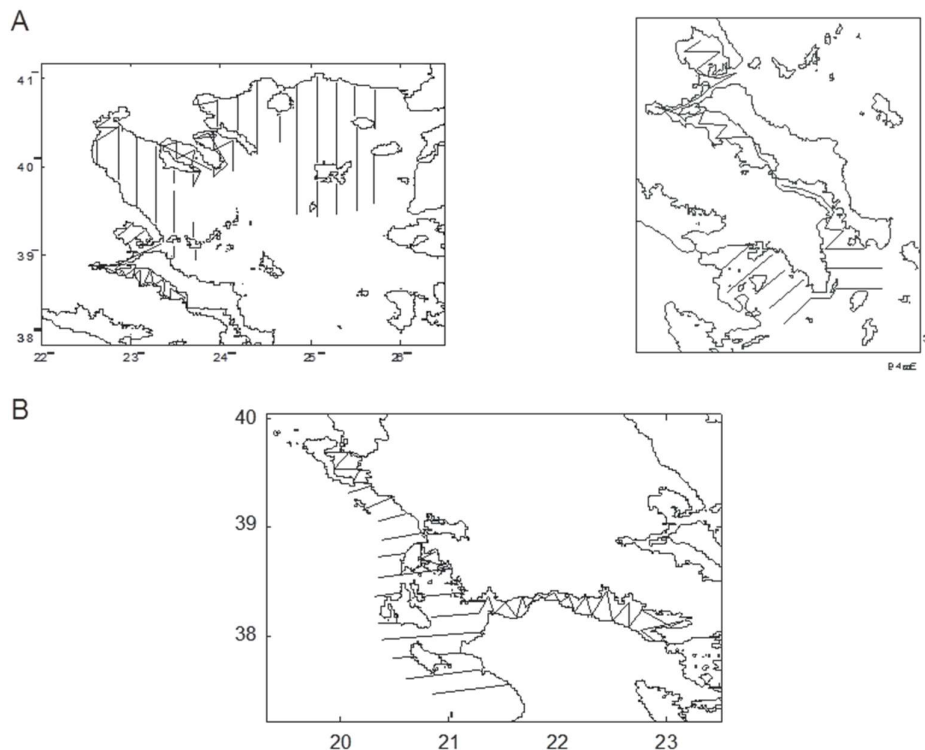


Figure 1 MEDIAS predefined acoustic transects in the Aegean (GSA 22) and the Ionian (GSA 20)

The acoustic survey covered a total area of 29 161 km² in the North Aegean. The weight-length ratio and species composition by length and region was required to estimate the anchovy and sardine biomass. To obtain this data, 15 pelagic trawls were dragged along the transects in areas with a high concentration of fish.

Hydrographical parameters were recorded in a network of 33 North Aegean sampling stations (Figure 2). At each station of the sampling network, a vertical temperature and salinity profile was recorded using a Seabird Electronics SBE-19 salinity, temperature and depth (CTD) profiler.

No plankton sampling was carried out in the North Aegean as the research vessel was only available for a limited period of time.

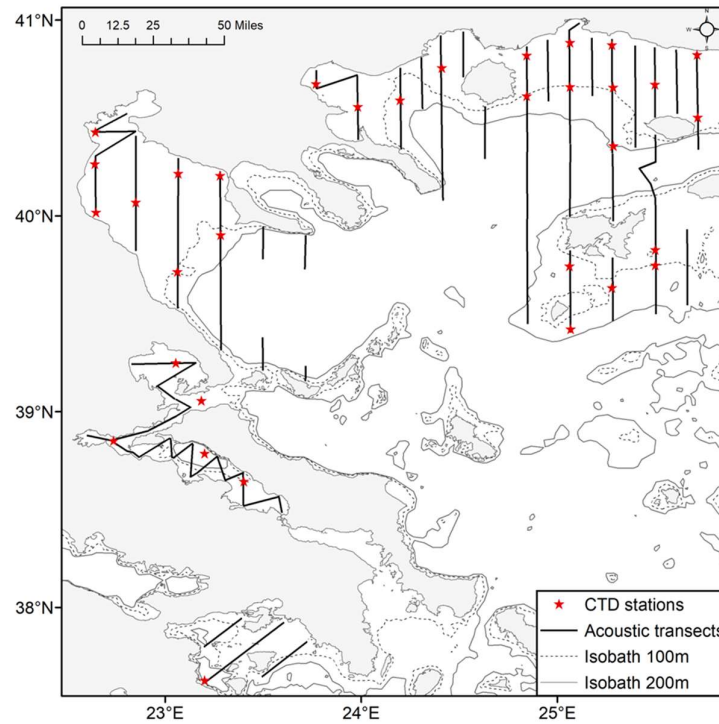


Figure 2 Acoustic sampling transects in the MEDIAS survey in the Greek section of the North Aegean (GSA 22) in June-July 2020. The position of the CTD stations is also shown.

Acoustic sampling maps of the MEDIAS survey in the Greek section of the North Aegean (GSA 22) are presented below.

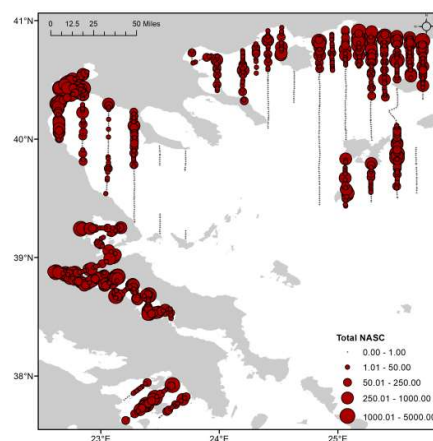


Figure 3 Overall NASC (m²/nm²) stock distribution by EDSU in the North Aegean (GSA 22), June-July 2020.

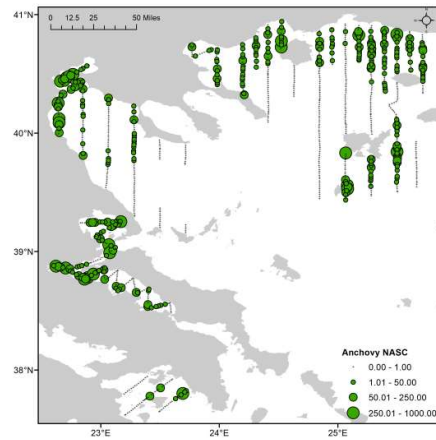


Figure 4 Anchovy NASC (m^2/nm^2) distribution by EDSU in the North Aegean (GSA 22), June-July 2020.

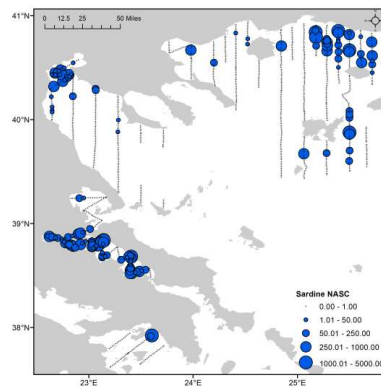


Figure 5 Sardine NASC (m^2/nm^2) distribution by EDSU in the North Aegean (GSA 22), June-July 2020.

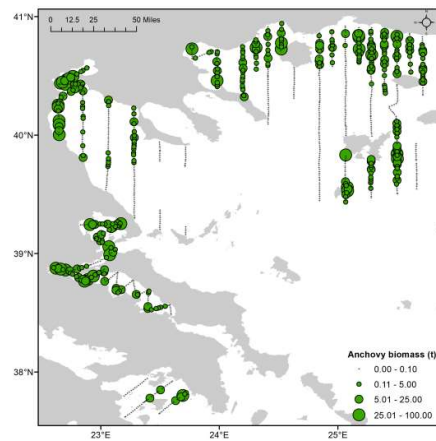


Figure 6 Anchovy biomass distribution (tonnes) by EDSU in the North Aegean (GSA 22), June-July 2020.

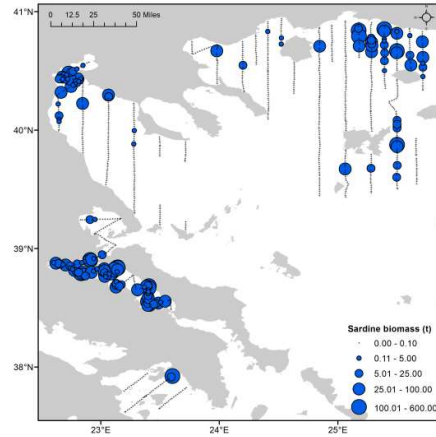


Figure 7 Sardine biomass distribution (tonnes) by EDSU in the North Aegean (GSA 22), June-July 2020.

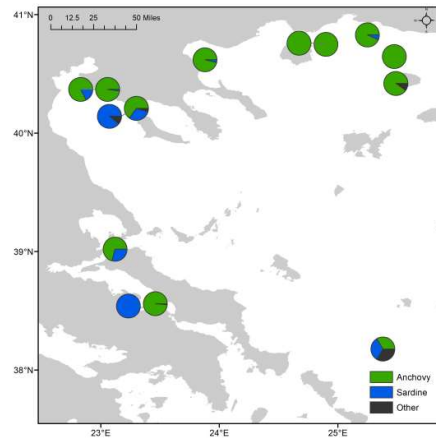


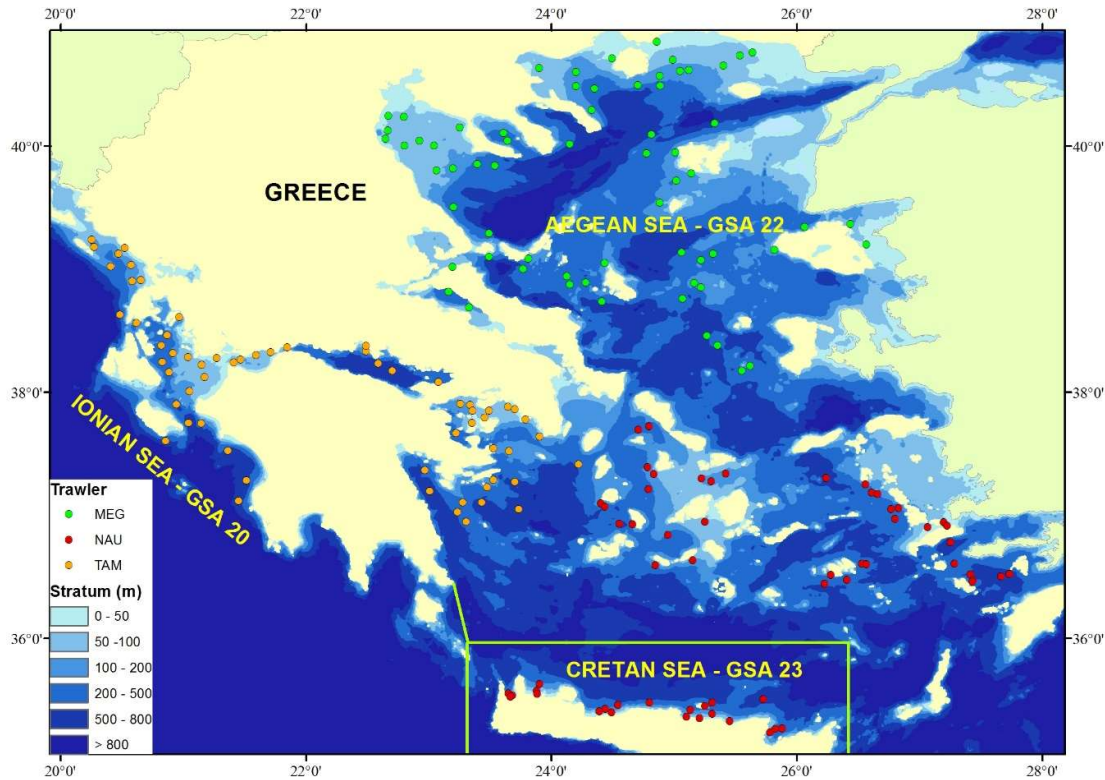
Figure 8 Catch composition (species kg/haul) by weight and time of haul in the North Aegean (GSA 22), June-July 2020.

Demersal species

The MEDITS survey programme is conducted annually in several areas of the Mediterranean according to a standardised protocol, with the aim of coordinating all experimental sampling with bottom trawls (MEDITS) carried out across the Mediterranean.

The main objective of MEDITS survey sampling is to monitor spatial and temporal variations in the abundance of demersal fish stocks.

In 2020 sampling was carried out **in all areas** planned, i.e. the Ionian, Aegean and Cretan Seas (GSA 20, 22 and 23), and at all stations planned (see the figure below, where each of the three fishing vessels used is shown in a different colour).



Map of sampling locations

The sampling exercise involved scientists from the Fisheries Research Institute based in Kavala, which conducted sampling in the northern and central Aegean, and from the two branches of the Marine Biological Resources and Inland Waters Institute of the HCMR, i.e. (a) the Athens branch, which carried out sampling in the Argosaronic Gulf, the Gulf of Corinth and the Ionian Sea, and (b) the Crete branch, which carried out sampling in the southern Aegean Sea and the Cretan Sea. **Three** commercial trawlers with the required technical specifications were rented, through tendering procedures, to conduct the experimental sampling.

All the required data was collected during the experimental sampling, which covered depths from 10 to 800 metres divided into five zones (10-50 m, 50-100 m, 100-200 m, 200-500 m and 500-800 m). All fauna species were identified, measured and weighed. Biological parameters (individual length and weight, sex and reproductive maturity) were collected for the reference species, and basic environmental data (temperature, etc.) was recorded to help interpret the biological data.

Survey results

During the sampling, priority was given to collecting biological data for 83 species of fish, cephalopods and decapod crustaceans. The majority of these species were commercial, but some non-commercial species considered as 'ecological indicators' (e.g. certain elasmobranchs) were also included.

The list of species can be found in the MEDITS manual. The data collected allows the abundance index, i.e. the number and weight of individuals per square kilometre of surface area, to be calculated for each species and sampling station. It also allows the size composition of the populations of each species to be assessed.

As the analysis for 2020 has not been completed, the following is based on the latest available analysis (2019 data).

In **2019** the landings and fishing effort of the various métiers varied both within and between GSAs 20, 22 and 23 (see Tables 2.A.1 and 2.A.2).

Specifically, in GSA 20 the trammel net (GTR) was the fishing gear accounting for the most fishing days and the biggest landings on an annual basis. This was followed, in terms of effort based on fishing days, by gillnets, bottom longlines, trawls, purse seines used at night, traps and winch trawls (Table 2.A.1), and based on landings by purse seines used at night, gillnets, trawls, bottom longlines and winch trawls.

The gear accounting for the most fishing days in GSA 22 was the trammel net, followed by gillnets, bottom longlines, traps, trawls, purse seines and winch trawls. The biggest landings in GSA 22 were recorded for purse seines used at night, followed by trawls, trammel nets, gillnets, bottom longlines, traps and winch trawls.

In GSA 23 the gear accounting for the most fishing days was the trammel net, followed by bottom longlines, gillnets, trawls, purse seines and winch trawls. The biggest landings in GSA 23 were recorded for trawls, followed by trammel nets, bottom longlines, purse seines used at night and gillnets.

To sum up, there is considerable variation between the three sub-regions as regards the fishing activity of the various métiers.

GSA 22 has both the most landings and the highest level of fishing effort among the sub-regions, with the exception of trammel nets in GSA 20, which account for both the most landings and the largest fishing effort.

Table 2.A.1. Fishing effort in **2019** (days at sea, days x GT, days x kW) by geographic sub-region (GSA), metier and length class of the fleet.

Geographical sub-region (GSA) 20						Geographical sub-region (GSA) 22						Geographical sub-region (GSA) 23					
Metier	Vessel length class	Quarter	Total days at sea	Days at sea x GT	Days at sea x kW	Fishing gear	Vessel length class	Quarter	Total days at sea	Days at sea x GT	Days at sea x kW	Fishing gear	Vessel length class	Quarter	Total days at sea	Days at sea x GT	Days at sea x kW
Traps																	
FPO																	
VL000																	
6		1	117	343	47	FPO	VL0006	1	2 146	16 231	1 464						
FPO	VL0006	2	111	569	47	FPO	VL0006	2	2 136	11 172	975						
FPO	VL0006	3	31	685	22	FPO	VL0006	3	992	1 613	124						
FPO	VL0006	4	186	546	73	FPO	VL0612	1	11 435	234 690	29 355						
FPO	VL0612	1	556	10 219	2 441	FPO	VL0612	2	1 7062	151 470	19 002						
FPO	VL0612	2	510	9 374	2 239	FPO	VL0612	3	7 050	21 626	3 020						
FPO	VL0612	4	1 443	26 523	6 335	FPO	VL0612	4	14 672	54 825	9 782						
						FPO	VL1218	1	404	17 592	524						
						FPO	VL1218	2	1 013	117 933	11 952						
						FPO	VL1218	3	588	46 658	5 955						
						FPO	VL1218	4	438	3 346	404						
FPO			2 954	48 259	11 204				57 936	677 156	82 557						

Gillnets

GNS	VL0006	1	1 261	11 189	828	GNS	VL0006	1	16 624	475 890	43 820	GNS	VL0006	1	656	6 884	555
GNS	VL0006	2	1 427	12 998	1 081	GNS	VL0006	2	15 464	165 128	14 526	GNS	VL0006	2	419	4 195	316
GNS	VL0006	3	921	8 295	656	GNS	VL0006	3	23 175	14 591	1 320	GNS	VL0612	1	527	23 295	1 173
GNS	VL0006	4	934	80 537	657	GNS	VL0006	4	12 891	14 303	1 219	GNS	VL0612	2	614	22 194	2 394
GNS	VL0612	1	19 606	899 359	80 658	GNS	VL0612	1	46 196	1 429 049	144 556	GNS	VL0612	3	29	1 087	86
GNS	VL0612	2	35 733	1 396 159	128 244	GNS	VL0612	2	59 233	1 021 936	103 217	GNS	VL0612	4	645	27 228	2 324
GNS	VL0612	3	40 837	1 489 604	132 466	GNS	VL0612	3	78 454	1 026 157	123 649						
GNS	VL0612	4	30 945	956 522	84 548	GNS	VL0612	4	59 958	926 378	120 661						
GNS	VL1218	1	58	7 179	941	GNS	VL1218	1	364	136 751	18 126						
GNS	VL1218	2	254	28 966	3 373	GNS	VL1218	2	374	22 649	4 456						
GNS	VL1218	3	302	29 356	3 965	GNS	VL1218	3	1 026	62 611	10 799						
GNS	VL1218	4	111	10 472	1 633	GNS	VL1218	4	443	38 484	7 101						
GNS total			132 389	4 930 636	439 050				314 202	5 333 927	593 450			2 890	84 883	6 848	

Trammel nets

GTR	VL0006	1	23 769	228 658	18 766	GTR	VL0006	1	44 940	804 786	65 830	GTR	VL0006	1	3 552	33 067	2 232
GTR	VL0006	2	25 094	219 116	20 252	GTR	VL0006	2	40 414	415 515	29 284	GTR	VL0006	2	4 623	40 473	3 588
GTR	VL0006	3	35 799	317 469	33 442	GTR	VL0006	3	34 423	246 322	14 881	GTR	VL0006	3	8 147	81 167	6 044
GTR	VL0006	4	23 542	229 391	21 843	GTR	VL0006	4	32 587	277 004	16 927	GTR	VL0006	4	4 603	49 332	3 812
GTR	VL0612	1	51 057	2 388 904	244 827	GTR	VL0612	1	99 625	2 848 753	291 121	GTR	VL0612	1	5 322	169 364	19 015
GTR	VL0612	2	54 217	1 965 656	219 443	GTR	VL0612	2	107 518	2 212 997	288 881	GTR	VL0612	2	14 252	464 783	51 601
GTR	VL0612	3	49 056	1 757 652	176 557	GTR	VL0612	3	103 805	1 474 068	229 002	GTR	VL0612	3	8 196	284 559	32 278
GTR	VL0612	4	44 917	1 430 247	157 921	GTR	VL0612	4	77 527	1 205 353	166 845	GTR	VL0612	4	5 412	145 115	19 588
GTR	VL1218	1	181	17 321	2 717	GTR	VL1218	1	2 924	111 294	30 686	GTR	VL1218	1	533	31 743	7 703
GTR	VL1218	2	310	19 649	5 967	GTR	VL1218	2	3 859	142 315	38 633	GTR	VL1218	2	442	26 260	6 206
GTR	VL1218	3	527	44 575	10 894	GTR	VL1218	3	3 257	211 172	37 697	GTR	VL1218	3	510	28 741	6 668
GTR	VL1218	4	164	13 130	3 317	GTR	VL1218	4	1 823	118 532	18 037	GTR	VL1218	4	105	5 838	1 545
GTR total			308 633	8 631 768	915 946				552 702	10 068 111	1 227 824			55 697	1 360 442	160 280	

Bottom longline

LLS	VL0006	1	1 669	13 323	1 303	LLS	VL0006	1	13 933	312 824	34 227	LLS	VL0006	1	1 026	18 053	950
LLS	VL0006	2	2 762	19 613	2 078	LLS	VL0006	2	23 270	193 087	19 393	LLS	VL0006	2	2 262	32 975	1 992
LLS	VL0006	3	4 712	34 956	3 573	LLS	VL0006	3	38 854	93 097	7 117	LLS	VL0006	3	1 101	17 294	886
LLS	VL0006	4	1 850	30 225	1 384	LLS	VL0006	4	26 011	59 285	3 626	LLS	VL0006	4	1 914	26 696	1 723
LLS	VL0612	1	4 322	59 406	15 557	LLS	VL0612	1	26 202	776 995	96 889	LLS	VL0612	1	2 240	79 407	9 990
LLS	VL0612	2	13 867	328 419	45 119	LLS	VL0612	2	38 616	753 910	113 110	LLS	VL0612	2	3 410	125 804	16 923
LLS	VL0612	3	15 048	363 724	48 074	LLS	VL0612	3	40 862	849 301	120 496	LLS	VL0612	3	5 929	160 784	25 074
LLS	VL0612	4	7 749	196 249	24 685	LLS	VL0612	4	40 639	685 106	104 649	LLS	VL0612	4	4 776	165 999	23 150
LLS	VL1218	1	38	2 886	646	LLS	VL1218	1	763	61 302	11 205	LLS	VL1218	2	293	30 257	3 690
LLS	VL1218	2	350	19 380	5 125	LLS	VL1218	2	1 230	110 592	17 700	LLS	VL1218	3	196	34 648	2 670
LLS	VL1218	3	385	25 783	6 040	LLS	VL1218	3	1 936	144 119	25 692	LLS	VL1218	4	216	25 932	4 054
LLS	VL1218	4	172	5 931	1 583	LLS	VL1218	4	1 786	129 997	23 382	OTB	VL1824	1	150	26 973	6 401
LLS total			52 924	1 099 895	155 167				254 102	4 169 615	577 486			23 513	744 822	97 503	

Trawls

OTB	VL1824	1	996	253 999	53 311	OTB	VL1218	1	35	2 843	703	OTB	VL1824	2	64	10 641	2 902
OTB	VL1824	2	380	92 237	22 270	OTB	VL1218	2	34	2 744	679	OTB	VL1824	4	140	25 560	5 923
OTB	VL1824	3	207	47 551	13 838	OTB	VL1218	4	46	3 724	921	OTB	VL2440	1	361	114 300	50 251
OTB	VL1824	4	839	201 266	44 737	OTB	VL1824	1	4 147	1 150 447	219 438	OTB	VL2440	2	263	80 597	38 149
OTB	VL2440	1	1 077	291 574	132 757	OTB	VL1824	2	2 557	711 642	136 306	OTB	VL2440	3	70	24 271	10 228
OTB	VL2440	2	515	137 827	64 704	OTB	VL1824	3	699	194 377	38 438	OTB	VL2440	4	410	127 928	57 168
OTB	VL2440	3	318	89 264	36 876	OTB	VL1824	4	4 622	1 281 372	243 353						
OTB	VL2440	4	1 068	294 454	133 816	OTB	VL2440	1	8 493	2 696 174	1 128 666						
			220	26 877	4 567	OTB	VL2440	2	5 180	1 640 689	693 784						
			584	86 114	13 452	OTB	VL2440	3	3 111	1 012 711	452 069						
			574	84 642	13 582	OTB	VL2440	4	8 533	2 730 023	1 136 604						
OTB total			6 778	1 605 805	533 910				37 457	11 426 746	4 050 961			1 308	383 297	164 621	

Purse seines used at night

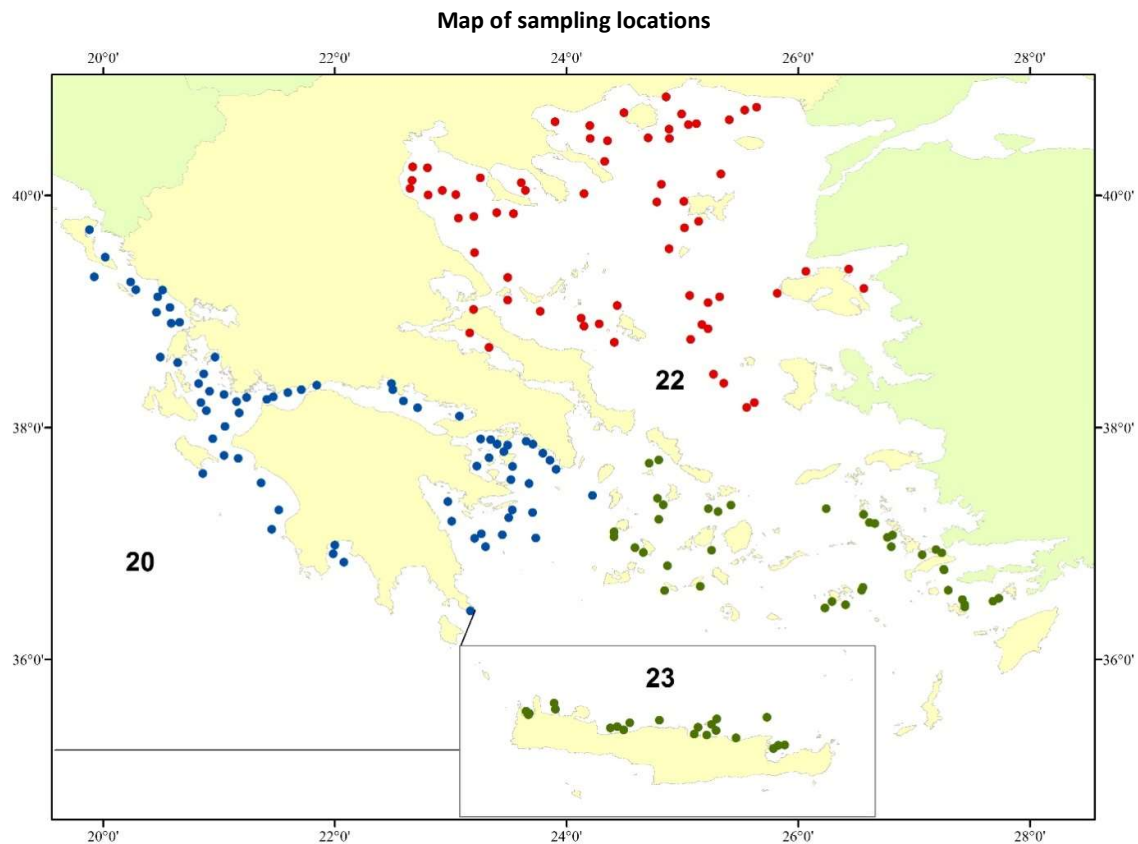
PS	VL1218	1	324	43 680	7 796	PS	VL1218	1	1 130	143 263	24 225	PS	VL1218	1	29	5 488	821
PS	VL1218	2	398	75 101	14 649	PS	VL1218	2	2 681	359 673	61 160	PS	VL1218	2	135	26 799	3 663
PS	VL1218	3	1 399	274 530	54 429	PS	VL1218	3	3 404	451 961	77 749	PS	VL1218	3	155	30 311	4 261
PS	VL1218	4	1 735	340 403	67 709	PS	VL1218	4	1 907	258 752	43 880	PS	VL1218	4	64	12 632	1 720
PS	VL1824	1	941	182 331	35 926	PS	VL1824	1	2 162	480 018	109 970	PS	VL1824	1	33	5 314	1 017
PS	VL1824	2	6	2 357	588	PS	VL1824	2	6 417	1 391 426	321 537	PS	VL1824	2	175	28 067	7 461
PS	VL1824	3	19	2 887	1 551	PS	VL1824	3	7 111	1 533 825	357 949	PS	VL1824	3	164	24 209	7 099
PS	VL1824	4	56	8 859	4 552	PS	VL1824	4	3 693	797 805	185 220	PS	VL1824	4	65	9 502	3 288
PS	VL2440	1	18	7 408	1 848	PS	VL2440	1	905	207 174	85 543	PS	VL2440	1	43	7 586	4 989
PS	VL2440	2	44	388	17	PS	VL2440	2	2 142	518 822	195 781	PS	VL2440	2	85	14 751	9 627
PS	VL2440	3	47	414	19	PS	VL2440	3	2 376	585 615	219 921	PS	VL2440	3	88	14 828	9 665
PS	VL2440	4	1 527	88 466	8 678	PS	VL2440	4	1 186	276 488	109 137	PS	VL2440	4	30	4 795	3 105
PS total			6 514	1 026 824	197 762.1				35 114	7 004 822	1 792 072			1 066	184 282	56 716	

Winch trawl

SB	VL0006	1	1 716	99 846	9 794	SB	VL0612	1	2 438	147 369	14 506	SB	VL0612	1	17	830	139
SB	VL0006	4	86	10 115	1 436	SB	VL0612	4	3 780	225 950	22 242	SB	VL0612	4	67	3 468	581
SB	VL0612	1	124	14 584	2 070	SB	VL1218	1	813	100 921	13 867	SB	VL1218	1	39	3 114	607
SB	VL0612	4				SB	VL1218	4	1 215	153 836	21 138	SB	VL1218	4	72	6 067	1 183
SB	VL1218	1										SB	VL1824	1	58	9 240	1 620
SB	VL1218	4										SB	VL1824	4	61	9 856	1 728
SB total			1 926	124 544.6	13 300.37				8 246	628 075.7	71 752.92			314	32 575.09	5 857 688	

The MEDITS experimental sampling exercise with **bottom trawls** in **2020** also took place in the three management areas (GSAs) of the Greek territory: the Ionian, Aegean and Cretan Seas.

The data collected in 2020 is still being processed, but the sampling locations are shown below.



Estimates show that the hake stock is in a precarious state, with an F/F_{msy} ratio above 1 (maximum permissible exploitation ratio) according to the experts' preliminary assessment of data from the national fisheries data collection programme of previous years regarding the biological indicators for demersal species in the Aegean Sea (GSA 22); see Chapter III of this report.

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 levels of exploitation allowing maximum sustainable yields (MSY) to be achieved. This may be a sign of imbalance if it occurs 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, it was deemed necessary to take appropriate management measures based on adequate scientific evidence.

Reducing fishing capacity by scrapping vessels targeting this specific species among others, using nets and longlines and bottom otter trawls as fishing gear, could help achieve this objective.

Permanent cessation through scrapping took place in 2018 and 2019.

According to the 'observation-based' technical indicator, small-scale coastal fishing was on a downward trend from 2009 to 2018, whereas there was a slight improvement in 2019 and 2020.

Prices in **2020** improved compared to the previous year for fleet segments VL0006 and VL1218. For segment VL0612 prices fell slightly compared to 2019, but have remained relatively stable in relation to previous years, especially considering the impact in 2020 of the COVID-19 pandemic.

A factor that is likely to have influenced the negative trend of this indicator is the rising age of fishers, who may therefore be less able or motivated to make regular fishing trips.

Trawlers in segment VL2440 and purse seiners in segments VL1824 and VL2440 achieved a **higher indicator value than in 2019**, continuing a positive trend, while for coastal vessels in segment VL0006 there was a slight improvement.

Reduced fishing effort due to the cost of fuel and reduced sales prices for catches, in addition to the COVID-19 pandemic, are likely to have contributed to the above indicator values.

VESSEL USE INDICATORS

Year	Fleet	Length	Technical indicator (observed)	Technical indicator (theoretical)
2020	OTB	VL1218 ¹	-	-
		VL1824	0.74	0.68
		VL2440	0.87	0.83
	PS	VL1218	0.77	0.62
		VL1824	0.77	0.71
		VL2440	0.84	0.81
	Coastal	VL0006	0.55	0.23
		VL0612	0.77	0.56
		VL1218	0.65	0.39
2019	OTB	VL1218 ¹	-	-
		VL1824	0.71	0.65
		VL2440	0.91	0.88
	PS	VL1218	0.75	0.60
		VL1824	0.87	0.81
		VL2440	0.99	0.96

¹ The indicator is not suitable for statistical use as the segment includes very few vessels (less than five) with a very low level of activity.

	Coastal	VL0006	0.64	0.43
		VL0612	0.77	0.64
		VL1218	0.39	0.32
2018	OTB	VL1218	0.32	0.23
		VL1824	0.77	0.71
		VL2440	0.82	0.78
	PS	VL1218	0.38	0.28
		VL1824	0.59	0.54
		VL2440	0.78	0.69
Coastal	VL0006	0.62	0.46	
	VL0612	0.71	0.61	
	VL1218	0.50	0.39	
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

	Coastal	VL2440	0.74	0.66
		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

Information from the report on the implementation of the landing obligation

The following information concerning Greek-registered vessels was submitted for the purposes of the **2020** report on the implementation of the landing obligation to be drawn up by the European Commission in accordance with Regulation (EU) 2015/812.

I. Information concerning 2020

(a) Small pelagic species for which a minimum size is laid down in Annex IX to Regulation (EU) 2019/1241, specifically anchovy, sardine, mackerel and horse mackerel:

Commission Delegated Regulation (EU) No 1392/2014 established a discard plan, including *de minimis* exemptions under Article 15(5)(c) of Regulation (EU) No 1380/2013, subsequently replaced by Regulation (EU) 2018/161.

Under the discard plan it is permitted, by way of derogation from Article 15(1) of Regulation (EU) No 1380/2013, to discard up to 3% of the total annual catches of the aforementioned species fished using purse seines in the Ionian Sea. The same derogation applies to the same species caught using purse seines in the Aegean Sea and off Crete.

(b) Bluefin tuna, for which a catch limit applies:

Fishing vessels targeting bluefin tuna are allowed, under a derogation from Article 15(2) of Regulation (EU) No 1380/2013 laid down by Commission Delegated Regulation (EU) 2015/98, to retain on board, tranship, transfer, land, transport, store, sell, etc. by-catches of up to 5% of the total tuna catch per landing, in terms of the number of individuals, subject to a minimum size (between 8 kg/75 cm and 30 kg/115 cm).

(c) Certain benthic species typically caught:

A discard plan with *de minimis* exemptions is in place under Commission Delegated Regulation (EU) 2017/86, as amended by Regulations (EU) 2018/2036 and 2020/4.

Under the discard plan it is permitted, by way of derogation from Article 15(1) of Regulation (EU) No 1380/2013, to discard up to 6% of the total catches in 2020 of the aforementioned species fished using bottom otter trawls in the Ionian Sea. The same derogation applies to the same species caught using bottom otter trawls in the Aegean Sea and off Crete. In addition, a derogation for the same areas and species allows discards of up to 1% of the total annual catches of coastal vessels fishing with gillnets and trammel nets or a combination of these (GTN, GNS, GTR).

(d) Swordfish, for which a catch limit applies:

Since 1 January 2017 there has been a catch limit on Mediterranean swordfish (MedSWO) (ICCAT Recommendation 16-05). It allows fishing vessels targeting Mediterranean swordfish to retain on board, tranship, transfer, land, transport, store, sell, etc. by-catches of swordfish of up to 5%, by weight or by the number of individual swordfish in the total catch per landing, of below the minimum size of 11.4 kg (whole weight) or 10.2 kg (gilled and gutted weight) or

less than 100 cm in length. The above provisions of ICCAT Recommendation 16-05 were incorporated into EU law by Regulation (EU) 2018/191.

(e) Certain demersal species:

A discard plan with *de minimis* exemptions is in place under Delegated Regulation (EU) 2018/2036, as amended by Regulation (EU) 2020/4.

Under the discard plan it is permitted, by way of derogation from Article 15(1) of Regulation (EU) No 1380/2013, to discard up to 5% of the total catches in 2020 of the aforementioned species fished using bottom otter trawls in the Ionian Sea. The same derogation applies to the same species caught using bottom otter trawls in the Aegean Sea and off Crete. In addition, a derogation for the same areas and the same species allows discards of up to 3% of the total annual catches of coastal vessels fishing with gillnets and trammel nets or a combination of these (GTN, GNS, GTR) and up to 1% of the total annual catches of coastal vessels fishing with hooks and lines (LLD, LLS, LHM, LHP, LTL).

All undersized catches of Norway lobster caught with bottom trawls and traps, crawfish and lobster caught with traps or with gillnets and trammel nets (or a combination of these) can also be discarded.

Finally, it is permitted to discard up to 5% of undersized individuals in by-catches of sardine, anchovy, mackerel and horse mackerel caught by bottom trawls.

II. Action taken to inform the parties concerned

The Directorate-General for Fisheries issued circulars to inform the regional fisheries departments, fisheries bodies and the competent control authorities of the provisions of Regulation (EU) No 1380/2013 concerning the landing obligation and the applicable derogations.

As regards the implementation of the landing obligation in 2020, we issued a document (ref. 882/45108 of 10 February 2020) with information about the provisions of Regulation (EU) 2020/4 and a general update on the applicable derogations.

An announcement was also made available to the public on the website of the Directorate-General for Fisheries (<http://www.alieia.minagric.gr/node/298>) and posted on the official website of the Ministry of Rural Development and Food. Information was also posted about fishing licences issued on an annual basis.

III. Data collection

(a) ERS data

The electronic recording system (ERS) allows normal catches and any undersized catches (in terms of quantities or, where required, individuals) to be recorded in the fishing logbook and the landing declaration (creation of different lots). Specifically for bluefin tuna (BFT), records are based on the weight and length of each individual.

The following data is extracted from the ERS:

i) Species subject to a catch limit

a) Bluefin tuna (BFT)

According to the ERS data available, the following quantities of bluefin tuna (live weight) were caught in 2020, broken down by normal and undersized individuals:

Total weight (kg) (Weight_Q)	351 483
Total number of individuals	6 101
Weight (kg) of normal individuals (larger than the minimum)	343 755
Number of individuals	5 816
Percentage of total weight	97.80%
Percentage of all individuals	95.33%
Weight of undersized individuals	7 728
Number of individuals	285
Percentage of total weight	2.20%
Percentage of all individuals	4.67%

b) Swordfish (SWO)

According to the ERS data available, the following (landed) quantities of swordfish were caught in 2020, broken down by normal and undersized individuals:

Total weight (kg)	656 515
Total number of individuals	35 133
Weight (kg) of normal individuals (larger than the minimum)	650 837
Percentage of total weight	99.14%
Weight of undersized individuals	5 678
Percentage of total weight	0.86%

All tuna and swordfish catches are inspected by the competent port authorities.

ii) Small pelagic species

The following table shows anchovy, sardine, mackerel and horse mackerel catches and total declared discards in 2020 according to the available ERS data. Note, however, that records of undersized individuals, from both landings and discards, were insufficient due to the particular conditions that prevailed in 2020, when fishing activity was limited for considerable periods of time owing to the COVID-19 pandemic.

Species	Code	Catches (kg)	Discards (kg)	Percentage (%)
Anchovy	ANE	11 970 817	546	0.046
Horse mackerel	JAX	1 235 416	679.5	0.055
Mackerel	MAC-MAS	1 637 076	2	0.000
Sardine	PIL	11 007 662	175	0.002

iii) Benthic species typically caught

The following table shows hake, red mullet and giant red shrimp catches and total declared discards in 2020 according to the available ERS data. Note, however, that records of undersized individuals, from both landings and discards, were insufficient due to the particular conditions that prevailed in 2020, when fishing activity was limited for considerable periods of time owing to the COVID-19 pandemic.

Species	Code	Catches (kg)	Discards (kg)	Percentage (%)
Hake	HKE	2 406 180	333	0.014
Striped mullet	MUT	1 124 140	581	0.052
Giant red shrimp	DPS	2 252 097	0	0.000

iv) Other demersal species

Table 1 below shows catch data in kilograms, broken down by species and gear, for 31 species and 11 types of gear for which derogations from the landing obligation were in place in 2020, as well as total catches and total declared species by gear for vessels keeping an electronic fishing logbook (ERS), regardless of vessel length.

Table 1_ ERS Logbooks_ 2020 production											
FAO CODE	FPO	GNS	GTN	GTR	LHM	LHP	LLD	LLS	LTL	OTB	PS
ANE		605	8047	130						501462	11460573
ANN	16	1215	353	952		5		81		821	14000
BFT					15289	16566	318670	666	152	40	100
BSS		664	14	826				16		7823	2760
CTB		3605	2819	1506				12		753	4030
DPS		29	51	485						2251433	99
EEA	48	13	517	1146	3	10	39	4394	196	65	
EFJ				169				38		120	
GPD	66	29	74	1073			17	6310	65	139	26
GPW		70	118	649		14	86	1396	303	13212	185
HKE		61650	4153	12866	28		3516	139283	1206	2183084	395
JAX		14872	4413	2821	12	54		152	7	484147	728938
LBE		9		49						174	
MAC		1619	286	2756						89502	21024
MAS		8965	823	3777		1288				34927	1472110
MUR	34	12044	5839	41093	12	1	15	248	20	265363	2078
MUT	1	15261	1669	12673			3	39		1093056	1438
NEP	574	254	131	956						178662	13
PAC	17	4362	2299	8982	34	138	17	3406		210803	11025
PIL		2075	16751	4214						194541	10790081
RPG	537	8219	734	9375	261	462	147	35670	208	20502	3071
SBA		1730	4315	6548	3		6	2594	50	12195	834
SBG	44	208	964	3434	419	220	181	6579		56154	59623
SBR			133	1788				20		5683	658
SHR		211	422	20				1		360	9622
SLO	288	1233	2933	7888				63		307	
SOL		3121	42	8318				4		47260	3
SSB		110	223	1399						193	12057
SWA	600	600	482	2460		62	46	3519	5	2979	3553
SWO	500	56	225	151	15	26	638711	16786			46
WRF		15		289			89	1478	12	587	
TOTAL QUANTITY PER GEAR	199974	285382	165588	462879	16816	44151	1097312	269079	5377	14508999	30298370
VESSELS PER GEAR	50	212	89	335	31	51	160	247	38	217	205
TOTAL NUMBER OF SPECIES PER GEAR	31	107	92	124	22	29	44	83	34	137	94

v) Discards reported in OSPA, the integrated monitoring and recording system for fishing activities

Table 2 below shows ERS discard data reported in OSPA in 2020.

Table 2 ERS Discards 2020				
FAO COD	Quantity	No of vessel	No of record	Month, where declared
ANE	546	2	42	January, Febr, March, August
ANN	175,75	6	46	Jan, March, May, June, July, Nov, Dec
BFT				
BSS	50	1		May
CTB				
DPS				
EEA				
EFJ				
GPD				
GPW				
HKE	333	7	49	All months except, August, Sept., Nov.
JAX	679,5	6	112	all months
LBE				
MAC				
MAS	2	1	1	Sept
MUR	119	6	33	Jan., Febr., March, May, June
MUT	581	5	39	all months, except April, July, August, Sept.
NEP	1	1	1	March
PAC	346,5	7	74	all months, except April,
PIL	1.158,50	6	175	all months, except September
RPG	5	1	1	February
SBA	336	4	68	all months
SBG	65	2	15	Jan, Febr, March, Sept.
SBR				
SHR				
SLO	15,3	3	9	Mach, June, July
SOL	57	3	23	Jan, Febr, March, April, May, June.
SSB				
SWA				
SWO	12	1	1	Sept
WRF				

(b) Information from the national fisheries data collection programme

Table 3 below shows discard estimates for important commercial species in 2019 based on data extracted from the national fisheries data collection programme.

* Table 3_ DCF data 2019

Year	Type of exemption	Exemption included in regulation	Data source*	Fishing area	Fishing fleet / metier	Species	Species discarded	Discards weight (tn)	Remarks
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Engraulis encrasicolus</i>	ANE	8.66	By-catch_ Not undersized, but damaged individuals (crushed due to the weight of the net)
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Parapenaeus longirostris</i>	DPS	3.61	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Merluccius</i>	HKE	9.81	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Scomber scombrus</i>	MAC	0.83	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Scomber colias</i>	MAS	0.48	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Mullus surmuletus</i>	MUR	0.04	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Mullus barbatus</i>	MUT	2.08	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Nephrops norvegicus</i>	NEP	0.32	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Pagellus erythrinus</i>	PAC	8.75	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Sardina pilchardus</i>	PIL	14.45	By-catch_ Not undersized, but damaged individuals (crushed due to the weight of the net)

2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Pagrus</i>	RPG	0.07	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Pagellus acarne</i>	SBA	1.90	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Sparus aurata</i>	SBG	0.29	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	OTB	<i>Pagellus bogaraveo</i>	SBR	9.47	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/161	at-sea monitoring programme / logbooks	GSA-20	PS	<i>Engraulis encrasicolus</i>	ANE	2.78	
2019	<i>De minimis</i>	2018/161	at-sea monitoring programme / logbooks	GSA-20	PS	<i>Scomber colias</i>	MAS	81.87	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/161	at-sea monitoring programme / logbooks	GSA-20	PS	<i>Sardina pilchardus</i>	PIL	44.12	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Engraulis encrasicolus</i>	ANE	52 005.54	By-catch_ Not undersized, but damaged individuals (crushed due to the weight of the net)
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Diplodus annularis</i>	ANN	2.75	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Diplodus vulgaris</i>	CTB	0.16	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Parapenaeus longirostris</i>	DPS	96.76	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Merluccius</i>	HKE	181.36	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Scomber scombrus</i>	MAC	3.16	

2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Scomber colias</i>	MAS	1.76	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Mullus surmuletus</i>	MUR	0.52	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Mullus barbatus</i>	MUT	13.21	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Nephrops norvegicus</i>	NEP	2.73	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Pagellus erythrinus</i>	PAC	13.44	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Sardina pilchardus</i>	PIL	30 383.87	By-catch_ Not undersized, but damaged individuals (crushed due to the weight of the net)
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Pagrus</i>	RPG	0.14	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Pagellus acarne</i>	SBA	27.76	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Sparus aurata</i>	SBG	0.22	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Pagellus bogaraveo</i>	SBR	18.46	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	OTB	<i>Solea solea</i>	SOL	0.25	
2019	<i>De minimis</i>	2018/161	at-sea monitoring programme / logbooks	GSA-22	PS	<i>Engraulis encrasicolus</i>	ANE	114.63	
2019	<i>De minimis</i>	2018/161	at-sea monitoring programme / logbooks	GSA-22	PS	<i>Scomber scombrus</i>	MAC	0.22	
2019	<i>De minimis</i>	2018/161	at-sea monitoring programme / logbooks	GSA-22	PS	<i>Scomber colias</i>	MAS	12.27	

2019	<i>De minimis</i>	2018/161	at-sea monitoring programme / logbooks	GSA-22	PS	<i>Sardina pilchardus</i>	PIL	468.32	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	OTB	<i>Engraulis encrasicolus</i>	ANE	0.24	By-catch_ Not undersized, but damaged individuals (crushed due to the weight of the net)
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	OTB	<i>Parapenaeus longirostris</i>	DPS	0.02	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	OTB	<i>Merluccius merluccius</i>	HKE	12.87	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	OTB	<i>Pagellus erythrinus</i>	PAC	0.05	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	OTB	<i>Mullus surmuletus</i>	MUR	0.00	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	OTB	<i>Mullus barbatus</i>	MUT	1.02	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	OTB	<i>Sardina pilchardus</i>	PIL	4.15	By-catch_ Not undersized, but damaged individuals (crushed due to the weight of the net)
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	OTB	<i>Pagrus pagrus</i>	RPG	0.38	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	OTB	<i>Pagellus acarne</i>	SBA	1.72	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/161	at-sea monitoring programme / logbooks	GSA-23	PS	<i>Scomber colias</i>	MAS	0.14	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/161	at-sea monitoring programme / logbooks	GSA-23	PS	<i>Sardina pilchardus</i>	PIL	3.27	No commercial value / interest

2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GNS	<i>Diplodus annularis</i>	ANN	365.63	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GNS	<i>Merluccius merluccius</i>	HKE	24.29	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GNS	<i>Mullus barbatus</i>	MUT	2.12	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GNS	<i>Pagellus acarne</i>	SBA	1.78	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GNS	<i>Pagellus bogaraveo</i>	SBR	1.20	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GNS	<i>Pagellus erythrinus</i>	PAC	8.45	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GNS	<i>Sparus aurata</i>	SBG	0.47	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GTR	<i>Diplodus annularis</i>	ANN	482.45	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GTR	<i>Diplodus sargus</i>	SWA	5.67	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GTR	<i>Diplodus vulgaris</i>	CTB	2.86	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GTR	<i>Mullus barbatus</i>	MUT	1.89	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GTR	<i>Mullus surmuletus</i>	MUR	1.89	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GTR	<i>Pagellus acarne</i>	SBA	42.02	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GTR	<i>Pagellus bogaraveo</i>	SBR	11.45	By-catch_ No commercial value / interest

2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GTR	<i>Pagellus erythrinus</i>	PAC	11.35	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GTR	<i>Pagrus pagrus</i>	RPG	2.16	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GTR	<i>Solea solea</i>	SOL	0.41	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	GTR	<i>Sparus aurata</i>	SBG	1.70	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	LLS	<i>Diplodus annularis</i>	ANN	2.24	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	LLS	<i>Diplodus sargus</i>	SWA	0.04	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-20	LLS	<i>Pagrus pagrus</i>	RPG	1.05	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GNS	<i>Diplodus annularis</i>	ANN	89.82	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GNS	<i>Diplodus vulgaris</i>	CTB	0.49	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GNS	<i>Merluccius merluccius</i>	HKE	9.67	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GNS	<i>Mullus barbatus</i>	MUT	1.07	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GNS	<i>Mullus surmuletus</i>	MUR	0.93	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GNS	<i>Pagellus acarne</i>	SBA	18.92	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GNS	<i>Pagellus bogaraveo</i>	SBR	6.67	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GNS	<i>Pagellus erythrinus</i>	PAC	7.85	No commercial value / interest

2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GNS	<i>Pagrus pagrus</i>	RPG	0.19	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GNS	<i>Sparus aurata</i>	SBG	0.07	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GTR	<i>Diplodus annularis</i>	ANN	79.22	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GTR	<i>Diplodus puntazzo</i>	SHR	0.04	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GTR	<i>Diplodus sargus</i>	SWA	4.93	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GTR	<i>Diplodus vulgaris</i>	CTB	2.76	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GTR	<i>Merluccius merluccius</i>	HKE	3.01	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GTR	<i>Mullus barbatus</i>	MUT	2.04	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GTR	<i>Mullus surmuletus</i>	MUR	3.98	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GTR	<i>Pagellus acarne</i>	SBA	30.04	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GTR	<i>Pagellus bogaraveo</i>	SBR	18.66	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GTR	<i>Pagellus erythrinus</i>	PAC	16.90	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GTR	<i>Pagrus pagrus</i>	RPG	10.41	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GTR	<i>Solea solea</i>	SOL	1.15	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	GTR	<i>Sparus aurata</i>	SBG	1.34	

2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	LLS	<i>Diplodus annularis</i>	ANN	8.14	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	LLS	<i>Diplodus sargus</i>	SWA	0.45	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	LLS	<i>Diplodus vulgaris</i>	CTB	2.19	By-catch_ Not undersized, but damaged individuals (crushed due to the weight of the net)
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	LLS	<i>Mullus surmuletus</i>	MUR	0.29	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	LLS	<i>Pagellus acarne</i>	SBA	0.22	By catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	LLS	<i>Pagellus erythrinus</i>	PAC	4.46	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	LLS	<i>Pagrus pagrus</i>	RPG	2.27	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-22	LLS	<i>Sparus aurata</i>	SBG	0.62	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	GNS	<i>Diplodus vulgaris</i>	CTB	0.01	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	GTR	<i>Diplodus annularis</i>	ANN	2.66	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	GTR	<i>Diplodus sargus</i>	SWA	1.47	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	GTR	<i>Diplodus vulgaris</i>	CTB	0.11	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	GTR	<i>Merluccius merluccius</i>	HKE	0.16	No commercial value / interest

2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	GTR	<i>Mullus barbatus</i>	MUT	0.37	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	GTR	<i>Mullus surmuletus</i>	MUR	0.79	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	GTR	<i>Pagellus acarne</i>	SBA	1.96	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	GTR	<i>Pagellus erythrinus</i>	PAC	0.35	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	GTR	<i>Pagrus pagrus</i>	RPG	3.27	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	LLS	<i>Diplodus sargus</i>	SWA	6.06	By-catch_ No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	LLS	<i>Diplodus vulgaris</i>	CTB	0.01	
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	LLS	<i>Pagellus erythrinus</i>	PAC	0.12	No commercial value / interest
2019	<i>De minimis</i>	2018/2036	at-sea monitoring programme / logbooks	GSA-23	LLS	<i>Pagrus pagrus</i>	RPG	0.46	

* The values in this table are estimated results of reductions. The discard ratios resulting from the samplings of national DCF program were used. The total catch was calculated according to the formula: total catch = landings / (1-discard ratio).

Note that the data is based on on-board sampling as part of the implementation of the national fisheries data collection programme, which is used to calculate the discard ratio, and on subsequent extrapolation to landing data. Moreover, the discards are not of undersized individuals but of fish with no commercial value due to lack of demand in the market or unsuitability (crushed, destroyed).

Data for 2020 is not currently available as the quality of the primary data is still being checked.

IV. The derogations in place minimise the socio-economic impact of the landing obligation as well as the impact on the security of Greek-registered vessels (in terms of separate stowage and storage of undersized fish; extra staff to manage it, etc.).

As regards port infrastructure and the gears used by the vessels, catches by purse seiners, trawlers and surface longliners are landed in designated ports, as provided for by Article 22 of Regulation (EC) No 1967/2006, with the exception of the quantities which, by way of derogation, may be discarded. The same applies to catches of bluefin tuna (Article 30 of Regulation (EU) 2016/1627) and swordfish (paragraph 31 of Recommendation 16-05 and Article 23 of Regulation (EU) 2019/1154), with the exception of discards.

Undersized bluefin tuna, defined as 8-30 kg in weight or 75-115 cm in length, and swordfish of less than 11.4 kg or 100 cm, may be sold provided that the requirements laid down in Regulation (EU) 2016/1627, as amended, are met for bluefin tuna and in Recommendation 16-05 and Regulation (EU) 2019/1154 for swordfish.

To prevent the landing of undersized fish, port authorities carry out regular and spot checks both at points of landing and at auction halls in connection with first sales as required by EU legislation.

According to data published on the official website of the Fisheries Control Directorate of the Ministry of Shipping and Island Policy, in 2020 these checks established **78 infringements** due to undersized catches, **33 at auction halls and 45 during transport**, while **6 248 fishing inspections, of which 1 270 at sea**, were carried out on professional fishing vessels.

https://alieia.hcg.gr/statistika/2020/statistika_2020.pdf

CHECKS ON TRADE / DISTRIBUTION OF CATCHES (CHECKS FOR UNDERSIZED CATCHES) AND FISHING INSPECTIONS						
CHECKS FOR UNDERSIZED CATCHES				FISHERY INSPECTIONS		
CHECKS (FISH AUCTIONS)	INFRINGEMENTS (FISH AUCTIONS)	CHECKS (DURING TRANSPORT)	INFRINGEMENTS (DURING TRANSPORT)	PROFESSIONAL VESSELS	RECREATIONAL VESSELS	OTHER INSPECTIONS
1 615	33	387	45	6 248 (1 270 at sea)	7 331 (5 048 at sea)	1 187

37 infringements were established, of which, broken down by fishing category, 1 concerned trawlers, 0 purse seiners, 11 shellfish vessels and 24 other types of vessel (see table).

TYPE OF ACTIVITY		INFRINGEMENTS OF FISHING LEGISLATION (BY FISHING CATEGORY AND TYPE OF ILLEGAL ACTIVITY)																											
		2020																											
		FISHING WITHOUT A LICENCE		USE OF PROHIBITED FISHING METHODS		ATTEMPTS TO FALSIFY, ERASE OR CONCEAL THE VESSEL'S EXTERNAL IDENTIFICATION MARKS		UNAUTHORISED FISHING IN A SPECIFIC AREA/PERIOD		RULES ON MINIMUM SIZE/WEIGHT		STORING OR OFFERING FOR SALE FISHERY PRODUCTS NOT IN COMPLIANCE WITH APPLICABLE MARKETING STANDARDS – FAILURE TO COMPLETE FISHING DATA		INFRINGEMENTS RELATING TO THE SATELLITE-BASED VESSEL MONITORING SYSTEM		TOTALS													
		DECISIONS	FINE (€)	SUSPENSION OF VESSEL LICENCE, IN DAYS	SUSPENSION OF INDIVIDUAL LICENCE, IN DAYS	DECISIONS	FINE (€)	SUSPENSION OF VESSEL LICENCE, IN DAYS	SUSPENSION OF INDIVIDUAL LICENCE, IN DAYS	DECISIONS	FINE (€)	SUSPENSION OF VESSEL LICENCE, IN DAYS	SUSPENSION OF INDIVIDUAL LICENCE, IN DAYS	DECISIONS	FINE (€)	SUSPENSION OF VESSEL LICENCE, IN DAYS	SUSPENSION OF INDIVIDUAL LICENCE, IN DAYS	DECISIONS	FINE (€)	SUSPENSION OF VESSEL LICENCE, IN DAYS	SUSPENSION OF INDIVIDUAL LICENCE, IN DAYS								
PROFESSIONAL	Trawlers						15						1	€600			5	€4 200	170	130	92	€85 350	1 525	1 485	113	€108 350	2 015	1 915	
	Purse seiners					1		10	€11 100	170	170						1	€600	10	10	65	€71 600	1 340	1 300	77	€84 500	1 540	1 500	
	Winch trawlers					3	€3 700	60	60											14	€9 561	160	150	21	€15 648	260	250		
	Shellfish boats	7	€3 200	70	80	67	€31 700	70	70										€3 300	0	0					126	€65 900	290	300

GRAND TOTALS FOR PERIOD	EXPLOSIVE / TOXIC	RECREATIONAL				Tuna boats	Swordfish boats	Other professional boats	Totals
		Other recreational activity	Foreigners	Underwater fishing	Totals				
46		0				38	1		
€20 300		€0				€16 500	€600		
545		0				455	20		
555		0				455	20		
578	6	387		104		14			
€301 627	€13 500	€159 130	€117 280	€41 850		€92 397			
1 595	0	20		0		1 425			
1 605	0	20		0		1 435			
18		0				18			
€8 687		€0				€8 687			
0		0				0			
0		0				0			
398		307	115	192		26			
€169 447		€104 810	€40 760	€64 050		€14 250			
870		20	20	0		320			
840		20	20	0		310			
78		41	35	6		24	1		
€88 405		€27 300	€23 700	€3 600		€50 305	€1 200		
630		30	30	0		420	30		
630		30	30	0		420	30		
73		0				60	2		
€121 088		€0				€111 788	€1 200		
590		0				370	40		
530		0				360	30		
179		0				8			
€173 711		€0				€7 200			
3 145		0				120			
3 055		0				120			
1 370	6	735	433	302		288	4	0	
€883 265	€13 500	€291 240	€181 740	€109 500	€0	€301 127	€3 000	€0	
7 375	0	70	70	0		3 110	90	0	
7 215	0	70	70	0		3 100	80	0	

GRAND TOTALS FOR THE PERIOD:

NUMBER OF DECISIONS IMPOSING PENALTIES:	1 370
TOTAL AMOUNT OF FINES IMPOSED:	€883 264.58
SUSPENSION OF VESSEL LICENCE, IN DAYS:	7 375
SUSPENSION OF INDIVIDUAL LICENCE, IN DAYS	7 215

V. Fishing gears in Greece are subject to several area restrictions and periods in which fishing is banned, in both national and international waters. For instance, permanent fishing bans cover 38% of the Aegean and seasonal bans apply to an additional 27.8%, according to a study published in 2017 (Petza et al, 2017²). The situation is similar in the Ionian and Cretan Seas.

The only permitted mesh size for bottom otter trawls is a 40 mm square mesh in the codend. The results of a scientific programme has validated this choice.

Restrictions on the mesh size of static nets were introduced by Presidential Decree 174/2013 (Government Gazette, Series I, No 277). Specifically, across Greece, the minimum permitted mesh size of gillnets and trammel nets, or a combination of both, is 20 mm, measured as set out in Regulation (EC) No 517/2008.

Under Annex IX to Regulation (EU) 2019/1241, the minimum mesh size for static nets is 16 mm. Greece allows this mesh size to be used only to fish big-scale sand smelt (*Atherina boyeri*), with nets measuring no more than 220 m in width and 400 mesh holes in height. Vessels are also banned from carrying other gear and fishing other aquatic organisms on the same fishing trip (Article 2 of Presidential Decree 174/2013).

All this is effective in helping to prevent catches of juveniles of aquatic organisms.

VI. Fishers are well informed and act responsibly. This is clear from the fact that they use various means to avoid catching undersized individuals, including:

- refraining from fishing in areas where they encounter small individuals, often alerting fellow fishers so they can also avoid those areas;
- using more selective gear (e.g. traps and nets with a mesh opening of 50 mm, which is larger than the minimum permitted);
- using, if they can afford it, expensive technological equipment that helps them identify not only the species but also the size of the fish. As this contributes to sustainable stock management, there is good reason to seriously explore the possibility of financing the purchase and installation of such equipment on all vessels fishing with dynamic gear.

3. REDUCTION IN FISHING CAPACITY

In recent years the overall number of Greek fishing vessels has dropped significantly, and this downward trend is continuing.

The withdrawal of vessels with financial support under Council Regulation (EC) No 1198/2006 is the main reason the Greek fleet has been shrinking.

² PETZA, D., MAINA, I., KOUKOUROUVLI, N., DIMARCHOPOULOU, D., AKRIVOS, D., KAVADAS, S., TSIKLIRAS, A.C., KARACHLE, P., & KATSANEVAKIS, S. (2017). Where not to fish - reviewing and mapping fisheries restricted areas in the Aegean Sea. Mediterranean Marine Science, 18(2), 310-323. doi: <https://doi.org/10.12681/mms.2081>

In 2017, in line with the action plan submitted together with the 2016 fleet report, a significant number of vessels was selected for scrapping under the 'permanent cessation of fishing activities' measure provided for in the 2014-2020 fisheries and maritime operational programme. The actual scrapping mainly took place in 2018 but continued in 2019.

No scrapping was carried out in 2020.

Between **1 January 2003** and **31 December 2020** the Greek fishing fleet was reduced by a total of **3 333 vessels (17.57%)** through the permanent cessation of fishing activity (**DES**), with or without financial assistance. As a result, fishing capacity fell by **31.27%** in gross tonnage (GT) and **28.33%** in engine power (kW).

In its management of fishing fleet capacity, Greece ensures, as required by the common fisheries policy, that the reference levels for engine power (kW) and tonnage (GT) are not exceeded.

Any new fishing capacity added to the fleet without financial support is always accompanied by the mandatory withdrawal of corresponding capacity without financial support.

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

To assess compliance with the entry-exit regime provided for in Article 23 of Regulation (EC) No 1380/2013, we provide tables showing the calculation of the regime and reference level baselines as at 31 December 2020, based on the most recent update of the national register of fishing vessels kept by the Fisheries Control Directorate of the Ministry of Shipping and Island Policy.

A. Calculation of the 1 January 2003 baseline (GT₀₃ and kW₀₃)

GT_{FR} (1.1.2003)	GT₁	GT₂	GT₃	GT₄	GT₀₃
101 401	0	0	4 526	0	105 927

kW_{FR} (1.1.2003)	kW₁	kW₂	kW₃	kW₄	kW₀₃
588 554	0	0	1 234	0	589 788

B. Management of entries/exits, as at 31 December 2020

		GT		kW	
1	Fishing capacity as at 1.1.2003	GT_{FR}	101 401	kW_{FR}	588 554
2	Fishing capacity under the entry-exit regime	GT₀₃	105 927	kW₀₃	589 788
3	Entry of vessels of over 100 GT with public support	GT₁₀₀	0	kW₁₀₀	0
4	Other entries or capacity increase (not included in 3 or 5)		12		85

5	Increase in GT tonnage for safety reasons	GT _s	13		
6	TOTAL ENTRIES (3+4+5)		25		85
7	Exit with public support before 1.1. 2007	*GT _{a1}	11 339	kW _{a1}	60 827
8	Exits with public support after 1.1.2007	*GT _{a2}	19 897	kW _{a2}	104 026
9	Other exits (after 1.1.2003 not included in 7 or 8)		518		2 282
10	TOTAL EXITS (7+8+9)		31 754		167 135
11	Engine power replaced with public support subject to a reduction in power			kW _r	0
12	Fleet fishing capacity as at 31.12.2020 (1+6-10)	GT _t	69 672	kW _t	421 504
13	Upper limit (ceiling) as at 31.12.2019		75 614		424 935

Rows 1, 3, 4, 5, 7, 8, 9, 11, 12: data from 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

According to the above table, the Greek fleet has **available fishing capacity** equivalent to **5 942 GT** and **3 431 kW** based on the difference between the capacity ceiling and fishing capacity as at 31 December 2020.

C. Reference levels as at 31 December 2020

		GT		kW	
		R(GT) ₀₃	119 910	R(KW) ₀₃	653 497
1	Reference levels as at 1.1.2003	R(GT) ₀₃	119 910	R(KW) ₀₃	653 497
2	Entry of vessels of over 100 GT with public support	GT ₁₀₀	0	kW ₁₀₀	0
3	Tonnage increase in GT for safety reasons	GT	13		
4	Exit with public support up to 31.12.2006	GT _{a1}	11 339	kW _{a1}	60 827
5	Exit with public support after 1.1.2007	GT _{a2}	19 897	kW _{a2}	104 026
6	Engine power replaced			kW _r	0
7	Fleet fishing capacity as at 31.12.2020	GT _t	69 677	kW _t	421 537
8	Reference levels as at 31 December 2020	R(GT) _t	89 597	R(kW) _t	488 644

Situation according to the 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

The above table shows that the Greek fishing fleet was **in compliance** with the reference levels as at 31 December 2020.

It is also clear from the table that the fishing capacity of the Greek fleet **does not exceed** the maximum fishing capacity limits laid down in Annex II to Regulation (EU) No 1380/2013 (84 123 GT and 469 061 kW).

It should be noted, moreover, that a number of fishing vessels that do not hold a valid fishing licence continue to appear as active in the national register. These vessels are gradually being

correctly marked as inactive in the register in a rather lengthy administrative procedure which, once completed, will further reduce the above fleet capacity.

5. FLEET MANAGEMENT SYSTEM

The Greek fishing fleet remains the largest in the EU in terms of numbers. It is mainly made up of small coastal vessels that mostly fish with selective gear, although the gear varies significantly depending on time and location.

Inspecting the fishing activity of 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 common fisheries policy and the current provisions on the control of fishing activities (Council Regulation (EC) No 1224/2009), the organisational structure of fisheries inspection is constantly adjusted to modernise the national penalty system and improve and/or extend 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 Member States and its 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, operators' equipment and training of inspectors;
- designing and implementing control programmes as regards tuna and swordfish, fishing activities 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

The organisational structure and responsibilities of the single control authority and the fisheries inspection authorities within this Ministry and the Ministry of Shipping and Island Policy have been gradually improved as from 2015 but mainly from 2017.

This has involved an upgrade of the fisheries monitoring centre; full operation of the integrated fisheries monitoring system (OSPA), a system for the electronic recording and monitoring of fishing activity and marketing data which is constantly being extended and

upgraded; drawing up rules and/or bringing them into line with EU provisions on marketing control and setting up a points system; electronic recording and monitoring of tuna catches; and providing users at inspection authorities and other institutions with information and training on new systems.

The following were also implemented:

- a programme of inspection and control of fishing activity and fishery products at sea, in port, at fish landing and trading ports and in auction halls across 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 deployment programme coordinated by the European Fisheries Control Agency (EFCA), including checks and inspections on the fishing activities of fishing vessels and other economic operators and joint inspection and monitoring activities;
- to implement all of the above, fisheries inspectors at port bodies and marine biologists in the central administration and the regions were trained, patrol vessels and planes were procured along with other inspection equipment, and a sufficient number of inspectors were put in charge of the monitoring, control and surveillance of fishing activities.

Other measures taken:

- administrative checks on the import, export and re-export of fishery products to and from third countries;
- drawing up rules and/or bringing them into line with EU provisions to ensure the reporting of data on the fishing activity of vessels in length classes < 10 m and 10-12 m;
- drawing up rules and/or bringing them into line with EU provisions to ensure the reliable weighing of fishery products, the submission of landing, take-over and first-sale declarations and the registration of all buyers of first-sale fish in the relevant register;
- regulation and administrative action to deal with pending appeals relating to fishing.

Improving the management system

To improve the management of the fishing fleet – apart from setting up and operating an effective and reliable management system, which has largely been achieved – continuous recording of data is necessary to be able to design management measures that respond to actual needs.

The data is partly based on estimates, as the time series required for full scientific documentation is not available due to a delay in implementing the fisheries data collection programme in previous years. The situation is constantly improving.

Note that the latest available information, from a survey collecting socio-economic data, was used to calculate the financial results and economic indicators presented in the analysis below.

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.

Data on the value of landings based on the socio-economic questionnaire cannot be used in these reports as it is not collected in line with the transversal variables methodology.

CHAPTER II

SOCIO-ECONOMIC DATA CONCERNING THE SEA FISHING INDUSTRY

This report presents the most recent data available, based on the **2020 report** of the national fisheries data collection programme combined with an analysis of data from previous years.

The data is **provisional and still being processed**. The 2020 annual report of the fisheries data collection programme, once finalised, will contain the fully processed data.

The economic indicators for the Greek sea fishing fleet presented below, calculated on the basis of economic data collected under the national programme for the collection, management and use of fisheries data, **pertain to 2019**.

The socio-economic data collected mainly concerns fishing vessel expenditure, in particular on 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).

Other socio-economic data such as 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 annual depreciation is also covered.

II. ASSESSMENT OF THE FISHING SECTOR

A.1: Economic and cross-cutting variables

A.1.a: Socio-economic data on the sea fishing sector

A.1.a.1. Introduction

Collection of economic variables

Socio-economic data on the sea fishing sector for the 2019 reference year was collected in the context of the 2017-2019 national fisheries data collection programme in accordance with the requirements of Regulation (EC) No 1004/2017 and Implementing Decision 2016/1251. The socio-economic data collected mainly concerns fishing vessel expenditure, in particular on 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).

Data is also collected on 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 annual depreciation. Economic data collected under the national programme includes the value of physical capital and investments in physical capital in the reference year (2019). Data is also collected on employment in fisheries (engaged crew and national/harmonised full-time equivalents (FTE)).

The economic variables were collected by means of a structured questionnaire, as described in detail in the deliverable 'Instructions for filling in the socio-economic questionnaire on the sea fishing sector and for entering the data in the database, 2019'. The information was collected from a sample of vessels selected using the sampling method set out in the national fisheries data collection programme, as summarised in the following paragraph. Data on the fishing fleet's annual fuel consumption, which is a transversal variable, is also collected by means of the socio-economic questionnaire.

The results of the collection of socio-economic data on sea fishing are presented below, including a description of how businesses in the fishing fleet are structured in terms of how many vessels they own. Data regarding the number of vessels per category, the average total length of vessels (in metres), gross tonnage (GT), total engine power (kW) and the average age of vessels (in years) is also assessed and presented as transversal variables. The variables are calculated on the basis of entries in the fishing vessel register in the reference year.

This report also presents data on the revenue of fishing vessels, in particular the gross value of landings and revenue from direct subsidies³.

The variables (a) 'gross value of landings', (b) 'average value by species caught' and (c) 'days at sea' are transversal variables collected on a monthly basis per fish species.

For purse seiners (PS) and trawlers (DTS 1824 and DTS 2440) the information presented is derived from OSPA data, processed with the assistance of industry experts.

³ Note that data on revenue from the renting of quotas or other fishing rights is also collected under the programme; however, this type of revenue is statistically negligible in Greece.

In the following paragraphs, socio-economic data on Greece's sea fishing sector is initially presented for the entire fleet. The data is then broken down by small-scale and large-scale fishing and by each stratum of the fishing fleet (based on the vessels' length class and main gear).

The conclusions drawn from the analysis of the economic data are set out at the end of the chapter, highlighting the most important issues encountered when the survey was carried out.

Sampling

The fishing vessel register, which in 2019 included 14 075 vessels, was used as a sampling basis to select the sample of vessels from which economic data was collected. The sample was selected by stratified random sampling. The population was stratified by means of two variables: vessel length and main fishing gear. Table A.1.a.1 shows the stratification of the population based on these variables.

Table A.1.a.1. Sampling basis: Stratification of the fleet according to vessel length and main fishing gear

Main fishing gear	Length	Population
Nets	<6	3 558
Nets	>=6 <12	5 712
Nets	>=12 <18	158
Pots and traps	<6	69
Pots and traps	>=6 <12	310
Longlines	<6	1 491
Longlines	>=6 <12	1 914
Longlines	>=12 <18	100
Dredges	>=6 <12	47
Winch trawl	>=6 <12	189
Winch trawl	>=12 <18	34
Bottom trawl	>=18 <24	105
Bottom trawl	>=24 <40	146
Purse seines	>=12 <18	85
Purse seines	>=18 <24	133
Purse seines	>=24 <40	24
TOTAL		14 075

Table A.1.a.2 shows the number of active vessels in the sample and the number of questionnaires collected per stratum. Note that in most categories the coverage rate in the sample is sufficient for the purposes of the survey.

Table A.1.a.2. Number of vessels in the sample and collected questionnaires by stratum

Main fishing gear	Length	Number of active vessels	Collected questionnaires
Nets	<6	2 669	60
Nets	>=6 <12	4 918	280
Nets	>=12 <18	143	37
Pots and traps	<6	56	8
Pots and traps	>=6 <12	267	25
Longlines	<6	1 119	46
Longlines	>=6 <12	1 688	107
Longlines	>=12 <18	90	27
Dredges	>=6 <12	10	5
Winch trawl	>=6 <12	121	27
Winch trawl	>=12 <18	28	12
Bottom trawl	>=18 <24	81	22
Bottom trawl	>=24 <40	136	31
Purse seines	>=12 <18	64	27
Purse seines	>=18 <24	123	40
Purse seines	>=24 <40	24	11
TOTAL		11 537	765

Implementation of the survey

The data used to assess the economic variables in the sea fishing sector, as set out in the following paragraphs, was collected from a random sample of vessels using a structured socio-economic questionnaire. The sampling process described in the previous paragraph was the first stage of the survey.

This was followed by training of the researchers, with a presentation of the questionnaire and the database in which the data collected through the questionnaires is recorded. The researchers were given the necessary clarifications with respect to collecting socio-economic data and using the database. The researchers were asked to complete a pilot questionnaire as part of their training.

Quality checks and further processing of the socio-economic data took place where this was considered necessary, using the appropriate methodological framework (see the methodology report for more details⁴). The framework also includes the use of specific evaluation indicators⁵.

The relevant economic variables were then assessed for the fleet as a whole as well as for its individual segments. Some additional socio-economic indicators were also calculated in the context of this report to help paint a clearer picture of the sea fishing sector and draw conclusions on the sector's viability and importance for the national economy.

A.1.a.2. 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 2019 the fishing vessel register comprised 14 075 vessels with an overall tonnage of 66 805 GT and total engine power of 396 003 kW. The average age of the vessels was 32 years. The number of vessels, overall tonnage and total engine power fell slightly compared to both 2018 and 2012, whereas the vessels' average age increased slightly. It is worth noting that in 2018 the number of vessels in the register fell by 751 (to 14 234 vessels), mainly due to the implementation of Measure 6.1.10 'Permanent cessation of fishing activities', under the heading 'Scrapping of fishing vessels', of the 2014-2020 fisheries and maritime operational programme.

In 2019 the Greek fleet comprised 13 090 businesses, the vast majority (around 93%) of which owned only one vessel. The table also shows that in recent years the total number of workers has been in constant decline (with a 31% drop overall since 2012). Note also that the figures in Table A.1.a.3 point to continued underemployment in sea fishing, since the overall number of workers is well above the number of full-time equivalents in this sector. Specifically, one worker corresponds to 0.85 FTEs.

With regard to fishing effort, the quantity of fuel consumed by the Greek fleet in 2019, based on the data collected, is estimated at 84 786 834 litres in total, which is 5% less than in 2018, whereas the total number of days at sea increased by 2% to 1 863 279. In the long term, however, there is a downward trend in the number of days at sea. When the relevant data was collected in 2019, the 'total number of days at sea' variable for 2017 was not calculated at national level for all segments of the fishing fleet.

⁴ Available at http://www.alicia.minagric.gr/sites/default/files/basicPageFiles/Methodology%20and%20Quality%20Report_Greek%20Fishing%20Fleet_English%20Version%203.pdf

⁵ Examples include crew size per stratum, fuel consumption and cost per day at sea, salary per crew member, etc.

The variable was calculated only for trawlers and purse seiners due to the late start of the programme, Note also that in 2014 the variable was based on only 9 months of the year (April-December). Therefore, the historical data for this variable covers the whole year only with respect to 2012, 2013 and 2015, for which data was collected using the socio-economic questionnaire rather than the transversal variables method provided for by Regulation (EU) No 1224/2009.

There was a slight fall in energy costs (-8%) in 2019 compared to 2018, confirming the long-term downward trend. A similar trend can be observed for other variables, including the cost of energy relative to catch value (-5%) and energy consumption relative to catch value (-2%). Sales revenue is estimated at €434 948 427, a slight decline compared to 2018.

Table A.1.a.3. Structure, employment, fishing effort and fishing yield of the Greek sea fishing fleet, 2012-2019

Variable	2012	2013	2014	2015	2016	2017	2018	2019	% change 2019-2018	% change 2019-2012
Number of vessels	16 063	15 954	14 755	15 624	15 182	14 985	14 234	14 075	-1%	-12%
Number of inactive vessels	1 531	1 202	1 155	1 210	1 535	1 521	1 423	2 538	78%	66%
Average age of vessel (years)	26.78	27.61	28.26	29.06	29.43	30.22	32.21	31.90	-1%	19%
Gross tonnage (GT)	76 211	75 566	72 843	74 699	71 751	71 085	67 095	66 805	0% -	-12%
Total engine power (kW)	455 640	454 565	431 166	446 239	430 793	426 683	398 346	396 003	-1%	-13%
Number of businesses	13 918	13 871	13 666	12 594	14 207	13 972	12 277	13 090	7%	-6%
Total number of workers	27 559	24 486	23 232	25 407	24 975	22 471	20 923	18 983	-9%	-31%
FTEs (national full-time equivalents)	23 945	22 546	20 780	23 431	23 040	20 542	18 342	16 109	-12%	-33%
Average yearly wages per worker	5 967	7 575	6 127	6 274	7 465	7 687	7 872	7 846	0% -	-12%
Average yearly wages per FTE	6 868	8 227	6 850	6 803	8 837	8 738	8 979	9 245	3%	66%
Days at sea (total)	2 815 808	2 843 714	1 921 836	2 603 840	2 040 825	-	1 832 232	1 863 279	2%	-34%
Energy costs	109 056 322	108 188 604	92 446 711	84 432 443	75 789 015	69 414 243	70 210 300	64 812 112	-8%	-41%
Energy consumption (litres)	115 096 554	113 673 414	107 319 701	107 015 700	104 897 542	94 118 510	89 208 240	84 786 834	-5%	-26%
Energy cost relative to catch value (€)	0.255	0.259	0.264	0.223	0.163	0.148	0.151	0.149	-5%	-42%
Energy consumption relative to catch value (€)	0.269	0.272	0.306	0.283	0.226	0.201	0.192	0.195	-2%	-28%
Sales revenue from catches	427 837 048	418 072 659	350 261 580	378 350 308	464 594 132	468 539 588	449 071 380	434 948 427	-3%	9%

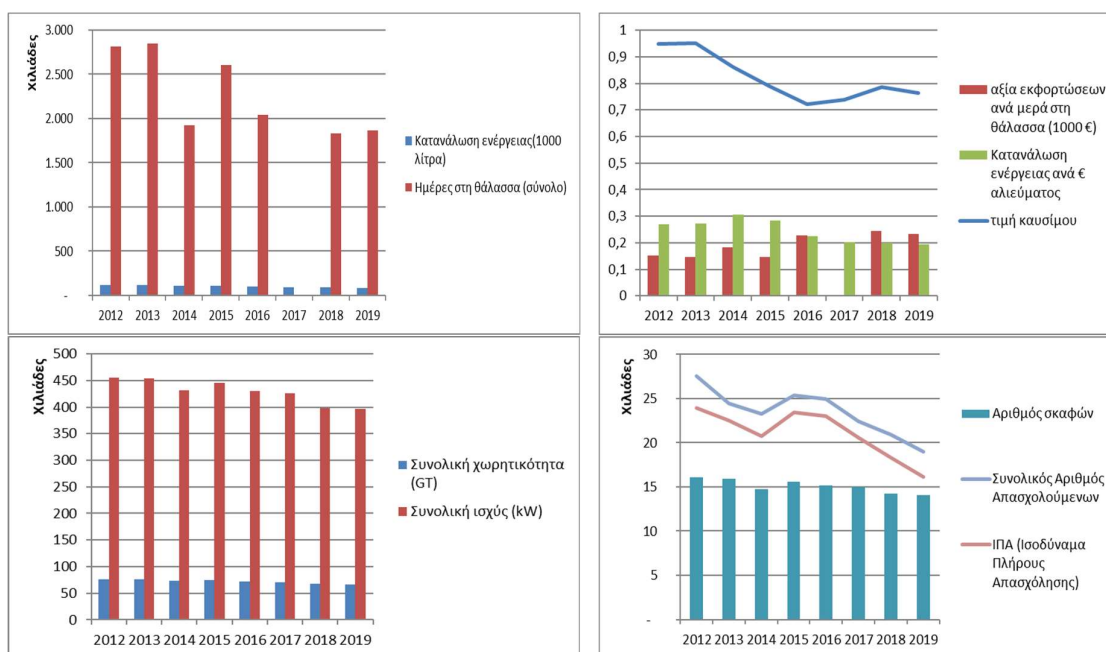


Figure A.1.a.1. Structure, employment, fishing effort and fishing yield of the Greek fleet, 2012-2019

Key to tables	
Χιλιάδες	Thousands
Κατανάλωση ενέργειας (1000 λίτρα)	Energy consumption (1 000 litres)
Ημέρες στη θάλασσα (σύνολο)	Days at sea (total)
Αξία εκφορτώσεων ανά μέρα στη θάλασσα (€ 1000)	Value of landings per day at sea (€1 000)
Κατανάλωση ενέργειας ανά € αλιεύματος	Energy consumption relative to catch value (per €)
Τιμή καυσίμου	Cost of fuel
Συνολική χωρητικότητα (GT)	Total tonnage (GT)
Συνολική ισχύς (kW)	Total engine power (kW)
Αριθμός σκαφών	Number of vessels
Συνολικός Αριθμός Απασχολούμενων	Total number of workers
ΙΠΑ (Ισοδύναμα Πλήρους Απασχόλησης)	Full-time equivalents (FTEs)

A.1.a.3. Expenditure and financial results

As can be seen from Table A.1.a.4, the sea fishing fleet draws its revenue almost exclusively from the sale of catches. Direct subsidies make up just a fraction of total revenues and relate to fuel duty refunds in cases where fuel 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.

In 2019 the overall revenue of the Greek fishing fleet was €436 230 617. As can be seen from the figures in Table A.1.a.4, the vessels made net profits for the fourth consecutive year. In the reporting year profits amounted to €82 854 455, a 5% increase compared to 2018. The fleet's financial results have thus been on a continuing upward trend since 2013. Note also that, as in previous years, the revenue that actually reflects fishers' economic situation and living standards (net profit and remuneration of the imputed value of labour) is quite high, and increased again by 3% compared to 2018.

Table A.1.a.4. Expenditure and financial results in the fishing sector, 2012-2019

Variable		2012	2013	2014	2015	2016	2017	2018	2019	% change 2019-18	% change 2019-2012
Revenue	Sales revenue from catches	427 837 048	418 072 659	350 261 580	378 350 308	464 594 132	468 539 588	449 071 380	434 948 427	-3%	2%
	Direct subsidies	0	3 747 195	5 075 829	2 635 936	2 768 528	1 701 601	1 293 410	1 282 190	-1%	-
Expenditure	Crew wages and salaries	73 367 684	105 420 429	67 278 063	77 354 959	91 281 222	74 123 474	69 205 957	58 742 418	-15%	-20%
	Imputed value of unpaid labour	91 089 486	80 058 019	75 062 991	82 050 233	95 160 109	99 534 130	95 494 252	90 189 037	-6%	-1%
	Energy costs	109 056 322	108 188 604	92 446 711	84 432 443	75 789 015	69 414 243	70 210 300	64 812 112	-8%	-41%
	Repair and maintenance costs	40 144 431	43 168 187	34 308 680	35 636 500	32 995 944	28 269 340	25 112 136	25 559 833	2%	-36%
	Other variable costs	83 917 813	77 604 070	74 033 627	78 249 174	77 901 956	57 250 926	63 661 874	63 377 769	0%	-24%
	Non-variable costs	7 749 586	6 747 994	7 139 387	6 482 234	6 476 903	8 331 749	8 031 302	8 664 201	8%	12%
	Annual depreciation	53 514 201	58 675 084	26 844 329	24 206 436	36 283 271	36 492 379	39 961 452	42 030 792	5%	-21%
									173 043 493	-1%	188%
Financial results	Gross value added	186 968 896	186 110 999	147 409 004	176 185 893	274 198 841	306 974 931	283,349,179	273 816 703	-3%	46%
	Gross profit	22 511 726	632 551	5 067 950	16 780 701	87 757 511	133 317 327	118,648,969	124 885 247	5%	455%
	Net profit	-31 002 475	-58 042 533	-21 776 379	-7 425 735	51 474 240	96 824 948	78,687,518	82 854 455	5%	-
	Profit and remuneration for imputed value of labour	60 087 011	22 015 486	53 286 612	74 624 498	146 634 349	196 359 078	174,181,770			
Capital value	Depreciated replacement value of physical capital (€)	226 071 892	242 619 052	113 968 237	99 787 479	151 622 928	160 303 189	153 732 751	160 064 530	4%	-29%
	Value of investments (€)	30 207 167	24 111 423	26 140 333	27 767 435	25 718 634	30 387 903	27 008 253	31 623 546	17%	5%
	Financial position (%)	2.92	1.54	0.55	0.37	0.50	1.35	-			
Economic indicators	Net profit margin (%)	-7.25	-13.76	-6.13	-1.95	11.01	20.59	17.47	18.99	9%	-
	RoFTA (%)	-13.71	-23.92	-19.11	-7.44	33.95	60.40	51.18	51.76	1%	-
	Gross value added / FTE	7 808	8 255	7 094	7 519	11 901	14 944	15.448	16 998	10%	118%
	Gross profit margin (%)	5.26	0.15	1.43	4.40	18.78	28.35	26.35	28.63	9%	444%
	Gross value added / revenue	0.44	0.44	0.41	0.46	0.59	0.65	0.63	0.63	0%	44%
	Net profit margin and remuneration for imputed value of labour (%)	14.04	5.22	15.00	19.59	31.37	41.76	38.68	39.67	3%	182%

The fleet's total expenditure, at €353 376 162, fell by 5% compared to 2018, thus confirming the trend that emerged in 2017 when most types of variable expenditure fell significantly compared to 2016. This is a result of fishing businesses aiming to reduce the use of inputs as much as possible to improve their liquidity. As can be seen from Table A.1.a.4 and Figure A.1.a.2, the main expenditure items of the Greek fleet are the imputed cost of unpaid labour at around €90 million (25.5% of total expenditure), followed by energy costs and other variable costs at around €65 million (18% of total expenditure each).

Energy costs, which had temporarily fallen behind expenditure on crew salaries and wages in 2017, returned to second place in the ranking of fishing vessels' individual expenditure items. The fourth largest expenditure item, after other variable costs, are crew salaries and wages which account for 16.7% of total expenditure.

Repair and maintenance costs increased slightly (+2%) compared to 2018, there was a small increase in non-variable costs (+8%) and annual depreciation of capital also increased by around 5% to €42 million⁶.

With regard to financial results, gross value added fell slightly (-3%). However, gross profit increased by 5%, and, as already mentioned, the sea fishing industry recorded a net profit.

Invested capital (total depreciated replacement value of physical capital) in the fishing sector amounts to €160 million, a slight increase compared to 2018, whereas total investments in 2019 are estimated at €31.6 million, a notable increase (+17%) compared to 2018. Lastly, Table A.1.a.4 shows an improvement in the other economic indicators compared to 2018.

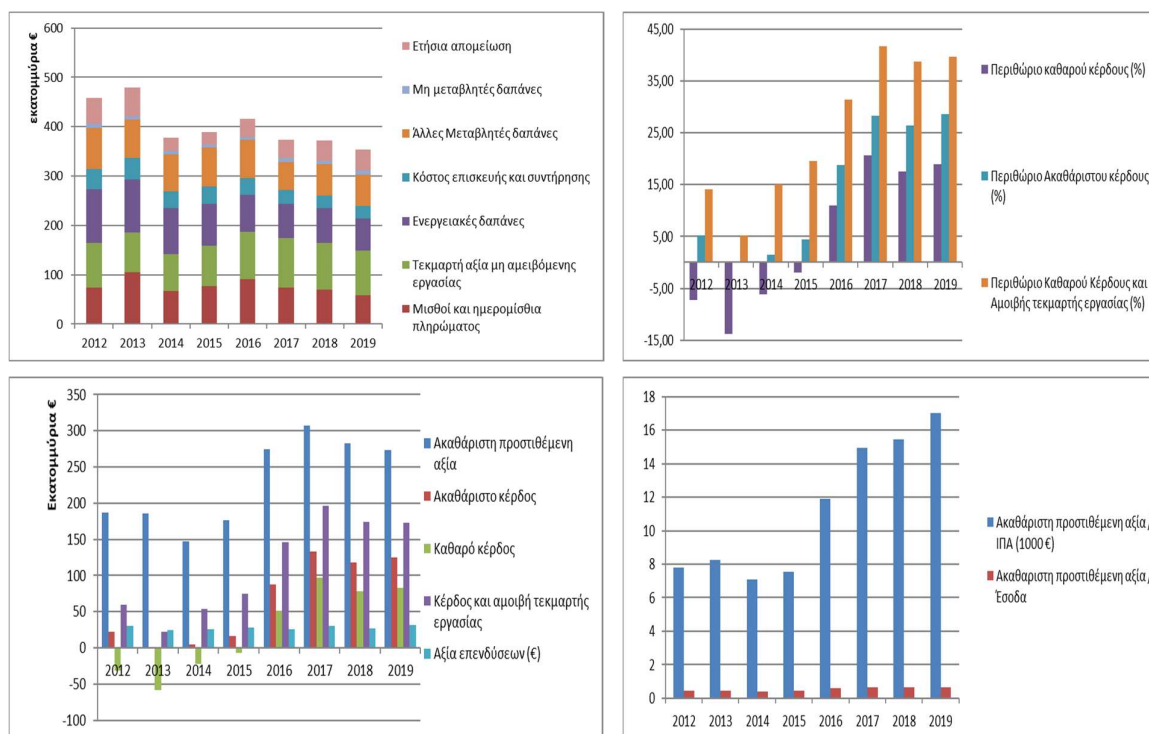


Figure A.1.a.2. Revenue, expenditure and financial results of the Greek fishing fleet, 2012-2019

Key to tables	
Εκατομμύρια €	€ million
Ετήσια απομείωση	Annual depreciation
Μη μεταβλητές δαπάνες	Non-variable costs
Άλλες μεταβλητές δαπάνες	Other variable costs
Κόστος επισκευής και συντήρησης	Repair and maintenance costs
Ενεργειακές δαπάνες	Energy costs

⁶ This increase is due to a change in the parameters for implementing the perpetual inventory method (PIM) to estimate the depreciation of physical capital, with a view to converging with the other countries participating in the programme.

Τεκμαρτή αξία μη αμειβόμενης εργασίας	Imputed value of unpaid labour
Μισθοί και ημερομίσθια πληρώματος	Crew salaries and wages
Περιθώριο καθαρού κέρδους (%)	Net profit margin (%)
Περιθώριο Ακαθάριστου κέρδους (%)	Gross profit margin (%)
Περιθώριο Καθαρού Κέρδους και Αμοιβής τεκμαρτής εργασίας (%)	Net profit and remuneration of imputed value of labour margin (%)
Ακαθάριστη προστιθεμένη αξία	Gross added value
Ακαθάριστο κέρδος	Gross profit
Καθαρό κέρδος	Net profit
Κέρδος και αμοιβή τεκμαρτής εργασίας	Profit and remuneration of imputed value of labour
Αξία επενδύσεων (€)	Value of investments (€)
Ακαθάριστη προστιθεμένη αξία / ΙΠΑ (1000 €)	Gross added value / FTE (€1 000)
Ακαθάριστη προστιθεμένη αξία / Έσοδα	Gross added value / revenue

A.1.a.4. Small-scale and large-scale fishing in Greece – structure and financial data

Tables A.1.a.5 and A.1.a.6 sum up data on the structure, fishing effort, employment and yield of small-scale and large-scale fishing in Greece, respectively⁷. As can be seen from the tables, 94% of all vessels in the fleet engage in small-scale fishing. The tables also show that the number of vessels declined over the past year in both coastal and mid-distance fishing. Vessels engaged in small-scale fishing are older on average, and their gross tonnage and engine power fell even more in relation to the number of vessels. One reason for this could be that the coastal vessels that were withdrawn had above-average tonnage and engine power for their category. Such vessels also had a greater economic incentive to participate in the permanent cessation measure. By contrast, despite a decline in numbers, the tonnage of mid-distance vessels remained stable and engine power fell only slightly.

The total number of workers fell in both small-scale fishing and mid-distance fishing. It is worth noting that underemployment increased in small-scale fishing but fell in mid-distance fishing. Finally, average wages per worker and per FTE increased in small-scale fishing compared to 2018, whereas the corresponding indicators fell in mid-distance fishing.

The breakdown of expenditure is similar to that of the previous year in both small-scale and mid-distance fishing. Accordingly, the main expenditure item for small-scale fishing is the imputed value of unpaid labour (39%), followed by wage costs (17%) and energy costs (17%). In large-scale fishing the main expenditure items are other variable costs (mainly marketing costs) at 28%, followed by crew salaries and wages and energy costs, each accounting for 21%. Lastly, there was a marginal increase in sales revenue in coastal fishing (+1%) and a slight decrease in mid-distance fishing (-7%).

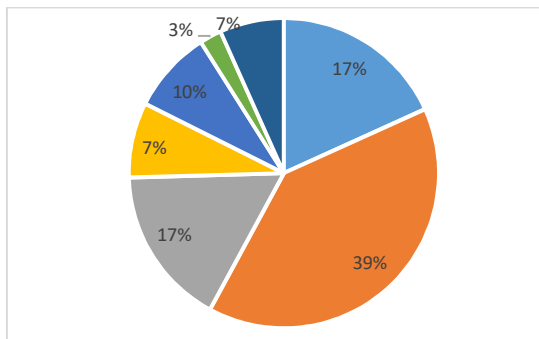
⁷ Small-scale fishing involves vessels less than 12 m in length. Large-scale fishing involves vessels with a length of 12 m and above.

Table A.1.a.5. Structure of the small-scale Greek fishing fleet in 2012-2019, fishing effort, employment and fishing yield

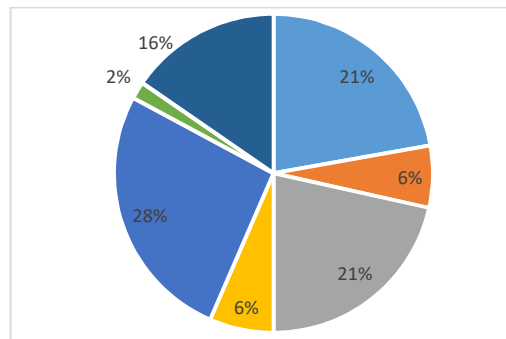
Variable	2012	2013	2014	2015	2016	2017	2018	2019	% change 2019-2018	% change 2019- 2012
Number of vessels	15 139	15 038	13 850	14 708	14 319	14 126	13 446	13 290	-1%	-12%
Number of inactive vessels	1 488	1 159	1 088	1 141	1 447	1 425	1 384	2 442	76%	64%
Average age of vessel (years)	27	28	28	29	30	31	32	32	0%	19%
Gross tonnage (GT)	30 138	29 897	27 613	29 406	29 061	28 714	26 329	26 500	1%	-12%
Total engine power (kW)	287 564	285 456	265 919	280 366	274 826	272 248	249 399	246 882	-1%	-14%
Total number of workers	22 529	19 708	18 222	20 420	19 613	18 132	16 435	14 644	-11%	-35%
FTE (national full-time equivalent)	19 724	17 885	15 782	18 490	17 799	16 213	15 161	12 903	-15%	-35%
Average yearly wages per worker	5 744	7 599	6 260	6 218	6 568	7 155	7 580	7 622	1%	33%
Average yearly wages per FTE	5 029	6 896	5 421	5 630	7 237	8 002	8 216	8 650	5%	72%
Days at sea (total)	–	–	1 921 836	2 603 840	1 928 836	–	1 708 859	1 414 726	-17%	–
Energy costs	57 557 178	60 246 282	52 567 939	49 009 374	45 345 077	37 325 894	38 519 066	36 626 634	-5%	-36%
Energy consumption (litres)	50 283 598	48 705 410	45 752 146	47 823 940	45 029 099	35 702 516	33 607 780	31 918 196	-5%	-37%
Energy cost relative to catch value (€)	0.244	0.259	0.259	0.220	0.192	0.169	0.178	0.167	-6%	-31%
Energy consumption relative to catch value (€)	0.213	0.210	0.226	0.215	0.191	0.162	0.156	0.146	-6%	-32%
Sales revenue from catches	235 877 167	232 288 624	202 868 115	222 546 553	236 329 149	220 743 073	216 126 619	218 782 079	1%	-7%

Table A.1.a.6. Structure of the mid-distance Greek fishing fleet in 2012-2019, fishing effort, employment and fishing yield

Variable	2012	2013	2014	2015	2016	2017	2018	2019	% change 2019-2018	% change 2019- 2012
Number of vessels	924	916	905	916	863	859	788	785	0%	-15%
Number of inactive vessels	43	43	67	69	88	96	43	96	123%	123%
Average age of vessel (years)	24	25	26	27	28	29	30	30	1%	24%
Gross tonnage (GT)	46 072	45 669	45 231	45 292	42 690	42 371	42 417	40 305	-1%	-13%
Total engine power (kW)	168 076	169 109	165 246	165 873	155 966	154 435	148 946	149 121	0%	-11%
Total number of workers	5 031	4 778	5 010	4 987	5 362	4 339	4 488	4 339	-3%	-14%
FTE (national full-time equivalent)	4 221	4 661	4 998	4 941	5 241	4 329	3 181	3 206	1%	-24%
Average yearly wages per worker	12 119	10 635	8 714	8 992	10 746	9 391	8 941	8 600	-4%	-29%
Average yearly wages per FTE	12 119	10 635	8 714	8 992	10 991	9 413	12 614	11 640	-8%	-4%
Days at sea (total)	–	–	93 699	160 423	111 989	–	123 373	100 242	-19%	–
Energy costs	51 499 144	47 942 322	39 878 772	35 423 069	30 443 938	30 785 345	31 691 234	28 185 478	-11%	-45%
Energy consumption (litres)	64 812 957	64 968 004	61 567 555	59 191 759	59 868 443	57 455 359	55 600 459	52 868 638	-5%	-18%
Energy cost relative to catch value (€)	0.268	0.258	0.271	0.170	0.133	0.124	0.128	0.130	-4%	-51%
Energy consumption relative to catch value (€)	0.338	0.350	0.418	0.283	0.262	0.232	0.224	0.245	2%	-28%
Sales revenue from catches	191 959 881	185 784 035	147 393 465	208 982 455	228 264 984	247 796 515	232 944 761	216 166 347	-7%	13%

**Small-scale fishing**

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

**Mid-distance fishing**

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

Figure A.1.a.4. Share in total expenditure of each expenditure item in (a) small-scale fishing and (b) mid-distance fishing

As regards financial results and economic indicators, note that there was a 10% decline in mid-distance fishing, with the exception of 'gross value added / revenue', which has remained stable, and 'gross profit margin', which increased slightly.

In coastal fishing the indicators improved considerably, with the exception of 'gross value added', which has remained stable, and 'gross value added / revenue', which fell marginally.

Table A.1.a.7. Expenditure and financial results in small-scale fishing, 2012-2019

Variable	2012	2013	2014	2015	2016	2017	2018	2019	% change 2019-18	% change 2019-12	
Revenue	Sales revenue from catches	235 877 167	232 288 624	202 868 115	222 546 553	236 329 149	220 743 073	216 126 619	218 782 079	1%	-7%
	Direct subsidies	–	3 611 349	4 476 639	2 402 045	2 490 956	1 897 882	1 255 180	1 174 890	-6%	–
Expenditure	Crew wages and salaries	24 613 785	61 542 925	29 542 208	39 096 183	39 564 077	40 861 452	37 781 404	27 411 954	-27%	11%
	Imputed value of unpaid labour	88 688 818	74 366 188	69 244 763	75 875 157	89 255 089	88 871 423	86 789 957	84 201 999	-3%	-5%
	Energy costs	57 557 178	60 246 282	52 567 939	49 009 374	45 345 077	37 325 894	38 519 066	36 626 634	-5%	-36%
	Repair and maintenance costs	26 488 344	30 462 503	22 393 893	23 808 484	18 657 345	17 610 492	15 919 736	16 519 978	4%	-38%
	Other variable costs	34 739 510	32 643 116	30 393 627	31 660 887	24 756 687	19 285 510	22 561 965	25 561 831	13%	-26%
	Non-variable costs	3 854 803	4 163 533	4 182 432	3 923 889	3 461 654	5 114 891	5 775 071	6 398 065	11%	66%
	Annual depreciation	31 792 823	34 181 973	13 109 737	13 670 111	13 247 910	15 014 048	14 831 063	18 480 414	12%	-42%
Financial results	Gross value added	113 237 333	108 384 539	97 806 863	116 545 964	146 599 342	141 406 287	134 605 961	134 850 462	0%	19%
	Gross profit	-65 270	-27 524 574	-980 108	1 574 625	17 780 176	11 673 411	10 034 600	23 236 509	132%	–
	Net profit	-31 858 093	-61 706 547	-14 089 845	-12 095 487	4 532 266	-3 340 637	-4 796 463	4 756 095	–	–
	Profit and remuneration for imputed value of labour	56 830 725	12 659 641	55 154 918	63 779 670	93 787 355	85 530 786	81 993 494	88 958 094	11%	57%
Capital value	Depreciated replacement value of physical capital (€)	137 536 291	143 896 490	58 234 707	57 740 682	56 085 651	63 007 525	61 052 383	68 017 130	11%	-51%
	Value of investments (€)	25 069 059	19 024 071	20 829 880	21 254 460	16 126 887	20 089 833	19 215 657	22 792 199	19%	-9%
	Financial position (%)	0.25	0.08	0.44	0.34	0.91	–	–	–	–	–
Economic indicators	Net profit margin (%)	-13.51	-26.16	-6.80	-5.38	1.90	-1.50	-2.21	2.16	–	–
	RoFTA (%)	-23.16	-42.88	-24.19	-20.95	8.08	-5.30	-7.86	6.99	–	–
	Gross value added / FTE	5 741	6 060	6 197	6 303	8 236	8 722	8 878	10 451	18%	82%
	Gross profit margin (%)	-0.03	-11.67	-0.47	0.70	7.45	5.24	4.62	10.56	129%	–
	Gross value added / revenue	0.48	0.46	0.47	0.52	0.61	0.64	0.62	0.61	-1%	27.7%
	Net profit margin and remuneration for imputed value of labour (%)	24.09	5.37	26.60	28.35	39.27	38.42	37.72	40.44	9.5%	67.9%

Table A.1.a.8. Expenditure and financial results in large-scale fishing, 2012-2019

Variable	2012	2013	2014	2015	2016	2017	2018	2019	% change 2019-18	% change 2019-12	
Revenue	Sales revenue from catches	191 959 881	185 784 035	147 393 465	208 982 455	228 264 984	247 796 515	232 944 761	216 166 347	-7%	13%
	Direct subsidies	–	135 846	599 190	233 892	277 571	963 846	38 230	107 301	181%	–
Expenditure	Crew wages and salaries	48 753 899	43 877 504	37 735 856	38 258 777	51 717 144	31 773 768	31 424 553	31 330 465	0% –	-36%
	Imputed value of unpaid labour	2 400 668	5 691 831	5 818 228	6 175 076	5 905 020	8 975 549	8 704 295	5 987 039	-31%	149%
	Energy costs	51 499 144	47 942 322	39 878 772	35 423 069	30 443 938	30 785 345	31 691 234	28 185 478	-11%	-45%
	Repair and maintenance costs	13 656 087	12 705 684	11 914 787	11 828 015	14 338 600	9 330 073	9 192 400	9 039 855	-2%	-34%
	Other variable costs	49 178 303	44 960 954	43 640 001	46 588 287	53 145 269	37 683 708	41 099 909	37 815 938	-8%	-23%
	Non-variable costs	3 894 783	2 584 461	2 956 955	2 558 345	3 015 249	2 500 541	2 256 231	2 266 136	0% –	-42%
	Annual depreciation	21 721 379	24 493 111	13 734 592	10 536 324	23 035 361	22 025 010	21 308 330	23 550 378	0% –	8%
Financial results	Gross value added	73 731 564	77 726 460	49 602 141	112 818 630	127 599 500	167 496 849	48 743 218	138 966 241	-7%	88%
	Gross profit	22 576 998	28 157 125	6 048 057	68 384 777	69 977 335	126 747 531	108 614 369	101 648 738	-6%	350%
	Net profit	855 619	3 664 015	-7 686 535	57 848 453	46 941 975	104 722 521	87 306 039	78 098 360	-8%	–
	Profit and remuneration for imputed value of labour	3 256 287	9 355 846	-1 868 306	64 023 529	52 846 994	113 698 070	96 010 334	84 085 399	-10%	–
Capital value	Depreciated replacement value of physical capital (€)	88 535 601	98 722 562	55 733 531	42 046 797	95 537 276	96 252 094	92 680 368	92 047 400	-1%	4%
	Value of investments (€)	5 138 108	5 087 352	5 310 453	6 512 975	9 591 746	7 440 557	7 792 596	8 831 347	13%	72%
	Financial position (%)	11.60	3.93	1.91	0.54	6.05	–	–	–	–	–
Economic indicators	Net profit margin (%)	0.45	1.97	-5.19	27.65	20.54	42.10	37.47	36.11	-1%	–
	RoFTA (%)	0.97	3.71	-13.79	137.58	49.13	108.80	94.20	84.85	-8%	–
	Gross value added / FTE	17 468	16 677	9 924	22 831	24 346	38 692	46 757	43 346	-7%	148%
	Gross profit margin (%)	11.76	15.14	4.09	32.69	30.62	50.95	46.62	47.00	1%	100%
	Gross value added / revenue	0.38	0.42	0.34	0.54	0.56	0.67	0.64	0.64	0% –	67%
	Net profit margin and remuneration for imputed value of labour (%)	1.70	5.03	-1.26	30.60	23.12	45.71	41.21	38.88	-4%	100%

A.1.a.5. Fleet composition

Table A.1.a.9 shows a breakdown of the Greek fleet into 16 segments/strata according to main fishing gear and vessel length.

Table A.1.a.9. Breakdown of the fleet based on main fishing gear and vessel length

Fleet segment	Main fishing gear	Length (metres)	Inactivity rate (%)
DTS 6-12 m	Winch trawl	6-12	35.98%
DTS 12-18 m	Winch trawl	12-18	17.65%
DTS 18-24 m	Bottom trawl	18-24	22.86%
DTS 24-40 m	Bottom trawl	24-40	6.85%
DFN 0-6 m	Nets	0-6	25.00%
DFN 6-12 m	Nets	6-12	13.90%
DFN 12-18 m	Nets	12-18	10.00%
FPO 0-6 m	Pots and traps	0-6	20.00%
FPO 6-12 m	Pots and traps	6-12	13.90%
HOK 0-6 m	Longlines	0-6	25.00%
HOK 6-12 m	Longlines	6-12	11.81%
HOK 12-18 m	Longlines	12-18	10.00%
DRB 6-12 m	Dredges	6-12	80.00%
PS 12-18 m	Purse seines	12-18	25.00%
PS 18-24 m	Purse seines	18-24	7.52%
PS 24-40 m	Purse seines	24-40	0.00%

The table also shows the percentage of inactive vessels per segment/stratum⁸. Table A.1.a.10 shows the vessels' average length, gross tonnage, total engine power and the average age of active vessels in each segment of the fleet.

Table A.1.a.10. Main characteristics of the fishing fleet by segment, 2019

Fleet segment	Number of active vessels	GT	kW	Average age	Average length
DFNVL0006	2 669	1 843.08	24 204.42	34.89	4.96
DFNVL0612	4 918	13 359.43	114 537.72	29.00	7.83
DFNVL1218	143	2 298.38	13 486.79	25.15	13.74
DRBVL0612	10	48.33	301.56	28.89	8.14
DTSVL0612	121	653.45	6 109.85	53.15	9.37
DTSVL1218	28	520.28	3 771.04	50.80	13.48
DTSVL1824	81	3 888.80	20 384.60	37.66	21.47
DTSVL2440	136	18 104.59	43 892.33	25.05	28.12
FPOVL0006	56	75.64	754.72	31.26	4.98
FPOVL0612	267	669.96	7 090.19	28.13	7.90
HOKVL0006	1 119	798.82	10 710.98	36.52	4.95
HOKVL0612	1 688	4 780.99	41 166.60	30.65	7.75
HOKVL1218	90	1 861.12	9 499.25	25.30	14.76
PSVL1218	64	1 438.07	9 207.53	41.59	15.51
PSVL1824	123	5 992.77	25 316.95	29.13	21.12
PSVL2440	24	2 106.03	5 907.61	18.67	26.72
INACTIVEVL0006	1 274	926.39	12 063.98	35.30	4.96
INACTIVEVL0612	1 168	3 357.16	29 649.53	30.71	7.91
INACTIVEVL1218	52	1 057.24	6 421.72	34.72	14.59
INACTIVEVL1824	34	1 692.95	8 297.97	34.68	21.30
INACTIVEVL2440	10	1 331.22	3 227.38	25.05	28.12

To establish the basic economic variables for each segment of the fishing fleet, the relevant variables were first calculated on the basis of a sample of vessels in each segment. To extrapolate the variables to the population, account was taken of the overall population of vessels in each segment as well as the rate of inactivity.

The results of the analysis are set out in Table A.1.a.11, and Figure A.1.a.4 shows the overall expenditure share of each cost category for each segment of the fleet.

⁸ Under Commission Decision 2010/93/EU, a vessel is considered 'inactive' if it has not been engaged in fishing during the reference year (2019).

Table A.1.a.11. Basic economic variables per segment of the Greek fleet, 2019

	DFN0006	DFN0612	DFN1218	DRB0612	DTS0612	DTS1218	DTS1824	DTS2440	FPO0006	FPO0612	HOK0006	HOK0612	HOK1218	PS1218	PS1824	PS2440
Employment																
Engaged crew	3 031	6 906	452	16	296	82	464	965	63	363	1 241	2 728	353	491	1 242	290
Full-time equivalents	1 771	6 906	452	12	296	82	464	965	43	319	827	2 728	353	167	532	191
Average salary per worker	5 270	8 711	7 677	3 675	6 817	7 522	10 354	8 382	9 410	10 999	6 088	7 795	9 667	7 471	8 581	8 962
Average wages per FTE	9 019	8 711	7 674	4 748	6 823	7 553	10 356	8 381	13 787	12 509	9 130	7 795	9 658	21 998	20 019	13 639
Fishing effort																
Fuel consumption (litres)	3 036 887	18 205 920	1 796 776	27 425	733 955	298 312	10 833 792	24 468 057	147 980	978 288	1 546 044	7 241 698	2 849 465	1 977 513	7 545 153	3 099 570
Days at sea	355 265	993 681	17 567	800	9 636	2 468	14 916	29 399	5 719	55 171	119 364	204 899	11 940	11 207	24 293	6 954
Revenue	29 014 184	128 686 137	8 349 083	149 257	3 641 389	1 294 767	25 200 651	69 041 085	1 163 857	7 868 474	12 622 226	36 811 445	12 116 974	11 257 209	60 553 087	28 460 792
Sales revenue from catches	28 996 089	127 884 662	8 261 351	148 757	3 614 196	1 294 767	25 184 082	69 041 085	1 156 857	7 823 974	12 488 433	36 669 113	12 113 974	11 257 209	60 553 087	28 460 792
Direct subsidies	18 095	801 475	87 732	500	27 194	–	16 568	–	7 000	44 500	133 793	142 332	3 000	–	–	–
Expenditure (€)	27 724 550	110 583 731	8 131 689	152 067	4 601 299	1 502 149	18 720 088	40 220 751	955 612	6 808 571	13 724 795	47 425 142	12 393 577	9 243 806	34 438 413	11 040 757
Crew wages and salaries	2 737 652	15 366 214	1 971 206	25 806	1 020 521	295 416	4 197 918	7 308 817	45 780	1 347 629	955 407	5 912 944	2 263 115	3 223 222	9 574 801	2 495 969
Imputed value of unpaid labour	13 235 300	44 793 685	1 499 011	33 000	997 427	321 417	606 491	780 026	547 050	2 645 009	6 599 546	15 350 983	1 149 328	445 156	1 082 738	102 873
Energy costs	4 006 858	20 949 402	1 323 330	24 575	718 948	231 905	5 365 387	11 584 063	150 013	822 642	2 025 049	7 929 146	2 208 683	1 298 944	4 488 147	1 685 018
Repair and maintenance costs	2 051 963	9 043 949	582 398	9 563	302 948	57 089	1 177 573	3 416 352	78 050	495 202	803 958	3 734 344	837 592	504 428	1 932 911	531 513
Other variable costs	2 639 445	12 285 323	850 006	29 391	603 538	243 393	4 313 990	8 733 884	65 450	476 232	2 038 208	7 424 244	3 807 579	2 630 494	12 644 975	4 591 617
Non-variable costs	965 092	3 109 981	223 768	6 895	167 607	48 568	410 501	552 665	24 570	197 914	436 684	1 489 322	283 867	181 867	462 299	102 602
Annual depreciation	2 088 239	5 035 176	1 681 970	22 837	790 310	304 361	2 648 227	7 844 945	44 698	823 943	865 943	5 584 160	1 843 414	959 696	4 252 542	1 531 164
Invested capital																
Depreciated replacement value (€)	7 844 109	17 324 505	6 834 918	90 182	2 755 345	1 070 872	9 808 173	31 217 210	176 863	3 230 136	3 210 552	21 543 771	7 376 056	3 514 524	16 374 302	6 627 700
Total investments (€)	2 975 935	13 009 523	951 154	6 143	640 369	166 600	1 214 100	2 400 400	40 180	674 768	917 006	4 528 275	1 041 577	830 255	1 785 128	442 133
Financial position (€)	13 685 723	97 384 325	18 571 301	153 750	5 647 671	3 292 210	17 947 140	74 365 539	308 000	8 337 224	4 864 153	52 911 375	11 222 661	7 201 812	38 885 344	18 553 082
Economic Indicators (€)																
Gross value added*	19 350 825	83 297 482	5 369 581	78 834	1 848 348	713 812	13 933 199	44 754 121	845 774	5 876 484	7 318 327	16 234 389	4 979 253	6 641 477	41 024 755	21 550 042
Gross profit	3 377 873	23 137 583	1 899 364	20 027	-169 600	96 979	9 128 790	36 665 278	252 944	1 883 847	-236 626	-5 029 538	1 566 810	2 973 099	30 367 216	18 951 200
Net profit	1 289 634	18 102 406	217 395	-2 810	-959 910	-207 382	6 480 563	28 820 333	208 245	1 059 904	-1 102 569	-10 613 697	-276 604	2 013 403	26 114 674	17 420 036
Profit and remuneration for imputed value of labour	14 524 934	62 896 091	1 716 406	30 190	37 517	114 035	7 087 054	29 600 359	755 295	3 704 913	5 496 977	4 737 285	872 724	2 458 559	27 197 412	17 522 909
Profitability indicators (€)																
GVA/income	0.67	0.65	0.64	0.53	0.51	0.55	0.55	0.65	0.73	0.75	0.58	0.44	0.41	0.59	0.68	0.76
Labour productivity**	10 926	12 061	11 875	6 365	6 249	8 741	30 034	46 370	19 669	18 411	8 844	5 951	14 092	39 826	77 059	113 095
RoFTA (%)***	0.19	1.07	0.06	-0.01	-0.32	-0.17	0.69	0.95	1.20	0.35	-0.32	-0.47	-0.01	0.60	1.62	2.65
Net profit margin****	4.44	14.07	2.60	-1.88	-26.36	-16.02	25.72	41.74	17.89	13.47	-8.74	-28.83	-2.28	17.89	43.13	61.21

* Gross value added: Revenue – (energy costs + repair and maintenance costs + other variable costs + non-variable costs)

** Labour productivity: Gross value added / FTE

***RoFTA (%) (return on assets): (revenue – expenditure) / depreciated replacement value

****Net profit margin: profit/revenue (%)

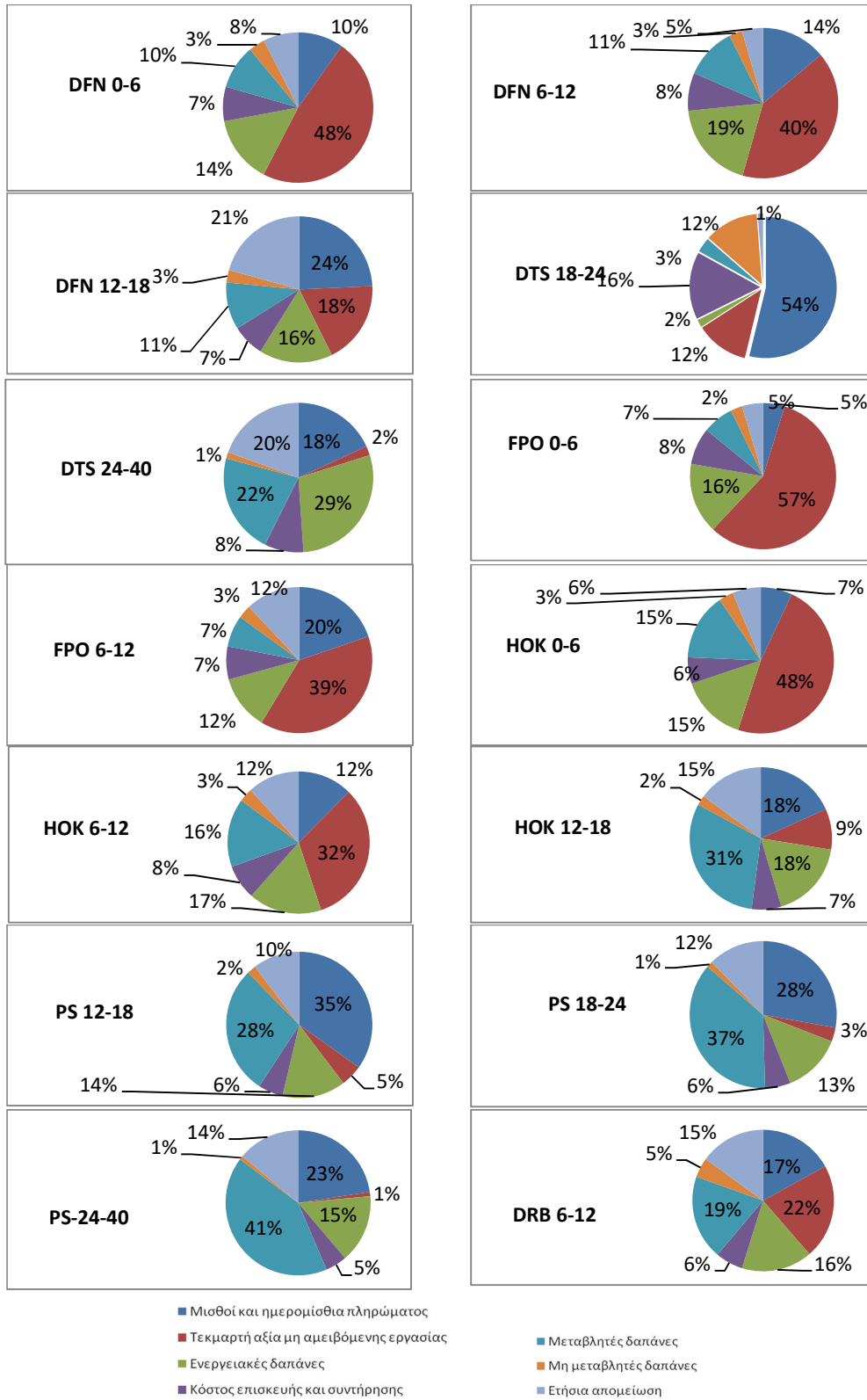


Figure A.1.a.5. Breakdown of expenses for each segment of the Greek fleet

Key to tables	
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

A.1.a.5. Conclusions of the survey and problems encountered

This report sets out the basic economic variables for the Greek sea fishing sector with respect to the **2019 reference year**. The variables were collected under the 2020 national fisheries data collection programme. The economic variables were collected from a sample of fishing vessels using a structured questionnaire.

The sample was selected by stratified random sampling as provided for by the national programme.

The 2019 national fishing vessel register was used as a sampling basis and stratification of the population was based on vessel length and main fishing gear. The Greek fishing fleet was divided into 16 segments, eight of which comprise vessels engaged in small-scale fishing, i.e. all vessels less than 12 metres in length.

The above analysis shows a downward trend in the number of vessels and the total number of workers in the period from 2012 to 2019. Revenue from the sale of catches fell marginally in medium-distance fishing but increased slightly in coastal fishing compared to 2018.

As regards individual fleet segments, it is worth noting that 10 of the 16 segments achieved net profits, which was also the case for the fleet as a whole. This could be interpreted to mean that the least profitable vessels have left the sea fishing fleet, or that the vessels in operation have become more efficient, mainly by reducing their use of inputs.

It is worth noting that most economic results and indicators have improved compared to 2018 in small-scale fishing, pointing to efficiency gains, whereas mid-distance fishing saw a slight decline. However, there is a clear longer-term trend of improvement in both mid-distance and coastal fishing that smooths out these differences.

Furthermore, the sum of profits and remuneration for imputed labour is positive in all coastal fishing segments and quite high overall. This indicator is more suitable for assessing the standard of living in particular of coastal fishers, as it also takes into account work put in by family members who thus contribute to the household income. The indicator values show that fishers earn a positive income from their activity.

CHAPTER III BIOLOGICAL SUSTAINABILITY INDICATORS

A. Calculation of the 'sustainable harvest' indicator

The 'sustainable harvest' indicator has been calculated for a number of demersal and small pelagic stocks in GSA 20 (Ionian Sea) and GSA 22 (Aegean Sea) in accordance with Chapter 10 of the Communication from the Commission to the European Parliament and the Council on Guidelines for the analysis of the balance between fishing capacity and fishing opportunities according to Article 22 of Regulation (EU) No 1380/2013 of the European Parliament and of the Council on the common fisheries policy [COM(2014)545 final of 2 September 2014].

The final weighted F/F_{msy} harvest indicators for trawlers, coastal vessels and purse seiners are 0.84, 0.97 and 2.63, respectively.

F/F_{msy} values are shown below for the stocks taken into account, along with the weighting given to each stock based on its catch value expressed in euro (€ thousand).

In each case, account was taken of the main species, i.e. those making up the majority of the catch and with the highest economic value. Two species were taken into account for purse seiners, five for trawlers and eight for coastal vessels.

Purse seines (PS)

GSA	Species	F/F_{msy}	Catch value
22	Anchovy (ANE)	1.56	26 726
22	Sardine (PIL)	4.40	18 423
20	Anchovy (ANE)	0.20	570
20	Sardine (PIL)	1.08	1 669

Bottom otter trawls (OTB)

GSA	Species	F/F_{msy}	Catch value
22	Hake (HKE)	1.1	12 013
22	Red mullet (MUT)	0.3	6 452
22	Striped mullet (MUR)	0.66	2 535
22	Pink shrimp (DPS)	0.73	6 000
22	Spicara smarís (SPC)	0.18	363
20	Hake (HKE)	1.83	1 572
20	Red mullet (MUT)	1.19	769
20	Striped mullet (MUR)	0.46	50
20	Pink shrimp (DPS)	0.85	109
20	Spicara smarís (SPC)	0.48	33

Coastal vessels

GSA	Species	F/F_{msy}	Catch value
22	Hake (HKE)	1.1	16 497
22	Red mullet (MUT)	0.3	12 840
22	Striped mullet (MUR)	0.66	9 244
22	Bogue (BOG)	0.77	4 421
22	Octopus (OCC)	0.65	12 542
22	Common pandora (PAC)	1.5	6 765
22	Common cuttlefish (CTC)	1.54	12 243
22	Spicara smaris (SPC)	0.18	972
20	Hake (HKE)	1.83	4 902
20	Red mullet (MUT)	1.19	3 104
20	Striped mullet (MUR)	0.46	307
20	Bogue (BOG)	0.61	770
20	Octopus (OCC)	0.76	1 311
20	Common pandora (PAC)	1.25	1 063
20	Common cuttlefish (CTC)	0.91	2 993
20	Spicara smaris (SPC)	0.48	382

For a small number of stocks, the sustainable harvest indicator (F/F_{msy}) for the reference year was calculated on the basis of population estimates provided by GFCM and EU (STECF) working groups, which have made similar comments and have been able to make validated quantitative assessments of the condition of the stocks only in a few cases.

For the remaining stocks the estimates were made specifically for the purposes of this report.

In the vast majority of cases, as a result of the national fisheries data collection programme not being implemented for a number of years, the estimates involve a large degree of uncertainty due to time gaps in the data series, which required a number of assumptions to be made in the methods used. These uncertainties should be taken into account and examined on a case-by-case basis, in particular if the estimates are used for management purposes.

Similar comments have also been made by the STECF and GFCM expert working groups, which have been able to make validated quantitative assessments of the condition of the stocks only in a few cases.