



JRC SCIENCE FOR POLICY REPORT

# Scientific, Technical and Economic Committee for Fisheries (STECF)

## The 2022 Annual Economic Report on the EU Fishing Fleet (STECF 22-06)

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2022



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JRC130578

EUR 28359 EN

PDF	ISBN 978-92-76-56541-3	ISSN 1831-9424	<a href="https://doi.org/10.2760/120462">doi:10.2760/120462</a>	KJ-AX-22-011-EN-N
STECF		ISSN 2467-0715		

Luxembourg: Publications Office of the European Union, 2022

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How to cite this report: Scientific, Technical and Economic Committee for Fisheries (STECF) - The 2022 Annual Economic Report on the EU Fishing Fleet (STECF 22-06), Pallezo, R., Sabatella, E., Virtanen, J. and Guillen, J. editors, Publications Office of the European Union, Luxembourg, 2022, doi:10.2760/120462, JRC130578.

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## Abstract

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In 2020, the EU fishing fleet numbered 73 716 vessels with a combined gross tonnage of 1.30 million and engine power of 5.26 million kW. Based on data submitted by Member States under the EU MAP, there were 56 111 active vessels in 2020 offering direct employment to 124 636 fishers, corresponding to 82 272 FTEs; on average earning EUR 25 654 in wages, annually. The EU fleet spent 5.3 million days-at-sea and consumed 1.9 billion litres of fuel to land 3.9 million tonnes of seafood with a reported value of EUR 5.8 billion. The Gross Value Added (GVA) and gross profit (all excl. subsidies and fishing rights) were estimated at EUR 3.3 billion and EUR 1.16 billion, respectively. GVA as a proportion of revenue was estimated at 55% and gross profit margin at almost 20%. With a total net profit of almost EUR 0.4 billion in 2020, 7.2% of the revenue was retained as profit. These results should be read in a context of reduction in fuel costs in 2020. These results indicate a deterioration compared to 2019 while nowcast estimates suggest that the performance of the EU fishing fleet will be moderately (in 2021) and heavily (in 2022) deteriorated, specially driven by the increase in fuel prices. This publication includes: 1) a structural and economic overview of the EU fishing fleet in 2020 and trend analyses for the years 2008-2020 where possible (nowcasts for 2021 and 2022); a regional analysis of the EU fishing fleet by major sea basin, as well as, fleets operating in the EU Outermost Regions and in Other Fishing Regions; 3) a detailed structural and economic overview of each Member State fishing fleet, including qualitative economic performance assessments for 2020 and nowcasts for 2021 and 2022.

# SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF) THE 2022 ANNUAL ECONOMIC REPORT ON THE EU FISHING FLEET (STECF 22-06)

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## Request to STECF

STECF is requested to review the report of the STECF Expert Working Group meeting, evaluate the findings and make any appropriate comments and recommendations.

## STECF comments

EWGs 22-02 and EWG 22-06 took place virtually from 04-08 April (AER I) and 13-17 June 2022 (AER II). The AER report produced by the EWGs covers the period 2008 to 2022 and includes information on the EU fleet's fishing capacity, effort, employment, landings, income and costs. The reference year for the AER 2022 report is 2020 with nowcast performance estimates provided for 2021 and 2022. All monetary values have been adjusted for inflation to 2020 constant prices. STECF observes that the regular analysis provides a structural and economic overview of the EU fishing fleet, a regional analysis of the EU fishing fleet by major sea basin and a detailed structural and economic overview of each EU Member State fishing fleet. Additionally, special requests relating to pelagic fleets, on social aspects and also an outlook for 2021 and 2022 considering the impacts of COVID-19, fuel prices and inflation were also addressed by the EWGs. As in previous years, STECF observes that the quality of the data submitted by Member States has steadily improved.

Regarding the analysis of social data of the fleets conducted by the EWG, STECF observes that there were some issues with the data provided in 2022 as highlighted in the EWGs report. While all Member States submitted data for the year 2020, only 10 resubmitted data for 2017, while the data submitted in 2019 was not available to the EWG. Therefore, the EWG could not carry out a comparison between 2020 and 2017 as had previously been planned.

STECF notes that different methodologies and input variables are applied in the Mediterranean and Atlantic nowcast. This is mainly because for the Atlantic, information on the TACs for the nowcasted years is used.

For the production of the nowcast for years 2021 and 2022, STECF observes that this could only be performed after the AER II meeting had finished. This was due to the delay in the availability of the input data (fuel and fish prices were updated up to May 2022, to account for as much as possible of the current variability of prices and market conditions) and the time needed for running the model as well as checking the results. Although a nowcast is more robust when more input data for the current year can be incorporated, having to produce the nowcast outside of the regular meeting is not advised because the time needed to check the results by the experts is severely reduced. STECF advises that the JRC incorporates the production of nowcasts for the Atlantic to its database, as it already performs the Mediterranean nowcasts. This would help producing the nowcast results during the EWG meeting.

STECF further observes that the basic methodology to produce the nowcast is based on the notion of relatively stable markets, gradually evolving over time. Abrupt variations in costs, prices, and inflation, resulting in changes in market structure and in fishing fleets' strategies, are currently observed, but are ignored in the current procedure, and this has potentially large impact on the robustness of the results obtained in the nowcast.

STECF observes that a full evaluation of the Long-Distance Fleet (LDF) has not been completed in the current AER. This can partly be attributed to a methodological issue and partly to a capacity issue within EWG 22-06. As noted previously by STECF, fleet data for some segments of the LDF cannot be reported because of confidentiality concerns arising from the small size of the fleet segments involved. Additionally, the LDF operates in the jurisdiction of several RFMO's, where some vessels cross jurisdictions even during a single fishing trip. In order to properly report for those vessels operating in more than one area, allocating catches and effort to specific areas is cumbersome and STECF notes that there was a capacity problem in EWG 22-06 that did not allow completing this task. The voluntary field "fishery" in the uploading template can be used by Member States to identify vessels of a fleet segment operating in a specific RFMO (e.g., ICCAT or IOTC), vessels operating under Sustainable Fisheries Partnership Agreements (SFPAs), which would ease the work of the EWG and lead to more robust estimates for the LDFs.

STECF observes that data quality has improved for the Outermost Regions (OMRs) although is still incomplete. Therefore, the EWG could not provide a full analysis of the OMR segments due to the lack of some indicators and incomplete time series.

Concerning the quality checking of data submitted by the Member States, STECF observes that for the 2022 JRC economic data call, although feedback was provided to Member States before AER I, the regular automatic checks (done in the database and available in Tableau) were not provided before the meeting. This was due to a shift in the system used by the JRC for data quality checks (from Tableau to QLIK). However, it will resolve this issue for future data calls.

STECF observes that providing Member States with timely feedback on data coverage is valuable, in addition to the general DTMT reporting, as it improves the quality of submitted data. In light of this, STECF observes that providing a checklist to Member States of data quality issues applied by JRC would help Member States in their (pre) checking of data quality before submission.

Concerning the storage and processing of data, STECF observes that Member States upload data to the JRC database. JRC processes these data and makes them available to the EWG by way of an Excel file. This Excel file has a very high operational time constraint. Average opening time of the file can take a long time; making changes to the file and regenerating the cells in the file also has a very long processing time requirement. STECF observes that automating procedures further, and moreover, reconsidering the data platform used to produce the AER analyses could facilitate a smoother workflow of the EWG, reducing the current time constraints.

As for additional requests, STECF observes that in recent years, new requests for the analysis of special topics have been added every year to the EWG ToRs. This year was no exception, with additional requests being added to the ToRs, representing a substantial additional workload to facilitate proper analysis and documentation in the report. This makes the completion of the AER report challenging. Noting the importance of current developments, STECF agrees that trade-offs may be required, and priorities may need to be discussed with DG Mare on the relative importance of for example of producing the nowcasts against these additional requests. Additionally, STECF observes that a number of these special requests may be dealt with outside the AER EWG through ad hoc contracts or as ToRs to the STECF Plenary.

STECF notes that with the new EU MAP some additional variables have been introduced in the data collection. STECF observes that reporting on these variables varies largely between Member States. For example, the way subsidies and support under COVID-19 measures have been dealt with is wide ranging. Some, Member States report COVID-19-related supporting measures as "Operating Subsidies", others as "Other Income" or even as social security aids as part of the crew wages. Other Member States do not report them at all. STECF observes that RCG ECON is best placed to review the variables and provide guidance to the Member States to reach a more unified approach to reporting on these issues.

Finally, STECF notes that the analyses made by the EWG 21-10 (FDI) show that there are discrepancies between the AER and FDI datasets. These discrepancies mainly relate to the naming and clustering of fleet segments, coding, and absence of data on inactive vessels in the FDI and reporting of inactive vessels.

### **STECF conclusions**

STECF concludes that the data presented in the AER report has been validated and is fit for purpose. The EWGs have addressed the TORs and STECF endorses the AER report.

STECF concludes that for the nowcast, the methodology used for the Mediterranean and the Atlantic could be better aligned if the JRC integrates the production of the nowcasts for the Atlantic to its database in the same way as for the Mediterranean.

In order to allow for a proper analysis of the LDF, STECF concludes that more capacity and expertise is needed in the EWG. STECF supports the use of the voluntary field "fishery" in the uploading template as it would ease the work of the EWG and lead to more robust estimates.

Similar to the STECF conclusions of 2021, for the outermost regions, although improvements in the data quality have been observed, some data gaps still persist, that continue to affect the coverage of the AER and also the quality of the balance indicators of these regions.

Concerning data quality checking, STECF concludes that making available a check list and access to the quality check would facilitate Member States in improving the quality of the data submitted.

This should be provided at the start of the data call. To allow for timely corrections, the data quality check report should be made available before the AER I meeting, following uploading of the economic data.

Concerning the storage and processing of data, STECF concludes that automating procedures further, and moreover, reconsidering the data platform used to produce the AER analyses could facilitate a smoother workflow of the EWG, reducing the current time constraints. As for additional special requests, STECF concludes that trade-offs may be required, and priorities discussed with DG Mare on the relative importance of certain elements of the AER (e.g., producing the nowcasts against the special requests). Additionally, STECF concludes that special requests may be dealt with outside the AER EWG through ad hoc contracts or as ToRs to the STECF Plenary.

STECF points out the importance of coordination at Member State and EU level. STECF suggests for the RCGs, in coordination with JRC, to consider the organisation of a workshop to explore the allocation of vessels to fleet segments and landing and effort to métiers by Member States for both FDI and AER data calls. STECF concludes it would be beneficial to both groups to harmonise different approaches in accordance with DCF definitions, variables and data call specifications.

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## EXECUTIVE SUMMARY

The 2022 Annual Economic Report (AER) on the European Union (EU) fishing fleet provides a comprehensive overview of the latest information available on the structure and economic performance of the EU Member States fishing fleets. Should be noted that this year and in comparison with previous releases of the report, the base year has been updated to 2020 (including the forecast and nowcasting procedures).

Results indicate that the profitability of the EU fleet fell in 2020, registering a net profit of almost EUR 0.42 billion, down 30% from 2019. Lower value of landings are the main reason for this reduction even in a situation of a sharp decrease of energy prices. 2020 is a continuation of the decreasing trend observed in 2019, with the added impact of the COVID-19 outbreak, with several short sized value chains closed in several months of the year 2020. Nowcast estimates indicate that the performance of the fleet will deteriorate, especially in 2022, due, chiefly, to the effects brought on by Ukraine-Russia conflict, in particular with high fuel costs and inflation rates.

In 2020, the EU fishing fleet numbered 73 716 vessels with a combined gross tonnage (GT) of 1.3 million tonnes and engine power of 5.26 million kilowatts (kW). There were 17 605 inactive vessels (23.8% of the total number of vessels), bringing the number of active vessels to 56 111. Of the active vessels, 75% were SSCF vessels, 24% LSF and less than 0.5% DWF. EU fleet capacity has continued to decrease at a similar rate as that observed in previous years.

Direct employment generated by the sector, amounted to 124 636 fishers, corresponding to 82 272 FTEs. These values follow a similar trend as the capacity indicators. Almost 29% of the employed persons were estimated as being unpaid labour (similar to 2019). Average annual wage per FTE was estimated at EUR 25 654, an increase compared to 2019. Remarkable, is the big dispersion along the different Member States, ranging from an average wage of EUR 1 127 for Cypriot fishers to EUR 107 461 for Belgian fishers. In both cases, higher figures than in 2019.

To perform, the EU fishing fleet consumed 1.9 billion litres of fuel and spent 5.3 million days-at-sea (DaS) in 2020. This combination produced 3.9 million tonnes of seafood landings with a value of EUR 5.8 billion.

In 2020, the EU fishing fleet had an estimated depreciated replacement value (tangible asset value) of EUR 5.4 billion and in-year investments amounted to EUR 527 million. These figures indicate that the capital value of the EU fishing fleet increased in 2020 compared to 2019. Investments presented the highest value of the time series (2008-2020).

The amount of GVA and gross profit (all excl. subsidies) generated by the EU fishing fleet in 2020 was EUR 3.3 billion and EUR 1.16 billion, respectively. GVA as a proportion of revenue was estimated at 55%, higher than in 2019 and gross profit margin at 19.7%, similar to the one obtained in 2019. After accounting for capital costs, 7% of the revenue generated by the fleet was retained as net profit, again a drop from that obtained in 2019.

While overall the EU fishing fleet was profitable, performance deteriorated compared to 2019. Three out of the 22 coastal Member States fleets suffered net losses in 2020, namely: Cyprus, Finland, and Germany. Results also varied by scale of operation and fishing region.

The EU **small-scale coastal fleet (SSCF)** totalled 42 582 vessels in 2020, employing 62 196 fishers. This implies that the SSCF comprised 76% of the active fleet and 50% of the engaged crew. FTEs were 32 128, revealing the part time nature of this activity. Collectively, the SSCF was profitable in 2020 but revenue and GVA and all economic indicators decreased compared to 2019. The only exception is the average wage, which increased to EUR 14 365 (+4.2% compared to 2019). Results by Member State reveal that seven SSCF suffered gross losses (Germany, Denmark, Estonia, Lithuania, Latvia, Malta and Poland) and 10 net losses (Germany, Denmark, Estonia, Finland, Greece Lithuania, Latvia, Malta, Poland and Sweden). This negative situation was particularly marked in the Baltic region where collectively the SSCF was already performing at negative gross losses in 2018-19, deteriorating further in 2020. The Mediterranean SSCF (the major EU contributor to this segment in vessels and employment) also suffered a contraction in its economic performance in 2020 compared to 2019, impacted by the COVID-19 outbreak.

The EU **large-scale fleet (LSF)** encompassed 13 280 vessels in 2020 and employed 55 952 fishers, representing 18% and 45% of the total EU fleet, respectively. This fleet contributed 79% in landings and 70% to the value of these landings of the total EU fleet. The LSF was profitable in 2020 but GVA decreased by 6%, gross profit by 8.5% and net profit by 23% compared to the previous year. This a continuation of what was observed in 2019. However, as in 2019, all the Member States' LSF made gross profits in 2020 and three, Cyprus Germany and Finland, made net losses.

The EU **distant-water fleet (DWF)** numbered 249 vessels in 2020 and employed 6 480 fishers, less than 0.5% and 5.3% of the EU total, respectively. This fleet contributed 15% in landings in weight and value of the total EU fleet. The reported GVA was of EUR 314 million. Gross profit was estimated at EUR 91 million and net profit at EUR 31 million. Gross profit and GVA were similar to those obtained in 2019, while net profit increased by almost 23%. French LDF suffered gross losses and Italian fleet net losses.

The 10 Member States fleets operating in the **North Sea & Eastern Arctic (NSEA)** region in 2020 numbered 2 048 vessels, four vessels more than in 2019, with an estimated 3 539 FTE. The revenue generated was EUR 0.98 billion, 76% of which was provided by three Member States: Denmark, the Netherlands and Germany. Revenue presented a mixed evolution in 2020 compared to 2019: the Netherlands (EUR 288 million; -1%), Germany (EUR 88 million; +3%), Denmark (EUR 383 million; +1%), Ireland (EUR 11 million; +42%), and Belgium (EUR 25 million; -22%). GVA produced by the fleets was estimated at EUR 538 million in 2020; representing an overall increase of 5% compared to 2019. The fleets made EUR 258 million in gross profit, a 15% increase compared to 2019. By fishing activity, the SSCF operating in the NSEA generated EUR 26 million in revenue and 249 FTE. The DWF generated EUR 25 million in revenue and 151 FTE.

Eight Member States were actively involved in **Baltic Sea (BS)** fisheries in 2020: Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, and Sweden, while the Estonian, Finnish, Latvian and Polish fisheries were fully dependent on this region. In 2020 the total number of vessels operating in the BS increased by 2% but a decrease of 19% since 2008. The fleet with 5 231 active vessels generated EUR 197 million in revenue, a decrease of 12% compared to 2019. GVA also decreased by 5%. However, overall, the EU Baltic Sea fleet was profitable in 2020, and conversely to other performance indicators, gross profit remained stable compared to 2019, as a result a reduction of fuel cost of 38%. Three Member States' fleets (Estonia, Germany and Lithuania) suffered net losses in 2020 in the region. While the SSCF had 92% of the vessels (4 838 vessels) in 2020, total employment in the sector amounted only to 2 405 FTE or 65% of the total, indicating the predominantly part-time nature of employment in this fleet segment mostly reflected in the Estonian and Finnish fleets with 0.24 and 0.32 FTE per person employed, respectively. Overall, FTE decreased by 5.8% in 2020 and reached the lowest level since 2008. In 2020, the SSCF generated GVA EUR 17.6 million (EUR 21.3 million in 2019) and 2 495 FTE. The decrease (-17%) can be mainly attributed to lower value of landings. The profitability of the SSCF deteriorated again, from net losses of EUR 6.1 million in 2019 to net losses of EUR 19.4 million in 2020. SSCF in the Baltic accounted for 8% of the landed weight and 21% of the value and the profitability is presenting a continuous deteriorating scheme. The contribution of Atlantic cod in total revenues of SSCF has decreased from 36.3% in 2008 to 14% in 2019 and dropped to 8% in 2020. The Member States SSCF with a relatively low cod dependency i.e. Finland and Latvia, made positive gross profits while the remaining Member States suffered losses. The revenue generated by the LSF fleet in 2020 was EUR 152.8 million, 12% less compared to 2019. However, gross profit and net profit generated by LSF increased by 6% and 2%, respectively. Lower energy costs and labour costs contributed the most to the improved profitability of the fleet. Number of people employed decreased by 9% (FTE and total jobs).

The main Member State fleets in the **North Western Waters (NWW)** are the French and Irish. Ireland had the highest total percentage of national landed value from the region at 95% indicating their high dependency on this area. Belgium, Denmark, Spain and the Netherlands also had quite a substantial amount of production from the area while Germany, Lithuania and Portugal showed low activity. Overall, the fleets account for 2 486 active vessels with 6 382 FTE, a decrease of 9% compared to 2020. In 2020, the two main species landed in terms of weight were small pelagic species including blue whiting and Atlantic mackerel, although in value hake was also important. Although total revenue remained stable between 2019 and 2020 some differences between countries can be noticed when comparing 2019 to 2020. Countries that had a noticeable decrease in revenue were Spain (EUR 9.5 million; -41%), France (EUR 23 million; -38%) and Belgium (EUR 7 million; -28%), while countries with a noticeable increase in revenue were Portugal (EUR 4.7 million; +43%), Ireland (EUR 3.3 million; +30%) and Lithuania (EUR 3.8 million; +15%).

The main fishing Member States in the **Southern Western Waters (SWW)** are Spain, France and Portugal (combined generating 99% of the revenue in 2020). The main species landed were Atlantic horse mackerel, Club mackerel, European anchovy and European pilchard. In terms of value, the main species were Albacore, European hake, octopus and European anchovy. Overall, the fleet was profitable and similar to that of 2019. SWW fleets generated over EUR 1.1 billion in revenue, EUR 685 million in GVA and EUR 155 million in gross profits. Overall, revenue and profits have recovered since 2013, going from a loss-making position to posting net profits, although they have deteriorated over the past four years. Overall, the SSCF was profitable in 2020, totalling EUR 195 million in GVA. Total

employment for the SSCF was highest for Spain and Portugal than in France, totalling 6 688 and 6 130, respectively, reflecting the high number of active vessels in these Member States. All of them in the SWW demonstrated a much lower FTE figures than total employed (about half the value) indicating that a large majority of those employed in the SSCF are part-time employees. The most important species caught by this fleet are the common octopus (13% of the landed value) followed by the European seabass (10%). The LSF was profitable in 2020, totalling EUR 490 million in GVA and EUR 94 million in gross profit. The Spanish LSF is responsible for 44% of the gross profit of the LSF in the SWW region, followed by Portugal that contributed with 35% and the French fleet with 25%.

The **Mediterranean Sea** (MED) fleet accounted for 58% of all EU vessels and 46% of the EU employment (FTE) in 2020. The Mediterranean fleet also contributed to 9% of the EU landings in weight and 24% in value. Almost all landings by the Cypriot, Croatian, Greek, Italian, Maltese, and Slovenian fleets were originated from the region. The Greek fleet is the first contributor in terms of the number of vessels (35%) and days-at-sea (48%) while the Italian one is the dominant fleet in terms of landings (37% in weight and 44% in value), revenue (43%), gross value added (43%) and gross profit (54%). The economic performance was mostly driven by the LSF, which contributed to 72% of the landings value from the Mediterranean and to 84% of landings weight in 2020. In contrast, 81% of the vessels operating in the region belong to SSCF. Employment in the Mediterranean fishing fleet in 2020 was estimated at 59 762 jobs, corresponding to 38 701 FTEs. Employment (measured as FTE) decreased by about 12% relative to 2019. More than half of the employment is created by the SSCF; 35 415 jobs corresponding to more than 59% of total jobs, and 20 377 FTEs corresponding to almost 53% of total FTEs. The economic performance of SSCF in the Mediterranean faced many impacts due to COVID-19 restrictions. The economic performance of the SSCF had a slightly positive net profit margin in the region but followed a decreasing trend, with Greece, Malta, Slovenia, and Cyprus making net losses. For the whole Mediterranean fleet (SSCF+LSF) all the economic performance indicators have worsened compared to 2019.

Bulgaria and Romania are the only two EU Member States involved in the **Black Sea** (BKS) fisheries. Revenue in 2020 was estimated at EUR 10.5 million, decreasing by 29% compared to 2019 although 22% more than the average 2008-2019 period. GVA produced was EUR 5.1 million, representing an overall decrease of 36% compared to 2019 and 24% lower than the average for the period from 2008 to 2019. Gross profit was estimated to be EUR 3.2 million, a 46% decrease compared to 2019. The BKS fishery is dominated by SSCF vessels. The number of SSCF vessels in 2020 (1 240) increased by 10% compared to 2019. They make up 92% of the total fleet by number and 82% of the total employment (67% of FTE). In 2020, 1 807 fishers were directly employed, corresponding to 452 FTEs. In the majority of cases, vessels are operated by the owner or a family member.

Although the main fishing grounds for the EU fishing fleet are located in FAO areas 27 and 37, part of the EU fleet operates in fishing areas much further afield. For the sake of this report, these areas are collectively termed **Other Fishing Regions** (OFR) and are divided into two main groups: (1) **EU Outermost Region** (OMR) fleet operating in the EEZs of the Canary Islands (Spain); the Azores and Madeira (Portugal); and the French overseas regions and departments of Guyana, Antilles (Martinique and Guadeloupe), Reunion and Mayotte and, (2) the **EU long distant fisheries** (LDF) in fishing areas outside EU waters and in Areas Beyond National Jurisdiction (ABNJ), covered by Regional Fisheries Bodies (RFBs), such as the, Northwest Atlantic Fisheries Organization (NAFO), the International Commission for the Conservation of Atlantic Tunas (ICCAT), the Indian Ocean Tuna Commission (IOTC), the North-East Atlantic Fisheries Commission (NEAFC) and the Fishery Committee for the Eastern Central Atlantic (CECAF); and fishing areas within the EEZ of third countries regulated under the framework of EU Sustainable Fisheries Partnership Agreements (SFPAs). Due to data limitations and time constraints, it was not possible to provide a complete analysis of the EU fleets operating in all the OFRs.

In 2020, the number of active vessels of the **OMR** was 2 544, although in some regions, significant parts of the registered fleet were inactive. Most of the OMR fleet is small scale with 84% of the vessels under 12 metres LOA. The economic performance fleets deteriorated in 2020 compared to 2019. However, overall they were profitable. Total engaged crew was 6 651 for 3 461 FTEs. Landings from the OMR fleets combined amounted to 31 887 tonnes valued at EUR 138.4 million in 2020 (-18% and -8%, respectively compared to 2019). For the French OMR fleets, information is still incomplete, however, some improvement in terms of data quality and assessments was achieved in this year's report compared to previous editions. In 2020, GVA per Member State was estimated to EUR 38.6 million, EUR 28.4 million and EUR 20.4 million in French, Portuguese and Spanish OMRs, respectively. However, these values do not consider the operating subsidies related to EMFF, including compensation of costs programs, reported to EUR 4.0, EUR 7.5 and EUR 6.3 million in 2018, 2019, 2020, respectively.

According to data submitted, the EU **ICCAT** fleet numbered 3 190 commercial vessels and total reported EU catches for the main species regulated by ICCAT in the Atlantic Ocean and Mediterranean Sea amounted to 251 802 tonnes in 2020; of which 234 303 tonnes, or 94% of the EU total landings, came from the Atlantic and 15 654 tonnes from the Mediterranean Sea. Nearly 55% of these catches correspond to tropical tunas (yellowfin, bigeye and skipjack), 20% to sharks, and 11% to albacore. To analyse the EU **ICCAT LDF** fleet, all fleet segments over 18 metres LOA and with 20% or more of their landings in value obtained in 2020 from one or more of the major species or stocks in the ICCAT RA were selected. Based on these criteria 21 DCF fleet segments were identified for the ICCAT LDF analysis in 2020: 13 in the Atlantic and 8 in the Mediterranean. The Atlantic stocks comprise over 87% of the total landings, the top species in landings in 2020 were: skipjack (43 538 tonnes, 25% of the total landings), blue shark (41 564 tonnes), yellowfin tuna (35 453 tonnes), albacore (25 600 tonnes) and bigeye tuna (11 021 tonnes). In the Mediterranean Sea, bluefin tuna accounted for 52% of the total ICCAT landings, followed by swordfish (17%). Landings of bluefin tuna amounted to 13 145 tonnes in 2020, 4% more than in 2019 or 98% more than the average landings over the period 2008-2019.

Given the method of aligning LDF segments to the area, the number of vessels can vary from year to year and therefore, average indicators by vessel are presented. For the **Mediterranean ICCAT LDF**, these showed an improved situation than in 2019 for revenue and GVA although a reduction in gross and net profitability. For the Atlantic ICCAT LDF these showed a worse situation than in 2019, only comparable with the values obtained in 2008 (in real average terms).

Four Member States were active in the **IOTC** Convention region in 2020: France (including Reunion), Portugal, Italy and Spain. The EU fleet active in 2020 consisted of estimated 439 vessels: 303 from France (100 from Mayotte, 193 from Reunion and 11 from mainland fleet), 118 from Spain (91 surface longliners targeting swordfish and 27 purse seiners), 17 from Portugal (all longliners targeting swordfish) and 1 from Italy. The EU landings amounted to 376 216 tonnes in 2020 valued at EUR 572 million, a significant increase from 2019 (reported on EUR 368.6 million). The top species were the tropical tuna species skipjack, yellowfin and bigeye. Landings for the **IOTC LDF** amounted to 303 638 tonnes valued at EUR 423.7 million. The two major fleet segments for both Spain and France are the purse seiners above 40 metres LOA. Both show, in general, a positive profitability (in gross and net terms), however, both show a deterioration in their profitability since 2017. This reduction in 2020 was somehow exacerbated by the sanitary restrictions (costs and crew rotations) due to the COVID-19 outbreak.

A large part of the activity in the **CECAF** region is related to the tuna fishery, which overlaps with ICCAT. When excluding landings of ICCAT major species, six LDF segments were identified with high dependency in this area targeting demersal and/or small pelagic species (54 vessels). Total catches for these selected were approximately 63 million tonnes. Due to time constraints and data limitations, STECF EWG 22-06 was unable to provide a detailed account of the main fishing segments operating in CECAF. Given the method of aligning LDF segments to the area, the number of vessels can vary from year to year and therefore, average indicators by vessel are presented. These show an improved situation compared to 2019 and a further improvement compared to the gross and net losses observed in 2018, with an average vessel making gross and net profits.

In 2020, eight fleet segments from four Member States (Portugal, Spain, Germany and France) showed some activity in the **NAFO** convention Area (excluding ICCAT major species). The fleet was composed of an estimated number of 23 vessels (3 less than in 2019) which produced 34 272 tonnes valued at EUR 86.3 million (both higher than in 2019). None of the national fleet segments are heavily dependent on the region, although specifically, Portuguese demersal trawler fleets above 40 metres obtains around 80% of its total landings in value from activity in NAFO, and half of the Spanish trawlers above 40m are almost fully dependant on this area. The other Member States' fleets have less than 5% dependency on this area, although individual vessels could have a dependency above . Economic performance results for 2020 shows an increase in revenue, GVA and gross profit for the fleet operating in the area with respect to that of 2019. This could be partially explained for a reduction in operational costs as a result of change in fishing strategies as a result of the pandemic.

The main fisheries in the **NEAFC** convention area were: redfish, mackerel; haddock; herring, blue whiting and deep-sea species. Total catches for the segment selected to be dependent on this area were approximately 97 million tonnes. The four top main fisheries regulated in the NEAFC Regulatory Area (Atlantic mackerel, herring, cod and blue whiting) Due to time constraints and data limitations, STECF EWG 22-06 was unable to provide a detailed account of the main fishing fleets operating in NEAFC. Given the method of aligning LDF segments to the area, the number of vessels can vary from year to year and therefore, average indicators by vessel are presented. These showed an improved situation compared to 2019, although an average vessel was making gross and net losses.

**Nowcast results for 2021 and 2022** are driven by the sharp increase in fuel prices, specially for 2022. However, they should be taken with caution because they do not consider tactical adaptations of the fishing fleet but also due to the methodological limitations of the procedure to produce these results.

**Preliminary results for 2021**<sup>1</sup> are driven by the United Kingdom leaving the EU and the increase in energy costs, especially after the second half of the year 2021. Overall, the nowcasting methodology indicates a decrease of 3.7% in landed value in 2021 compared to 2020, although prices increased 8%. Energy cost increased almost a 40% which at the end drives to a reduction of 30% and 46% in the overall gross and net profit. However, still the projection for 2021 shows that the EU fishing fleet will remain profitable in gross and net terms.

**Preliminary results for 2022**<sup>1</sup> are driven by the inflation rate and fuel price increases in 2022, due to the Russia-Ukraine conflict. Overall, a decrease in landed weight of 17.6% is predicted although almost compensated by an increase of 19% in the real price when compared to 2020. This makes that the value of landings are only going to be reduced by 1.6%. However, the sharp increase in fuel prices, especially after march 2022, makes that projections give a 173% increase in energy costs compared to 2020. This implies that gross and net profit margins will deteriorate to levels where, overall, the EU fleet will not continue to be profitable, being the LSF and DWF more affected than the SSCF by this increase in fuel prices.

This publication includes:

- 1) A structural and economic overview of the EU fishing fleet in 2020, with nowcasts for 2021 and 2022, and trend analyses for the years 2008-2020; It also includes specific sections for EU pelagic reference fleet, social data and pays specific attention to the situation in 2022.
- 2) A regional analysis of the EU fishing fleet by major sea basin: Baltic Sea, North Sea & Eastern Arctic, North Atlantic (NWW and SWW), Mediterranean Sea, Black Sea, as well as Other Fishing Regions, including the EU Outermost Regions and the EU long distant fisheries in Other Regions;
- 3) A detailed structural and economic overview of each Member State fishing fleet, including qualitative economic performance assessments for 2020 and nowcasts for 2021 and 2022.

The 2022 AER Annex report further contains supplementary data tables providing the main results at the EU, regional and national levels, an outline of the methodology and nowcast model used to estimate economic indicators for 2021 and 2022.

The data used to compile all the various analyses contained within the reports were collected under the data collection framework, cf. Council Regulation (EC) No 199/2008 of 25 February 2008 for the years 2008 -2016 (DCF) and cf. Council Regulation (EC) No 2017/1004 of 17 May 2017, for the years 2017-2020 (EU\_MAP)

**The 2022 AER supersedes all previous AERs. Comparisons across AER reports should not be made.** This is mainly due to the inclusion of more Member State fleets, the exclusion of the United Kingdom, greater coverage of the data this year and change of base year from 2015 to 2020). Member States may have provided revised data submitted in previous calls, which is expected to have increased the coverage and quality of the data reported under the 2022 Data Collection Framework (DCF and EU-MAP).

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<sup>1</sup> Includes Greece. Excludes the United Kingdom.

## EU 2020 MEMBER STATE FLEET SUMMARY REPORTS

The following paragraphs present the concise summary of each the national chapter containing results for the main economic performance indicators in **2020** and developments in relation to the previous year (2019):

**BELGIUM:** A positive and **improved** performance, operating at a net profit of EUR 7.5 million (+181%). Only the DTS fleet segments was on the verge of being profitable. Revenue decreased by 8%, amounting to EUR 77.5 million; GVA estimated at EUR 41.5 million (4%) and gross profit EUR 15.4 million (45%). The 2021 year was better than maybe initially expected with an overall improved performance.

**BULGARIA:** **Deteriorated** economic performance compared with period 2008-2019. Revenue decreased 32%, amounting to EUR 5.5 million; GVA estimated at EUR 3.35 million (-31%) and gross profit EUR 2.21 million (-15%) and comparing with 2019 the percentages are: -24%, -30% and 40%, respectively.

**CROATIA:** **Improved** economic performance in 2020. Revenue increased by 3%, amounting to EUR 90.1 million; GVA EUR 58.9 million (13%), gross profit EUR 31.3 million (28%) and net profit increased to EUR 10 million (143%). One of the reasons for improved performance is increase in landings in 2020 (11%), while in 2021 landings are lowest in the period since 2012 (-13% compared to 2012-2020 average).

**CYPRUS:** Overall **deteriorated** economic performance compared to 2019. Revenue decreased by 15%, amounted to EUR 6.3 million; GVA EUR 2.76 million (-17%), gross profit EUR 1.14 million (-30%) and a net loss of -EUR 1.8 million. The economic performance of the Cyprus national fleet declined in 2020 mainly because of the COVID-19 outbreak.

**DENMARK:** **Improved** performance from 2019 to 2020. The total income in 2020 was EUR 473 million, an increase of 5% compared to 2019. GVA increased 10% to EUR 310 million, gross profit increased 15% to EUR 192 million and net profit increased 10% to EUR 98 million compared to 2019.

**ESTONIA:** **Deteriorated** performance. Revenue decreased by 13%, amounting to EUR 13.7 million; GVA EUR 8.4 million (-6%), gross profit EUR 2.5 million (-21%) and net profit decreased to EUR 0.2 million (-121%). For 2021 improvement in economic performance is expected due to the increase in average first-sale prices of the key species (e.g. herring and sprat). No significant COVID-19 impact detected.

**FINLAND:** **Deteriorated** performance. The total weight landed by the Finnish fleet in 2020 amounted 112 000 tonnes of seafood (-17%) with a value of EUR 31 million (-15%). The GVA generated by the Finnish national fleet was EUR 22 million an increase of 23%. The low fuel prices helped especially trawlers and the gross profit margin increased to 43%. The net profit improved from last year but remained negative: -EUR 5.6 million.

**FRANCE:** Overall **deteriorated** economic performance. Revenue decreased by 11%, amounting to EUR 1.16 billion; GVA estimated at EUR 601 million (-4%), gross profit EUR 131 million (-8%) and net profit EUR 29.5 million (-32%). For 2021 and 2022 further decrease in economic performance is expected.

**GERMANY:** **Highly deteriorated** economic performance operating at a net loss. Revenues decreased to EUR 124 million (-7%), GVA was estimated at EUR 66.2 million (+2%), gross profit EUR 21.4 million (+13%) and net losses -EUR 3.0 million (all figures excluding the pelagic trawler fleet). Profitability slightly improved in 2020, but still negative, as expected also for 2021.

**GREECE:** Economic performance has **significantly deteriorated**, with the fleet posting a net profit of EUR 19 million (-75%) in 2020. Revenue estimated at EUR 347 million (-19%), GVA EUR 205 million (-24%), and gross profit EUR 70 million (-42%). The outcome for 2021 has revealed a major decline in all the economic indicators due to the COVID-19 pandemic, while for 2022 fuel price increase will deteriorate the profitability.

**IRELAND:** There was a **slight increase** in economic performance. Revenue increased by 2%, amounting to EUR 312 million; GVA EUR 161 million (+6%), gross profit EUR 65 million (+24%) and

net profit decreased to EUR 32 million (-20%). In 2021, due to COVID-19, and the TCA a deterioration of all the economic indicators is expected.

**ITALY: Deteriorated performance.** Revenue decreased by 27%, amounting to EUR 664 million; GVA EUR 422 million (-25%) and gross profit EUR 210 million (-31%). The economic performance of the Italian national fleet declined in 2020 mainly because of the COVID-19 outbreak. In 2021 and 2022, due to increase of energy costs, a deterioration of the economic performance is expected.

**LATVIA:** Positive and with **improved performance**, the fleet operated at a profit in 2020. Revenue increased by 12%, amounting to EUR 21.7 million; GVA estimated at EUR 13.2 million (+59%), gross profit EUR 8.2 million (+138%) and net profit EUR 7.7 million (+156%).

**LITHUANIA:** In 2020 value of landings **decreased** by 18% to EUR 72.8 million. GVA was estimated EUR 30.0 million, gross profit at EUR 21.2 million and net profit EUR 12.6 million. Fishing industry employed 449 fishers corresponding to 408 FTE. In 2021 days at sea and weight of landings increased by 4% and 12% respectively. Value of landings in 2021 improved by 9% to EUR 79.5 million.

**MALTA:** Performance **deteriorated** in 2020; gross profit decreased by 27% (EUR 2.7 million) from 2019. Income estimated at EUR 11.2 million (-22%), GVA EUR 6.1 million (-25%), and net profit EUR 0.6 million (-75%).

**NETHERLANDS:** Overall **improved** performance and still operating at a net profit of EUR 32.5 million in 2020 (+18% compared to 2019). The number of employees (as FTE) was 1 504 (-10% to 2019) and the labour productivity increased (13%). The total revenue of the total Dutch fleet decreased (-5%) although GVA increased 1% (to EUR 147 million), driven by the reduction in fuel cost. For 2021 and 2022 all performance indicators are expected to worsen.

**POLAND: Deteriorated** economic performance operating at a net profit of EUR 357 000 (-92% compared to 2019). Reduction of personnel expenditures (-3%) and fuel costs (-27%). Revenues decreased to EUR 35.7 million (-23%), GVA was estimated at EUR 19.1 million (-24%), gross profit EUR 0.8 million (-88%). Profitability is expected to be reduced in 2021.

**PORTUGAL: Deteriorated** economic performance. Revenue decreased by 9%, amounting to EUR 356 million; GVA estimated at EUR 216 million (-12%), gross profit EUR 73 million (-22%) and net profit EUR 13.7 million (-59%).

**ROMANIA: Deteriorated** economic performance compared with period 2008-2019. Revenue increased 7%, amounting to EUR 2.88 million; GVA estimated at EUR 1.78 million (-6%), gross profit EUR 1.03 million (-16%) and net profit EUR 0.6 million (-34%), and comparing with 2019 the percentages are: -35%, -44%, -55% and -69% (reductions), respectively.

**SLOVENIA:** Positive and with **improved** performance. Compared to 2019, revenues increased 40%, amounting to EUR 3.2 million; GVA estimated at EUR 2.8 million (+51%), gross profit EUR 2.5 million (+75%) and net profit EUR 2.4 million (+71%). One of the reasons for improved performance is the increase in landings, probably because of reduced fishing effort in Italy and Croatia due to COVID-19 restrictions. Profitability is expected to severely reduce in 2021, when the COVID-19 restrictions will be, to some extent, eliminated or reduced.

**SPAIN: Deteriorated** economic performance in 2020 as a consequence of COVID-19. GVA, gross profit and net profit decreased by 4%, 14% and 25%, respectively. Compared to 2019, revenue decreased by more than 10% (the amount was EUR 1.616 billion) but the total of expenditures decreased too by 10%.

**SWEDEN: Improvement** of the economic performance compared to 2019. Revenue, however, decreased by 4%, amounting to EUR 121.9 million; increased GVA estimated at EUR 65.4 million (+4%), increased gross profit EUR 39.3 million (+1%) and net profit remained stable at EUR 15.3 million.

## **EXPERT WORKING GROUP REPORT**

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### **REPORT TO THE STECF**

#### **EXPERT WORKING GROUP OF THE 2022 ANNUAL ECONOMIC REPORT ON THE EU FISHING FLEET**

#### **EWG-22-02 & 22-06**

**Virtual meetings, 04-08 April & 13-17 June 2022**

This report does not necessarily reflect the view of the STECF and the European Commission and in no way anticipates the Commission's future policy in this area

# 1 INTRODUCTION

The 2022 Annual Economic Report (AER) on the European Union (EU) fishing fleet provides a comprehensive overview of the latest information available on the structure and economic performance of EU Member State fishing fleets.

This report covers the period 2008 to 2022 and includes information on the EU fleet's fishing capacity, effort, employment, landings, income and costs. The reference year is 2020 with nowcast performance estimates provided for 2021 and 2022, where possible. All monetary values have been adjusted for **inflation to 2020 constant prices**. The profitability and performance of the EU fishing fleet is also reported in terms of Gross Value Added (GVA), profits (gross and net), profit margins, resource productivity (labour and capital) and efficiency (fuel use, LPUE, etc.).

This publication includes:

- 1) A structural and economic overview of the EU fishing fleet for the reference year 2020, with trend analyses for the period 2008 to 2020, including estimates for 2021 and 2022;
- 2) A regional analysis of the EU fishing fleet by major sea basin: North Sea & Eastern Arctic, Baltic Sea, North Western Waters, Southern Western Waters, Mediterranean Sea, Black Sea, as well as for the EU Outermost Regions and long-distant fisheries (LDF) in Other Fishing Regions, i.e., RFMOs (e.g., NAFO, ICCAT, IOTC, CECAF);
- 3) A detailed structural and economic overview of each EU Member State fishing fleet, including qualitative economic performance assessments for the years 2008-2020 and nowcasts for 2021 and 2022.

**The 2022 AER supersedes all previous AERs. Comparisons across AER reports cannot not be made.**

## Terms of Reference for STECF EWG-22-02 & 22-06

### Background and general objectives provided by the Commission

The AER is the main source of economic and social data for scientific advice on the performance of the EU fishing fleet. It is also increasingly used by scientific bodies, national administrations and international institutions.

Given the increasing number of scientific uses of the AER and its growing complexity, there is a greater need to guarantee robust, precise data and analyses as well as streamline the content of the report.

The trimming down of the AER is intended to achieve a more balanced effort/product exercise, concentrating on the core, routine tasks of the AER on the one hand, while freeing up time and resources on the other so that EWG experts can focus on more applied economic analyses.

The 2022 AER will continue efforts made in previous years to streamline the contents while providing more in-depth look at the different factors driving the economic performance of the EU fleets. This will mainly be achieved through:

- dedicated data checking exercises, covering national and regional data sets: <https://datacollection.jrc.ec.europa.eu/data-analysis>
- more concise and less descriptive chapters, supplemented by the JRC online data dissemination tool <https://datacollection.jrc.ec.europa.eu/da/fleet/>
- a continued effort to provide more analytical outcomes, notably on drivers of profitability and trends

Regional analyses were traditionally left to the second AER meeting, during which previously undetected data issues are often encountered by the EWG, leading to data resubmissions at this late stage. Data submissions during the second meeting cause significant delays in analyses, in particular when a Member State fleet operates in several different fishing regions, potentially affecting analyses in all regions. To avoid such delays and to further free up time for deeper analyses during the second meeting, the dedicated data checking exercise during the first meeting will include regional data sets.

The report should provide an in-depth look at the different factors affecting the economic performance of the EU fishing fleet with a special focus on the major drivers and issues affecting the sector (in

particular, the fuel prices crisis in 2022, COVID-19 and Brexit impacts). In addition to interpreting and explaining the quantitative results from the data collected and nowcasts, the report should contain qualitative information and analysis on the drivers and trends in performance and other aspects of policy relevance based largely on the scientists' expert knowledge.

The main objectives of the report is to obtain high quality interpretation of all data outputs to ensure the usefulness of the report for DG MARE's policy development, Member States and the industry. The analysis will be done at the EU, regional, national and fleet segment levels.

The relevance and role of the following factors should be taken into account: changes in first sale prices, operational costs, in particular fuel prices and fuel efficiency; structural and marketing measures, market and trade determinants.

In addition, and where possible, special focus should be given to the energy transition of the EU fleets (recent trends in ratios of energy efficiency for the different fleet segments), economic benefits of MSY (such as analysis of causality between stocks exploited sustainably and the improvement in the performance of the fleets), the impact of choke-species situations, status and recovery of important stocks and the implementation of other management measures, such as the Landing obligation and the role of the EMFF/EMFAF support in terms of innovation and sustainability.

Given the social importance of this activity in many coastal communities, particular attention should be paid to the social aspects, including trends on employment, salaries and labour productivity and interconnections with other sectors of the blue economy, such as aquaculture, fish processing, ocean energy, coastal tourism, etc.

The main socio-economic indicators, where relevant, should also be put into context with homologous figures at the EU and national levels (e.g., national average salaries, employment, GVA, GDP, etc.).

All relevant documentation and data will be made available on the DCF\_JRC or STECF websites or will be made available on a dedicated EWG FTP.

The final draft of the EWG report will be reviewed by the STECF during its summer plenary meeting in 2022.

### **Special requests / topics**

In light of the current situation regarding fuel prices, experts are requested to provide an indication of the main socio-economic impacts of these fuel prices on the national fishing fleets, such as, fishing activity (fishing effort and production), employment and income loss, etc.

These indications should help to fine-tune the routine nowcasting exercise to estimate the performance of fishing fleets in 2022. The nowcasting will be done by region and fishing fleet category.

### **Data transmission issues**

All data issues that may impact the quality and robustness of the analyses in the AER, and associated STECF reports (e.g. Balance between fleet capacity and fishing opportunities) will be reported in the Data Transmission Monitoring Tool (DTMT).

### **Outline of the 2022 AER**

STECF is requested to provide the Annual Economic Report on EU fishing fleets for 2022 including, the following sections:

#### **STECF Observations**

#### **Executive Summary**

#### **Expert Working Group Report**

##### **1. EU Fleet Overview**

This chapter will contain a section on each of the following topics:

- Fleet structure
- Fishing activity and production
- Employment and average salaries
- Economic performance
- Resource productivity and efficiency

- Main drivers and trends
- EU small-scale coastal fleet (key socio-economic indicators)
- EU distant-water and outermost region fleets (key socio-economic indicators)
- Assessment of the economic performance for 2019 and 2020 (nowcasts).

## 2. Regional Analysis

A specific chapter for each of the main fishing regions in which EU fleets operate, namely:

- North Sea & Eastern Arctic
- Baltic Sea
- North Western Waters
- South Western Waters
- Mediterranean Sea
- Black Sea
- EU Outermost Regions
- Other Fishing Regions (distinguishing where possible by RFMO, such as NAFO, ICCAT, IOTC, CECAF, etc.).

## 3. National Chapters

This section of the report will contain a specific chapter for each of the EU Member State fleets and shall include a brief section on the small-scale coastal and distant-water fleets (key socioeconomic indicators) where relevant, as well as the main drivers affecting profitability of the fishing fleets.

## 4. Annexes

To include sections on: Methodologies, data transmission issues, definitions, glossary, etc.

### Structure, workflow and outputs of the EWGs

Following the 2022 EU-MAP call for economic data on the EU Fishing Fleet, the EWGs are requested to analyse and comment on the economic performance of the EU and national fishing fleets between 2008 and 2020, and where possible, 2021 and beyond.

Economic data series will be available up to 2020, with some provisional data up to 2021. As these data will be outdated by the time the report is published in July-August 2022, experts should provide indication on the main factors affecting the indicators used for the “nowcast” estimations (i.e. for 2021 and 2022).

The first EWG will focus primarily on data quality and coverage. EWG 22-02 will produce final draft national chapters, the formulation of which constitutes an integral part of the data checking process.

The second meeting (EWG 22-06) will focus on developing applied economic analysis based on the final data submitted. In particular, experts will produce a synthesis on the trends and economic results of the EU fishing fleet by main fishing region and aggregate it at EU level, and identify the main factors behind these trends.

The specific objectives and priorities for the two working groups are described below.

### EWG 22-02 (AER 1)

The first AER STECF EWG meeting should lead to a data endorsement by the attending experts, a detailed account of any data transmission (DT) issues and the drafting of concise national chapters.

As a matter of priority, the EWG is requested to ensure that all unresolved data transmission (DT) issues and failures encountered prior to and during the EWG meeting are recorded on line via the Data Transmission Monitoring Tool (DTMT) available at: <https://datacollection.jrc.ec.europa.eu/web/DCF/dtmt>

Any outstanding data issues not covered by EWG 22-02 will be followed up by EWG 21-08. This may occur if MS submit revised data after EWG 22-06. That is, according to the data handling procedure, data submission may occur up to two weeks after the first meeting upon request of STECF or the JRC.

Guidance on how DT issues should be inserted in the DTMT, log-on credentials and access rights will be provided separately by the STECF Secretariat focal point for the EWG.

### **Routine tasks AER 1**

- Experts should check national data (national totals and fleet segment) and preliminary disaggregated regional data prepared by the JRC while producing their national chapters.
- National chapters should include a section on the impacts of the fuel crisis
- Detected data issues should be corrected and resubmitted during the meeting as far as possible.
- All unresolved data issues should be flagged and where possible, revised, corrected and resubmitted before the final deadline, i.e., two weeks after the first meeting.
- Time and data permitting, estimates of economic performance for 2021 and 2022 should be carried out.

## National Chapters

Each national chapter should include a short description of the national fleet, performance results by fishing activity and an in-depth look at the different factors driving economic performance.

National chapters should follow the following structure:

- **Short description of the national fleet**
  - Fleet structure
  - Fishing activity and production
  - Employment and average salaries
- **Economic performance results for 2020 and recent trends**
  - National fleet performance
  - Resource productivity and efficiency
- **Drivers affecting the economic performance**
  - Market and trade (including first sale prices)
  - Operating costs (external factors)
  - Status of key stocks, changes in TACs and quotas
  - Management instruments
  - Innovation and development (role of the EMFF/ EMFAF)
- **Assessment of the economic performance for 2021 and 2022 (nowcasts)**
  - Impact of the COVID-19, Brexit, fuel prices crisis
- **Economic performance by fishing activity**
  - Small-scale coastal fleet
  - Distant-water and outermost region fleets (if applicable)
- **Economic performance of selected fleet segments**
- **Data issues**

## Outputs AER 1

Specifically, the EWG should provide:

- Data endorsement by the attending experts
- All pending data transmission (DT) issues and failures recorded in the Data Transmission Monitoring Tool (DTMT)
- Final drafts of national chapters
- A concise summary of the national chapter (2-3 lines) containing results for the main economic performance indicators for 2020; how they compare to previous year's results (improvement/deterioration, etc.) and expected outcomes for 2021/2022.

## EWG 22-06 (AER 2)

EWG 22-06 will continue from EWG 22-02 and produce final EU overview and regional chapters. The data checks performed for the regional analyses during the first meeting should free up time for deeper analyses.

Nowcasts for 2021 and 2022, where possible, will be completed and incorporated into the EU overview and national chapters.

## Routine tasks AER 2

- Nowcasts for 2021 and 2022 should be updated and completed with the latest available information.
- National chapters should be finalised with nowcasts for 2021 and 2022
- Regional analyses

- EU overview completed with main drivers and trends and nowcasts for 2021 and 2022 incorporated
- Any unresolved data transmission (DT) issues and failures should be reported in the DTMT.

## EU Overview

This chapter will again have specific sections on the following fleet categories:

- **EU small-scale coastal fleets:** This section will investigate the drivers/factors behind the trends of the small-scale coastal fleets, whether there are regional differences and the possible reasons for these differences.
- **EU distant water fleets:** This section will include an overview of the employment, profitability and salaries for the EU distant water fleets distinguishing by main fishing areas (e.g. NAFO, ICCAT, IOTC). It will also investigate the factors behind the trends and identified any data gaps.
- **EU outermost region fleets:** This section will include an overview of the employment, profitability and salaries across different outermost regions. It will also investigate the factors behind the trends and identified any data gaps.
- **Links between economic growth and resource use:** This section will examine key drivers behind trends in resource efficiency, in particular, landings per unit of effort (fish landed per fishing day or day at sea), fuel use and improvements in energy efficiency, labour and capital productivity.
- Furthermore, a special section on the **fishing fleets with dependency on pelagic stocks** should be elaborated time-permitting.

## Outputs AER 2

Specifically, by the end of the second meeting, the EWG should provide:

- Revised DTMT, containing only the unresolved/outstanding data issue;
- Final national chapters and summaries with nowcasts for 2021 and 2022;
- Final EU overview chapter with nowcasts for 2021 and 2022;
- Final Regional chapters
- Outline of the current socio-economic impacts of fuel prices crisis.
- Draft Executive summary

## Data sources and coverage

The data used to compile all the various analyses contained within the report were collected under the data collection framework, cf. Council Regulation (EC) No 199/2008 of 25 February 2008 for the years 2008 -2016 (DCF) and cf. Council Regulation (EC) No 2017/1004 of 17 May 2017, for the years 2017-2020 (EU-MAP).

The 2022 call requested data for the years 2020 and 2021. Fleet capacity data were requested up to and including 2021, while fishing activity (effort and landings), employment and economic parameters were requested up to and including 2020. Additionally, income from landings and several effort and landings variables were requested for 2021 (non-mandatory) to allow for economic performance nowcasts to be estimated at fleet segment and national level for 2021 and 2022.

This report includes data reported by national totals and by fleet segments (a combination of the main fishing technology used and vessel length group operating predominately in one supra-region). The data analysed covers transversal (capacity, effort and landings) and economic data (income, costs, employment, enterprises, capital value and investment).

For a full list of variables and reference years requested under the 2022 call for economic data on the EU fishing fleet see Annex 1 - AER Report Methodology in the 2022 AER Annex report.

In terms of the completeness of the Member States data submissions, most countries submitted the majority of parameters requested under the call. In many cases missing data relates to fleet segments with low vessel numbers for which data may be sensitive or hard to obtain (logbooks are compulsory for vessels over 10 metres only). In terms of data quality, inevitably some 'abnormal' estimates for various parameters were detected by the JRC or experts and in many cases rectified by the Member State. However, some coverage and quality issues remain outstanding:

- Greece provided only partial data for the years 2014-2017. Due to the incomplete coverage of the fishing activity and socio-economic data, Greece can only be included in the analyses for 2018, 2019 and 2020 years and has been excluded from all aggregated time series analyses over the period 2008-2020. The analysis of European Small Scale Coastal Fleet includes Greek data and therefore, the time series analysis has been restricted to the period 2018-2020.

- Due to the reduced number of vessels and/or enterprises, several Member States, including Italy, Germany and some of the Baltic States, do not deliver sensitive data on their distant water fleets, making coverage at the EU and regional levels incomplete.
- United Kingdom fleet segments have not been included in the analysis.
- As a Member State that entered the EU in 2013, Croatia is only required to provide data from 2012 onwards.
- Incomplete time series data due to either the non-submission or submission of questionable data, make trend analysis over the entire period 2008-2020 at the EU and regional levels impossible without excluding the Member States fleets that are incomplete.

See Section 5 – Data Coverage and Quality for more information on data transmission issues.

## 2 EU FLEET OVERVIEW

### Background

The EU overview chapter provides a summary of the structure and economic performance of the EU fishing fleet in 2020 and highlights some key trends over the period 2008-2020, based on data submitted by Member States under the 2022 fleet economic data call. **All monetary values have been adjusted for inflation to 2020 constant prices and therefore, data prior and subsequent to 2020 may not necessarily equate to the data submitted by Member States.**

Due to incomplete data submissions from several Member States, it is not possible to do a trend analyses on the economic performance for the EU fleet over the period analysed. Croatia officially joined the EU in 2013 and, hence, only required to provide DCF data from the year 2012 onwards. As Greece provided only partial landings, effort and economic data for the years 2014 to 2017, it is excluded from the EU overview in those years, but included for 2018 and forward. The United Kingdom officially left the EU at the end of 2020, the British data has been excluded from the analyses. More details on data availability are provided in the chapter on quality and checking procedures (Section 5).

For analyses at Member State level, national level datasets are used, whereas fleet segment level data are used to compile results by main type of fishing activity (i.e. small-scale coastal fleet -SSCF-, large-scale fleets -LSF- and distant-water fleets -DWF-). Results for 2020 at the EU level include all Member States fleets in 2020 excluding the United Kingdom, while results by fishing activity may exclude some fleet segments with insufficient data.

While in theory, both the national and fleet segment datasets submitted by each Member State should be internally consistent, this is not always the case. Discrepancies can arise due to missing or incomplete datasets for fleet segments. In some cases, such discrepancies occur due to statistical confidentiality issues. To avoid this, Member States may combine such fleet segments into "clusters" and provide data at a more aggregated level. In other cases, statistically confidential data are not provided at the fleet segment level, but are included at the national total level, resulting in inconsistencies between the two datasets.

Normalised trends in indicator values at the EU level are presented relative to 2008 (based on 2008=100) and unless otherwise stated, exclude Greece and should not be considered as a complete EU overview.

To provide the most reliable, complete and up-to-date information as possible, this chapter includes:

- A snapshot of the EU fishing fleet in 2020, by Member State and main type of fishing activity, i.e. SSCF, LSF and DWF (including data summary tables);
- A section with nowcasts for 2021 and 2022 on the economic performance of EU fleets where possible (based on fleet segment data);
- A description of the main drivers and trends that may have contributed to the economic performance of the EU fleet over recent years;

The three main types of fishing activity used in the AER are defined as:

**Small-scale coastal fleet (SSCF)** - includes all vessels under 12 metres using static gears. According to the DCF gear definitions these include: 'drift and/or fixed netters', 'pots and/or traps', 'hooks', 'passive gears only', 'other passive gears', 'polyvalent passive gears only', 'active and passive gears'.

**Large-scale fleet (LSF)** - segment includes all vessels over 12 metres using static gears and all vessels using towed gears operating predominately in EU waters. According to the DCF gear definitions these include: 'dredgers', 'demersal trawlers and/or demersal seiners', 'other active gears', 'polyvalent active gears only', 'purse seiners', 'beam trawlers', 'pelagic trawlers'.

**Distant-water fleet (DWF)** - includes EU registered vessels over 24 metres operating in 'other fishing regions' including EU outermost regions.

As a special request for this AER 2022, two sections with the **pelagic reference fleet** and **social** data have been added.

## At a glance

Due to incomplete data from Member States, the EU Fleet Overview (Section 2) and Regional Analysis (Section 3) omit Greece when comparing trends in a number of indicators. This omission is always stated in the text and figures. In addition, to ensure confidentiality, data on some fleet segments have not been provided by some Member States and these too have been omitted. The reference year is 2020 and all monetary values are adjusted for inflation; constant prices (2020).

## Fleet Capacity

In 2020, the EU fishing fleet numbered 73 716 vessels with a combined gross tonnage of 1.30 million and engine power of 5.26 million kW.

There were 17 605 inactive vessels (23.8% of the total number of vessels), bringing the number of active vessels to 56 111.

Of the active vessels, 76% were SSCF vessels, 23.7% LSF and less than 0.4% DWF.

EU fishing fleet capacity has continued to **decrease** steadily: 1.0% in number, 2.2% in engine power and 2.3% in gross tonnage compared to 2019.

## Employment and wages

The EU fleet directly employed circa 124 636 fishers, corresponding to 82 272 FTE. Of the total employed, at least 36 633 were estimated as being unpaid labour<sup>2</sup>.

Average annual wage (including crew wages and unpaid labour) per FTE was estimated at EUR 25 654, ranging from EUR 115 964 for Belgian fishers to EUR 1 840 for Bulgarian fishers.

## Effort and landings

The EU fleet spent over 5.3 million days-at-sea (DaS) and consumed almost 1.9 billion litres of fuel.

Landings reported amounted to 3.9 million tonnes of seafood, amounting to a value of EUR 5.76 billion (a **decrease** of 12.5% compared to 2019).

Landings per day at sea (LPUE), for the EU fleet as a whole, was estimated at around 0.74 tonnes per day (a **decrease** compared to 2019).

## Economic performance

Revenue (gross value of landings plus other income) amounted to almost EUR 5.9 billion. Other income represented 3.0% of revenue.

GVA, gross profit and net profit (all excl. subsidies and fishing rights) generated by the fleet was EUR 3.3 billion, EUR 1.16 billion and EUR 0.4 billion, respectively.

GVA to revenue was estimated at 55% (53% in 2019); gross profit margin at 19.7% (down from 20.2% in 2019), and 7.2% of the revenue was retained as net profit (down from 9.0% in 2019). These indicators present, in general, a **worsening** situation compared to 2019.

Overall, the **EU fishing fleet was profitable but performance reduced slightly** when compared to 2019 and four out of the 22 Member States evaluated, generated net losses, namely: Cyprus, Finland, Germany and Estonia (three in 2019 - Cyprus, Finland and Germany).

At Member state level, none suffered gross losses in 2020.

Estonia moved from a profit making position in 2019 to net profit loss in 2020.

The EU fishing fleet was estimated to have a replacement value of EUR 736 million (+3.8% compared to 2019) and in-year investments amounted to over EUR 527 million (+19%).

<sup>2</sup> Unpaid labour figures exclude Belgium and France.

## EU Small-scale coastal fleet (SSCF)

The EU SSCF comprised 42 582 vessels covering up to 76% of the number of active vessels, but only 8.3% of the gross tonnage and 32% of the engine power.

Engaged crew amounted to 62 196 fishers or 32 128 FTE, 50% and 39% of the EU total, respectively.

Contributed 5.8% of the weight landed (229 513 tonnes) and 15% of the landed value (EUR 888 million).

Generated EUR 635 million in GVA ( a **decrease** of 10% compared to 2019), EUR 173 million in gross profit (-23%) and EUR 42 million in net profit (-61%).

In relative terms, this amounted to a GVA to revenue of 64.8% (**down** from 2% in 2019), a gross profit margin of 17.7% (**down** from 15%) and a net profit margin of 4.4% (**down** from 62%).

## EU Large-scale fleet (LSF)

Comprised 13 280 vessels (23.7% of the EU active fleet) and covered 72% of the gross tonnage and 60% of the engine power of the EU total fishing fleet, respectively.

Engaged crew amounted to 55 952 fishers or 42 836 FTE, 45% and 52% of the EU total fishing fleet, respectively.

Contributed 79% to landed weight (3.1 million tonnes) and 69.6% to landed value (EUR 4.1 billion).

Generated EUR 2.3 billion in GVA (**down** by 6.3% compared to 2019), EUR 898 million (-8.5%) in gross profit and EUR 398 million in net profit (-23%)

In relative terms, this amounted to a 57% GVA to revenue (**up** from 55% in 2019), 22% gross profit margin (**up** from 21.7%) and 10% net profit margin (**down** from 12%).

## EU Distant-water fleet (DWF)

Comprised 0.4% of the EU active fleet (249 vessels) and covered 19.7% of the total gross tonnage and 7% of the engine power of the EU total fishing fleet, respectively.

Employed 6 480 fishers or 7 349 FTEs. 5% and 9% of the EU fishing fleet total, respectively.

Contributed 15% to landings in weight and value of the EU fishing fleet total.

Generated EUR 313 million in GVA (a **reduction** of by 0.3%, compared to 2019), EUR 91 million in gross profit (an **increase** of 0.9%) and EUR 31 million in net profit (an **increase of 23%**).

In relative terms, this amounted to a 36% GVA to revenue (**up** from 31% in 2019), 10.6% gross profit margin (**up** from 9%) and a 4.3% net profit margin (**up** from 3%).

Table 2.1 below provides a summary of the main results for the EU-27 fleet (all figures exclude Greece) for the period 2010-2020 and nowcast results for 2021 and 2022.

Table 2.2 below provides a summary of the main results for the EU-27 fleet, including Greece in 2018 and forward

Tables 2.3 to 2.5 provide a summary of the main results for the EU-27 fleet by main fishing activity (SSCF, LSF and DWF) (all figures exclude Greece) for the period 2010-2020 and nowcast results for 2021 and 2022.

Table 2.1 Main results for the EU-27 fleet (excl. Greece) for 2008-2020 and nowcasts for 2021 and 2022.

EU27		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	%Δ 2020-2019	%Δ 2020-avg2008-19	%Δ 2020-2008
Number of vessels	thousand	64,2	61,0	60,5	59,6	61,9	61,1	60,5	62,8	62,2	62,1	60,8	60,4	59,8	59,3	59,4	-1,0%	-2,7%	-6,9%
Total vessel tonnage	thousand GT	1.575	1.528	1.465	1.414	1.390	1.369	1.377	1.341	1.311	1.293	1.285	1.269	1.238	2.204		-2,4%	-10,6%	-21,4%
Total vessel power	thousand kW	5.555	5.358	5.258	5.132	5.296	5.242	5.226	5.218	5.118	5.072	4.973	4.983	4.870	2.708		-2,3%	-6,4%	-12,3%
Engaged crew	thousand	127	125	125	120	121	118	118	115	116	118	114	111	106	103	104	-4,2%	-11,0%	-16,8%
FTE national	thousand	92	91	89	87	86	83	83	84	84	83	80	76	68	68	68	-11,3%	-20,2%	-26,5%
Days at sea	thousand	5.006	5.027	4.915	4.864	4.893	4.748	4.642	4.573	4.618	4.476	4.315	4.179	3.683	2.393	1.788	-11,9%	-21,4%	-26,4%
Fishing days	thousand	4.817	4.941	4.863	4.805	4.786	4.666	4.606	4.510	4.636	4.345	4.295	4.118	3.635	1.604		-11,7%	-21,2%	-24,5%
Energy consumption	million litre	2.161	2.319	2.213	2.069	1.986	1.993	1.931	2.044	1.991	1.968	1.937	1.924	1.816	1.721	1.810	-5,6%	-11,2%	-16,0%
Live weight of landings	thousand tonne	4.153	4.209	4.254	3.974	3.809	4.099	4.315	4.358	4.216	4.545	4.410	3.978	3.881	3.447	3.197	-2,4%	-7,5%	-6,6%
Value of landings	million EUR	6.711	6.463	6.425	6.546	6.404	6.392	6.514	6.331	6.992	6.829	6.611	6.152	5.408	5.209	5.319	-12,1%	-17,2%	-19,4%
Gross value of landings	million EUR	6.041	6.373	6.360	6.650	6.266	6.175	6.322	6.354	6.768	6.677	6.509	6.036	5.366	5.269	5.371	-11,1%	-15,9%	-11,2%
Other income	million EUR	105	96	123	131	91	105	118	103	96	144	136	140	182	171	174	29,8%	57,3%	73,1%
Operating subsidies	million EUR	187	150	98	85	85	62	72	63	43	57	50	48	116	-		142,1%	39,6%	-37,6%
Income from leasing out quota	million EUR	2	3	3	11	12	38	37	35	29	36	34	20	33	-		64,8%	53,6%	1451,2%
Personnel costs	million EUR	1.662	1.951	1.836	1.819	1.690	1.670	1.744	1.853	1.969	2.016	1.954	1.850	1.783	1.729	1.735	-3,7%	-2,8%	7,3%
Value of unpaid labour	million EUR	249	327	282	249	235	253	253	229	251	255	244	213	193	187	197	-9,4%	-23,9%	-22,5%
Energy costs	million EUR	1.456	1.139	1.265	1.491	1.477	1.370	1.236	1.014	843	907	1.015	984	700	957	1.911	-28,9%	-40,8%	-51,9%
Repair & maintenance costs	million EUR	474	537	511	550	501	492	511	547	589	572	596	565	508	501	498	-10,2%	-5,4%	7,2%
Other variable costs	million EUR	767	941	888	933	801	840	846	900	921	870	836	861	757	743	739	-12,1%	-12,7%	-1,3%
Other non-variable costs	million EUR	548	568	523	510	485	474	490	496	508	516	535	527	517	508	506	-1,9%	0,3%	-5,8%
Consumption of fixed capital	million EUR	828	829	799	790	778	713	693	741	655	715	707	667	689	654	673	3,3%	-7,2%	-16,7%
Lease/rental payments for quota	million EUR	17	16	30	34	34	36	52	64	58	44	41	40	42	-		4,5%	7,4%	147,8%
Opportunity cost of capital	million EUR	52	236	160	142	104	119	111	77	59	1	10	26	4	105	284	83,2%	-105,1%	-108,3%
Value of physical capital	million EUR	5.903	5.932	5.922	5.374	5.380	5.069	5.188	5.249	5.122	5.082	5.036	5.207	5.242	5.003	5.083	0,7%	-2,4%	-11,2%
Value of quota and other fishing	million EUR	667	1.280	1.180	1.151	1.136	1.256	1.599	1.710	2.306	2.933	2.613	2.252	2.441	-		8,4%	45,9%	266,1%
Investments	million EUR	483	512	441	349	461	392	345	445	445	444	351	412	493	106	104	19,9%	16,6%	2,2%
Gross Value Added	million EUR	2.901	3.284	3.297	3.297	3.092	3.104	3.356	3.501	4.003	3.957	3.663	3.239	3.067	2.731	1.891	-5,3%	-9,6%	5,7%
Net Value Added	million EUR	2.021	2.219	2.338	2.365	2.211	2.273	2.552	2.683	3.289	3.242	2.966	2.598	2.382	2.183	1.502	-8,3%	-7,1%	17,9%
Gross profit	million EUR	990	1.006	1.178	1.229	1.168	1.182	1.360	1.418	1.783	1.685	1.465	1.176	1.092	767	41	-7,2%	-16,2%	10,2%
Net profit	million EUR	111	58	219	297	286	350	556	601	1.069	970	768	535	407	218	430	-24,0%	-14,4%	267,5%
GVA to revenue	%	47,2	50,8	50,8	48,6	48,6	49,4	52,1	54,2	58,3	58,0	55,1	52,4	55,3	50,2	34,1	5,4%	6,0%	17,1%
Gross profit margin	%	16,1	15,6	18,2	18,1	18,4	18,8	21,1	22,0	26,0	24,7	22,0	19,0	19,7	14,4	0,7	3,3%	-1,6%	22,1%
Net profit margin	%	1,8	0,9	3,4	4,4	4,5	5,6	8,6	9,3	15,6	14,2	11,6	8,7	7,3	4,1	7,8	-15,4%	1,5%	307,0%
Average wage per FTE	thousand EUR	20,7	25,1	23,7	23,7	22,5	23,1	24,0	24,8	26,4	27,5	27,6	27,0	29,2	28,5	28,5	7,9%	18,2%	40,8%
GVA per FTE (labour productivity)	thousand EUR	31,5	36,1	36,9	37,8	36,2	37,2	40,4	41,7	47,5	47,9	46,1	42,4	45,3	40,2	27,9	6,7%	12,8%	43,9%

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values adjusted for inflation; constant prices (2020). Nowcast for 2021 and 2022.

Table 2.2 Main results for the EU-27 fleet, including Greece in 2018 and forward, and nowcasts for 2021 and 2022.

EU27		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	%Δ 2020-2019	%Δ 2020-avg2008-19	%Δ 2020-2008
<b>Number of vessels</b>	thousand	64,2	61,0	60,5	59,6	61,9	61,1	60,5	62,8	62,2	62,1	75,1	74,4	73,7	71,6	70,6	-1,0%	15,6%	14,8%
<b>Total vessel tonnage</b>	thousand GT	1.575	1.528	1.465	1.414	1.390	1.369	1.377	1.341	1.311	1.293	1.352	1.336	1.304	2.267		-2,3%	-6,6%	-17,2%
<b>Total vessel power</b>	thousand kW	5.555	5.358	5.258	5.132	5.296	5.242	5.226	5.218	5.118	5.072	5.371	5.379	5.261	3.069		-2,2%	-0,1%	-5,3%
<b>Engaged crew</b>	thousand	127	125	125	120	121	118	118	115	116	118	135	130	125	122	122	-3,8%	1,8%	-2,1%
<b>FTE national</b>	thousand	92	91	89	87	86	83	83	84	84	83	98	92	82	83	81	-11,0%	-6,2%	-10,8%
<b>Days at sea</b>	thousand	5.006	5.027	4.915	4.864	4.893	4.748	4.642	4.573	4.618	4.476	6.147	6.042	5.309	4.019	1.788	-12,1%	6,3%	6,0%
<b>Fishing days</b>	thousand	4.817	4.941	4.863	4.805	4.786	4.666	4.606	4.510	4.636	4.345	6.127	5.981	5.261	3.230		-12,0%	6,8%	9,2%
<b>Energy consumption</b>	million litre	2.161	2.319	2.213	2.069	1.986	1.993	1.931	2.044	1.991	1.968	2.027	2.009	1.895	1.800	1.881	-5,7%	-8,0%	-12,3%
<b>Live weight of landings</b>	thousand tonne	4.153	4.209	4.254	3.974	3.809	4.099	4.315	4.358	4.216	4.545	4.478	4.048	3.940	3.506	3.249	-2,7%	-6,3%	-5,1%
<b>Value of landings</b>	million EUR	6.711	6.463	6.425	6.546	6.404	6.392	6.514	6.331	6.992	6.829	7.043	6.581	5.755	5.593	5.677	-12,5%	-12,8%	-14,2%
<b>Gross value of landings</b>	million EUR	6.041	6.373	6.360	6.650	6.266	6.175	6.322	6.354	6.768	6.677	6.954	6.465	5.714	5.615	5.689	-11,6%	-11,4%	-5,4%
<b>Other income</b>	million EUR	105	96	123	131	91	105	118	103	96	144	136	141	182	171	175	29,5%	57,3%	73,2%
<b>Operating subsidies</b>	million EUR	187	150	98	85	85	62	72	63	43	57	52	49	151	35		206,2%	80,8%	-19,0%
<b>Income from leasing out quota</b>	million EUR	2	3	3	11	12	38	37	35	29	36	34	20	33	-		64,8%	53,6%	1451,2%
<b>Personnel costs</b>	million EUR	1.662	1.951	1.836	1.819	1.690	1.670	1.744	1.853	1.969	2.016	2.023	1.908	1.841	1.788	1.786	-3,5%	-0,2%	10,8%
<b>Value of unpaid labour</b>	million EUR	249	327	282	249	235	253	253	229	251	255	339	302	269	263	270	-10,7%	0,3%	8,2%
<b>Energy costs</b>	million EUR	1.456	1.139	1.265	1.491	1.477	1.370	1.236	1.014	843	907	1.084	1.048	751	1.008	2.050	-28,4%	-37,1%	-48,4%
<b>Repair &amp; maintenance costs</b>	million EUR	474	537	511	550	501	492	511	547	589	572	621	591	530	523	518	-10,2%	-2,0%	11,9%
<b>Other variable costs</b>	million EUR	767	941	888	933	801	840	846	900	921	870	899	923	817	802	791	-11,6%	-6,9%	6,5%
<b>Other non-variable costs</b>	million EUR	548	568	523	510	485	474	490	496	508	516	543	535	526	517	514	-1,8%	1,8%	-4,1%
<b>Consumption of fixed capital</b>	million EUR	828	829	799	790	778	713	693	741	655	715	746	709	736	700	709	3,8%	-1,9%	-11,1%
<b>Lease/rental payments for quota</b>	million EUR	17	16	30	34	34	36	52	64	58	44	41	40	42	-		4,5%	7,4%	147,8%
<b>Opportunity cost of capital</b>	million EUR	52	236	160	142	104	119	111	77	59	1	5	23	0	105	291	101,2%	-99,7%	-99,5%
<b>Value of physical capital</b>	million EUR	5.903	5.932	5.922	5.374	5.380	5.069	5.188	5.249	5.122	5.082	5.189	5.365	5.421	5.181	5.221	1,0%	0,4%	-8,2%
<b>Value of quota and other fishing</b>	million EUR	667	1.280	1.180	1.151	1.136	1.256	1.599	1.710	2.306	2.933	2.613	2.252	2.441	-		8,4%	45,9%	266,1%
<b>Investments</b>	million EUR	483	512	441	349	461	392	345	445	445	444	378	443	527	139	134	19,0%	23,1%	9,1%
<b>Gross Value Added</b>	million EUR	2.901	3.284	3.297	3.297	3.092	3.104	3.356	3.501	4.003	3.957	3.943	3.509	3.273	2.936	1.991	-6,7%	-4,8%	12,8%
<b>Net Value Added</b>	million EUR	2.021	2.219	2.338	2.365	2.211	2.273	2.552	2.683	3.289	3.242	3.201	2.823	2.537	2.340	1.572	-10,1%	-2,5%	25,5%
<b>Gross profit</b>	million EUR	990	1.006	1.178	1.229	1.168	1.182	1.360	1.418	1.783	1.685	1.581	1.299	1.162	837	65	-10,5%	-12,2%	17,3%
<b>Net profit</b>	million EUR	111	58	219	297	286	350	556	601	1.069	970	840	613	426	242	483	-30,4%	-12,6%	285,1%
<b>GVA to revenue</b>	%	47,2	50,8	50,8	48,6	48,6	49,4	52,1	54,2	58,3	58,0	55,6	53,1	55,5	50,7	34,0	4,5%	6,2%	17,6%
<b>Gross profit margin</b>	%	16,1	15,6	18,2	18,1	18,4	18,8	21,1	22,0	26,0	24,7	22,3	19,7	19,7	14,7	1,1	0,2%	-1,8%	22,3%
<b>Net profit margin</b>	%	1,8	0,9	3,4	4,4	4,5	5,6	8,6	9,3	15,6	14,2	11,8	9,3	7,2	4,3	8,2	-22,1%	-1,0%	301,4%
<b>Average wage per FTE</b>	thousand EUR	20,7	25,1	23,7	23,7	22,5	23,1	24,0	24,8	26,4	27,5	24,1	23,9	25,7	25,0	25,4	7,3%	6,3%	23,8%
<b>GVA per FTE (labour productivity)</b>	thousand EUR	31,5	36,1	36,9	37,8	36,2	37,2	40,4	41,7	47,5	47,9	40,3	38,0	39,8	35,6	24,6	4,8%	1,3%	26,5%

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values adjusted for inflation; constant prices (2020). Nowcast for 2021 and 2022.

Table 2.3 Main results for the EU-27 Small-scale coastal fleets (excl. Greece) for 2008-2020 and nowcasts for 2021 and 2022

EU27 SSCF (excluding Greece)		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	%Δ 2020-2019	%Δ 2020-avg2008-19	%Δ 2020-2008
<b>Number of vessels</b>	thousand	33,1	32,8	33,2	29,6	31,5	31,5	31,2	31,0	33,1	33,5	32,8	32,1	32,0	31,6	31,7	-0,5%	-0,4%	-3,4%
<b>Total vessel tonnage</b>	thousand GT	86,1	83,4	83,3	81,5	84,1	83,2	84,0	81,5	83,3	83,1	80,2	79,4	78,2	77,2		-1,5%	-5,5%	-9,2%
<b>Total vessel power</b>	thousand kW	1.267,6	1.259,5	1.271,6	1.255,4	1.342,7	1.345,6	1.328,7	1.318,8	1.321,5	1.321,1	1.291,3	1.278,3	1.261,0	1.251,3		-1,4%	-3,0%	-0,5%
<b>Engaged crew</b>	thousand	58,4	56,1	57,3	53,1	53,8	54,5	51,9	50,9	53,4	44,5	51,7	48,3	47,9	47,4	47,4	-1,0%	-9,4%	-18,0%
<b>FTE national</b>	thousand	29,6	29,2	31,1	29,5	28,0	30,4	27,7	27,7	27,8	20,4	25,8	22,6	20,6	21,3	21,8	-8,9%	-25,1%	-30,4%
<b>Days at sea</b>	thousand	2.994	3.050	2.975	2.823	2.798	2.735	2.650	2.637	2.663	2.155	2.490	2.372	2.118	1.275	975	-10,7%	-21,4%	-29,3%
<b>Fishing days</b>	thousand	2.958	3.063	3.024	2.869	2.827	2.792	2.739	2.699	3.749	2.141	2.540	2.409	2.154	925		-10,6%	-23,6%	-27,2%
<b>Energy consumption</b>	million litre	146	167	167	171	145	165	119	128	128	101	120	120	114	114	117	-4,6%	-18,3%	-21,9%
<b>Live weight of landings</b>	thousand tonne	244	227	207	225	242	253	253	243	227	218	206	197	213	231	233	8,2%	-6,8%	-12,6%
<b>Value of landings</b>	million EUR	937	955	864	903	809	741	844	773	879	853	852	788	733	721	754	-6,9%	-13,7%	-21,8%
<b>Gross value of landings</b>	million EUR	918	1.007	1.010	996	853	856	830	863	925	736	885	821	779	754	787	-5,1%	-12,6%	-15,1%
<b>Other income</b>	million EUR	17	24	35	25	23	26	27	19	18	40	39	40	46	45	45	15,5%	66,1%	163,9%
<b>Operating subsidies</b>	million EUR	24,9	19,8	12,8	14,1	18,1	13,9	11,1	15,0	4,3	16,1	14,4	19,6	40,7			107,5%	165,2%	63,6%
<b>Income from leasing out quota</b>	million EUR	0,3	0,0	0,0	1,7	0,7	1,4	1,2	2,3	1,2	5,1	1,2	1,1	1,6			38,1%	17,0%	397,5%
<b>Personnel costs</b>	million EUR	253	275	272	293	243	254	257	256	284	228	270	282	274	268	271	-2,9%	3,7%	8,2%
<b>Value of unpaid labour</b>	million EUR	143	201	180	149	122	146	140	134	143	95	130	95	87	87	90	-8,3%	-37,7%	-39,1%
<b>Energy costs</b>	million EUR	108	92	113	137	122	128	91	79	74	64	77	71	61	85	172	-14,3%	-36,9%	-43,9%
<b>Repair &amp; maintenance costs</b>	million EUR	60	67	66	59	57	58	53	53	60	47	53	51	52	51	51	1,8%	-8,2%	-12,7%
<b>Other variable costs</b>	million EUR	85	109	117	107	96	105	83	87	88	69	91	92	82	83	84	-10,2%	-12,5%	-3,5%
<b>Other non-variable costs</b>	million EUR	82	73	78	86	70	70	71	68	72	69	71	69	73	71	71	5,9%	-0,9%	-11,5%
<b>Consumption of fixed capital</b>	million EUR	97	97	112	116	111	102	96	92	94	93	95	89	93	91	91	4,5%	-7,0%	-5,0%
<b>Lease/rental payments for quota</b>	million EUR	0,8	0,9	0,8	1,1	2,3	1,5	1,2	1,6	1,4	1,4	1,1	0,8	0,9			3,0%	-31,2%	2,3%
<b>Opportunity cost of capital</b>	million EUR	5,6	24,7	19,5	16,7	14,2	17,0	15,9	11,5	10,7	3,0	1,0	0,8	0,9	12,2	33,0	209,1%	-92,2%	-83,7%
<b>Value of physical capital</b>	million EUR	675	665	749	713	712	664	640	625	648	603	630	652	656	637	639	0,6%	-1,3%	-2,8%
<b>Value of quota and other fishing rights</b>	million EUR	21	68	51	55	51	91	77	61	88	121	94	126	131			3,9%	73,5%	531,1%
<b>Investments</b>	million EUR	104	110	64	82	66	74	54	53	45	16	36	9	53	23	23	523,1%	-10,8%	-49,1%
<b>Gross Value Added</b>	million EUR	600	691	672	634	533	521	559	595	650	527	633	579	557	508	454	-3,7%	-7,0%	-7,1%
<b>Net Value Added</b>	million EUR	497	569	540	503	409	401	447	491	545	431	537	491	464	429	395	-5,5%	-5,0%	-6,7%
<b>Gross profit</b>	million EUR	194	211	223	199	165	118	159	205	224	204	233	202	196	153	92	-2,6%	1,0%	1,1%
<b>Net profit</b>	million EUR	92	64	81	60	41	5	39	94	111	97	117	102	86	83	43	-15,5%	16,1%	-5,9%
<b>GVA to revenue</b>	%	64,1	67,0	64,3	62,1	60,9	59,0	65,2	67,4	68,9	68,0	68,5	67,2	67,5	63,7	54,7	0,5%	3,6%	5,3%
<b>Gross profit margin</b>	%	21,1	20,6	21,4	19,5	18,9	13,4	18,6	23,2	23,7	26,3	25,2	23,4	23,8	19,2	11,1	1,6%	11,9%	12,8%
<b>Net profit margin</b>	%	10,0	6,9	8,0	6,0	4,9	0,6	4,8	11,4	12,8	13,0	13,3	12,3	10,9	10,4	5,2	-11,5%	26,8%	9,0%
<b>Average wage per FTE</b>	thousand EUR	14,5	16,6	15,0	15,1	13,2	13,3	14,5	14,1	15,4	15,9	15,6	16,7	17,5	16,6	16,6	5,1%	17,1%	20,6%
<b>GVA per FTE (labour productivity)</b>	thousand EUR	20,4	23,8	21,8	21,6	19,2	17,2	20,3	21,5	23,5	25,7	24,7	25,6	27,1	23,8	21,2	5,9%	22,7%	32,9%

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values adjusted for inflation; constant prices (2020). Nowcast for 2021 and 2022.

Table 2.4 Main results for the EU-27 Large-scale fleets (excl. Greece) for 2008-2020 and nowcasts for 2021 and 2022

EU27 LSF (excluding Greece)		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	%Δ 2020-2019	%Δ 2020-avg2008-19	%Δ 2020-2008
<b>Number of vessels</b>	thousand	13,6	13,2	12,8	14,1	14,7	14,2	14,2	13,8	13,8	13,7	13,2	13,3	12,5	12,1	12,0	-6,2%	-9,0%	-7,9%
<b>Total vessel tonnage</b>	thousand GT	1.080,9	1.041,5	979,4	930,1	913,3	907,5	890,9	862,9	854,6	863,6	860,8	855,7	829,9	804,6		-3,0%	-9,8%	-23,2%
<b>Total vessel power</b>	thousand kW	3.275,9	3.147,8	2.986,0	2.871,0	2.896,0	2.848,8	2.822,1	2.779,3	2.752,1	2.758,2	2.699,0	2.734,5	2.605,3	2.535,0		-4,7%	-9,6%	-20,5%
<b>Engaged crew</b>	thousand	62,1	62,1	59,3	59,8	61,3	58,1	59,4	57,6	56,7	38,2	56,1	55,8	51,6	50,9	50,4	-7,5%	-9,8%	-16,9%
<b>FTE national</b>	thousand	54,4	52,8	48,5	49,5	50,4	46,6	48,2	48,5	49,3	31,5	46,3	45,2	39,9	39,3	38,7	-11,7%	-16,3%	-26,7%
<b>Days at sea</b>	thousand	1.945	1.885	1.842	1.945	2.007	1.934	1.914	1.862	1.883	1.238	1.756	1.733	1.496	1.055	813	-13,7%	-18,2%	-23,1%
<b>Fishing days</b>	thousand	1.811	1.806	1.756	1.854	1.883	1.804	1.797	1.743	1.777	1.165	1.698	1.649	1.427	702		-13,4%	-17,4%	-21,2%
<b>Energy consumption</b>	million litre	1.747	1.779	1.661	1.544	1.479	1.454	1.419	1.439	1.493	1.161	1.447	1.438	1.303	1.269	1.295	-9,4%	-13,5%	-25,4%
<b>Live weight of landings</b>	thousand tonne	3.304	3.322	3.387	3.055	2.934	3.152	3.284	3.368	3.253	3.597	3.488	3.079	3.072	2.600	2.359	-0,2%	-6,0%	-7,0%
<b>Value of landings</b>	million EUR	4.795	4.544	4.546	4.503	4.311	4.285	4.251	4.384	4.803	4.740	4.703	4.330	3.814	3.638	3.659	-11,9%	-15,5%	-20,5%
<b>Gross value of landings</b>	million EUR	4.458	4.539	4.382	4.559	4.322	4.196	4.243	4.401	4.748	3.613	4.554	4.222	3.744	3.674	3.686	-11,3%	-14,0%	-16,0%
<b>Other income</b>	million EUR	88	66	74	78	68	73	74	69	67	75	93	96	124	120	118	29,0%	61,8%	41,2%
<b>Operating subsidies</b>	million EUR	146,5	122,6	70,3	58,5	52,6	41,8	54,9	44,2	37,3	33,6	34,4	25,8	71,9			178,5%	19,4%	-50,9%
<b>Income from leasing out quota</b>	million EUR	1,8	2,7	3,2	8,9	11,6	35,4	34,7	31,5	27,5	24,6	32,6	17,8	30,5			70,9%	57,4%	1570,2%
<b>Personnel costs</b>	million EUR	1.290	1.498	1.357	1.319	1.255	1.223	1.298	1.392	1.483	1.085	1.451	1.345	1.287	1.260	1.245	-4,3%	-3,4%	-0,2%
<b>Value of unpaid labour</b>	million EUR	105	123	101	98	111	106	113	95	108	67	112	117	105	107	106	-10,6%	0,1%	0,1%
<b>Energy costs</b>	million EUR	1.159	854	930	1.110	1.109	997	911	726	629	561	768	740	515	704	1.416	-30,4%	-41,1%	-55,5%
<b>Repair &amp; maintenance costs</b>	million EUR	360	390	366	400	350	341	360	397	428	348	423	413	384	378	376	-7,1%	0,6%	6,5%
<b>Other variable costs</b>	million EUR	506	582	503	554	465	489	476	477	504	372	478	471	436	422	418	-7,5%	-11,0%	-13,9%
<b>Other non-variable costs</b>	million EUR	412	404	360	339	317	316	317	308	334	277	352	347	336	329	327	-3,0%	-1,2%	-18,5%
<b>Consumption of fixed capital</b>	million EUR	653	652	595	598	583	528	521	536	469	444	477	448	476	466	460	6,2%	-12,2%	-27,2%
<b>Lease/rental payments for quota</b>	million EUR	15,2	14,8	26,7	29,6	29,8	33,8	50,1	58,3	53,2	31,8	37,0	36,2	36,7			1,1%	5,6%	141,9%
<b>Opportunity cost of capital</b>	million EUR	39,6	162,5	110,8	93,3	64,3	75,8	70,3	44,7	36,1	0,4	5,8	19,3	5,2	72,2	188,7	73,1%	-109,3%	-113,1%
<b>Value of physical capital</b>	million EUR	4.146	4.130	4.033	3.543	3.643	3.424	3.494	3.523	3.437	3.239	3.454	3.554	3.528	3.440	3.395	-0,7%	-2,9%	-14,9%
<b>Value of quota and other fishing rights</b>	million EUR	596	1.147	1.062	1.026	1.014	1.069	1.415	1.518	2.044	2.458	2.360	2.069	2.251			8,8%	51,9%	277,6%
<b>Investments</b>	million EUR	350	371	271	42	387	304	269	276	373	368	271	342	412	54	53	20,4%	39,6%	17,5%
<b>Gross Value Added</b>	million EUR	2.108	2.375	2.297	2.230	2.140	2.120	2.252	2.552	2.919	2.128	2.627	2.342	2.196	1.962	1.265	-6,2%	-6,2%	4,2%
<b>Net Value Added</b>	million EUR	1.416	1.560	1.591	1.539	1.493	1.516	1.661	1.972	2.414	1.684	2.156	1.912	1.725	1.567	994	-9,8%	-1,0%	21,8%
<b>Gross profit</b>	million EUR	714	755	839	812	774	791	842	1.065	1.328	976	1.064	881	804	594	86	-8,7%	-11,0%	12,7%
<b>Net profit</b>	million EUR	27	66	135	113	114	177	234	470	801	508	579	438	327	209	336	-25,4%	11,1%	1096,0%
<b>GVA to revenue</b>	%	46,4	51,6	51,5	48,1	48,8	49,7	52,2	57,2	60,6	57,7	56,5	54,3	56,8	51,7	33,3	4,6%	7,3%	22,4%
<b>Gross profit margin</b>	%	15,7	16,4	18,8	17,5	17,7	18,6	19,5	23,9	27,6	26,5	22,9	20,4	20,8	15,7	2,3	1,7%	1,7%	32,4%
<b>Net profit margin</b>	%	0,6	1,5	3,1	2,5	2,7	4,2	5,6	10,8	17,0	14,2	12,8	10,6	8,7	5,6	9,0	-18,5%	25,7%	1320,3%
<b>Average wage per FTE</b>	thousand EUR	25,8	31,0	30,2	28,7	27,2	28,6	29,3	30,7	32,3	36,6	33,8	32,4	35,1	34,9	35,0	8,1%	14,8%	36,0%
<b>GVA per FTE (labour productivity)</b>	thousand EUR	39,0	45,2	47,5	45,1	42,6	45,6	46,7	52,8	59,2	67,6	56,7	52,2	55,4	50,1	32,9	6,2%	10,7%	42,0%

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values adjusted for inflation; constant prices (2020). Nowcast for 2021 and 2022.

Table 2.5 Main results for the EU-27 Distant-water fleets for 2008-2020 and nowcasts for 2021 and 2022

EU27 DWF		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	%Δ 2020-2019	%Δ 2020-avg2008-19	%Δ 2020-2008	
Number of vessels	number	385	353	368	347	328	287	287	278	267	255	250	259	249	240	239	-3,9%	-18,4%	-35,3%	
Total vessel tonnage	thousand GT	282,4	288,7	284,4	272,6	275,0	249,6	286,0	279,5	261,3	256,8	247,0	247,2	236,5	236,9		-4,3%	-12,1%	-16,3%	
Total vessel power	thousand kW	409,8	404,0	394,0	372,2	374,2	337,6	377,4	371,9	354,4	345,7	338,9	345,8	329,5	327,2		-4,7%	-10,7%	-19,6%	
Engaged crew	thousand	6,9	7,3	8,6	7,1	6,0	5,8	6,4	6,2	5,6	1,3	6,2	6,5	6,5	6,4	6,3	0,2%	5,2%	-6,2%	
FTE national	thousand	8,2	8,8	9,7	8,2	7,2	6,4	7,2	7,8	7,1	1,3	7,4	8,1	7,3	7,3	7,3	-9,1%	0,9%	-10,8%	
Days at sea	thousand	97	92	98	96	87	78	78	76	75	16	69	74	69	58		-7,0%	-11,6%	-28,6%	
Fishing days	thousand	75	72	83	82	76	69	70	67	65	15	57	60	54	44		-9,8%	-18,3%	-28,5%	
Energy consumption	million litre	269	373	385	354	362	374	393	474	372	100	370	399	399	399	398	-0,1%	13,3%	48,6%	
Live weight of landings	thousand tonne	598	651	647	688	631	694	776	693	728	723	716	698	594	606	605	-15,0%	-13,6%	-0,7%	
Value of landings	million EUR	970	954	964	1.080	1.212	1.294	1.417	1.052	1.301	1.229	1.057	1.034	859	853	906	-17,0%	-24,0%	-11,5%	
Gross value of landings	million EUR	656	821	968	1.094	1.090	1.123	1.249	1.090	1.096	257	1.069	994	844	845	898	-15,1%	-12,0%	28,6%	
Other income	million EUR	0	6	15	28	1	7	16	15	12	3	5	4	12	12	12	187,8%	31,9%		
Operating subsidies	million EUR	15,2	7,3	15,2	12,5	13,8	6,6	5,9	3,7	0,9	-	1,5	2,5	3,7			49,5%	-47,5%	-75,5%	
Income from leasing out quota	million EUR	-	-	-	-	0,0	1,0	0,7	0,8	0,4	0,1	0,7	1,0	0,9			-7,7%	128,2%		
Personnel costs	million EUR	119	177	208	208	192	194	188	206	202	64	233	223	222	219	218	-0,6%	20,5%	87,0%	
Value of unpaid labour	million EUR	0,9	1,9	0,5	1,6	1,4	0,7	0,4	0,2	0,6	-	2,4	1,1	0,8	0,8	0,8	-32,0%	-24,2%	-14,1%	
Energy costs	million EUR	188	192	221	244	246	245	235	210	140	40	170	173	124	168	323	-28,4%	-35,5%	-34,2%	
Repair & maintenance costs	million EUR	54	80	79	91	93	94	98	97	102	44	120	101	72	72	72	-28,9%	-18,1%	33,8%	
Other variable costs	million EUR	175	250	268	272	241	246	287	336	329	37	268	298	238	238	238	-20,0%	-4,8%	35,9%	
Other non-variable costs	million EUR	54	91	85	85	99	88	102	119	102	34	113	111	108	108	108	-2,9%	19,5%	98,4%	
Consumption of fixed capital	million EUR	76	80	70	57	55	56	49	79	62	13	77	72	56	55	55	-22,7%	-10,6%	-27,1%	
Lease/rental payments for quota	million EUR	0,8	0,6	2,5	3,6	1,4	0,8	1,1	3,8	3,2	0,3	2,4	2,9	4,2			46,6%	114,0%	404,3%	
Opportunity cost of capital	million EUR	2,4	27,4	12,6	10,3	11,1	10,3	11,4	10,0	4,6	-	5,2	-	5,0	-	0,7	-	16,1	-	40,6
Value of physical capital	million EUR	645	634	569	535	511	435	515	567	570	348	523	590	626	623	623	6,1%	16,6%	-3,0%	
Value of quota and other fishing rights	million EUR	-	-	11	-	-	9	19	10	11	49	58	58	59			2,5%	215,3%		
Investments	million EUR	28	14	53	34	9	14	22	38	28	2	44	60	28	28	28	-52,8%	-1,0%	1,0%	
Gross Value Added	million EUR	175	207	329	430	412	457	544	344	435	105	403	314	314	271	170	-0,3%	-9,4%	79,7%	
Net Value Added	million EUR	96	100	247	363	346	390	483	255	368	95	332	248	259	232	156	4,5%	-6,5%	169,9%	
Gross profit	million EUR	55	28	121	221	219	262	355	138	232	41	168	90	91	52	49	0,9%	-43,6%	65,3%	
Net profit	million EUR	-	22	-	41	34	134	121	172	289	56	142	-	6	62	25	31	13	-	40
GVA to revenue	%	27,0	25,2	33,5	38,3	37,8	40,4	43,0	31,1	39,3	40,4	37,6	31,5	36,6	31,6	18,7	16,3%	3,4%	35,7%	
Gross profit margin	%	8,5	3,5	12,3	19,7	20,1	23,2	28,1	12,5	21,0	15,7	15,6	9,0	10,6	6,0	5,4	17,6%	-32,7%	24,9%	
Net profit margin	%	-	3,3	-	5,7	3,8	13,5	13,0	17,5	25,8	5,7	15,0	-	6,3	7,1	3,0	4,3	1,8	-	5,1
Average wage per FTE	thousand EUR	15,0	20,9	22,1	26,4	27,7	31,0	26,6	26,9	29,4	58,3	32,1	27,8	30,3	29,9	30,0	9,2%	5,8%	102,0%	
GVA per FTE (labour productivity)	thousand EUR	21,9	24,2	34,9	54,3	59,1	73,0	76,7	44,8	63,0	95,3	54,9	38,9	42,7	36,9	23,3	9,7%	-20,1%	94,8%	

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values adjusted for inflation; constant prices (2020). Nowcast for 2021 and 2022.

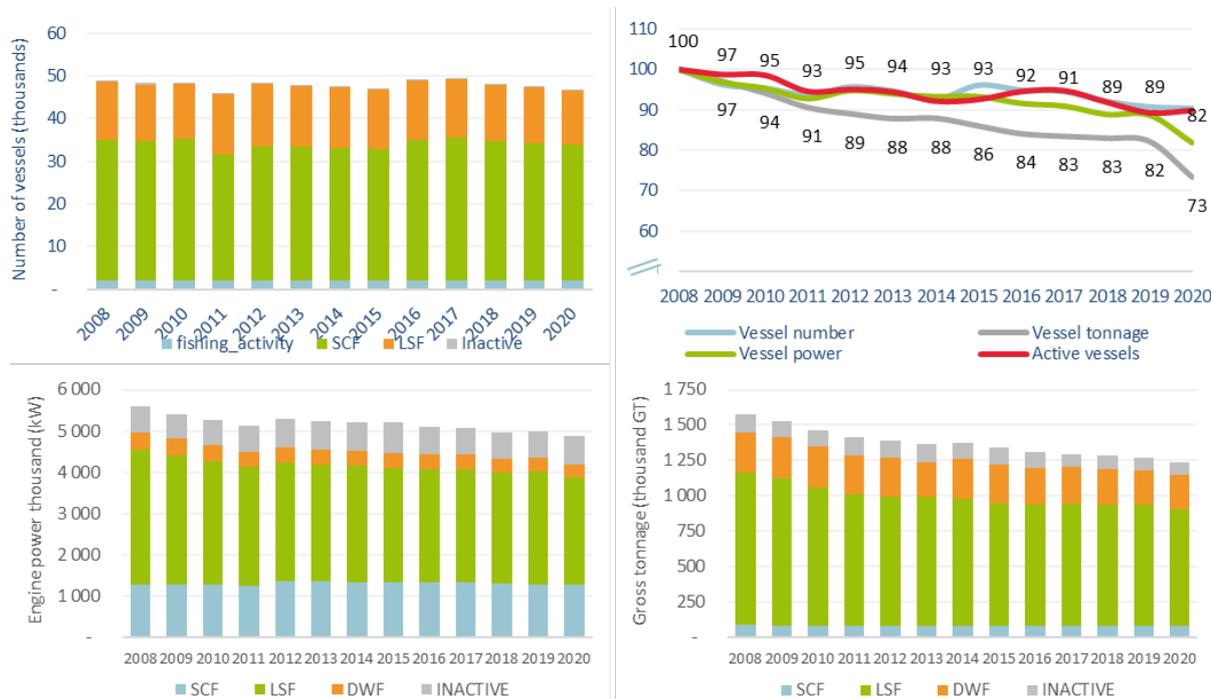
## 2.1 Overview of the EU Fishing Fleet in 2020

### Fleet Capacity and structure

The EU fleet numbered 73 716 vessels in 2020 (-1.0% compared to 2019), of which 56 111 (74%) were active (Figure 2.1).

EU fleet<sup>3</sup> capacity has decreased gradually over the period analysed, overall declining 6.9% in number of vessels, 21.4% in kW and 12.3% in GT compared to 2008.

Greece maintained the largest fleet within the EU (by vessel number) with 19% of the total number of vessels, followed by Italy (16.2%) and Spain (12.1%). Belgium, with 67 vessels, 63 of which were active in 2020, has the lowest number of vessels of all Member States. The Spanish fleet held the largest GT (25.5% of the total) while the French fleet was superior in engine power (18.3% of the total) (see data tables in Annex 2).



**Figure 2.1 Trends and variations on capacity in number of vessels, gross tonnage and engine power.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)). Trends exclude Greece for time-series consistency

### Employment and average wage

In 2020, 124 636 fishers were directly employed in the EU fishing fleet, corresponding to 82 272 FTEs. Total employed decreased by 0.9% and FTE by 3.8% compared to 2019 (Figure 2.2).

Personnel costs decreased 3.5% and average wage per FTE increased by 7.3% (EUR 25 654) (Figure 2.2).

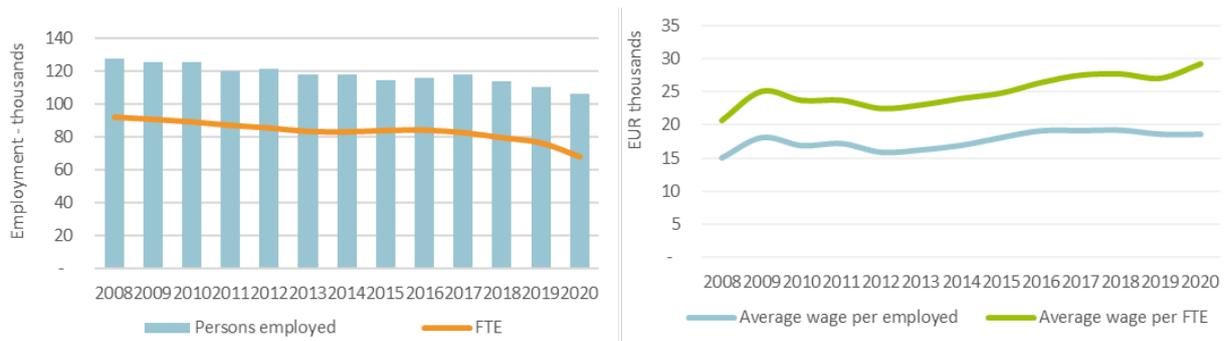
Employment decreased over the period 2008-2020; -2.1% in total employed and -10.8% in FTE compared to 2008, while average wage per FTE increased by 23.8% (excluding Greece for consistency<sup>4</sup>) (Figure 2.2).

<sup>3</sup> Variations exclude Croatia for time-series consistency unless otherwise stated.

<sup>4</sup> Employment data unavailable for the years 2008 to 2012 for both Croatia and Greece.

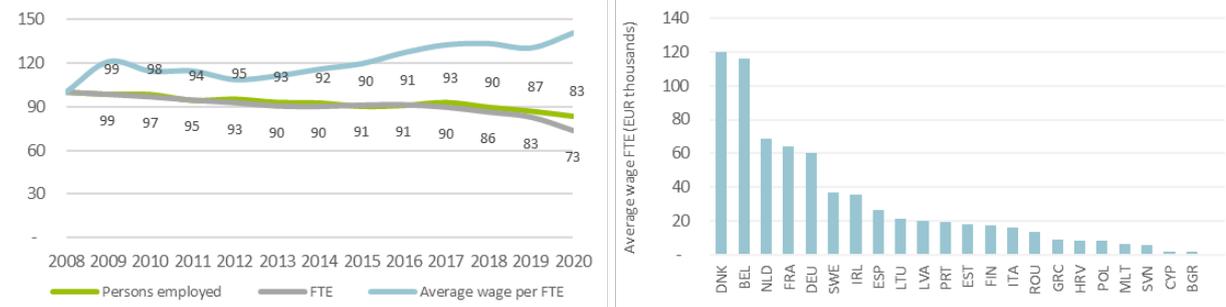
At EUR 119 871, Danish fishers earned the highest annual wages on average in 2020, followed by Belgian (EUR 115 964) and fishers from the Netherlands (EUR 68 713) fishers (Figure 2.3). However, since Belgium calculate their annual earnings differently than the other Member States, these numbers might not show the whole picture. Bulgarian fishers received the lowest average wage (EUR 1 840), followed by Cyprus (EUR 2 041) fishers (Figure 2.3).

The Spanish fleet employed 25.1% of the total, followed by the Italian (17.1%) and Greek (15.0%) fleets. In terms of FTEs, the Spanish fleet has the highest followed by the Greek and then the Italian fleet. Greek fleet surpasses the Italian, indicating more part-time fishers in Italy (see data tables in Annex 2).



**Figure 2.2 Trends on employment (in persons employed and FTE) and average wage per FTE.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Trends exclude Greece for time-series consistency



**Figure 2.3 Variation in employment and average wage (based on 2008=100); average wage per FTE by MS.**

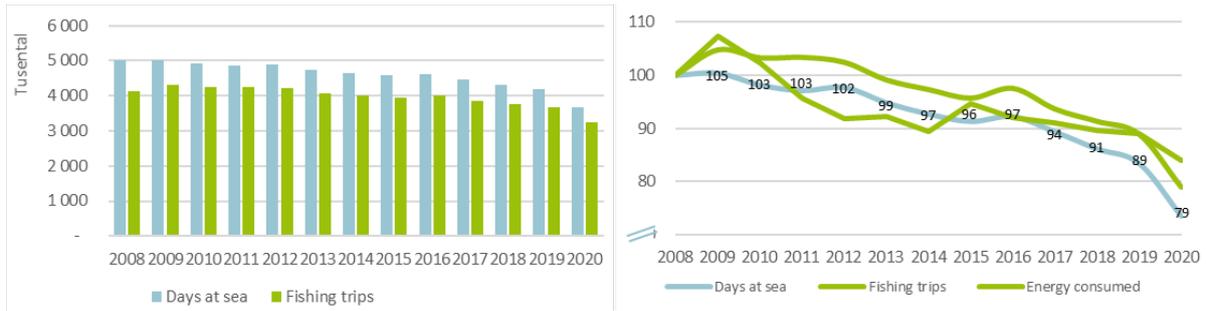
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Trends exclude Greece for time-series consistency

### Fishing effort and fuel consumption

In 2020, the EU fishing fleet spent 5.3 million Days at Sea (DaS) and consumed almost 1.9 billion litres of fuel (Figure 2.4), that means that on average, each active vessel spent around 88 DaS and consumed 30 087 litres of fuel in 2020. The Belgian fleet consumed on average the most fuel (538 869 litres per vessel) followed by the Lithuanian (288 526 litres) and then the Dutch (244 276 litres) fleets. Belgian vessels also spent the most average DaS (197), followed by Greek vessels (116) and then Spanish vessels (96). On average, Bulgarian vessels spent only on average 12 DaS, followed by Maltese vessels, Finland (22) and Romania (25), in 2020.

Effort, in DaS, deployed by EU fleets declined by 1.0% compared to 2019. Energy consumption decreased 5.7%.

Greece reported the highest number of sea days (1.6 million or 30.6% of the total), followed by Italy (990 000 days or 18.6% of the total) and then Spain (856 000 days or 16.1% of the total). The Spanish fleet consumed the most fuel (586 million litres or 30.9% of total), followed by the French (279 million litres) and Italian (243 million litres).



**Figure 2.4 Trends and variations on fishing effort and fuel consumption (based on 2008=100)**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)). Trends exclude Greece for time-series consistency

## Landings

The EU fleet landed 3.94 million tonnes of seafood in 2020, decreasing since 2019 (-2.7%). The value of landings reported was EUR 5.76 billion, a 12.5% decrease compared to 2019 (Figure 2.5).

The landed weight and the landed value provide different fluctuations during the same period. Changes in the landed weight and value between 2008 and 2019 have reflected the average fish price over the period, with some periods of increased landings associated with lower average price and vice-versa, noticeably in 2015. However, the average price per kilo has remained relatively stable over the entire time period analysed, oscillating between 1.4 euro/kg and 1.6 euro/kg (Figure 2.5).

The Spanish fleet accounted for 27.3% of the total value landed during the year (2.0% in weight), followed by France (20.0% in value, 12.0% in weight), Italy (11.3% in value and 3.5% in weight) and Denmark (7.8% in value and 20.8% in weight).

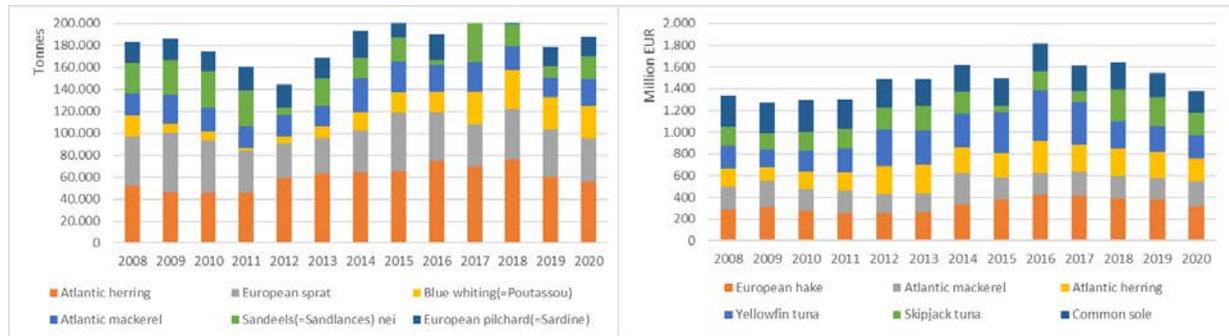


**Figure 2.5 Trends and variations on landings in weight and value and average landed price (based on 2008=100)**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Trends exclude Greece for time-series consistency

### Top species and average landed prices

Atlantic herring, at 556 113 tonnes, continued to be the most landed species (in weight) by the EU fleet in 2020, followed by European sprat (399 903 tonnes) blue whiting (299 426 tonnes), Atlantic mackerel and sandeels.

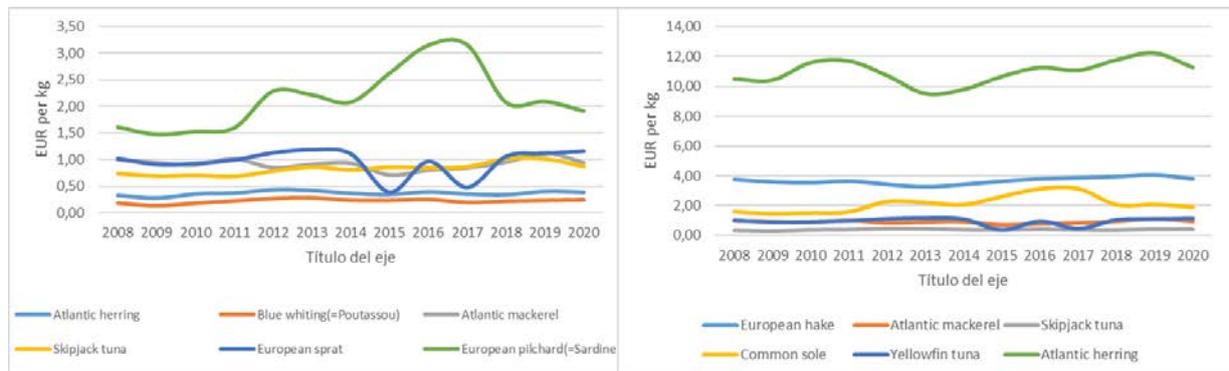


**Figure 2.6 Trends for the top six species landed in weight and in value**  
 Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

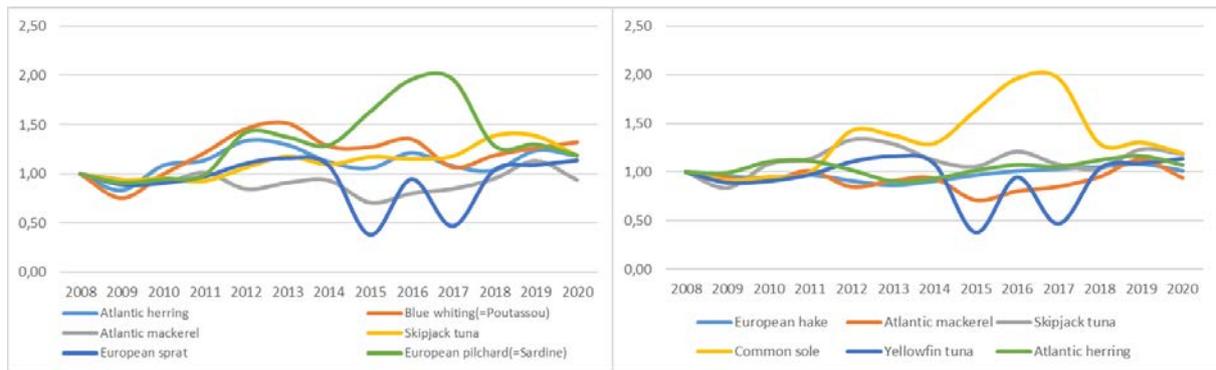
European hake at EUR 321 million, was the top species landed in value, followed by Atlantic mackerel, Atlantic herring, yellowfin tuna, skipjack and common sole (Figure 2.6).

Landings of European pilchard, sandeels and Atlantic mackerel increased in weight and value. Conversely, landings of, blue whiting, Atlantic horse mackerel, herring, skipjack, yellowfin tuna and European sprat decreased in weight and value.

The average price of yellowfin tuna has been on the rise since 2016, but experienced a significant drop in prices in 2017, but the last three years improved, being higher than in 2019. The average price of Atlantic mackerel has an increasing trend, but in 2020 went down compared to 2019. Common sole that suffered a significant decrease in average price in 2017 was slowly recovering in 2018-2019, but in 2020 a significant increase of almost 30% was observed. Skipjack average price had a sharp increase in 2017 and in 2019, but the value of 2020 has decreased compared to 2019 (Figures 2.7 and 2.8).



**Figure 2.7 Average landed price of the top species landed in weight and/or value**  
 Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 2.8 Variations in average price of the top species landed in weight and/or value (based on 2008=1)**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

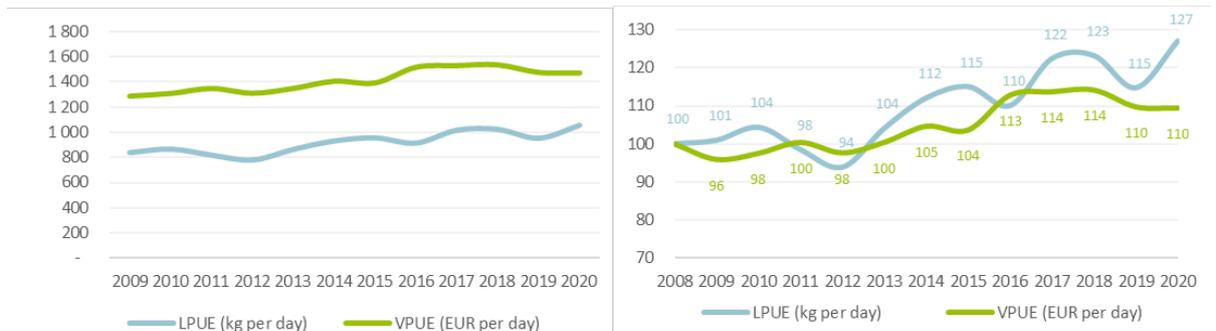
### Landings per unit of effort

Landings weight per DaS and landings value per DaS are used as proxies of LPUE and VPUE. However, the values and trends of these two proxies should be considered with caution and only as indicative, as no effort standardisation has been performed. Variations may result from many factors such as seasonal and locational characteristics, fishers’ skills, fishing methods, technological advances, or shifting management regimes (e.g., area closures, trip limits, effort limits, choke species, etc.).

LPUE and VPUE were estimated at 1 054 kg and EUR 1 468 per DaS in 2020, respectively. An increase of 107% and a decrease 0.3% compared to 2019, respectively (Figure 2.9).

The average LPUE was 17.3% and VPUE 5.1% higher in 2020 than in 2008. After a continuously increasing trend from 2011 to 2017, the average LPUE has started a slightly decreasing trend the recent years (Figure 2.9).

LPUE for the SSCF was estimated at 63 kg per DaS in 2020. For the LSF, LPUE was estimated at 1.7 tonnes and 8.6 tonnes for the DWF. LPUE for the SSCF increased while the LPUE decreased both the LSF and DWF compared to 2019.



**Figure 2.9 Trends and variations on landings per unit of effort (days-at-sea) by weight (LPUE) and value (VPUE) (based on 2008=100)**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

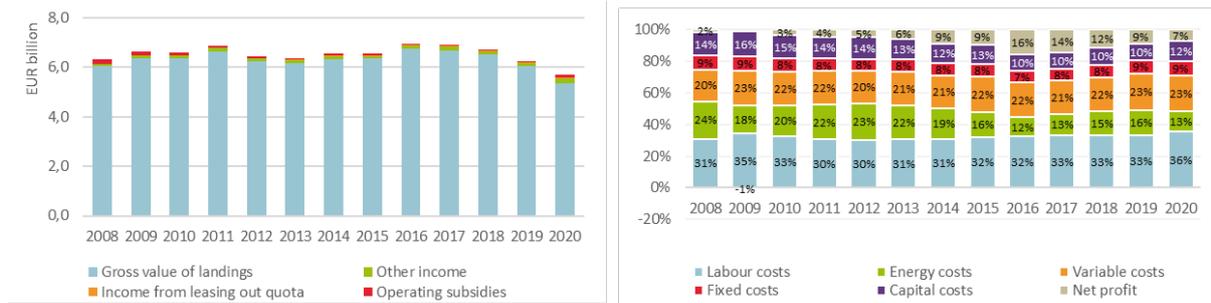
### Income and costs

In 2020 the total revenue<sup>5</sup> generated by the EU fishing fleet was EUR 5.5 billion. Total costs amounted to EUR 5.1 billion, 92% of the revenue generated (Figure 2.10).

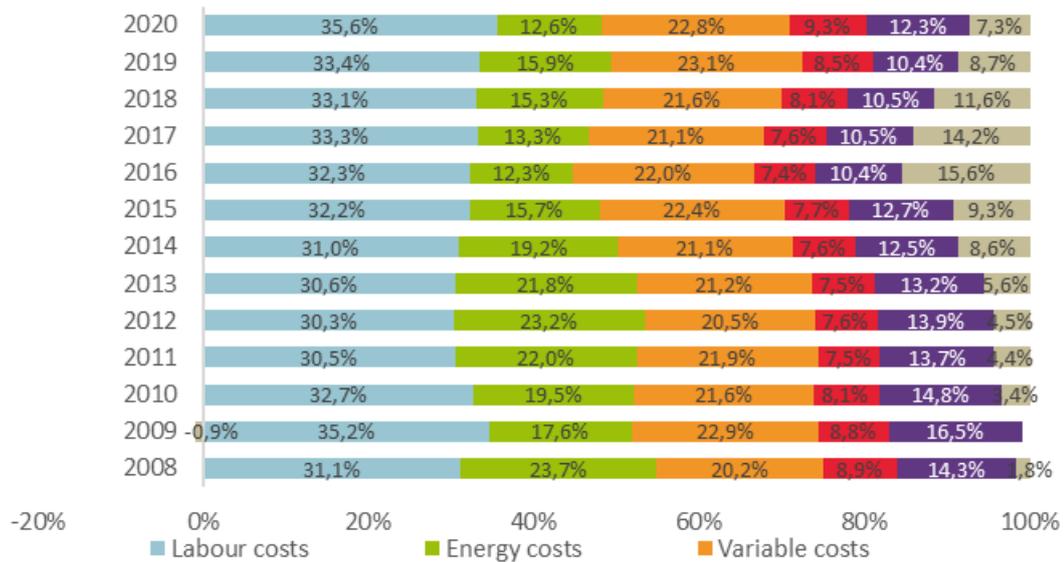
<sup>5</sup> Direct income subsidies and income from leasing out fishing rights excluded from the economic analyses.

Of the revenue generated, 97% was obtained from the fish sale (EUR 5 366 million) and EUR 182 million from non-fishing income. Additionally, the fleet received EUR 116 million in operating subsidies and EUR 33.2 million in income from leasing out quota and other fishing rights (Figure 2.10). Of the costs incurred by the fleet in 2020, 87% consisted of operating costs<sup>6</sup> (EUR 4.4 billion) and 13.4% of capital costs (EUR 689 million).

The main operating costs were labour costs (35.6% of total costs: EUR 1.78 billion in personnel costs and EUR 193 million in unpaid labour), other variable costs (22.8% of total costs: EUR 757 million), and fuel costs (EUR 700 million, 12.6% of total costs). In addition, other costs linked to production amounted to almost EUR 1.07 billion: EUR 508 million in repair and maintenance and EUR 517 million in other non-variable (fixed) costs. Figure 2.11 shows costs as a percentage of revenue.



**Figure 2.10 Trends on main income and costs items**  
 Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Trends exclude Greece for time-series consistency



**Figure 2.11 Trends on costs as a percentage of revenue**  
 Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Trends exclude Greece for time-series consistency

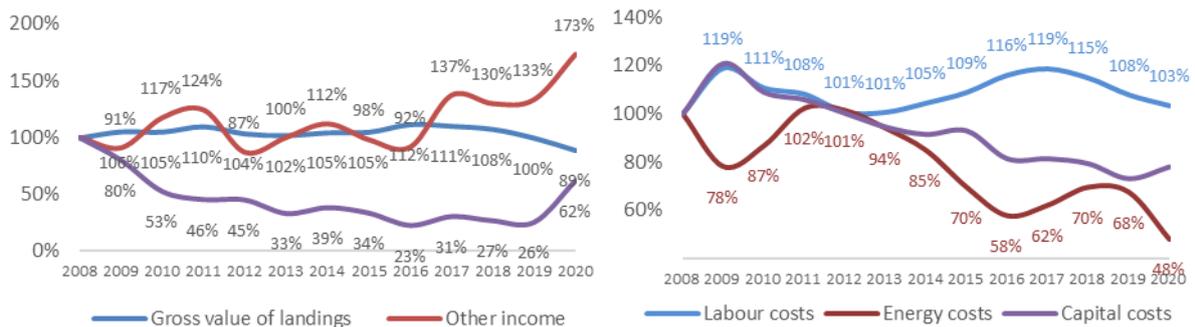
While revenue has varied little from 2008 to 2019, oscillating around EUR 6.2 billion, it has shown an overall increase over the period analysed. However, revenue decreased (-10.2%) in 2020 compared to 2019; mainly due to the 11.1% decrease in the sale of fish. However, income from leasing/renting out quota or other fishing rights and operational subsidies have increased since 2019 (Figure 2.12).

<sup>6</sup> Total operating costs include: crew wage costs, unpaid labour, energy costs, other variable costs, repair costs, other non-variable costs.

Total costs<sup>7</sup> followed a similar but opposite trend to revenue; in general, a decrease of -14.8% from 2008 to 2020. This general reduction was mainly a result of decreasing energy costs (-51.9%) and the value of physical capital (-16.7%), in line with the lower fuel prices in recent years and reduced fleet capacity from 2008 to 2020. Conversely, personnel costs (7.3%) and repair and maintenance costs (7.2%) increased compared to 2008.

In 2020, total costs decreased 8.9% compared to 2019, brought on by slight decreases in almost all cost items like energy costs (-28.9%), other variable costs (-1.3%) except for consumption of fixed capital (+3.3%) (Figure 2.12).

At EUR 1.6 billion, Spain generated more than a quarter of the total EU fleet revenue, followed by France (EUR 1.2 billion, 19.7%) and Italy (EUR 664 million, 11.3%) (see data tables in Annex 2).



**Figure 2.12 Variations on main income and costs items (based on 2008=100)**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Trends exclude Greece for time-series consistency

Average fuel prices remained relatively low during 2009 and early 2010, increasing steadily throughout late 2010 and remained until mid-2012, decreasing and then rising again in 2014. Just after a sharp decrease in 2016 and hitting a low in early 2016. Average fuel prices remained low throughout 2016 and 2017, increasing further throughout 2018 and 2019. By mid-2018, prices returned to 2015 levels.

Fluctuations in fuel prices had a significant impact on the performance of the fleet. Energy costs in 2020 (12.6% of revenue) are significantly lower than those recorded in 2008, and from 2011 to 2013 (around 22%) but higher than in 2017 (14%).

<sup>7</sup> Total costs include crew wage costs, unpaid labour, energy costs, repair costs, other variable costs, other non-variable costs, annual depreciation and opportunity cost of capital (capital costs).

## 2.2 Economic Performance Indicators

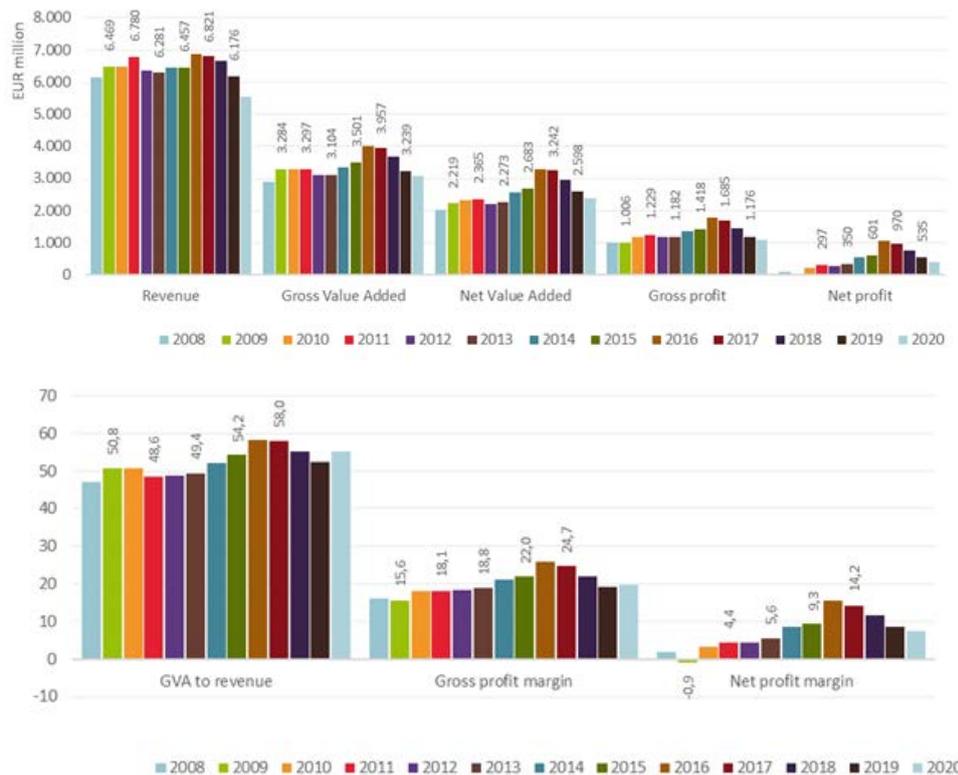
Main performance indicators are provided by Member State and for the EU fleet as a whole in the Annex 2.

### Situation in 2020

The GVA, gross profit, and net profit (excluding subsidies) generated by the EU fishing fleet in 2020 were EUR 3.0 billion (5.3% decrease compared to 2019), EUR 1.09 billion (-7%), and EUR 407 million (-24%), respectively. Trends excluding Greece are shown in Figure 2.13.

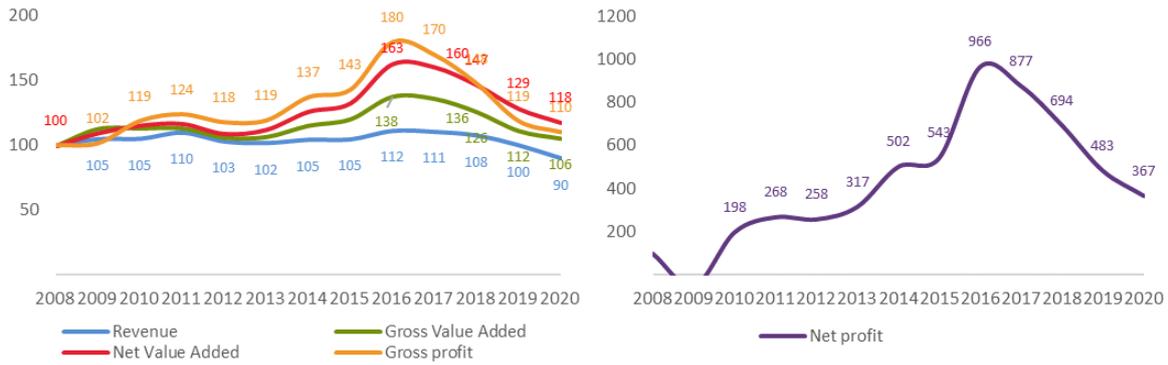
In relative terms, GVA to revenue was 55.3%. 19.7% of revenue was retained as gross profit; after deducting capital costs, 7.3% of revenue was retained as net profit. As depicted in Figures 2.13 and 2.14, results follow a decreasing trend from 2016.

In 2020, operating subsidies revealed a significant increase (+142%); the EUR 116 million operating subsidies can be partially explained by the support provided to alleviate the sector due to the COVID-19 pandemic. Greece and Poland supported with EUR 34.7 million each, Italy with EUR 22.9 million, France with EUR 20 million, Spain with EUR 9.8 million, and Denmark with EUR 4.7 million.



**Figure 2.13 Trends on revenue and profit for the EU fleet**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 2.14 Variations on revenue and profits for the EU fleet (based on 2008=100)**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Trends exclude Greece for time-series consistency

An analysis of the 2020 economic performance by Member State revealed a mixed picture.

No Member State suffered gross losses, while four generated net losses (Finland, Germany, Estonia, and Cyprus).

The Spanish fleet generated by far the highest revenue (EUR 1.6 billion, -10% compared to 2019), GVA (EUR 856 million, -4%), gross profit (EUR 200 million, -14%), and net profit (EUR 97.9 million, -25%).

The French fleet generated almost EUR 1.1 billion (-11%) in revenue and EUR 601 million in GVA (-4%), followed by the Italian fleet, with EUR 664.4 million (-27%) in revenue and EUR 421.6 million in GVA (-25%).

In relative terms, the Slovenian fleet generated the highest level of GVA relative to revenue (86.3%), followed by Denmark (68%), Croatia (65%), and Bulgaria (64.5%).

The Slovenia fleet generated the highest gross profit margin (77%), followed by Bulgaria (42.5%) and Denmark (41.9%).

### Capital value and investments

In 2020, the EU fleet had an estimated consumption of the fixed capital value of EUR 689 million. In-year investments amounted to EUR 493 million, a 20% increase compared to 2019. The Italian fleet had the highest consumption of fixed capital value, amounting to some EUR 147 million, followed by France (EUR 108.5 million), Denmark (EUR 100.4 million), and Spain (EUR 98 million).

## 2.3 Resource Productivity and Efficiency

### Labour and Capital Productivity

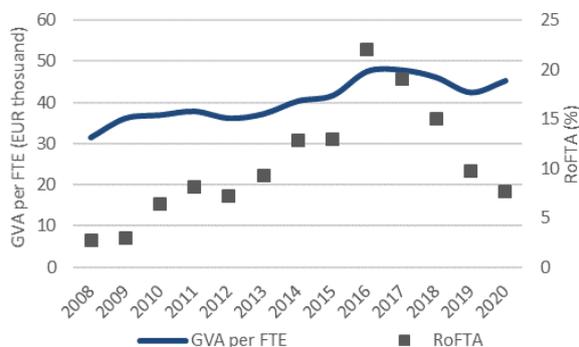
Apart from a small decline between 2011 and 2012, labour productivity of the EU fishing fleets has generally increased since 2008 up to 2016. From 2017 to 2019 the labour productivity also drop down near to the 2015 result. (Figure 2.15).

However, in 2020, labour productivity was estimated at EUR 45 276 which implies a 7% increase compared to 2019. The Danish fleet is reporting the highest level (EUR 313 314), followed by the Belgian fleet (EUR 184 350) and the Netherlands (EUR 105 819). Capital productivity, measured as the RoFTA, was estimated at 9.5%, where Latvia having the highest followed by Slovenia and Spain.

### Labour and capital productivity by scale of fishing activity

Labour productivity in the SSCF is estimated at EUR 27 134 per FTE, decreasing from 2009 until 2013 and increasingly improving since 2014 and in 2020 obtained an increase of 6% compared to 2019. Capital productivity followed a similar trend but achieved better results from 2015 and recovering during 2018. In 2019, capital productivity declined compared to 2018 and in 2020 (13.8%) this decline continued with a decrease of 15% compared to 2019.

Labour and capital productivity for the LSF and DWF show generally increasing trends over the entire period, with that of the DWF being more pronounced albeit with a significant drop in 2015, rebounding in 2016. Both have continuously declined and in 2019 reached the lowest levels since 2017. However, in 2020 there is a positive sign with an increase in labour productivity for both fleets. The capital productivity for the DWF also showed improvement in 2020 but for the LSF the decline continued.

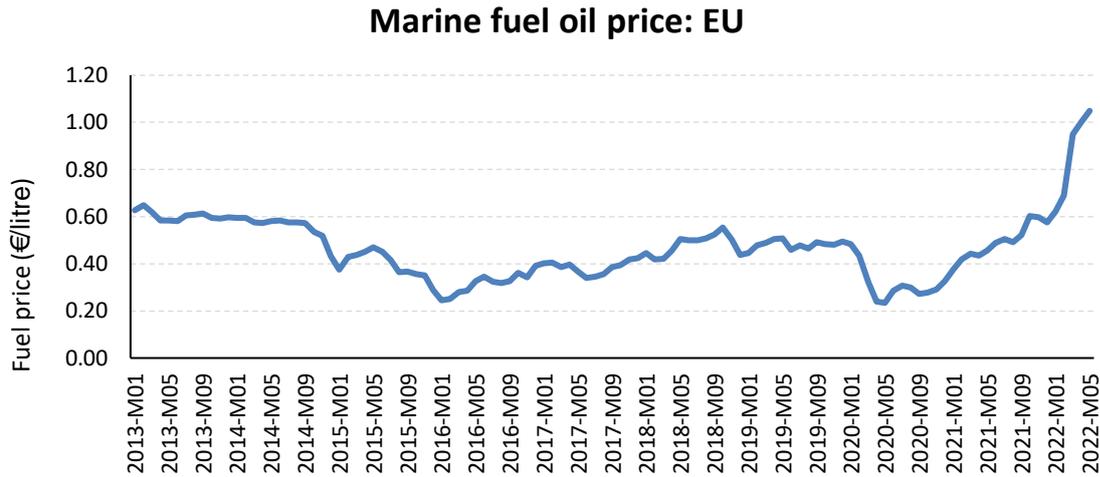


**Figure 2.15 Trends on labour (GVA per FTE) and capital productivity (RoFTA) for the EU fleet**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Energy use – fuel efficiency and intensity

These marine fuel oil prices fluctuated through the years. Where in 2013 price levels were high with fluctuations between 0.60 euro/litre and 0.68 euro/litre, in the spring of 2020 it was at 10 year lowest levels (0.25 euro/litre). However, from October 2020 the fuel price has steadily increase, until February 2022. In this month, and when the Ukraine -Russian conflict started, the fuel price has boost its speed of increase, to levels never observed in the time series. (Figure 2.17).



**Figure 2.16 Fluctuations of the average marine fuel oil prices (in euro) for EU-27.**

Data source: EUMOFA database. All monetary values have been adjusted for inflation; constant prices (2020).

For the total EU fleet, the average fuel costs per DaS were EUR 141 in 2020. A reduction of 18% compared to 2019. The average fuel consumption was in total around 356 litre/DaS in 2020, a 7% increase from 2019. The total average fuel consumption per landed tonne was 480 litre in 2020 (7% less than in 2019). Price of fuel was 0.4 euro/litre (24% lower than in 2019).

#### *Energy use by scale of fishing activity*

For the total EU SSCF, the average fuel cost was 25 euro/DaS. A reduction of 5% compared to 2019. The average fuel consumption was in total around 40 litre/DaS in 2020, a 8% increase from 2019. The total average fuel consumption per landed tonne was 627 litre in 2020 (8% less than in 2019). Price of fuel was 0.62 euro/litre (12% lower than in 2019).

For the total EU LSF, the average fuel costs per DaS were EUR 335. A reduction of 19% compared to 2019. The average fuel consumption was in total around 843 litre/DaS in 2020, a 5% increase from 2019. The total average fuel consumption per landed tonne was 434 litre in 2020 (8% less than in 2019). Price of fuel was 0.4 euro/litre (23% lower than in 2019).

For the total EU DWF, the average fuel costs per DaS were EUR 1 799. A reduction of 23% compared to 2019. The average fuel consumption was in total around 5 790 litre/DaS in 2020, a 7% increase from 2019. The total average fuel consumption per landed tonne was 672 litre in 2020 (8% less than in 2019). Price of fuel was 0.31 euro/litre (28% lower than in 2019).

## 2.4 EU Small-Scale Coastal Fleet

### Introduction

This section provides a summary of the main findings for the EU SSCF and by main fishing region. There are no EU small-scale vessels operating in the NAFO area, consequently, this region is not included in the analyses. Furthermore, the trend analyses refer just to the period 2018-2020 for which complete set of data (including Greek data) is available.

### Main characteristics of Small-scale coastal vessels

- Typical multi-gear and multi-species fleet. The most commonly used gears are trammel nets and set gillnets, followed by pots, set longline and hand lines;
- Area of operation closest to landing points, usually operating within 12 miles;
- The vessels are usually owned by small families or one physical person;
- Use of multiple fishing gears by the same vessel;
- Represents the most significant part of the EU fleet in terms of number of vessels;
- SSCF generally improves production price to a higher degree than the LSF, and the gap between prices at first sale can be very high. These gaps may be explained by both differences in quality linked to freshness, size grade and shorter fish supply chain.

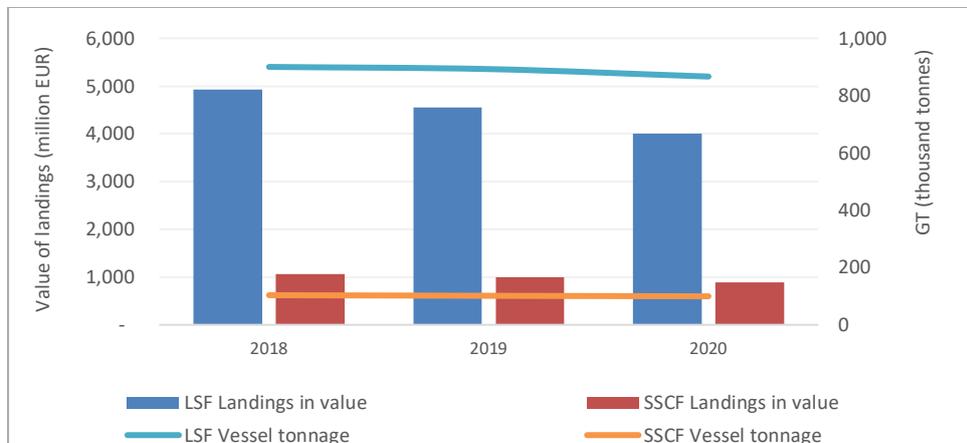
### Key findings for 2020 and recent trends

The EU small-scale coastal fleet (SSCF) totalled 42 582 active vessels in 2020, employing 62 196 fishers. This implies that the SSCF comprised 76% of the active fleet and 50% of the engaged crew.

### Fleet capacity and landings

The value of landings by the SSCF represented 15% of all EU landings in 2020. In 2021 the total value of landings by the SSCF is expected to reduce compared to the previous triennium.

The number of vessels of the SSCF is 76% from the EU active fishing fleet, however, in terms of GTs, they represent the 8%. A declining trend, with respect to value of landings can be seen in SSCF and LSF segments compared to 2018-2019 average, while the vessel tonnage was rather stable for the SSCF and it decreased for the LSF (Figure 2.17).



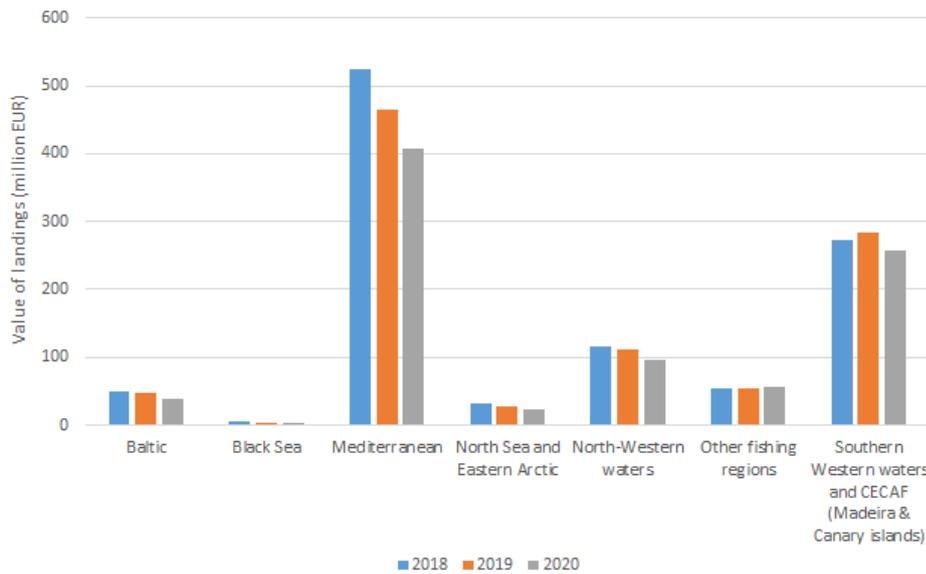
**Figure 2.17 Trends on the landings in value and vessel tonnage for the SSCF and LSF**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

The differences between SSCF and LSF are driven by many factors such as gear selectivity, operating costs, selling price, indebtedness, level of dependency on overfished stocks, etc. but also on the opportunities and abilities of adapting to the global crisis that has significantly affected fisheries and the market for fishery products in recent years.

The Mediterranean is the most significant region for the EU SSCF, representing 39% of the value of SSCF landings. The SWW and CECAF region (which includes Madeira & Canary islands) is the second in terms of value of landings, being responsible for 28% of the total value of SSCF landings.

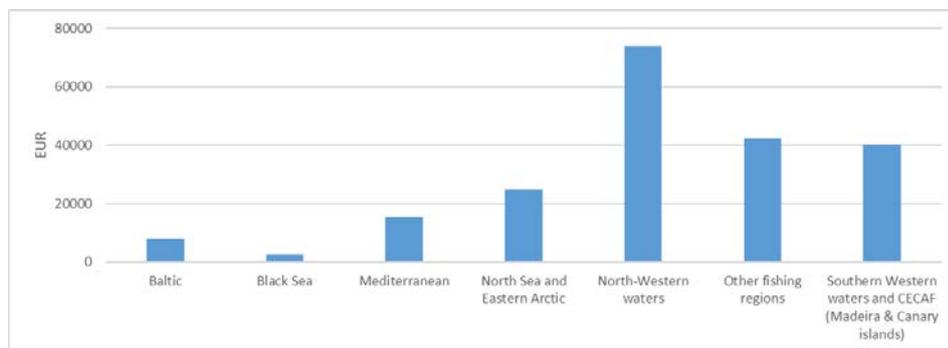
Value of landings in SSCF has decreased in all regions except for other fishing regions, with an overall decrease of 14% in 2020 compared to the 2018-2019 average, while the most severe decline was in the Mediterranean (Figure 2.18). This last had an important impact on the profitability of the Mediterranean SSCF (Figure 2.25).



**Figure 2.18 Trends on landings in value for the SSCF by main fishing region**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

SSCF in North-Western waters achieved the highest value of landings per vessel (around 73 thousand euro per year), followed by SSCF vessels operating in Other fishing regions and Southern Western waters and CECAF (Madeira & Canary island) (Figure 2.19).



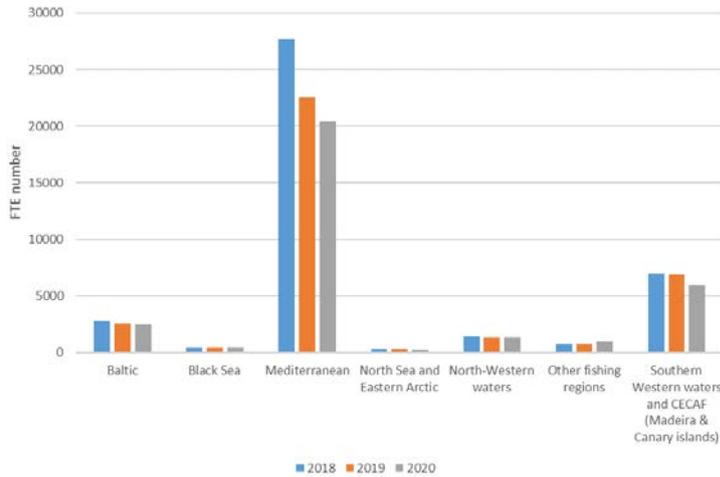
**Figure 2.19 Landings in value per vessel in the SSCF by main fishing region**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

### Employment and average wage

The number of employees in the SSCF represents 50% of the total EU engaged crew and 39% of all FTEs. Total employed decreased by 8% and FTE by 21% compared to 2018.

The Mediterranean generates the highest number of FTEs, followed by the SWW CECAF and Baltic. On the other hand, the Mediterranean faced the more significant reduction (-27%) in FTEs among all the regions in the EU in the period 2018-2020 (Figure 2.20).

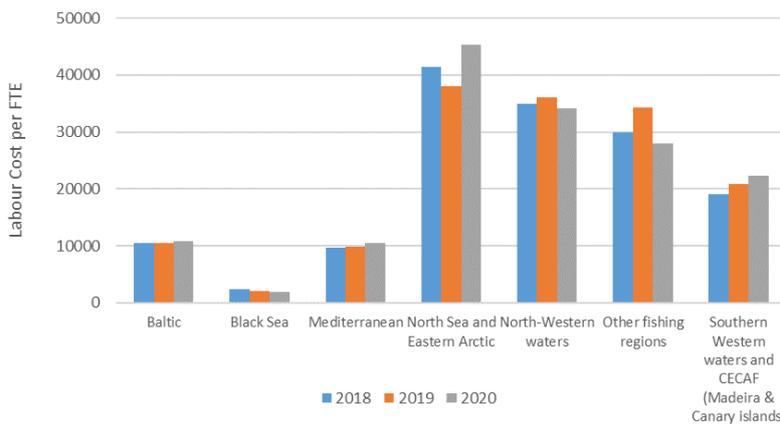


**Figure 2.20 Trends on FTE in numbers for the SSCF by main fishing region**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

The crew wages and unpaid labour costs in SSCF were estimated at EUR 303 million and EUR 158 million, respectively, in 2020. The total labour costs (crew wages and unpaid labour) reduced by 5% relative to 2019 in line with the decrease in overall employment.

Annual average labour cost per FTE in 2020 in the SSCF was estimated at around EUR 14 400 and it increased by 5% relative to 2019. The highest labour cost per FTE was achieved in the North Sea and Eastern Arctic (EUR 45 364), in Northern Western (EUR 34 112) and Southern Western waters and CECAF (EUR 22 328). This contrasts with the average value of other regions: Black Sea (EUR 1 855), the Mediterranean (EUR 10 543) and the Baltic (EUR 10 757) (Figure 2.21).



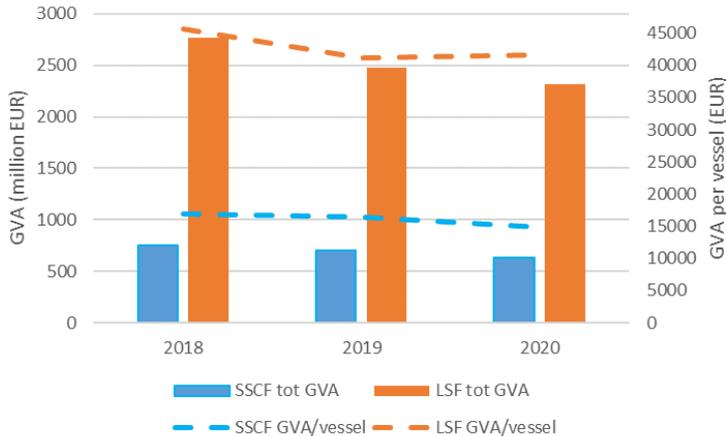
**Figure 2.21 Trends on labour cost per FTE for the SSCF by main fishing region**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

### Economic performance

Figure 2.22 displays a comparison between the SSCF and LSF in terms of GVA generated by the fleets. Between 2018 and 2020 the GVA has fallen down by around 16.5% in both

fleets. The GVA generated per vessel in the LSF showed a decrease by 11% in 2019 compared to 2018 but maintained the value in 2020 while the SSCF had also a similar breakdown, but only in 2020 (Figure 2.22).



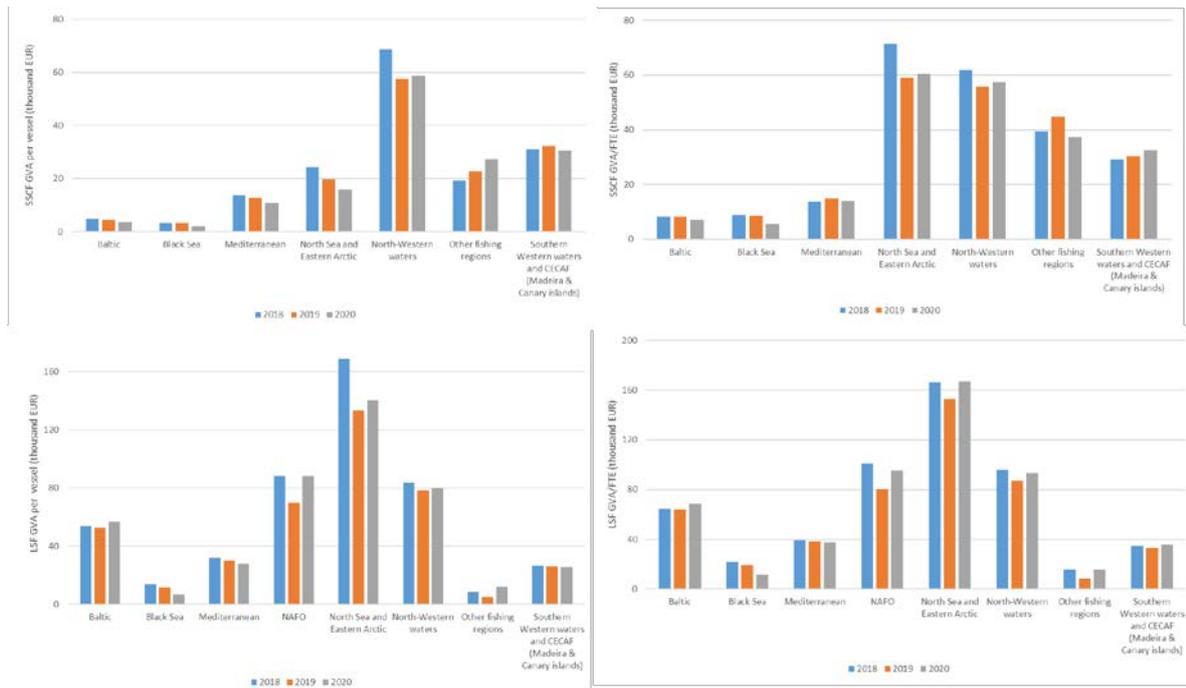
**Figure 2.22 Trends of GVA and GVA per vessel for the SSCF and LSF**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

In SSCF, the labour productivity (GVA per FTE) decreased by about 1.1% compared to 2019, estimated at EUR 19 932. On the contrary, in LDF, labour productivity increased by 6.5% compared to 2019, estimated at EUR 54 259. Three regions, namely the North Sea and Eastern Arctic, North-Western waters and Southern Western waters and CECAF revealed the highest labour productivity for the SSCF, EUR 60 427, EUR 58 564, and EUR 32 662, respectively. On the other side, the Black sea (EUR 5 638), the Baltic (EUR 7 063), and the Mediterranean (EUR 13 983) revealed the lowest labour productivity (Figure 2.23).

The North-Western waters is the region where the SSCF gets the highest average GVA per vessel, well above the average of the other regions. In the LSF is the North Sea and Eastern Arctic that gets the greatest value, followed by the North-Western waters (Figure 2.23).

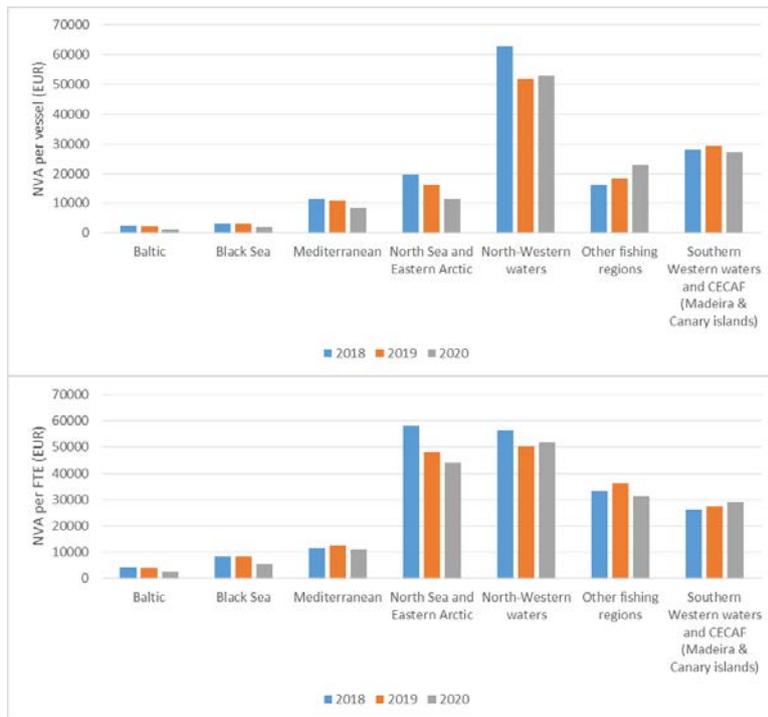
Comparing to 2019, the GVA per vessel in the SSCF has only increased in the Other fishing regions and North-Western waters regions. Of note is the strong growth observed in 2020 in the Other fishing regions. In the other regions this indicator has deteriorated since 2018, especially in Black Sea and North-Western waters (Figure 2.23).



**Figure 2.23 Trends on average GVA per vessel and GVA per FTE for the SSCF (up) and LSF (down) by fishing region**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

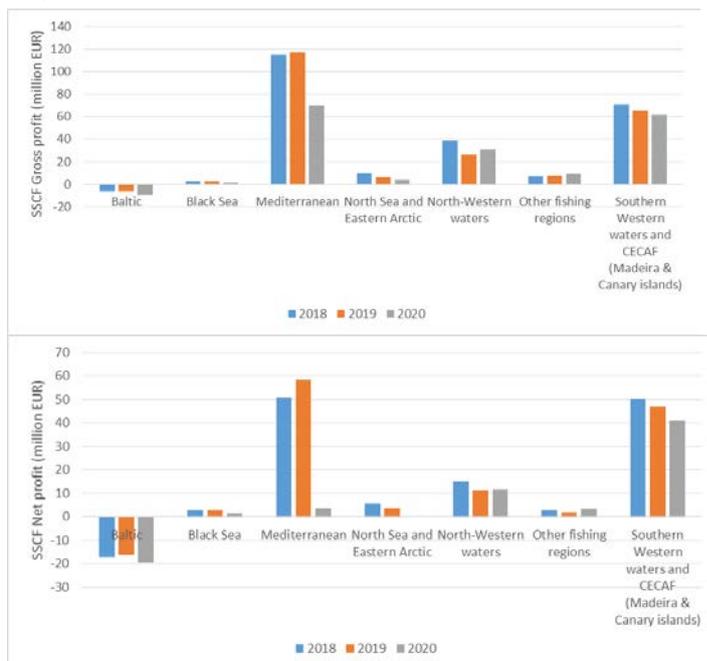
Fishers in SSCF are mostly self-employed. In this case, the owner-fisher return includes the emolument for labour as well as that from the capital invested (in the form of the vessel and other physical capital) in the fishing activity. Net value added (NVA) thus shows how much money actually remains for the fisherman after paying all the expenses. The average NVA per vessel for the SSCF shows a decreasing trend in most of the regions, with exemptions of Other fishing regions (increased trend) and Southern Western waters and CECAF (stagnation). A slightly better situation can be observed when analysing NVA per FTE data. Especially in the Northern regions, higher values can be observed compared to previous, NVA per vessel, values (Figure 2.24).



**Figure 2.24 Trends on average NVA per vessel and per FTE for the SSCF by main fishing region**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

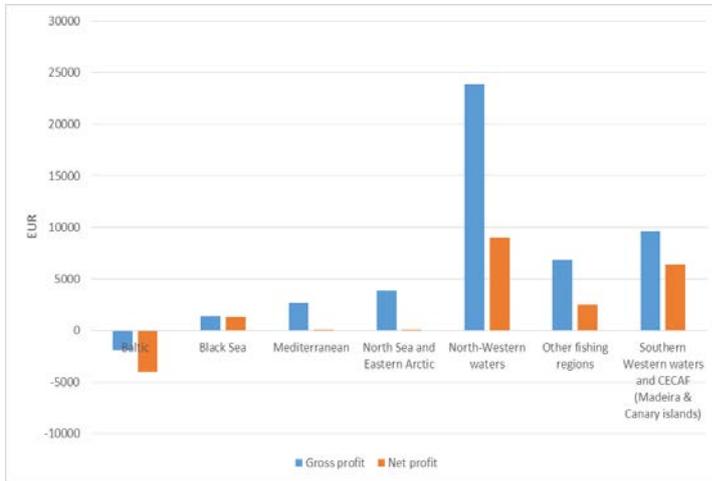
The gross and net profit generated by SSCF followed deteriorating trend in the period analysed. Gross profit decrease for 23%, while Net profit recorded a fall of more than 60% in the period analysed. Figure 2.25 shows trends on the gross and net profit generated by the SSCF operating in the different EU fishing regions. SSCF in the Mediterranean recorded the biggest fall although other regions albeit to a lesser degree, e.g. the North-Western waters and Southern Western waters and CECAF. However, improvements occurred after 2018 for the SSCF in Other fishing regions.



**Figure 2.25 Trends on gross and net profit for the SSCF by fishing region**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

Figure 2.26 shows the average gross and net profit per vessel for SSCF. The highest values of both indicators are recorded in North-Western waters and South Western waters and CECAF (Madeira & Canary islands). However, the biggest difference between the two indicators can be observed in the Mediterranean and North Sea and Eastern Arctic regions which may imply to higher Depreciation costs and Opportunity cost of capital compared to other regions.

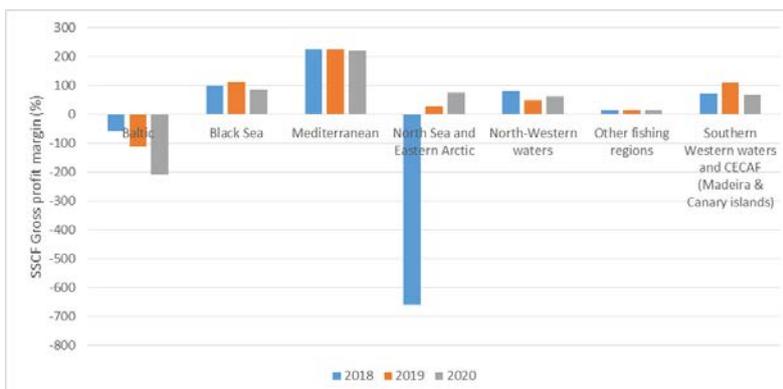


**Figure 2.26 Average gross and net profit per vessel for the SSCF by fishing region in 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

Both the gross and net profit margins for the SSCF declined significantly in 2020, reflecting the economic crisis experienced in this period (-15% and -62%, respectively). These indicators have also decreased in the LSF although to a lesser degree (-2% and -15%, respectively), increasing the divergence between the values of the two fleets.

There is a large heterogeneity among regions as far as the SSCF gross profit margin is concerned. However, most of the fishing regions have generated positive profit margins over the period analysed, except the Baltic Sea region's fleet (hitting a record low in 2020) and North Sea and Eastern Arctic, which has fluctuated between losses and profits (Figure 2.27).

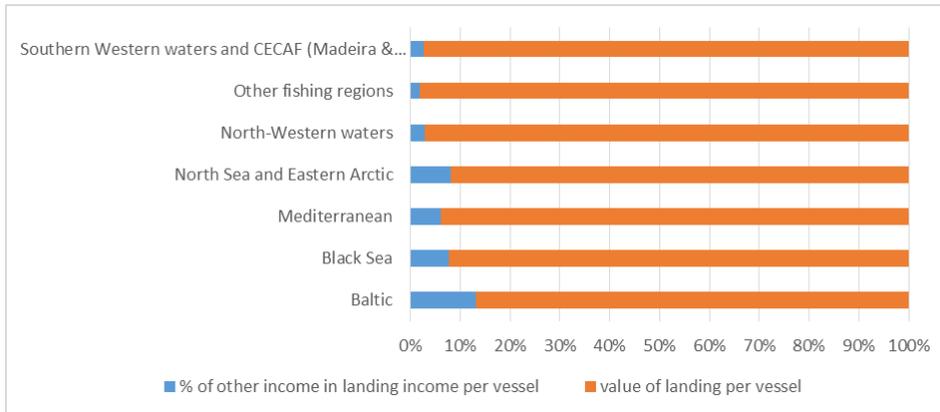


**Figure 2.27 Trends on gross profit margin for the SSCF by fishing region**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

Although SSCF other income followed an increasing trend at EU level, data per region shows a decrease in Mediterranean and Other fishing regions. COVID-19 crisis and consequently a decline in tourism revenues may be one of reasons for lower values of other incomes, especially in the Mediterranean. The highest value of other income per vessel is reached by vessels in North-Western waters followed by North Sea and Eastern Arctic and Baltic.

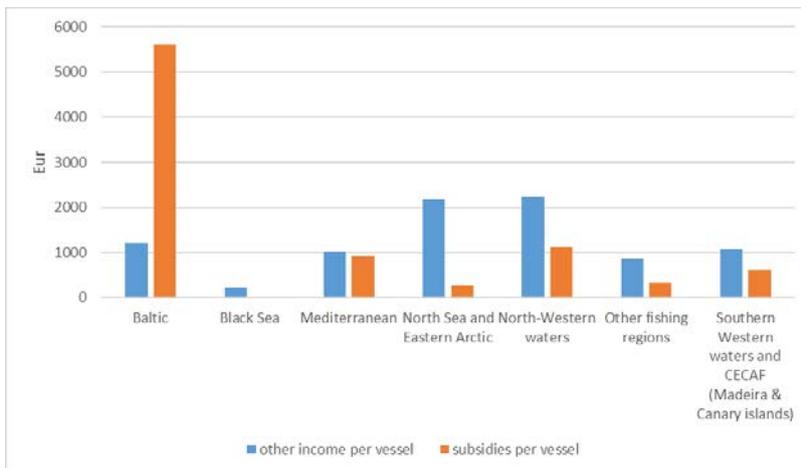
Share of Other income in Landing income is the highest in Baltic region, followed by North Sea and Eastern Arctic and Black sea. Other income, in most of the regions, consists mainly of income from tourism and, in 2020, also from compensation for income shortfalls caused by the COVID-19 outbreak (Figure 2.28).



**Figure 2.28 Share of Other income in landing income per vessel for the SSCF by fishing region in 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

One of the objectives of fisheries subsidies is also to diversify activities, i.e. reorientation to other industries. Increased trend in value of Other income may be, therefore, related also with increased payment of subsidies in the period analysed. Relatively high value of operating subsidies in Baltic region can be explained with fond paid as compensation for temporary suspension of fishing activity caused by COVID-19 situation (especially in Poland) (Figure 2.29).



**Figure 2.29 Other income and operating subsidies per vessel for the SSCF by fishing region in 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

## 2.5 EU Distant-Water Fleet and Outermost Region fleets

### EU Distant-Water Fleet (DWF)

The EU Distant-water fleet (DWF), comprises fishing vessels over 24 metres LOA flying the flag of a Member State and fishing predominately in non-EU waters. This fleet represents 0.4% of the EU active vessels and 1% of the effort (fishing days), but carries out 15% of all the landings (593 571 tonnes) of the EU in weight and 15% in value (EUR 858 million).

In 2020, there were 249 fishing vessels (Spain 80%, France 8% and Portugal 6%) with a capacity of 236 543 GT (19.7% of total) or 329 482 kW (7.3% of total), active in distant waters. Over the years, the number of DWF vessels has decreased (from 385 in 2008 to 249 in 2020), however, this has not impacted the level of catches and landings, which has remained the same and, some years, even increased.

It accounts for 5% of the employment (6 480 jobs) and 9% of the FTE (7 349) of the EU fishing fleet.

GVA was estimated at around EUR 313 million (9.6% of the EU total) and gross profit at around EUR 90.7 million (7.8% of the EU total). Estimated net profit was EUR 31 million (6.6% of the EU total). Compared to 2019, gross profit and net profit in DWF increased by 1% and 23%, respectively. In 2020 a decline compared to 2019 was observed in major DWF fleets of Spain declining gross profit by 4% and 18%, respectively. However, in 2020 Portugal and France increased gross profit by 10% and 7%, respectively, whereas Lithuania from gross losses in 2018 improved to gross profits of EUR 10 million in 2020 (similar to 2019).

Labour productivity (GVA per FTE) was estimated at EUR 42 677. On average, the salary of FTE in the EU DWF in 2020 was EUR 30 334 per year. All productivity indicators have improved significantly throughout 2008 to 2020. GVA increased by 80% and gross profit by 65%. An increase in GVA to revenue and gross profit margin (36%, 25% respectively) compared to 2008 was also observed.

### EU Outermost Region Fleet (OMR)

The EU Outermost Region (OMR) fleet refers to vessels based in the nine remote territories belonging to three EU Member States: six French territories - Saint-Martin, Guadeloupe, Martinique, French Guiana, Mayotte, La Reunion, and; one Spanish territory - Canary Islands; and two Portuguese autonomous regions - Azores and Madeira.

Combined, the EU OMR (local) fleet numbered 2 544 active vessels in 2020 with 93% of the fleet under 12 meters LOA. With 1 378 vessels, the French fleet was the most numerous, accounting for 54% of all active EU OMR vessels. The Portuguese fleet comprised 606 vessels (24%) and the Spanish fleet 560 vessels (22%). Canaries Islands, with 560 active vessels, was the largest OMR fleet (by number), followed by Azores (590), Martinique (502), Guadeloupe (488), Reunion (183), French Guiana (105), Mayotte (100), Madeira (86) and St Martin (8).

In 2020, the OMR fleets operated 193 000 DaS for a total energy consumption of 25.3 million litres. In terms of energy efficiency, average figures were 131 litres per trip for the OMR as a whole, 1.3 kg and 5.5 euro of fish landed per litre of fuel consumed but with heterogeneous situations between OMRs and segments. Engaged crew was 6 651 for 3 461 FTEs. Landings from the OMR fleets combined amounted to 31 900 tonnes valued at EUR 138 million in 2020 (average price 4.3 euro/kg). The French OMR fleets accounted for 47% of the landings in value (30% in weight), followed by the Portuguese OMR fleets (31% in value, 39% in weight) and the Canaries Islands fleets (21% in value, 31% in weight). The average price was respectively 6.8 euro/kg, 3.5 euro/kg and 3.0 euro/kg for the French, Portuguese and Spanish fleets. OMR fleets mostly supply local markets with fresh fish and relative high prices. The exceptions are some tunas and other large pelagic species which are often processed (canned, in loins or frozen) and

exported to the EU mainland and also deep-sea species from Azores. It is noteworthy that the price obtained for these species is very dependent on the international markets. Gross value added and net value added were EUR 87.5 million (63% of total revenue) and EUR 73.2 million, respectively. Gross profit and net profit were estimated to EUR 20.7 million and EUR 6.3 million, respectively. In 2020, GVA per crewmember was 13 151 and GVA per FTE was EUR 25 276. These figures exclude operating subsidies which represented 4.5% of OMR total revenue in 2020 but with significant differences between member states and OMR. They represented 8.3% of revenue in Portuguese OMRs, 2.9% in Canaries islands and French OMR but most of the subsidies are from Reunion (12.1% of revenue). These subsidies may have a significant impact on profitability of the segments.

OMR active vessels declined by -30% between 2011 and 2020 (Canaries Island and Mayotte excluded) and by -15% between 2017 and 2020 for the whole OMR fleet. Engaged crew and days at sea follows quite the same trend with however significant differences between OMRs (see below). However, the year 2020 with the Covid-19 crisis reinforced this trend with respectively a -6% and -18%, -8% drop-in days at sea, landings weight and value between 2020 and 2019 with contrasted impacts between OMRs. The revenue and GVA did not followed the same trend. Year 2011 excluded, the period 2017-19 was better compared to the period 2012-2018 meaning that the productivity of vessels and engaged crew in OMR as a whole improved over the period. This evolution needs to be confirmed and analyzed at OMR and segments because several drivers may explain these trends (exit of non-active or less active vessels, decommissioning schemes, resource evolution, operating subsidies ...).

## 2.6 Pelagic Reference Fleet

Pelagic trawlers (TM VL40XX) land vast quantities of pelagic fish (e.g., Atlantic mackerel, horse mackerel, herring, blue whiting, albacore tuna and boarfish). In 2020, they contributed to 1% of total landings, 2% landing weight, 6% revenue, 11% of the gross profit and 1% of employment of the total EU fishing fleet. Overall, an improvement can be observed from 2018-2020. Specific details are provided in the sections below.

The Pelagic Advisory Council (Pelagic AC) prepares and provides advice on the management of pelagic fish stocks on behalf of the fisheries sector and other stakeholders. It covers pelagic stocks in all areas with the exception of stocks in the Baltic and Mediterranean Seas. Given the scale and importance of these fleets, and further to a request from the Pelagic Advisory Council, in 2022 the AER report was extended to include a summary economic profile of a representative sample of these vessels.

### Fleet selection

A section on the EU Pelagic Reference fleet was last presented in the 2019 AER. The following text provides an updated overview of the economic performance of the EU's pelagic fishing fleet operating in the North Atlantic (NAO) and covers the time series 2012- 2020. Given that these vessels may in some cases operate in multiple fisheries - including some non-pelagic, the analysis presented here focuses on a representative sample of these vessels referred to, hereafter, as the Pelagic Reference Fleet. It is important to note that following Brexit in January 2021, the UK were no longer obliged to submit economic data (i.e., for 2020 operations). As a result, comparisons of economic variables from the previous Pelagic Reference Fleet analysis in 2019 will be inconsistent.

The analysis of this fleet is presented in two parts: a summary of key parameters (number of vessels, tonnage, power, etc.), cost structure (energy costs, repairs and maintenance, etc.) and performance indicators (gross and net profit, GVA etc.). The second part of the analysis comprises a dashboard of key trends from 2008- 2020 and how these trends vary across the different national fleets within the Pelagic Reference Fleet. The data used in the dashboards are also provided in tables accompanying this analysis at the end of this chapter.

In 2020, the Pelagic Reference Fleet comprised 42 vessels and included large-scale fleets from four Member States: Denmark, France, Ireland, the Netherlands. The fleet segments included in the analysis are presented in Table 2.6.

**Table 2.6 Fleet segments included in the analysis of the pelagic reference fleet**

Member State	Fleet Segment Code	No. of active vessels in 2020
Denmark	DNK NAO TM VL40XX	12 (+9% from 2017)
France	FR NAO TM VL40XX	4 (0% from 2017)
Ireland	IRL NAO TM VL40XX	20 (0% from 2017)
The Netherlands	NLD NAO TM VL40XX	6 (-25% from 2017)

Source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)) and AER 2019.

The following fleet segments fall outside the scope of the Pelagic Reference Fleet and have therefore been excluded from the 2020 analysis:

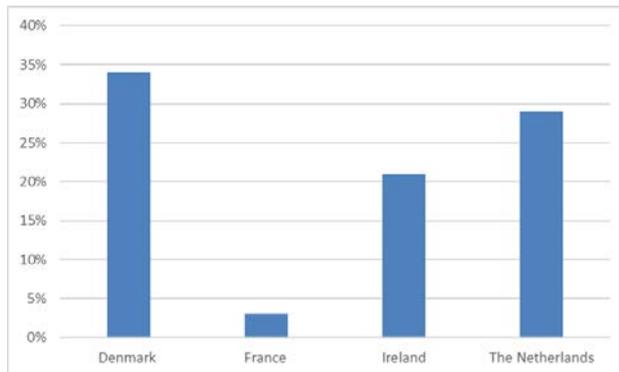
- The German pelagic trawler over 40m segment - of the 15 vessels under this code only 4 vessels are 100% pelagic. The remaining 11 vessels are demersal trawlers

(i.e., mixed segment). For confidentiality reasons, no economic data are provided for the pelagic segments.

- The Lithuanian pelagic trawler over 40m segment - of the six vessels in the segment only one freezer-trawler is active in the NE Atlantic (at times). The other five are either not pelagic vessels or only active in West Africa.
- The Swedish pelagic trawlers over 40m segment – insufficient number of vessels to create a pelagic trawler segment over 40m (due to confidentiality issues); these are grouped with demersal trawlers as well as with vessels between 24m and above (i.e., mixed segment).
- The Polish pelagic trawlers over 40m segment- mostly operate in waters outside the NE Atlantic.

### Member States dependency to the pelagic reference fleet

The pelagic reference fleet represents 34% of total revenue of the Danish EU fleet. For the Netherlands, this percentage is also high, 29%. The two other Member States have a lower dependence, Ireland 21% while French dependence to this fleet is around 3% of the total revenues of the French EU fleet.



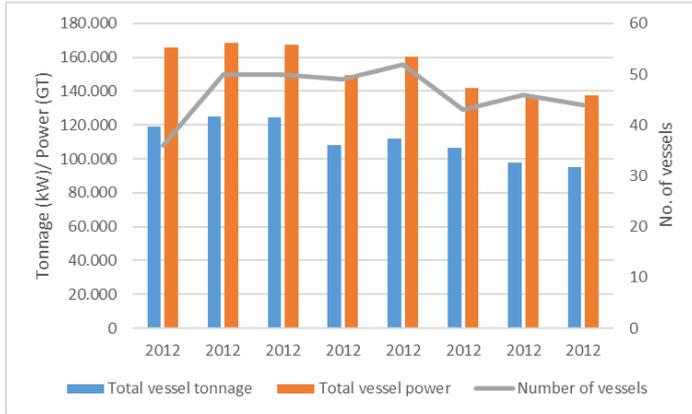
**Figure 2.29 Percentage of Member State's total revenue of the pelagic reference EU fleet in 2020**  
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)).

### Main characteristics of the pelagic reference fleet

#### Fleet Capacity

In 2020, the Pelagic Reference Fleet consisted of 42 vessels in (-5% from 2019), with a combined gross tonnage (GT) of 132 743 and engine power of 90 768 kW, representing a 3% and 5% decrease, respectively from 2019 as a result of the reduced fleet size.

Fleet capacity has fluctuated over the period 2012-2020, with the lowest number of vessels, 36, recorded in 2012 and the highest, 52 vessels, recorded in 2016.

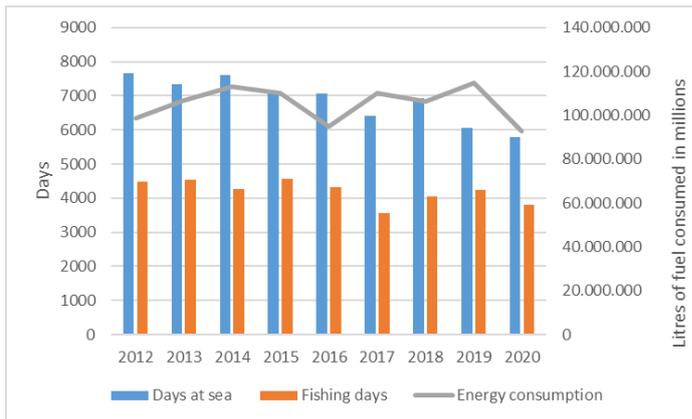


**Figure 2.30 Fleet structure of the pelagic reference EU fleet: 2012-2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

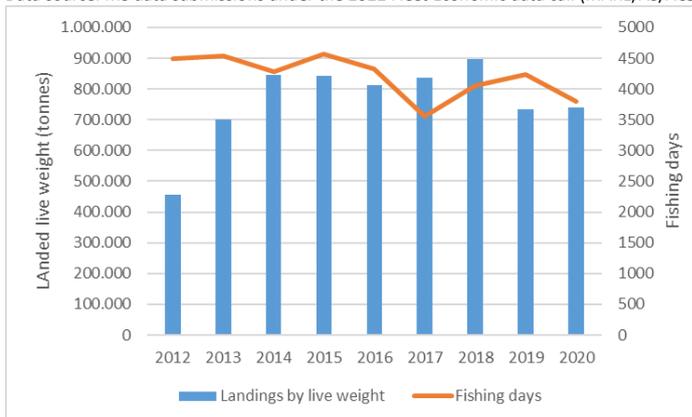
### Effort and landings

In 2020, the Pelagic Reference Fleet spent 5 792 days-at-sea (-5% from 2019) and consumed 93 million litres of fuel (-20% from 2019). The fleet landed 741 200 tonnes of seafood with a reported value of EUR 340 million. Landings per fishing day (LPUE), for the Pelagic Reference Fleet as a whole, were estimated at 194 tonnes per day in 2020, 13% more than in 2019.



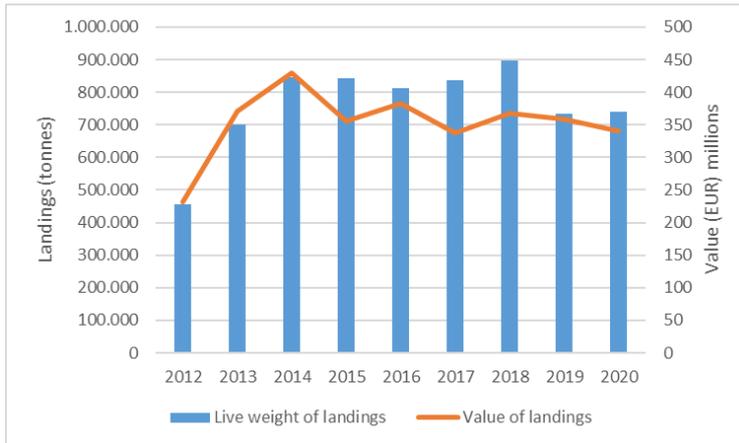
**Figure 2.31 Fishing effort of the pelagic reference EU fleet: 2012-2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)).

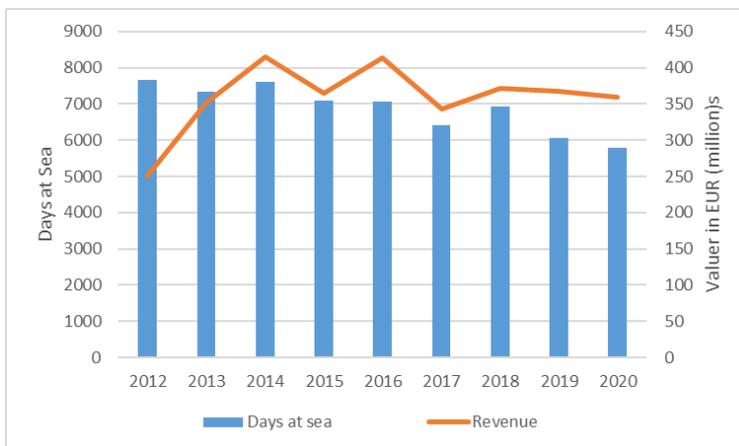


**Figure 2.32 Landed weight per fishing days of the pelagic reference EU fleet: 2012-2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)).



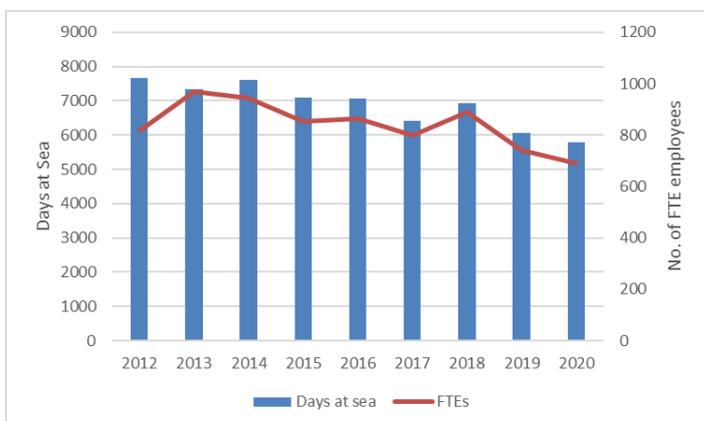
**Figure 2.33 Landings by live weight and value of the pelagic reference EU fleet: 2012-2020.**  
 Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



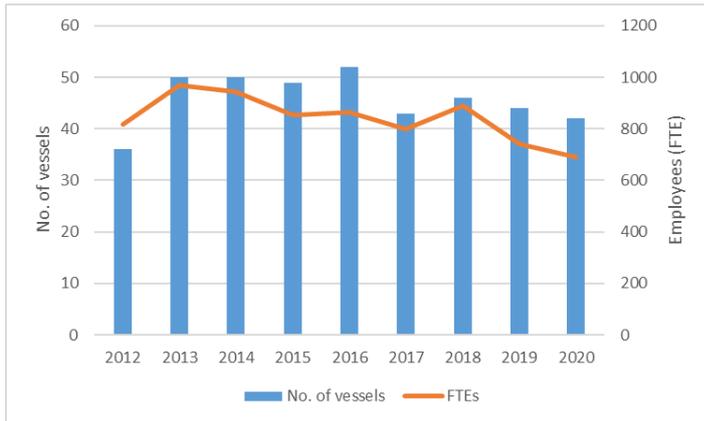
**Figure 2.34 Revenue per day at sea of the pelagic reference EU fleet: 2012-2020.**  
 Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Employment and wages

The Pelagic Reference Fleet directly employed circa 694 fishers, corresponding to 691 FTEs. Average annual wage (per total employed) was estimated at EUR 146 815 in 2020, ranging from EUR 98 864 for French fishers to EUR 274 970 for Danish fishers.

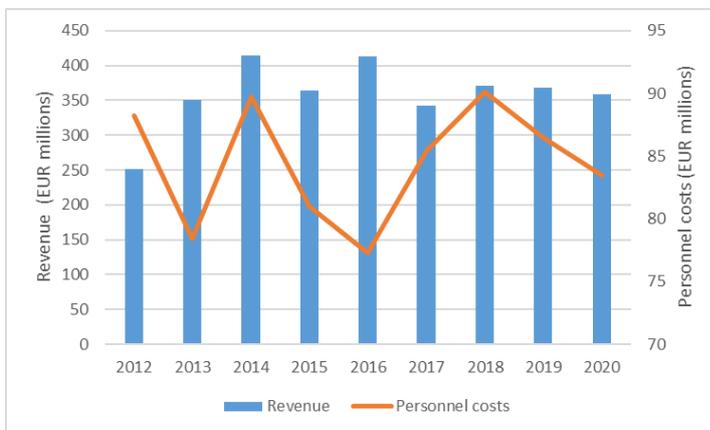


**Figure 2.35 Employees (FTE) by Days at Sea of the pelagic reference EU fleet: 2012-2020.**  
 Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)).



**Figure 2.36 Number of vessels and FTE of the pelagic reference EU fleet: 2012-2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)).



**Figure 2.37 Personnel costs by revenue of the pelagic reference EU fleet: 2012-2020.**

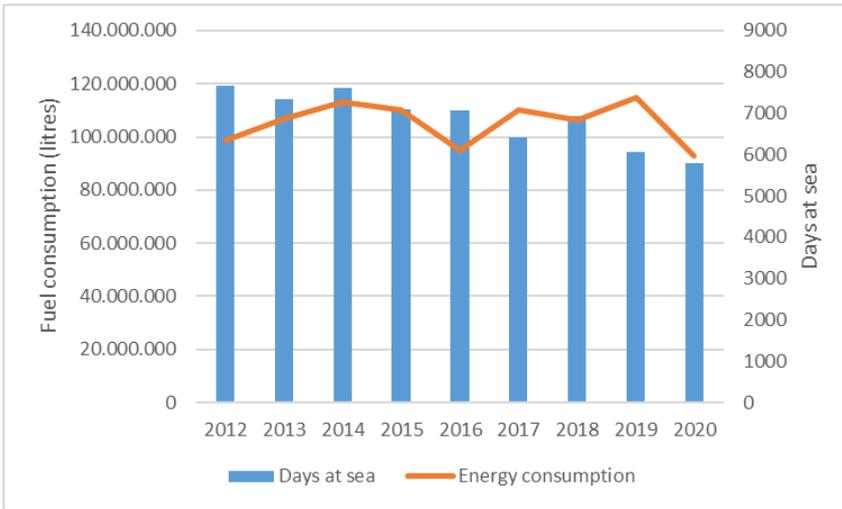
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### *Economic performance and cost structure*

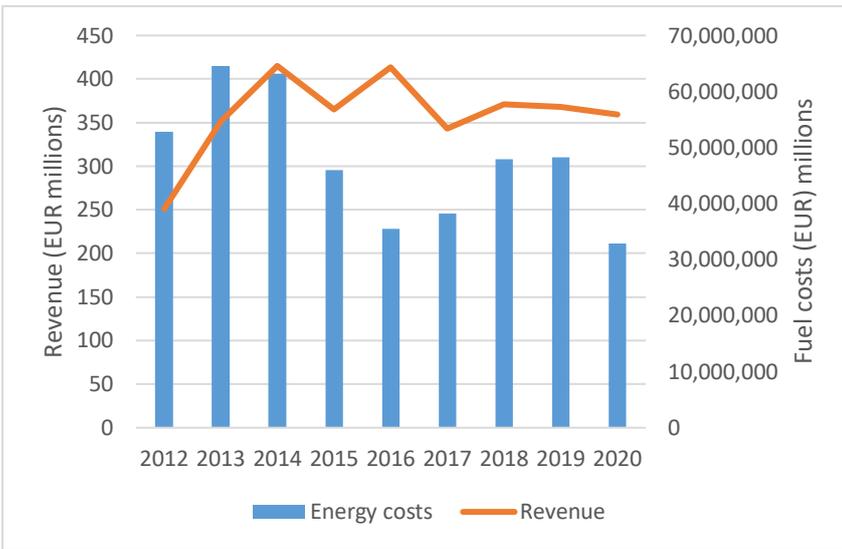
Total revenue (i.e., income from landings and other income) earned by the Pelagic Reference Fleet in 2020 was estimated at EUR 359.5 million.

The amount of GVA, gross profit and net profit (all excl. subsidies and fishing rights) generated by the fleet in 2020 was EUR 229.5 million, EUR 143 million and EUR 79.2 million (+4%), respectively.

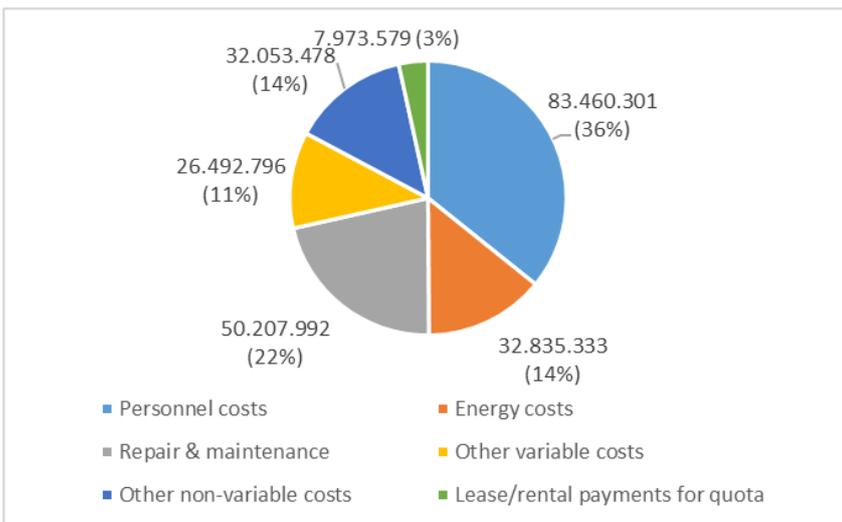
GVA to revenue was estimated at 58% (+6% from 2019); gross profit margin at 30% (+6% from 2019), and 22% of the revenue was retained as net profit (+1% from 2019).



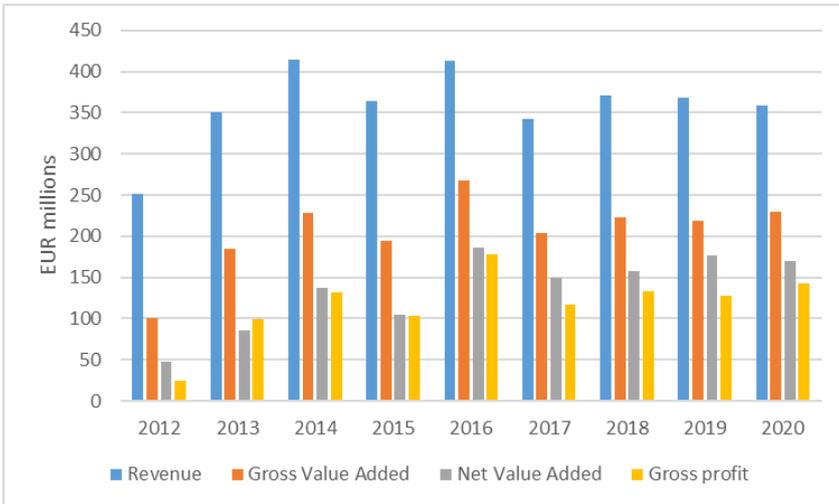
**Figure 2.38 Fuel consumption of the pelagic reference EU fleet: 2012-2020.**  
 Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)).



**Figure 2.39 Energy costs of the pelagic reference EU fleet: 2012-2020.**  
 Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 2.40 Costs structure of the pelagic reference EU fleet in 2020.**  
 Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



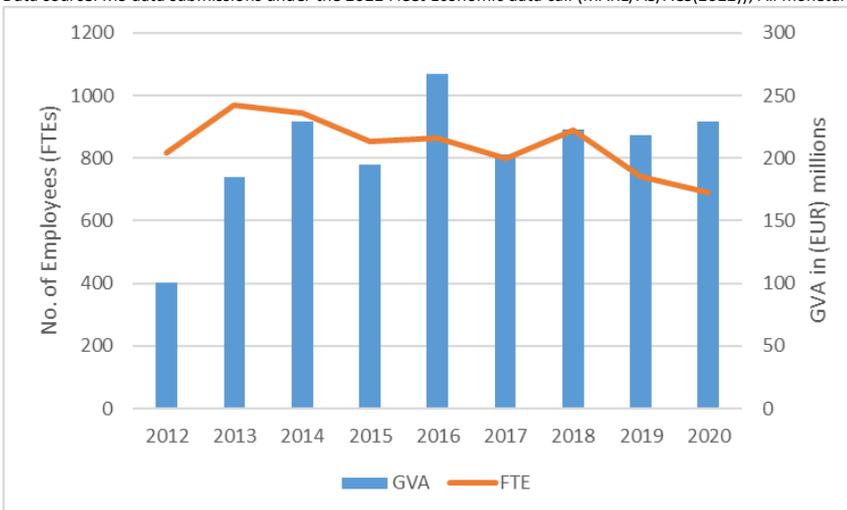
**Figure 2.41 Economic performance of the pelagic reference EU fleet: 2012-2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 2.42 Profitability of the pelagic reference EU fleet: 2012-2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 2.43 Labour productivity of the pelagic reference EU fleet: 2012-2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Table 2.7 Key economic indicators for the Pelagic Reference Fleet by national fleet (2020)

	No. of vessels	FTE national	Days at sea	Energy consumed per landed tonne	Live weight of landings	Value of landings	Revenue	% Of total Revenue	Gross Value Added
DNK NAO TM40XX	12	80	2	86	351,797,156	146,030,605	155,959,020	0	121,785,904
FRA NAO TM40XX	4	113	623	188	45,284,575	34,020,635	35,638,848	0	14,819,536
IRL NAO TM40XX	20	225	1	35	116,247,522	58,863,849	66,962,196	0	37,795,638
NLD NAO TM40XX	6	273	2	166	227,839,442	100,886,352	100,895,844	0	55,067,249
TOTAL	42	691	6	476	741,168,695	339,801,442	359,455,908		229,468,327
	GVA to revenue	Gross profit	Gross profit margin	Net profit	Net profit margin	Average wage per FTE	GVA per FTE (labour productivity)	Return on fixed tangible assets	
DNK NAO TM40XX	78.1	99,789,147	63.98	63,556,132	40.75	275	1,522,381	14.6	
FRA NAO TM40XX	41.6	3,647,921	10.24	Not Available	Not Available	99	131	-	
IRL NAO TM40XX	56.4	14,084,544	21.03	-1,976,215	-2.95	105	168	-0.5	
NLD NAO TM40XX	54.6	25,570,917	25.34	17,588,740	17.43	108	NA	16.7	
TOTAL/AVERAGE	57.7	143,092,529	30.15	-	-	147	506	-	

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

**Table 2.8 Key economic parameters and performance indicators for the Pelagic Reference Fleet: 2012-2020**

Variable	Unit	2012	2013	2014	2015	2016	2017	2018	2019	% Change	
										2020	2019-2020
Number of vessels	Number	36	50	50	49	52	43	46	44	42	-5%
Total vessel power	GT	166	168	168	150	160	142	137	137	133	-3%
Total vessel tonnage	kW	119	125	124	108	112	107	98	95	91	-5%
FTE national	Persons	817	969	945	854	864	801	889	741	691	-7%
Days at sea	Day	8	7	8	7	7	6	7	6	6	-5%
Fishing days	Day	4	5	4	5	4	4	4	4	4	-11%
Live weight of landings	Kg	457,506,388	699,578,156	847,153,936	844,045,651	812,878,420	835,391,004	898,192,812	733,206,361	741,168,695	1%
Value of landings	€	231,733,507	371,039,101	430,108,737	355,462,676	382,781,609	338,039,034	367,378,465	359,118,873	339,801,442	-6%
Gross value of landings	€	361,108,085	332,782,918	392,751,873	344,062,230	392,811,389	328,174,446	356,614,132	355,218,182	342,887,829	-4%
Other income	€	4,192,264	4,836,714	7,979,425	9,011,010	10,370,854	17,327,427	918	3,118,292	8,478,025	63%
Operating subsidies	€	-	16	-	46	29	-	924	-	410	
Income from leasing out quota	€	8,460,723	3,825,179	3,515,658	1,931,858	7,430,685	11,947,531	15,542,383	6,072,109	19,388,928	69%
Personnel costs	€	88,256,530	78,433,915	89,739,799	80,951,608	77,281,965	85,416,740	90,122,888	86,491,062	83,460,301	-4%
Value of unpaid labour	€	2,384,577	2,644,009	3,365,364	3,456,107	2,930,444	2,221,768	1,879,125	4,243,794	3,002,322	-41%
Energy costs	€	52,863,646	64,560,468	63,143,826	46,013,165	35,545,994	38,181,181	47,928,306	48,293,287	32,835,333	-47%
Repair & maintenance costs	€	52,241,445	45,430,960	61,378,530	47,737,575	38,767,671	47,723,448	45,236,631	47,278,072	50,207,992	6%
Other variable costs	€	25,263,918	21,377,145	24,963,434	28,679,683	29,676,055	31,657,059	23,400,930	32,990,667	26,492,796	-25%
Other non-variable costs	€	22,893,568	23,323,268	30,552,303	24,822,067	31,277,855	32,565,872	31,855,858	29,653,375	32,053,478	7%
Consumption of fixed capital	€	546,126,976	625,242,677	770,730,114	801,496,972	815,451,054	690,788,280	723,481,426	831,102,844	778,964,331	-7%
Lease/rental payments for quota	€	7,129,693	6,120,791	7,195,494	10,071,876	22,225,508	5,153,853	10,721,172	11,440,351	7,973,579	-43%
Revenue	€	251,018,006	351,008,288	415,061,587	364,858,128	413,624,898	343,074,962	371,075,357	368,027,670	359,455,908	-904%
Gross Value Added	€	100,719,858	184,609,637	228,851,573	194,696,222	267,297,863	203,314,005	222,689,445	218,384,274	229,468,327	5%
Net Value Added	€	47,297,785	85,910,180	137,158,619	105,164,199	185,592,256	149,062,882	158,111,214	176,862,008	169,444,984	-4%
Gross profit	€	24,297,997	98,805,862	131,907,909	103,765,190	177,507,568	117,548,145	133,091,299	128,069,088	143,092,529	10%
Net profit	€	-37,357,892	-37,109,954	33,488,610	-14,233,166	87,972,878	-58,287,153	63,756,645	76,085,473	79,168,657	4%
Value of physical capital	€	598,840,723	616,772,482	683,165,807	838,586,029	676,271,919	790,085,173	895,494,572	643,264,276	858,169,768	25%
Value of quota and other fishing rights	€	382,156,443	403,523,150	476,973,162	465,721,771	762,059,910	635,467,968	568,742,902	807,831,920	630,813,294	-28%
Investments	€	97,956,577	49,132,486	90,172,667	65,006,911	108,806,782	-4,853,760	63,484,010		71,445,341	

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 2.7 Main drivers and trends affecting the economic performance of the EU fleet

### Summary of main trends on economic performance

After continuous growth of the economic performance of the EU fishing (excluding Greece and United Kingdom) fleet in 2009-2016, a declining trend of profitability from 2017 to 2020 is being observed. Net profit in 2020 decreased by 30% compared to 2019, which was also a very bad year compared to 2018.

Economic performance vary by Member State, fishing activity and region. All of the 22 EU coastal Member States fleets analysed recorded gross profits in 2019, which declined by 17% to EUR 1.251 billion. Net profit continued to elude four Member States fleets (Cyprus, Estonia, Germany and Finland) but overall, the EU fleet made a net profit of EUR 426 million, 30% less than in 2019. The considerable decline of profitability in 2020 occurred with a reduction of energy costs and of other variable costs by 28% and 11%.

Compared to 2019, total revenues of EU fishing fleet decreased by 11%, following the decline of total DaS by 13.8% and of 13.6% less fishing days. However, they consumed only 9.4% less. Overall, weight and value of landings declined by 2.7 % and 12.5%, respectively, compared to 2019.

GVA decreased by 6.7% compared to 2019 (EUR 3.2 billion); with a 11% reduction in FTE. However, the average wages per FTE increased by 7.3% compared to 2019.

For the SSCF, GVA and FTE decreased by 10.5% and 8.7%, respectively, whereas higher drop in economic performance was observed in EU LSF fleet. GVA and net profit in LSF dropped by 6.3% and 22.7%, respectively.

In 2020, the EU DWF GVA decreased by 0.3%. However, gross and net profit increased by 0.9% and 22.9%, whereas fishing days decreased by 9.8%. Weight and value of landings in DWF decreased by 15% and 17%. The gross and net profit increases observed are explained by the remarkable reduction in all cost items, and remarkably the 28.4% drop in energy costs.

With a fleet as diverse as the EU fishing fleet, operating in fishing areas across the globe, it is difficult to pin-point the underlying drivers of economic performance. In fact, different factors will have varying levels of impact on different fleets. However, a main factor stand out in 2020, COVID-19 outbreak. Other factors that may cause to deteriorated economic performance, include, but are not limited to the following (in no specific order) by main fishing region:

### Supporting measures to the fishing fleet due to COVID-19

In 2020, subsidies and financial measures to support the fishery sector during the pandemic have been issued by European and national institutions. In March 2020, EU legislators approved a range of urgent relief measures under the Coronavirus Response Investment Initiative (CRII) through the EU Regulation 2020/560, further supplemented by the Coronavirus Response Investment Initiative (CRII+), enabling the use of structural funds, including the European Maritime and Fisheries Fund (EMFF), to support economic activities. In addition, the new State Aid Temporary Framework enabled EU countries to use full flexibility foreseen under EU State aid rules to provide relief to economic operators in the fisheries sector hit by the COVID-19.

The measures mainly included compensation for the temporary cessation of fishing activities and one-off contribution in relation to vessel size. Additional social assistance subsidies were also granted directly to the crew member.

Due to the wide range of these measures, different approaches have been used by Member States in their economic classification. Most Member States reported COVID-19-related supporting measures as "Operating Subsidies", but some other Member States reported them in "Other Income" or even in social security aids as part of the crew wages. The DCF definition of operating subsidies recalls the definition of Subsidies in the European system of accounts (ESA 2010), where it is specified that "exceptional losses due to factors outside the control of the enterprise" should not be included in subsidies but recorded as "other capital transfers". But this interpretation seems not be correct if we consider that capital transfers are used to cover losses on capital goods, that is not the case for the covid supporting measures.

Notwithstanding these methodological issues, the operating subsidies, after a continuous decreasing trend in the period 2008-2019, have increased by 142% in 2020 compared to 2019. This increase

reflects the issues of supporting measures to the fishing fleet due to COVID-19 but may also be related to the increase of payments related to the last year of implementation of the EMFF 2014-2020.

Payments in support of the fleets may affect the profitability of the fleet. In 2020, the net profit “subsidised”, that is calculated including the operating subsidies in the total revenues, was 29% higher than the actual net profit, while in 2019 it was only 9% higher. The impact of support payments on profitability was particularly evident in the regions where the use of these measures is quite extensive.

### North Sea and Eastern Arctic

- TAC of North-East Atlantic mackerel (+41%) and blue whiting (+2%) were increased, North Sea herring quota remained unchanged.
- Slight increase in both landings and prices for common shrimp.
- More vertical integration is being observed leading to shifts in ownership.
- Decreasing fuel prices added no further burden on the sector.
- Decrease of TAC of important stocks, e.g. North Sea cod (-47%), saithe (-35%) plaice (-3%).
- The implementation of the ban on the pulse fishing technique (mid 2021) results in increasing fuel costs and decreasing net profits.
- Quota adjustments as consequence of the Brexit becoming effective 2021 will have a substantial negative impact on fishing performance in the region.
- In the context of Brexit negotiations with Norway were procrastinated and might lead to unfavourable development of EU TAC shares.

### Baltic Sea

- Based on ICES advice the stock decrease implemented in 2020 for herring which is a main target species for the Baltic region (45% decline in TAC for subdivisions 25-32 from 2020 to 2021) and the forecasted stock decrease in 2021 is likely to have a considerably negative effect on the Baltic Sea fleet profitability and could cause further reductions of the fishing fleet capacity in all countries operating in the Baltic region.
- Due to the critical condition of cod stocks in the Eastern and Western part of the Baltic Sea, the commercial cod fishing was significantly reduced in 2019 and direct fisheries on cod were not permitted in 2020-2023, except for small-scale fisheries on the western cod stock. The cod catches are allowed only as an unavoidable by-catch to the other species. The cod limits for such cases are critically low and, in a situation, where the cod limit is exceeded, all fishing should be stopped. In some countries, that can threaten the biggest part of the fleet and the negatively affect fishery sector in the country. ICES expects that the cod stock most probably will remain in a dire condition in the middle-term.
- Due to the implemented restrictions and recommendations concerning COVID-19 control, availability of the workforce and in some cases decreased fishing effort had a negative impact on the fleet performance in the region.
- Some management measures are planned for the LSF vessels targeting cod and operating with DTS, DFN, HOK fishing gears as well as coastal fishing vessels operating with gears PGP or PG. Temporary seasonal bans on fishing are planned for these vessels, change of fishing gear or re-arranging from cod fishery to other species (such as flounder and round goby) are recommended by the local rules or legislation.
- Fishing performance, especially in the SSCF, is very weather dependent. Even with favourable economic conditions, it can be a limiting factor for fleet performance, especially for seasonal fisheries.
- Based on ICES advice in 2022, the stock for the sprat, which is a commercially important species, is exploited at levels capable of producing the MSY and harvested sustainably. The same applies to the Baltic herring stock in the Gulf of Riga.

- Compensations from the EMFF funds have been provided to the owners of the fishing vessels for the temporary cessation of fishing activities due to the protection of cod stock. Such compensations could provide significant support to the fishing companies in the short-term.
- The EMFF has also provided measures to improve profitability including increased added value (for the SSCF) and utilisation of by-catch arising from the landing obligation (for the LSF). Measures are already applicable in some Member States fishing in the Baltic region.
- From 2017 onwards, the average price of cod recovered.
- Policy management instruments, specifically quota allocation (introduced in some countries), may have significantly helped to improve the economic performance of certain fleets.
- While aging vessels, obsolete equipment and insufficient investment all lead to increased maintenance costs and reduce the profitability of the fleet, the EMFF does provide the possibility of engine replacement if the fishing capacity is proven to be in balance with exploitation. Some Member States have already introduced such schemes.
- Energy costs is one of the main expenditure items for the LSF, especially for trawlers. A decrease in fuel price was observed in 2020 which substantially decreased operational costs of vessels and facilitated fleet profitability.

### North Western Waters

- Recovery of some stocks, e.g., the biomass of most herring stocks has increased, and the Northern hake stock continues to follow a positive trend.
- Increased TACs for a number of stocks and maintaining of fish prices.
- Decreased of some costs such as energy cost that have decreased by 28% compared to 2019.
- An overall decrease in landed weight by 5.4% and value of landing by 11.7%.
- Fish prices were lower than in 2019.
- Average wage for LSF decreased by 11%.
- With the EU-UK Trade and Cooperation Agreement (TCA) there will be large impacts on fleets operating in the region. Furthermore, there is a high dependency on the United Kingdom waters for a number of Member States including Ireland, France, Spain, Belgium, the Netherlands and Germany.

### South Western Waters

- Decreased TACs for a number of stocks, e.g., hake and blue whiting.
- Lower average prices for blue whiting, Atlantic horse mackerel and chub mackerel.

### Mediterranean Sea

- Results for 2020 are driven by COVID-19 pandemic and is likely to impact on 2021.
- In addition, the implementation of management plans for DTS and PS segments in Western Mediterranean and Adriatic Sea lead to a further reduction in days at sea; the fishing effort regimes and the introduction of new spatio-temporal closures are a major source of concern for professional fishers for the period beyond 2020.
- Status of the stocks: since 2015 fishing mortality (F) has been decreasing and biomass increasing (STECF-22-01); these positive trends should be related to increased management measures implemented in the Mediterranean Sea in recent years, particularly through the adoption of management plans;
- Diversification of sales channels: the fishers' efforts to deal with the pandemic crisis have prompted them to adopt a number of innovative solutions. The diversification of sales channels, the organization of fishing trips based on actual demand through direct contact with local consumers and changes in catch composition according to market demand are some of the initiatives adopted during the lockdown. Their continued application in the future has the potential to enhance the economic and social development of fishery sectors, in particular of the SSCF.
- Significant advances have been made in the recent period in managing fisheries resources, with the adoption of several multiannual management plans. The GFCM adopted recommendation GFCM/42/2018/8 on further emergency measures in 2019-2021 for small pelagic stocks and

recommendation GFCM/43/2019/5 on a multiannual management plan for sustainable demersal fisheries in the Adriatic Sea. The first one established catch and effort limits for small pelagic stocks, the second one fishing effort regime for certain demersal stocks. These measures were implemented in Council Regulation (EU) 2019/2236. In 2021 significant advances include establishment of a five-year effort regime for key demersal stocks in the Adriatic Sea (Recommendation GFCM/44/2021/1), a multiannual management plan for small pelagic Sea (Recommendation GFCM/44/2021/20) and establishment of fisheries restricted areas in the Jabuka/Pomo Pit and the Bari Canyon.

- Additional measures of reductions of the fishing effort have been introduced with the Western Mediterranean MAP; this plan lays down a 10% reduction in fishing effort (annual fishing days) the first year of implementation (2020) in relation to the reference period (2015-2017) and up to a further reduction of an additional 30% until 2025. In addition to that, the reduction of fishing days must be complemented with temporal and permanent closures with the aim of protecting juveniles of hake and in general all the species affected by the plan. Any other measures as selectivity improvements could be approved. The combination of all these measures is expected to contribute significantly to the sustainability of Mediterranean Fisheries and to reach the objective of achieving MSY in 2025.
- Important steps have been taken towards the spatial management of fisheries resources, through the introductions of FRAs (fisheries restricted areas); to date, nine FRAs have been established by the GFCM; among these, the Jabuka/Pomo Pit fisheries restricted area, the first to be introduced in 2017, is considered an example of best practice in transnational cooperation and in the integration of the views of fishers and stakeholders in the implementation of spatial protection measures. The initial scientific evidence (FAO, 2021) showed higher abundance and densities of the main commercial species (e.g. European hake, Norway lobster, and deep-water rose shrimp) inside the FRA.

## Black Sea

After the trend for improvement of the fleet's economic performance between 2015 and 2017 with an increase in both gross and net profits, in 2018 and 2019 both indicators decreased and this trend continued also during 2020 where the level of economic profitability decreased significantly and drop down near the level of 2012.

Factors that may have contributed to the positive economic performance in the region include:

- Additional increase in the turbot quota for both Bulgaria and Romania in 2019 and 2020 together with management plan for third countries fishing in the Black Sea;
- The stable average prices for some important species with significant landings as sea snail and maintaining the average prices for the other species;
- The sea snails stock in GSA 29 is fished near  $F_{MSY}$ , which means that fishing vessels and processing plants utilising this species could continue to provide employment in the region;
- Keeping the trend with stable fuel costs at the regional level is directly connected with the energy costs, which remain the major percentage of the expenses.

Factors that may have hampered the fleet performance in the region:

- The weather conditions in the Black Sea, including strong winds and large temperature differences between winter and summer, significantly affect fishing activities by the SSCF, which led to a reduction of the days at sea and value of landings, and of course a negative impact of the total employment.
- The LSF of both countries consists mainly of vessels with trawls and vessels with polyvalent active and passive gears. As trawling is fuel-intensive, the trend of a stable level of the days-at-sea is leading to the relevant stable energy costs.

Other factors that affected fleet performance in the region include:

- The Black Sea fishery is highly dependent on very few valuable species. In terms of landing weight and value, the sea snail is the most profitable species and according to the most recent available

consideration from 2021, its stock in the Black Sea was considered to be outside safe biological limits. Sprat, which is the second most important fishery is evaluated as sustainably exploited.

- The GFCM has established a set of emergency measures for stocks in the Black Sea region to align the implementation of management measures by all countries operating in the region.

## OMR

- Most OMRs are islands and geographically far from sources of supply. These constraints generate, for fishers additional costs compared to mainland. Compensation scheme for the additional costs were established and funded by EMFF but the returns and benefits for local fishers seems to be limited in scope in Guadeloupe, Martinique and French Guiana.
- In a context of fleet reduction over the last five years, the year 2020 with the COVID-19 crisis led a drop in days at sea, landings weight and value between but with contrasted impacts between OMRs. The increase in the cost of capital is considered as a main issue for fleet renewal and access to fisheries for newcomers in most of the OMRs. Fuel price is one of the main factors affecting the performance of the segments, especially the most dependent. Major increases in fuel price and more generally inputs (gears, engines) are reported for 2022 with potential effort reduction. Compensation measures for fuel price increases have been established in some regions in 2022. The landing prices have increased over the past four years for Canaries islands but this trend is not similar in other regions like Guadeloupe or Martinique where the importation and competition from seafood from international markets is high.
- The variations in TACs and quotas of key species are one of the main factors affecting the performance of the fleets mainly in Canaries Islands, Madeira and Azores. In Guadeloupe, the Conch fishery was closed for the season 2020-2021 with impact on dependent vessels. If fisheries are regulated through technical measures (gear regulation, species mesh size), the lack of access regulations to fisheries (licences ...) is source of internal competition and increased cost of operation within the SSCF sector in most of the French OMRs. The funding of Moored Fishing Aggregating devices and their management is also a key driver of and fisheries and fleet evolution in the OMR where they are used (Mayotte, Reunion, Guadeloupe, Martinique).
- In most OMRs, competition with recreational fishing and illegal fishing is particularly high for the small-scale segments. Poaching fish activities also reduce the market availability affecting also the price. In the Atlantic Ocean and the Indian Ocean, OMRs fleets harvest the same stocks as large-scale fleets especially on large pelagic species.
- In some OMRs, the lack of suitable infrastructures for vessels operations including landings create dis-incentives to enter or to continue to operate in the sector. In most OMRs, the fleets faced the lack of incentives to attract young fishers to the sector with contrasted situation between islands; unemployment or lack of labour. Additionally, this issue is reinforced by the lack training for the fishers at local level and administrative digitalization constraints.
- Marine ecosystems and fishing activity in the OMRs are subject to the occurrence of extreme events (hurricanes or storms) or change in the environment (vase amazon) with impact on gears and harbour infrastructures. Since 2011, massive Sargassum algae inflows (stranded and floating blankets) in the Caribbean led to massive changes in the pelagic and coastal ecosystems with impacts on the fishing stocks. Fishing activity in Guadeloupe, Martinique and French Guiana was also significantly impacted by these events (difficulties to operate vessels and fishing gears).
- The sustainability of the fishing sector is also threatened by the quality of habitats environment dependent on coastal development and agriculture. Permanent pollution of coastal habitats by pesticide (Chlordecone) used by agriculture led to the ban of coastal fishing areas in Guadeloupe and Martinique.
- Illegal fishing (e.g. bottom longline settled in coastal areas, recreational fishing for commercial purposes, etc.) is putting pressure on some fish stocks (mainly coastal species), and the corresponding commercialization of these species is putting pressure on the markets, both challenging the sustainability of SSCF.

## NAFO

- The NAFO Conservation and Enforcement Measures (CEM) incorporate all NAFO measures presently in force as adopted by the NAFO Commission in accordance with provisions of Articles VI and XIV of the Convention on Cooperation in the Northwest Atlantic Fisheries. Every year the NAFO CEM is revised by the Commission. These measures shall, unless otherwise provided, apply to all fishing

vessels used or intended for use for the purposes of commercial fishing activities conducted on fishery resources in the RA as defined in Article 1 of the NAFO Convention.

- The latest version of the document incorporates amendments which were adopted at the most recent NAFO Annual Meetings held in September 2021.
- The applicable CEM measures for the period analysed in this report (2020): <https://www.nafo.int/Portals/0/PDFs/COM/2020/CEM-2020-web.pdf>
- Also, more information on the historical archive of management measures and quota tables can be consulted at NAFO website: <https://www.nafo.int/Fisheries/Conservation>
- NAFO Scientific Advice is generated through a joint effort by NAFO members (13 CPCs in 2021) and makes use of different data sampling programs carried out by the Member States. Additionally, available statistics on the resources and their environment are also used when producing the advice.
- A Management Strategy Evaluation (MSE) for Greenland halibut was adopted at NAFO Annual Meeting in September 2017 with a starting TAC of 17 500 tonnes. This management plan contains a harvest control rule (HCR) which has proven to be robust to date (2022) and contributed to provide economic stability and predictability in the level of catches in the region of 16 000 tonnes to 17 000 tonnes for the coming years.
- A protocol for exceptional circumstances for Greenland halibut MSE was subsequently developed in 2018 to guarantee that the full process is respected. This protocol has not been used yet as exceptional circumstances have not occurred to date.
- Due to the poor biological situation of the 3M Atlantic Cod stock, a drastic reduction of the TAC has been adopted in recent years. In 2020, the TAC was set in 1 500 tonnes, coming down from 17 500 tonnes in 2018 and from 8 500 tonnes in 2018. However, in 2021 the situation improved slightly and it was agreed to set up a TAC of 4 000 tonnes in line with the scientific advice.

On top of this TAC setting, the following three flanking measures apply since 2021 as additional conservation and control measures to protect spawning aggregations and juvenile fish in the Flemish Cap area on the basis of recommendations made by the NAFO Scientific Council (measures 1 and 2) and STACTIC (measure 3), respectively:

- Time area closure of the directed fishery for the 3M cod stock for January-March.
- Compulsory use of sorting grids for all trawlers with a directed fishery on cod.
- 100% Control of landings for vessels engaging in directed fishery on 3M cod stock.
- The economic impact of the decrease of TAC and the time area closure of the directed fishery for cod in 3M is likely to be very detrimental for Portuguese and Spanish demersal trawlers, as they will be forced to change their fishing strategies in the North Atlantic and look for alternative fishing grounds, at least during the time of the closure. Displacement of fishing effort might occur as well as loss of income for those operators more reliant or with higher dependency on this fishery (in particular, Portuguese demersal trawlers). Also, there might be a switch in the target species towards other demersal species such as redfish, Greenland halibut or hake in the short term.
- It is noticed that only two Spanish demersal trawlers have reported combined activities in NAFO and NEAFC fishing grounds in 2020, while another one reported combined activity in NAFO and the Atlantic South West. This means a switch in the fishing plans from previous years, where there were more than 10 trawlers combining both grounds. The decrease in fishing opportunities in NAFO might explain that the fishing strategies have changed and there is an increasing number of demersal trawlers targeting cod, halibut or other species such as hake in international waters or under the NEAFC/agreement in third country waters with Norway.
- The benchmark review of the cod (3M Subdivision) initiated in 2018 to develop a HCR is now in stand-by. Work will resume soon trying to provide more stability in the long term to the fleets and avoid big fluctuations in TACs between years. However, this task will be extremely challenging given the dire state of the stock and the poor level of recruitments. The HCR has not yet been developed due to scientific issues with the modelling, but further work is ongoing at the Scientific Council.

- The Commission adopted in 2014 an MSE approach for redfish in Division 3LN ([FC Doc. 14/29](#)). This approach uses a HCR designed to reach 18 100 tonnes of annual catch by 2019 to 2020 through a stepwise biannual catch increase, with the same amount of increase every two years. At the 2020 annual meeting, it was decided to continue using the HCR and extend the 18 100 tonnes annual TAC for the period 2021 to 2022. The MSE is currently subject to review.
- The 3M shrimp fishery had a high importance and commercial and socioeconomic value for many EU fishing vessels in the past, but it was under a moratorium from 2011 to 2019. The EU is by far the largest NAFO CPC in terms of quota share for this stock, which was the most valuable one in terms of landings during the period 1995-2010. Within the EU, Estonia is the largest fishing nation of 3M shrimp followed by Lithuania, then Latvia and, to a lesser extent, Denmark, Poland, Spain and Portugal. During the period of closure, there was a slow and gradual improvement of the biomass and in 2019 it was above  $B_{lim}$ . The commercial shrimp fishing was reopened in 2020 in 3M, with an effort scheme based on allocation by CPCs, corresponding to the EU 823 out of the total 2 640 fishing days. However, it was closed again with effect January 2022 as a result of catch limits being exceeded with only 20% of the fishing effort allocated for 2021.
- The uncertainty on the management of this fishery proves that the management system is not fit for purpose and any future reopening of the fishery will be subject to an agreement on a new system that could be based on quotas, fishing effort or being a mixed system. This situation has already caused the loss of significant incomes for the specialised demersal trawl fleet from Estonia and Latvia. NAFO is planning intersessional work to review the current management approach for shrimp in Division 3M and agree on modalities for transition from an effort to a TAC and quota system, provided that there is agreement between the contracting parties in terms of allocation keys based on reference periods of historical catches.
- The development of an ecosystem-based approach to fisheries management in the NAFO regulatory area and the setting of a coherent network of Vulnerable Marine Ecosystem (VME) areas could bring about new closures or expansion of existing ones (e.g., seamounts, sponges and gorgonians, sea pens concentrations, black corals, bryozoans, etc.). In 2021, a rollover of the current VME closures in the NAFO RA was agreed for an additional year, pending a more comprehensive review in 2022.
- A study on the impact of bottom fisheries in the NAFO area was conducted in 2021. However, a preliminary evaluation that assessed eight fisheries in areas where there are VMEs found that while the Greenland halibut fishery does overlap with polygons containing VMEs, the longline cod and the shrimp fisheries do not. Other fisheries analysed showed an intermediate level of overlap. The NAFO Scientific Committee recommended that this first analysis be augmented with more detailed data including VMS and haul data. The outcomes of this study could influence the dynamics of specific EU fleet segments through closures/displacement and/or reduced effort and/or concentration of catches in other areas.
- Proposals from new areas of closure adjacent to fishing grounds can create a risk of fishing effort displacement. The threshold established by the scientists of 60% of protection for specific areas labelled as VMEs may cause significant economic impacts on areas where there are a consolidated fisheries footprint or adjacent to fishing grounds and important for transit or passage.
- Apart from proposals to potentially close certain fishing areas, the NAFO regulatory area will also likely be affected by other human economic activities that impact the seabed; these include oil and gas drilling and deep-sea mineral mining in the continental platform of Canada. Indeed, any licence to prospect or commercially extract known deposits in the seabed might have an adverse effect on the fishing activities of EU fleets operating in the area.
- An EU funded project developing a method for a multispecies assessment in Subdivision 3M for looking at the ecosystem and the predator-prey interactions between cod, redfish and shrimp was finalised and presented in 2019. This includes a bioeconomic tool to test management scenarios and evaluate economic trade-offs. This approach could bring further uncertainty for those fleets dependent on one commercial species and create unexpected changes in their fishing patterns. A roadmap is being developed to include reporting on progress in multi-species models and simulations to evaluate the reliability of decision rules for species aggregated catch levels (total catch indicator indexes).
- The COVID-19 outbreak with the restrictive measures adopted in March and April 2020 in the EU and extending through the years 2020-2022 had significant economic impacts on the behaviour of the DWF, either refraining for starting their fishing season (as it was the case of 3M shrimp for the Estonian fleet) or deciding to extend their fishing trip as they had already started it (e.g. cod and redfish trawlers) to comply with health and safety rules and overcome travel restrictions related to

crew rotation or changeover. This might result in significant changes of fishing days or days at sea reported in the area for 2021 and 2022, depending on the specific circumstances of each fleet.

## ICCAT

- It is observed a continuous increase from the Spanish purse seiners in their catch data while the French purse seiners present a more stable pattern. The degree of dependency of the Spanish purse seine fleet reached a peak level in 2018 of above 70% of the share of value in landings. This might be partially linked to a displacement of effort or change of fishing strategy with less presence and activity in ICCAT due to combination of technical measures and FAD closure seasonal area to reduce catches of bigeye and yellowfin tunas in this area.
- The current regulatory framework with increased control of tuna landings and transshipments coupled with the implementation of technical measures such as 2 months' time closure for FADs might have a negative impact in terms of fleet presence of French and Spanish purse seine active vessels in ICCAT RA.
- Regarding shortfin mako, the Commission could not reach a consensus on annual catch limits but agreed to impose restrictions for vessels to catch and retain on board, tranship or land North Atlantic shortfin mako. Stringent measures and increases in observer coverage might likely have as well an impact in terms of catches of these species reported by Spanish and Portuguese surface longliners and a possible displacement of effort to other areas including the Indian Ocean.
- A full assessment of Atlantic bigeye tuna stock was conducted in 2018 with worrying results in terms of biomass. Efforts are being made to gather and collect missing datasets particularly from non-European longliners and purse seiners. However, the lack of a comprehensive and periodic control system to monitor quota uptake and the unilateral increase of capacity by many CPCs could hamper the process.
- In 2019, full scientific stock assessments were carried out for two species: yellowfin tuna and white marlin, while new projections were provided for the northern shortfin mako shark. Ongoing work will continue in 2020 in terms of assessment for mako which seems to be in a dire situation (according to SC, even with zero tonnes catch, biomass will decline until 2035) where ambitious rebuilding measures might be adopted including an improved data collection and registration of dead individuals as by-catches and release of alive specimens of the sea.

## IOTC

- In recent years, the IOTC adopted management measures including catch and effort limits for purse seine and other fisheries. For tropical tunas, the measures adopted include Harvest Control Rules for skipjack, catch limits for yellowfin tuna (Resolution 19/01), and measures to limit fishing effort for purse seine fisheries as a whole; as well as procedures on a fish aggregating devices (FADs) management plan, including a limitation on the number of FADs, more detailed specifications of catch reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species. It also includes a resolution for the conservation of albacore caught in the IOTC area of competence; observer schemes and regional programme for monitoring transshipments at sea.
- At the IOTC Annual Meeting in 2022, there have been proposals that have not been adopted in 2022 on increasing the sustainability of FAD fishery by reducing the number of deployed FADs from 300 to 240 per vessel and imposing the use of biodegradable FADs in 2025 introducing the basis for traceability in the use of FAD. Any feature proposals reducing number and use of FADs, as well as retrieval, are likely to have an impact on those purse seiners relying on the use of FADs for their business plans.
- The Indian Ocean Tuna Commission (IOTC) held its last annual session from 16 to 20 May 2022. The main priorities for the EU at the meeting were to discuss how to address the management of yellowfin tuna stock in the Indian Ocean, the adoption of a new management measures for drifting fish aggregating devices (FADs) and the adoption of catch reduction for skipjack tuna. The IOTC could not agree on any of these items and they will continue to be discussing in forthcoming meetings.
- The poor biological situation of the yellowfin tuna stocks will likely lead to further catch reductions for those CPCs abided by the Resolutions. Since the establishment of the rebuilding plan for yellowfin tuna in 2016, the EU fleets have continuously reduced its yellowfin tuna catches by more than 21% as compared to 2014 levels (more than 20 000 tonnes).

- There are a number of IOTC members which have refused to abide by this rule to date, with 6 major harvesters: India, Indonesia, Iran, Madagascar, Oman and Somalia that have objected to date to be subject to the rebuilding plan and have increased their catch unilaterally. At the 2022 annual countries, the same countries have reiterated their unwillingness to participate to the conservation effort. Commitment to continue with diplomatic efforts in 2022, a special session will be called to discuss future solutions at latest by the first quarter of 2023.
- The IOTC did not manage to adopt the proposal to bring back the catches of skipjack within the agreed TAC. Some parties of the IOTC were not willing to take action to ensure that the fisheries on skipjack remain sustainable on the long-term. This might be counteractive and exacerbate the risk of deterioration of skipjack stock in the medium term.
- However, the IOTC adopted a far-reaching management procedure on bigeye tuna, an important step forward for well-informed science-based management decisions for the management of the bigeye tuna stock in the future.
- In addition, an EU proposal on observer coverage - creating the basis for the introduction of more electronic monitoring system on board - has been adopted by the IOTC parties.
- The EU accepted a further reduction of 6% in catches of yellowfin tuna, summing up to a total reduction of 21% compared to 2014 catch levels (around 92 000 tonnes). As such, the EU is the main contributor to the catch reduction scheme. For the EU fleet (mainly Spanish and French purse seiners), the cut in the TAC is estimated to be around 4 500 tonnes for 2022 for the Spanish and French tuna purse seiners (from 77 694 tonnes in 2021 to 73 146 tonnes in 2022. This reduction in quota will be coupled with the reduction of supply ancillary vessels from 2 for each 5 purse seiners to 3 for each 10. These measures combined will have a likely effect of effort displacement towards EEZs of countries where the EU has tuna agreements in place (Seychelles, Ivory Coast, Gabon...) or fishing in international waters. Longer fishing trips might also reflect into lower energy efficiency, higher fuel consumption and costs.
- However, it is still uncertain if this reduction in YFT catch will be achieved, given the intent expressed by five IOTC member nations (namely, Oman, Iran, India, Madagascar and Indonesia) to object to the measure. These five countries represent near 40% of the total catch of yellowfin and a TAC has not been agreed for this stock for them. In the case that all IOTC parties do not fully implement the yellowfin measure, the catch levels recommended by the IOTC Scientific Committee are likely to be exceeded.
- Failure in recovering this stock could have a direct economic impact in EU and other fleets as many retailers and supermarkets in developed countries (following mandate from organisations such as ISSF or GTA) have agreed to reduce their annual sourcing of Indian Ocean yellowfin tuna in the event that IOTC does not take appropriate action.
- The EU proposal to bring back the catches of skipjack within the agreed Total Allowable Catch (TAC) was not adopted due to opposition of other IOTC parties. However, a proposal submitted by Maldives on skipjack tuna management without allocation keys was adopted. This is not envisaged to produce any short- or medium-term effect in the catch levels for this species.
- The IOTC agreed to the mandatory use of non-entangling and non-meshed material FADs from 1 January 2020 and encouraged the use of biodegradable FADs from 1 January 2022. In addition, the Commission further reduced the limit on active FADs to 300 for 2020 (down from 550 in 2015 and 350 in 2017) and the number acquired annually per purse seiner to 500 (down from 1 100 in 2015 and 700 in 2017). The non-entangling FADs should not have a great economic impact in the fishing activity of French and Spanish purse seiners as they have them already installed and internalized in their operating costs.
- At the IOTC Annual Meeting in 2021, there was a proposal aiming to further regulate the management of drifting fish aggregating devices (dFADs), reducing the number of FADs from 300 to 150 per vessel, which was rejected by a narrow margin. However, the Commission did not agree on whether the 2/3 majority was met as there was disagreement on whether the votes cast as 'abstain' should be included in the total count of votes, and advice from the FAO Legal Office was requested on this matter. The Commission did not report that a CMM on the management of fish aggregating devices in the IOTC area of competence had been adopted.
- The main issue in the IOTC relates to lack of comprehensive and quality scientific data. The result is patchy and incomplete data which is used to underpin the scientific assessments. It is therefore crucial that the IOTC increases activities to assist developing states in improving data collection and reporting, and verification of their capacity to monitor compliance with quotas in near-real time.

- Increase in observer coverage (EMS included) would be needed as up to now only EU purse seiners have a 100% observer coverage, whereas non-EU longliners do not reach levels below 10%. An increase in observer coverage, with a minimum of 20% of the activity covered in all industrial vessels, could help to have a more accurate picture of by-catches (e.g., dolphin fish, wahoo, barracuda, etc.) and discards by gears, to understand interactions with tuna purse seiners and long liners.
- Divergencies have been noted between different sources, e.g., submission of catch data by EU Member States and CPCs to IOTC and via official statistics from EUROSTAT and EU-MAP. This could bring discrepancies on the data collected by the EU-MAP while cross-checked with IOTC to perform analysis.
- Estimate of total catch, including target species and non-target species (by-catch and discards) has to be improved. Currently there is a non-existing level of reporting of by-catch data by most CPCs, with only EU purse seiners and long liners collecting this sort of information. This ends up in a rough estimation of nominal discards. There is a need to fill this gap to improve knowledge in particular of sensitive species such as turtles or silky sharks.
- More information would be desirable in the way fishing effort is accounted for and reported for all gears in the IOTC area. Some CPCs such as Korea, Japan and Mauritius have made already a specific request on this in Annual Meetings. Overfishing and IUU fishing by non-EU fleets undermines conservation and management of tuna stocks and puts in risk the future economic viability of the fishery for the EU fleet, due to the deterioration of the stock and the vicious circle of decrease of quotas due to the lack of level playing field between all concerned CPCs.
- During its 19th Session held in May 2022, the IOTC Compliance Committee has expressed concern repeatedly with low levels of compliance with the commission's regulations at its latest meeting in 2022. In response, it has produced several recommendations on how to achieve targets set by IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs). In particular, there were low levels of compliance with Resolution 15/02, covering mandatory statistical reporting requirements, and Resolution 17/05, covering the conservation of sharks caught in association with fisheries managed by IOTC. The committee has recommended that the IOTC should carry out a review of its conservation and management measures alongside subsequent reports that point out the challenges encountered during their implementation.
- Within 2022, the committee proposed, the IOTC Secretariat should also provide an analysis highlighting problems and possible solutions on the implementation of resolution 19/04, which concerns the IOTC's records of vessels authorized within its area of competence, so as to guide CPCs in a possible future review.
- Meanwhile, the committee said the IOTC should consider making the use of electronic port-state measures (ePSM) applications mandatory. It should also consider endorsing the Working Party on the Implementation of Conservation and Management Measures' recommendations, with the goal of having the system implemented before the next IOTC compliance assessment in 2023, but IOTC members encountering problems with the system will be allowed to continue using a paper system.

## 2.8 Social aspects

The social variables that should be collected for the fishing fleets are listed in table 10 in the COMMISSION DELEGATED DECISION (EU) 2019/910, establishing the multiannual Union programme for the collection and management of biological, environmental, technical and socioeconomic data in the fisheries and aquaculture sectors.

The social variables that should be collected are Employment by gender, Employment by age, Employment by education level, Employment by nationality, Employment by employment status, FTE by gender and Unpaid Labour by gender.

Although the regulation gives no guidance on how the data should be collected the PGECON workshop report from Vilnius in 2017 and Athens, 2018 provides recommendations on the data collection. The Commission Decision does not require stratified data or combined variables PGECON recognised that reporting social variables at more disaggregated levels rather than at national totals and reporting combined variables would add value to the social analysis.

The following categories for social variables were recommended:

- Age categories: <=14, 15-24, 25-39, 40-64, >65, unknown.
- Education categories: High, Low, Medium, unknown.
- Gender categories: Female, Male, unknown.
- Nationality categories: EEA, EU, national, non-EU/EEA, unknown.
- Employment status: Owner, Employee, Employee full, Employee Part, Owner Full, Owner Part

PGECON recommended that social data should be reported (raised) for the total population and that the sampling strategy and size should be reported.

The following analysis of social variables include 2020 data provided by all Member States under the 2022 Annual Economic data call.

Member States collected social data at different levels. Some Member States collected data at enterprise level, others at employee level. Similarly, to the economic data collection under DCF, Member States used different sampling strategies (e.g., census, probability sample survey or non-probability sample survey). Italy did not provide in 2020 any information for DWF due to confidentiality issues. More details on the data submitted by the Member States can be found in the annex of this report. Therefore, this section can only provide a snapshot in time (year 2020) and cannot examine trends.

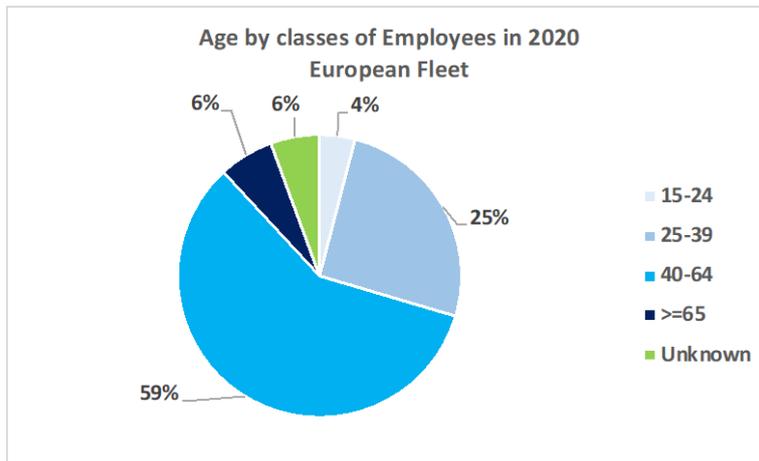
### Summary of main indicators on social aspects for 2020

#### *Employment by gender and fleet*

According to the official social data submitted by the Member States under the 2022 Fleet Economic data call, more than 96% of the workers are males. The distribution of male and female was the same as the one reported in STECF 19-03 - Social data in EU fisheries sector, in which was analysed to the data for 2017.

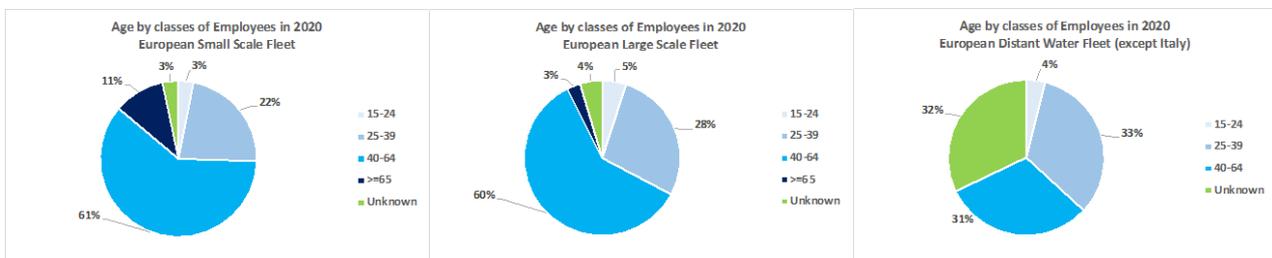
#### *Employment by age and fleet*

All Member States provided number of employees by age. Age class '40-64' represents 59% of the workers in the EU fishing fleet. The percentage of people between 40 and 64 years was very similar for SSCF and LSF – 61% and 60%, respectively. It is more difficult to conclude for DWF as 31% of the age class is 'unknown' (mainly Spanish data). The youngest age categories '15-24' do not represent more than 5% in any fleet categories. The employees >=65 years represent 6% of the employees in the EU fleet, in the SSCF they were 11% and 3% in the LSF.



**Figure 2.44 Employment distribution by Age for EU Fishing Fleet, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022))



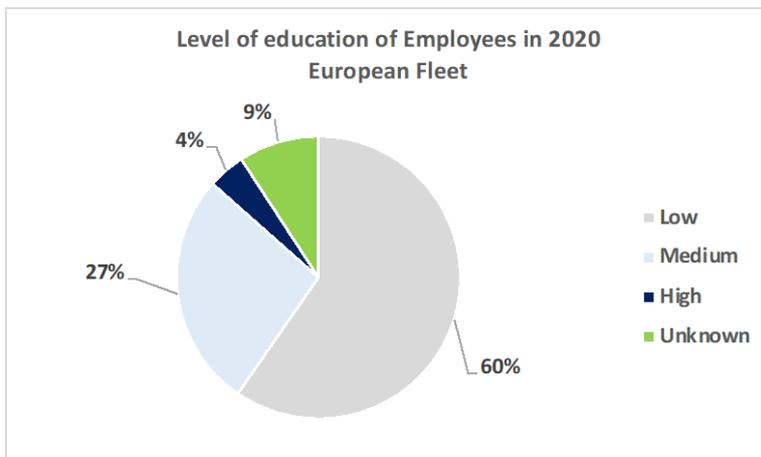
**Figure 2.45 Employment distribution by Age for SSCF, LSF and DWF for EU Fishing Fleet, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022))

**Employment by education by fleet**

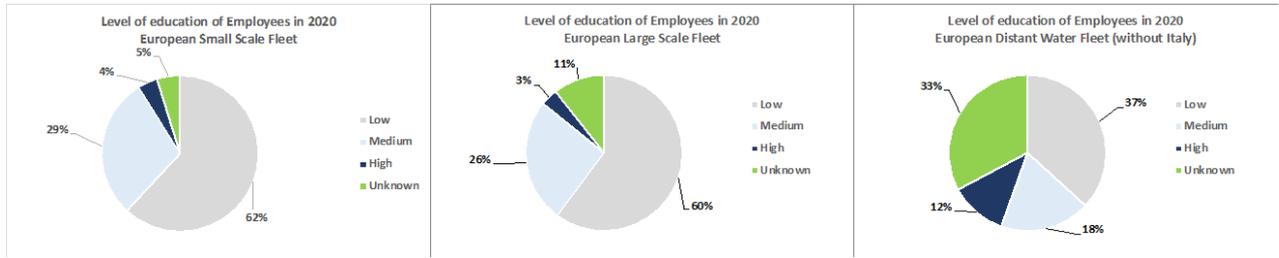
All MS provided education distribution in 2020. 9% of the total the population was noticed as unknown level of education (33% for DWF, mainly due to Spain which provided “unknown”). The proportion of people whose education level was unknown was fluctuating between 5 and 33% in the different fleet categories.

High educated employees were 4% in the whole European fleets equivalent to SCF and LSF distribution, while in the DWF the higher educated employees were 12%. The repartition is very similar upon age classes: 62% in SCF, 60% in LSF for low education, 26% (LSF) to 29% (SSCF) for medium education.



**Figure 2.46 Employment distribution by Education for EU Fishing Fleet, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). Belgium, Latvia and Finland not included.



**Figure 2.47 Employment distribution by Education for SSCF, LSF and DWF for EU Fishing Fleet, 2020**

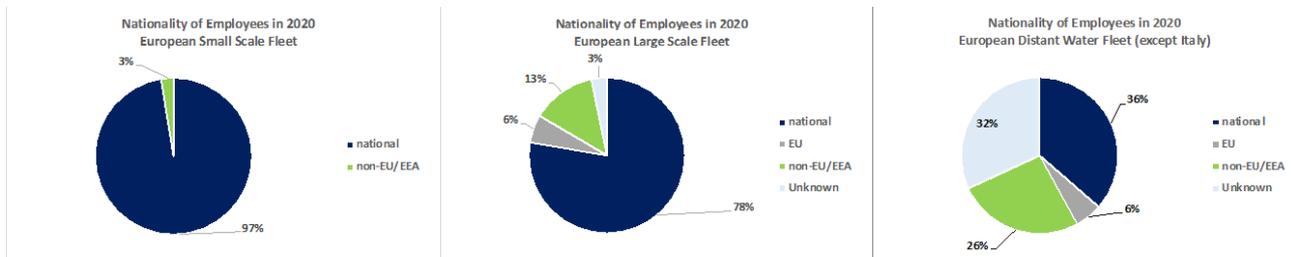
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). Belgium, Latvia, Finland and Italy not included.

**Employment by Nationality by fleet**

All Member States provided Nationality distribution. The large majority of employees were nationals for fleet categories except DWF in which 26% were non-EU/EEA and 6% were EU. The largest proportion of nationals was in the SSCF (97%), followed by the LSF (78%) and DWF (36%). In should be noted, that the level of unknown is very high in the DWF – 32% EU, due to the Spanish data.

**Figure 2.48 Employment distribution by Nationality for EU Fishing Fleet, 2020**

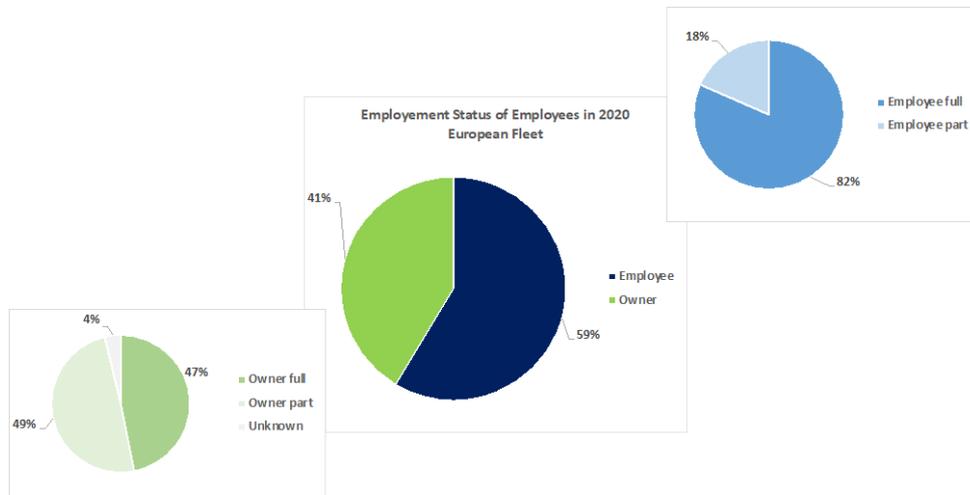
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). Belgium, Latvia and Finland not included.



**Figure 2.49 Employment distribution by Nationality for SSCF, LSF and DWF for EU Fishing Fleet, 2020**

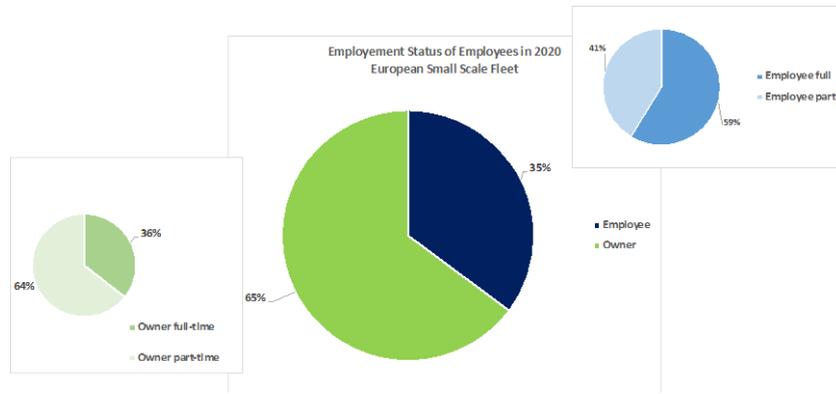
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). Belgium, Latvia, Finland and Italy not included.

**Employment by Employment Status by fleet**



**Figure 2.50 Employment distribution by status for EU Fishing Fleet, 2020**

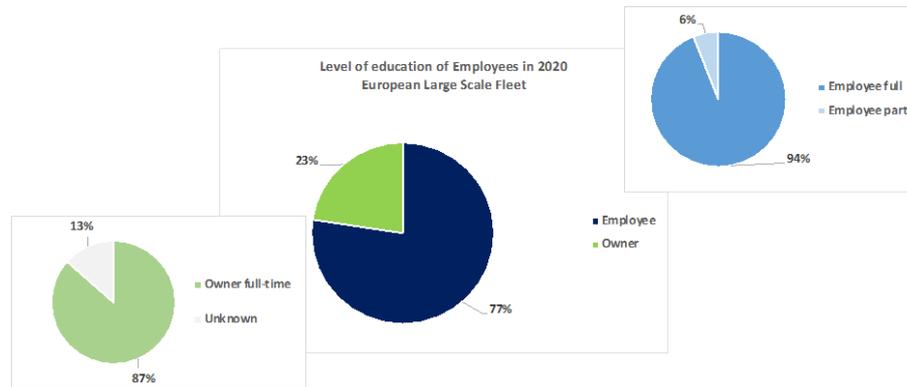
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). Belgium, Latvia and Finland not included.



**Figure 2.51 Employment distribution by status for SSCF for EU Fishing Fleet, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). Belgium, Latvia and Finland not included.

In 2020, 65% of the workers on board of SSCF vessels were owners of their vessel, mainly working part-time (36%) while employees worked full time (59%).



**Figure 2.52 Employment distribution by status for LSF for EU Fishing Fleet, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)).

The structure of workers on board LSF and DWF vessels is reversed in comparison to SSCF fisheries; 77% are employees mostly working full time (94%), and most owners are full time engaged in fisheries (87%).

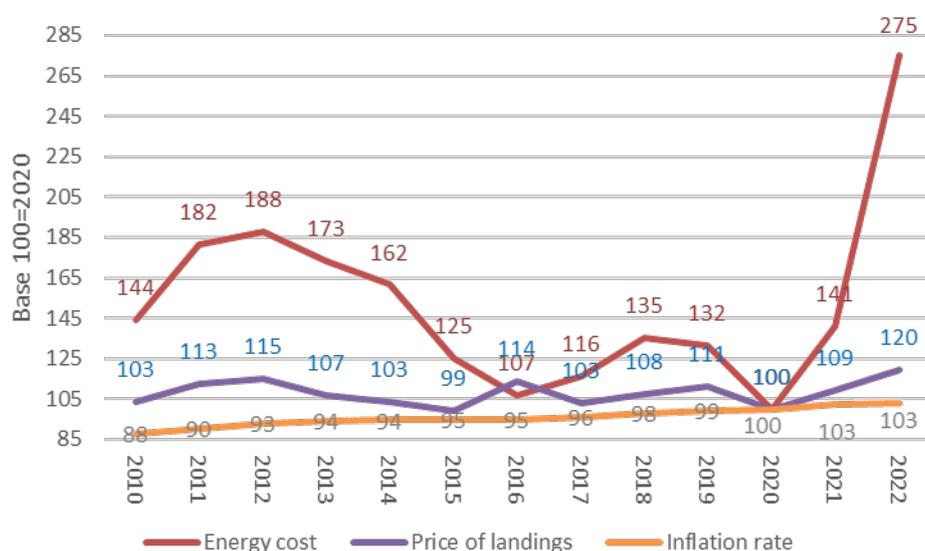
Almost 100% of the workers in the DWF were, in 2020, employees working full-time.

## 2.9 Assessment for 2021 and outlook for 2022 and beyond

### Forecast and Nowcast for 2021 and 2022

The nowcast results for 2021 and 2022 for the main analyses are provided throughout each of the chapters (also in Table 2.10 and the Annex 2 data tables). This section summarises the estimates on the performance of the EU-27 fleet in 2021 and 2022, based on preliminary data. The EWG notes that this is an estimation based only on the number of vessels, and fuel and landing prices of a subset of the species. For the case of the north east Atlantic, also the TACs and quota changes have been considered. Also, where no 2021 data was reported by Member States, and for all 2022 data, explanatory variables for the year 2020 are used to generate nowcasts and this would affect the final estimates as they are strongly related to the 2020 results even if the performance of this year has been highly impacted by the COVID-19 pandemic. In addition, the methodology does not consider possible strategic changes in fleet behaviour, based on optimizing the trips. For example, by performing shorter trips due to the increase of fuel, or staying at port -not fishing- due to high fuel cost episodes. Both effects reported to the EWG, although not possible to include in the nowcasting procedure. See Annex 1 for the full methodology used.

Considering that the main two drivers are the fuel cost and the landings value, figure below presents the trends observed (2008-2020), and forecasted for 2021 and 2022.



**Figure 2.53 Trends on average price for fish, average energy cost for the EU Fishing Fleet and inflation rate for the average EU27 economy, from 2020-2020 and nowcast for 2021-2022 (for prices and energy costs).**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

Figure 2.53 can be used as the main explanation to the nowcasted results. While prices in 2022 from 2020 have increased, in real terms, around 20%, fuel costs have increased a 175%. In 2021 the predicted situation is also negative given that prices increased by 9% while energy costs by 40%. If considered that energy cost are mayor item in the cost structure of the fishing fleet, it can be confirmed that the EU fishing fleet, overall, has not been able to transfer the operating costs increase in the final prices for fish, therefore, results will show an important deterioration of the economic performance.

### Forecast for 2021

- Preliminary results forecast a 11% drop in landed weight in 2021 compared to 2020, accompanied by higher average prices. This reflect an 3.7% decrease in the total value of the landing for the entire EU fleet.
- Nowcasts suggest that in 2021 there is an increase in all costs compared to 2020, which is especially relevant for energy costs (+36.7%). There is a sharp deterioration in performance results in 2021 in terms of GVA (-11%), gross profit (-30%) and in net profit (-46%).
- In regards to the previous year's results, projections indicate that the EU fleet still continued to operate at positive profit margins in 2021.

- In relative terms, projected results show a GVA to revenue of 50% in 2021, gross profit margin at 14% and a net margin at 4%, in all cases the lowest value of the observed period (2008-2020).

## Nowcast for 2022

- Nowcast results for 2022 indicate a drop in landed weight in 2022 of 17% compared to 2020, accompanied by higher average prices (+20% compared to 2020). This reflects an 1.6% decrease in the total value of the landings for the entire EU fleet.
- Nowcast results for 2022 indicate a similar FTE in 2022 compared to 2020.
- In 2022, revenues are similar to 2020, however, they are accompanied by an increase in fuel costs (175%). The EU fleet as a whole is expected to reduce severely the profitability in gross and net terms, with negative margins in both, for the first time in the last 10 years.
- These negative results are mainly driven by the LSF and DWF, while SSCF is still expected to be less impacted (given its lower fuel intensity).
- The EWG also run a second scenario for the nowcast, based on projecting the average prices of fuel observed in 2022, for the rest of the year (after May), which implied a fuel cost 13.5% lower in average for 2022 than the one used in the base nowcast. It had a big impact on the estimated profitability given that under this scenario although net profit remained negative, the overall EU fleet would perform under positive gross profits.
- Based on the two scenarios, a simulation was performed to check the fuel price in nominal (2022) prices that would induce zero profits. This was calculated to be 1.17 euro/litre, that can be compared to the 1.21 euro/litre used in the nowcast results, the 1.05 euro/litre in the alternative scenario explained in the paragraph above, and/or the nominal average price for 2021 of 0.57 euro/litre (nominal).

## Nowcast by Member State

- Table 2.9 is providing the main results for 2021 and 2022 and a comparison with 2020.
- By Member State, projected results for 2022 further indicate that Belgium, Germany, Spain, France, Greece, Ireland, Malta, the Netherlands, Poland and Portugal are projected to move to a negative position in 2022 from their positive position in 2020, in gross terms.
- By Member State, projected results for 2022 indicate that Belgium, Spain, France, Greece, Ireland, Italy, Malta, the Netherlands, Poland, Portugal and Sweden will to move to a negative position in 2022 from their positive position in 2020, in net terms. Germany and Finland will remain negative (as in 2020) and Cyprus and Estonia will move from a negative position to a positive one.
- Generally, the performance of most Member State fleets deteriorated in 2022.

## Nowcast by type of fishery

- By type of fishery, the highest GVA decrease predicted in the 2021 and 2022 (compared to 2020) is for the DWF (-13% and 46%, respectively), followed by LSF (-11% and 42%, respectively) and the SSCF (-10% and 25%, respectively). This reflects the intensity in fuel use, and therefore, the more intensity the more impact would have the increase in fuel prices. This order is also followed when gross profits are considered
- In the 2021 the projections show that none of these types of fisheries (DWF, LSF and SSCF) will recover. Furthermore, gross profits they will be hampered by the increase in fuel costs observed in the first semester of the year 2021. However, it is also projected that the three types of fisheries will be profitable in 2022 although in 2022 all three present negative economic performance.

Table 2.9 Main results for the EU-27 by Member State fleet for 2020 and nowcasts for 2021 and 2022

MS	GVA (EUR million)			% diff		Gross profit (EUR million)			% diff		Net profit (EUR million)			% diff		GVA to revenue (%)			% diff		Gross profit margin			% diff		Net profit margin			% diff	
	2020	2021	2022	2021-	2022-	2020	2021	2022	2021-	2022-	2020	2021	2022	2021-	2022-	2020	2021	2022	2021-	2022-	2020	2021	2022	2021-	2022-	2020	2021	2022	2021-	2022-
BEL	41,5	34,2	17,2	-17%	-50%	15,4	9,0	-9,5	-42%	-206%	7,5	2,4	-13,8	-68%	-673%	54	46	22	-15%	-53%	20	12	-12	-40%	-200%	10	3	-17	-67%	-642%
BGR	3,4	6,2	6,0	86%	-3%	2,2	5,1	4,8	131%	-6%	2,0	5,2	5,9	158%	13%	64	74	60	14%	-19%	43	61	48	42%	-21%	39	61	58	59%	-5%
CYP	2,8	2,7	1,6	-1%	-41%	1,1	1,1	0,1	0%	-95%	-1,8	0,0	0,4	-102%	1324%	49	49	28	-2%	-42%	20	20	1	0%	-95%	-32	0	7	102%	1291%
DEU	66,2	45,8	32,2	-31%	-30%	21,4	8,0	-5,2	-63%	-165%	-3,0	-12,6	-19,9	326%	58%	53	44	31	-17%	-29%	17	8	-5	-56%	-166%	-2	-12	-19	-408%	-60%
DNK	310,2	310,6	217,4	0%	-30%	191,5	184,1	104,5	-4%	-43%	97,6	104,4	58,1	7%	-44%	68	67	54	-1%	-20%	42	40	26	-5%	-35%	21	22	14	5%	-36%
ESP	856,1	779,5	621,8	-9%	-20%	199,9	141,7	-9,6	-29%	-107%	97,9	59,0	-69,6	-40%	-218%	53	49	38	-7%	-22%	12	9	-1	-28%	-107%	6	4	-4	-39%	-215%
EST	8,4	8,5	6,4	1%	-25%	2,5	2,6	0,4	4%	-83%	-0,2	1,2	1,2	-768%	3%	61	60	46	-2%	-24%	18	18	3	1%	-83%	-1	9	9	747%	3%
FIN	22,4	19,4	16,3	-13%	-16%	15,3	13,3	10,1	-14%	-24%	-5,5	-3,9	-4,6	-29%	16%	63	63	52	0%	-18%	43	43	32	0%	-26%	-16	-13	-14	18%	-14%
FRA	601,4	534,6	381,1	-11%	-29%	131,1	75,1	-88,6	-43%	-218%	29,5	-9,8	-151,5	-133%	1440%	52	47	32	-9%	-31%	11	7	-8	-42%	-214%	3	-1	-13	-134%	-1384%
GRC	205,5	204,3	99,5	-1%	-51%	70,5	70,1	-24,2	-1%	-134%	19,5	23,5	-52,9	20%	-325%	59	59	31	0%	-47%	20	20	-8	0%	-138%	6	7	-17	21%	-346%
HRV	58,9	53,3	44,3	-10%	-17%	31,2	27,0	18,9	-13%	-30%	10,0	14,1	15,1	41%	7%	65	60	49	-8%	-20%	35	31	21	-12%	-32%	11	16	17	44%	4%
IRL	161,6	119,7	71,6	-26%	-40%	65,9	27,6	-24,5	-58%	-189%	32,4	8,2	-27,5	-75%	-437%	52	42	24	-18%	-43%	21	10	-8	-54%	-184%	10	3	-9	-72%	-421%
ITA	421,6	371,8	239,3	-12%	-36%	209,9	160,7	31,1	-23%	-81%	55,3	21,7	-89,1	-61%	-510%	63	56	35	-12%	-38%	32	24	5	-23%	-81%	8	3	-13	-61%	-498%
LTU	30,0	27,9	20,7	-7%	-26%	21,2	19,4	12,3	-9%	-36%	12,6	14,4	16,0	15%	11%	34	31	22	-9%	-31%	24	22	13	-10%	-41%	14	16	17	13%	4%
LVA	13,2	12,6	11,4	-5%	-9%	8,2	7,9	6,6	-5%	-17%	7,8	7,5	6,5	-3%	-14%	61	61	56	1%	-8%	38	38	32	0%	-15%	36	36	32	2%	-13%
MLT	6,1	8,2	2,5	36%	-70%	2,7	4,8	-0,8	78%	-117%	0,6	2,7	-1,7	359%	-163%	54	56	21	4%	-63%	24	33	-7	36%	-121%	5	18	-14	251%	-176%
NLD	159,2	132,5	34,9	-17%	-74%	55,8	27,9	-70,9	-50%	-354%	32,5	6,5	-78,7	-80%	-1304%	46	38	10	-18%	-74%	16	8	-20	-51%	-352%	9	2	-22	-80%	-1294%
POL	19,2	15,1	6,2	-21%	-59%	0,8	-4,1	-13,9	-608%	237%	0,4	-2,9	-9,2	-912%	217%	54	46	21	-15%	-56%	2	-13	-46	-651%	265%	1	-9	-31	-981%	-243%
PRT	215,5	197,2	112,5	-9%	-43%	72,8	53,5	-19,0	-27%	-136%	13,2	-2,1	-60,3	-116%	2783%	60	55	33	-9%	-40%	20	15	-6	-27%	-137%	4	-1	-18	-116%	-2924%
ROU	1,8	1,0	0,6	-42%	-44%	1,0	0,3	0,0	-72%	-95%	0,6	0,1	0,1	-76%	-58%	62	46	28	-26%	-38%	36	13	1	-64%	-95%	21	7	3	-69%	-54%
SVN	2,8	2,3	2,0	-17%	-12%	2,5	2,0	1,7	-19%	-14%	2,4	2,0	1,9	-16%	-7%	86	81	73	-6%	-11%	77	71	63	-8%	-12%	75	71	67	-5%	-6%
SWE	65,0	47,9	45,1	-26%	-6%	39,0	0,0	10,8			14,9	0,0	-9,6			54	44	29	-17%	-35%	32	0	7			12	0	-6		
EU 27	3.273	2.936	1.991	-10%	-32%	1.162	837	-65	-28%	-108%	426	242	-483	-43%	-300%	53	56	52	5%	-7%	20	22	18	11%	-16%	11	13	9	20%	-25%

## Outlook for 2021 and beyond

The EU Fisheries sector has been hit strongly by the COVID-19 pandemic with the restrictive measures adopted in March and April 2020. In 2020, the COVID-19 affects the EU fleet in all fishing activities SSCF, LSF, and the distant water fleets of EU countries, even if the economic impact on fisheries is heterogeneous in the region.

Numerous measures across Europe were taken to mitigate the effects of the crisis on the fisheries sector (e.g. ensuring the continuity of food supply, expanding home delivery and direct sales, and supporting national and local production through consumer awareness campaigns), complemented with enhanced investment in the fisheries sector. In 2021 the measures designed to contain the spread of the virus, especially through measures aimed to reduce social interactions, including lockdowns, and travel restrictions were continued in order to fight the pandemic.

The expected impact of COVID-19 is a decrease in the total landings for this period compared to other years as well as a reduction of days at sea. Also, crew wages in some Member States are correlated to the value of landings, and these may lead to a decrease compared to previous years.

The data analysis do provide a clear picture of the reduction of volume of landings in 2020 by 2.7% when compared to 2019, while for prices a reduction of around 11% is observed compared to 2019. Overall, a reduction of the value of landings by 12.5% when compared to 2019. This was partially outweighed by the reduction in fuel costs in 2020. In such a way that when comparing 2020 data to 2019 a 6.7% reduction in GVA has been estimated. The numerical results presented in the forecast for the year 2021 shows that not only COVID-19 effect on the economic performance of the EU fleets. The fuel prices with an 40% increase are one of the main driving forces during 2021 and is expected also to play a major role of the profitability of the EU fleet in 2022. The estimation for 2022 enhances this profitability deterioration, specially derived from the 175% increase in fuel costs estimated for 2022, which makes for the first time an overall projection of negative profitability for the EU fishing fleet.

## Production

Global seafood production has grown rapidly in the last decades and in 2018 reached a record of 96.4 million tonnes, an increase of 5.4% from the average of the previous three years. World fish production, fish supply, consumption, and trade revenues are all expected to have declined in 2020 due to containment restrictions caused by COVID-19, and definitely the result of the projection can be affected by the policy reforms and a multitude of other factors. The next decade is likely to see major changes in the natural environment, resource availability, macroeconomic conditions, international trade rules and tariffs, market characteristics, and social conduct, which may affect production, markets, and trade in the medium term.

According to OECD–FAO (2021)<sup>8</sup>, after strong growth in 2018, with overall production, trade and consumption reaching historic peaks, the global fisheries and aquaculture sector declined slightly in production was driven by lower aquaculture output while capture fisheries remained largely unchanged. Disruption in some key producing countries was especially important for trade in 2020. Aquaculture production is expected to continue increasing over the outlook period (+23% by 2030), but at a slower rate than observed over the previous decade. Despite the increasing prominence of aquaculture in total fish supply, the capture fisheries sector is expected to remain dominant for a number of species, and vital for domestic and international food security. Capture fisheries production should experience modest growth (+3.6% by 2030), with some fluctuations in El Niño years (2022 and 2027).

Global fish production (capture and aquaculture) is expected to grow from up to 201 million tonnes by 2030, with an increase of 12.8%. This is a relatively slower increase in global fish production representing approximately 69% of the previous decade growth. The increase in fish production is driven, primarily by the continued progression in aquaculture production, which is expected to reach 103 million tonnes by 2030. However, aquaculture production growth over the projection period, by 23.0%, is slower than in the previous decade when production grew by 52.7%. Aquaculture production is expected to overtake capture production in 2027 and account for 52% of all fish production by 2030.

By comparison, capture fisheries are projected to experience a relatively modest growth of 3 million tonnes or 3.6% in the projection period, reaching 97 million tonnes in 2030. This growth in production is expected to come largely from improved fisheries management and technological improvements

<sup>8</sup> OECD/FAO (2021), OECD-FAO Agricultural Outlook 2021-2030, OECD Publishing, Paris, <https://doi.org/10.1787/19428846-en>.

reducing discards and waste. The growth in capture fisheries production is expected to be slightly less than the previous decade, with reduced growth rates in most regions. More specifically, while Africa is still expected to experience the strongest growth rate, by 10.3%, this is significantly slower growth than experienced in the previous decade - an increase of 38.6%. Capture fisheries production in Asia is expected to increase by 1.2 million tonnes, however, the relative growth of 2.4% will be slower than in Africa (+10.3) and Europe (+5.7%). Consequently, the share of Asia in global capture production is projected to decline slightly to 51.6% in 2030 compared to 52.2% in the base period. EU fisheries and aquaculture sectors, in particular, are going to be affected by the economic situation with the absolute level of inflation in each country and fuel prices. Also, climate change and ocean acidification impact fisheries and aquaculture. However, their impact on productivity rates are uncertain and may vary significantly by region.

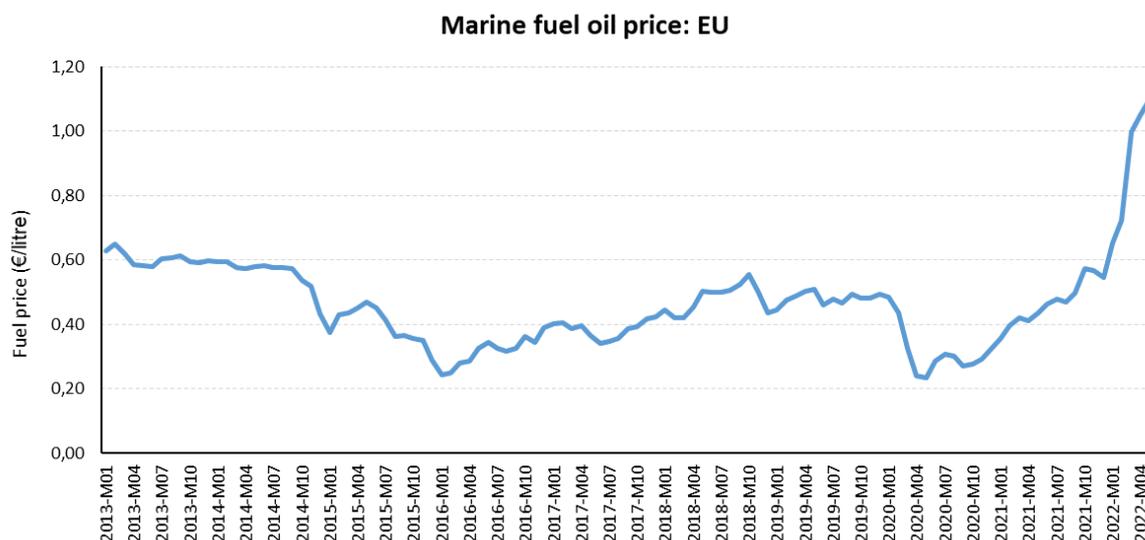
## Fish prices

According to OECD–FAO (2021), fish prices are expected to remain high relative to historic levels and continue to grow in nominal terms. In regards to the EU Fish Market 2021 report produced by EUMOFA from 2019 to 2020, household expenditure on fishery and aquaculture products grew by a remarkable 17%, which was much higher than the 2,1% inflation of prices for these products. This increasing trend was confirmed by Europanel, Kantar and Gfk data on household consumption of fresh fish in the EU's largest consuming countries. The data showed an increase of 7% in value and 4% in volume from 2019 to 2020. This increase was most likely due to the closings in the HoReCa sector due to the COVID-19 pandemic, and the consequent increase in at-home consumption.

In 2021, the prices of crude oil have trended upward toward the 2019 level while in 2022 these have recorded values never observed. Taking into consideration that energy costs are one of the main costs for the EU fishing fleet, and that general prices also increase, is expected fish prices to increase. The projection model results show that fish prices in 2021 were 1.51 euro/kg which represents an 8% increase compared to the same period of 2020 when the value was 1.4 euro/kg. Furthermore, in 2022, the model predicts prices for 2022, 19% and 10% higher than those in 2020 and 2021, respectively (1.66 euro/tonne).

## Fuel prices

Marine fuel oil prices fluctuated through the years. Where in 2013 price levels were high with fluctuations between 0.60 euro/litre and 0.68 euro/litre, in the spring of 2020 it was at 10 year lowest levels (0.25 euro/litre) (Figure 2.54).



**Figure 2.54 Fluctuations of the average marine fuel oil prices (in euro) for EU-27**

Data source: EUMOFA database. All monetary values have been adjusted for inflation; constant prices (2020).

In 2020 fuel price collapsed due to the reductions in demand as a result of the COVID-19 crisis. However, oil prices increased by 39% between August 2020 and February 2021 on positive vaccine news and the rapid economic recovery in Asia (U.S. Energy Information Administration (EIA) 2021). In the last trimester of 2020 fuel prices started to rise until the start of the Ukraine-Russia conflict. After that (February 2022) this increase has speed up, reaching levels never observed in the time series.

Oil price forecasts depend on the interaction between supply and demand for oil on international markets. Among the most important supply-side factors weighing on pricing, expectations are US shale oil production, US crude oil stocks, and OPEC (Organization of the Petroleum Exporting Countries) oil supply. However, in this context of energy crisis, to perform any prediction, upwards or downwards is complex. Therefore the EWG decided to use the observed mean prices for fuel up to May 2022, and project the rest of this year using this last month's price. At the time of writing this report is too risky to confirm if this is an over or an underestimation.

### **Overall assessment for 2022**

The first half of the year 2022, from the macroeconomic perspective, is a combination of high inflation rates, real increase in ex-vessel prices and sharp increase in fuel costs. As it can be observed in Figure 2.53, increase in real price for fleets' landings has been higher than the general inflation increase. However, in any case outweighs the fuel price trends. This perfect storm should have an impact on the economic performance of the EU fleet, although not necessarily equal to all the fleets. SSCF were more affected by the value chain disruption due to COVID-19, while now, in 2022 those more fuel intensive fleets (LSF and DWF) will be more impacted. However this is an average and this impact would be reduced if fleets would be able to transfer the increase in the costs into the ex-vessel prices, and also if they optimize their behaviour and/or if they stop when high fuel episodes occur. In any case the predicted negative profitability of the EU-27 fishing fleet, although can be considered a statistical artifact, is showing that profitability is going to be reduced in 2022 compared to any other year of the time series.

## 3 EU Regional Analysis

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### Introduction

The main fishing grounds for the EU fishing fleet are located in FAO fishing areas 27 (Northeast Atlantic, Baltic and North seas) and FAO 37 (Mediterranean and Black seas). Part of the EU fleet also operates in fishing areas much further afield. These areas, including EU outermost regions, are collectively termed "*Other Fishing Regions*" or OFR.

This section analyses the economic performance of the EU fishing fleet by main fishing region. For this economic data provided by fleet segment at the supra-region level are disaggregated based on effort and landings data provided by sub-region (FAO level 3 or 4) (see Annex 1 of this report for more details on the methodology used).

The EU fishing fleet was analysed by the following fishing regions:

North Atlantic (NAO):

- North Sea & Eastern Arctic (NSEA)
- Baltic Sea (BS)
- North Western Waters (extended) (NWW)
- Southern Western Waters (SWW)

Mediterranean & Black seas (MBS):

- Mediterranean Sea (MED)
- Black Sea (BKS)

Other Fishing Regions (OFR):

- EU Outermost regions (OMR) – six France, two Portugal and one Spain
- Long distant fisheries (LDF) – NAFO, ICCAT, IOTC, CECAF and NEAFC

Note: Due to explicit data and methodological limitations (see Annex 2), all results provided in this chapter should be considered exploratory rather than a source of factual statements that are considered robust enough to be a basis for policy decisions.

### 3.1 North Sea & Eastern Arctic

#### Regional Details

The North Sea & Eastern Arctic region (NSEA), as defined for this report, comprises ICES areas 27.1, 27.2, 27.3a, 27.4, 27.5, and 27.7d. French data were incomplete and are only included in the analysis from 2010 onwards. In addition, where insufficient data were provided for fleet segments these may have been excluded from all or some of the analyses. As, for confidentiality reasons, not all data were provided for the German pelagic trawlers and some high seas Polish vessels; these segments are not included in the analysis. Trends and absolute regional figures should therefore be interpreted and considered with care.

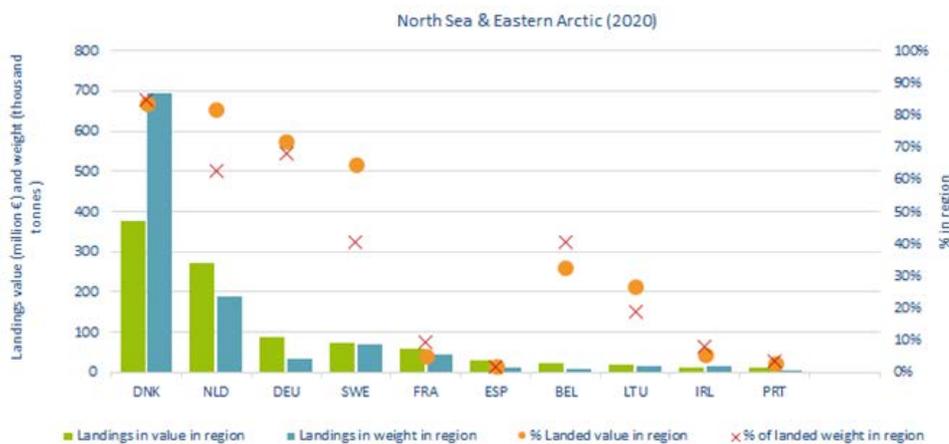
The analysis includes reported landings from 10 Member States' fleets: Belgium, Denmark, Germany, France, Ireland, Lithuania, the Netherlands, Portugal, Spain and Sweden. These fleets target high value species including common sole (the Netherlands, Belgium, Germany and France), common shrimp (The Netherlands, Germany, Denmark and Belgium) and Norway lobster (Denmark, Sweden, the Netherlands, Belgium, and to some extent Germany). Other important demersal species include Atlantic cod (Spain, Germany, Denmark, and France) and European plaice (the Netherlands, Denmark and Belgium). Furthermore, a number of these fleets also target pelagic species such as Atlantic mackerel and Atlantic herring (Denmark, the Netherlands, Germany and Sweden).

Annex 2 contains the tables with all the economic performance figures of the NSEA fleet by Member State, main type of fishing activity and fleet segment.

None of the Member States' fleets is entirely dependent on the region for their fishing activity, yet based on the value of landings, the NSEA is a very important fishing region for Denmark (84% of total landings), the Netherlands (82%), Germany (72%), Sweden (65%) and Belgium (33%) (Figure 3.1).

Two main players dominate the seascape of this region. In 2020, the Danish fleet was the most important in terms of both landed weight (696 000 tonnes) and landed value (EUR 377 million). Furthermore, the Dutch fleet is also an important contributor (190 000 tonnes and EUR 273 million). The share of the French, German, Swedish and Belgian fleets is considerably lower, but except for the French fleet, the region itself is of major importance for these national fleets (Figure 3.1).

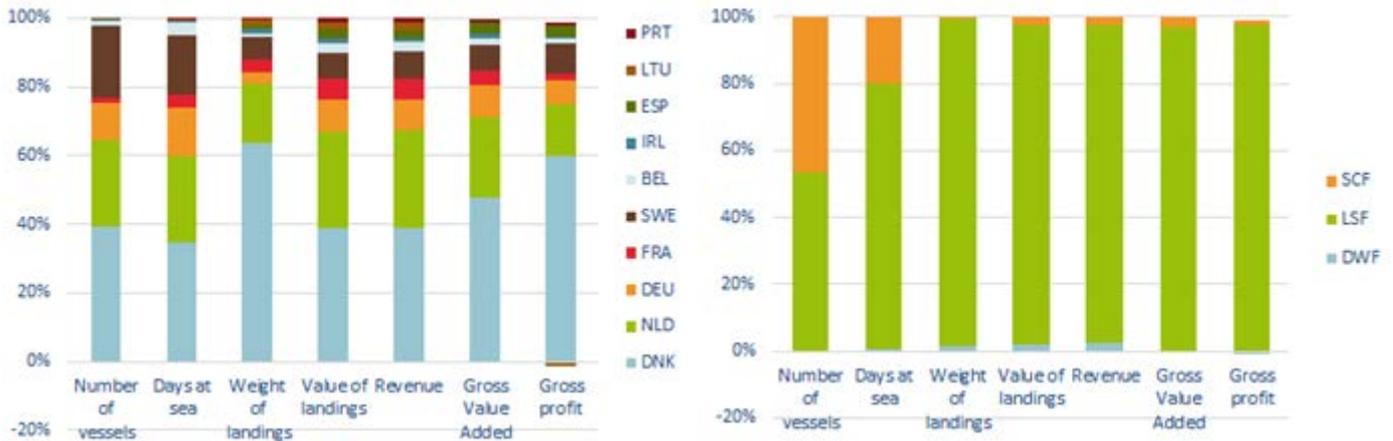
In terms of landed weight, Denmark caught 85% of their landings in the NSEA region, followed by Germany (68%), the Netherlands (62%), Sweden and Belgium (40% each). The pelagic fisheries influence these ratios to a large extent. Large volumes of sandeel are caught by the Danish fleet, while this is not a high valued species. The sandeel quota varies grossly from year to year.



**Figure 3.1 Importance of the NSEA for MS fisheries in landings weight and value, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Even though the share of the number of small-scale vessels is more than 50% and the effort is about one third of the total days-at-sea in the NSEA, their economic contribution as well as their share of the landed weight is marginal. The LSF landed 98% of the total weight and 96% of the total value (Figure 3.2).



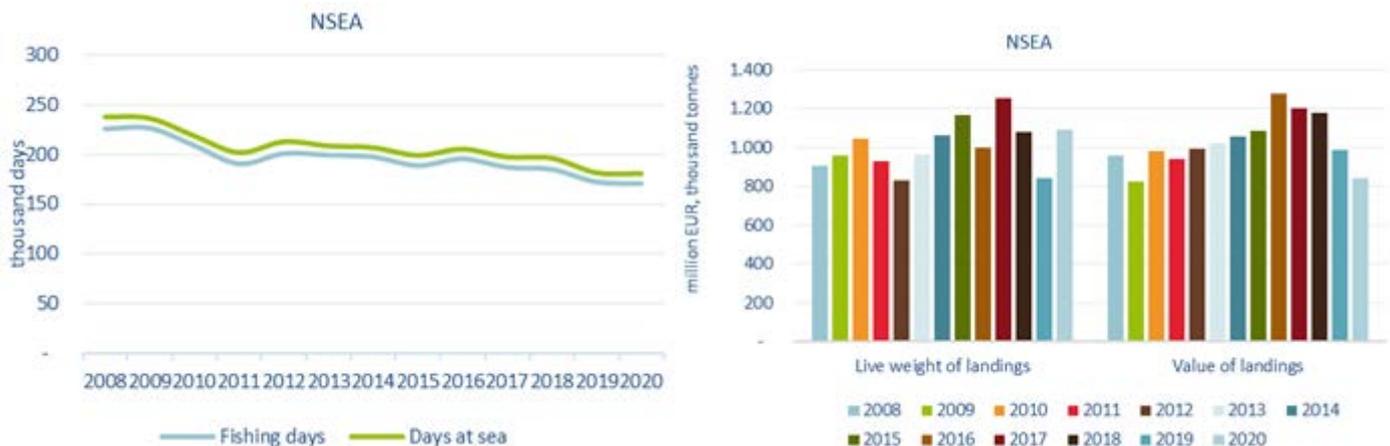
**Figure 3.2 Share by MS fleet and fishing activity in the NSEA, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Overview of the main results for EU fleets in the NSEA

### Fishing effort and landings

Fishing effort barely decreased (>1%) while landings have increased again, a first since 2017, to a level comparable to 2018 (Figure 3.3). The value of landings in 2020 fell below average between 2008 and 2020, decreasing with 16.3%. For a number of important North Sea fish species prices varied grossly compared to 2018. The price for common shrimp was particularly high in 2016 and 2017, but dropped 30% in 2018, which was then overcompensated by doubled weight of landings. However, in 2019 prices dropped by 26% and landings by even 60% with some recovery in 2020 (prices +22%, weight +12%). Prices for herring dropped 20% in 2019 and remained unchanged in 2020, while prices for cod (-15%), mackerel (-18%) and saithe (-2%) decreased. The total landings in weight increased by about 30% in 2020 compared to 2019. Fuel prices showed a decreasing trend in 2020. Fuel is an important operational cost and therefore an important driver for profitability.



**Figure 3.3 Trends on effort and landings for MS fleets operating in the NSEA**

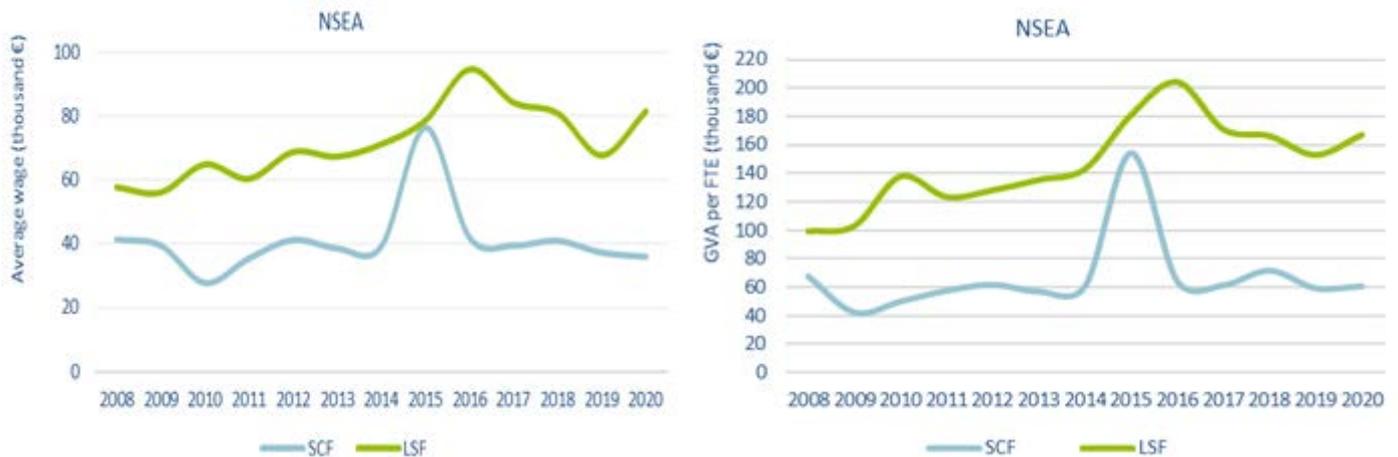
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Employment, wages and labour productivity

Over the past years, employment measured in terms of FTE showed a rather stable trend between 2010 and 2018 with an estimated 3 580 FTE for 2019. In 2020 the FTE remained stable compared to 2019. The main contributors to the employment are the Netherlands (38%), Denmark (24%) and Sweden (12%).

Wages per FTE increased by 17% in the LSF from 2019 to 2020. There was a trend between 2008 and 2020 where the wages per FTE increased by 42% (Figure 3.4). In 2020, the average wage in the LSF was estimated at EUR 81 555. In the SSCF there was an overall decreasing trend (13%) between 2008 and 2020. Between 2018 and 2019 the average wage per FTE for the SSCF decreased by 3.5%, being EUR 35 937.

The productivity (GVA/FTE) of the LSF increased considerably between 2010 and 2016 (+60%). This coincided with a slight decrease in employment. In 2017, 2018 and 2019 labour productivity dropped for three years in a row but then increased again in 2020. For the SSCF, labour productivity showed a huge peak in 2015, dropping back to average levels in 2016, increased towards 2018 and has fluctuated around the same value in 2019 and 2020.



**Figure 3.4 Trends on average wage per FTE and GVA per FTE by fishing activity for MS fleets operating in the NSEA**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Economic performance

The revenue generated by the NSEA fleet in 2020 was estimated at about EUR 987 million, a decrease by 1.1% compared to 2019 (excluding the United Kingdom from now on).

GVA produced by the fleets covered in the analysis was estimated at about EUR 538 million, representing an overall increase of about 5% compared to 2019. The fleets made about EUR 258 million in gross profit, an estimated 15% increase compared to 2019 (Figure 3.5).



**Figure 3.5 Trends on revenue and profits for MS fleets operating in the NSEA**

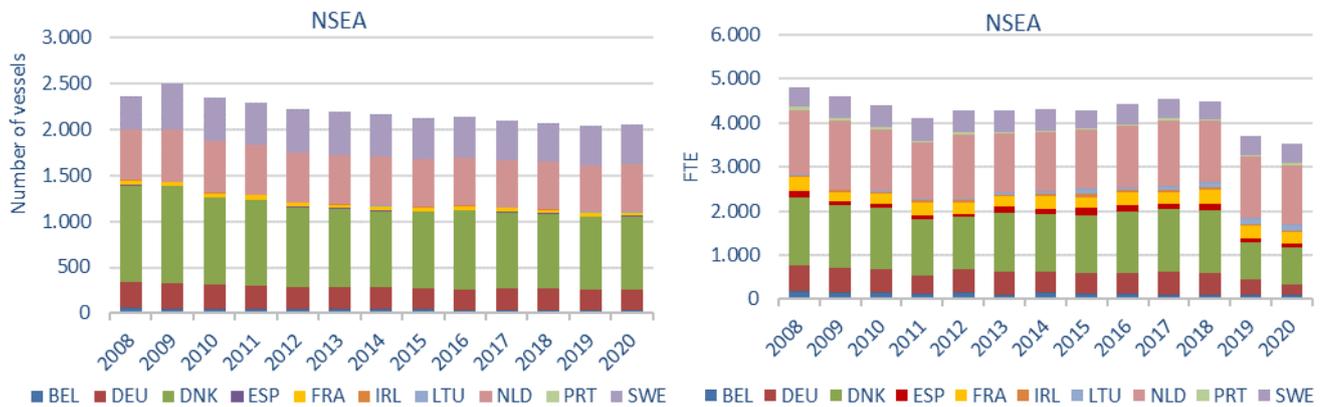
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Trends by Member State fleet

### Fleet capacity and employment

EU fleets operating in NSEA in 2020 numbered 2 048 vessels, a slight increase of about 0.2% from 2019. The Danish NSEA fleet comprised the largest in number (803 active vessels), accounting for 39% of the total reported for the region and 53% of their national fleet (Figure 3.6)

Overall, the number of vessels operating in the region has followed a decreasing trend between 2010 and 2020 but may be stabilising in the last couple of years. The employment, measured in terms of FTE, showed a rather stable trend between 2010 and 2018, but a sharp decline (-18%) in 2019 (Figure 3.6). This decline continues in 2020 with a further 5% decrease. In terms of employment, the SSCF generated 831, mostly part time jobs (249 FTE) while the LSF generated 3 738 jobs (3 139 FTE).



**Figure 3.6 Trends on number of vessels and employment (in FTE) for MS fleets operating in the NSEA**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022))

## Fishing effort

Effort followed the fleet capacity development, with a stable phase between 2011 and 2017 and considerable decrease since 2017 mainly attributed to the Dutch, Danish and German fleet. Fuel consumption decreased significantly from 2010 to 2011, continuing on a steady decreasing trend until 2014 (Figure 3.7). Since then, fuel consumption has slightly increased until 2017 and remained almost unchanged until 2019, with a sharp increase now shown for 2020.

Around 20% of the days-at-sea (DaS) were undertaken by SSCF. Danish and Swedish small scale vessels accounted for 40% and 37% of this effort, respectively. LSF accounted for most of the remaining 79.5% of the DaS. Denmark (33%), the Netherlands (32%), Germany (18%) and Sweden (11%) were the most active nations with respect to DaS of the LSF.



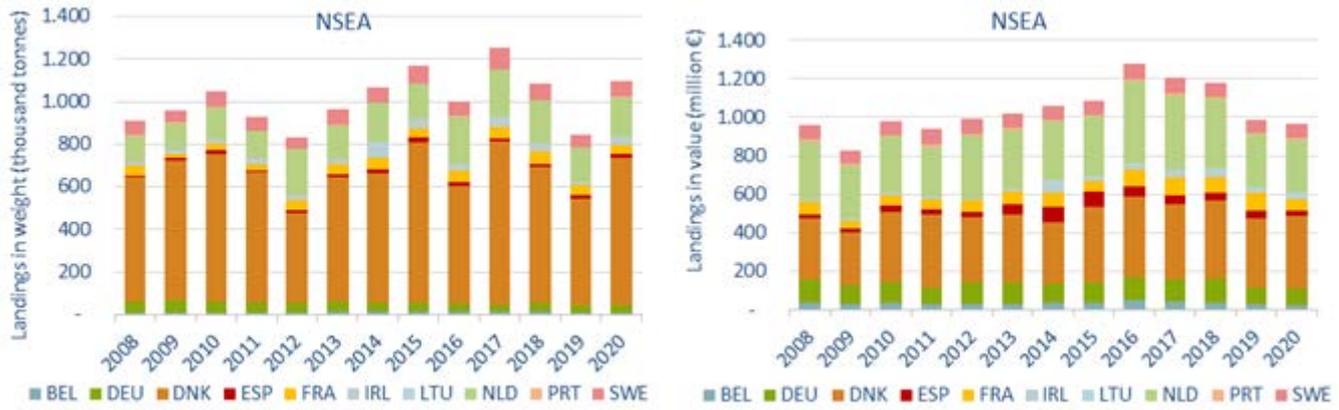
**Figure 3.7 Trends on fishing effort (in days-at-sea) and fuel consumption for MS fleets operating in the NSEA**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)).

## Landings and top species

In 2020, the weight and value of landings generated by the EU-27 fleet amounted to approximately 1 billion tonnes and EUR 987 million, respectively. Landings in weight increased sharply by about 23% compared to 2019, comparable to the landed weight in 2018, however the value of the landings decreased by almost 2%.

Landings in weight decreased sharply between 2010 and 2012, mainly due to lower catches made by the Danish fleet. It increased steadily from 2013 onwards, again due to the contribution of the Danish fleet, dipping again in 2016. Landings in 2017 were rather high, but then decreased in 2018 and again in 2019. In 2020 landing in weight increased again, and similar to previous events, because of an increased landings in weight by the Danish fleet. Landings in value remained rather stable over the period 2010 to 2013, increasing in 2014, 2015 and even more in 2016 (Figure 3.8). Despite lower landings in terms of weight, there was a strong increase in value in 2016. Since 2017 the value of landings has decreased, particularly sharp in 2019. The decrease of landings in value continues in 2020 but to a much smaller extent.

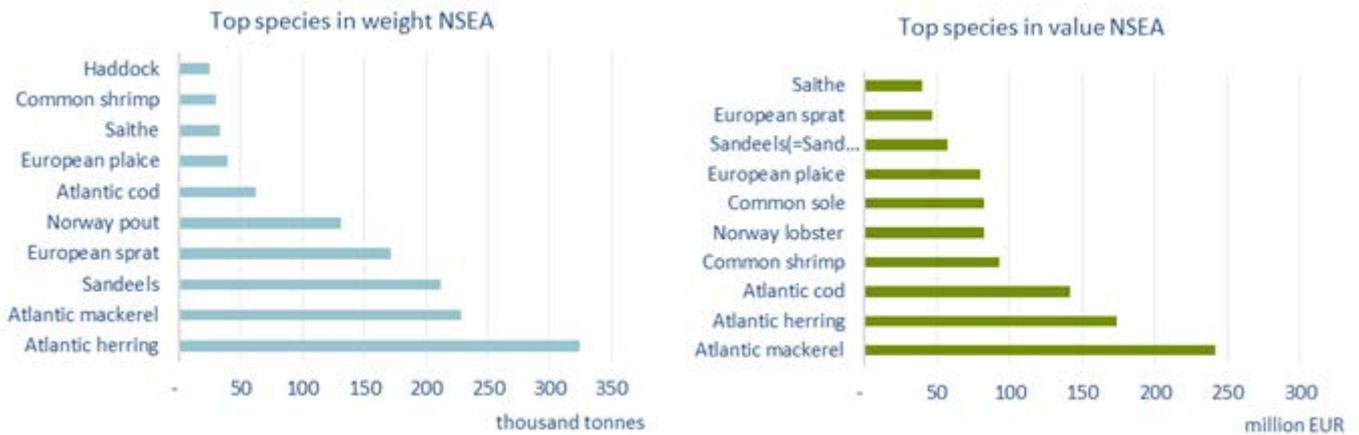


**Figure 3.8 Trends on landings in weight and value for MS fleets operating in the NSEA**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2022).

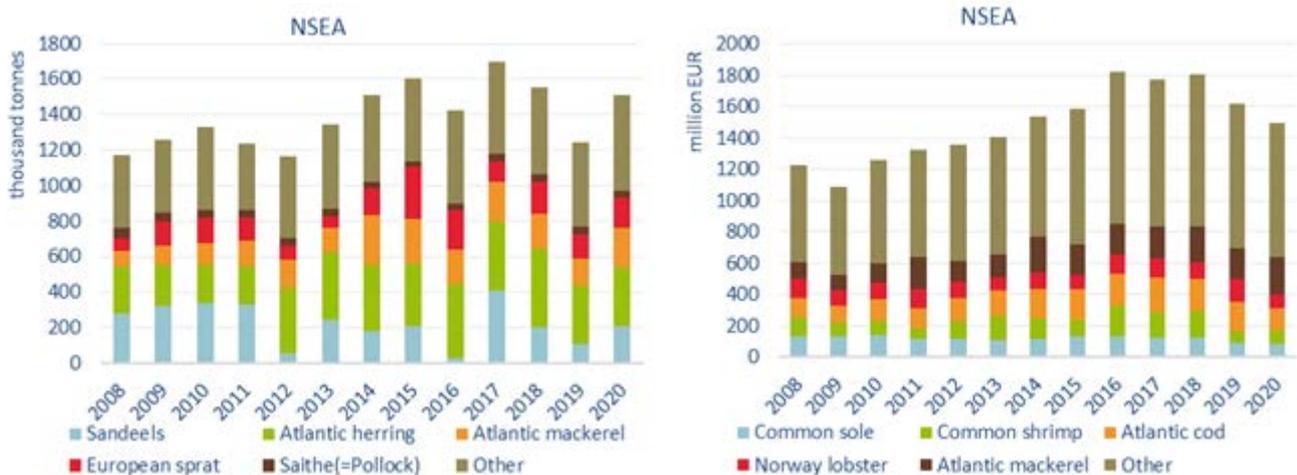
In 2020 Atlantic herring (324 000 tonnes, -1%) and Atlantic mackerel (228 000 tonnes; +33%) were the most important species in terms of weight. Landings of Sandeel (212 000 tonnes; +48%), European sprat (171 000 tonnes; +20%) and Norway pout (131 000 tonnes; +71%) were the next most important species in terms of weight (Figures 3.9 and 3.10).

In terms of value, the most important species in 2020 were: Atlantic mackerel (EUR 242 million), Atlantic herring (EUR 174 million), Atlantic cod (EUR 141 million), followed by common shrimp (EUR 93 million), Norway lobster (EUR 83 million), common sole (EUR 83 million), and European plaice (EUR 80 million) (Figures 3.9 and 3.10). Especially, the decrease in landed value of Norway lobster (-71%), European plaice (37%) and Atlantic cod (-36%) were noteworthy in 2020.



**Figure 3.9 Top 10 species in landed weight and value from the NSEA, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.10 Trends on landings for the top species in landed weight and value for MS fleets operating in the NSEA**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

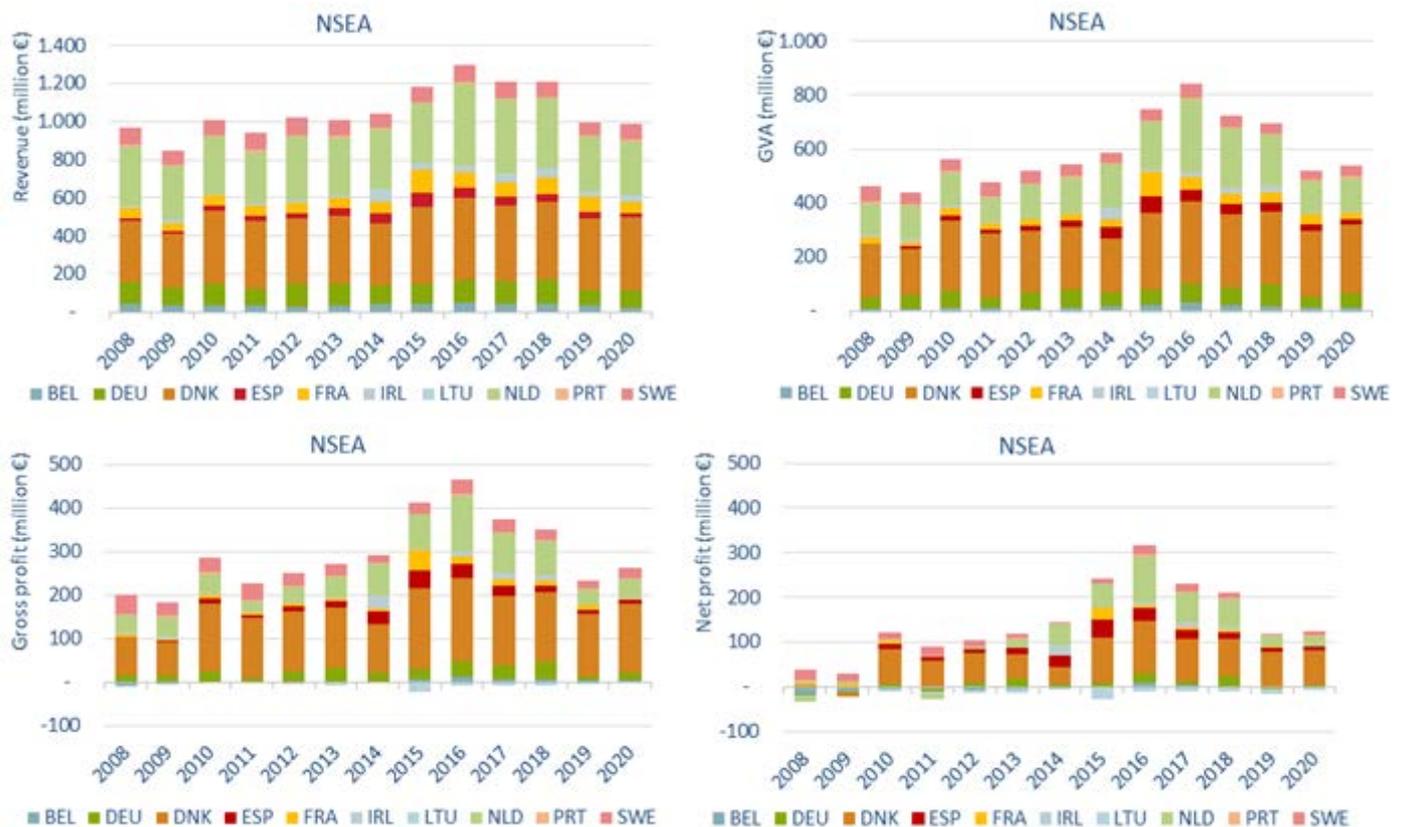
## Economic performance

The revenue generated by the EU-27 NSEA fleet in 2020 was estimated at EUR 987 million, 39% of which was provided by Denmark (EUR 377 million), 29% by the Netherlands (EUR 283 million), and 9% by Germany (EUR 89 million) (Figure 3.11).

Although total revenue remained stable between 2019 and 2020 some differences between countries can be noticed when comparing 2019 to 2020. Countries that had a noticeable decrease in revenue were Spain (EUR 9.5 million; -41%), France (EUR 23 million; -38%) and Belgium (EUR 7 million; -28%), while countries with a noticeable increase in revenue were Portugal (EUR 4.7 million; +43%), Ireland (EUR 3.3 million; +30%) and Lithuania (EUR 3.8 million; +15%).

GVA produced by the fleet covered in the analysis was estimated at about EUR 538 million in 2020. This represented an overall increase of 5% compared to the GVA generated in 2019. The fleets made EUR 258 million in gross profit, a 13% increase compared to 2019 (Figure 3.11).

By fishing activity, the SSCF generated EUR 26 million in revenue, a 16% increase relative to 2019, while the LSF generated EUR 935 million in revenue, a decrease of 1.6% from 2019.



**Figure 3.11 Trends on revenue and profit (GVA, gross profit and net profit) for MS fleets operating in the NSEA**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Main factors affecting the performance of the fleet

The overall changes have been mostly driven by the LSF, whereas the trends for the SSCF in the NSEA are less clear.

Factors that may have contributed to the overall situation include:

- TAC of North-East Atlantic mackerel (+41%) and blue whiting (+2%) were increased, North Sea herring quota remained unchanged.
- Slight increase in both landings and prices for common shrimp.
- More vertical integration is being observed leading to shifts in ownership.
- Decreasing fuel prices added no further burden on the sector.
- Decrease of TAC of important stocks, e.g. North Sea cod (-47%), saithe (-35%) plaice (-3%).

Factors that may hamper economic performance in the future include:

- The implementation of the ban on the pulse fishing technique (mid 2021) results in increasing fuel costs and decreasing net profits.
- Quota adjustments as consequence of the Brexit becoming effective 2021 will have a substantial negative impact on fishing performance in the region.
- In the context of Brexit negotiations with Norway were procrastinated and might lead to unfavourable development of EU TAC shares.

### Regulation and Fisheries management in the region

- The management plans in force in 2020 (including proposals for 2021) that impacted on the North Sea/Eastern Arctic included:
  - Conservation of fisheries resources and the protection of marine ecosystems through technical measures. These technical measures are partly related to fishing gear. One of the technical measures that has a strong impact in particular for the Dutch (and to lesser extend Belgium and German) fleet, is the pulse ban. Fishing with electric pulse trawl shall be prohibited in all Union waters as of 1 July 2021 (Regulation EU 2019/1241). The use of electric pulse trawl remained possible during a transitional period until the mentioned date of 30 June 2021 and under certain strict conditions. During the transitional period ending 30 June 2021, fishing with electric pulse trawl in ICES divisions 4b and 4c shall continue to be allowed under the conditions set out in this and any conditions defined in accordance with point (b) of Article 24(1) of this Regulation.
  - Long-term plan for cod stocks and the fisheries exploiting those stocks (Council Regulation (EC) No 1342/2008). The effort controls of the cod recovery zone were repealed in November 2016 by EU Parliament and Council Regulation No 2016/2094. This is a long term plan and as it was already implemented in 2016, it will not have a significant direct impact on 2020 results.
  - A multiannual plan for demersal stocks (e.g. cod, haddock, sole, plaice, saithe etc.) in the North Sea and the fisheries (Regulation EU 2018/973) exploiting those stocks, specifying details of the implementation of the landing obligation in the North Sea and repealing Council Regulations (EC) No 676/2007 and (EC) No 1342/2008.
  - A multiannual plan for certain demersal stocks fished in the Western Waters and adjacent waters (Regulation 2019/472 of the European Parliament and of the Council)
  - Fishing opportunities available in EU waters and, to EU vessels, in certain non- EU waters (Council Regulation (EU) No 40/2013 of Jan 21, 2013), including European Union and Norway bilateral fisheries arrangements.
  - Other management measures that may affect economic performance of the fleets operating in the North Sea include marine protected areas, spatial management issues like wind farms and other national legislation. In particular, the extension of wind farm areas will have a strong effect on fishing opportunities. This process has been accelerated due to recent political developments. Wind farm areas are in general closed for fishing and thus further limit the areas left for fishing. Moreover, the installation and operation of wind farms will have an impact on the marine fauna.

### Status of important stocks

At the overall level, the majority of the stocks in the NSEA are having a fishing pressure below  $F_{MSY}$  (ICES 2021). Atlantic herring, European plaice, haddock, saithe, hake and Norway lobster in the North Sea are all managed at biomass levels compatible with producing the MSY. However, not all Norway lobster stocks have an MSY analytical target. According to ICES advice, the plaice stock's spawning stock biomass continues to develop favourably under the current management plan (ICES 2021).

Despite the implementation of the cod management plan since 2003, the fishing mortality of North Sea cod is still above  $F_{MSY}$ . The recovery did not occur as quickly as expected by the ICES assessment group in 2017 (ICES 2017). Therefore, cod in the North Sea and Eastern English Channel remains a point of concern. In July 2017 North Sea cod was certified as sustainable (MSC 2017), but the certificates were suspended in 2019 as a result of the declining SSB.

Another economically important species is brown shrimp (*Crangon crangon*). This species is currently not under a TAC regime. However, there have been initiatives from the fishing industry to move towards implementing harvest control rules and in 2016 measures were taken to regulate the weekly

fishing effort. This was one of the requirements to qualify for a sustainability certificate. The fishery was certified in 2017. In 2018, the landings were at a very high level, as not seen in decades before, but in 2019, it decreased sharply and recovered only marginally in 2020.

### TAC development of main species

Figure 3.12 shows the EU TACs for 2008 to 2022 for some pelagic and demersal species. It should be noted that in some cases the TAC areas are not limited to the NSEA and include adjacent waters. Figures for herring, cod, common sole and Norway lobster comprise more than one stock. It has to be pointed out that up to 2020 figures include the United Kingdom quota, hence numbers from 2021 onwards are by default lower as United Kingdom shares are no longer contained. Without pointing out particular stocks, it is evident that EU quotas in the region have decreased considerably in recent years, especially for the demersal sector.

Mackerel quota was increased in 2020 but shows a strong decrease since then. Herring quota dropped in 2021 but was increased for 2022. Cod and saithe quota show a constantly decreasing trend. Norway lobster, sole and haddock show a stable or slightly increasing trend in recent years.

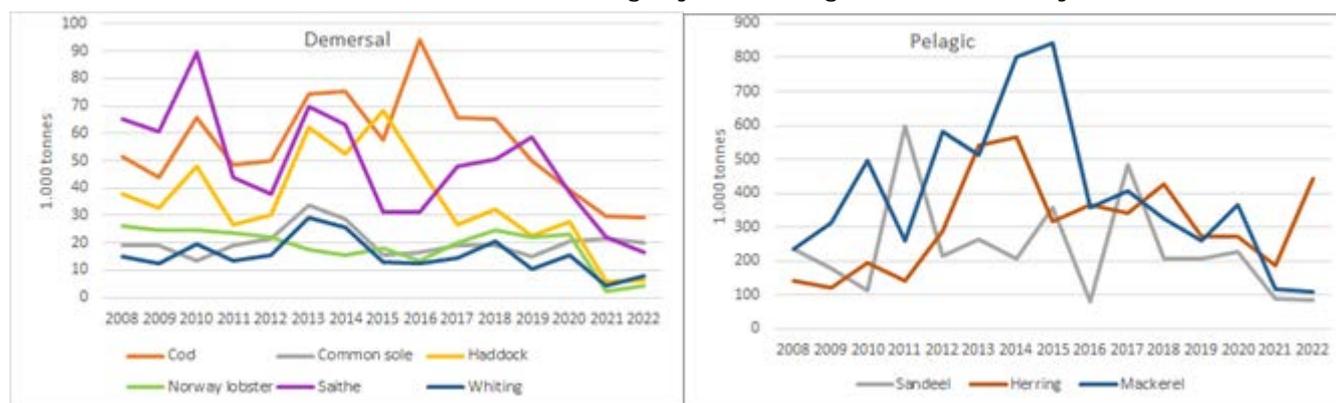


Figure 3.12 TACs pre-uplift for demersal species (left) and major pelagic species (right)

Source: Calculated based on TAC Council Regulations

### Landing obligation

In 2020 an economic impact by the implemented LO was hard to observe due to several exemptions of the discard ban for certain species in the North Sea. In the North Sea discard plan a number of exemptions from the LO were granted for the duration of the Delegated Regulation but required Member States having a direct management interest to submit additional scientific information supporting the exemption in order for STECF to assess the provided scientific information.

According to Ullrich (2018), no incidents of choke species have been reported for the North Sea demersal fisheries. Highest risk for the incidence of choke species was seen with Northern hake in trawl fisheries and North Sea plaice in small-meshed beam trawl fisheries. According to the 2021 ICES mixed fisheries considerations (ICES 2021), cod might become a choke species for several fleets in 2022.

### Description of relevant fisheries in the region

The most important LSF segments were the Danish pelagic trawlers over 40 metres based on revenue (EUR 126 million), followed by the Dutch beam trawlers 24-40m (EUR 101 million) and the Danish demersal trawlers over 40m (EUR 75 million). The most important fleets in terms of GVA were again the Danish pelagic trawlers over 40m and Dutch beam trawlers 24-40m.

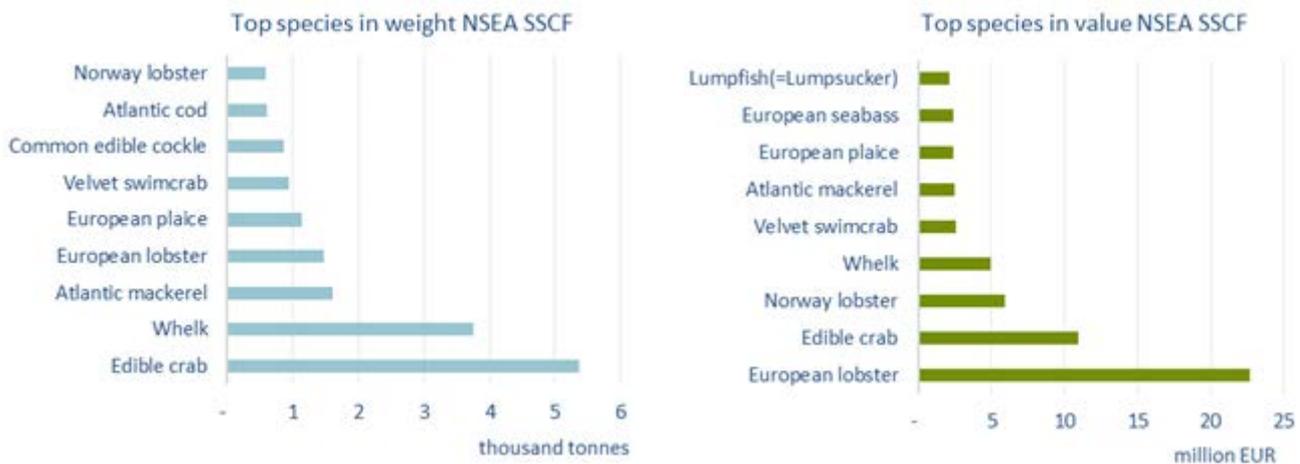
### Small-scale coastal fleet

SSCF from five Member States operated in NSEA in 2020. Of these, the Danish fleet, consisting of 487 vessels and employing 86 FTEs, generated the highest revenue (EUR 13 million), but also the highest negative net profit (-EUR 1.4 million). In the NSEA region, Danish SSCF contributed by 23.8% of total active vessels, 2.4% of FTE and 1.3% of revenues. The Swedish SSCF, with 264 vessels generated revenue of EUR 8.7 million and a net profit of EUR 1.1 million.

Overall, the SSCF segment was profitable in 2020, posting a EUR 72 505 net profit, although a strong decrease by 58% from 2019. Indeed, from all SSCF in the NSEA region, the Danish and French fleets generated net losses.

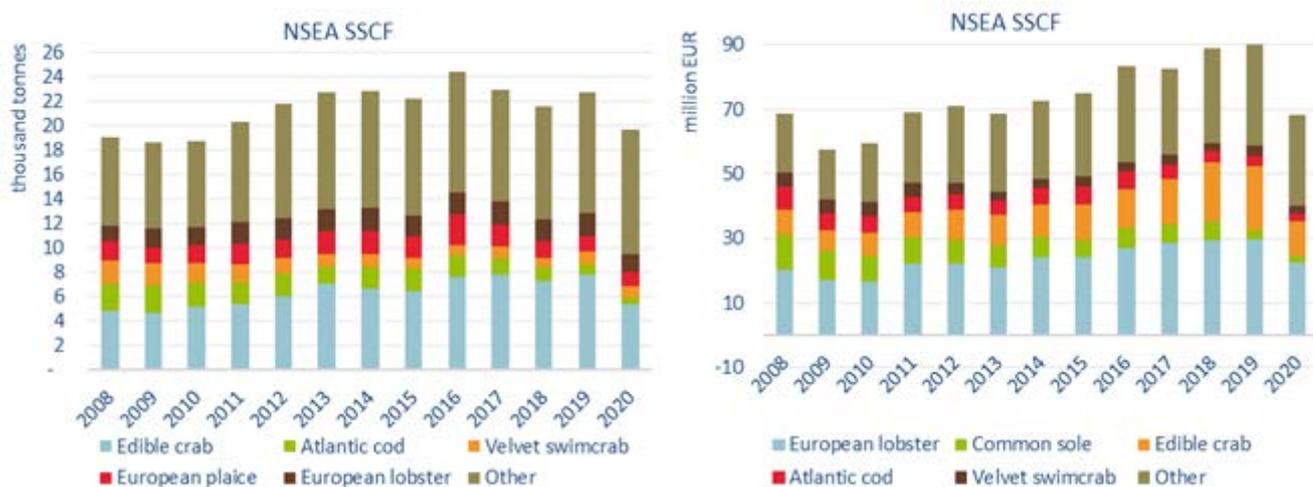
The most profitable in terms of gross and net profit was the Swedish fleet with EUR 2.5 million and EUR 1.1 million, respectively. All Member States fleets in the NSEA demonstrated a lower FTE in comparison with total employed indicating that a large majority of those employed in the SSCF are part-time or casual workers. SSCF fisheries contributed to 7% of total FTE in the region.

Landings were valued at EUR 24 million in 2020. The most important species for SSCF in 2020 were edible crab, whelk and Atlantic mackerel in weight. In value the top species were again European lobster, edible crab and Norway lobster (Figure 3.13).



**Figure 3.13 Top 10 species landed in weight and value by MS SSCF operating in the NSEA, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.14 Trends in landings of the top species landed in weight and value by MS SSCF operating in the NSEA**

Data source: MS data submissions under the 2021 Fleet Economic data call (MARE/A3/AC(2021)); All monetary values have been adjusted for inflation; constant prices (2015).

## Large-scale fishery

There were 10 Member States LSF operating in the NSEA totalling 1 087 vessels. The Netherlands, Denmark, Germany and Sweden had the largest number of active vessels contributing 94% of the total active vessels in the region.

The Danish and Dutch LSF, consisting of 316 and 328 vessels, respectively, generated the highest revenue (EUR 369 million and EUR 280 million, respectively), followed by the German LSF (EUR 89 million).

Overall, the LSF was profitable in 2020, generating EUR 524 million in GVA and EUR 258 million in gross profit. Compared to 2019, GVA and gross profit increased by 12.4% and 21%, respectively. The most profitable fleets in terms of gross and net profit were the Danish fleets with EUR 158 million and EUR 79 million, and the Netherlands fleets with EUR 39 million and EUR 23 million, respectively.

Total employment for the LSF was highest for the Netherlands and Denmark totalling 1 381 and 906, respectively. While the SSCF demonstrates a difference between the total number employed and total FTE for all Member States, the LSF figures for total employed and FTE are closer in value, indicating the high level of full time employment in this segment.

Landings were valued at EUR 925 million in 2020. Danish LSF contributed to 38% of landings value in the region. In term of weight, the most important species for the LSF in the region in 2020 were Atlantic herring, Atlantic mackerel and sandeels, whereas the top species in value were Atlantic mackerel, Atlantic herring and Atlantic cod.

Three Lithuanian vessels are engaged in demersal fisheries in the Eastern Arctic. As these are in a cluster with the long distance fleet, these vessels are displayed under "LDF". As for all fleets covering more than one region the figures on employment, cost and economic performance are estimated based upon disaggregation procedures. As the segment is very small, the data must be interpreted with particular caution. Lithuanian catches are not included in Figures 3.15 and 3.16 but as these are small the main species would not, in any case, be amongst the top 10 species.



Figure 3.15 Top 10 species landed in weight and value by MS LSF operating in the NSEA, 2020

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

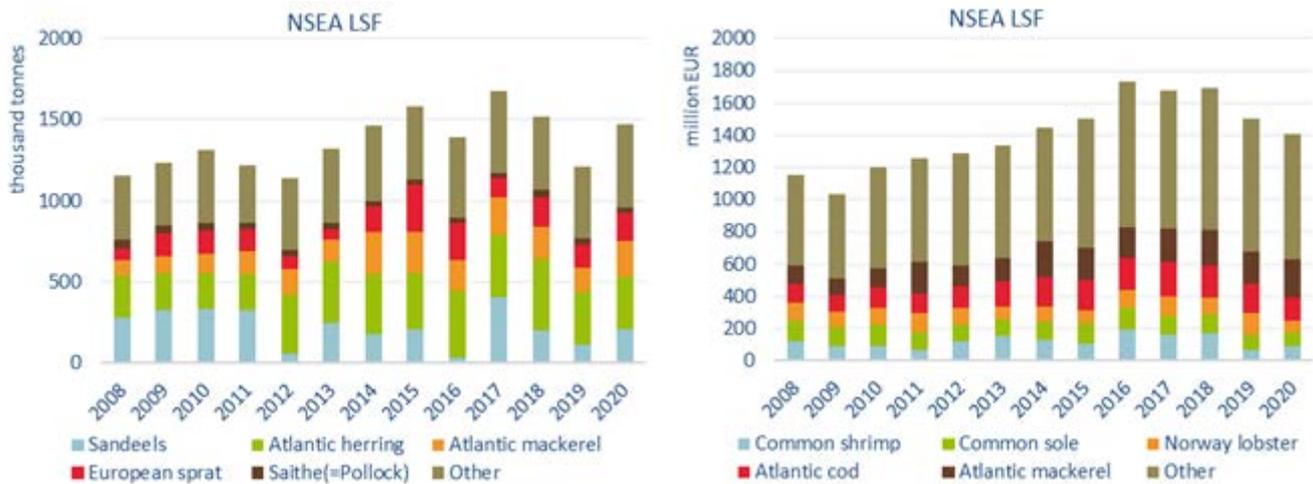


Figure 3.16 Trends in landings of the top species landed in weight and value by MS LSF operating in the NSEA

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Pelagic fishery

The pelagic fishery operates both in the North Sea, the Eastern Arctic as well as in the North East Atlantic. Member States involved are, in order of importance, Denmark, The Netherlands, Sweden, Germany, France, and Ireland. A distinction can be made between industrial and non-industrial fisheries. In general, a large share of the Danish and Swedish landed volume consists of sandeel, European sprat, and some volume of Atlantic herring. Sandeel and sprat are used for industrial purposes (e.g. fishmeal and fish oil), whereas Atlantic mackerel, Atlantic herring and horse mackerel are important species for human consumption.

The Danish pelagic fishery in the North Sea mainly targets Atlantic herring, sandeel, sprat and Atlantic mackerel. In Denmark, all these species are under an ITQ regime. The fishery is executed mainly by large pelagic trawlers, but also by vessels from the demersal segment, which switch gears seasonally.

The Dutch pelagic fleet in the NSEA consists of large trawlers (from 60 to over 100 metres). These vessels mainly target Atlantic herring, mackerel, and, to a lesser extent, horse mackerel and blue

whiting. There is no fishery directed for industrial purposes. All these species are under an ITQ regime and overall managed by the international organisation called Pelagic Freezer-trawler Association (PFA).

The German pelagic fishery is performed by large freezer trawlers and medium sized trawlers targeting Atlantic herring and Atlantic mackerel. Pelagic trawlers of about 30 metres perform a seasonal fishery on sandeel.

For Sweden, major amounts of herring and sandeel are also fished and are more important in terms of value of landings than any other species caught by this fishery. Most of these vessels are in an ITQ system and land their catches mostly in Denmark.

For the small amount of Irish pelagic fisheries in the area the most important species is Atlantic mackerel followed by Herring.

### Demersal roundfish and *Nephrops* (Norway lobster) fishery

Important target species are cod, *Nephrops*, haddock, saithe and hake. Haddock and hake were fished close to or below  $F_{MSY}$ , cod fisheries were still above  $F_{MSY}$  in 2020, while saithe was above  $F_{MSY}$  only in 2020. The cod recovery plan in the North Sea had not yet fulfilled assessment experts' expectations on improvement of the stock status over the past years.

The Danish demersal roundfish fishery targets cod, haddock and saithe. A broad range of vessel segments are involved in that fishery. Moreover, the Danish fleet is the largest fleet according to the value of landings in the *Nephrops* fishery in the North Sea, and also in relation to the cod fishery.

The French fleet also participates in the cod and saithe fishery in the ICES Division 4a.

The main species for German demersal trawlers in the North Sea is saithe in the ICES Division 4a, involving vessels between 30 and 41 metres in length. These vessels also catch some cod and minor amounts of haddock. The fish is landed in Denmark or Germany and is destined for the fresh market, but also for processing. While the *Nephrops* fishery has gained importance for some vessels it remains of minor importance overall.

The Dutch demersal roundfish fishery targets cod and *Nephrops*, but this fishery is of minor importance in the total national context. Turbot and plaice are bycatch and therefore contribute to the overall revenues. The vessels are medium sized with a length of in general less than 30 metres. The species are all landed fresh and exported to markets in France, Italy and Spain.

While Swedish demersal vessels catch large amounts of *Nephrops*, cod, saithe and haddock, overall, these fisheries are of minor importance with respect to the total catch of these species.

The Spanish fleet was mainly active in the Eastern Arctic with a TAC for Atlantic cod (EU and Norway waters 27.1, 27.2b).

Belgium has a very small demersal fishery targeting primarily Norway lobster and European Plaice. Ireland also has some minor catches of *Nephrops* in the area but it is minimal.

Lithuanian and Polish vessels perform fisheries targeting Northern prawn.

### Flatfish fishery (plaice and sole)

The main Member States that took part in the flatfish fishery in 2020 were the Netherlands, Denmark, Belgium, Germany and France. Important target species were common sole and European plaice, and at a lower level, brill and turbot. Sole was fished above  $F_{MSY}$  in 2020, but with decreasing trend, the recruitment in 2019 was estimated to be the highest since the start of the time series in 1957. Overall, the performance of most flatfish beam trawl fleets was positive in 2020. However, since 2016 there is a decreasing trend in terms of landed weight and value and therefore a lower economic performance.

The Netherlands exert by far the most activity in the flatfish fishery, carried out mainly by large beam trawlers in the southern North Sea (ICES Division 4c), using the pulse technique. In 2018 almost all EU permitted 'pulse fisheries exemptions' were used in Dutch fleets, resulting in considerable fuel savings (minus 40-50% compared to conventional beam trawling). Common sole is very important due to high prices. As a result, this fishery is profitable. Since June 2019 this fishing technique was forbidden with a transition period for the exemptions until July of 2021.

Although the plaice stock biomass is at very high levels, the fishing industry did not profit very much from it, as the quota was not fully exploited. The catchability of this species has dropped. It is thought that stocks have moved from their original fishing grounds to grounds further in the North, and that the population has spread further.

The Danish fleet targets flatfish mainly using otter trawls in ICES Division 3a and area 4. The ratio of sole catches to plaice catches is rather low (~4%) compared to other Member States. Plaice is a target species in some fisheries, but constitutes a bycatch in the cod and *Nephrops* fisheries.

Flatfish is a major species for Belgian beam trawlers in the southern North Sea. Opposed to the Dutch pulse gear, the Belgian beam trawlers use the more traditional beam trawl gear, although they have made a number of technical adjustments in order to reduce fuel consumption. In the Belgian beam trawl fleet there were new built vessels ordered in 2019 for the future, and were indeed in the process of being built in 2020. Most of these vessels were aimed to save fuel consumption and energy costs.

French vessels target plaice and sole in the Channel area (ICES Division 7d). Sole catches are considerably higher than plaice catches.

The German flatfish fishery is operated by a small number of (mostly Dutch owned) beam trawlers. These vessels fish in a similar manner as the Dutch fleet.

## Brown Shrimp Fishery

The main Member States that took part on the shrimp fishery in 2020 were the Netherlands, Germany, Denmark, and Belgium. The fishery is carried out by smaller beam trawlers (mainly below 24 metres). Considerable catches are being made in coastal areas of the southern North Sea. Overall, the performance of the participating fleets decreased considerably in 2019 as catches dropped 45% and even prices decreased by about 24%. In 2020, prices went up 22% and catches 12%, but total revenues were still far below previous years. Dutch and German catches account for about 95% of the total weight. In 2020, the Dutch fleet caught about 54% of the total brown shrimp catch (in landed value). The Danish and the Belgian fleets also contribute to this total while for the French fleet only negligible amounts are reported. Some German vessels operate under Dutch ownership. Some Dutch vessels switch between flatfish and shrimp fishery.

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### 3.2 Baltic Sea

#### Regional Details

The Baltic Sea covers ICES areas 27.3b,c and d and is bounded by the Swedish part of the Scandinavian Peninsula, mainland Europe and the Danish islands. The central part of the Baltic Sea is bordered on its northern edge by the Gulf of Bothnia, in the northeast by the Gulf of Finland, and in the east by the Gulf of Riga. For simplicity, hereafter the EU vessels operating in the aforementioned ICES areas are referred to as the EU Baltic Sea fleet or fisheries. Tables in the Annex 2 contain a summary of the economic performance of the Baltic Sea fleet by Member States, fishing activity and fleet segment, respectively.

Eight Member States were involved in Baltic Sea fisheries in 2020: Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden (Figure 3.18). Most of the Member States bordering the Baltic Sea are highly dependent on the region, where the main species targeted include herring, sprat and cod.

In terms of landings, and based on the EU-MAP data available, the Estonian, Finnish, Latvian and Polish fisheries are fully dependent on the Baltic Sea region. However, it should be noted that Estonian, Latvian and Polish vessels operating in the high seas (DWFs) are not included in the analysis due to insufficient data or for reasons of confidentiality. On the other hand, the Lithuanian low dependency rate is due to the DWF operating in other areas. Most German, Danish and Swedish vessels operate in both the Baltic and North Sea fishing regions.

In 2020, the Swedish fleet was the most important fleet in terms of landed value (EUR 41 million), while the Polish fleet was the most important fleet in terms of landed weight (130 394 tonnes) (Figure 3.17).

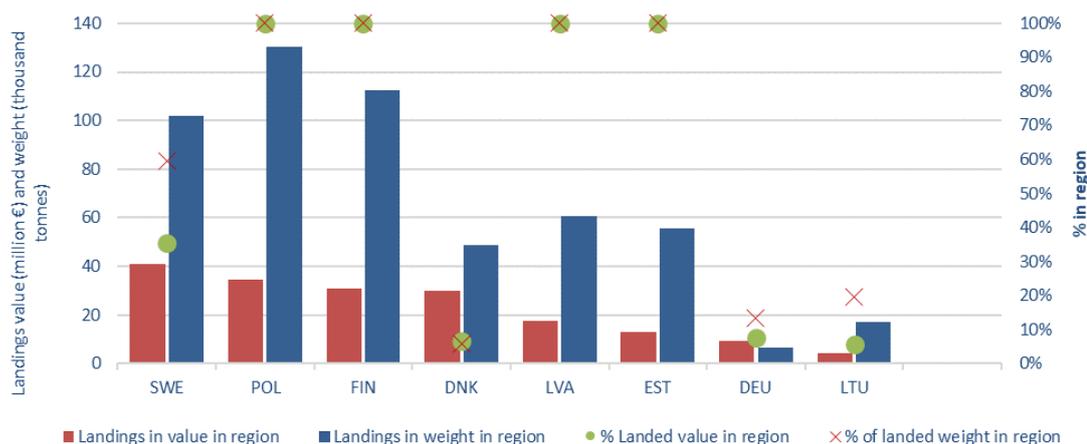


Figure 3.17 Importance of the Baltic Sea region for MS fleets in terms of landings in weight and value, 2020

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

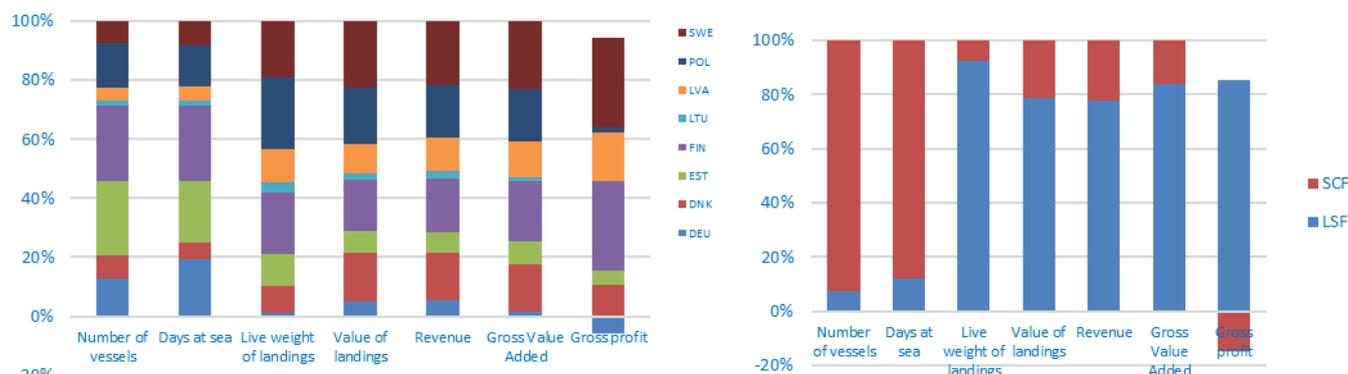


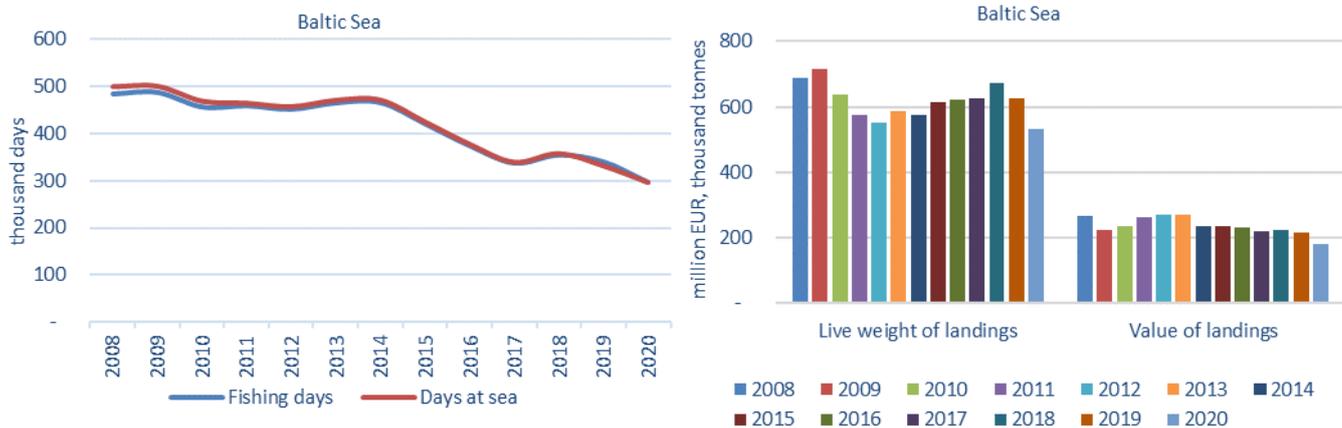
Figure 3.18 Share by MS and fishing activity fleets operating in the Baltic Sea, 2020

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Overview of the main results for EU Baltic Sea fleet

### Fishing effort and landings

The EU Baltic Sea fleets spent 297 029 days-at-sea in 2020 (10.5% less than in 2019). Generally, the effort variables show a decreasing trend compared to 2008. The weight and value of landings was approximately 533 734 tonnes and EUR 181 million. Landings (by weight) from the Baltic declined between 2009 and 2012, followed by a slight increase in 2013 and further increase after 2014. However, from 2019 to 2020 the weight of landings decreased with 14.4%. Conversely, landings by value increased steadily from 2009 to 2013, decreased significantly in 2014 (due to slump in the price for small pelagic species) and had still not entirely recovered in 2020 following a reduction from 2019 to 2020 with 15.4% (Figure 3.19).



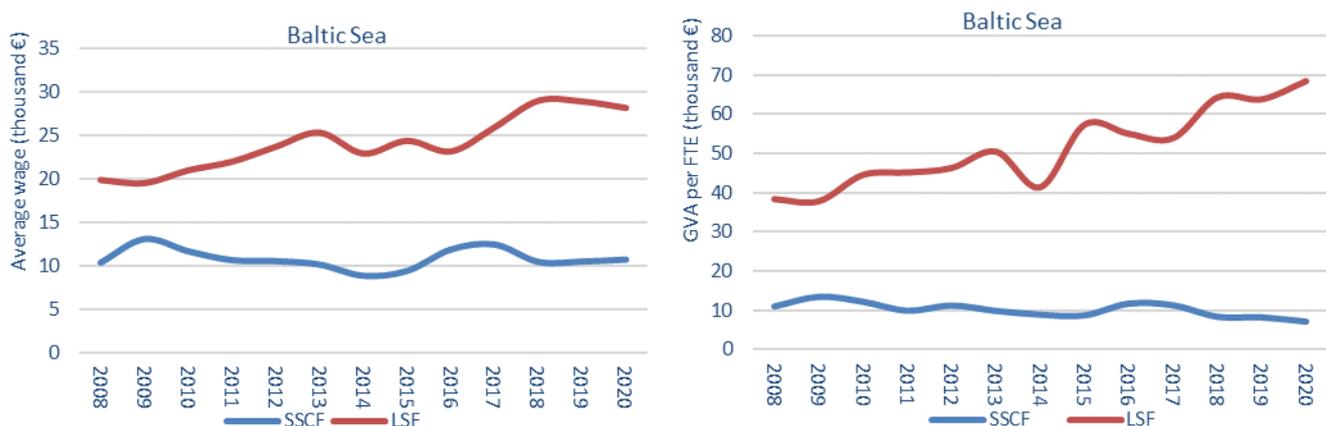
**Figure 3.19 Trends on effort and landings for MS fleets operating in the Baltic Sea region**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Employment, wages and labour productivity

For the SSCF, the overall average wage per FTE increased by 2.2% in 2020 compared to 2019, thus being EUR 10 757 in 2020 (Figure 3.44). Average wages per FTE in the LSF decreased by 2.6% between 2019 and 2020 and was EUR 28 174 in 2020.

The overall labour productivity (GVA/FTE) for the SSCF decreased 13.6% in 2020 compared to 2019, being EUR 7 063 in 2020. The overall labour productivity (GVA/FTE) for the LSF increased 7.3% to a level of EUR 68 579 (Figure 3.20).



**Figure 3.20 Trends on average wage and GVA per FTE by fishing activity for MS fleets operating in the Baltic Sea**

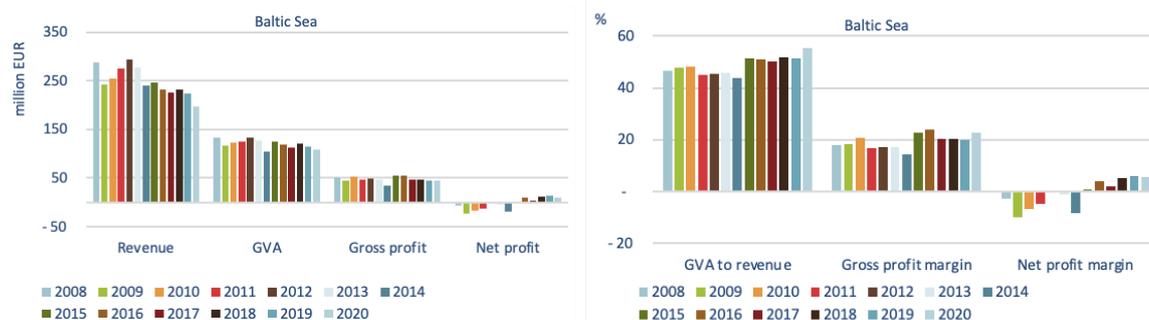
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Economic performance

The revenue generated by the EU Baltic Sea fleet in 2020 was estimated at almost EUR 196.9 million, a decrease of 11.9% compared to 2019.

GVA produced was over EUR 109.2 million and compared to 2019, decreased by 4.7%. The fleets operating in the region made almost EUR 44.7 million in gross profit, an estimated 0.5% decline from

the previous year profits record (EUR 44.9 million). Net profit also decreased by 20.5% compared to 2019 (Figure 3.21).



**Figure 3.21 Trends on revenue and profits for MS fleets operating in the Baltic Sea**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Trends by Member State fleet

### Fleet capacity and employment

Member State fleets operating in the Baltic Sea collectively numbered around 5 232 active vessels in 2020. The Finnish fleet was the largest with 1 336 active vessels, some 26% of the total. The number of vessels decreased steadily between 2008 and 2011, mainly a result of capacity reductions in the Latvian and Polish fleets but rose again with the entry of Finnish and Estonian vessels in 2013 and 2014. Compared to 2019 the total number of vessels operating in Baltic Sea increased by 1.5% (Figure 3.22).

In 2020 total fleet capacity decreased by 4.8% corresponding to 57 651 GT with the largest share made up of Polish (15 239 GT) and Finnish (12 251 GT) vessels. The largest decline of GT during 2019-2020 was observed in Danish and Swedish fleet, each by around 18%. Compared to 2008, capacity in GT decreased by 37.4%. Since 2008 capacity reductions resulted mainly from decommissioning programmes implemented in Latvia (after EU accession) and the introduction of an ITQ system in the Swedish pelagic fisheries in 2009 as well as introduction of entry restrictions to the Swedish eel fishery.

Total employment in the region amounted only to 3 830 FTE in 2020. The dominance of SSCF fisheries in the region indicates predominantly part-time nature of employment mostly represented by Estonian and Finnish fleets with average 0.24 and 0.32 FTE per person employed, respectively. Employment, measured in terms of FTE, showed a decreasing trend over the period, apart from a small increase in 2012. Overall, FTE decreased by 5.8% in 2020 and reached the lowest level since 2008. From 2008 The largest reductions in the employment were observed in Danish, German and Swedish fleets, where number of FTE in 2020 decreased by 57%, 55% and 41%, respectively, compared to 2008-2019 average. However, in 2020 the number of FTE in Finland increased by 55% compared to 2019 and 34% compared to the 2008-2019 average.



**Figure 3.22 Trends on the number of vessels and employment in FTE for MS fleets operating in the Baltic Sea**

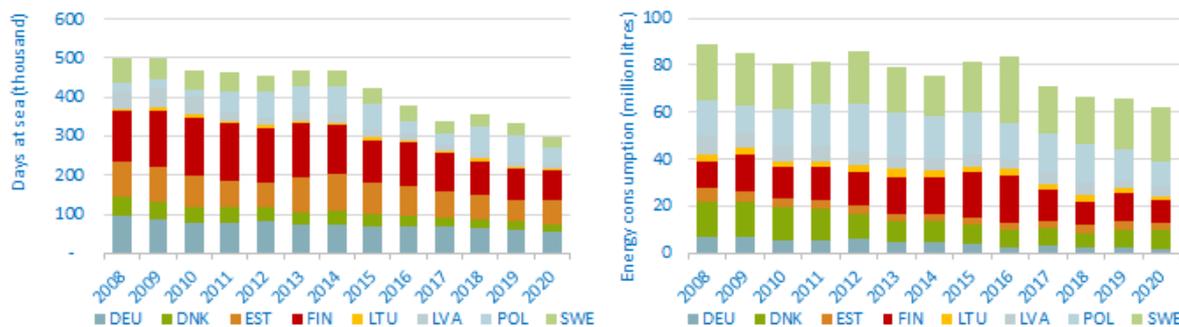
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022))

### Fishing effort

The EU Baltic Sea fleets spent 297 029 DaS in 2020, a 10.5% decrease compared to 2019 and reached the lowest level since 2008 (Figure 3.23). In 2020 the decline in fishing effort was under conditions of COVID-19 lockdown. The biggest decline of fishing effort was observed in Polish and Lithuanian fleets,

corresponding to 38.4% and 15% respectively. Vessels from Finland and Estonia had the highest effort, accounting for 46% of total DaS in the region because of the small-scale fleet dominance in these Member States. Total number of DaS per vessel was 12% lower compared to 2019 and 22% less than 2008-2019 average. The largest number of DaS per vessel was observed in German, Lithuanian and Latvian fleets.

Despite the decline in number of DaS in 2020, the CPUE in terms of weight of landings per DaS remained at relatively high level. Compared to 2019, CPUE decreased by 4.5% but was 21% higher than the 2008-2019 average. In 2020 the largest CPUE was observed in Swedish, Latvian and Lithuanian fleets.



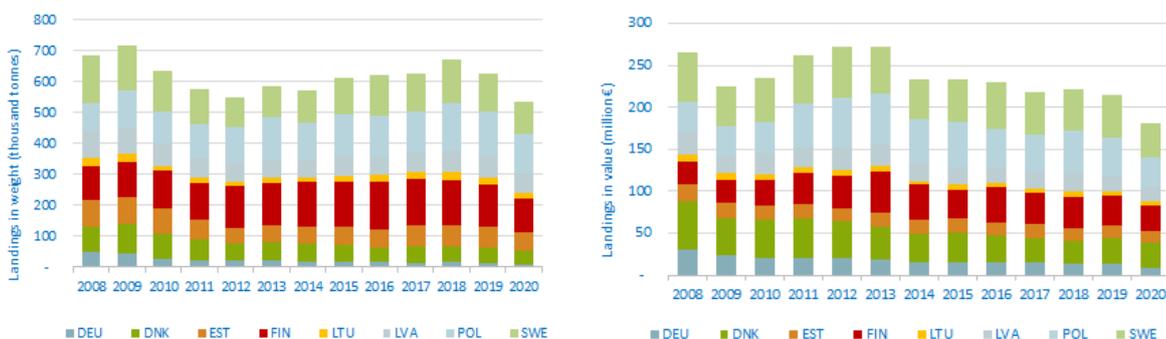
**Figure 3.23 Trends on effort (in days-at-sea) and energy consumption for MS fleets operating in the Baltic Sea**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022))

In 2020 Baltic Sea fleet consumed 61.9 million litres of marine fuel and compared to 2019 it decreased by 5.6%. Fuel consumed per landed weight of seafood, in 2020, was 11% lower than 2008-2019 average indicating better energy efficiency of current Baltic Sea fleet.

## Landings and top species

The weight and value of landings was 533 733 tonnes and EUR 180.6 million in 2020 with 14.6% and 15.5% decline in comparison to 2019 respectively. In terms of landed weight, Poland (130 394 tonnes), Finland (112 346 tonnes) and Sweden (101 731 tonnes) were the leading Member States. Sweden (EUR 40.8 million), Poland (EUR 34.7 million), Finland (EUR 31.0 million) and Denmark (EUR 30 million) collectively accounted for around 76% of the total value of landings in 2020.

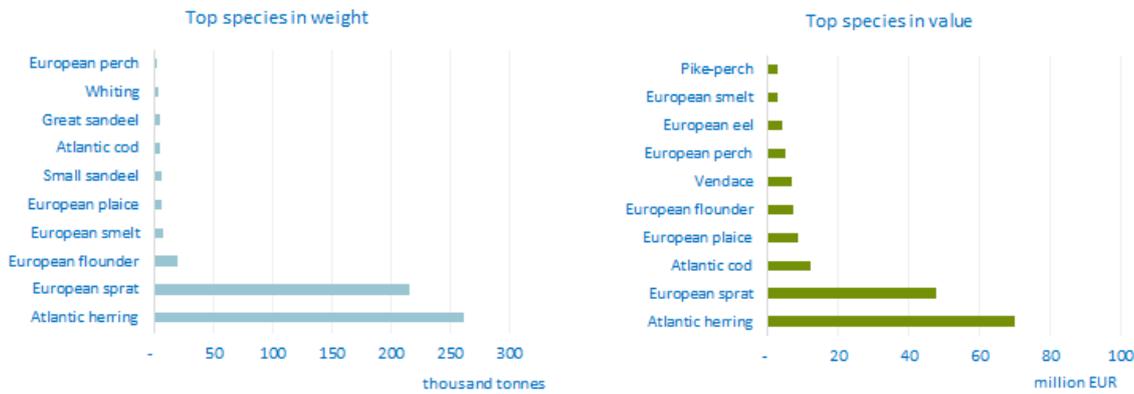


**Figure 3.24 Trends on landings in weight and value for MS fleets operating in the Baltic Sea**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

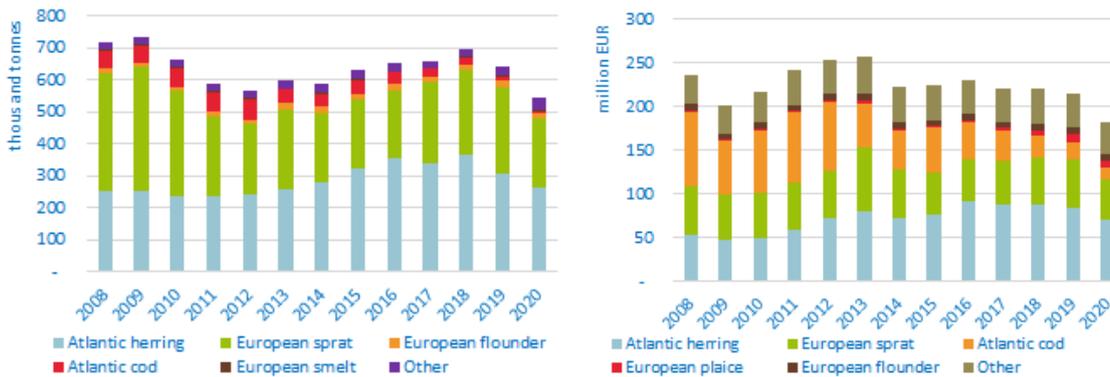
In 2020, the most important species (by weight of landings) were herring (261 231 tonnes, 49% of the landed weight), sprat (215 516 tonnes) and flounder (19 611 tonnes) (Figure 3.43).

Herring generated the highest value (EUR 69.9 million), representing 39% of the landed value, followed by sprat (EUR 47.5 million, 26% of the landed value) and cod (EUR 12.1 million, 7% of the landed value) (Figure 3.25).



**Figure 3.25 Top 10 species in landed weight and value by MS fleets operating in the Baltic Sea, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.26 Trends on landings of the top six species in landed value for MS fleets operating in the Baltic Sea**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Sprat landings, by weight and value, decreased by 20% and 12% respectively in 2020 compared to 2019. The total landed weight and value of Baltic herring declined by 14% and 18% respectively. Cod landings dropped by 60% in weight and 40% in value in 2020 compared to 2019 (Figure 3.26).

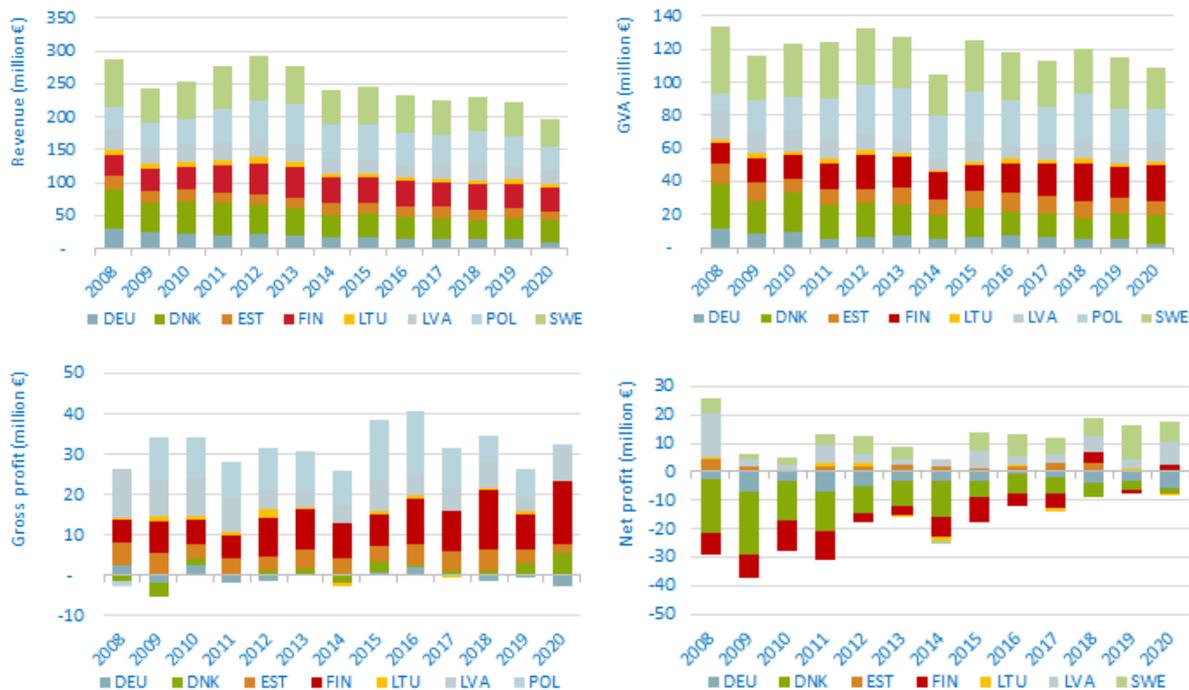
## Economic performance

The Baltic fleet was profitable in 2020, generating EUR 44.7 million gross profit and EUR 10.6 million net profit. Compared to 2019 gross and net profit decreased by 0.5% and 20.5%, respectively. Regardless the overall net profitability in 2020, Denmark, Estonia, Germany and Lithuania experienced net losses in the region (Figure 3.27).

The revenue generated in 2020 was EUR 197 million with a decrease of 12% from 2019. Four Member States accounted for 74% of all revenues: Sweden (EUR 42.6 million), Poland (EUR 35.3 million), Finland (EUR 35.7 million) and Denmark (EUR 32.0 million).

The GVA generated by the Baltic fleet in 2020 was EUR 109 million and compared to 2019 it decreased by 4.7%. The largest GVA per vessel was in Sweden and Latvia corresponding to EUR 65 100 and EUR 57 200, respectively.

In 2020 the gross profit margin of the region increased by 13% compared to 2019 and was 19% higher compared to 2008-2019 average. The increase in profitability was largely impacted by the considerable decline in fuel costs, which had the lowest share in cost structure since 2008. In 2020 the largest gross profit margins in the Baltic region were observed in Finland (43%), Latvia (38%) and Sweden (36%).



**Figure 3.27 Trends on revenue and profits for MS fleets operating in the Baltic Sea region**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Main factors affecting the performance of the fleet

The major factors that may have negatively influenced economic performance:

- Based on ICES advice the stock decrease implemented in 2020 for herring which is a main target species for the Baltic region (45% decline in TAC for subdivisions 25-32 from 2020 to 2021) and the forecasted stock decrease in 2021 is likely to have a considerably negative effect on the Baltic Sea fleet profitability and could cause further reductions of the fishing fleet capacity in all countries operating in the Baltic region.
- Due to the critical condition of cod stocks in the Eastern and Western part of the Baltic Sea, the commercial cod fishing was significantly reduced in 2019 and direct fisheries on cod were not permitted in 2020-2023, except for small-scale fisheries on the western cod stock. The cod catches are allowed only as an unavoidable by-catch to the other species. The cod limits for such cases are critically low and, in a situation, where the cod limit is exceeded, all fishing should be stopped. In some countries, that can threaten the biggest part of the fleet and the negatively affect fishery sector in the country. ICES expects that the cod stock most probably will remain in a dire condition in the middle-term.
- Due to the implemented restrictions and recommendations concerning COVID-19 control, availability of the workforce and in some cases decreased fishing effort had a negative impact on the fleet performance in the region.
- Some management measures are planned for the LSF vessels targeting cod and operating with DTS, DFN, HOK fishing gears as well as coastal fishing vessels operating with gears PGP or PG. Temporary seasonal bans on fishing are planned for these vessels, change of fishing gear or re-arranging from cod fishery to other species (such as flounder and round goby) are recommended by the local rules or legislation.
- Fishing performance, especially in the SSCF, is very weather dependent. Even with favourable economic conditions, it can be a limiting factor for fleet performance, especially for seasonal fisheries.

The major factors that may have contributed to the positive situation:

- Based on ICES advice in 2022, the stock for the sprat, which is a commercially important species, is exploited at levels capable of producing the MSY and harvested sustainably. The same applies to the Baltic herring stock in the Gulf of Riga.
- Compensations from the EMFF funds have been provided to the owners of the fishing vessels for the temporary cessation of fishing activities due to the protection of cod stock. Such compensations could provide significant support to the fishing companies in the short-term.

- The EMFF has also provided measures to improve profitability including increased added value (for the SSCF) and utilisation of by-catch arising from the landing obligation (for the LSF). Measures are already applicable in some Member States fishing in the Baltic region.
- From 2017 onwards, the average price of cod recovered.
- Policy management instruments, specifically quota allocation (introduced in some countries), may have significantly helped to improve the economic performance of certain fleets.
- While aging vessels, obsolete equipment and insufficient investment all lead to increased maintenance costs and reduce the profitability of the fleet, the EMFF does provide the possibility of engine replacement if the fishing capacity is proven to be in balance with exploitation. Some Member States have already introduced such schemes.
- Energy costs is one of the main expenditure items for the LSF, especially for trawlers. A decrease in fuel price was observed in 2020 which substantially decreased operational costs of vessels and facilitated fleet profitability.

## Regulation and fisheries management in the region

To incorporate the ecosystem approach in the fisheries management a multiannual management plan for the Baltic Sea fisheries has been developed. According to the plan objectives (Regulation (EU) 2016/1139)<sup>9</sup>, it shall apply the precautionary approach to fisheries management, and shall aim to ensure that exploitation of living marine biological resources restores and maintains populations of harvested species above levels which can produce MSY. The additional aims are elimination of discards by avoiding and reducing, as far as possible, unwanted catches and implement the ecosystem-based approach to fisheries management to ensure that negative impacts of fishing activities on the marine ecosystem are minimised.

The LO has been in force since 1 January 2015 for pelagic and demersal fisheries in the Baltic Sea. The new established Regulation (EU) 2018/306<sup>10</sup> aims to progressively eliminate discards for Baltic Sea cod and place fisheries through the introduction of a landing obligation, as regards cod and plaice caught in the fisheries for herring, sprat and cod in the Baltic Sea.

A ban on driftnet fisheries was introduced after a three-year transitional period in 2008. Technical measures were implemented in 2019 for the Baltic Sea region in the frame of the conservation of fisheries resources and the protection of marine ecosystems. The activities include prohibition to retain on board or land any quantity of marine organisms unless at least 85% of the live weight thereof consists of molluscs and/or *Furcellaria lumbricalis*; to have on board or deploy any driftnet; to use bottom-set gillnets, entangling nets and trammel nets for some species. For the optimisation of exploitation patterns and to provide protection for juveniles and spawning aggregations of marine biological resources Regulation (EU) 2019/1241<sup>11</sup> on the conservation of fisheries resources and the protection of marine ecosystems through technical measures was established. Some of the objectives are to minimise an incidental catch of sensitive marine species and the negative environmental impacts of fishing on marine habitats.

The European eel recovery plan (Regulation (EU) 1100/2007) also affects several Baltic states. Within this plan, Member States are required to allow 40% of adult eels to escape from inland waters to the sea where they can spawn. EU regulations also include technical conservation measures, including mesh size, minimum landing size, by-catch limitations as well as periods and areas closed to fishing.

A salmon management plan was proposed by the EU Commission in August 2011 (COM (2011) 470 final). This established fishing mortality rate-based harvest control rule with each Member States' setting annual fishing limits in rivers at the appropriate MSY level. It also sets targets for salmon management in rivers: 75% of smolt (juvenile salmon) production to be reached in 5 to 10 years, depending on the status of the rivers. However, the EU Council and the European Parliament have not yet reached an agreement on the Commission's proposal.

The work also is underway on protected areas determination in the Baltic Sea with the aim to protect valuable marine and coastal habitats. Involvement of fishers in fisheries management in protected areas could ensure sustainability of marine resources in the long term.

<sup>9</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32016R1139>.

<sup>10</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018R0306>.

<sup>11</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019R1241>.

The Baltic Sea coastal and inland fisheries are mainly regulated by each Member State in the region through their national legislation. While coastal fisheries are managed nationally, fisheries advice is provided by the ICES and the STECF. The key species in Baltic Sea are cod, herring, sprat, salmon, and plaice and these fisheries are all managed using TACs.

### TAC development of main species

TACs and quotas are set annually for five commercially important fish stocks: Atlantic cod, Atlantic herring, European sprat, Atlantic salmon and plaice. Each year, ICES provides separate advice for two stocks of cod, four stocks of herring and one stock of sprat.

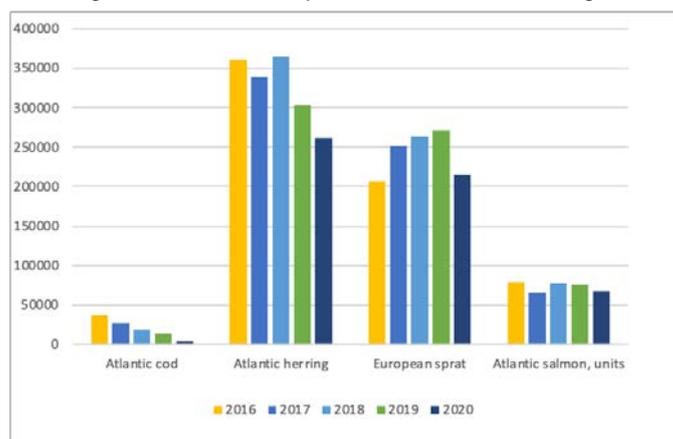
Figure 3.28 provides the development of TACs for the main species in the Baltic Sea. TACs are defined based on the status of stock, assessed by ICES, and the cod management plan.

On one hand the exploitation of the available TACs by Member State, provided in the Table 3.2 suggests that in several cases, e.g., Finland and Latvia, the available sprat quota could be a limiting factor (choke species) in the mixed pelagic fishery. On the other hand, available cod fishing opportunities were not fully utilised by most Member States in the Baltic Sea from 2016 to 2020.

The TAC proposal based on ICES advice includes the following fishing possibilities reduction for 2022:

- Western Baltic herring by -50%.
- Eastern Baltic cod unchanged.
- Western Baltic cod by -88%.
- Bothnia herring by -5
- Central herring by -36%.

Increases of TAC are planned for salmon in the Gulf of Finland by 6% herring in the Gulf of Riga by 21% and salmon in main basin by 6%. TAC for sprat was increased by 13% and for plaice by 25%.



**Figure 3.28 Reported catches for the four most important TACs species in the Baltic Sea region, 2016-2020**

Data source: EU Catch reporting system (FIDES3)

### Status of important stocks

Based on ICES advice in 2022, sprat stock was at MSY level and harvested sustainably. However, the TAC for sprat is not going to increase due to the mixed fishery with herring which the TAC decreased significantly.

The western Baltic herring stock biomass in Skagerrak and Kattegat continued to be below MSY. ICES provided a scientific advice of no catches. Also, the central Baltic herring stock is below levels capable of producing MSY, while the stock at the Gulf of Riga was at MSY level and harvested sustainably. The Bothnian Sea herring stock was assessed to be at MSY level in 2021 but the latest assessment was not accepted, and the status of the stock was undefined. ICES advises that when the EU multiannual plan (MAP) for the Baltic Sea is applied, catches in 2022 that correspond to the fishing mortality ranges in the plan are between 52 443 tonnes and 87 581 tonnes. According to the MAP, catches higher than 71 939 tonnes can only be taken under conditions specified in the plan, whilst the entire range is considered precautionary when applying ICES advice rule.

Cod stocks in Baltic Sea are at the lowest historical level and a targeted fishery will not be allowed in the medium term.

There is a multiannual plan for the stocks of cod, herring and sprat in the Baltic Sea and the fisheries exploiting those stocks (Regulation (EU) 2016/1139). The objective of this plan is to adapt the

exploitation rates of cod, herring and sprat in the Baltic Sea so as to ensure that the exploitation of those stocks restores and maintains them above levels that can produce MSY.

**Table 3.1 TAC use for some of the most important stocks in the Baltic Sea region, 2016-2020**

		Germany	Denmark	Estonia	Finland	Lithuania	Latvia	Poland	Sweden
Atlantic cod	2016	55%	74%	0%	9%	55%	63%	72%	48%
	2017	52%	78%	0%	28%	70%	77%	60%	56%
	2018	71%	52%	0%	9%	42%	53%	56%	33%
	2019	55%	43%	1%	17%	8%	20%	42%	20%
	2020	88%	71%	8%	24%	22%	58%	34%	30%
Atlantic herring	2016	98%	89%	86%	82%	75%	97%	79%	89%
	2017	90%	87%	90%	77%	62%	100%	79%	71%
	2018	95%	90%	87%	86%	96%	99%	85%	91%
	2019	92%	92%	94%	91%	94%	99%	83%	92%
	2020	93%	86%	87%	95%	102%	100%	88%	92%
European sprat	2016	99%	96%	93%	100%	95%	100%	98%	99%
	2017	99%	90%	90%	100%	98%	98%	92%	98%
	2018	91%	90%	95%	100%	99%	100%	98%	91%
	2019	98%	90%	97%	95%	99%	99%	97%	90%
	2020	96%	93%	95%	97%	104%	100%	95%	94%
Atlantic salmon	2016	85%	44%	47%	76%	6%	16%	48%	108%
	2017	46%	13%	50%	74%	3%	18%	48%	83%
	2018	60%	32%	43%	81%	69%	77%	52%	90%
	2019	58%	44%	48%	91%	93%	26%	58%	88%
	2020	24%	16%	50%	85%	38%	27%	78%	86%
European plaice	2016	91%	52%		0%			36%	46%
	2017	87%	30%		0%			42%	6%
	2018	90%	44%					100%	25%
	2019	90%	43%					59%	9%
	2020	90%	50%					41%	5%

Data source: EU Catch reporting system (FIDES3)

## Description of relevant fisheries in the region

### Small-scale coastal fleet

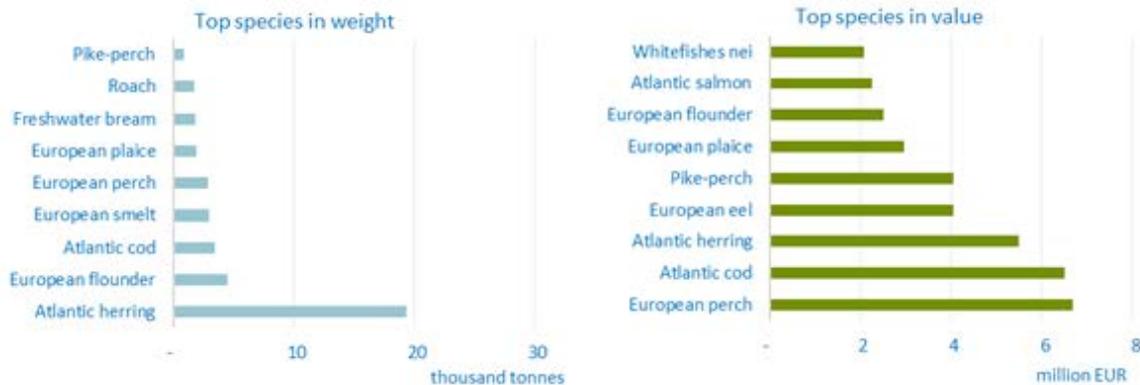
Socio-economic aspects determinate the importance of the Baltic SSCF. In 2020 as much as 92% of the total number of Baltic Sea vessels belonged to the fleet. The total number of people employed on boards of the small-scale boats amounted to 5 400 fishers (-2% compared to 2019) or 2 500 FTE (-4% compared to 2019) in 2020 SSCF contributed to 77% (or 65% in FTE) of the total employment in the Baltic Sea.

The fleet accounts for 8% of weight and 21% of the landed value. Revenue generated by the SSCF in 2020 was EUR 44.1 million, 13% less compared to 2019.

In 2020, the SSCF generated GVA EUR 17.6 million (EUR 21.3 million in 2019). The decrease (-17%) can be mainly attributed to lower value of landings. The profitability of the SSCF deteriorated again, from net losses of EUR 6.1 million in 2019 to net losses of EUR 19.4 million in 2020. The fleet received EUR 27.2 million operating subsidies in 2020 (EUR 12.9 million in 2019), so the subsidised net profit was positive EUR 7.8 million (negative in 2019 EUR 3.2 million).

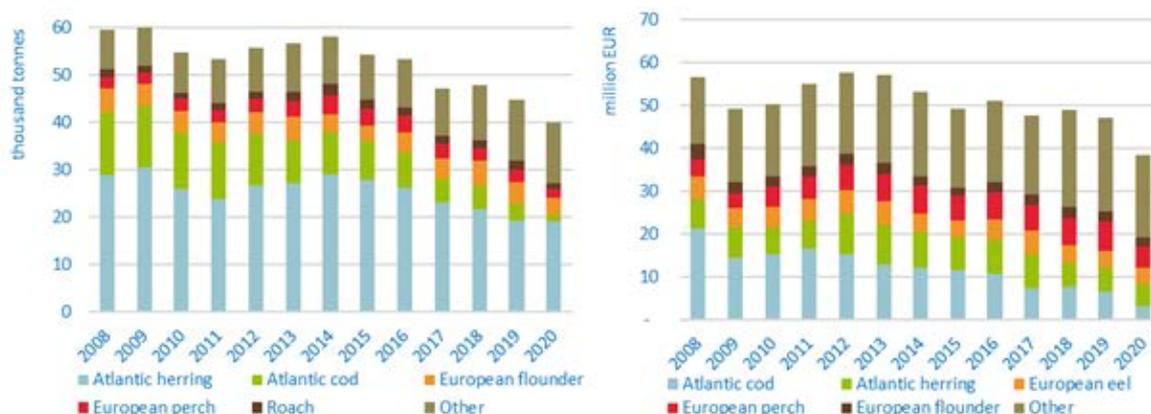
Atlantic herring followed by European perch and European eel are the three most important species in terms of landings value. The species composition of SSCF landings has changed across the past 10 years disfavoured Atlantic cod as a the most important one from the revenues point of view. That has been a result of the deteriorated stock status of cod, mainly the Eastern Baltic one. Moreover in 2020 the Commission decided to continue the imposed in 2019 (July 22) closure of cod fisheries in ICES subdivision 24,25 and 26 of the Baltic Sea, with some derogation (possibility to fish in shallow waters) given to vessels less than 12 metres LOA.

The contribution of Atlantic cod in total revenues of SSCF has decreased from 37% in 2008 to 14% in 2019 and dropped again to 8% in 2020. However, the share of the European perch in the total revenues has raised from 7% to 13% between 2008 and 2020.



**Figure 3.29 Top 10 species landed in weight and value by the SSCF operating in the Baltic Sea, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.30 Trends in landings of the top species landed in weight and value by the SSCF operating in the Baltic Sea**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Deteriorated Baltic cod stocks condition has affected the most Swedish coastal fisheries. Between 2008 and 2020 landings value of Swedish SSCF decreased by 67%, followed by Denmark (-49%) and Germany (-52%). On the other side there are countries where revenues of SSCF increased, like Estonia (61%) Latvia (89%) and Finland (30%). The share of Estonian SSCF value of landings in the total value of the Baltic SSCF increased in the period from 6% to 15%, Latvian from 1% to 4% and Finnish from 13% to 25%.

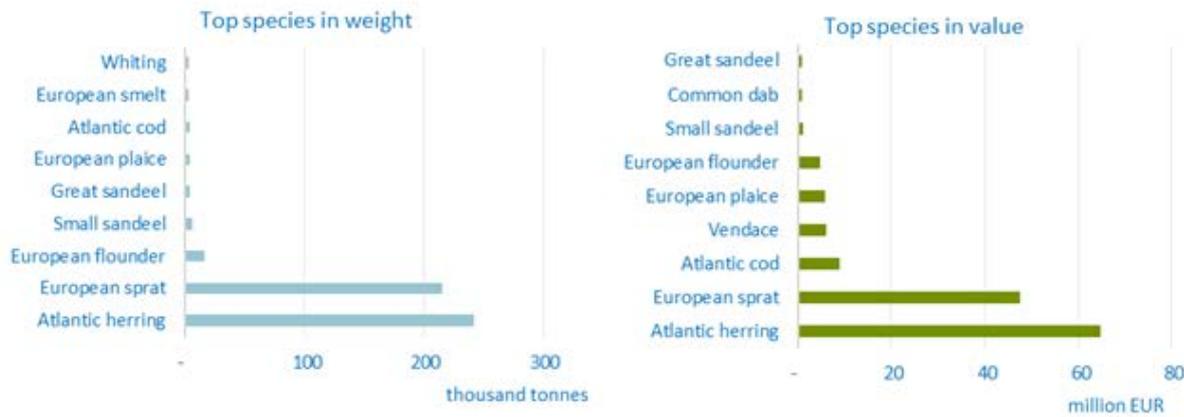
In 2020 Finland and Latvia were the only Member States which generated positive gross profits EUR 4.8 million and EUR 1.4 million, respectively. Denmark (-EUR 2.9 million), Sweden (-EUR 3.2 million), Germany (-EUR 2.0 million), Poland (-EUR 6.8 million), Estonia (-EUR 0.4 million) and Lithuania (-EUR 0.1 million) reported negative gross profits. After taking account of estimated capital costs net profits of all national SSCF fleets (except for Latvia) were negative (up to -EUR 6.4 million for Poland). Subsidised net profits of Polish, Latvian, Lithuanian, and Finnish fleets were positive and amounted EUR 17.8 million, EUR 1.3 million, EUR 0.3 million and EUR 0.16 million, respectively.

The negative output was mainly caused by relatively high capital costs as well as high labour costs in the Swedish, Estonian, Polish and Danish fleet (mostly in unpaid labour).

## Large-scale fleet

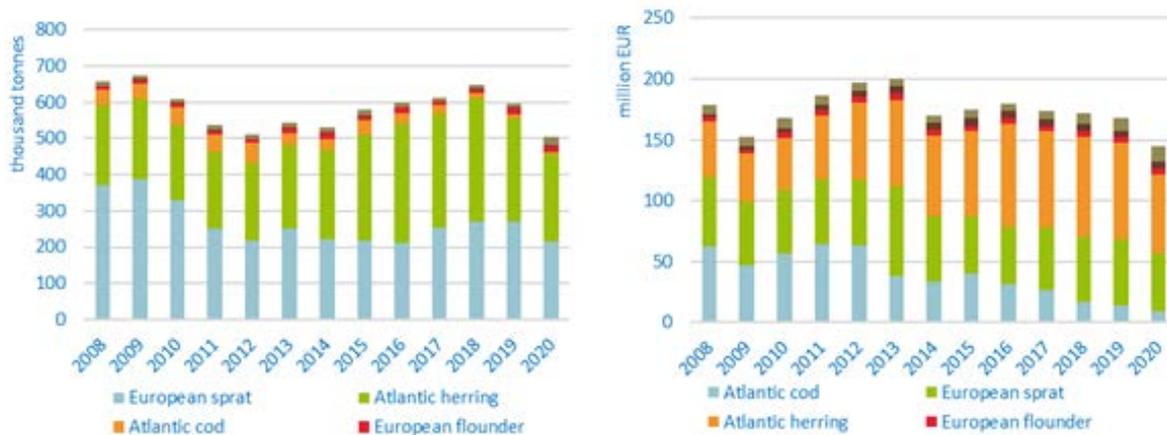
In 2020 LSF in the Baltic consisted of 393 vessels, 5% less than in 2019. Revenue generated by the fleet in 2020 was EUR 152.8 million, 12% less compared to 2019. However, gross profit and net profit generated by LSF increased by 6% and 2%, respectively. Lower energy costs and labour costs contributed the most to the improved profitability of the fleet. Number of people employed decreased by 9% (FTE and total jobs). Since number of fishing days decreased proportionally to landings weight (-15%) CPUE remained stable (live weight/fishing day). The fleet consumed 53 million litres of fuel, 6% less compared to 2019.

GVA/revenue indicator improved compared to 2019 (from 54 to 60), however GVA itself decreased to EUR 91.8 million (-2%).



**Figure 3.31 Top 10 species landed in weight (left) and value (right) by LSF operating in the Baltic Sea, 2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.32 Trends in landings of the top species landed in weight and value by the LSF operating in the Baltic Sea**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Atlantic herring followed by sprat and Atlantic cod continued to be the three most important species in terms of landings value. The fishing pattern of the fleet landings has changed significantly from 2008 to 2020. Atlantic cod landings value decreased by 86% and its contribution to total revenues of the LSF decreased from 35% in 2008 to 6% in 2020. In the same period, the value of Atlantic herring raised by 42% and its contribution to fishing revenues increased from 25% in 2008 to 45% in 2020 (Figures 3.50 and 3.56). Restriction imposed on Atlantic cod as well as insufficient European sprat and Atlantic herring caused that fishing effort has been redirected at less exploited earlier species like European flounder, European smelt, European plaice or Whiting and Sandeels. Nevertheless, sprat and herring remained the two most important exploited species accounting for 91% of total LSF landings in 2020.

Poland, Denmark and Finland are three the most important countries in terms of LSF value of landings accounting for 51% all together or 20%, 16% and 15% individually of the combined fleet landings in 2020.

LSF total net profit in 2020 was positive again and amounted to EUR 30.0 million (+2%) net profit subsidised increased 27% to EUR 39.4 million. Total GVA of the fleet decreased slightly to EUR 91.6 million (-2%) however, averages per vessel or FTE improved 3% or 2%, respectively.

Swedish fleet continued to be the most profitable of the region (EUR 18.5 million) followed by Finish (EUR 10.5 million) Danish (EUR 8.3 million) and Polish (EUR 7.6 million). The gross profitability of Danish and Finish fleets improved 34% and 101%, respectively while Polish fleet deteriorated 12%. Gross profit of the German LSF fleet become negative -EUR 0.9 million in 2020 compared to the positive result of EUR 1.2 million in 2019, what was mainly caused by 44% decreased revenues.

Labour and energy costs were two most important items in the costs structure, both changed considerably compared to 2019 by -11% and -40%, respectively. Employment costs increased only for Latvian fleet (+7%), while decreased in Finland (-28%), Germany (-27%), Estonia (-14%) Sweden (-13%), Poland (-6%), Lithuania (-4%) and Denmark (-2%). Energy costs decreased in all Member States - the most significantly in Finland -52%, Sweden -49% and Lithuania -40%.

## Performance by fleet segment

There were 52 fleet segments operating in the Baltic Sea in 2020 compared to 56 segments in 2019. Segments using passive gears (PG, PGP and DFN) dominated the fleet accounting for 92% (4 811 units) of the total number of vessels (2% more compared to 2019), following by pelagic trawlers (TM) (229 vessels) (2018 in 2019) and demersal trawlers (DTS) (131 vessels) (-23% compared to 2019). Pelagic and demersal trawlers dominated in production output contributed to 69% and 23%, respectively of the total volume of landings or 31% and 46% of the total value of landings in 2020. Pelagic trawlers produced the highest gross profit EUR 33.3 million (EUR 26.0 million in 2019) following by DTS EUR 20.1 million (EUR 25.1 in 2019). Passive gear segments suffered losses -EUR 9.6 million in 2020 compared to -EUR 6.0 million in 2019.

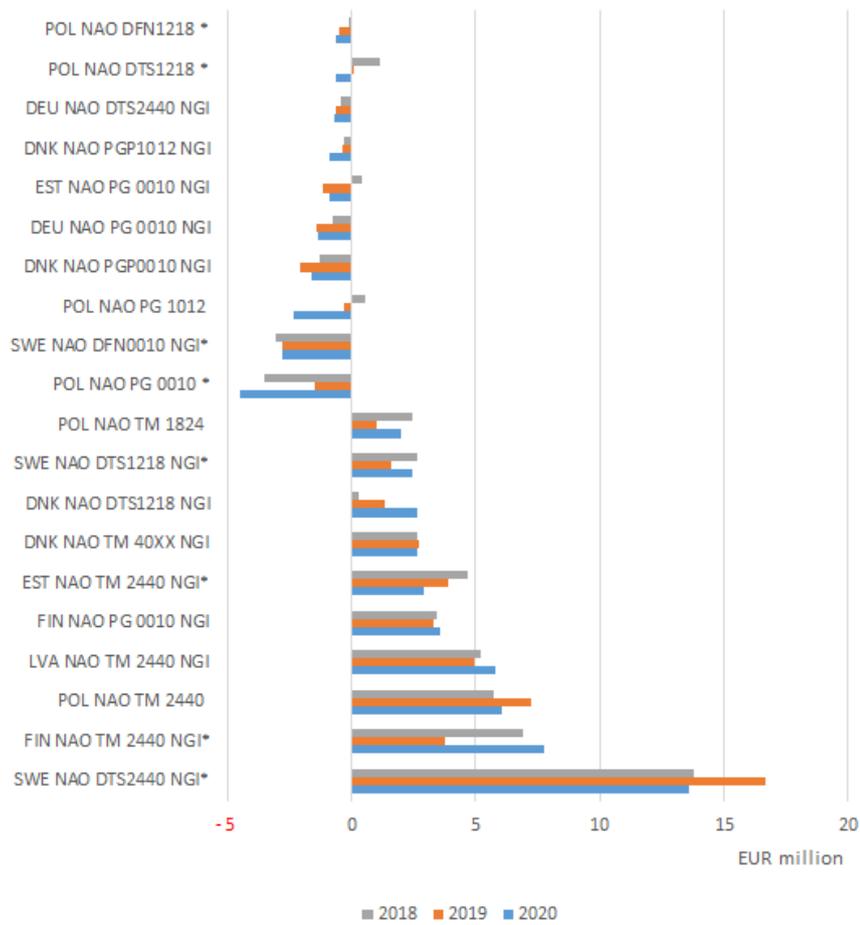
One important reason for the gross losses of smaller vessels was the estimated opportunity cost of unpaid labour. For the fleet segments below 12 metres, and to a certain extent for the 12-18 m segment, the estimated cost of labour may be high in proportion to the catch value, making the gross profit negative (Table 3.14).

Segments using passive gears deployed the highest effort with 294 000 fishing days in 2020 (-12% compared to 2019) followed by DTS with 57 000 (-11% compared to 2019) and TM 22 000 days (no change compared to 2019).

Of the 52 fleet segments in 2020 and 47 in 2019, 26 in 2020 and 28 segments in 2019 made positive gross profits. On the top 10 most profitable segments six belonged to pelagic trawlers, three to demersal trawlers and one to passive gear vessels below 10 metres (FIN PG 0010). The 10 most unprofitable segments were dominated by SSCF segments out of which eight belonged to either PG, PGP, PMP or DFN. Two segments belonged to DTS.

At the fleet segment level, the Swedish demersal trawl and seine 24-40m segment generated the highest revenues in 2020 EUR 29.3 million compared to EUR 37.2 million in 2019 followed by the Finnish pelagic trawl 24-40m segment EUR 19.3 million (EUR 21.7 million in 2019) and the Polish pelagic trawl 24-40m segment EUR 17.9 million (EUR 20.4 million in 2019). The gross profits produced by these three top segments amounted to EUR 13.6 million (-18% compared to 2019), EUR 7.8 million (+107%) and EUR 6.1 million (-16%), respectively. The explanation of the successful business doing by the Swedish demersal trawl and seine 24-40m could be that the segment is fishing also (half by half) in North Sea waters, so can be flexible with using quotas in both management areas.

The second most profitable fleet's segment - Finnish pelagic trawl 24-40m- gross profit increase - was caused by higher cuts in labour and energy costs (24% and 51%, respectively). The economic performance of the Polish pelagic segment deteriorated because of smaller value of landings (-12%) with relatively constant fuel and labour costs.



**Figure 3.33 Top ten most profitable and top ten most unprofitable fleet segments operating in the Baltic Sea, 2018-2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### 3.3 North Western Waters

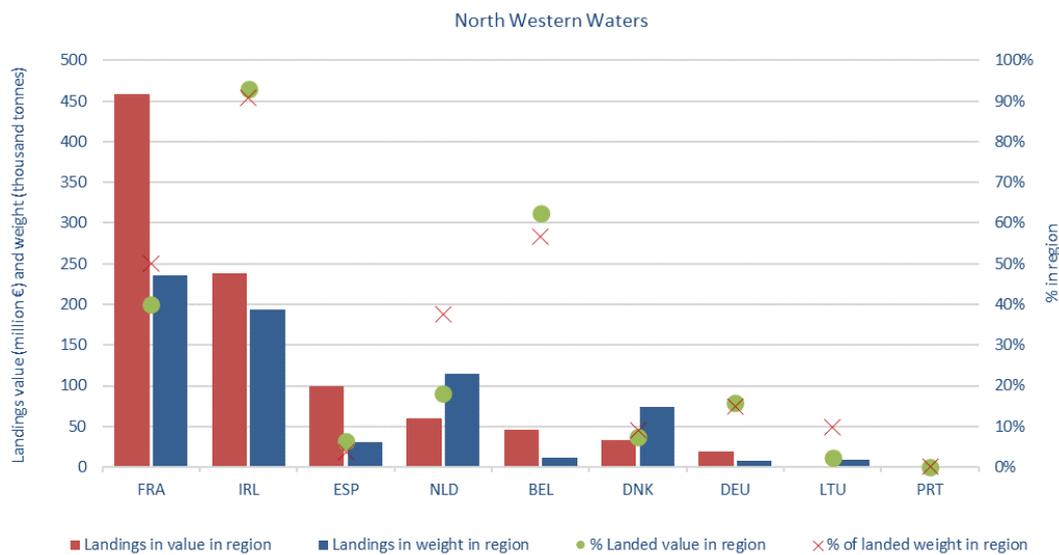
#### Regional Details

The North Western Waters cover the Atlantic ICES areas 5, 6 and 7. For simplicity EU vessels operating in the aforementioned fishing areas are referred to as the EU North Western Waters (NWW) fleet.

The Member States fishing in the NWW are Belgium, Denmark, France, Germany, Ireland, Lithuania, the Netherlands, Sweden, Portugal and Spain. The main fleets operating in 2019 were from France and Ireland. The Netherlands, Spain, Belgium and Denmark also conduct part of their fishing activity in the NWW (Figure 3.34).

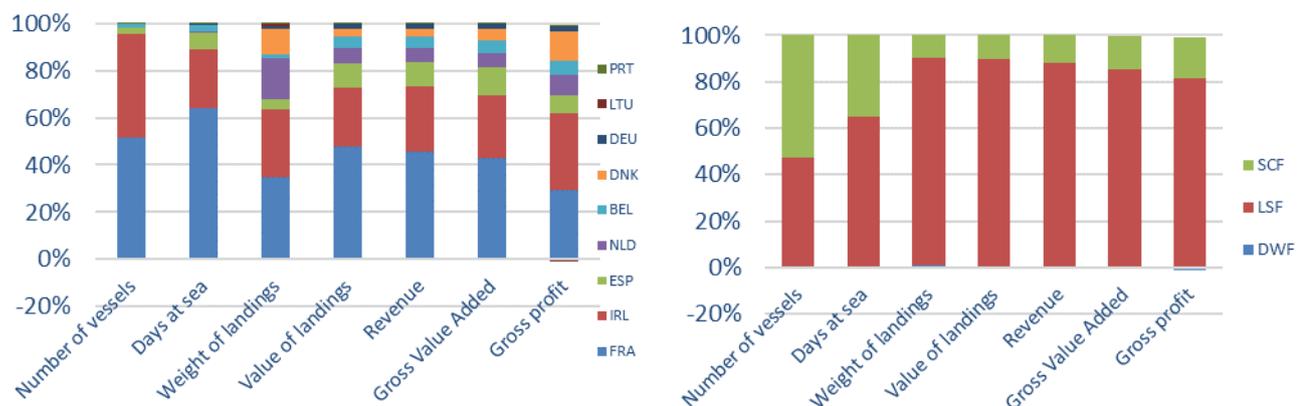
Based on the value of landings, the French and Irish fisheries have the highest level of landings in the NWW. However, Ireland has the highest total percentage of national landed value from the region at 95% indicating their high dependency on this area (98% of the days-at-sea -DaS- take place in these waters). Belgium (45%) and France (30%) also have a high dependence on the area in terms of DaS. While Ireland and Belgium have high dependency, the highest share of fishing is conducted by France and Ireland (Figure 3.35).

Tables at the end of this section contain a summary of the economic performance of the NWW fleet by Member State, main type of fishing activity and fleet segment.



**Figure 3.34 Importance of the North Western Waters for MS fleets in terms of landings in weight and value, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.35 Share by MS fleet and fishing activity in NWW, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Overview of the main results for EU fleets in the NWW

### Fishing effort and landings

Fishing effort has demonstrated a stable trend over the last ten years. However, there was a marked difference in 2020 with a 10% reduction in DAS. The decrease in effort was most notable for France and Spain. The highest value of landings was observed in 2008 with similar values been experiences in 2016 and 2017. Since then, the value of landings has increased gradually over the years, being at the same level in 2018 and 2019. There was a decrease in value of 8% in 2020 bringing the total value to EUR 957 million. The majority of the decrease in value was experienced by France (13%), Spain (13%) and Ireland (10%). The total landings in weight decreased by 18% in 2020 compared to 2019.



**Figure 3.36 Trends on effort and landings for MS fleets operating in NWW**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Employment, wages and labour productivity

Total employment in this region in 2020 was estimated at 7 959 with the number of FTE employees at 6 407, a decrease of 11% from 2019. The most important fleets in terms of overall employment correlate to those fisheries that have the highest dependency on this area. In 2020 France has the highest level of total employment with 2 595 FTE, follow by Ireland (2 243 FTE) and Spain (1 164).

Total employment for the LSF is highest for France and Ireland, totalling 2 841 and 1 565, respectively, reflecting the high number of active vessels in these Member States. These numbers have been stable for the last years. The SSCF, for all Member States, demonstrates a marked difference between the numbers of total employed and total FTE indicating that a large number of those employed in the SSCF are part-time or casual workers. Total employed for the SSCF was again highest for France and Ireland reflecting their high number of SSCF vessels. LSF figures for total employed and FTEs are closer in value indicating a high level of full-time employment in this segment in comparison to the SSCF except for Spain which demonstrates a higher level of FTE than total employment which can be explained by the fact that one FTE is equivalent to 1 800 hours (one working day), but in Spain their fisherman are working 2 000 hours which results in higher FTE than total engaged crew.

The overall average wage per FTE for the SSCF decreased by 3% from 2019 to 2020, fluctuating around EUR 34 000. For the LSF average wage increased by 11% to a value of EUR 63 700 (Figure 3.37).



**Figure 3.37 Trends on average wage and GVA per FTE by fishing activity for MS fleets operating in NWW**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Economic performance

The revenue (income from landings and other income) generated by the NWW fleet covered in the analysis in 2020 was estimated at EUR 1.01 billion, representing 16% of the total revenue for the EU fleet. This is a reduction in revenue of 9% from 2019. The GVA was estimated at EUR 544 million, representing an overall decrease of 4% compared to the previous year. The fleet made EUR 177 million in gross profit, a decrease of 3% compared to 2019. The net profit, at EUR 68 million, also decreased by 24% compared to 2019 (Figure 3.38). Fuel prices decreased to an average price of 0.40 euro/litre and fuel consumption decreased by 19% from 2019 following the decrease trend in effort. Fuel is an important operational cost and therefore an important driver for profits which will no doubt begin to show negative impacts with the increase in fuel prices experienced into 2021 and 2022.

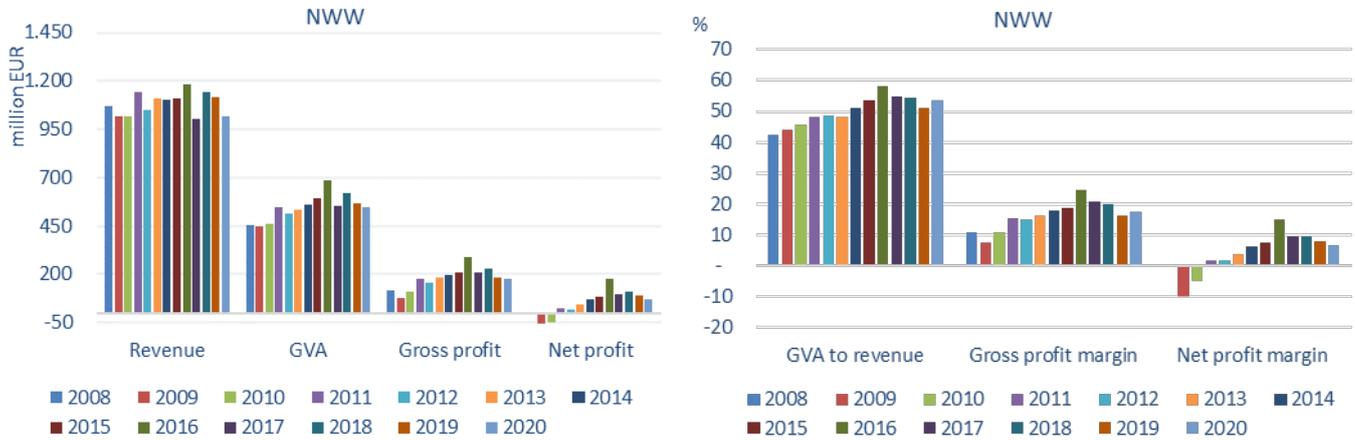


Figure 3.38 Trends on revenue and profits for MS fleets operating in NWW

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Trends by Member State fleet

### Fleet capacity and employment

The 10 Member States fleets operating in the NWW collectively numbered over 2 486 active vessels in 2020, a decrease of 2% from 2019. French and Irish fleets collectively contributed to more than 95% of the total of vessels in 2019. The number of vessels has remained relatively stable in the last 10 years even excluding the United Kingdom over the entire time series. An increase in vessel number was recorded in 2015 accounted predominantly by Ireland but this is an artefact of better data reporting that allowed vessels, especially in the SSCF, to be assigned to a fishing region (Figure 3.38).

Employment in the region reached 6 407 FTE in 2020, a 9% drop from 2019 stable development from 2018 (7 017 FTE). French fleet contributes to 40% of the total FTE, with a total number of FTE reaching 2 595, in 2020. Followed by the Irish (35%) and Spanish (18%) fleets. The Spanish fleet represents the dominance of LSF activity for this Member State in that region. Employment followed the slight decrease of fleet capacity from 2008 to 2014, while from 2015 the trend was upwards again per year, except for a 9% drop in 2020.

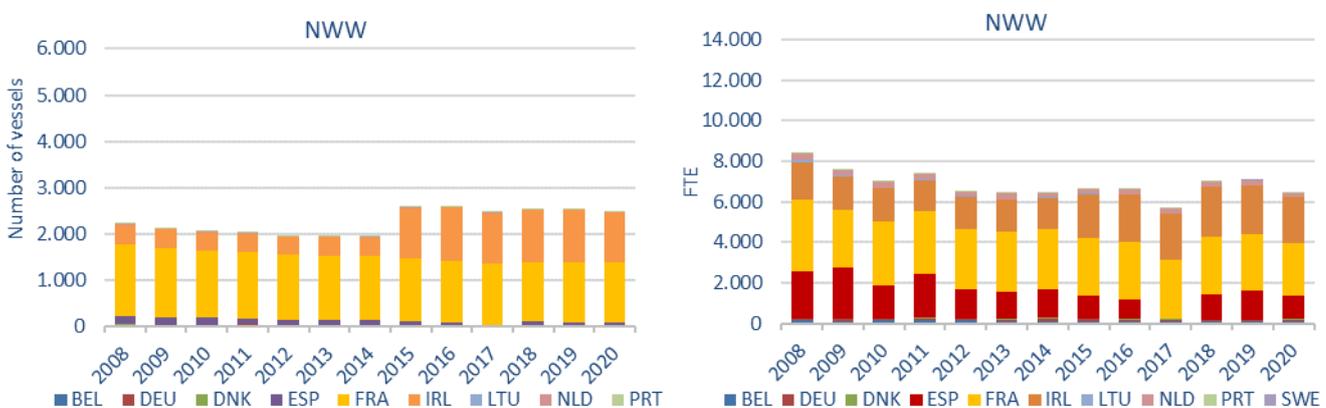


Figure 3.39 Trends on the number of vessels and employment (in FTE) for MS fleets operating in NWW

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)).

## Fishing effort

The EU NWW fleet spent over 261 394 DaS in 2020. This means a 10% decrease compared to 2019. French and Irish fleets represented almost the total effort deployed in the region (89% of total in 2022). It must be noted that Ireland had partial effort data for some fleet segments less than 10 metres LOA and only for the years 2013 to 2020, so conclusions regarding effort need to be taken with caution as Ireland's effort is underestimated for its less than 10 metres segments (Figure 3.39).

Energy consumption for the EU NWW fleet amounted to 289 million litres in 2020, 70% of which were consumed by the French and Irish fleets. Spanish, Dutch and Belgium fleets combined contribute to 25% of the total energy consumption, due to the dominance of the LSF activity for these Member States in that region.

Fishing effort and energy consumption has followed a general decreasing trend by 28% and 25% respectively for EU NWW fleet between 2008 and 2020. The fishing effort (DaS) for the French fleet decreased by 8% while a 13% decrease of energy consumption from 2020. For the Irish fleet there was a decrease of 16% of effort (DaS) and rather larger decrease (37%) of energy consumption.

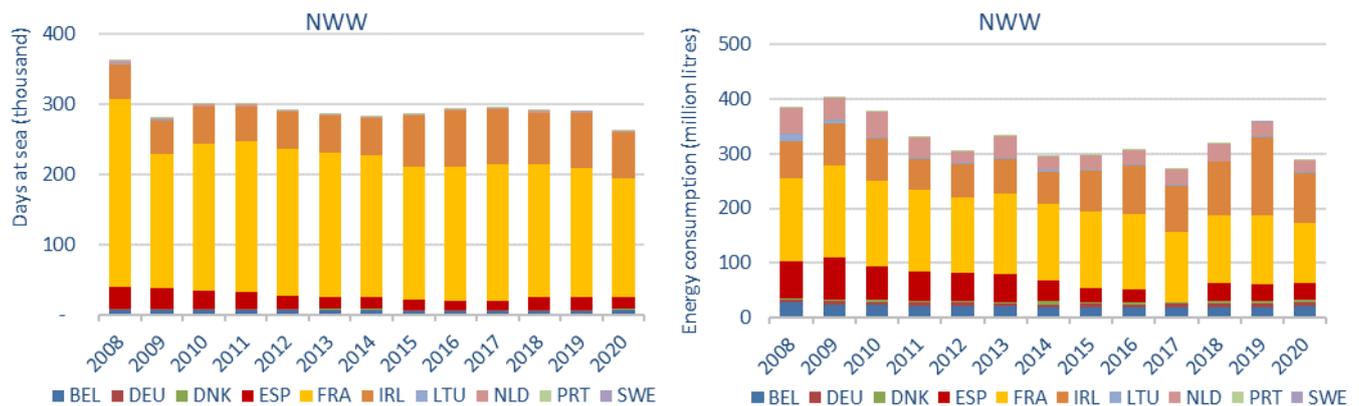


Figure 3.40 Trends on fishing effort (in days-at-sea) and energy consumption for MS fleets operating in NWW

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)).

## Landings and top species

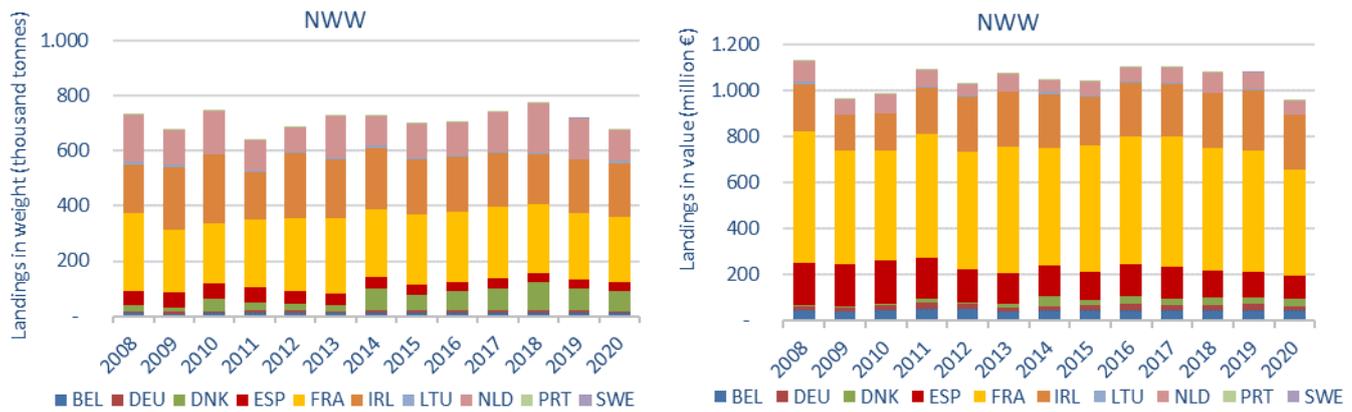
The weight and value of landings amounted to approximately 676 000 tonnes and EUR 957 million, respectively in 2020. In terms of landed weight, the French, Irish, Dutch and Danish were the leading national fleets, together accounting for 91% of the total weight landed (Figure 3.41).

With regards to the landed value, French, Irish and Spanish fleets contributed 48%, 25% and 10% respectively of the total of the EU NWW fleet in 2020. The contribution of the Netherlands and Denmark was less important in value than in volume, the majority of their landings being pelagic species.

At NWW fleet level, landings weight and value had lots of variations over the period 2008-2020. At country fleet level, Denmark landings increased from 2008 to 2020 by almost three times in weight and by seven times in value reaching 73 471 tonnes for EUR 33 million in 2020. On the same period, Irish landings also increased on a lesser extent by 13% in value while Spanish landings followed a decreasing trend by approximately 45% in weight and in value.

In 2020, the two main species landed in terms of weight were small pelagic species including blue whiting, and Atlantic mackerel (Figure 3.42).

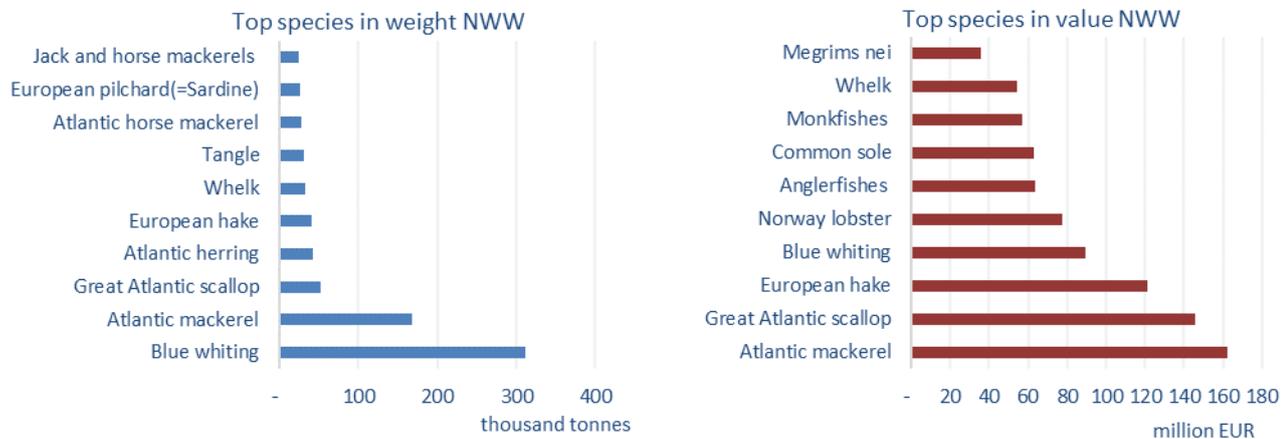
The top 10 species in value included Atlantic mackerel and Atlantic scallop but also a diversity of other species like pelagic (mainly large in landed weight) or species with high price values as crustaceans, bivalves, flatfishes and whitefishes: European hake, blue whiting, Norway lobster, anglerfishes, common sole and monkfishes.



**Figure 3.41 Trends on landings in weight and value from MS fleets operating in NWW**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

The top species, through their availability, TACs and quotas and fish market prices, are drivers for fleets’ performance. The share in landed values of the crustaceans, Norway lobster and edible crab, is dominated by Ireland. The great Atlantic scallop and the whelk landing values are dominated by France. Atlantic mackerel landing values are dominated by Ireland and France. The share in landed values of European hake is dominated by Spain and France, while Belgium and France dominated for common sole.



**Figure 3.42 Top 10 species in landed weight and value for MS fleets operating in NWW, 2020**

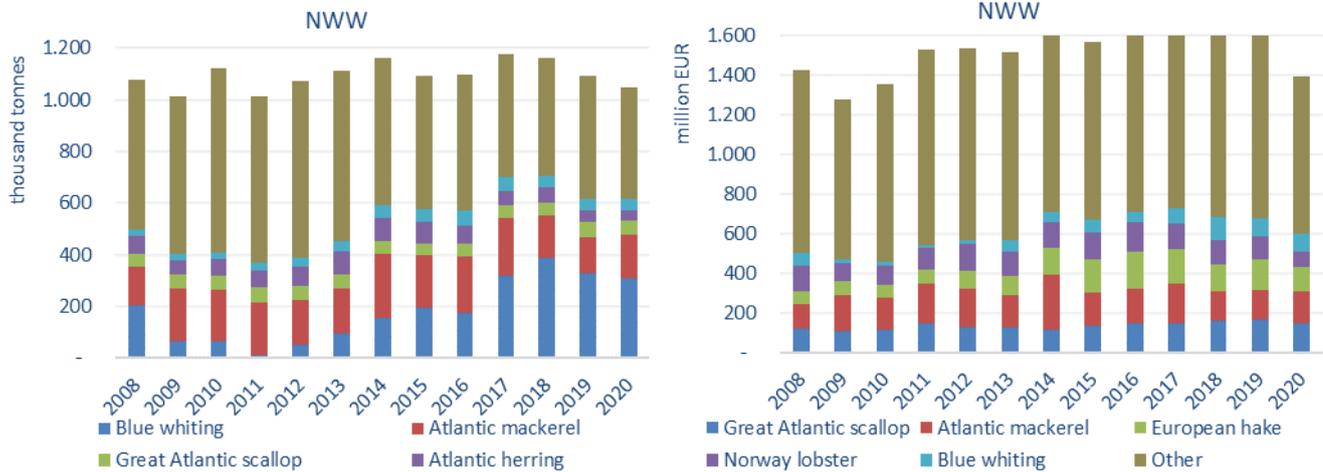
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Temporal trends in the value and weight of landings, have been significantly influenced by fluctuations in TAC and quotas for Atlantic mackerel, blue whiting, and hake (Figure 3.43).

Mackerel went through a significant increase in 2014 followed by a long-term decrease. In 2020, mackerel landings decreased by 33% to a total of 168 000 tonnes.

Blue whiting landed weight and value peaked in 2018 but in 2020 decreased by 20% and 22%, respectively.

European hake landings were multiplied by 2.5 in weight and by 3 in value from 2008 to 2016 as TAC increased on the same time period before a constant decrease until 2020 with 40 000 tonnes which is 31% less than 2016. Great Atlantic scallop landed weight and value followed a significant increasing trend from 2015 to 2019, reaching its higher value in 2019 and decreasing by 8% in weight and 11% in value in 2020.



**Figure 3.43 Trends on landings of the top six species landed value for MS fleets operating in NWW**

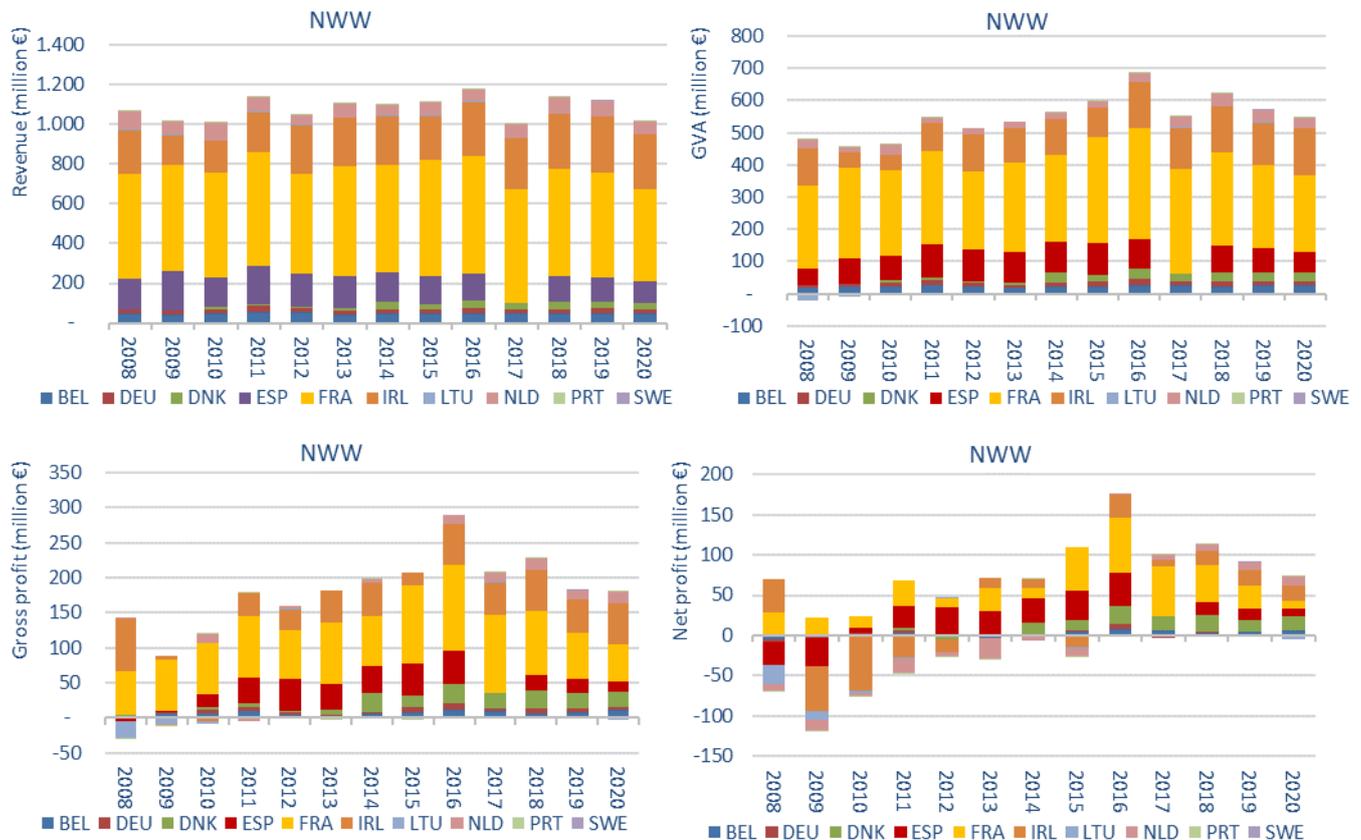
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Economic performance

The revenue generated by the NWW fleet covered in the analysis in 2020 was estimated at EUR 1.01 billion, over 84% produced by three Member States fleets: France (EUR 462 million), Ireland (EUR 279 million) and Spain (EUR 109 million) (Figure 3.44).

The majority of the Member States saw a decrease in overall revenues from 2019 to 2020. Three of them saw increases in revenue Belgium (1.62%), Portugal (10.9%), and Denmark (10.7%). The highest-ranking Member States' fleets, suffered a decrease in revenue of 13%, 12.75% and 0.16% for Spain, France, and Ireland respectively. These decreases are primarily driven by TAC and quota reductions.

The GVA produced was estimated at EUR 545 million in 2020. This represented an overall decrease of 4% compared to 2019. A decreased in GVA was experienced by all Member States except Belgium, Denmark, Ireland and Portugal.



**Figure 3.44 Trends on revenue and profit for MS fleets operating in NWW**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

The fleet made EUR 177 million in gross profit, a decrease of 2.8% compared to 2019. All of the Member State's fleets operating in the NWW generated positive gross and net profits except Lithuania. The three highest France (EUR 53.7 million), Ireland (EUR 59 million), and Spain (EUR 13.9 million) accounting for 71% of the total gross profit. Denmark also shows a high gross profit with EUR 22.5 million.

The temporal variation in total annual revenue is mainly linked to annual fluctuations in TACs, quotas, and fish prices. In this sense, the value of landings and the weight of landings decreased by 11.7% and 4.4% from 2019.

## Main factors affecting the performance of the fleet

### Main drivers affecting fleet performance in the region

#### Factors that may have contributed to the positive situation include:

- Recovery of some stocks, e.g., the biomass of most herring stocks has increased, and the Northern hake stock continues to follow a positive trend.
- Increased TACs for a number of stocks and maintaining of fish prices.
- Decreased of some costs such as energy cost that have decreased by 28% compared to 2019.

#### Factors that may have hampered economic performance in the region include:

- An overall decrease in landed weight by 5.4% and value of landing by 11.7%.
- Fish prices were lower than in 2019.
- Average wage for LSF decreased by 11%.
- With the EU-UK Trade and Cooperation Agreement (TCA) there will be large impacts on fleets operating in the region. Furthermore, there is a high dependency on the United Kingdom waters for a number of Member States including Ireland, France, Spain, Belgium, the Netherlands and Germany. Refer to the Brexit forecasts for impacts.

### Regulation and Fisheries management in the region

- The TCA sets out preferential arrangements in areas such as trade in goods and in services, digital trade, intellectual property, public procurement, aviation and road transport, energy, fisheries, social security coordination, law enforcement and judicial cooperation in criminal matters, thematic cooperation, and participation in Union programmes. The TCA was signed on 30 December 2020, applied provisionally as of 1 January 2021, and entered into force on 1 May 2021. In June 2021, the EU and the United Kingdom concluded the negotiations on an agreement in principle setting out catch limits for jointly managed fish stocks for 2021. The agreement closes the first ever annual consultations on fishing opportunities between the EU and the UK under the terms of the TCA. The agreement established the parties (UK and EU) share of the Total Allowable Catch (TAC) for 124 stocks of common interest, including changes to the shares in each of the years 2021 to 2025 and 2026 onwards. Because these changes include 55 stocks where the United Kingdom share is increased, the total share available to the EU is reduced accordingly. This had impacted on many remaining EU MSs operating in the NWW.
- Council Regulation (EC) No 1300/2008 established a multi-annual plan for the herring stock distributed to the west of Scotland and the fisheries exploiting that stock in international and EU waters in ICES Divisions 5b and 6b, and the northern part of ICES Division 6a excluding the Clyde. The United Kingdom and Irish fleets are the most important fleet segment for this fishery. Most herring stocks (North Sea, Irish Sea and Celtic Sea) are fished in accordance with MSY, with corresponding 2016 TAC for these stocks. The situation is also positive for southern and western horse mackerel and the TAC allows fishing at levels corresponding to MSY in 2016.
- Long-term plan for cod stocks and the fisheries exploiting those stocks (Council Regulation (EC) No 1342/2008). The long-term plan for cod has an impact on the North-eastern Member States. The French, Belgian, German, United Kingdom, Irish, Dutch, Spanish and Portuguese fleets all have

quota for cod and thus interact with the cod fisheries. As DaS restrictions are becoming more constraining, it may influence the economic performance of the fleets.

- Council Regulation (EC) No 388/2006 established a multiannual plan for the sustainable exploitation of the stock of sole in the Bay of Biscay covering ICES Divisions 8a and 8b. The French DFN segments are the most important fleets in term of sole landings in weight in the Northeast Atlantic with 26 000 tonnes (61%).
- Council Regulation (EC) No 509/2007 established a multi-annual plan for the sustainable exploitation of the stock of sole in the Western Channel (ICES Division 7e). The sole fishery is the most important to the United Kingdom and French fleets. - Council Regulation (EU) No 713/2013 establishing the fishing opportunities for anchovy in the Bay of Biscay for the 2013/14 fishing season. This management plan concerns mainly Spanish and French fleets.
- Measures for the recovery of eel. Area covered includes EU estuaries and rivers that flow into seas in ICES areas 3, 4, 6, 7, 8 and 9 and the Mediterranean (Council Regulation (EC) No 1100/2007 of 18 September 2007). In the region, this management plan applies mainly to France.
- Council Regulation (EC) No 302/2009- 500/2012 Measures concerning a multiannual recovery plan for bluefin tuna in the eastern Atlantic and Mediterranean. According to STECF data, in 2015, three national fleets operated in this fishery with the French fleet representing 50% of the total of landings value in the Northeast Atlantic (followed by Portugal (48%) and the Irish fleet (1%).
- Council Regulation (EC) No 811/2004 to increase the quantities of mature fish in the Northern hake stock to at least 140 000 tonnes. This management plan concerns Spanish, French, Portuguese, Irish, United Kingdom, Dutch and Belgian fleets and has been successful.
- Other management measures that may affect economic performance of the fleets operating in the NWW include marine protected areas and other legislation that has a multispecies impact.

### Status of important stocks

Overall fishing mortality (F) for shellfish, demersal, and pelagic fish stocks has reduced since the late 1990s although the pelagic stock are now above the reference point according to ICES. The ICES Ecoregion for the Celtic Seas, which mostly correlates with the NWW regions indicated that Mean F is now closer to the level that produces maximum sustainable yield (MSY). The fishing mortality on 43 stocks has been evaluated against MSY reference points; of these, 33 stocks are now fished at or below FMSY.

### TAC development of main species

In 2020, there were quotas for over 34 fish species defined for the region.

#### Demersal species:

- The total TAC increase from 2008 to 2020 is mainly due to the positive development of hake stocks and increasing ling TAC.
- TAC of anglerfish increased by 28% from 2008 to 2019.
- Norway lobster TAC in NWW quite stable but has experienced decreased in 2020 by 6%.
- However, from 2019 there has been an overall 13% reduction in the TAC of this area.

#### Pelagic Species:

TACs for pelagic species in the Northeast Atlantic region have varied since 2001 especially for blue whiting and mackerel with very high values in 2005 and then again in 2014 (Figure 3.44).

- After a peak in 2014, the mackerel TAC decreased from 2014 to 2015, horse mackerel TAC decreased in NWW from 2014 to 2015. Both of these reductions impacted the Irish and British fleets and having a knock-on effect on total revenue and economic indicators. Mackerel quotas in the area experienced a reduction in 2018 and 2019 by 20% annually since 2017 impacting negatively in the overall revenue of the NWW fleets in 2018. While TAC of Mackerel improved in

2020 it must be highlighted that the TCA had negatively impacted the quota for all pelagic species and this will have a major impact on the fleets in 2021 onwards.

- TAC of blue whiting increased by 107% from 2008 to 2017, with an 85% increase from 2016 and 2017. This increase positively affected the five most important Member State fleets in the NWW. However, in 2019 and 2020 the increase was moderate and future trends show that the TAC will impact on the stock in 2021.
- Herring has fluctuated from 2008 and overall has experienced a decline from 2008 to 2019. In 2020 this reduced by a further 10% and in 2021 the TCA will again reduce this figure.

## Landing obligation

The introduction of the LO may be implemented with little extra effort in the pelagic sector as well as in the saithe fisheries as these fisheries traditionally have had low bycatch rates. However, more challenges are to be expected for demersal fisheries. Fishers fear that the LO will have a large impact on their profitability, mainly due to increased costs. Another concern is related to potential choke species. Particularly, in a mixed fishery this could be an issue as many species are caught at the same time and multiple choke species may occur. Whiting, haddock, ray, cod, sole, plaice, dab, turbot and brill are potential choke species candidates in mixed demersal fisheries. Therefore, to continue fishing throughout the year, it will be vital to have either enough adapted quota available or adapt fishing strategies with more selective technical measures taking into account EU Regulation n° 2019/1241, fishing closures or by using those possibilities that landing obligation allow fishers to use such as interspecies flexibility, de minimis or negotiating swaps with other Member States.

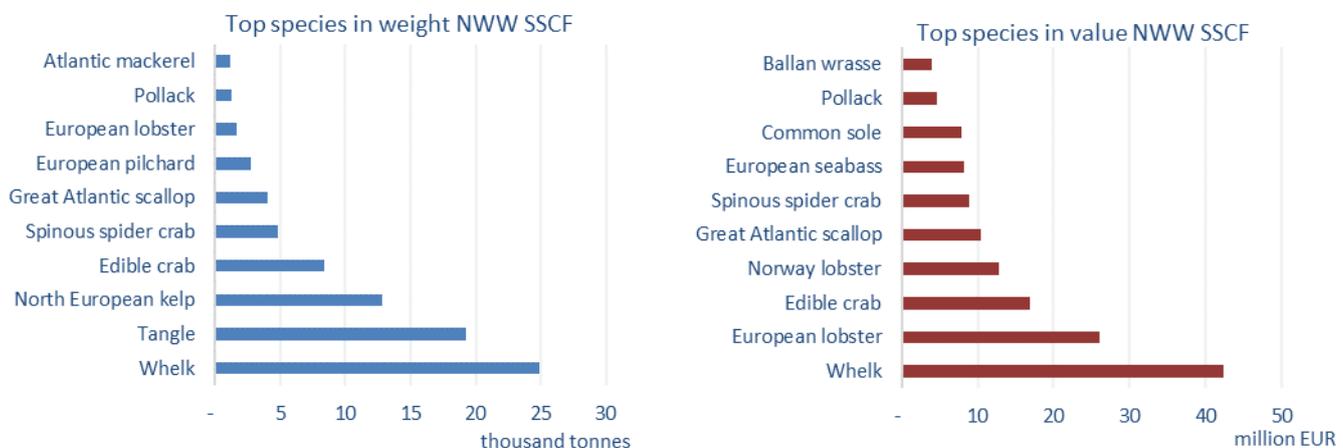
## Description of relevant fisheries in the region

### Small-scale coastal fleet

There were SSCF from two Member States (France and Ireland) operating in the NWW. While 100% of Irish SSCF fished in the NWW in 2020, it represented only part of the SSCF fishing activity for France (46%), as they were also active in the Mediterranean Sea and/or in the North Sea. In terms of vessel numbers, Ireland and France had the highest number of active SSCF vessels with 678 and 632 active vessels, respectively.

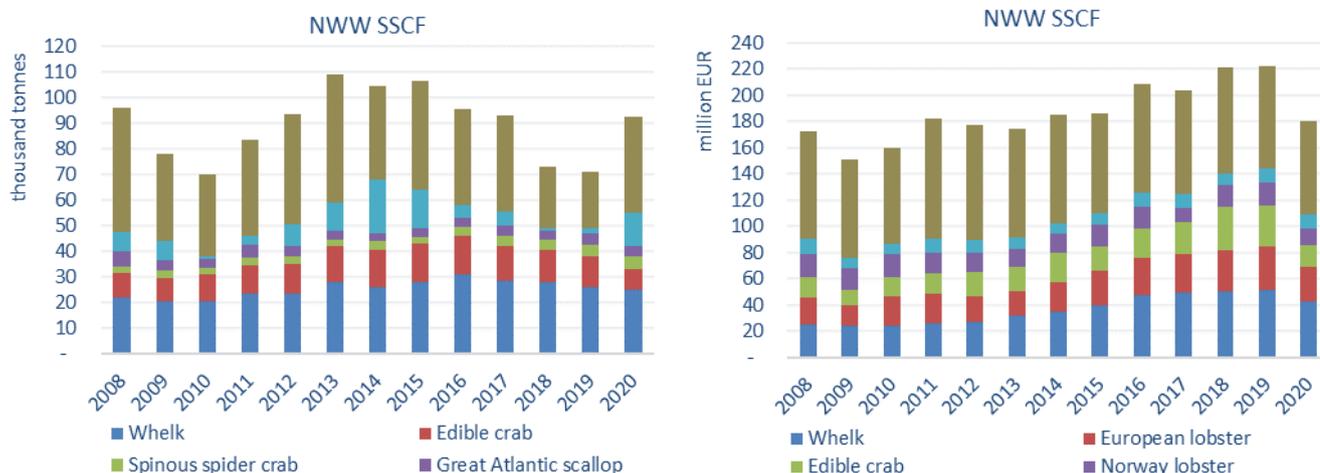
Total employment for the SSCF is highest for France totalling 1 167 jobs, followed by Ireland with 890 jobs, reflecting the largest number of active vessels. These Member States in the NWW demonstrated a lower FTE figure in comparison with total employed indicating that a large majority of those employed in the SSCF are part-time fishers.

Overall, the SSCF was profitable in 2020, totalling EUR 77 million in GVA and EUR 31 million in gross profit. The most relevant SSCF fleet with high profitability was the Irish SSCF, with gross profit margins of 45%, followed by France (17%). In terms of productivity, the GVA per FTE varied from EUR 97 000 (France) to EUR 31 000 (Ireland).



**Figure 3.45 Top 10 species landed by SSCF operating in NWW, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.46 Trends in landings of top species landed by SSCF operating in NWW**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

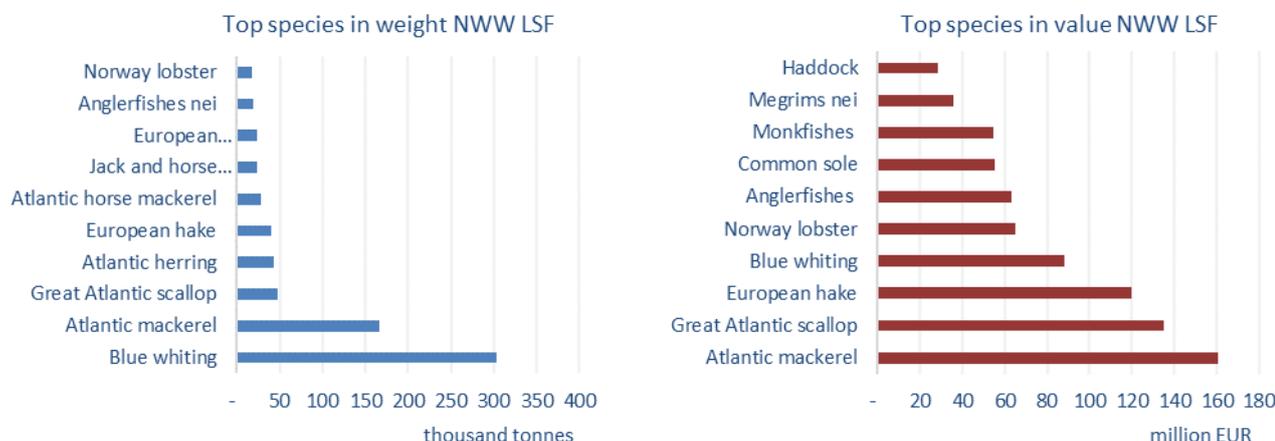
### Large-scale fleet

There were eight Member States’ LSF operating in the NWW region totalling 1 176 active vessels. France has the largest number of active vessels in the area with 658 vessels. However, the area is more important to the Irish fleets with 95% of their LSF active in the area. Total employment for the LSF is highest for France totalling 2 841 jobs, reflecting the high number of active vessels in this Member State.

Overall, the LSF was profitable in 2020, totalling EUR 470 million in GVA and EUR 149 million in gross profit. The French NWW LSF, generated the highest revenue (EUR 376 million), followed by Ireland (EUR 242 million) and Spain (EUR 109 million).

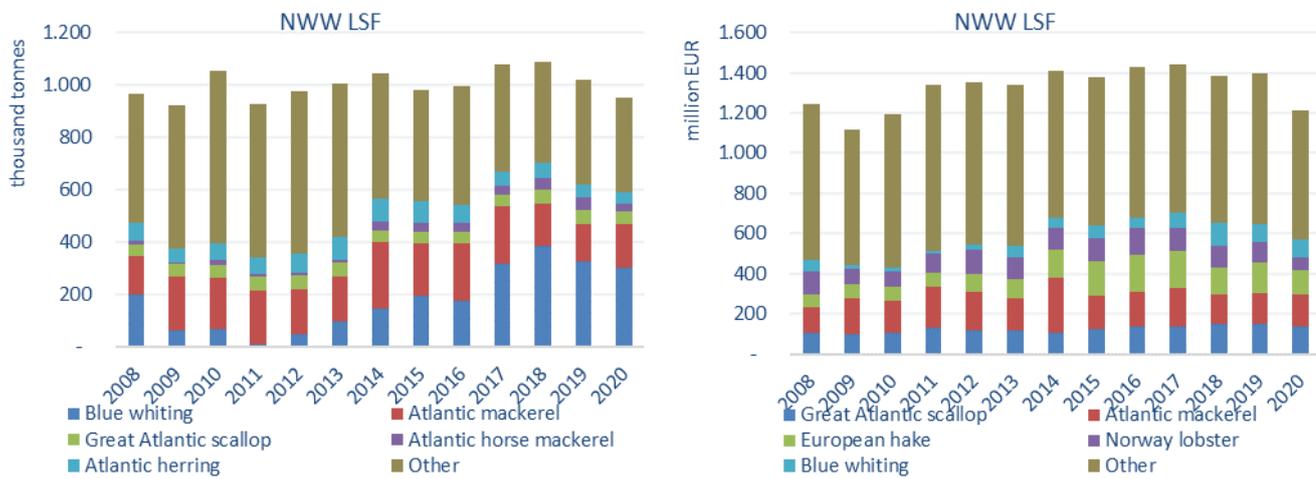
At Member State level, all LSF generated gross profits in 2020. Additionally, one DWF Lithuanian fleet was also active in the region in 2020. It should be noted that data on the EU DWF operating in the region is limited and the economic indicators are to be interpreted with caution. Member States can be classed into different categories according to their dependency which is representative of their LSF landings composition in the NWW:

- In Ireland, the main value species were Atlantic mackerel and Norway lobster totalling 36% of the total value. These two species had landing values of EUR 80 million.
- In the Netherlands, Germany and Denmark, main species were blue whiting (EUR 47 million), in addition to mackerel.
- For Spain and France, there was a more diverse landing composition, with hake playing a key role for both Member States. The main species by landing value for France were scallop (21%), monkfish (14%), and hake (13%).



**Figure 3.47 Top 10 species landed by LSF operating in NWW, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.48 Trends in landings of top species landed by LSF operating in NWW**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Performance by fleet segments

There were an estimated 79 segments operating in the NWW. At fleet segment level, the French demersal trawlers between 18-24m generated the most revenue in 2020 (EUR 69 million), followed by the French demersal trawlers between 24-40m (EUR 67 million) and the Spanish polyvalent passive gears between 24-40m (EUR 64 million).

There were 20 EU fleet segments (Ireland and France) that operated 80% or more in the NWW region in 2020, accounting for 56% of the number of vessels, 44% of the DaS deployed, 44% of the FTE. Collectively, these "resident" fleets represent more than 40% of the value and 20% of weight of landings, as there is a mix of LSF and SSCFs.

For the four segments with the highest revenue their economic indicators were as follows:

- The French demersal 18-24m segment has a GVA of EUR 30 million, gross profit of EUR 5.8 million and GVA per FTE (labour productivity) of EUR 89 000.
- The French demersal 24-40m segment has a GVA of EUR 22 million, negative gross profit of EUR 1.6 million and GVA per FTE (labour productivity) of EUR 59 000.
- The Spanish polyvalent passive 24-40m segment has a GVA of EUR 35 million, gross profit of EUR 1.7 million and GVA per FTE (labour productivity) of EUR 41 000.
- The Irish pelagic trawlers over 40m segment has a GVA of EUR 35 million, gross profit of EUR 14.6 million and GVA per FTE (labour productivity) of EUR 200 000.

### 3.4 Southern Western Waters

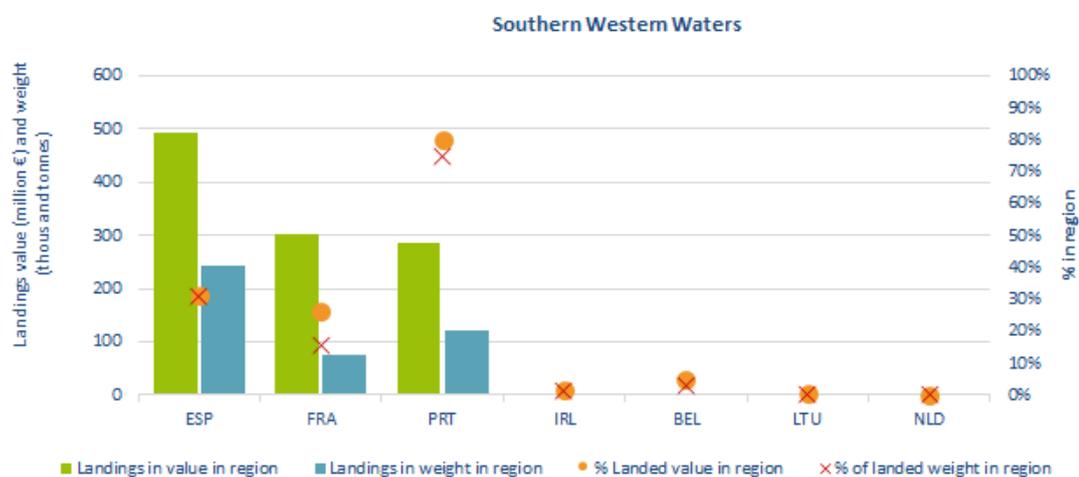
#### Regional Details

The Southern Western Waters (SWW) covers the Atlantic zone running from the tip of Brittany in the North, to the Strait of Gibraltar in the south and including the outermost regions of Madeira, the Azores and the Canary Islands (ICES areas 8, 9 and 10, and the COPACE divisions 34.1.1., 34.1.2, 34.2.0). For simplicity EU vessels operating in the aforementioned fishing areas are referred to as the EU SWW fleet.

The main fleets operating in the region were the Spanish, French, and Portuguese. Besides those, four more EU fleets operated in the region in 2020: Belgium, Ireland, Lithuania and the Netherlands. Except Belgium whose catches and effort represent 3% and 3.9%, respectively of the region, all of them have limited fishing activity in the region (effort and landings shares in the region were less than 2% of the total).

Based on the value of landings, Spain produces the most from the region, followed by France and Portugal. However, Portugal has the highest total percentage of national landed value from the region at 80%, followed by Spain (31%) and France (26%).

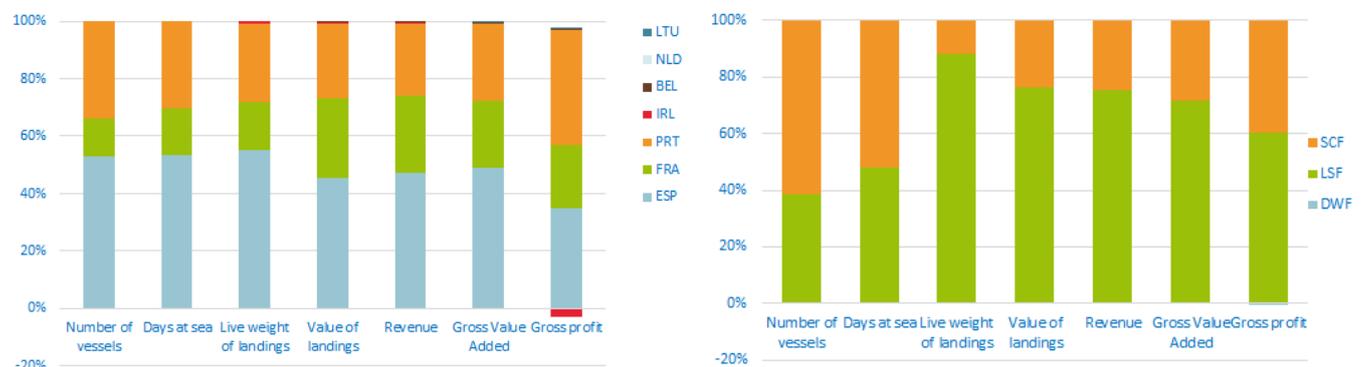
The SWW region represents 5% of the landings value in Belgium, 2% in Ireland and is residual for the Netherlands and Denmark.



**Figure 3.49 Importance of the SWW for MS fleets in terms of landings in weight and value, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2020)); All monetary values have been adjusted for inflation; constant prices (2020).

SSCF dominates in number of vessels while the LSF is the main segment in terms of production. Effort, in terms of days at sea, was equally shared between the two fleets. (Figure 3.50).



**Figure 3.50 Share of MS fleets and fishing activity in the SWW, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

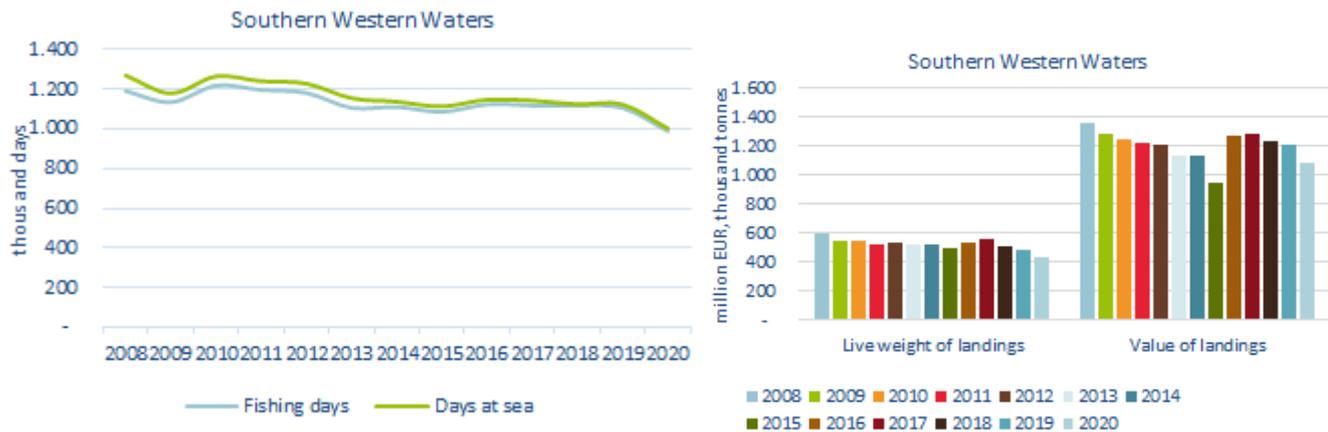
## Overview of the main results for EU fleets in the SWW

### Fishing effort and landings

Fishing effort has decreased over the period analysed at the same time than weight of landings and value of landings. These two variables have decreased by 9 and 10% respectively compare with 2019. (Figure 3.51).

The main species landed were Atlantic horse mackerel, Club mackerel, European anchovy and European pilchard. In terms of value, the main species were Albacore, European hake, octopus and European anchovy. For certain species, it is particularly important the price as in the case of the octopus, whose landings were 192 tonnes and the value of landing reached EUR 45 million.

Fishing opportunities and prices are major drivers of revenues, but also operational costs, as fuel, whose prices averaged 0.41 euro/litre.



**Figure 3.51 Trends on effort and landings for MS fleets operating in the SWW**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Employment, wages and labour productivity

Total employment in the region was estimated at 32 904 fishers with the number of FTE at 19 732. Engaged crew in this region has followed a decreasing trend (-28% in FTE compared to 2008), even though yearly variations are observed. From 2019 to 2020, the engaged crew decreased 4% while FTE decreased 13%, indicating a reduction of the activity which is compensated to a certain extent by the part time dedication to the fishing activity. This behaviour is particularly evident in Spain as a drop of 19% in FTE correlated with just a decrease of 6% in the engaged crew.

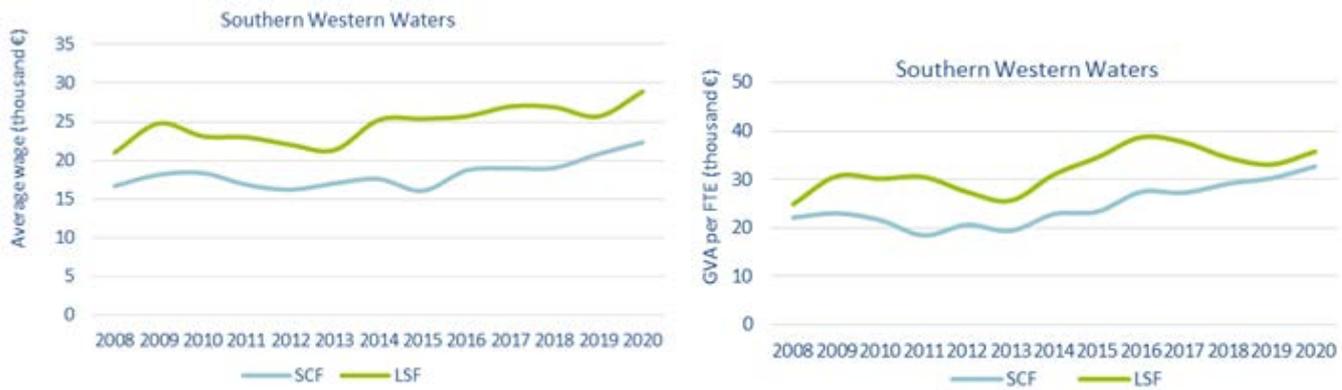
The most important fleets in terms of overall employment correlate to the same fleets with the highest dependencies on the region. Spain employs the most fishers (56% of the FTE), followed by Portugal (33%) and then France (10%). Together, these three Member States covered almost 100% of the employment in the region.

Total employment for the SSCF was highest in Spain and Portugal reflecting their high number of SSCF vessels in the region. The SSCF, for these two Member States, demonstrates a marked difference between the number of totals employed and total FTE indicating that a large number of those employed are part-time employees. This situation is particularly evident in Portugal, where FTE is about 36% of the engaged crew.

Employment for the LSF is the highest for Spain and Portugal, 59% and 30% of the LSF FTE, respectively, reflecting the high number of active vessels of these Member States in the region, especially the Spanish fleet. Compared to 2019, the FTE has decreased in Spain (17%) as in Portugal decreased 6%. LSF figures for engaged crew and FTEs are closer in value than in the SSCF fleet, indicating a high level of full-time employment.

Average wages per FTE in the SSCF have grown 7% in 2020, being 24% above the average of the previous 10 years. Nevertheless, this growth is not equally distributed along the years. In fact, salaries started to grow from 2013 onwards.

For LSF, wages also decreased until 2013 but have grown since then till 2018, decreasing in 2019 but growing again in 2020. In 2020 salaries in SWW LSF increased by 13% and currently they are 18% above the average of the last 10 years. The gap in salaries between SSCF and LSF has increased from 2019 to EUR 6 500 (Figure 3.52). However, the gap between labour productivity (GVA per FTE) in the SSCF and LSF increased until 2016 but started to get closer since then.

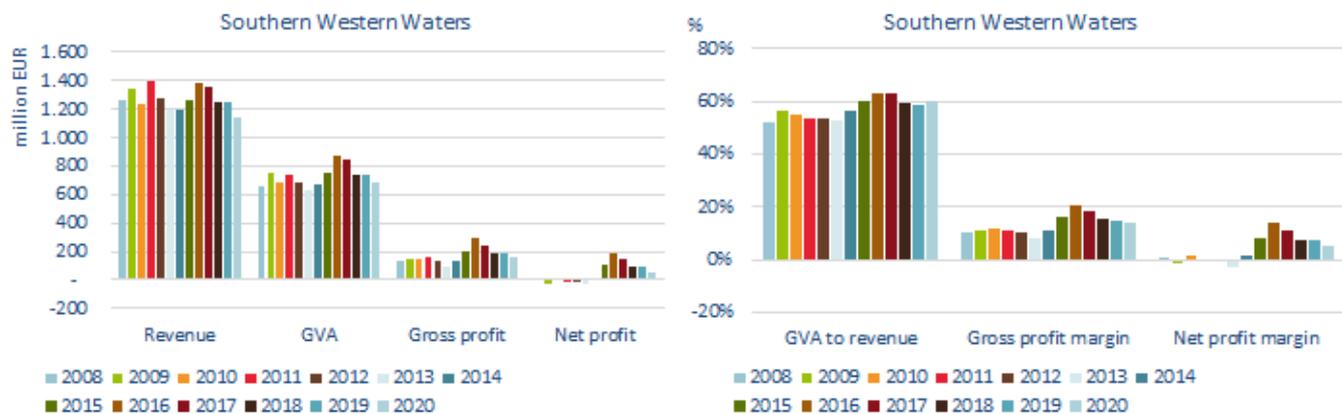


**Figure 3.52 Trends on average wage and labour productivity (GVA per FTE) by fishing activity for MS fleets operating in the SWW**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Economic performance

In 2020, the fleet operating in the SWW generated over EUR 1.1 billion in revenue, EUR 685 million in GVA and EUR 155 million in gross profits. Overall, revenue and profits have recovered since 2013, going from a loss-making position to posting net profits, although they have deteriorated over the past four years. The fleet as a whole was profitable in 2020, posting a net profit of over EUR 58 million (5% profit margin) (Figure 3.53).



**Figure 3.53 Trends on revenue and profits for MS fleets operating in the SWW.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Trends by Member State fleet

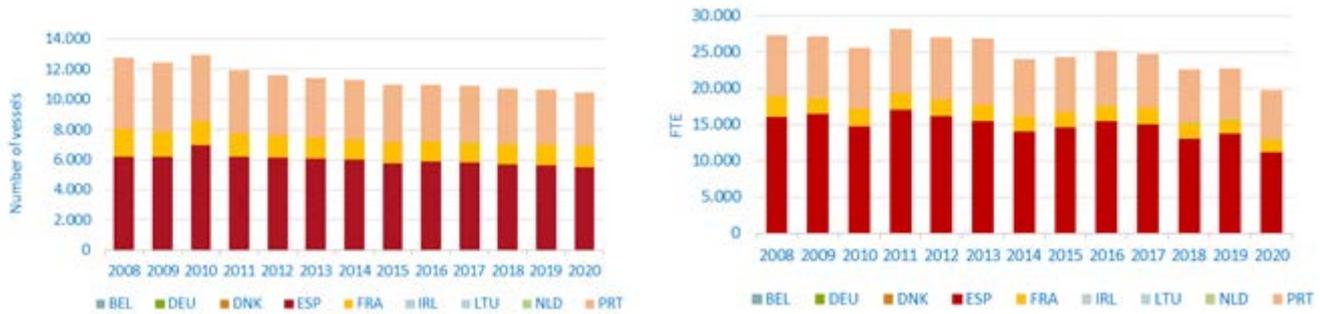
### Fleet capacity and employment

The seven Member States fleets operating in the SWW collectively numbered over 10 460 vessels even though Spain, Portugal and France represented 99.9% of the total. The Spanish fleet comprised the largest fleet in number (5 528 active vessels in the region), followed by Portugal (3 546) and France (1 375).

The SSCF accounted for 61% of the number of vessels and 52% of the days-at-sea, while LSF generated by far the highest landed weight, with 88% of the total and 76% of the value in 2020.

In 2020, the employment estimated for the SSCF amounted around 14 056 jobs corresponding to 5 967 FTE, a slight difference comparing to 2019, that makes the proportion of each remaining almost the same as the previous year (43% of the total jobs and 30% of the total FTE in the region), which indicates the dominant part-time nature of this fishing fleet.

Fleet capacity and employment in the region have followed a general decreasing trend over most of the period analysed, apart from a slight increase in FTE from 2015 to 2016, showing a new decrease in 2020 after keeping in 2019 in the same levels that in 2018 (Figure 3.53).



**Figure 3.54 Trends on the number of vessels and employment (in FTE) for MS fleets operating in the SWW.**

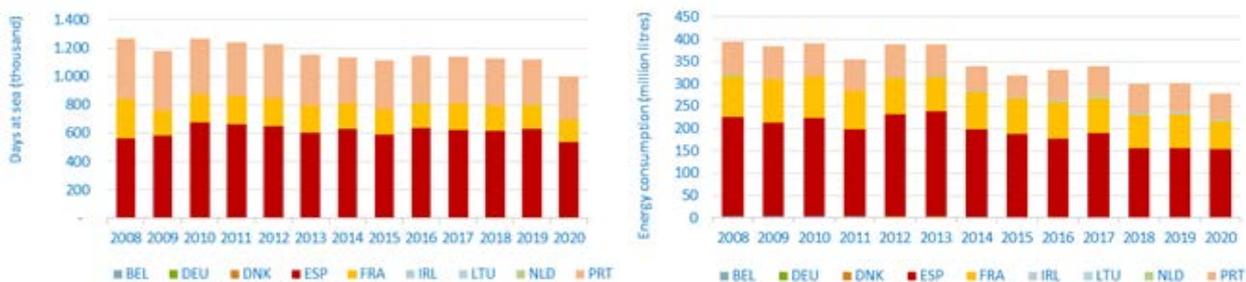
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022))

## Fishing effort

SWW fleet spent over 1 million DaS in 2020; 53% of which were deployed by the Spanish fleet (Figure 3.54). The number of DaS per fishing activity has remained quite balanced in recent years. In 2020, SSCF vessels accounted for 52% of the total number of days-at-sea but only 12% of the landed weight and 24% of the value.

Fishing effort has decreased much in line with capacity, with a 19% decrease in the number of vessels from 2010 and a 21% decrease in DaS. Between 2010 and 2020, more than 2 507 vessels ceased activity in the region, 57% of which were Spanish vessels. This decreasing trend in vessel number and also in engine power and gross tonnage is expected to continue for the coming years.

Energy consumption has also followed a general decreasing trend from 2012 to 2015, followed by an increase in 2016 and 2017, but in 2018, 2019 and 2020 the decreasing trend returned, reaching the lowest values in the series.



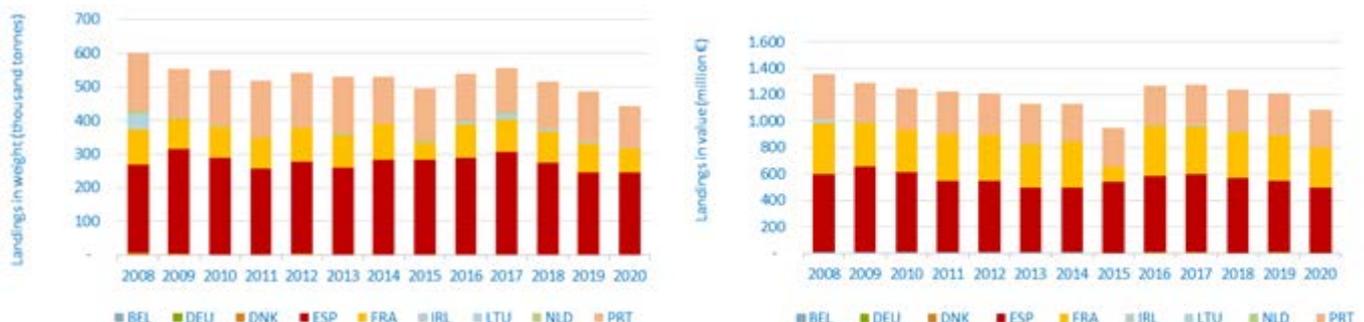
**Figure 3.55 Trends on fishing effort (in days-at-sea) and energy consumption for MS fleets operating in the SWW.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022))

## Landings and top species

The weight and value of landings generated by the SWW fleets amounted to approximately 441 386 tonnes and EUR 1.09 billion, respectively. In terms of landed weight, the Spanish (55% weight, 45% value), Portuguese (27% weight, 26% value) and French (17% weight, 28% value) were the most important national fleets, and together accounted for over 99% of the totals.

Landings in weight decreased by 9% in 2020 compared to 2019, while in value, they decreased by 10% (Figure 3.56). The decrease in value was centred on the French fleet. Landings were mainly generated by the LSF, making up 88% of the live weight and 76% of the landed value.

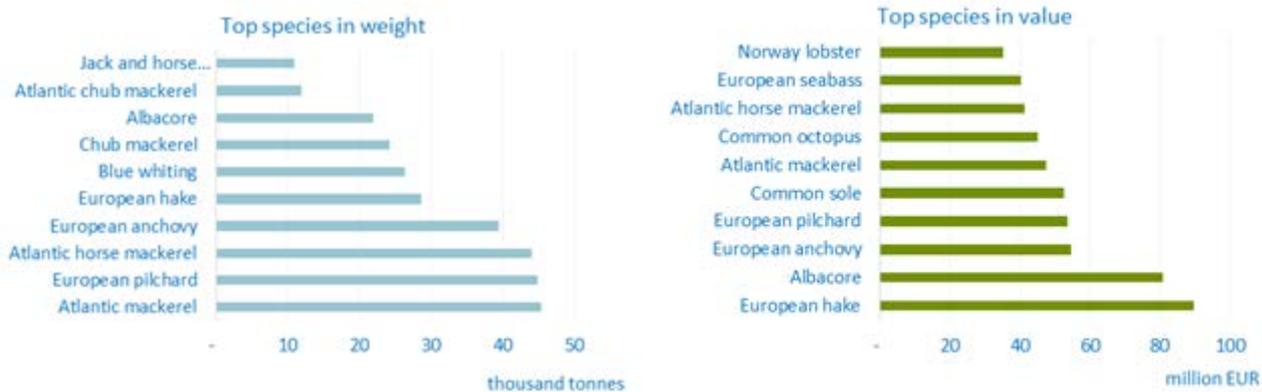


**Figure 3.56 Trends on landings in weight and value from MS fleets operating in the SWW**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

In 2020, the main species landed by the SWW fleet in terms of weight were small pelagic species, namely: European pilchard (44 582 tonnes), Atlantic horse mackerel (43 445 tonnes), Atlantic mackerel (40 193), Anchovy (39 457 tonnes), followed by European hake (27 192 tonnes). These species all together represented 44% of the total landings weight in the SWW. In terms of value, European hake was the most important species in 2019 (EUR 84 million), followed by albacore (EUR 77 million), European anchovy (EUR 55 million) and European pilchard (EUR 53 million) (Figure 3.57).

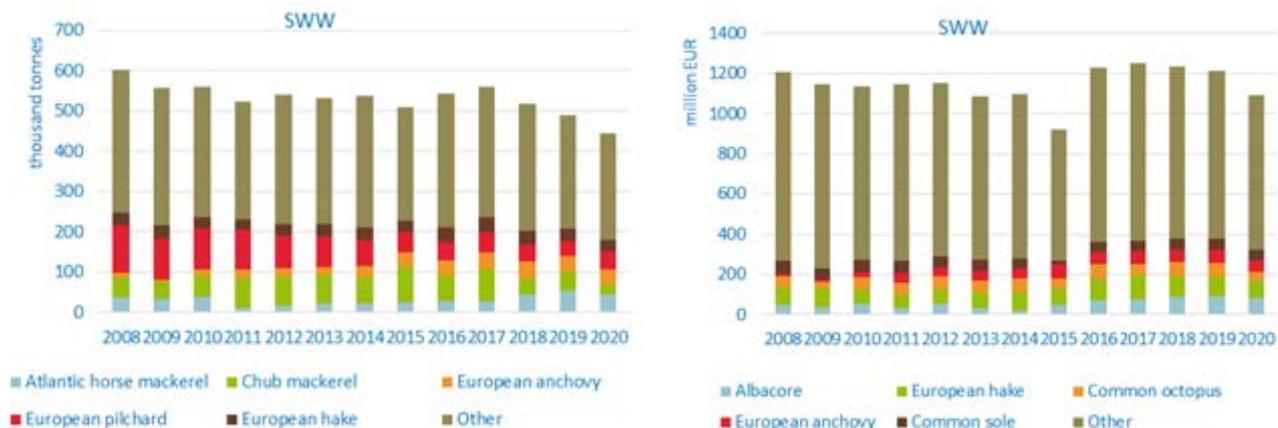
The top species can be seen as drivers for this region's fleets. The share of landed value of European hake is dominated by Spain and France (93%). Norway lobster, common sole and European seabass landings values, were dominated by France, with 84%, 80% and 66% of the total, respectively. Albacore landed values were dominated by Spain (77%). Regarding small pelagic fishes, European pilchard landings were led by Portugal (44% share) followed by Spain (30%) and France (27%). For European anchovy and Atlantic mackerel, Spain was the main Member State dependent on these species with 81% and 73%, respectively. Finally, common octopus is led by the Portuguese (70%) and followed by the Spanish fleet (30%).



**Figure 3.57 Top 10 species in landed weight and value for MS fleets operating in the SWW, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Temporal trends in the value and weight of landings have been influenced by fluctuations in TAC and quotas for Atlantic mackerel, blue whiting and hake. Mackerel went through a decrease in 2019 followed by an increase in 2020, which impacted the total value of landings for Member States targeting this species. European pilchard is of particular importance in the region, the biomass of which has been improving over the last years and, consequently, landings in 2020. (Figure 3.58).



**Figure 3.58 Trends on landings of the top species in landed weight and value for MS fleets operating in the SWW**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

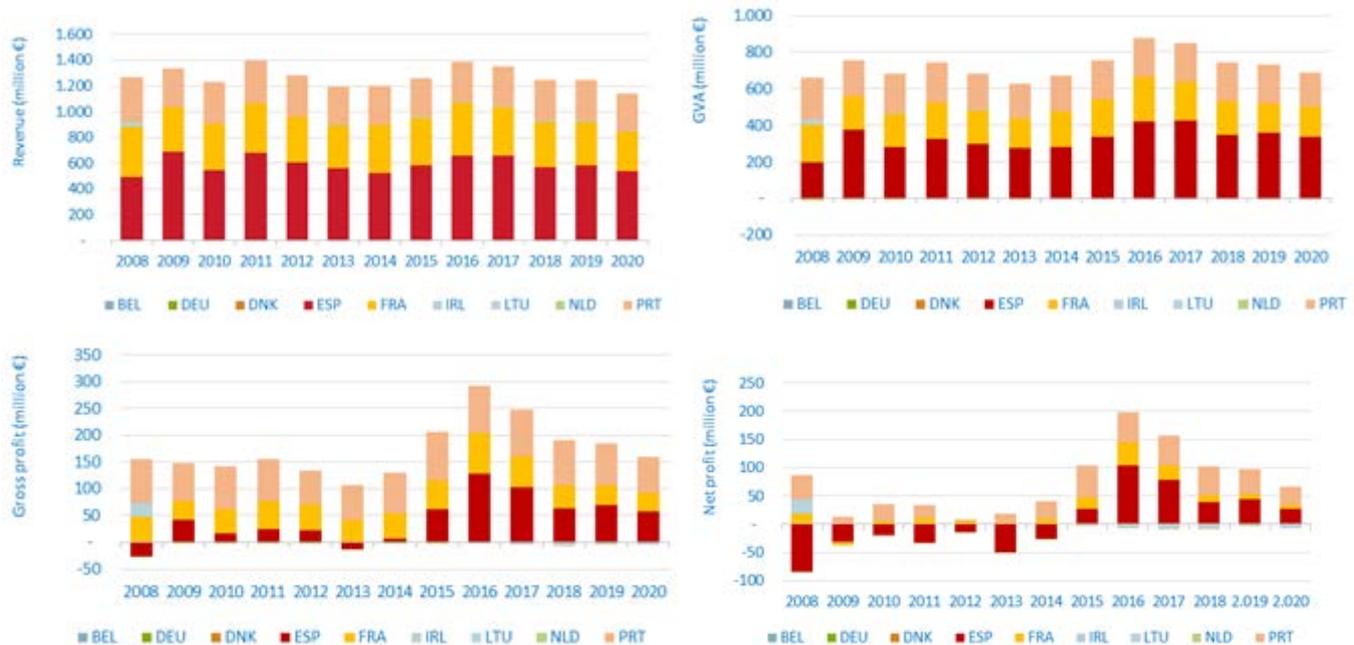
## Economic performance

The revenue generated by the SWW fleet in 2020 was estimated at EUR 1.1 billion. 99% of it was produced by three Member States fleets: Spain (47%), France (27%) and Portugal (25%). Revenue decreased in 2020 in comparison to 2019 by 8% (Figure 3.59).

The GVA generated amounted to EUR 685 million, a decrease of 6% compared to 2019 increasing the gap in relation to 2017. GVA decreased 11% for the Portuguese fleets, 5% for the Spanish fleet and 3% for the French fleets.

The fleet made EUR 155 million in gross profit, a decrease of 15% compared to 2019 continuing with the trend in relation to 2017. By Member States, the Portuguese fleet produced the highest gross profit (EUR 66 million), followed by the Spanish fleet (EUR 57 million) and then the French fleet (EUR 36 million).

By fishing activity, the SWW SSCF generated EUR 281 million in revenue in 2020, while the LSF generated EUR 856 million in revenue (75%).



**Figure 3.59 Trends on revenue and profit for MS fleets operating in the SWW**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Main factors affecting the performance of the fleet

### Main drivers affecting fleet performance in the region

Factors that may have hampered economic performance in the region include:

- Decreased TACs for a number of stocks, e.g., hake and blue whiting.
- Lower average prices for blue whiting, Atlantic horse mackerel and chub mackerel.
- Increase in fuel prices resulting in higher energy costs, especially for pelagic fisheries.

### Regulation and fisheries management in the region

Landing Obligation related regulations:

- Commission Delegated Regulation (EU) No 1394/2014 establishing a discard plan for certain pelagic fisheries in south-western waters.
- Commission Delegated Regulation (EU) 2019/2237 specifying details of the landing obligation for certain demersal fisheries in South-Western waters for the period 2020-2021.

Other relevant regulations are:

- Regulation (EU) 2019/1241 of the European Parliament and of the Council of 20 June 2019 on the conservation of fisheries resources and the protection of marine ecosystems through technical measures, amending Council Regulations (EC) No 1967/2006, (EC) No 1224/2009 and Regulations (EU) No 1380/2013, (EU) 2016/1139, (EU) 2018/973, (EU) 2019/472 and (EU) 2019/1022 of the European Parliament and of the Council, and repealing Council Regulations (EC) No 894/97, (EC) No 850/98, (EC) No 2549/2000, (EC) No 254/2002, (EC) No 812/2004 and (EC) No 2187/2005.
- Regulation (EU) 2019/472 establishing a multiannual plan for stocks fished in the Western Waters and adjacent waters, and for fisheries exploiting those stocks.

Other management measures that may affect economic performance of the fleets operating in SWW include marine protected areas and other legislation that has a multispecies impact. The EU is working in a new Regulation in order to include measures of the LO in NWW and SWW for the period 2021-2023.

### Status of important stocks

Fishing has generally progressed towards MSY in all areas of the Northeast Atlantic since 2006 and specifically in the SWW region.

Some important stocks in this area are: hake and mackerel. TAC for mackerel increased in 2020 but TAC for hake has decreased in recent years. On one hand, what is referred to hake, southern stock (ICES Divisions 8c and 9a) has a very specific model for the assessment and has shown a retrospective tendency to overestimate SSB and underestimate fishing mortality. The reasons for this pattern are not understood and ICES has not been able to solve this issue so far. On the other hand, under the guidelines of the CFP, the recommendation and TAC setting have been guided under the MSY principle. Both factors have led to the mention decrease on the TAC even the SSB has increased since 1998 and has been above MSY  $B_{trigger}$  (value of SSB that triggers a specific management action),  $B_{pa}$  (precautionary reference point for SSB), and  $B_{lim}$  (limit reference point for SSB) since 2007. Regarding fishing mortality, this value is decreasing although is still above  $F_{MSY}$ , but below  $F_{pa}$  (precautionary reference point for fishing mortality) and  $F_{lim}$  (limit reference point for fishing mortality). On the contrary, hake fished in the Bay of Biscay is part of northern component that shows a healthier trend because the SSB has increased substantially since 2006. In 2016 it reached the maximum in the time series, and since then it has declined slightly. Fishing mortality decreased markedly between 2005 and 2012, and has been stable below  $F_{MSY}$  since then. On the other hand, mackerel is a stock of wide distribution covering from SWW up to waters of Norway, Faroe Islands, Iceland and even Greenland. So the EU TAC fixed for ICES Divisions 8c and 9a (shared only by Portugal and Spain) depends on the evaluation and status of the stock in the whole area of distribution. The SSB is estimated to have increased since 2007, reaching a maximum in 2014, and has been declining since then even it remains well above MSY  $B_{trigger}$  since 2008. The fishing mortality has declined since 2003, but is estimated to have remained above  $F_{MSY}$ .

Regarding some other stocks of importance, there are two stocks of horse mackerel. On one side, southern horse mackerel fished in the ICES Division 9a by Spain and Portugal has a level of SSB above MSY  $B_{trigger}$  over the whole time-series, with a continuous and steep increase in the last few years, and is currently at its highest level. Recruitment (R) has been above the time-series average since 2011. F has been below  $F_{MSY}$  over the whole time-series. The situation of the other horse mackerel stock, the western component that in SWW distributes along Cantabrian Sea and Gulf of Biscay, is very dependent on occasional high recruitments. After a series of low recruitments, the estimates since 2014 are above average (1983–2018). SSB has been declining since 2006 and has been around  $B_{lim}$  since 2015. F has decreased since 2013, but remains above  $F_{MSY}$ .

Anchovy has two separate stocks, one for ICES Division 9a and another one for ICES area 8. The one in Division 9a presents some specificities that make difficult its complete evaluation and assessment. On the other side, the one in ICES area 8 the SSB has been above  $B_{lim}$  since 2010, and the year 2020 is assessed as the highest of the historical series. Recruitment has been mostly above the long-term average since 2010, and continues to increase in 2020, after a slight decrease in 2019. Harvest rates have been below the long-term average since the reopening of the fishery in 2010.

Finally, Iberian sardine in ICES Divisions 8c and 9a is seriously evolving from a situation clearly outside safe biological limit to be inside those. The biomass of age 1 and older fish (biomass 1+ or B1+) is above MSY  $B_{trigger}$  for the first time since 2009. Recruitment in 2019 is the highest since 2004 and above the long-term geometric mean. Fishing mortality has been declining since 2012 and is the lowest in the time-series; however, it is still above  $F_{MSY}$ . The reason of those changes in the stock status is the Fisheries Long Term Monitoring Program Sampling Protocol implemented by Portugal and Spain since 2017 that is foreseen to get the total recovering of the stock by 2023.

Anglerfishes are fished in correspondence with MSY and sole (FAO 27.8c and FAO 27.9a) stock status is unknown.

### TAC development of main species

The impact of changes in TACs and prices at Member State level varies as their species composition and species dependency of the fleets can differ considerably. In the SWW, the main fishing Member States, Spain, France and Portugal, rely on a diversified group of species, while less relevant

countries in this area, such as Belgium, Ireland, Denmark or the Netherlands are strongly oriented to one specific species.

Concerning the year 2020, it is important to highlight the following quotas:

#### **Demersal species:**

- In 2020, the TAC for southern hake is slightly lower than in 2019, despite the increase in biomass due to the model used for the assessment and the objective of reaching MSY levels, as mentioned above. Bay of Biscay hake returns to its 2018 TAC level, after an increase of around 22%.
- For SWW anglerfish TAC, looking at the two different stocks, there is a slight increase overall compared to 2019, due to the influence of the significant increase in the Bay of Biscay TAC. The southern quota (ICES divisions 8c and 9a) has seen a very slight decrease.
- TAC of common sole showed a small decrease in 2020 returning to the 2018 level.
- Norway lobster has some different stocks covering SWW. The stock in ICES Division 9a (shared by Spain and Portugal) returns to the 2018 TAC level in 2020. Due to the analysis of the stock in different functional units (FMUs), ICES maintained its recommendation, finally reflected in the TAC as in 2018, to limit catches in FMUs 26 (south of Galicia) and 27 (north of Portugal) to a percentage of the TAC and the total amount in FMU 30 (Gulf of Cadiz). Within the limits of the TAC, no more than the following quantity may be taken in functional unit 30 of ICES division 9a (NEP/\*9U30): 65 (December Council: COUNCIL REGULATION (EU) 2021/92). In the Cantabrian Sea, ICES Division 8c, the TAC remained low due to the status of the stock in the correspondent UF 25 and 31. This very small quota given to Spain with the purpose of performing scientific surveys to improve the knowledge and data for the evaluation of the stock.

#### **Pelagic Species:**

- TAC for mackerel had a peak in 2014 and, from then it has tended to decrease. It is important to notice that due to its wide distribution, this TAC is one for the whole area and it is agreed at the level of Coastal States of NEAFC (this one from 2016 to now). Since 2014, there has been an agreement for sharing the TAC between Norway, Faroe Islands and Norway. The TAC in 2020 in ICES Divisions 8c and 9a for Spain, Portugal and France had an increase of 7% after a decrease of 13%.
- TAC for horse mackerel has increased from 2019 to 2020 (decrease Bay of Biscay, but increase in Cantabrian Sea and southern waters).
- TAC for anchovy in ICES area 8 (shared by France and Spain) has decreased, as in FAO area 9.
- TAC for blue whiting increased each year from 2014 to 2018. However, in 2019 and 2020 had a slightly decrease. It is also important to point that this TAC is also negotiated at Coastal States, where EU has a high percentage of the total TAC.

### **Landing obligation**

Certain potential economic and social impacts have been identified, such as additional handling time in sorting and storing of unwanted catches, regarding the LO. It should be also referred the difficulty in dealing with some catch composition rules currently in force, the role of choke species in mixed fisheries or, specifically, the loss of quota, low prices and technical difficulties for commercialization of fish sold for non-direct human consumption. In this area whiting, red seabream, hake and alfonosinos are the most likely to become choke species and Spain, France and Portugal, the Member States most likely to be affected.

There are evidences of economic and social impacts mentioned by Member States in their scientific justifications of LO exemptions and in the annual report on the impact of the LO on their fleets.

### **Description of relevant fisheries in the region**

#### **Small-scale coastal fleet**

Three Member States have SSCF in the SWW: Spain, France and Portugal. The dependency of these fleets of this area is different. While 100% of the Portuguese SSCF fished in the area in 2020, it represented 73% of the SSCF fishing activity for Spain and 19% for France. In terms of vessel numbers, Spain and Portugal had the highest number of active SSCF vessels with 2 854 vessels and 2 819 vessels, respectively.

Overall, the SSCF was profitable in 2020, totalling EUR 195 million in GVA and EUR 61 million in gross profit. The most profitable in terms of gross and net profit margins was the Portuguese SSCF with 37% and 27%, respectively. In terms of labour productivity, the GVA per FTE varied from EUR 25 788 (Portugal) to EUR 89 758 (France).

Total employment for the SSCF is highest for Spain and Portugal, totalling 6 688 and 6 130, respectively, reflecting the high number of active vessels in these Member States. All of them in the SWW demonstrated a much lower FTE figures than total employed (about half the value) indicating that a large majority of those employed in the SSCF are part-time employees.

The most important species caught by this fleet are the common octopus (13% of the landed value) followed by the European seabass (10%).

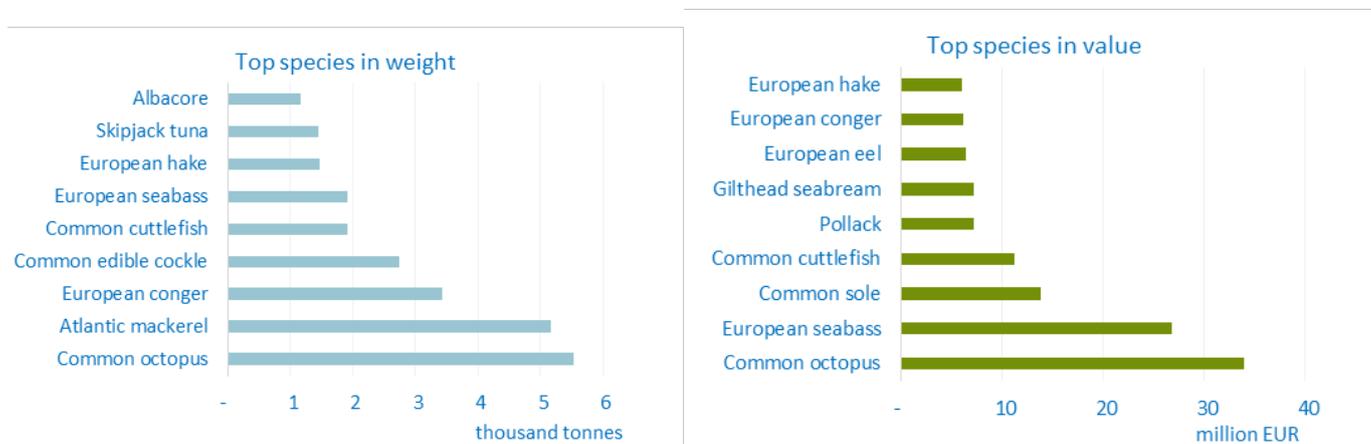


Figure 3.60 Top 10 species landed by SSCF operating in the SWW, 2020

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

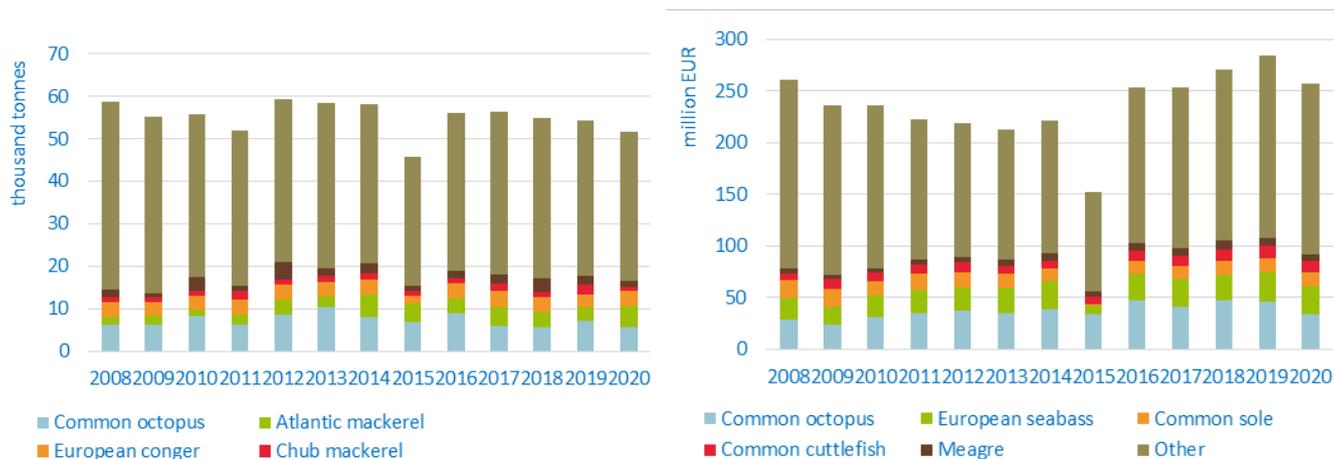


Figure 3.61 Trends in landings of top species landed and value by SSCF operating in SWW

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Large-scale fleet

There were six Member States LSF operating in SWW totalling 4 055 active vessels. Spain, Portugal and France had the largest number of active vessels and together account for 99.7% of the total number of vessels in the region.

The LSF was profitable in 2020, totalling EUR 490 million in GVA and EUR 94 million in gross profit. The Spanish LSF is responsible for 44% of the gross profit of the LSF in the SWW region, followed by Portugal that contributed with 35% and the French fleet with 25%. As for profitability, gross and net profit margins were 17% and 4% for the Portuguese fleet, 10% and 4% for the Spanish and 10% and 0.4% for the French fleet, respectively. When considering average GVA per vessel, differences are also noticeable; around EUR 175 000 for the French fleet, EUR 170 000 for the French fleet and EUR 95 000 for the Spanish fleet.

Total employment for the LSF for Spain and Portugal totalled 10 688 and 6 077, respectively, reflecting the high number of active vessels of these two Member States in the region. While the SSCF, for all Member States, demonstrates a considerable difference between the numbers of total employed and total FTE, the LSF figures for total employed and FTE are closer in value indicating the high level of full-time employment in this segment.

Member States can be classified into two categories according to their dependency which is representative of their LSF landings composition in SWW:

- Three Member States had a high dependency on one specie in the region. For the Belgian fleet common sole constituted 86% of landing. Albacore represented 92% of the landing value of the Irish fleet.
- For Spain, France and Portugal, the landing composition was more diverse, with hake playing a key role. The main species by landing value for Spain were albacore (15%), anchovy (11%), hake (11%), and Atlantic mackerel (7%). For France, hake (15%), common sole (14%), Norway lobster (13%), sardine (6%) and monkfishes (6%). Finally, the main species by landing value for Portugal were sardine (12%), Atlantic horse mackerel (8%), black scabbardfish (7%) and anchovy, shrimps, and swordfish (5% each).

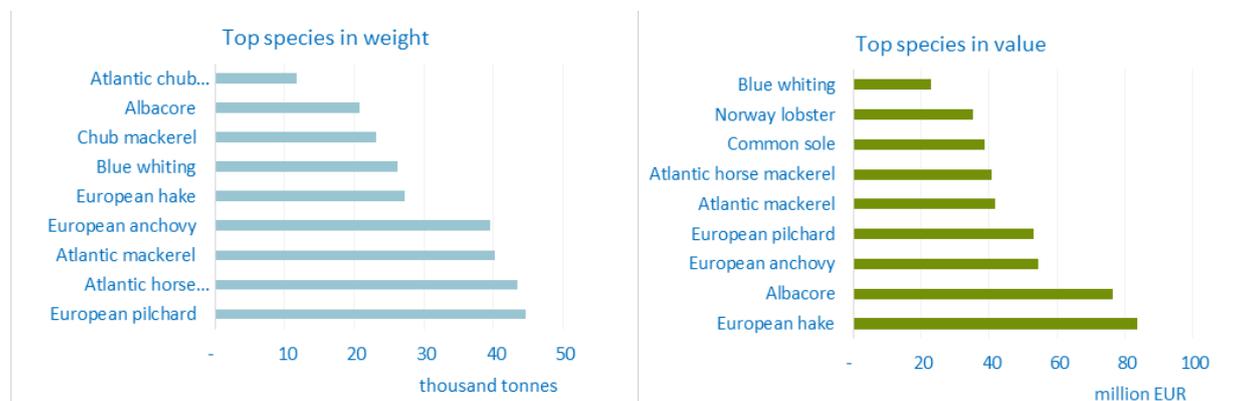


Figure 3.62 Top 10 species landed by LSF operating in the SWW, 2020

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

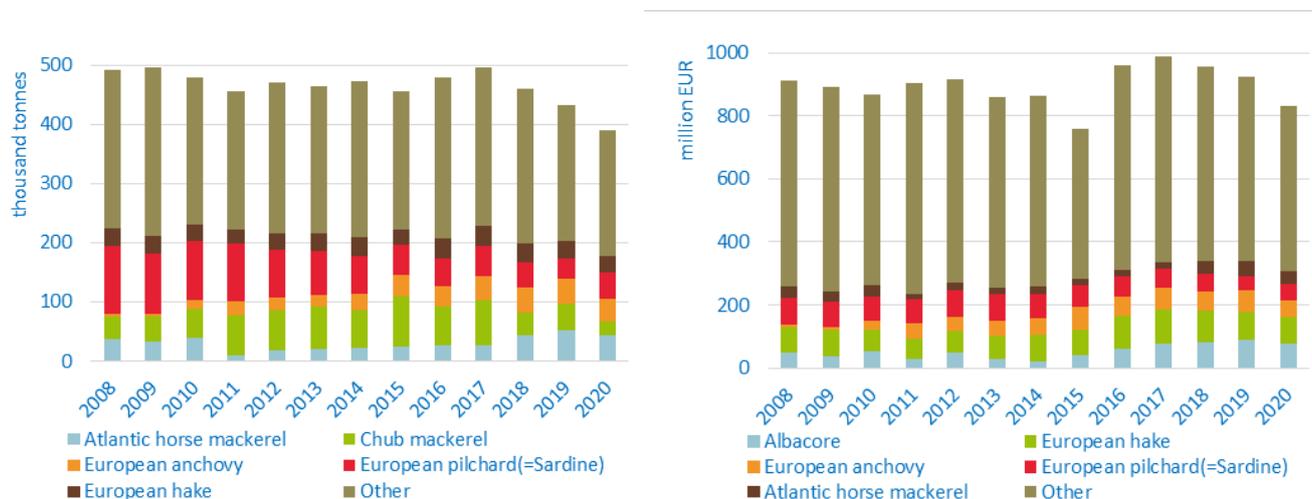


Figure 3.63 Trends in landings of top species landed in weight and value by LSF operating in SWW

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Additionally, two distant water fleets (Portuguese and Spanish fleets) had some activity in the region in 2020. The EWG notes, however, that data on the EU distant water fleets operating in the region is limited and the economic indicators are to be interpreted with caution.

## Performance by fleet segments

50 fleet segments, out of the 132 fleet segments identified in the area, represented over 86% of the vessels, 88% of the landed weight and 87% of the value generated by fleets in the region in 2020.

At fleet segment level, the Spanish purse seiners 24-40m generated the most revenue (EUR 75 million), followed by the Spanish demersal trawlers 24-40m (EUR 74 million) and the Spanish vessels using active and passive gears under 10m (EUR 69 million).

The segments with the highest profitability were Portuguese vessels under 10 metres using pots and/or traps (270 vessels achieving 43% overall net profit margin) and the Portuguese vessels under 10m using passive gears only (1 573 vessels achieving 29% overall net profit margin).

Considering labour productivity within the top 50 fleet segments, the 13 upper positions were occupied by the French fleets, being the purse seiners between 12 and 18 metres the one with the higher labour productivity (EUR 182 252 GVA per FTE). The following are vessels under 10 meters using other active gears (EUR 133 589 GVA per FTE) and vessels between 10 and 12 metres using hooks (EUR 114 395 GVA per FTE). Considering the Spanish and Portuguese fleet, it is observed that the most productive fleet segments was the Spanish Purse seines between 24 and 40 metres (EUR 56 587 GVA per FTE), followed by the Spanish vessels under 10 metres using polyvalent active and passive gears (EUR 54 044 GVA per FTE) and the Portuguese demersal trawlers between 24 and 40 metres (EUR 47 869 GVA per FTE).

In the range of the top 50, there is a wide gap between the most and the least efficient fleets, measured by gross profit margin. The most efficient is the Portuguese vessels under 10 metres using pots and traps (50% GRPm), being the latter position occupied by the Portuguese vessels between 24 and 40 metres using hooks (-14% GRPm).

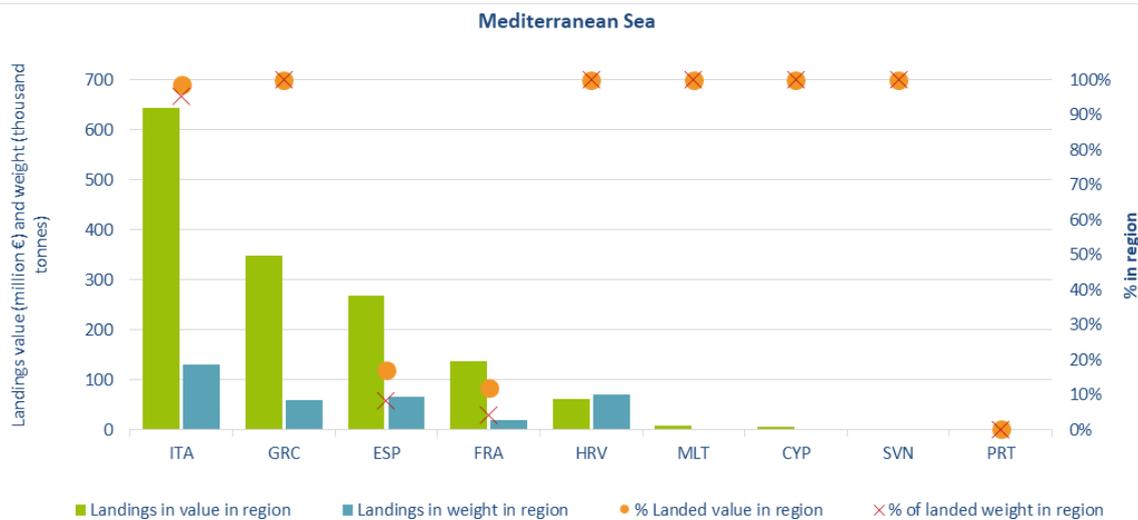
## 3.5 Mediterranean Sea

### Regional Details

The Mediterranean region covers FAO fishing areas 37.1, 37.2, and 37.3 and nine Member States: Croatia, Cyprus, France, Greece, Italy, Malta, Portugal, Slovenia, and Spain. Due to incomplete datasets for time series, Greece, one of the main fishing nations in the region, is included for the 2019 analysis but excluded for trends analysis. Data for Croatia is available from 2012 onwards only (Croatia entered EU in 2013).

The Mediterranean fleet accounted for 58% of all EU vessels and 46% of the EU employment (FTE) in 2020. The Mediterranean fleet also contributed to 9% of the EU landings in weight and 24% in value.

Most Member State's fleets were totally dependent on the Mediterranean basin for their primary fishery production. Almost all landings by the Cypriot, Croatian, Greek, Italian, Maltese, and Slovenian fleets were originated from the region. For Spain and France, the percentage of landings in weight originated from Mediterranean waters was less than 10%, and marginal for Portugal (Figure 3.64).

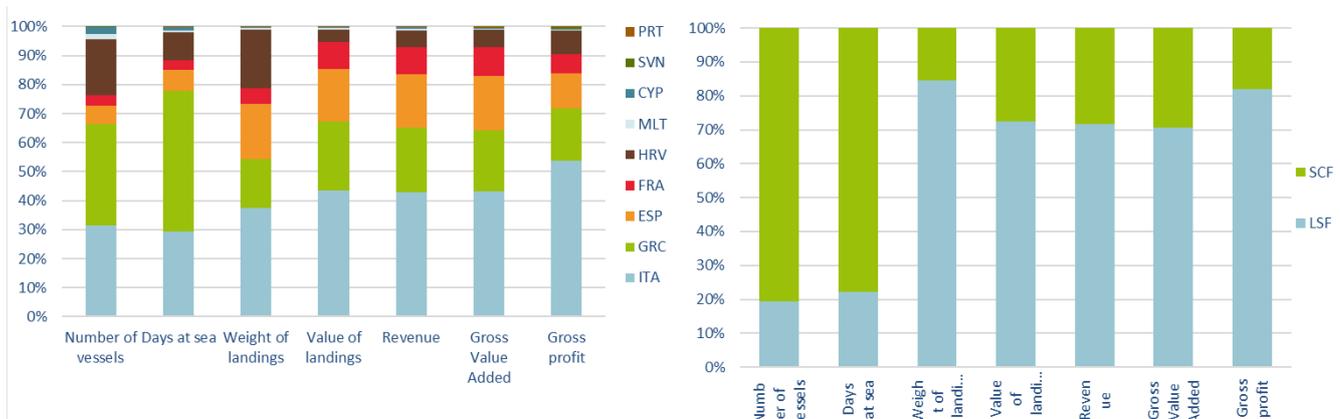


**Figure 3.64 Importance of the Mediterranean Sea for MS fisheries in terms of landings in weight and value, 2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

The Greek fleet is the first contributor in terms of the number of vessels (35%) and days-at-sea (48%) while the Italian one is the dominant fleet in terms of landings (37% in weight and 44% in value), revenue (43%), gross value added (43%) and gross profit (54%) (Figure 3.84).

In terms of landed weight, Croatia caught 20% of the Mediterranean landings, followed by Spain (19%) and Greece (17%). In terms of employment, Italy (36%), Greece (31%), and Croatia (13%) accounted for 80% of it.



**Figure 3.65 Share by MS fleets and fishing activity in the Mediterranean Sea, 2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

The economic performance was mostly driven by the LSF, which contributed to 72% of the landings value from the Mediterranean and to 84% of landings weight in 2020. In contrast, 81% of the vessels operating in the region belong to SSSF.

Around 78% of the DaS were undertaken by SSCF vessels. LSF accounted for 22% of the DaS, of which most were undertaken by the demersal fleet.

The Mediterranean SSCF generated 28% of the revenue in 2020, which decrease for 17% compared to 2019. LSF generated EUR 1.1 billion in revenue.

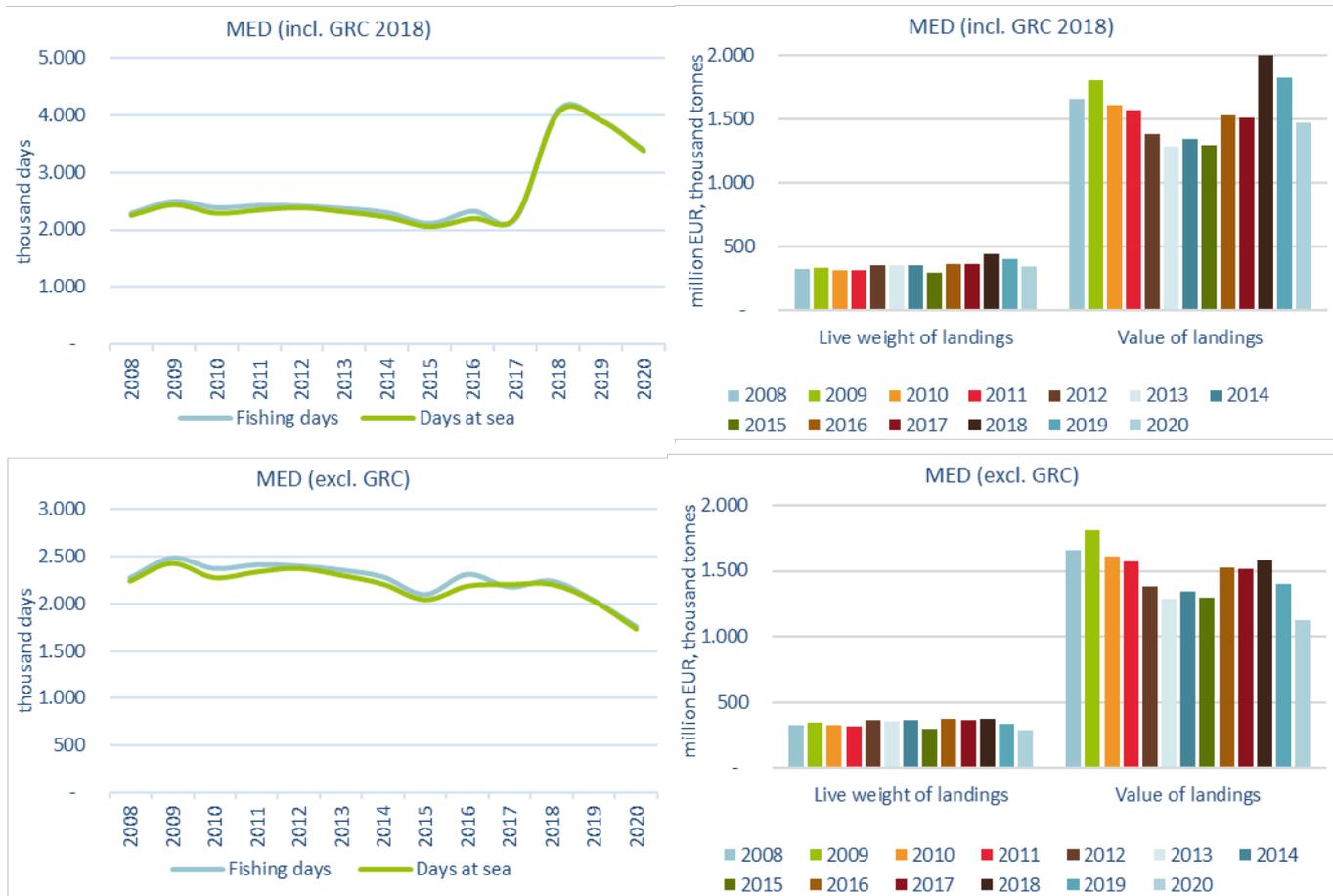
The main SSCF fleet segments in terms of the number of vessel are the Greek Drift and/or fixed netters 6-12m (5 003 vessels) and the Italian Vessels using polyvalent passive gears only 6-12m (4 751 vessels), which combined accounted for 30% of the Mediterranean fleet in 2020.

The main LSF fleet segments are the Italian demersal trawlers between 12-18m, 18-24m and 24-40m, the Spanish demersal trawlers between 18-24m and Greek demersal trawlers 24-40m, which altogether represented around 30% of total revenue from the area and 7% of the fleet covered.

## Overview of the main results for EU Mediterranean Sea fleet

### Fishing effort and landings

Fishing effort decreased compared to 2019 (Figure 3.67), (3.36 million days-at-sea and 3.38 million fishing days in 2020, including Greece). Effort decreased by 13% while landings, both in weight and value, have decreased by 15% and 19%, respectively, between 2019 and 2020. The weight and value of landings were approximately 348 360 tonnes and EUR 1.47 billion in 2020.



**Figure 3.66 Trends on effort and landings for MS fleets operating in the Mediterranean Sea.**

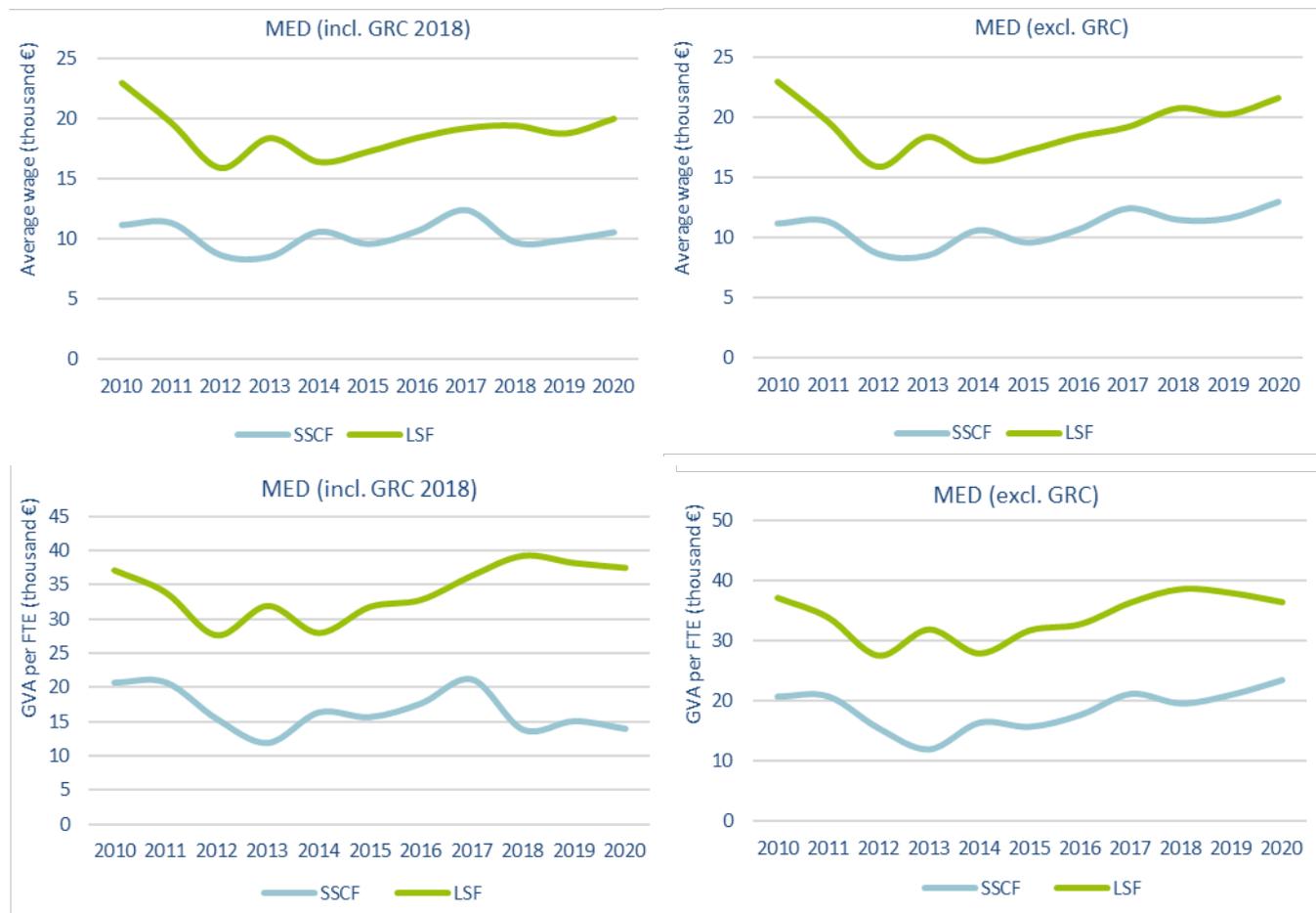
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Including Greece from 2018 and excluding Greece for the whole time series.

### Employment, wages and labour productivity

Employment in the Mediterranean fishing fleet in 2020 was estimated at 59 762 jobs, corresponding to 38 701 FTEs. Employment (measured as FTE) has decreased by about 12% relative to 2019. More than half of the employment is created by the SSCF; 35 415 jobs corresponding to more than 59% of total jobs, and 20 377 FTEs corresponding to almost 53% of total FTEs. The average employment per vessel is about 1.8. Additional information on capacity and employment are provided in the sections on trends and social aspects.

Annual average wages and salaries in 2020 for fishers in the SSCF and LSF were EUR 10 543 and EUR 20 019, respectively. Average wages in the LSF increased by 6% relative to 2019. In the SSCF, average wages increase by 7% compared to 2019 (Figure 3.67).

In LSF the labour productivity (GVA per FTE) decreased by about 2% compared to 2019, estimated at EUR 37 527, while in the SSCF labour productivity decreased by 7% to EUR 13 983.

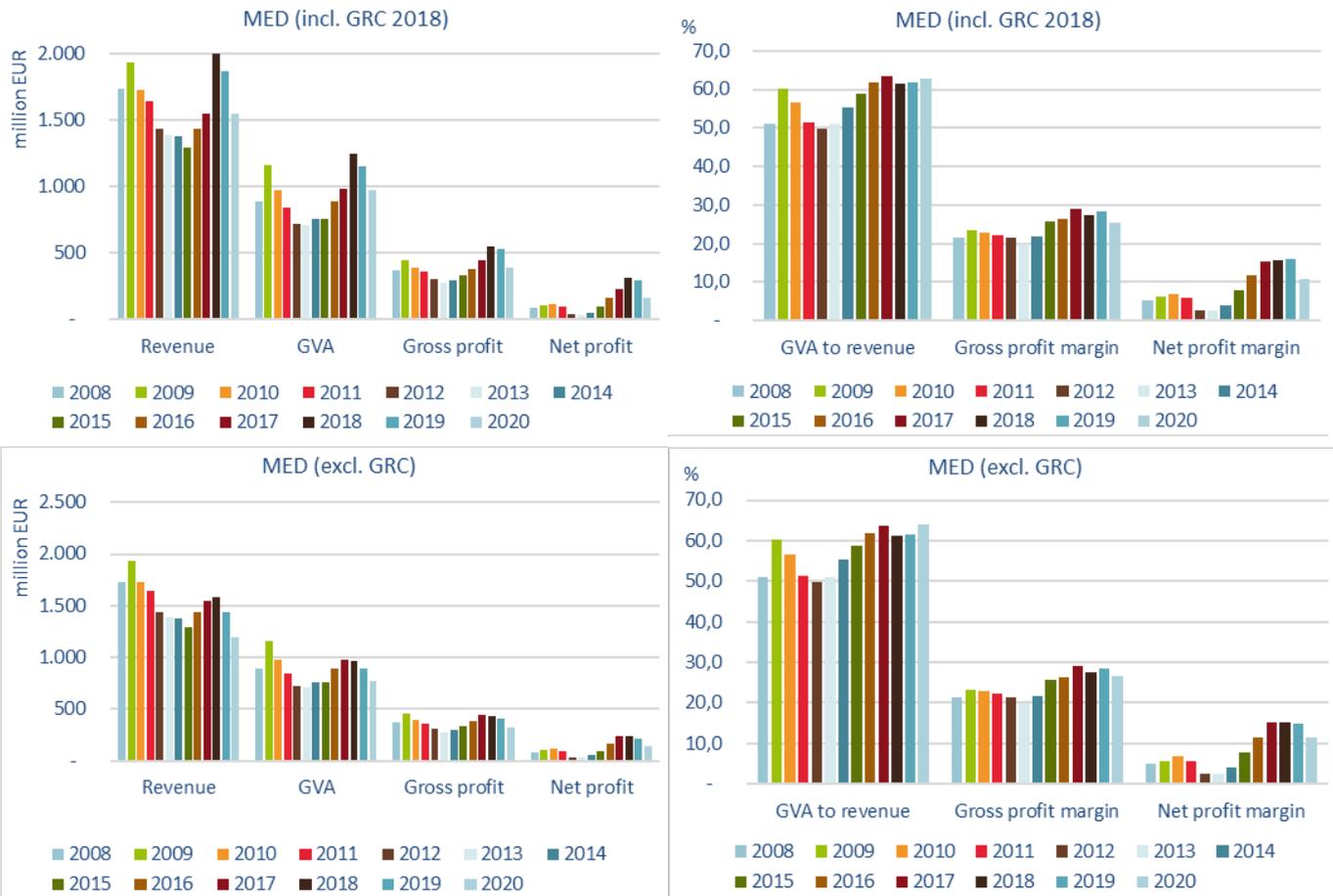


**Figure 3.67** Trends on average wage (up) and labour productivity (down) by fishing activity for MS fleets operating in the MED

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Including Greece from 2018 and excluding Greece for the whole time series.

## Economic performance

In 2020, after several years of continued improvement since 2015, the Mediterranean fleet reached a point of stagnation with respect to economic performance indicators analysed. The revenue was estimated at EUR 1.55 billion decreasing by 17% compared to 2019. GVA produced by the fleets amounted to EUR 0.97 billion. GVA decreased by 16% compared to 2019. The Mediterranean fleets made almost EUR 391 million in gross profit, a decrease of 26% compared to 2019. Finally, net profit was EUR 165 million (decreased by 45% compared to 2019). In addition, gross and net profit margin decrease for 11% and 31% in period 2019-2020 (Figure 3.69). GVA to revenue pursued a relatively stable trend in period mentioned.



**Figure 3.68 Trends on revenue, profits and profit margins for MS fleets operating in the MED**

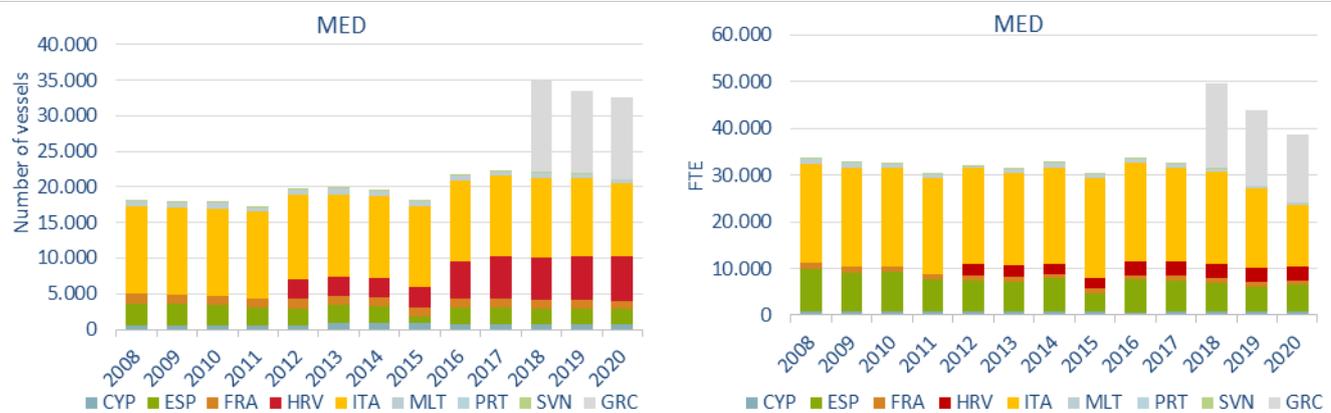
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Including Greece from 2018 and excluding Greece for the whole time series.

## Trends by Member State fleet

### Fleet capacity and employment

The Mediterranean fishing fleet numbered 32 551 active vessels. The SSCF comprised 26 239 vessels (81% of the regional fleet). Among them, 33% belonged to the Greek fleet. Total employment was estimated at 59 762 jobs (36% belonging to the Italian fleet), corresponding to 38 701 FTEs (Figure 3.70) in 2020.

Trends on the number of vessels have remained relatively stable, increasing in 2012 with the entry of the Croatian fleet. Number of vessels and engaged crew have decreased in 2020 by 3% and 4%, respectively, compared to previous year, mostly due to a decrease in the French and Italian fleets.

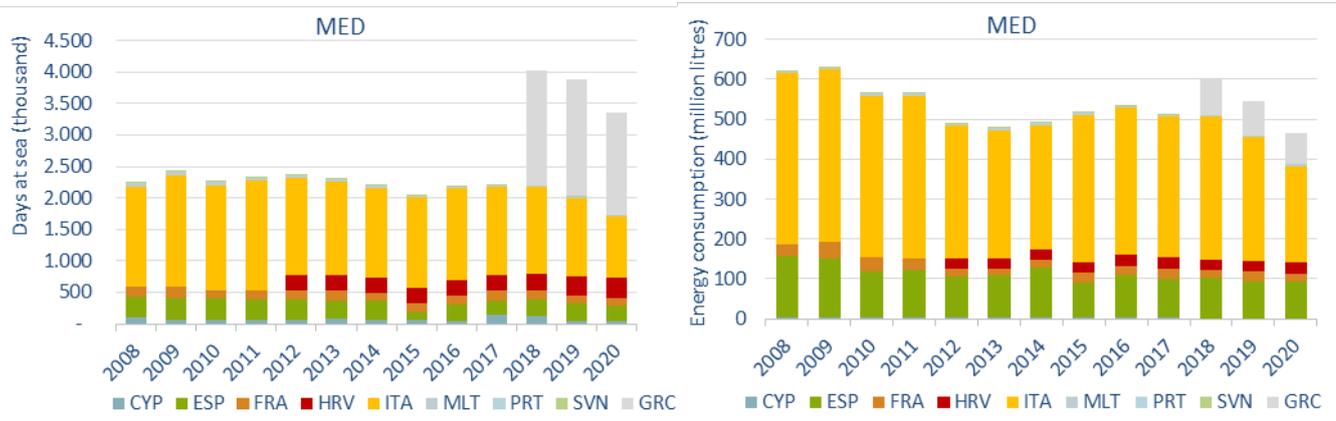


**Figure 3.69 Trends on the number of vessels and employment (in FTE) for the MS fleets operating in the MED**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); Includes Greece from 2018.

## Fishing effort

The Mediterranean fleet spent 3.3 million DaS in 2020. The Greek fleet accounted for about 48% of the number of days, followed by Italy (29% of the overall activity) (Figure 3.71). The SSCF accounted for 78% of these DaS.



**Figure 3.70** Trends on fishing effort (in days-at-sea) and energy consumption for MS fleets operating in the MED

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); Includes Greece from 2018.

Energy consumption in 2020 (459 million litres) decreased by 14% compared to 2019, mostly due to a 22% decrease in the Italian fleet and 21% decrease in the French fleet.

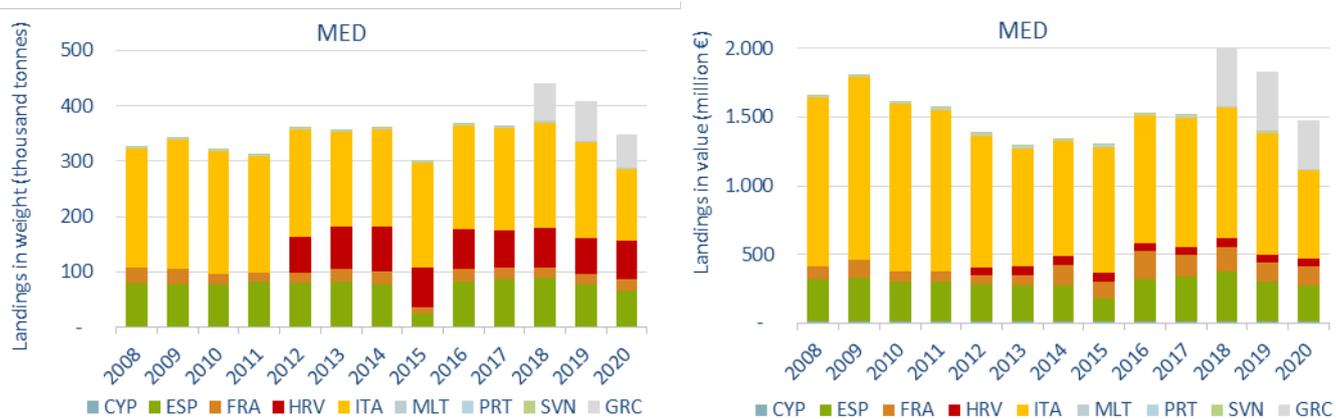
In 2020, Italy had the highest energy consumption in the region (52%), followed by Spain and Greece, with 20% and 17% energy consumption, respectively. Effort (DaS) deployed in the region followed a general decreasing trend, a slight increase between 2013 and 2016 and stabilising somewhat in period between 2016 and 2018 (Figure 3.89).

## Landings and top species

The weight and value of landings generated by the regional fleet in 2020 amounted to approximately 348 361 tonnes (-15% compared to 2019) and EUR 1.47 billion (-19% compared to 2019), respectively.

Regarding landed weight, Italy (130 088 tonnes), Croatia (70 330 tonnes), Spain (65 942 tonnes), Greece (59 558 tonnes) were the leading countries, together accounting for 94% of the total weight and almost 90% of the value of landings from the EU Mediterranean basin.

The Croatian fleet landed 20% of the seafood in weight but only generated 4% of the value, indicating the predominance of low valued species composition of the catch (i.e. small pelagic species). The Italian fleet landed 37% of the weight and generated 44% of the value (Figure 3.72).

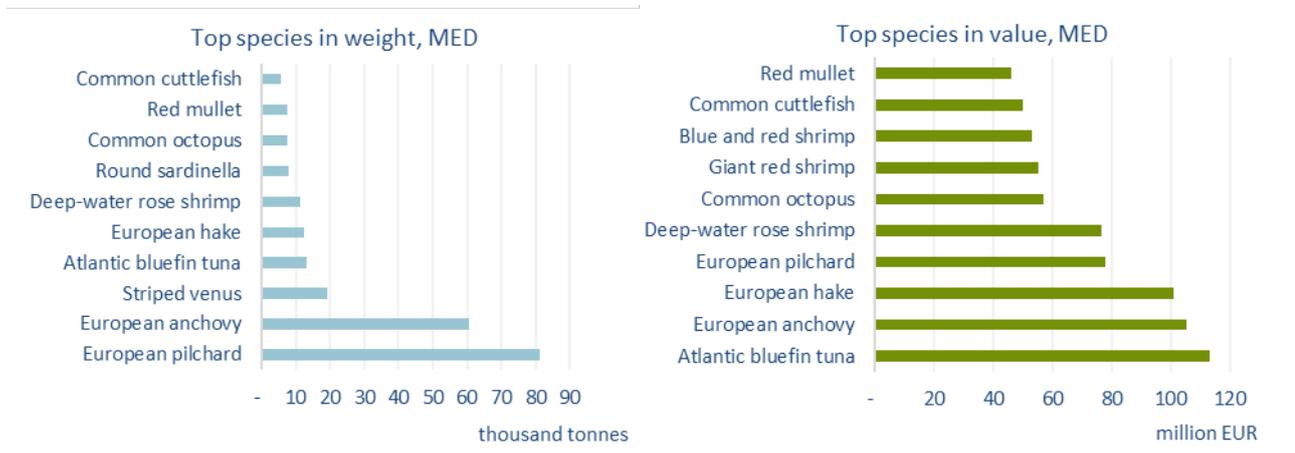


**Figure 3.71** Trends on landings in weight and value by MS fleets operating in the MED

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Includes Greece from 2018.

In 2020, the main species (by weight) were pilchard (sardine, 81 043 tonnes), followed by European anchovy (60 635 tonnes), striped Venus (19 139 tonnes) and bluefin tuna (13 145 tonnes).

By value, the most landed species were bluefin tuna (EUR 113 million), anchovy (EUR 105 million), hake (EUR 101 million), sardine (EUR 78 million), deep-water rose shrimp (EUR 77 million) and common octopus (EUR 57 million) (Figure 3.73).

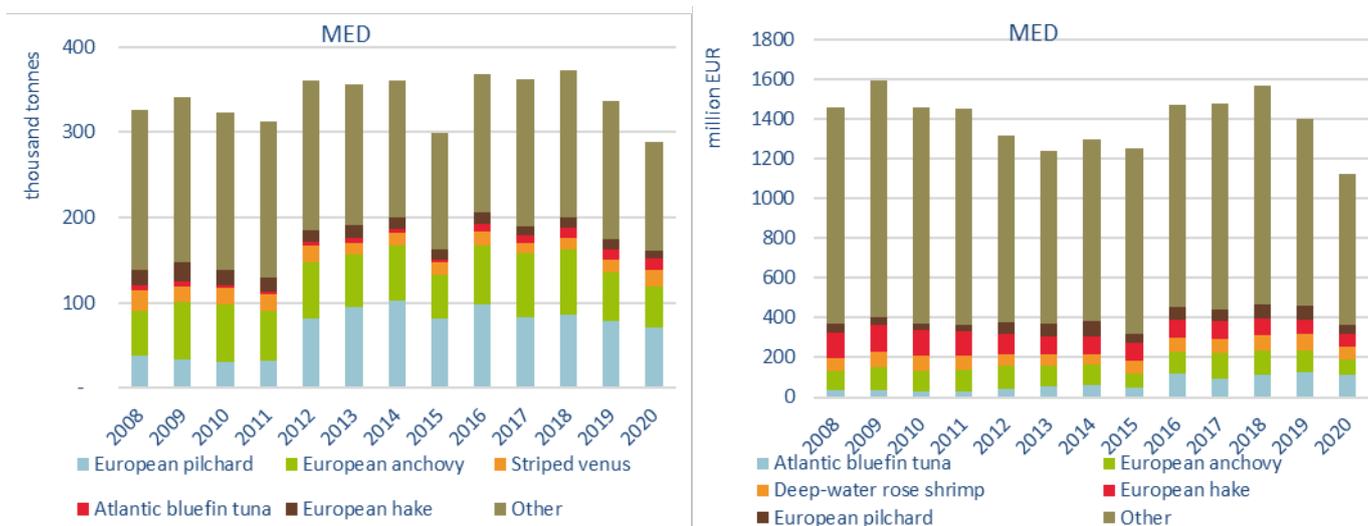


**Figure 3.72. Top 10 species in landed weight and value for MS fleets operating in the MED, 2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Includes Greece.

Landings of small pelagic species have increased in the last decade, however 2020 landings of sardine and anchovy decreased 11% in weight and 20% in value compared to previous year. After an increase in 2019, landings of deep water-rose shrimp decreased substantially (-16% in value compared to previous year).

In 2020 there was a very large increase also for the overall landings of bluefin tuna (7% in weight and value compared to 2019), mostly due to the increase in the overall Mediterranean quota – details in the section on management measures, quota and TAC-. Bluefin tuna is among the most valuable commercial species in the Mediterranean Sea; price of Bluefin tuna in 2020 has decreased by 17% (8.36 euro/kg) compared to 2018-2019 average (10.33 euro/kg). The COVID-19 outbreak had a direct impact on the export of this species because of restriction in transportation services.



**Figure 3.73. Trends on landings for the top species in landed weight and value for MS fleets operating in the MED**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Excludes Greece.

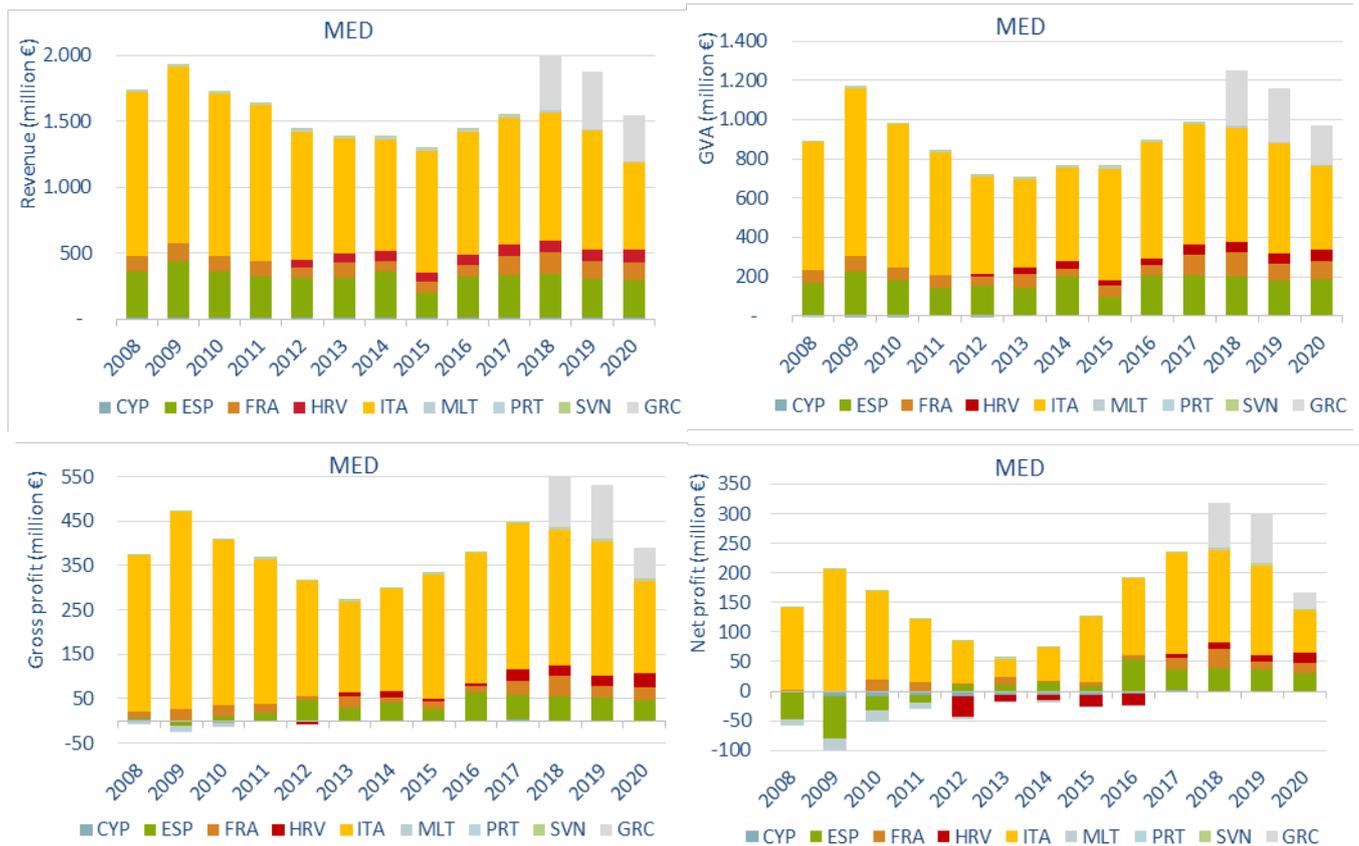
## Economic performance

The revenue (income from landings and other income) generated by the Mediterranean fleet in 2020 was over EUR 1.5 billion, 99% of which was provided by five Member States: Italy (EUR 662 million), Greece (EUR 348 million), Spain (EUR 283 million), France (EUR 143 million) and Croatia (EUR 90 million) (Figure 3.75).

Revenue decreased in 2020 by 17% compared to 2019, only in France, Croatia and Slovenia revenues increased compared to the previous year, while the other Member States have seen their revenues decrease. Italy has had a decrease of 27%, Spain 3% and Greece 19%.

GVA produced by Mediterranean fleet covered in the analysis was over EUR 973 million in 2020, a decrease of 16% compared to 2019. The largest decrease in GVA was recorded in Italy (-25%), followed by Greece (-24%) and Cyprus (-17%). The fleets operating in the region made almost EUR 391 million in gross profit, an estimated 27% decrease compared to 2019.

The Mediterranean fleet generated net profits in 2020 of about EUR 165 million with a deterioration of 45% compared to 2019. All Member States reported net profits in 2020, with the exception of Cyprus.



**Figure 3.74. Trends on revenue and profits for MS fleets operating in the MED**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Includes Greece from 2018.

## Main factors affecting the performance of the fleet

In 2020, the regional fishing fleet's economic performance worsened with decreased gross profit and net profit even if variation across Member States can be observed (France, Croatia and Slovenia showed an improving pattern in the net profit over the period). The overall negative trend was driven by the Italian, Greek, Maltese and Spanish fleet.

Results for 2020 are driven by COVID-19 pandemic; apart from Slovenia, the outbreak has had a direct impact on:

- fishing effort: a marked overall reduction in effort in terms of days at sea has been observed in all fleet segments;
- first sale price: a reduction of the first sale price involved some of the main commercial species (European anchovy, European, pilchards, Deep-water rose shrimp, Atlantic bluefin tuna). The closure of fish markets and restaurants had seriously negatively affected the quantity demanded and, consequently, the prices;
- crew wages and salaries: the average crew (labour costs on total jobs) decreased by 3% in 2020 compared to 2019; the reduction can be linked to the negative trend in revenues as, in most countries, labour costs are directly related to revenues as the traditional based income sharing system between the ship-owner and the crew is the most prevalent.

In addition, the implementation of management plans for DTS and PS segments in Western Mediterranean and Adriatic Sea lead to a further reduction in days at sea; the fishing effort regimes and the introduction of new spatio-temporal closures are a major source of concern for professional fishers for the period beyond 2020.

### Factors that may have contributed to an improved situation include:

- Status of the stocks: since 2015 fishing mortality (F) has been decreasing and biomass increasing (STECF-22-01); these positive trends should be related to increased management measures

implemented in the Mediterranean Sea in recent years, particularly through the adoption of management plans;

- Decreasing fuel prices in 2020 resulting in lower energy costs, especially for pelagic fisheries and trawlers;
- Diversification of sales channels: the fishers' efforts to deal with the pandemic crisis have prompted them to adopt a number of innovative solutions. The diversification of sales channels, the organization of fishing trips based on actual demand through direct contact with local consumers and changes in catch composition according to market demand are some of the initiatives adopted during the lockdown. Their continued application in the future has the potential to enhance the economic and social development of fishery sectors, in particular of the SSCF.

## Regulation and fisheries management in the region

The management of Mediterranean fisheries is based on a variety of spatio-temporal and technical measures aimed at increasing selectivity, accounting for subregional specificities. Fisheries Restricted Areas (FRAs) aimed at protecting nursery areas, technical measures to protect juveniles, emergency real time closures and establishment of minimum conservation reference sizes, catch limits and effort regimes are aimed at improving status of exploited stocks. In addition, temporary and permanent cessation of fishing activities implemented with the support of EMFAF aids in achieving sustainable fisheries, taking into account biological, economic and social implications of implementing such measures on dependent industries, employment and local communities.

Significant advances have been made in the recent period in managing fisheries resources, with the adoption of several multiannual management plans. The GFCM adopted recommendation GFCM/42/2018/8 on further emergency measures in 2019-2021 for small pelagic stocks and recommendation GFCM/43/2019/5 on a multiannual management plan for sustainable demersal fisheries in the Adriatic Sea. The first one established catch and effort limits for small pelagic stocks, the second one fishing effort regime for certain demersal stocks. These measures were implemented in Council Regulation (EU) 2019/2236. In 2021 significant advances include establishment of a five-year effort regime for key demersal stocks in the Adriatic Sea (Recommendation GFCM/44/2021/1), a multiannual management plan for small pelagic Sea (Recommendation GFCM/44/2021/20) and establishment of fisheries restricted areas in the Jabuka/Pomo Pit and the Bari Canyon.

Additional measures of reductions of the fishing effort have been introduced with the Western Mediterranean MAP; this plan lays down a 10% reduction in fishing effort (annual fishing days) the first year of implementation (2020) in relation to the reference period (2015-2017) and up to a further reduction of an additional 30% until 2025. In addition to that, the reduction of fishing days must be complemented with temporal and permanent closures with the aim of protecting juveniles of hake and in general all the species affected by the plan. Any other measures as selectivity improvements could be approved. The combination of all these measures is expected to contribute significantly to the sustainability of Mediterranean Fisheries and to reach the objective of achieving MSY in 2025.

Important steps have been taken towards the spatial management of fisheries resources, through the introductions of FRAs (fisheries restricted areas); to date, nine FRAs have been established by the GFCM; among these, the Jabuka/Pomo Pit fisheries restricted area, the first to be introduced in 2017, is considered an example of best practice in transnational cooperation and in the integration of the views of fishers and stakeholders in the implementation of spatial protection measures. The initial scientific evidence (FAO, 2021) showed higher abundance and densities of the main commercial species (e.g. European hake, Norway lobster, and deep-water rose shrimp) inside the FRA. Moreover, in general in GSA 17 (northern Adriatic Sea), the overall perception, including of fishers, is that the FRA is contributing to the recovery of the stocks and habitats (FAO, 2021).

## Status of important stocks

Resources' sustainability continues to be of particular concern in the Mediterranean. In recent years, there has been a decrease in the percentage of stocks in overexploitation, as well as in the average exploitation ratio, which has decreased from 2.9 to 2.4 times the maximum sustainable yield fishing mortality, and the percentage of stocks with high biomass had increased from 23% to 46% over the same period (FAO, 2021). For priority species, a decrease in the exploitation ratio is registered for a number of species, such as European hake and common sole, while others, such as blue and red shrimp, Norway lobster and sardine, have shown an increase in exploitation ratios (FAO, 2021).

Demersal stocks targeted by Mediterranean fishing fleets remain overexploited in a high percentage, with European hake continuing to be the most exploited priority species in the Mediterranean, and

although exploitation rates improved, fishing fleets are under strict management regimes, in particular trawl fishery (FAO, 2021).

Notwithstanding, the stock assessments in the Adriatic, Ionian and Aegean Seas indicate overfished status of several important demersal stocks (European hake, Spottail mantis shrimp and Deep water shrimp in the Adriatic), one is being fished close to F<sub>MSY</sub> (European hake in Western Ionian Sea) and one is under-exploited (Red mullet in the Adriatic); in the Western Mediterranean Sea, the assessments indicate that 11 out of the 19 stocks are being significantly overfished, five are being fished close or at F<sub>MSY</sub> and three are under-exploited (STECF-21-15 and STECF-21-11).

### TAC development of main species

The current management approach to highly migratory species in the Mediterranean concerns bluefin tuna (*Thunnus thynnus*), swordfish (*Xiphias gladius*), and albacore (*Thunnus alalunga*). The 2018-2020 recovery plan (Recommendation 2017-07) provides an increase of the annual TAC for bluefin tuna stock; the EU quota was increased to 19 360 tonnes in 2020 (121% increase compared to 2014 EU quota) and set at 19 311 tonnes in 2021. Purse seiners and long lines are widely used to catch large-pelagic fish under the ICCAT jurisdiction. Large-scale purse seiners are dedicated only to this fishery, while longlines target both pelagic and demersal fish; in most cases they are artisanal boats with a LOA lower than 18 metres. Interdependence of Bluefin tuna purse seine fishery with the aquaculture sector is significant, as all catch of bluefin tuna in purse seine fisheries is transferred to farming cages, and a significant share of the catch of small pelagic fish is intended for feeding farmed tuna.

A 15-year recovery plan was implemented for swordfish in 2017. A TAC of 6 780 tonnes for swordfish in the Mediterranean was set for 2020 (Council Regulation (EU) 2020/123), and 6 560 tonnes for 2021 (Council Regulation (EU) 2021/92), and allocated to all EU Mediterranean countries with the exception of Slovenia as is the case for bluefin tuna. The TAC has been reduced since 2018, to achieve a reduction of 15% in five years, and the quota uptake in 2020 amounted to 62%. Swordfish is among the most valuable commercial species in the Mediterranean Sea; the price (9.36 euro/kg) remains quite stable in the last 3 years.

The pelagic fleet segments operating in the Adriatic Sea have to respect a catch limit for anchovy and sardines (set at 101 711 tonnes in 2020 according to Council Regulation (EU) No 2019/2236). Small pelagic species are the main resources of the Adriatic Sea, accounting for a large part of the total catches and revenue. In the eastern part fishing by Croatian vessels has been directed mostly at sardines, while anchovies are mainly landed by Italian pelagic fleet. Two kind of fishing gears are currently used to catch the small pelagic species in the Adriatic Sea: purse seiners and mid-water pelagic trawl. In Croatia and Slovenia, small pelagic are fished by purse seiners; the most used by the Adriatic Italian fleet is the mid-water pelagic trawl net towed by two vessels, mostly operated in the northern and central area. As the current fisheries for small pelagic species in the Adriatic are highly dependent on only two species (sardine and anchovy) they are consequently highly sensitive to management measures imposed on these stocks.

### Landing obligation

The landing obligation came into force gradually, starting in 2015, with full implementation since January 2019. In the case of Mediterranean Sea all species with a MCRS (minimum conservation reference size) according to part A of annex IX of Regulation 2019/1241, will be subject to this LO.

Several ongoing projects in the region are aimed at providing more knowledge on selectivity, gear technology and fleet behaviour in relation to the stocks status and fleet economic performance with the aim to minimize discard rates through innovative technologies and fishing practices.

MedBLand project (Synthesis of the Landing Obligation Measures and Discard Rates for the Mediterranean and the Black Sea) is aimed at improving understanding of the implementation of the landing obligation by mapping, assessing and evaluating the management measures and their impact on the development of the discard rates. One of the key findings of the project is that there have not been major consequences of the landing obligation regulation for fishers so far mainly because of the use of the “de minimis exemptions”. Derogations are in force until the end of 2020 for small-pelagic species and until the end of 2021 for demersal species.

### Description of relevant fisheries in the region

## Small-scale coastal fleet

The SSCF in the Mediterranean represents 80.6% of the total fleet by the number of vessels and 59.2% of the employment (52.7% of the FTE). In 2020, there were 26 239 small-scale vessels following a decreasing trend (Greece 32.6%, Italy 20.8%, and Croatia 16.5%) with a combined gross tonnage of 51 902 GT and total power of 695 500 kW, active in the region.

Although the SSCF deployed over 77.7% of the effort (fishing days), these vessels landed only 15.5% by weight and 27.6% by value, following a slight increase compared to 2019. The Greek SSCF deploys 58% of the effort (fishing days) and follows the Italian SSCF with 23%. The average landing weight per fishing day was 21 kg for SSCF in contrast to 749 000 kg of LSF.

SSCFs are essential from a social point of view. In 2020, 35 416 fishers were directly employed in the Mediterranean SSCF, corresponding to 20 377 FTEs following a significant decrease (-10%) compared to 2019. The majority of them are family-based enterprises. Two Member States represented major employers: Greece with 11 558 FTEs and Italy with 4 663 FTEs. Both countries faced a significant decrease in FTEs; Italy faced a reduction of -23% and Greece -8%. Annual average wages and salaries in 2020 for fishers in the SSCF were EUR 10 543, and for LCF was EUR 20 019. Average wages in SSCF and LCF increased by 6.4% and 6.7%, respectively, relative to 2019. The SSCF in the Mediterranean follows a decreasing trend in terms of active vessels and employment. Moreover, it is crucial to mention the role of women often through the unpaid labour that supports the SSCF.

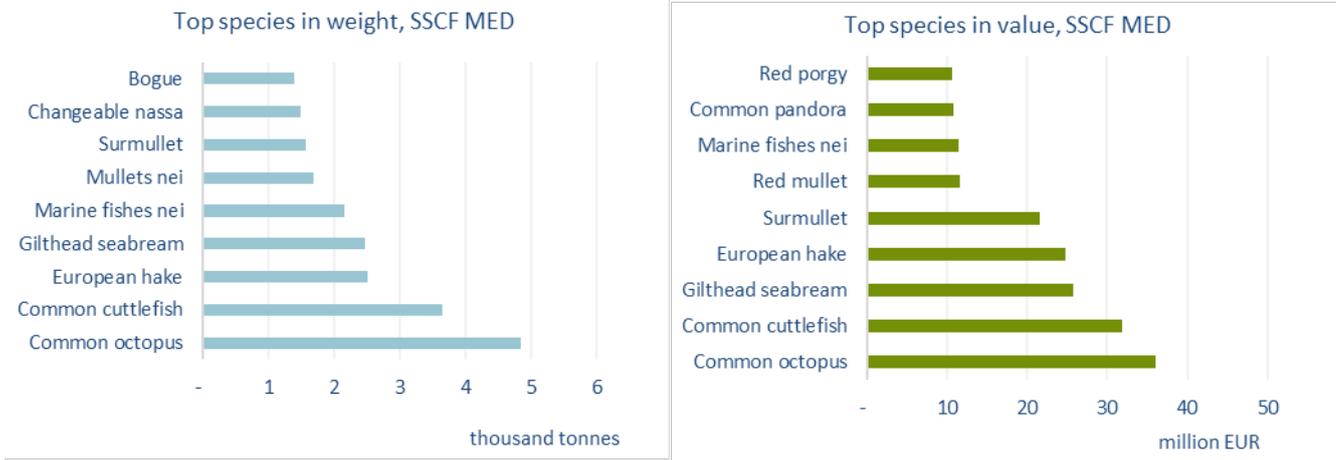
The SSCF in the Mediterranean involves a significant number of fishing techniques (static nets like trammel nets, gillnets, set longlines, pots, and traps) targeting a variety of species, including common octopus (mainly Italy, Croatia, Greece, Spain, France, and Malta), European hake (mostly Italy, Croatia, Spain, and France), gilthead seabream (mainly France, Italy, Greece, Spain, and Croatia), red mullet (mainly Italy, Spain, France, Greece, and Croatia) and surmullet (mainly Cyprus, Greece, Italy, France, Malta, and Spain). Other target species include common cuttlefish (mostly Italy, Croatia, Greece, and Spain) and common sole (mainly Croatia and Slovenia). The main SSCF fleet segments in terms of vessels are the Greek DFN and HOK, Italian and Croatian PGP corresponded to more than 60%, and in terms of FTEs to more than 40%.

The higher value achieved by the SSCF (compared to the LSF) appears to reflect higher prices linked to differences in quality, freshness, product size, and different marketing channels. In addition, the SSCF generally operates through very short supply chains.

In 2020, SSCF vessels generated 15.5% of the landed weight and 27.6% of the landed value, following a slight increase (+5%) compared to 2019. The total weight landed by the SSCF was 54 million kg. The weight of landings had a decreasing trend for many of the top species in 2020, like octopus (-20%), swordfish (-15%), common sole (-13%), compared to 2019 with the exemption of surmullet (+53%), mullets nei (+45%), gilthead seabream (+30%), and marine fishers nei (+273%). The value of landings has also faced a slightly increasing trend (+5%), but some had an increased value like surmullet (+67%), while others went down like octopus (-22%), common spiny lobster (-32%), common sole (-12%) and common cuttlefish (-10%) (Figure 3.100).

The Mediterranean SSCF generated 28.4% of the revenue (EUR 438 million) in 2020. GVA was around EUR 3.6 million (30% of the region), gross profit EUR 70 million (17% of the region), and net profit EUR 13.9 million. The economic performance of SSCF in the Mediterranean faced many impacts due to Covid-19 restrictions. Labour productivity (GVA per FTE) was EUR 13 983, presenting a slight decrease compared to 2019. GVA to revenue reached 65%, gross profit margin (16%), and net profit margin (0.8%) significant decrease in 2020 compared to 2019, mainly due to the problematic situation that Greek SSCF fishers faced due to COVID-19 effects.

Overall, the economic performance of the SSCF had a slightly positive net profit margin in the region but followed a decreasing trend. Four SSCF fleet segments provide significant losses, namely Greece, Malta, Slovenia, and Cyprus, in contrast to the positive economic performance of all the rest Mediterranean countries. The Italian SSCF generated the highest net profit at EUR 31 million unless the deteriorated performance faced during the last years. On the other hand, the Greek SSCF reported a significant reduction in economic performance mainly due to COVID-19 restrictions and limited demand from the HORECA sector in coastal and remote island areas.



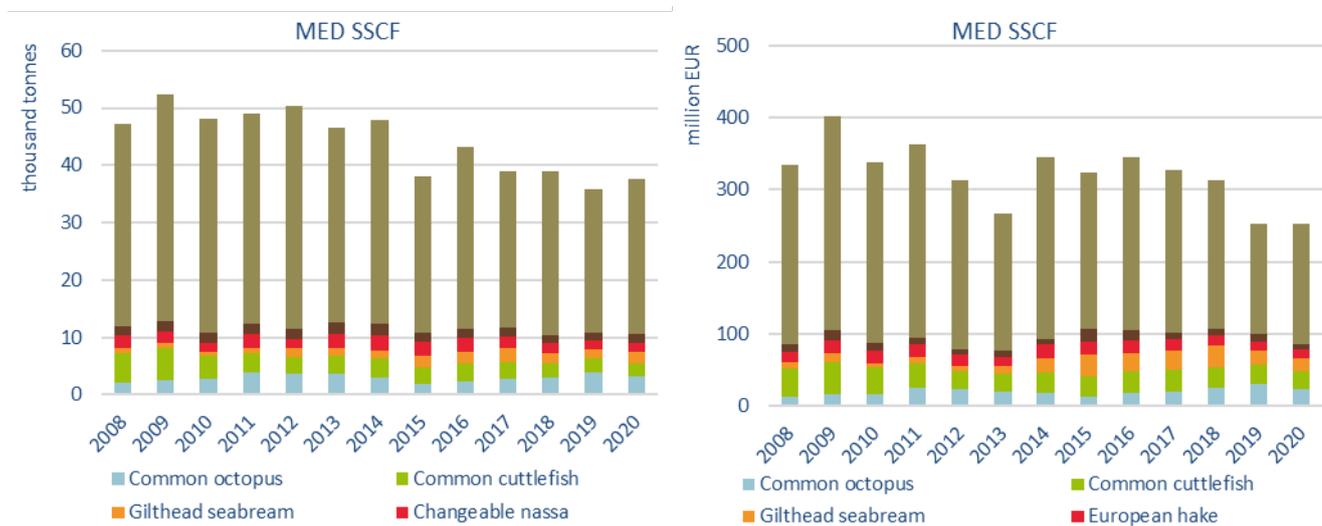
**Figure 3.75 Top 10 species landed by SSCF, 2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Includes Greece.

Higher average prices mainly drove the higher value of landings due to the use of other market channels like short supply chains or new attractive ways to contact consumers (e.g. the use of an interactive website connected with mobile technologies to inform consumers in real-time of the direct sales possibilities in their local area).

Among problems that negatively still affect the economic performance of small-scale fishers, there are:

- Competition with an increasing number of recreational fishers usually fish in coastal areas and sometimes illegally sell their catch at low prices.
- The conflict between the small-scale and large-scale fleet.
- Older age profile, if compared with LSF employment: there is a low generational change because small-scale fisheries, less rewarding than large-scale ones, are less attractive.
- COVID-19 impacts caused limited demand for the HORECA sector, mainly in coastal areas and islands



**Figure 3.76 Trends on landings for the top species in landed weight and value for SSCF operating in the MED**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Excludes Greece.

### Large-scale fleet

In 2020, the LSF fishing in the Mediterranean (including Greece) consisted of 6 312 vessels (19 % of the overall Mediterranean fleet), with a total tonnage of 238 527 GT and engine power of 1 120 million kW, representing 82% and 62%, respectively. Italy, Spain, Croatia and Greece have the most important fleets in terms of the number of vessels, total tonnage and engine power. These four Member States, also had the largest number of active vessels in the region with numbers of 3 455, 958, 882, and 796 active vessels, respectively. Between 2019 and 2020, the number of vessels decreased by 9,1%.

LSF vessels generated, by far, the highest landed weight (84% of the total) and 72% of the landed value. The total weight landed by the LSF was 294 317 tonnes (-15% compared to 2019). With an estimated revenue of EUR 1.1 billion, these fleets recorded almost EUR 688 million in GVA and a gross profit of EUR 321 million. In addition, GVA to revenue and GVA per FTE reached 62% and EUR 37 527, respectively. In 2020, LSF registered a decline in all the economic performance indicators; GVA decreased by 15% and gross profit by 22%.

The main fleet segments in terms of the number of employees were the Italian demersal trawlers from 12-18m and from 18-24m and the Spanish demersal trawlers from 18-24m. These three segments represented 30% of the overall LSF-FTEs.

Small pelagic species accounted for 40% of the weight of the total landing of the area and 12% of landings value in 2020. In particular, Croatia, Italy and Greece lead the catch of sardines, while anchovies are mainly landed by the Italian pelagic fleet followed by the Spanish and the Greek fleets.

The Mediterranean LSF is also heavily dependent on some demersal species such as the European hake, blue and red shrimps, deep-water rose shrimp, and giant red shrimp, combined accounted for 18% of total landings value in 2020. In addition, bluefin tuna represented 7% of total landings value (Figure 3.78).

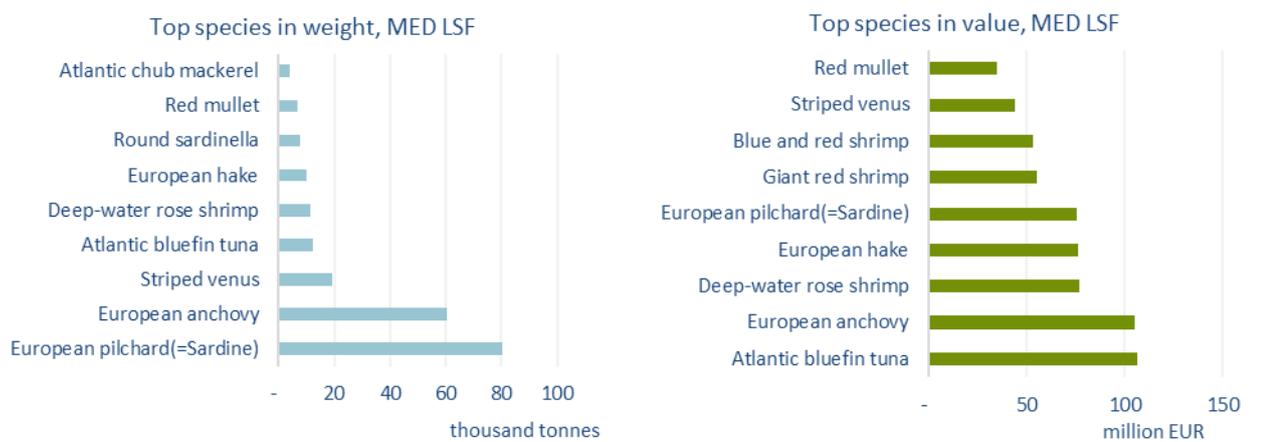


Figure 3.77 Top 10 species landed by MS LSF operating in the MED, 2020

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Includes Greece.

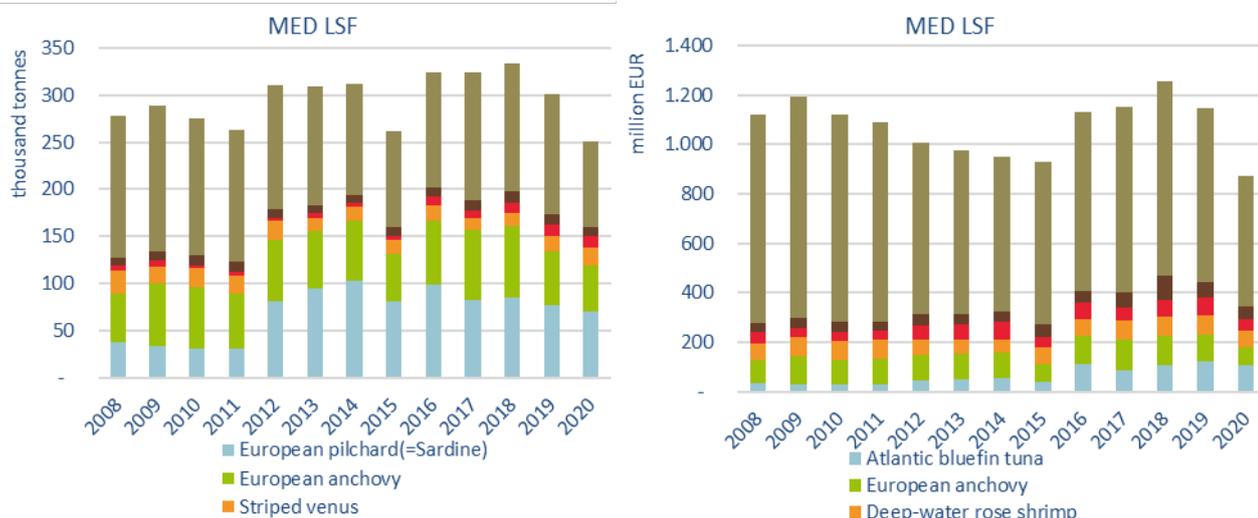


Figure 3.78 Trends on landings for the top species in landed weight and value for MS LSF operating in the MED

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Excludes Greece.

### Performance by fleet segment

Demersal Trawlers and purse seiners segments are the most important Mediterranean fleet segments in terms of economic performance. They include 40 segments out of the 122 active ones in the region, represented 13% of the number of vessels; covered 16% of the effort deployed (DaS); 31% of jobs; 74% of energy consumption; generated 60% of the landing value (EUR 885 million); 58% of the GVA (EUR 565 million); and 68% of the gross profit (EUR 266 million). Italy and Spain have the most

important demersal trawlers and purse seiners fleet regarding the number of vessels, landing value, and GVA.

At the fleet segment level, the Italian demersal trawlers from 12-18m, with 3% of the number of vessels, generated the highest revenue, EUR 116 million, or 7% of the total from the Mediterranean region in 2020. The Italian demersal trawlers from 18-24m followed them in importance with 7% of the total revenue produced (EUR 113 million). The Italian demersal trawlers from 24-40m produced the 5% of the revenue (EUR 81 million), and y the Spanish demersal trawlers from 18-24m the 5% of the revenue (EUR 75 million). The same fleet segments also generated the highest GVA, EUR 216 million combined, or 22% of the total GVA generated by the regional fleet.

Purse seiners lead in terms of GVA per vessel. The top four segments amount to EUR 1.1 million GVA per vessel, while the average of all Mediterranean segments is EUR 29 879. The French purse seiners from 24-40m produced the highest value, on average EUR 1.8 million per vessel and 18% GRP margin, followed by the Italian purse seiners over 40m (EUR 1.3 million per vessel and 40% margin) and then by the Spanish and Greek purse seiners from 24-40m (EUR 0.7 million per vessel and 36% and 62% GRP margin, respectively).

Conversely, 20 out of 122 segments with negative gross profit represented 44% of the number of vessels (14 372 vessels) and 31% of the number of jobs (18 786 jobs). Most of these vessels are included in segments of vessels using drift and/or fixed netters, hooks and polyvalent passive gears (13 567 vessels).

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### 3.6 Black Sea

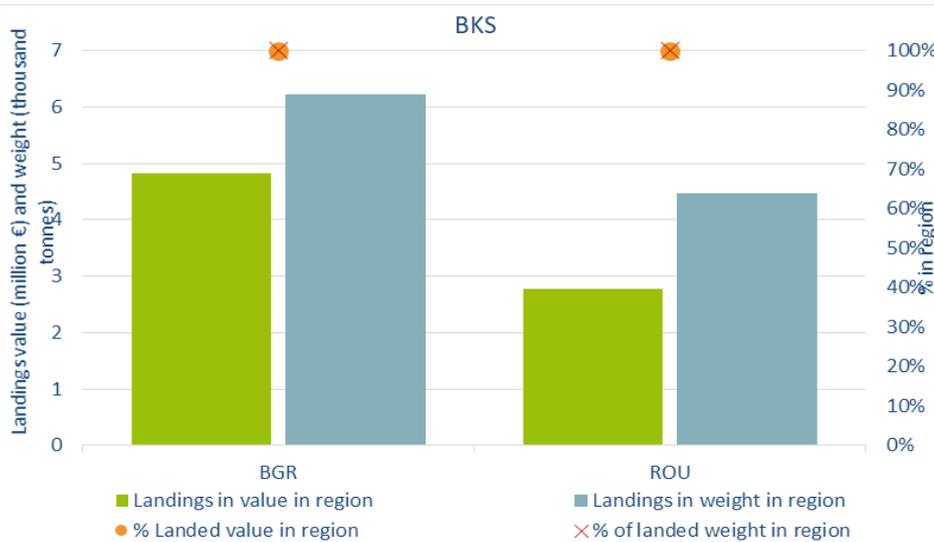
#### Regional Details

The Black Sea region covers FAO fishing area 37.4. Two Member States were involved in the Black Sea fisheries in 2020: Bulgaria and Romania. All landings by the Bulgarian and Romanian fishing fleets originated only from the Black Sea and both fleets operate mainly in waters under their respective national jurisdictional.

A comprehensive economic analysis, including both coastal Member States fishing fleets, was completed using data on the structure, activity and production for all vessels collected by Bulgaria and Romania. The data collection programme in place includes all economic and social variables.

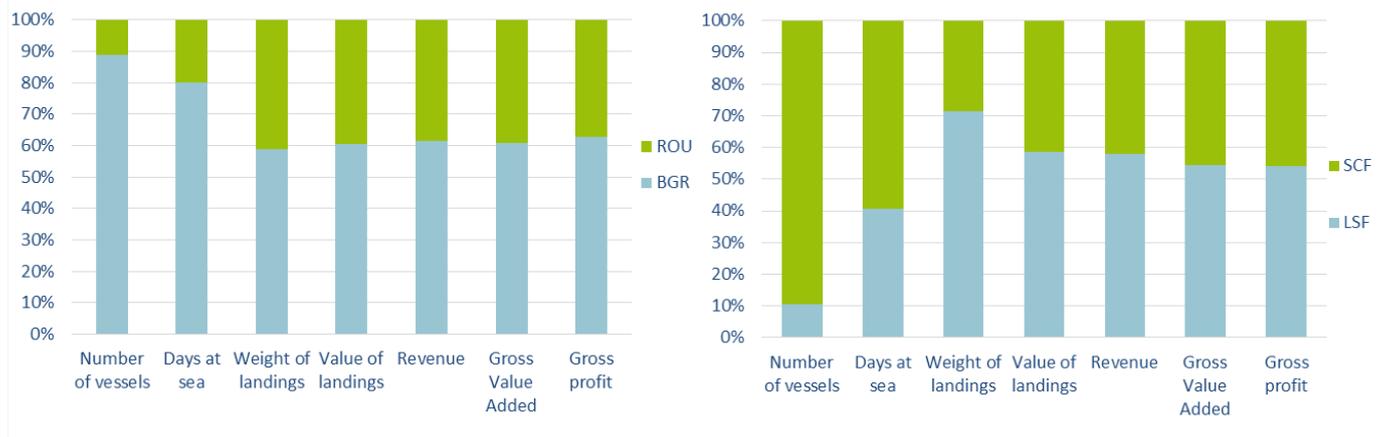
A trend analysis is provided for the period 2008-2020. Tables in the Annex 2 contain a summary of the economic performance of the Black Sea fleet by Member States, fishing activity and fleet segment, respectively.

There are two TAC species in the Black Sea: turbot and sprat. The quota for turbot is divided equally between Bulgaria and Romania. For sprat, Bulgarian and Romanian national quotas are set at 70% and 30% of the total EU quota, respectively.



**Figure 3.79 Importance of the Black Sea for MS fleets in terms of landings in weight and value, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.80 Share of MS and fishing activity in the Black Sea, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Overview of the main results for EU Black Sea fleet

### Fishing effort and landings

Fishing effort in the Black Sea fleet decreased by 1.8% in 2020, in comparison with 2019. The increase in the number of days-at-sea during the period 2014-2017 corresponds to the gradually growing weight and value of the landings in the same years. Since 2018 the overall picture for landings in weight, the value of landings and the Days at Sea deteriorated, and in 2020 decreased by 39%, 31%, and 3% compared to 2019, respectively. (Figure 3.81).



**Figure 3.81 Trends on effort and landings for MS fleets operating in the BKS**

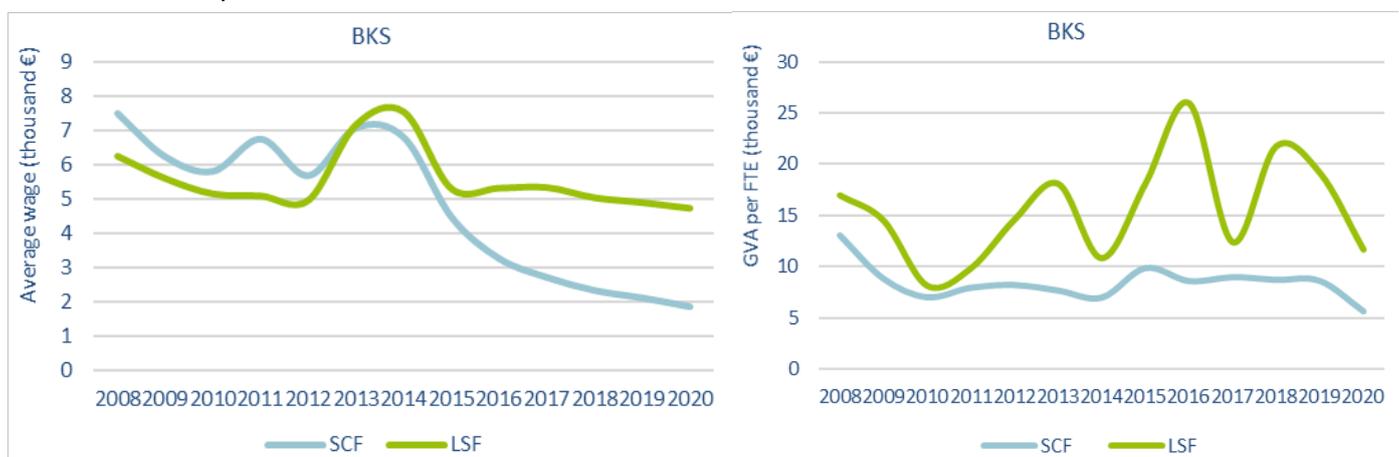
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Employment, wages and labour productivity

In 2020 the average wage per FTE in the SSCF fell by 12% compared to 2019 and by 63% to the period 2008-2019.

Wages for the LSF fell 3% in 2020 compared to 2019. The average wage in 2020 was EUR 4 738, - 37% lower compared to the highest level observed in 2014. The values of the average wages in 2020 for both LSF and SSCF were the lowest for the whole period 2008-2020 (Figure 3.83).

Labour productivity (GVA/FTE) in the LSF segment was increasing gradually from 2014 to 2016, when it reached its' highest value around EUR 26 000, in 2017 it decreased significantly to EUR 1 407, increased to EUR 21 752 in 2018 and decreased again to EUR 19 169 in 2019 and to EUR 11 670 in 2020 which is 55% decrease compared to 2016 and 39% compared to 2019. The situation for the SSCF is different from the LSF, labour productivity was stable in the period 2016-2019 fluctuating between EUR 8 000 and EUR 9 000 but decreased by 35% in 2020 reaching the lowest value for the indicator in the period 2008-2020 -EUR 5 638.



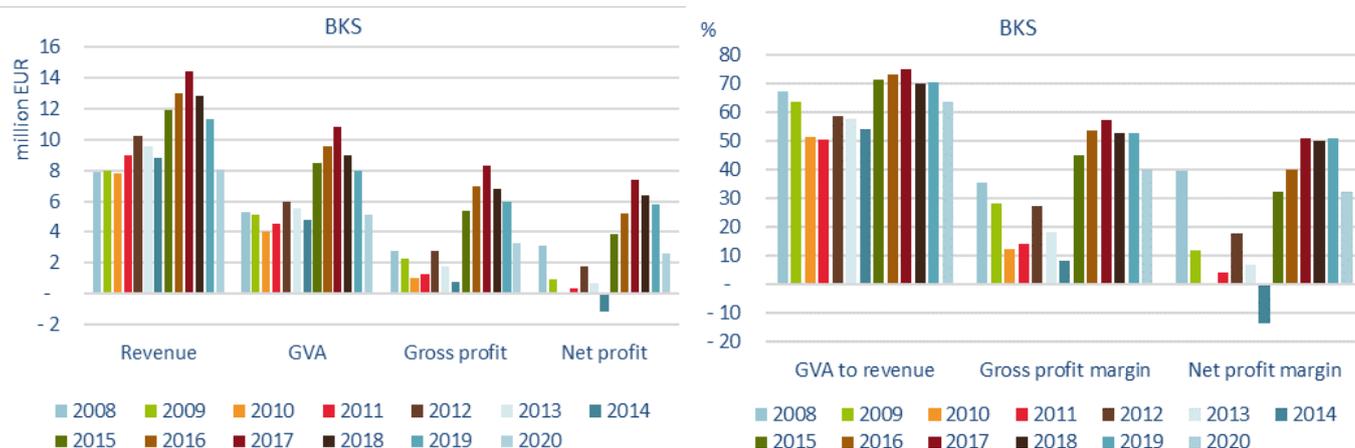
**Figure 3.82 Trends on average wage and GVA per FTE by fishing activity for MS fleets operating in the BKS**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Economic performance

Revenue in 2020 was estimated at EUR 10.5 million, decreasing by 29% compared to 2019 although 22% more than the average 2008-2019 period. GVA produced was EUR 5.1 million, representing an

overall decrease of 36% compared to 2019 and 24% lower than the average for the period from 2008 to 2019. Gross profit was estimated to be EUR 3.2 million, a 46% decrease compared to 2019 (Figure 3.84).



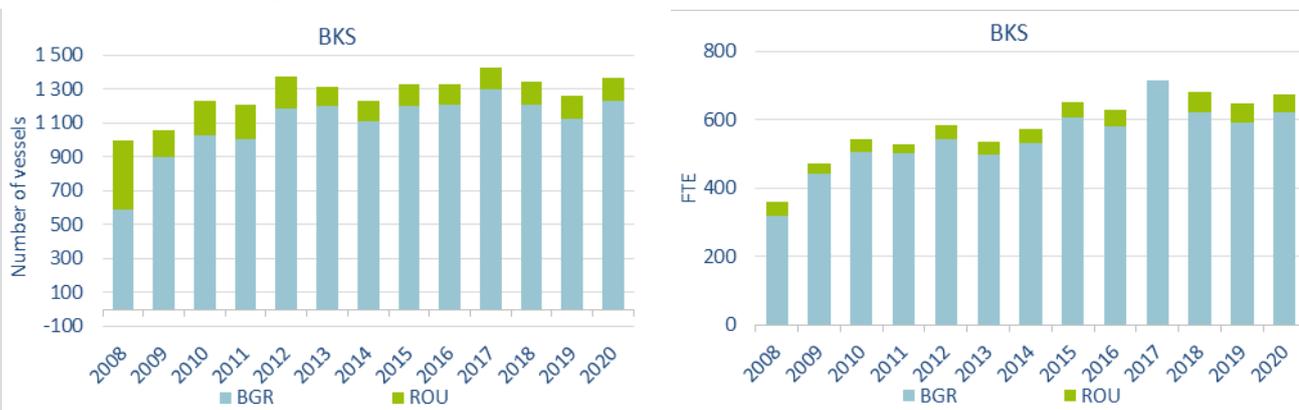
**Figure 3.83 Trends in revenue and profits for MS fleets operating in the BKS**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Total employment in 2020 was estimated at 2 200 jobs, corresponding to 673 FTEs.

Total employment in both countries is higher in the SSCF due to the larger number of vessels, but the FTE per vessel ratio is lower 0.36, compared to 1.80 in the LSF, due to the seasonal nature of the small-scale fishery and the lower effort.

Trend in the number of vessels in the Black Sea has remained relatively stable. The lowest number of vessels was registered in 2008 and the highest in 2017. The 8% increase in the number of vessels was due to the increase in the Bulgarian vessels in 2020, while the number of vessels of Romania was almost the same in 2018, 2019 and 2020 (136, 138 and 130 vessels, respectively). Despite the 8% increase in the number of vessels in 2020, the days-at-sea for 2020 decreased by 3% only, this is continuation of the trend for decrease of the DaS in the region since 2017. (Figure 3.84). The total employment increased by 8% between 2019 and 2020, due to the increase of the number of total employees in the Bulgarian and Romanian SSCF and LSF. The increase in the FTE by 4% sounds reasonable, following the trend from the last year and the increase in the number of vessels.



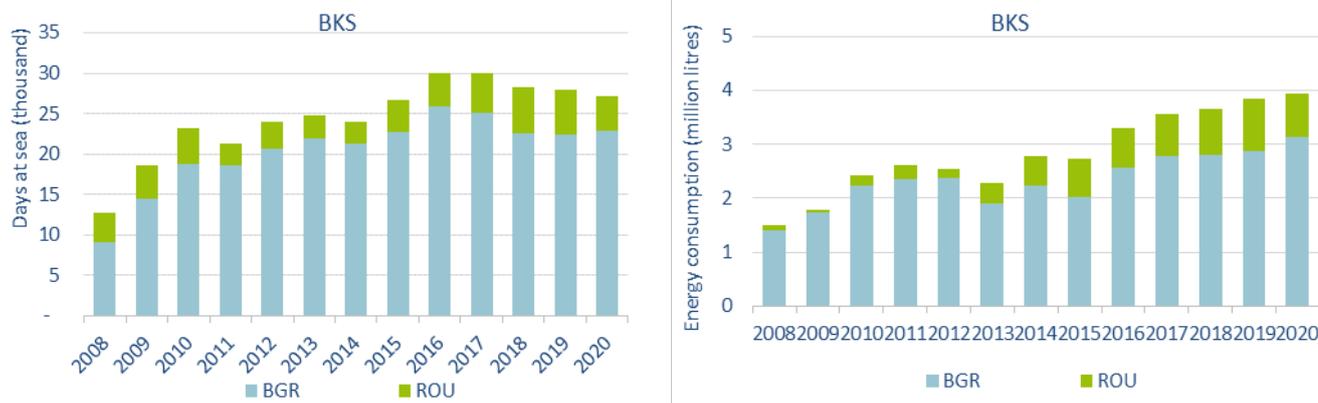
**Figure 3.84 Trends in the number of vessels and employment (in FTE) for the MS fleets operating in the BKS**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022))

### Fishing effort

The EU Black Sea fleet spent 27 194 days-at-sea in 2020, which is a 3% decrease compared to 2019 but 12% more than the average for the period 2008-2019. The decrease in –the region is mainly due to the Romanian days which decreased by 22% compared to 2019, while the days spent by the Bulgarian fleet increased by 2% only. The Bulgarian fleet accounted for 84% of the days, while the Romanian contribution was 16%. (Figure 3.85).

While the number of days-at-sea was stable in the period from 2010 to 2014, there has been a gradual increase in 2015 and 2016. The consistent number of days-at-sea in 2016 and 2017 can be explained by the growing interest in harvesting sea snails. The decrease in the last three years was mainly due to the reduction of the number of vessels in Bulgaria and decrease in DaS in Romania.



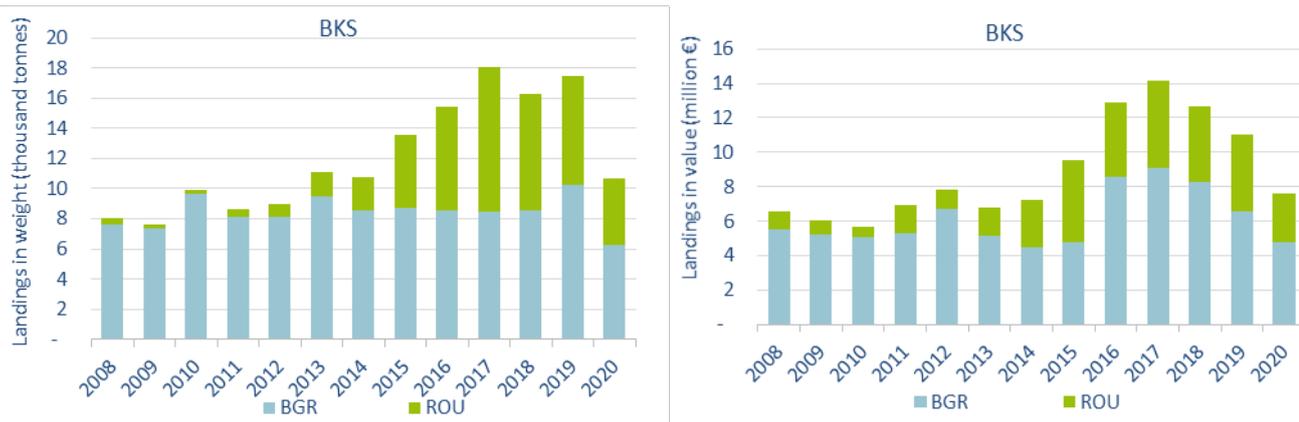
**Figure 3.85 Trends on fishing effort (in days-at-sea) and energy consumption for MS fleets operating in the BKS**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)).

### Landings and top species

The weight and value of landings generated by the Black Sea EU fleet in 2020 amounted to approximately 10 700 tonnes and EUR 7.59 million, respectively. In terms of landed weight, Bulgaria landed 6 227 tonnes and Romania 4 463 tonnes with the value of landings being EUR 4.82 million and EUR 2.77 million, respectively. The distribution of both the value and weight of landings, by country, is shown in Figure 3.87.

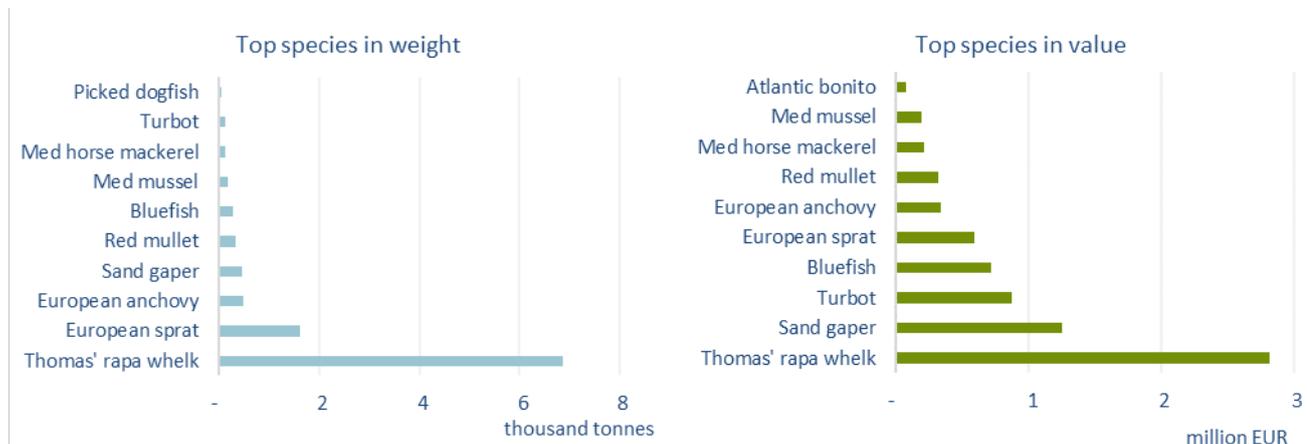
In 2020, LSF accounted for 67% of all landings by weight, equivalent to 56% of the landed value. Although over 63% of the effort was deployed by the SSCF, these vessels landed only 33% by weight and 44% by value. However, the SSCF is more important from a social point of view than the LSF, representing almost 82% of the total employment and 67% of FTEs.



**Figure 3.86 Trends on landings in weight and value by MS fleets operating in the BKS**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2015).

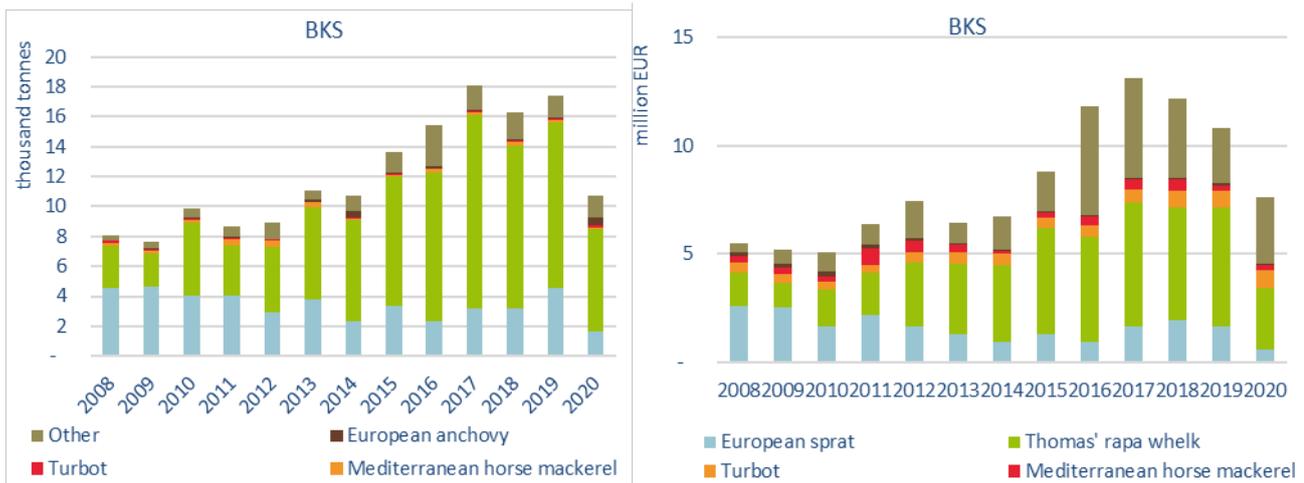
In 2020, the main species (by weight) were sea snails (6 861 tonnes), followed by European sprat (1 628 tonnes), European anchovy (494 tonnes) and sand gaper (462 tonnes) (Figure 3.88).



**Figure 3.87 Top 10 species in landed weight and value for MS fleets operating in the BKS, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2015).

In value of landings, the most important species were sea snails (EUR 2.81 million), sand gaper (EUR 1.25 million) and turbot (EUR 0.87 million) (Figure 3.89).



**Figure 3.88 Trends in landings of the top species in landed weight and value for MS fleets operating in the BKS**

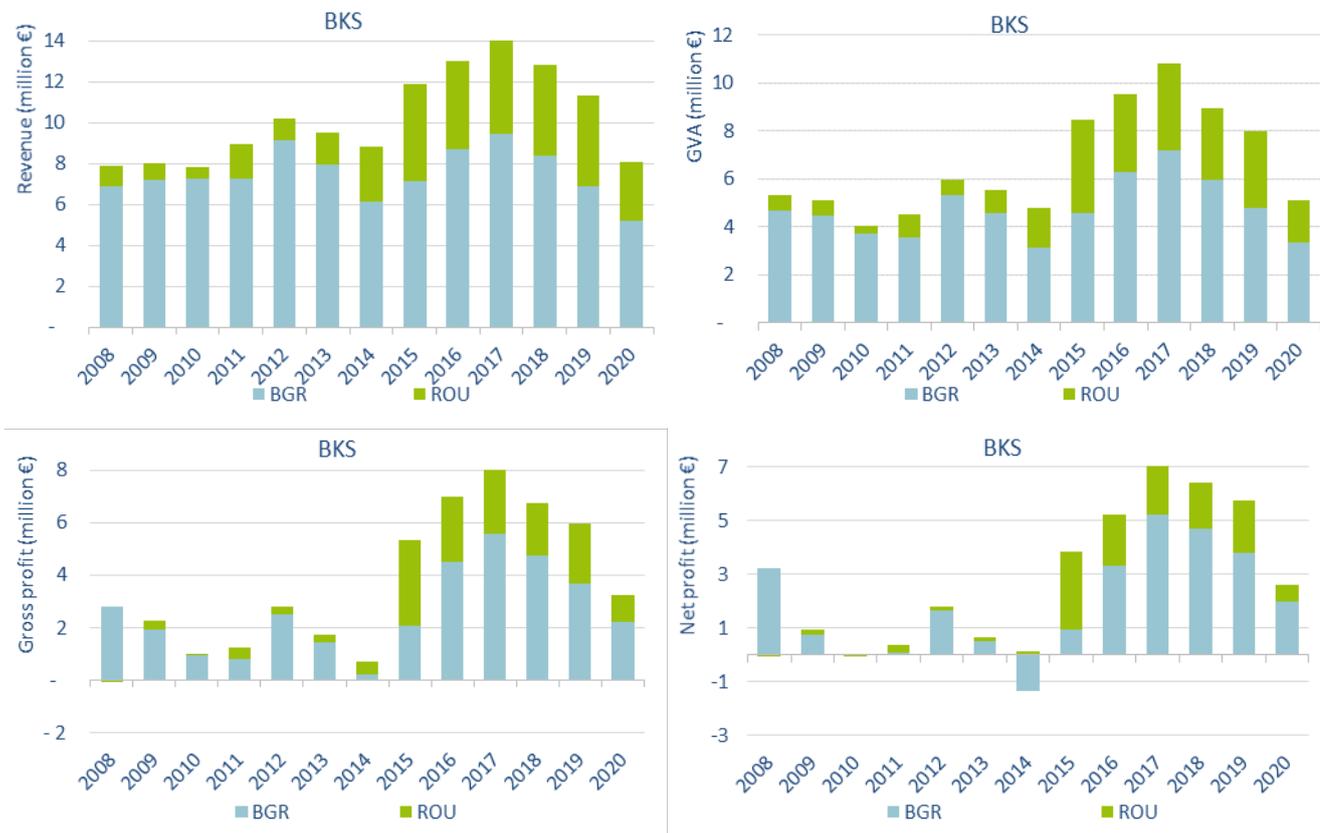
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2015).

### Economic performance

The revenue generated in 2020 was EUR 8.08 million, 64% of which was obtained by the Bulgarian fleet (EUR 5.2 million). The amount of GVA was EUR 5.1 million of which EUR 1.78 million were added by Romanian and EUR 3.35 million by the Bulgarian fleet.

Total gross profit for the region was estimated at EUR 2.24 million. The Bulgarian fleet generated the larger gross profit in 2020 amounting to EUR 2.2 million (Figure 3.90).

Three of Bulgaria’s SSCF segments reported gross losses in 2020: vessels under 6 metres using drift and/or fixed nets; vessels between under 6 metres and vessels from 6 to 12 metres using hooks. These three segments represent 366 vessels (27%) from the whole Black sea fleet. The gross losses of these segments were probably due to the low fishing activity of the majority of the vessels in them. These amounted to -EUR 12 368. Overall net profit amounted to EUR 2.6 million in 2020, but this includes one segment that recorded a net loss (-EUR 11 735).



**Figure 3.89 Trends in revenue and profit by MS fleets operating in the BKS**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

As in previous years, amongst the operating costs, the two major expenses remain energy costs and crew wages costs, accounting for EUR 1.5 and EUR 1.9 million, respectively. In terms of crew costs, Bulgaria was leading with EUR 1.1 million and Romanian costs were EUR 0.75 million. Regarding the energy costs, the situation was similar EUR 1 million for Bulgaria and EUR 0.5 million for Romania.

While the SSCF accounts for 91% of the total fleet by number (1 240 vessels) and accounts for 63% of the effort (17 011 days) it landed only 33% of the total by weight (3 553 tonnes) and 44% by value (EUR 3.4 million).

Overall, the LSF of both Member States were profitable, with gross profit margins estimated at 39.5% for the Romanian LSF and 31.9% for the Bulgarian LSF. For the SSCF the situation was different, while the Romanian SSCF recorded a 31.5% gross profit margin, the Bulgarian SSCF generated a 55.7%.

Net profit margins were estimated at 25.9% for the Romanian SSCF and 55.9% for Bulgarian SSCF while for the LSF the Romanian fleet reported a 17.9% margin and the Bulgarian LSF 24.5%.

## Main factors affecting the performance of the fleet

After the trend for improvement of the fleet's economic performance between 2015 and 2017 with an increase in both gross and net profits, in 2018 and 2019 both indicators decreased and this trend continued also during 2020 where the level of economic profitability decreased significantly and drop down near the level of 2012.

### Factors that may affect positively the fleet performance in the region:

- Additional increase in the turbot quota for both Bulgaria and Romania in 2019 and 2020 together with management plan for third countries fishing in the Black Sea;
- The stable average prices for some important species with significant landings as sea snail and maintaining the average prices for the other species;
- The sea snails stock in GSA 29 is fished near  $F_{MSY}$ , which means that fishing vessels and processing plants utilising this species could continue to provide employment in the region;
- Keeping the trend with stable fuel costs at the regional level is directly connected with the energy costs, which remain the major percentage of the expenses.

### Factors that may affect negatively the fleet performance in the region:

- The weather conditions in the Black Sea, including strong winds and large temperature differences between winter and summer, significantly affect fishing activities by the SSCF, which led to a reduction of the days at sea and value of landings, and of course a negative impact of the total employment.
- The LSF of both countries consists mainly of vessels with trawls and vessels with polyvalent active and passive gears. As trawling is fuel-intensive, the trend of a stable level of the days-at-sea is leading to the relevant stable energy costs.

### Other factors that affected fleet performance in the region include:

- The Black Sea fishery is highly dependent on very few valuable species. In terms of landing weight and value, the sea snail is the most profitable species and according to the most recent available consideration from 2021, its stock in the Black Sea was considered to be outside safe biological limits. Sprat, which is the second most important fishery is evaluated as sustainably exploited.
- The GFCM has established a set of emergency measures for stocks in the Black Sea region to align the implementation of management measures by all countries operating in the region.

## Regulation and fisheries management in the region

The recommendations adopted by the GFCM in the last 5 years have established a set of emergency measures that look to align the implementation of management measures by all countries operating in the region.

In 2020 the 44th session of GFCM was postponed due to COVID-19 and all recommendations accepted during the 43rd session of GFCM in 2019 are applicable as most recent. One Recommendation was applicable for the Black Sea: Recommendation GFCM/43/2019/3 amending Recommendation GFCM/41/2017/4 on a multiannual management plan for turbot fisheries in the Black Sea (geographical subarea 29). At the initiative of the EU, the GFCM amended recommendation GFCM/41/2017/4 which provides a multiannual management plan for turbot fisheries in the Black Sea

and lays down a list of measures. The specific objectives of the multiannual management plan and transitional measures are to maintain fishing mortality for turbot within agreed precautionary reference points to achieve or maintain fishing mortality at MSY. The recommendation from 2017 established fleet management measures, management of fishing effort and monitoring, control and surveillance (MCS) programme (Note: Recommendation GFCM/41/2017/4 also repeals Recommendation 40/2016/6 see below).

The main amendment and the most important for the fisheries sector in the region was that for the years 2020–2022, the total allowable catch was increased based on scientific advice and considering the socio-economic importance of fisheries exploiting turbot and the need to ensure their sustainability.

## Status of important stocks

Commercially important stocks for the Black Sea fisheries in 2020 remained the same as in the past decades - turbot, sea snails, sprat and picked dogfish.

During 2020 Turbot stock in GSA 29 was found to have a positive evolution of biomass and an improved or unchanged evolution of the overexploitation status. In terms of landing weight and value, the sea snail is the most profitable species and since there was no stock assessment in 2018 and 2019. In view of the consistent, deteriorating, signals, qualitative advice was provided in 2021. The Black Sea rapa whelk stock was considered in possible overexploitation and fishing mortality should not be increased on a precautionary basis. Sprat, which is the second most important fishery and the stock assessment during 2021 shows that the status was considered in sustainable exploitation. The Working group on the Black sea (WGBS) under GFCM agreed on a roadmap towards the finalization of the benchmark. Both countries are fishing less quantity than their European sprat quotas. In 2020 and 2021 Bulgarian fleet landed 22% and 46%, respectively of the TAC, while Romanian fleet landed less than 1% in both years. For the picked dogfish in the Black Sea, there is an established catch limit agreed between both countries and the European Commission. While for the Romanian fleet it's mainly bycatch, for the Bulgarian fleet it is a target fishery. Both countries, limit their catches to 2015 catch levels and inform the European Commission quarterly of the actions taken to meet this objective.

## TAC development of main species

Quotas for turbot and sprat TAC were introduced in 2008 following the accession of Bulgaria and Romania to the EU. The quota for turbot is divided equally between both Member States, while Bulgaria is allocated 70% of the EU sprat TAC and Romania 30%. In the period 2011-2017, the EU TACs were 86.4 tonnes for turbot and 11 475 tonnes for sprat per year.

GFCM Recommendation GFCM/43/2019/3 amended the TAC for turbot for 2018 and 2019 and set the EU share of this TAC at 114 tonnes in each of the two years.

With amendments of the multiannual management plan for turbot due to decisions taken during WGBS held in September 2019 was adopted Council Regulation (EU) 2019/2236 of 16 December 2019 fixing for 2020 the fishing opportunities for certain fish stocks and groups of fish stocks applicable in the Mediterranean and the Black Sea. With the regulation quota for sprat remain the same while turbot quota was increased to 75 tonnes for Bulgaria, 32% compared to the previous one and for EU Black Sea countries was allocated to 150 tonnes which is 17.5% of the total quota for the basin. The other quotas were fixed to 497 tonnes (58%) for Turkey, 160 tonnes (18.7%) for Ukraine, 20 tonnes (2.3%) for Georgia, and 30 tonnes (3.5%) for others. With Council Regulation (EU) 2021/90 of 28 January 2021 and Council Regulation (EU) 2022/10 of 27 January 2022 the same fishing opportunities were fixed for 2021 and 2022 respectively in the Black Sea.

## Description of relevant fisheries in the region

### Small-scale coastal fleet

The Black Sea fishery is dominated by SSCF vessels dispersed across 76 landing places (18 in Romania and 58 in Bulgaria). They utilise many different fishing techniques including set gillnets, hand-lines, pole-lines (mechanised or hand-operated), set longlines, drifting longlines, pots and traps, and vessels without gear (divers), all adapted to fishing seasons and fluctuations in species abundance.

The 1 240 vessels that comprise the SSCF had a combined capacity of 2 127 GT and 25 754 kW. The number of vessels in 2020 increased by 10% compared to 2019, GT and kW increased by 14% and 13%, respectively. These are of vital importance to the region where they make up 92% of the total fleet by number and 82% of the total employment (67% of FTE). In 2020, 1 807 fishers were directly

employed, corresponding to 452 FTEs. In the majority of cases, vessels are operated by the owner or a family member.

Landings by the Black Sea SSCF amounted to 33% of the total landed weight in the region and 44% of the total value. The lower value achieved by the SSCF (compared to the LSF) appears to reflect also the use of different marketing channels. The SSCF generally operates through very short supply-chains.

Even though SSCF vessels are small they are locally very important in the Black Sea. Besides generating revenue for the owner, there are vessels with a low activity where the catch is not intended for the market, but it is consumed directly by the owners and their families.

The SSCF accounted for 63% of the total days-at-sea in the region and generated revenues of EUR 3.6 million. GVA was estimated to be EUR 2.5 million, gross profit EUR 1.7 million and net profit EUR 1.6 million. In 2020, labour productivity (GVA per FTE) decreased by 35% compared to 2019 and to the average for 2008 to 2019 and reached EUR 5 638.

The SSCF target several species including sea snails, sand gaper, Mediterranean mussel, European sprat, European anchovy, pontic shad, turbot, gobies and Mediterranean horse mackerel. In terms of value, the most important species for the SSCF were sand gaper, followed by sea snails, turbot, Mediterranean mussel and bluefish (Figure 3.91).

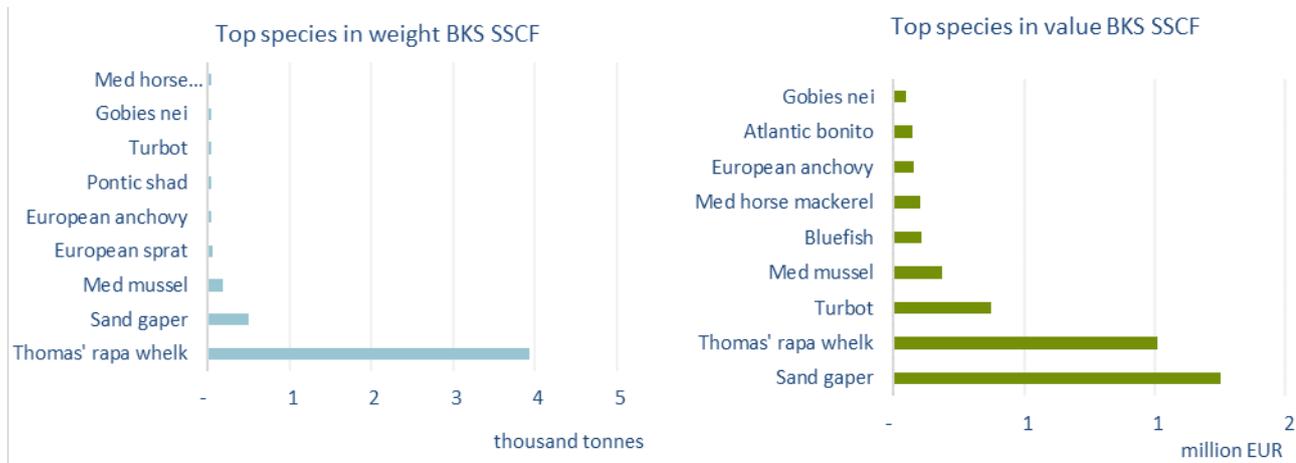


Figure 3.90 Top 10 species landed by SSCF operating in the BKS, 2020

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

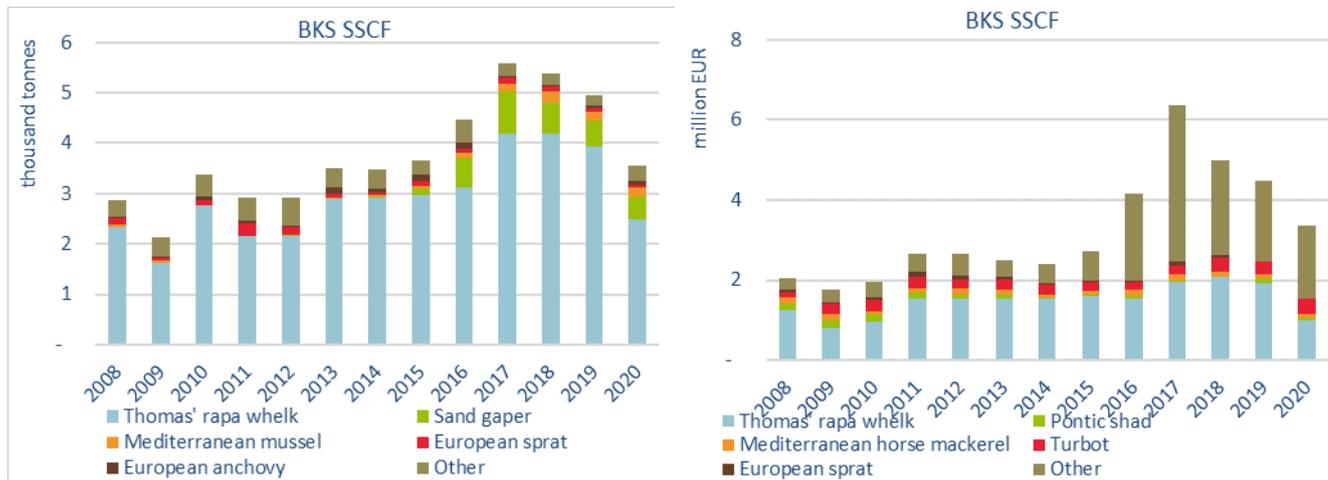


Figure 3.91 Trends in landings of top species landed by the SSCF operating in the BKS

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Large-scale fleet

In 2020, the LSF in the Black Sea consisted on 123 vessels or 9% of the entire fleet. These had a total capacity of 4 310 GT and 20 720 kW. The Bulgarian LSF represents 79% of the EU Black Sea LSF with 97 vessels while the Romanian LSF consists of 26 vessels. The main gears used remained pelagic trawls. There were also vessels using passive and active gears during the year and vessels using beam trawls.

The LSF employed a total of 393 people, corresponding to 221 FTE. Total labour costs in 2020 were EUR 1 million and the labour productivity (GVA per FTE) decreased to EUR 11 700, which is a 39% decrease compared to 2019 and by 36% compared to the average the 2008 to 2019 period.

Over the period 2011 to 2018, the LSF accounted for 30-37% of the total days-at-sea for the entire Black Sea fleet. However, while the proportion remained relatively constant, the total number of days in 2017 decreased compared to 2016 and 2015, in 2018 and 2019 they increased again to 10 300 and 11 300, respectively. In 2020 the DaS spent by the LSF decreased by 10% (10 200).

The LSF targets the same species as the SSCF with sea snails making up the highest proportion (by value and by weigh). Other important species for the LSF are European sprat, European anchovy, bluefish, red mullet, turbot and Mediterranean horse mackerel (Figure 3.111).

The LSF landed 67% (7 100 tonnes) of the total landed weight in the region in 2020 valued at EUR 4.2 million or 56% of the total value. This generated EUR 2.6 million in GVA and a net profit of EUR 0.9 million. None of the LSF segments reported a net loss in 2020. The LSF generally operates through longer supply-chains than the SSCF, but the marketing channels are more developed. In the period 2017-2019, the highest landings in terms of weight and value were polyvalent vessels with both active and passive gears, followed by the pelagic trawlers. Pelagic trawlers consumed more energy than polyvalent vessels and also more energy per tonne landed.

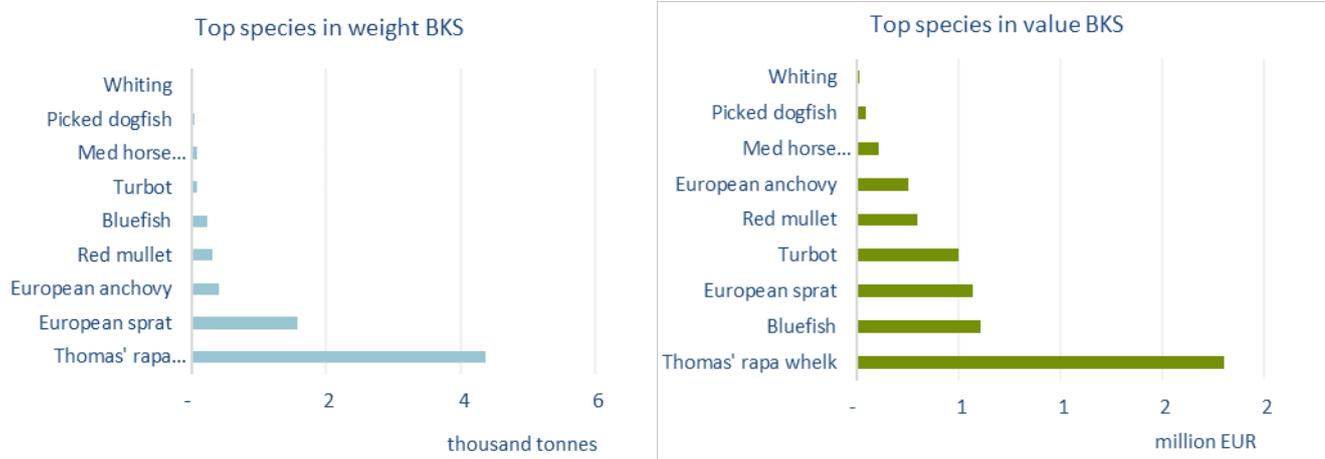


Figure 3.92 Top 10 species landed by LSF operating in the BKS, 2020

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

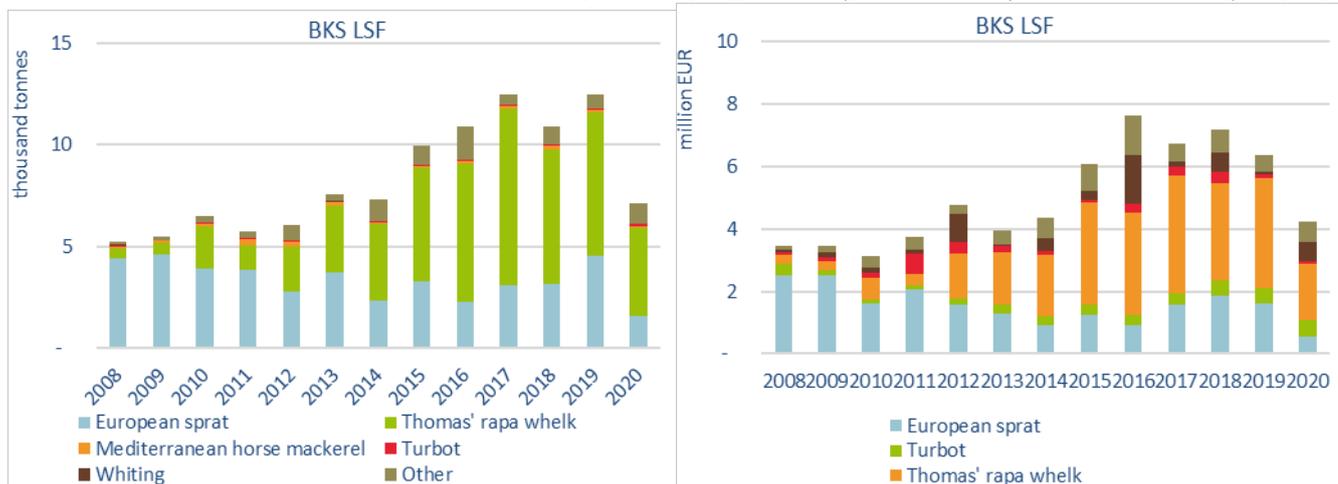


Figure 3.93 Trends in landings of top species landed by the LSF operating in the BKS, 2020

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Performance by fleet segment

In terms of revenue, live weight and value of landings the top five fleet segments operating in the Black Sea (out of 19 active fleet clustered segments) represented 21% of the total number of vessels; but these five segments (three LSF segments and two SSCF segment) landed 69% of the fish, corresponding to 67% of the value of landings and revenue. These segments provided work to 702 employees, corresponding to 212 FTEs.

There were eight segments from the SSCF, which represent 33% (443 vessels), which spent 16% of the total days-at-sea for the fleet but landed 2% of the fish, corresponding to 3.5% of the value. These eight segments were not so profitable, but they provided work to 227 employees or 66 FTEs.

At a fleet segment level, Bulgarian 06 to 12 metres polyvalent active and passive gears generated the highest revenue from the Black Sea region in 2020 (EUR 1.3 million), followed by the Romanian vessels using passive gears only for vessels 6 to 12 metres (EUR 1.26 million) and Romanian 12 to 18 metres segment with polyvalent active and passive gears (EUR 1.2 million).

There are nine segments from the SSCF (eight from Bulgaria and one from Romania) which represent 72% of the fleet, but generated only 8% of the revenue.

## 3.7 Other Fishing Regions (OFR)

### Geographical scope

The main fishing grounds for the EU fishing fleet are located FAO fishing areas 27 (Northeast Atlantic, Baltic and North seas) and FAO 37 (Mediterranean and Black seas). Part of the EU fleet also operates in fishing areas much further afield. These areas, including EU outermost regions, are collectively termed "*Other Fishing Regions*" or OFR.

The EU OMR fleets in the six French, two Portuguese and one Spanish regions, are analysed collectively in a dedicated section (see EU OMR chapter).

In this chapter, fleet performance is analysed by the main RFMOs relevant to EU fishing fleets. In particular, fleets in the long distant fishery (LDF) in ICCAT, IOTC, NAFO, CECAF and NEAFC are assessed.

Overall, around 17% of the EU fleet's activity in terms of landings in weight and 15% in value came from fishing operations in OFR in 2019, while only 3% of the days at sea were spent in these fishing areas.

While for the majority of the Member States' fleets fishing activity in OFR is low or null for others, the share of landings from activity in OFR can be substantial. For example, the Lithuanian fleet obtained 69% of its landings (in weight) from activity in OFR in 2019. This figure was greater than 80% in several years (e.g. 2009-2011, 2013).

Other Member States, such as Spain (58% of landings in weight), France (24%) and Portugal (14%) are also relatively dependent on these fishing areas for their fishing activity, while Italy, Germany and the Netherlands are less dependent, with around 3% of their landings in weight coming from the OFR in 2019.

For some Member States (e.g. Estonia and Latvia) it is not possible to assess the dependency of these national fleets on activity in OFR due to the non-submission of data on their high sea fleets under the EU DCF for confidentiality reasons.

### Fleet selection

To analyse the economic performance of the EU fleet at the regional level, the economic data provided by fleet segment at the supra-region level are disaggregated based on transversal data (effort and landings) that are provided at the sub-region level (FAO level 3 or 4) (see 2021 AER Annex report for more details on the methodology used).

Due to the particular characteristics of Other Fishing Regions and, in particular, the RFMOs, some adaptations from the standard regional disaggregation methodology are required.

Over the years, the definitions and criteria used to select fleets for the OFR analysis have changed. Analysis of fleets operating in the RFMOs and OMRs has taken on an almost ad-hoc nature, becoming clear that a more common and refined approach is needed. In addition, fishing activity in these areas is essentially assessed in the context of LDF. Thus, refinements proposed for the current methodologies, taking into account the level of granularity of the DCF and EU-MAP data, also contemplate the fact that not all fishing fleets operating in RFMOs are LDF, i.e., vessels over 24m LOA. There are other fleet segments that also have significant activity in certain RFMOs and thus, are considered as well in the analysis to obtain a fuller picture of the extent of the EU fleet's activity overall.

Table 3.2 outlines the criteria for fleet selection in this report (EWG 22-06) which has not been altered from the one used in the AER 2021.

**Table 3.2 – Overview of the definitions and criteria used to assess the performance of the EU fleets operating in the RFMOs**

RFMO	Geographical coverage	Vessel length	Target species	Degree of dependency	Assessment
		>24m LOA for the Atlantic stocks and	All ICCAT species and stocks	>=40% of a fleet segment's total landed value in 2018	Assessed fleet segments in the LDF with high dependency on ICCAT
<b>ICCAT</b>	Atlantic Ocean and adjacent seas (Mediterranean and Black Sea)	>18m for the Mediterranean stocks	ICCAT major species and stocks	Landings of at least one ICCAT major species	Assess all EU fleet activity in ICCAT
		>18m LOA for the Atlantic and Mediterranean stocks		>=20% of a fleet segment's total landed value in 2019	Assess EU LDF high level of dependency on ICCAT
<b>IOTC</b>	Indian Ocean (FAO statistical areas 51 and 57) and adjacent seas, north of the Antarctic Convergence	>24m LOA	IOTC major species and stocks	>=40% of a fleet segment's total landed value	Assessed fleet segments in the LDF with high dependency on IOTC
		All fleet segments		Landings of at least one ICCAT major species	Assess all EU fleet activity in IOTC
		>18m LOA		>=20% of a fleet segment's total landed value in 2019	Assess EU LDF with high level of dependency on IOTC
<b>NAFO</b>	FAO major fishing area 21	>24 m LOA	All species	>=40% of a fleet segment's total landed value in 2018	Assessed fleet segments in the LDF with high dependency on NAFO RA
		>18 m LOA	All species excluding the ICCAT major species	>=20% of a fleet segment's total landed value in 2019	Assess EU LDF with high level of dependency on NAFO excluding ICCAT activity in the area
<b>CECAF</b>	FAO major fishing area 34	>24m LOA	All species	>=40% of a fleet segment's total landed value	Assess EU LDF with high level of dependency on CECAF
		>18 m LOA	All species excluding the ICCAT major species	>=20% of a fleet segment's total landed value in 2019	Assess EU LDF with high level of dependency on CECAF excluding ICCAT
<b>NEAFC</b>	NEAFC CA: FAO major fishing area 27	>24m LOA	All species	>=40% of a fleet segment's total landed value	Assess EU LDF with high level of dependency on NEAFC CA and RA
	NEAFC RA: international waters in FAO major fishing area 27	>18 m LOA	All species excluding the ICCAT major species	>=20% of a fleet segment's total landed value in 2019	Assess EU LDF with high level of dependency on NEAFC CA and RA excluding ICCAT activity in the area

Source: EWG 22-06

### 3.7.1 EU Outermost Regions (OMR)

#### Background and regional details

The EU Outermost Regions (OMR) refers to the nine remote territories belonging to three Member States: six French territories - Guadeloupe, French Guiana, Martinique, Mayotte<sup>12</sup>, Reunion, and Saint-Martin; two Portuguese autonomous regions - Azores and Madeira and one Spanish territory - Canary Islands. All the outermost regions are islands, archipelagos except for one land territory (French Guiana), and are located in the western Atlantic Ocean, the Caribbean basin, the Amazonian forest and the Indian Ocean.

Under the fleet economic data call, Member States identify fleet segments based in the OMRs by allocating a geographical indicator to the fleet segment definition, as provided in Table 3.3. All fleet segments identified with a geographical indicator pertaining to one of the OMRs are considered.

**Table 3.3 – Geographical indicator codes used in the EU-MAP data calls to identify OMR fleet segments**

Geo Code	Name	Definition
P2	Madeira	Portuguese outermost region (autonomous region)
P3	Azores	
IC	Canaries	Spanish outermost region (autonomous community)
GF	French Guiana	French outermost region (overseas department)
GP	Guadeloupe	
MQ	Martinique	
MF	Saint-Martin	French outermost region (since 2009) (overseas community)
RE	Reunion	French outermost region (overseas department)

Source: EWG 22-06

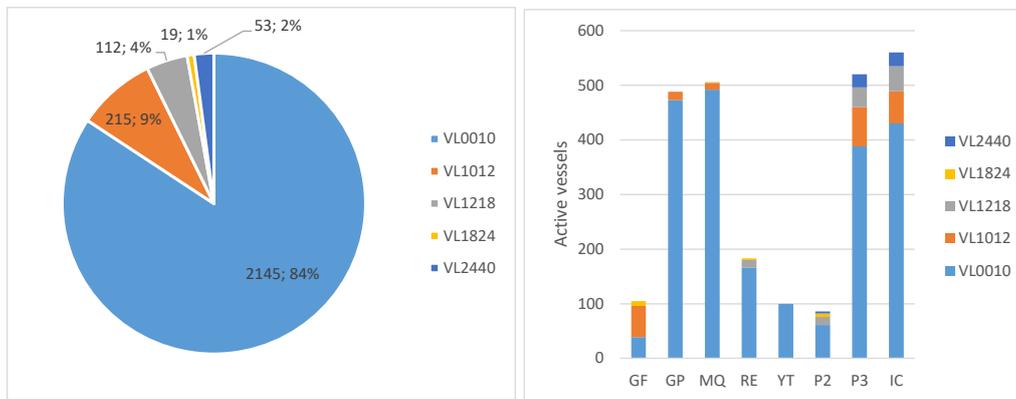
#### Data issues

Data availability issues have to be considered. The period analysed is from 2010 to 2020 and from 2011 to 2020 for economic indicators. However, data for Canaries islands and Mayotte has been only available since 2017 and 2015 respectively. No data was provided for Saint Martin, all years. Economic data are also missing for French Guiana segment DTS18-24m and for Martinique segment PGO00-10. Data sets have improved over the last years although improvements should still be considered regarding indicators (operating subsidies related to EMFF, coherence between value of landings and revenue, capital value and depreciation, FTE, etc.). Moreover, the level of activity is very heterogeneous within the fleets (Vessels fishing less than 50 days/year to vessels that fish 250 days/year can be found in the same segment) meaning that average figures derived from aggregates are not always relevant for analysis and interpretation.

#### Overview

In 2020, the number of active vessels was 2 544 but, although in some regions, significant parts of the registered fleet were inactive. Most of the OMR fleet is small scale with 84% of the vessels under 12 metres LOA.

<sup>12</sup> Since the adoption of the Lisbon Treaty, Mayotte is included in the list of EU Outermost Regions (Article 349 TFEU) as of 01.01.2014. Saint-Barthelemy changed status in 2012 to become part of the Overseas Countries and Territories (OCT) within the meaning of the TFEU.



**Figure 3.94 Number of active vessels per length categories (left) and per OMR (right), 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

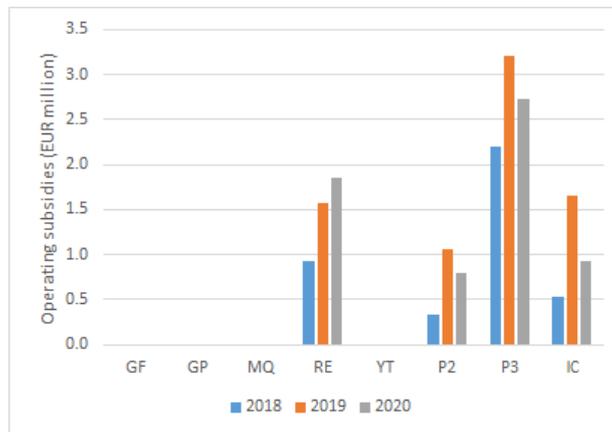
Total engaged crew was 6 651 for 3 461 FTEs. Total days at sea were around 192 874 for an energy consumption of 25.3 million litres (131 litres/DaS). Landings from the OMR fleets combined amounted to 31 887 tonnes valued at EUR 138.4 million in 2020 (respectively -18% and -8% compared to 2019). Average price was 4.3 euro/kg. GVA and NVA were EUR 87.5 million (63% of total revenue) and 73.2 million, respectively. Gross profit and net profit were estimated to EUR 20.7 million and EUR 6.3 million, respectively. In 2020, GVA per crewmember was EUR 13 151 and GVA per FTE was EUR 25 276. In terms of energy efficiency, average figures were 131 litres per trip for the OMR as a whole, 1.3 kg and 5.5 euro of fish landed per litre of fuel consumed but with heterogeneous situations between OMRs and segments.

**Table 3.4 – Summary results for the EU OMR fleet by region and Member State, 2020**

OMR	Number of vessels	Engaged crew	FTE national	Days at sea	Energy consumption (Million litres)	Live weight of landings (tonnes)	Value of landings (Million EUR)	Revenue (Million EUR)	Gross Value Added (Million EUR)	Net Value Added (Million EUR)	Gross profit (Million EUR)	Net profit (Million EUR)
France												
GF	105	343	192	10 361	0.4	1 748	4.3	4.9	2.7	2.4	0.6	0.4
GP	488	871	409	41 211	3.3	2 574	22.1	22.1	14.7	11.6	3.5	0.6
MQ	502	780	195	22 098	2.6	1 557	18.2	16.7	11.3	10.1	2.8	1.7
RE	183	321	186	15 560	2.8	2 703	15.8	15.3	6.8	5.2	0.3	-1.3
YT	100	253	149	10 444	0.7	951	4.9	4.5	3.1	2.5	0.8	0.3
<b>France Total</b>	<b>1 378</b>	<b>2 568</b>	<b>1 129</b>	<b>99 674</b>	<b>9.8</b>	<b>9 534</b>	<b>65.2</b>	<b>63.5</b>	<b>38.6</b>	<b>31.9</b>	<b>8.1</b>	<b>1.6</b>
Portugal												
P2	86	469	320	7 285	1.8	3 421	10.5	11.1	7.9	7.0	2.3	1.4
P3	520	2 178	1 207	39 739	5.3	9 154	33.1	33.1	20.5	15.5	5.3	0.1
<b>Portugal Total</b>	<b>606</b>	<b>2 647</b>	<b>1 527</b>	<b>47 024</b>	<b>7.1</b>	<b>12 575</b>	<b>43.5</b>	<b>44.1</b>	<b>28.4</b>	<b>22.5</b>	<b>7.7</b>	<b>1.5</b>
Spain												
IC	560	1 436	804	46 176	8.4	9 778	29.7	31.5	20.4	18.8	4.9	3.2
<b>Spain Total</b>	<b>560</b>	<b>1 436</b>	<b>804</b>	<b>46 176</b>	<b>8.4</b>	<b>9 778</b>	<b>29.7</b>	<b>31.5</b>	<b>20.4</b>	<b>18.8</b>	<b>4.9</b>	<b>3.2</b>
<b>Total OMR</b>	<b>2 544</b>	<b>6 651</b>	<b>3 461</b>	<b>192 874</b>	<b>25.3</b>	<b>31 887</b>	<b>138.4</b>	<b>139.1</b>	<b>87.5</b>	<b>73.2</b>	<b>20.7</b>	<b>6.3</b>

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Based on incomplete data for economic data. Operating subsidies excluded.

In 2020, 1 378 vessels and 2 568 engaged crew were active in the French OMR (1.8 per vessel on average) compared to 606 vessels and 2 647 engaged crew in the Portuguese OMRs (4.4 per vessel), 560 vessels and 1 436 engaged for the Spanish OMR (2.6 per vessel). With EUR 65.3 million and 9 534 tonnes (6.8 euro/kg average price), French OMR fleets accounted for 47% of the landings in value and 30% in weight, followed by the Portuguese OMR fleets with EUR 43.5 million and 12 575 tonnes (3.5 euro/kg) representing 31% of the total OMR value and 39% in weight. For Canaries islands, the value of landings was EUR 29.7 million for 9 778 tonnes (3.0 euro/kg average price) represented 21% of the total OMR value and 31% in weight. In most cases, landings are sold to local markets but in some regions, a significant part of the landings are exported from the regions (Azores, Reunion for swordfish). In 2020, GVA per Member State was estimated to EUR 38.6 million (44%), EUR 28.4 million (31%) and EUR 20.4 million (26%) in French, Portuguese and Spanish OMRs, respectively. These tables and figures do not consider the operating subsidies related to EMFF, including compensation of costs programs, reported to EUR 4.0, EUR 7.5 and EUR 6.3 million in 2018, 2019, 2020, respectively.



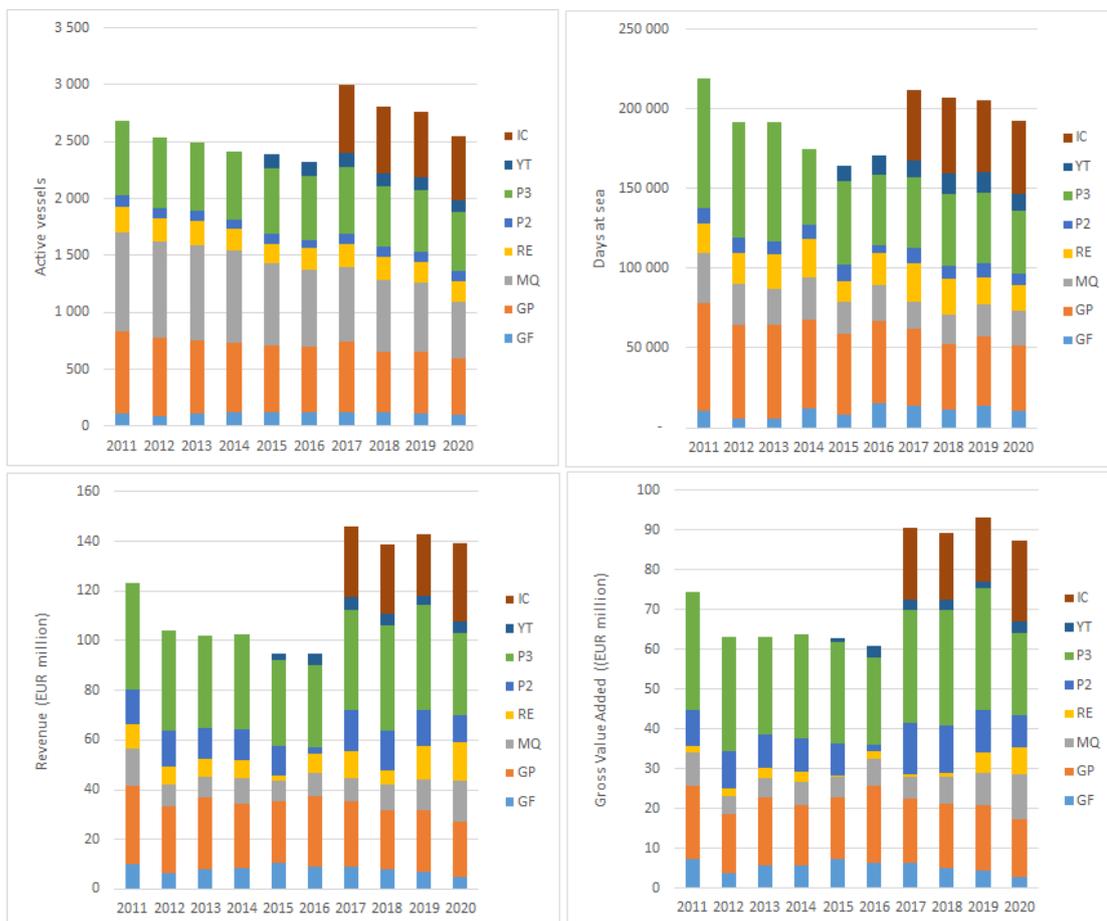
**Figure 3.95 Operating subsidies by OMR between 2018 and 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

In 2020, operating subsidies represented 4.5% of OMR total revenue but with significant differences between member states and OMR. They represented 8.3% of revenue in Portuguese OMRs, 2.9% in Canaries islands and French OMR but most of the subsidies are from Reunion (12.1% of revenue). These subsidies may have a significant impact on profitability of the segments.

### Trends in the OMRs

OMR active vessels declined by -30% between 2011 and 2020 (Canaries Island and Mayotte excluded) and by -15% between 2017 and 2020 for the whole OMR fleet. Engaged crew and days at sea follows quite the same trend with however significant differences between OMRs (see below). However, the year 2020 with the COVID-19 crisis reinforced this trend with respectively a -6% and -18%, -8% drop in days at sea, landings weight and value between 2020 and 2019 with contrasted impacts between OMRs.



**Figure 3.96 Trends in key indicators for EU OMR**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Based on incomplete data for economic data. Operating subsidies excluded.

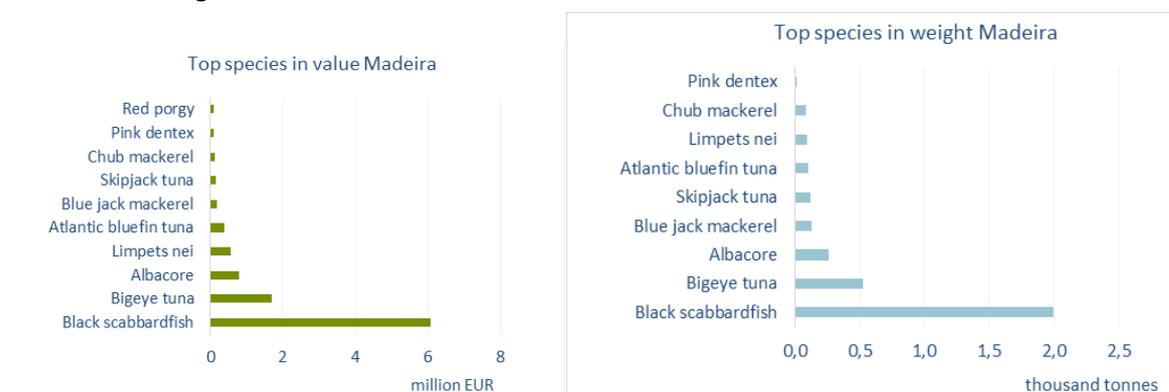
Revenue and GVA did not followed the same trend. Year 2011 excluded, the period 2017-20 was better compared to the period 2012-2018 meaning that the productivity of vessels and engaged crew in OMR as a whole improved over the period. This evolution needs to be confirmed and analyzed at OMR and segments because several drivers may explain these trends (exit of non-active or less active vessels, decommissioning schemes, resource evolution, operating subsidies ...).

## Results by OMR fleet: Portugal

The Portuguese OMR fleet in 2020 was composed of 606 active vessels, operating mainly in FAO 27.10 and FAO 34.1.2 (82% of days at sea of the Portuguese OMR fleet). 80% of the active vessels belongs to the SSCF. Both in Madeira and in the Azores, 5% of vessels are over 24 metres. The landings from the OMR fleets amounted 12 575 tonnes and generated a value of EUR 43.5 million. Engaged crew was responsible for 2 647 jobs corresponding to 1 527 FTE. GVA and NVA were respectively EUR 28.4 and EUR 22.5 million, gross and net profit respectively of EUR 7.7 and EUR 1.5 million. The most representative species in value were bigeye tuna, blackspot seabream and black scabbardfish, representing 16%, 15% and 14%, respectively, of the total value of landings.

### MADEIRA (P2)

The Madeira fleet was composed of 86 active vessels in 2020. Overall, 71% of the vessels are less than 10 metres LOA and 88% are less than 18 meters LOA. The total number of jobs created by this fleet was 469, corresponding to 320 FTE. In terms of effort, all these vessels together spent 7 285 DaS and used up 1.8 million litres of fuel (249 litres/DaS). The total live weight of landings was 3 421 tonnes generating an income of EUR 10.5 million, which means an average price of 3.06 euro/kg. Regarding the fleet performance, revenue was EUR 11 million and GVA and NVA were EUR 7.9 million and EUR 7.0 million, respectively. Gross profit and Net profit were EUR 2.3 million and EUR 1.4 million operating subsidies excluded. Most of the active vessels operated with long-lines and the most representative specie was the Black scabbardfish, once the 2 000 tonnes landed (58% of the total landings of these fleet) yield EUR 6 million (58% of the total value of landings). Tunas are also representative of the fishing activity in Madeira and the main species of tunas around 30% of the total value and weight landed.



**Figure 3.97 Top species landed in value (left) and weight (right) in Madeira, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Vessels of the Madeira fleet operate in the different following fisheries around Madeira archipelago:

- Slope fishery: vessels mainly targeting demersal species black scabbardfish mainly using set-longlines and small pelagic such as chub mackerel using purse seiner.
- The large pelagic fishery: vessels operate pool and line to target large pelagic species (skipjack tuna, bigeye tuna and albacore).

Between 2010 and 2020, the active fleet decreased by -24%, while FTE and crew decline -34%. This evolution was combined with a change in the structure of the fleet with vessels of larger size and engine power in the less than 10 metres category, and the opposite in the larger vessels. The decrease in days at sea and energy consumption was 23% and 31% showing that fuel consumption per day at sea decline despite the increase in the average engine power of the vessels remaining in the fleet. The landings in weight have fallen by -42% while the value of landings only dropped by -9%, resulting in a considerable increase in the average price (+55%). Total GVA was in 2020 almost the same as in 2010 while NVA increased over the period (+13%). Gross profit worsened in -34%, operating subsidies excluded.

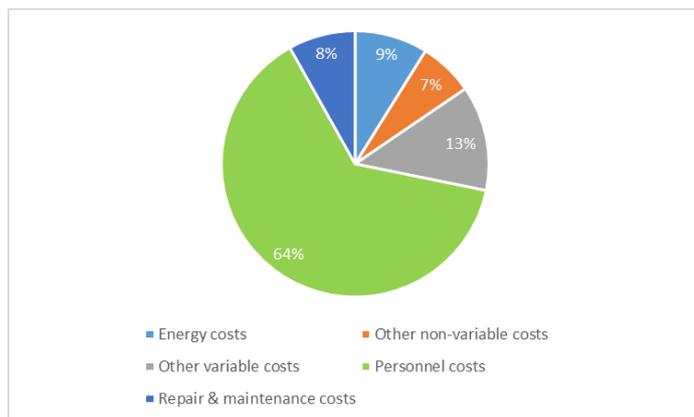


**Figure 3.98 Trends on capacity, effort, landings, GVA and profit for the Portuguese OMR fleet in Madeira.**

The sharp fall of the curve in 2016 is a reflection of the lack of 2016 data for some fleet segments of the Madeira fleet.

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

In 2020, the cost structure of the Madeira fleet is dominated by wages and salaries (64%) followed by other variable costs (13%) and repair and maintenance costs (8%).



**Figure 3.99 Cost structure for the Portuguese OMR fleet in Madeira, 2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Fleet structure and key results

The fleet structure is characterised by a dominance of vessels using set-longlines targeting demersal species black scabbardfish, and vessels operating with pole and line targeting large pelagic species. The Madeira fleet is structured in six fleet segments.

The most relevant segment in terms of number of vessels is the HOK0010 with 54 vessels representing 63% of the active fleet, 35% of the DaS and 19% of the value of landings). This fleet targets mainly demersal species (black scabbardfish represents 39% in weight and 32% in value) and also tunas (bigeye tuna and Atlantic bluefin tuna together represents 39% and 42% in weight and value of landings, respectively). The fleet segment employed 87 FTEs (27% of the total). Economic indicators for this fleet reported a gross profit of EUR 0.6 million

The HOK1218 segment is composed by 15 vessels, representing 17% of the active fleet, 38% of the days at sea and 52% of the value of landings. The fleet targets mainly demersal species (black scabbardfish represents 86% in weight and 89% in value). The fleet segment employed 126 FTEs (39% of the total). Economic indicators for this fleet reported a gross profit margin of 17%.

Segment HOK2440 is composed only by four vessels and represents 5% of the active vessels, 5% of the DaS and 10% of the value of landings. The fleet targets mainly large pelagic species (albacore

represents 55% in weight and 59% in value and big eye tuna represents 42% in weight and 40% in value). The fleet segment employed 45 FTEs (14% of the total). Economic indicators for this fleet reported a gross profit of -EUR 0.41 million. This fleet segment observed a big fall in all the economic variables and indicators comparing with the year before.

Between 2010 and 2020, the fleet have been stable in terms of number of vessels. However, is important to note that the important segments HOK1218 and HOK2440 have significantly worsened their economic performance in the last 2 years.

**Table 3.5 – Summary results for the Portuguese OMR fleet segments in 2020: Madeira (P2)**

	Number of vessels	Engaged crew	FTE national	Days at sea	Energy consumption (M litres)	Live weight of landings (tonnes)	Value of landings (Million EUR)	Revenue (Million EUR)	Gross Value Added (Million EUR)	Net Value Added (Million EUR)	Gross profit (Million EUR)	Net profit (Million EUR)	Operating Subsidies (Million EUR)
PRT NAO HOK0010 P2*	54	173	87	2.521	0,3	510	2,0	2,1	1,5	1,4	0,6	0,5	0,1
PRT NAO HOK1218 P2	15	144	126	2.773	0,6	1.857	5,4	5,8	4,3	4,1	1,2	1,0	0,5
PRT NAO HOK1824 P2	3	29	26	607	0,2	375	1,1	1,2	0,9	0,8	0,4	0,3	0,1
PRT NAO HOK2440 P2	4	60	45	385	0,6	379	1,1	1,1	0,5	0,1	0,0	0,4	0,1
PRT NAO MGP0010 P2	7	23	13	537	0,0	86	0,5	0,5	0,4	0,4	0,1	0,1	0,0
PRT NAO MGP1824 P2*	3	40	23	462	0,1	216	0,3	0,3	0,2	0,1	0,0	0,0	0,0

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Based on incomplete data for economic data.

### Main factors affecting the performance of the fleet

- The crew costs, which represents the main operational costs, can be affected in order to keep and recruit crew to operate the fleet. Besides the increase of the wages observed since 2014 the value is still low when compared with the mean salary in the OMR regions.
- The fleet faced the lack of incentives to attract young fishers to the sector. In addition to this constraint, there is a lack of available labour in the region.
- The ageing and outdated fleet also affects the results of the activity.
- A compensation scheme for the additional costs in the OMR in the fisheries sector is established and funded by EMFF within the 'Promoting marketing and processing of fisheries and aquaculture products' priority. In 2020 EUR 0.9 million were paid to the Madeira OMR under this aid.

### AZORES (P3)

The Azores fleet was composed of 520 active vessels in 2020. Overall, 64% of the vessels are less than 10 metres LOA and 88% are less than 18 metres LOA. The total number of jobs created by this fleet was 2 178, corresponding to 1 207 FTE. In terms of effort, all these vessels together spent 39 739 DaS and used up 5.3 million litres of fuel (134 litres/DaS). The total live weight of landings was 9 154 tonnes generating an income of EUR 33 063 million, which means an average price of 3.61 euro/kg. Regarding the fleet performance, revenue was EUR 33 million and GVA and NVA were EUR 20.5 million and EUR 15.5 million, respectively. Gross profit and Net profit were EUR 5.3 million and EUR 0.14 million. Like in Madeira, also the Azorean fleet was dominated by longliners (HOK), which in 2020 represented 83% of the active vessels. 94% of the Azorean fleet operates using passive gears only. The remaining fleet (6%) were purse seiners. The Azores OMR is very rich in biodiversity and fishing fleets target cephalopods, demersal and large pelagic species. The main species landed, by value, were red seabream (19%), bigeye tuna (15%), veined squid (12%) and albacore (12%).

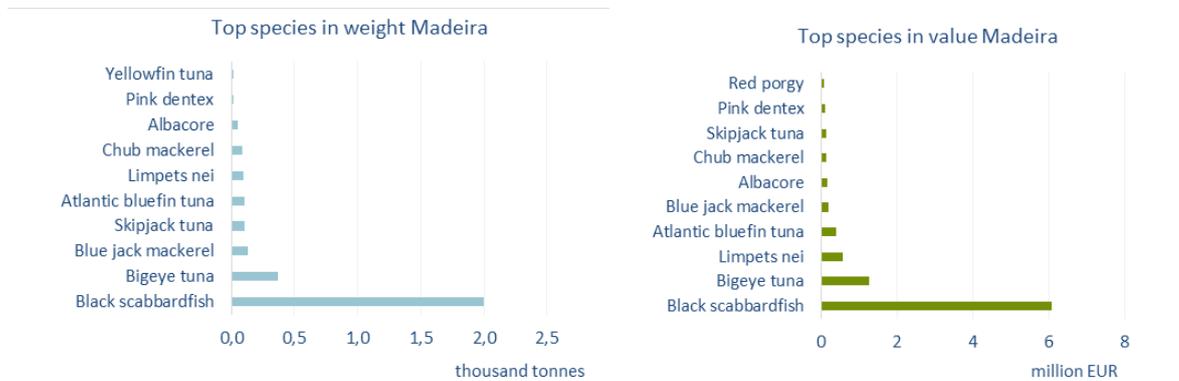


Figure 3.100 Top species landed in value (left) and weight (right) in Azores, 2020

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Between 2010 and 2020, the active fleet decreased by -23%, while FTE and crew decline 8% and 10%, respectively. This evolution was combined with a change in the structure of the fleet with vessels of larger size and engine power in the less than 10 metres category, and the opposite in the larger vessels. The decrease in days at sea and energy consumption was 51% and 57% showing that fuel consumption per day at sea decline (-13%) despite the increase in the average engine power of the vessels remaining in the fleet. The landings in weight and value have fallen by 51% while the value of landings dropped by 27%, resulting in a considerable increase in the average price (+51%). After 2016, where it was observed the lowest values for landing weight and value for all-time series, landings start to improve in a consistent way, specially caused by some recovery of the large pelagic species (skipjack tuna, albacore, and bigeye tuna) catches. In terms of value of landings 2019 it was the highest one in 2008-2019 period, due to the increase of landing value for veined squid which in 2019 represented almost one third of the total catches in value. Total GVA was in 2020 60% of the 2010 GVA and NVA also decreased over the period (+45%). However, in terms of economic performance, the profitability of the Azorean OMR fleet as a whole in 2020 was positive.

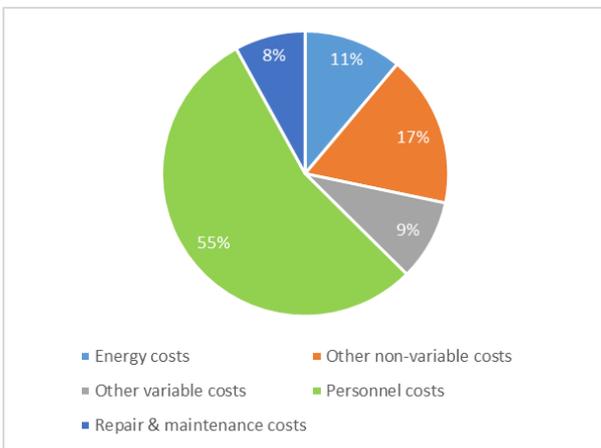


Figure 3.101 Trends on capacity, effort, landings, GVA and profit for the Portuguese OMR fleet in Azores.

The sharp fall of the effort curve in 2015 is a reflection of the lack of 2015 energy consumption data of the Azorean fleet.

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

In 2020, the cost structure of the Azorean fleet is dominated by wages and salaries (55%) followed by other variable costs (17%) and repair and energy costs (11%).



**Figure 3.102 Cost structure for the Portuguese OMR fleet in Azores, 2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Fleet structure and key results

The Azorean fleet is structured in 9 fleet segments, dominated by vessels using longlines targeting cephalopods, demersal and pelagic species.

The most relevant segment in terms of number of vessels is the HOK0010. With 313 vessels represents 60% of the active fleet, 46% of the DaS and 27% of the value of landings. This fleet targets demersal and cephalopods species - veined squid and red seabream - which combined represent 38% and 53% of the total weight and value of landings of the fleet segment, respectively. The discrepancy between the representativeness weight and value demonstrates the price valuation of these species. Specially, the veined squid average price was 9.04 euro/kg. In 2020, the total value from landings was EUR 8.8 million, 17% less than 2019, when the higher value of squid catches was reached. The fleet segment employed 262 FTEs (22% of the total) but generated 772 jobs (35% of the total), revealing the importance of partial employment in this segment. Economic indicators for this fleet reported a profit of EUR 2.7 million.

Segment HOK2440 is composed by 24 vessels operating mainly in area FAO 27.10.a (Azores) and FAO 34.1.2 (Madeira). This fleet represents 5% of the active vessels, 7% of the DaS, but is responsible for 27% and 38% of the value and weight of landings of the Azorean fleet, respectively. The fleet targets mainly tuna species (skipjack, bigeye tuna, blue shark and albacore). In 2020 the value of landings was almost EUR 9 million, 29% less comparing to 2019, resulting from the decrease of 30% in the weight of landings. The fleet segment employed 211 FTEs (17% of the total). Economic indicators for this fleet reported a worse performance compared to, but better efficiency once gross profit decreased 65% compared to 2019, while gross profit margin increased by 12%.

**Table 3.6 – Summary results for the Portuguese OMR fleet segments in 2020: Azores (P3)**

	Number of vessels	Engaged crew	FTE national	Days at sea	Energy consumption (M litres)	Live weight of landings (tonnes)	Value of landings (Million EUR)	Revenue (Million EUR)	Gross Value Added (Million EUR)	Net Value Added (Million EUR)	Gross profit (Million EUR)	Net profit (Million EUR)	Operating Subsidies (Million EUR)
PRT NAO DFN0010 P3	34	80	30	2.117	0,1	263	0,7	0,7	0,5	0,4	0,1	0,1	0,2
PRT NAO HOK0010 P3	313	772	262	18.462	0,7	1.413	8,8	8,8	6,1	4,9	2,7	1,4	0,7
PRT NAO HOK1012 P3	64	304	383	7.234	0,9	1.289	7,2	7,2	3,2	2,5	0,1	0,8	0,7
PRT NAO HOK1218 P3	32	287	213	4.042	0,6	1.605	5,5	5,5	3,8	3,4	1,1	0,6	0,6
PRT NAO HOK2440 P3*	24	321	211	2.597	2,5	3.472	8,8	8,8	5,4	3,1	0,9	1,6	0,5
PRT NAO PGP0010 P3*	20	59	28	1.618	0,1	173	0,6	0,6	0,4	0,3	0,1	0,1	0,1
PRT NAO PS0010 P3	21	89	28	1.545	0,1	279	0,5	0,5	0,3	0,3	0,2	0,1	0,0
PRT NAO PS1012 P3*	8	49	40	1.430	0,2	445	0,7	0,7	0,5	0,4	0,2	0,1	0,0
PRT NAO PS1218 P3	4	17	12	674	0,1	215	0,4	0,4	0,3	0,2	0,1	0,1	0,0

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Based on incomplete data for economic data.

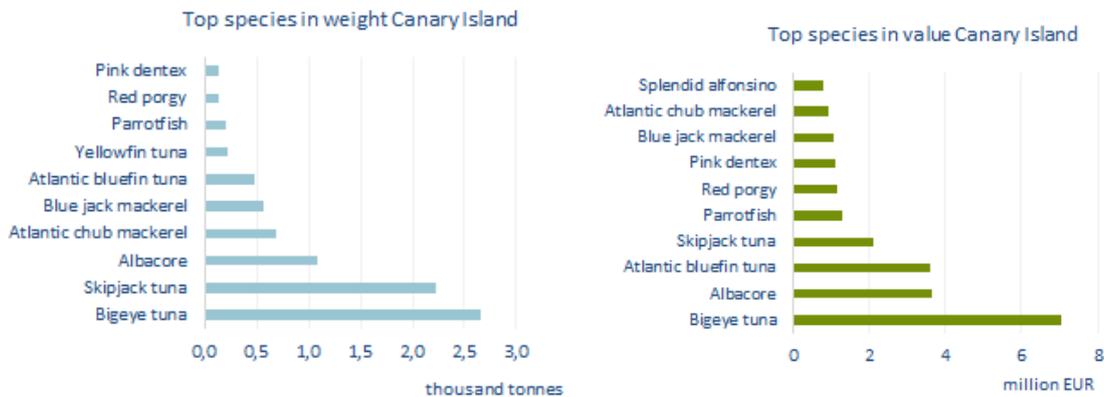
### Main factors affecting the performance of the fleet

- The fleet faces the lack of incentives to attract young fishers to the sector. In addition to this constraint, there is a lack of labour supply in the region.

- The observed fluctuation and catch restrictions of the tuna species, in particular skipjack tuna, affect the fleet economic performance, especially the HOK2440 and HOK1824 fleet segments.
- The low price of fish sold for the industry and marketing also affects the results of this fleet.
- Illegal fishing (e.g. bottom longline settled in coastal areas, recreational fishing for commercial purposes, etc.) is putting pressure on some fish stocks (mainly coastal species), and the corresponding commercialization of these species is putting pressure on the markets, both challenging the sustainability of SSCF.
- The Azores Archipelago faces several storms especially during the winter season, preventing the activity of the fishing sector, especially small-scale vessels. In 2019, the Hurricane Lorenzo destroyed several ports.
- A compensation scheme for the additional costs in the outer most regions in the fisheries is established and funded by EMFF within 'Promoting marketing and processing of fisheries and aquaculture products' priority. In 2020 EUR 3.3 million were paid to the Azores OMR under this aid.

## Results by OMR fleet: Spain. Canary Island

For Spain, fishing activity of the OMR fleet is spread out in FAO 34.1.2. In 2020, the Canary Island fleet was composed of 560 active vessels, of which 78% are small scales (under 12 metres LOA). Engaged crew was 1 436 (804 FTE). Total effort expressed in DaS was 46 176 days for total fuel consumption of 8.4 million litres (181 litres/DaS). Total landings in weight and value were 9 778 tonnes for EUR 29.7 million, respectively and average price was 3.03 euro/kg. GVA was EUR 20.4 million (64.8% of the revenue) and gross profit EUR 4.9 million. The main species in weight were bigeye tuna, skipjack and albacore; and in value bigeye tuna, Atlantic bluefin, albacore and skipjack tuna. In this sense the main species landed are the different species of tuna followed by small pelagic species. Most of the landings are sold locally directly to consumers or fish mongers. It is important to note that this fleet is dependent on species assessed or followed by the ICCAT.



**Figure 3.103 Top species landed in value (left) and weight (right) by the Spanish OMR fleet in 2020 (left) and FAO fishing area**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

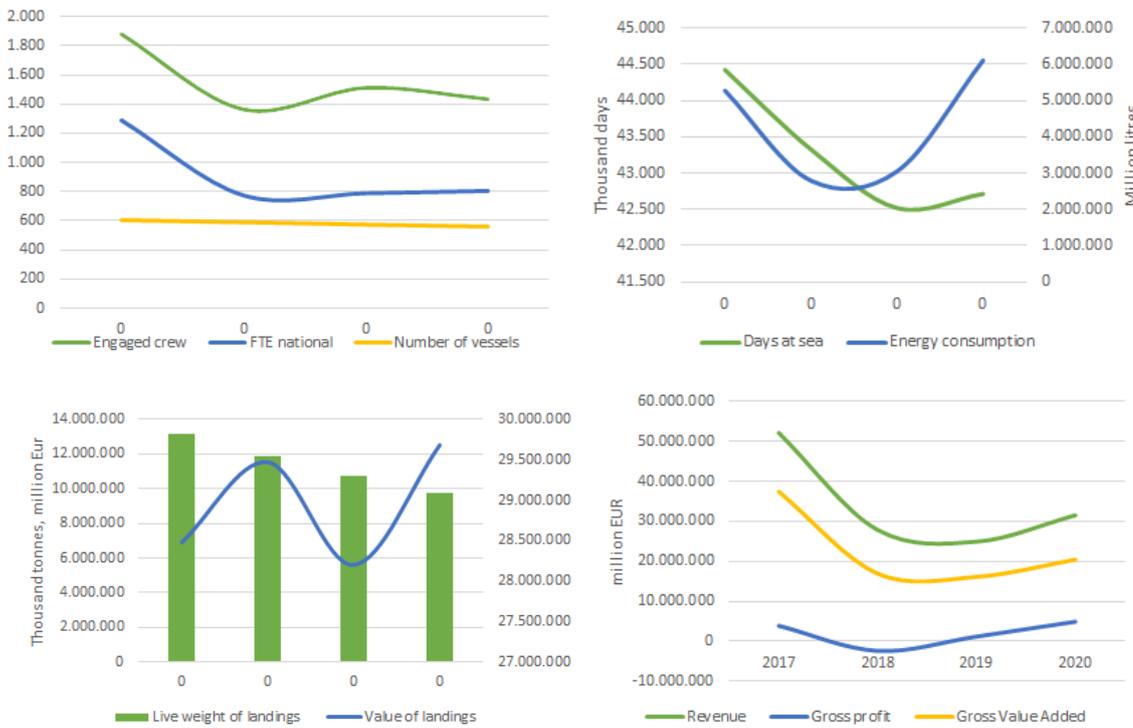
Vessels operate in two different fisheries:

- Coastal fisheries: vessels use small gears, such as pots, gillnets, and hooks to target small pelagic and demersal species.
- The large pelagic fishery: vessels operate with hand lines and trolling lines to target large pelagic species (tunas). Here we can find purse seiners for catching the bait.

Most of active vessels are polyvalent and may operate using several combinations of gears targeting more than one specie. Moreover, the level of activity is very heterogeneous within the fleet and segments, so we can find vessels fishing less than 50 days/year to vessels that fish 250 days/year. For most of the fishers, fishing is a complementary activity that is carried out part-time. The main problem for this fleet is the inactivity; so, 23% of the Canary Island fleet is inactive. The fleet is mainly composed of non-decked vessels with outboard engines operating on a one-day trip basis. Average crew is 1 or 2 members with some exceptions for vessels over 18 metres.

Between 2017 and 2020, the active fleet decreased by 7%, however the crew and the FTE decreased by 23.6% and 37.6%, respectively. This drop means that most fishers had other activities, so income from the fishing activity is just a complement. DaS increased by 3% however, energy consumption decreased by 9% showing a significant change in fuel consumption per DaS. The landings in value increased by 4% and weight decreased by 25.7%, it means that the average price has increased in the last years. One of the reasons for the increase of the price can be the COVID-19 situation.

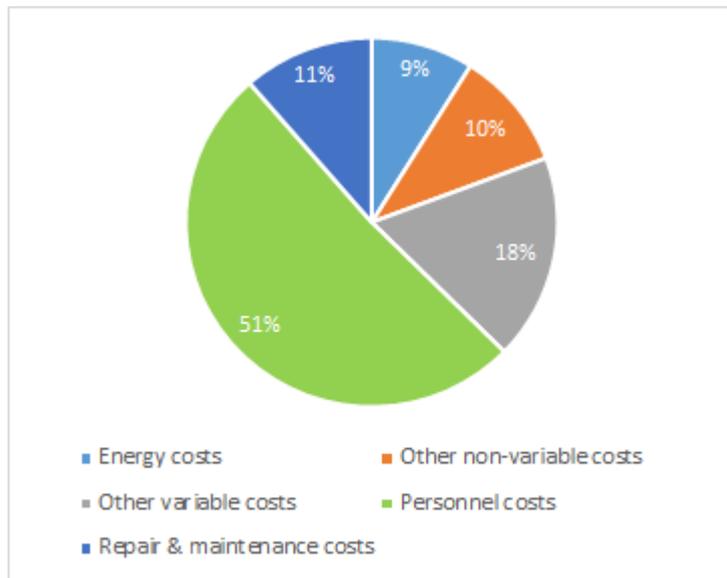
Total GVA also decreased over the period (-45%) but increased by 26.7% compared to 2019. The drop over the period may be due to a high figure in 2017. Gross profit also increased by 26% over the period.



**Figure 3.104 Trends on capacity, effort, landings, GVA and profit for the Spanish OMR fleet in Canary Island.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

In 2020, the cost structure of the Canary fleet is dominated by wages and salaries (51%) followed by other variable costs (18%) and repair and other variable costs (11% and 10%, respectively), values really similar than previous years.



**Figure 3.105 Cost structure for the Portuguese the Canary Island OMR fleet, 2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Fleet structure and key results

In Canary Islands we can find six clustered segments. The most important segment in number of vessels is PMPO010 with 430 vessels. This segment gives employment to 360 FTEs, the 44% of the total jobs generated by the Canary Island fishing fleet. It generates 36.7% of total landings value and 26% of total weight in the Canary Island fishing fleet. This segment together with FPO1012 (13 vessels) fish mainly in the coast targeting small pelagic species.

There are three segments that fish with hooks (HOK1012 – HOK1218 – HOK1824). These three segments have 109 vessels and give employment to 338 360 FTEs, the 42% of the total jobs generated by the Canary Island fishing fleet. It generates 53.7% of total landings value and 26% of total weight in the Canary Island fishing fleet. This segment together with purse seiner segment (PS1218) targets mainly tunas.

In Spain the geindicator (IC) started to be used in 2017. Regarding PMP0010 the number of vessels has decreased over the years by 11%, as the same time than sea days (2.5%) and weight of landings that have decreased by 30%; however, the value of landing have increased by 3.6%. GVA and Gross Profit have shown a high variability between years. With respect to hook segments, the number of vessels has been increasing over the years in parallel with the decrease of purse seiners. Compared to 2017 the weight of landing has decreased by 21% however, the value of landing has increased by 6%. GVA and Gross Profit have shown a high variability between years.

**Table 3.7 – Summary results for the Spanish OMR fleet segments in 2020: Canary Islands (IC)**

	Number of vessels	Engaged crew	FTE national	Days at sea	Energy consumption (M litres)	Live weight of landings (tonnes)	Value of landings (Million EUR)	Revenue (Million EUR)	Gross Value Added (Million EUR)	Net Value Added (Million EUR)	Gross profit (Million EUR)	Net profit (Million EUR)	Operating Subsidies (Million EUR)
ESP NAO FPO1012 IC *	13	52	46	1.202	0,1	157	0,7	1,1	0,9	0,9	0,7	0,6	0,0
ESP NAO HOK1012 IC *	46	161	55	3.037	0,3	1.396	3,4	2,3	1,6	1,4	0,4	0,3	-
ESP NAO HOK1218 IC	38	190	103	3.350	3,4	1.742	4,5	6,0	3,4	3,1	1,5	1,2	-
ESP NAO HOK2440 IC *	25	263	180	3.462	2,3	2.568	8,1	9,3	4,6	3,9	-	1,2	0,5
ESP NAO PMP0010 IC *	430	734	360	33.664	2,1	2.543	10,9	11,2	8,6	8,2	2,5	2,1	0,4
ESP NAO PS 1218 IC *	8	36	61	1.461	0,2	1.372	2,1	1,6	1,3	1,3	0,3	0,2	0,1

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Based on incomplete data for economic data.

### Main factors affecting the performance of the fleet

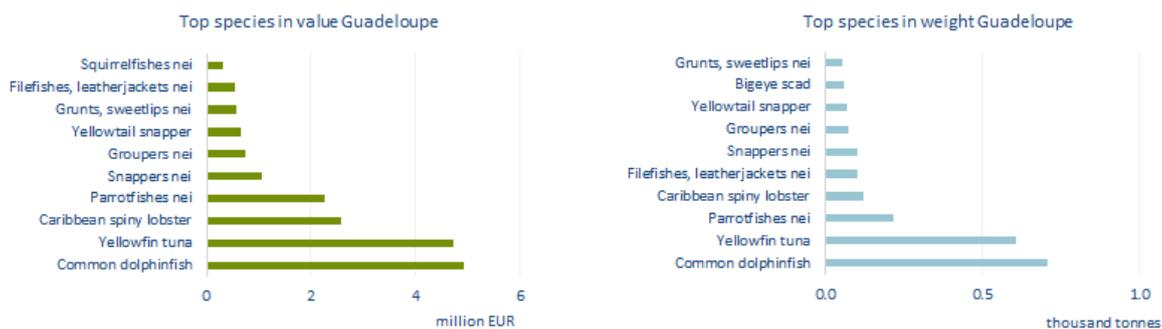
- The variations in TACs and Quotas of the main species (BET, BFT, ALB, YFT) are one of the main factors affecting the performance of the fleet.
- Poaching fish activities reduce the market availability affecting also the price.
- The landing prices have increased over the past four years.
- Operational cost has decreased over the years, mainly labour cost.
- Fuel price is one of the main factors affecting the performance of the fleet.
- A compensation scheme for the additional costs was established and funded by EMFF. In this sense in 2020 were approved EUR 9.8 million for aids. The most important were for improving market organisation of fisheries and aquaculture products (art.70 and 67), the standstill of fishing activity as a consequence of COVID-19 (art.33) and strategies for local development (art. 63).

## Results by OMR fleet: France

For France, fishing activity of the OMR fleet is spread out in the Atlantic and Indian oceans. 98% of the active vessels are small scale (under 12 metres LOA). Only the French Guiana, and Reunion fleets have fleet segments between 12 and 24 metres. The main fishing zones in terms of area of operation are in the Western Central Atlantic areas 31 (French Antilles), 31 and 41.1.1 (French Guiana), in the Western Indian Ocean 51.6 and 51.7 (Reunion and Mayotte). In 2020, landings from the OMR fleets combined amounted to 9 534 tons valued at EUR 65.5 million. Engaged crew was 3 568 (1 129 FTE), GVA and NVA were EUR 38.6 and EUR 31.8 million, respectively. Gross and net profit were EUR 8.1 million and EUR 1.6 million without considering operating subsidies, respectively. The top species landed in value were large pelagic species (yellowfin tuna and other tunas, common dolphinfish, swordfish and blue marlin, ...) but also coastal species (parrotfishes, spiny lobster, conchs and acoupa).

### GADELOUPE (GP)

In 2020, the Guadeloupe fleet was composed of 488 active vessels (97% under 10 metres LOA) in the fleet. Engaged crew was 871 (409 FTE). Total effort expressed in days at sea was around 41 000 days for total fuel consumption of 3.2 million litres (79 litres/DaS). Total landings in weight and value were 2 575 tonnes for EUR 22.1 million, respectively and average price was 8.6 euro/kg. GVA was EUR 14.7 million (67% of the revenue), NVA EUR 11.2 million (53% of the revenue) and gross profit EUR 3.5 million (15.1% margin). The main species in value were common dolphinfish, yellowfin tuna, parrotfishes, spiny lobster and filefishes. Snappers, groupers and conchs are also key species for the fleet. This landings composition reflects the different fisheries in which the vessels operate. All the landings are sold locally directly to consumers or fishmongers and restaurants. It is important to note that the Guadeloupe fleet is highly dependent on species assessed or followed by the ICCAT (yellowfin tuna, blue marlin, dolphinfish) and the WECAFC (conchs, spiny lobster, ...).



**Figure 3.106 Top species landed in value (left) and weight (right) in Guadeloupe, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Vessels operate in the different following fisheries around Guadeloupe archipelago.

- Coastal insular shelf fisheries: vessels use mainly traps, gillnets, hand line to catch a great diversity of demersal and benthic species, trammel nets to target spiny lobster or stromboid conch, and encircle nets to target small pelagic species and demersal species. Snorkelling is also practiced;
- Slope fishery: vessels mainly targeting snappers mainly using set-longlines and traps.
- The large pelagic fishery: vessels operate hand lines and trolling lines to target large pelagic species (dolphinfish, yellowfin tuna, blue marlin, wahoo, etc.) around private Moored Fishing Aggregating Devices (MFADs) or on free schools.

Most of active vessels are polyvalent and may operate in the different fisheries using several combinations of gears. However, the EU segments are not always relevant to differentiate the main fishing strategies in the fleet. Moreover, the level of activity is very heterogeneous within the fleet and segments. Vessels fishing less than 50 days/year to vessels that fish 250 days/year can be found in the same segment.

The fleet is mainly composed of non-decked vessels with outboard engines operating on a one-day trip basis. Average crew is 2 members with some exceptions for vessels using encircle nets. Crew members are from Guadeloupe. However, the fleet includes about ten decked vessels operating longer trips on the Saint-Barthelemy and Saint-Martin insular shelf. The level of activity is very variable within the fleet and segments.

Between 2010 and 2020, the active fleet decreased by -33% and FTE by -28%. This evolution was combined with a change in the structure of the fleet with vessels of larger size and engine power in the

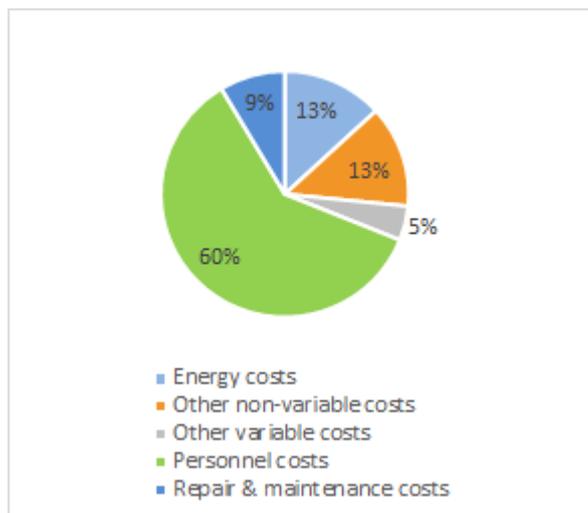
less than 10 metres category. The decrease in days at sea and energy consumption was around 35% showing no significant change in fuel consumption per day at sea and thus despite an increase in the average engine power of the vessels remaining in the fleet. The landings in weight and value followed the same trend (-21% and -23%) with average price which has remained almost stable over the period. Total GVA and NVA also decreased over the period (-23% and -19%), but gross profit remained stable. If total GVA decreased over the period following the trend in landings, GVA per vessel and per engaged crew increased by 15% and 35%, respectively.



**Figure 3.107 Trends on capacity, effort, landings, GVA and profit for the Guadeloupe fleet (GP).**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

In 2020, the cost of energy represented 13% of the total costs but the dependence to fuel is highly dependent on the segments considered. Vessels targeting large pelagic species with hooks and line around MFADs are more dependent than vessels operating in coastal areas. Non-variable cost represented on average 13% of the total costs. This so-called non variable cost is highly dependent on gear costs and the gears used. Personnel costs based on a share remuneration system include social security costs for which contribution rates are reduced compared to France mainland.



**Figure 3.108 Cost structure for the Guadeloupe OMR fleet, 2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Fleet structure and key results

The fleet structure is characterised by a high level of gear polyvalence that the main gear based DCF segmentation imperfectly represents. According to this segmentation (6 segments), the main fleets are the PG0010 (176 vessels representing 36% of the active fleet, 41% of the days at sea and 40% of the

landings in weight), the HOK0010 (101 vessels representing 21%, 18% and 34% of the previous indicators), followed by the FPO0010 (93 vessels, 19%, 16%, 10%) and DFN0010 (86 vessels 18%, 16%, 10%). Average landing price is higher (10-11 euro/kg) for the FPO0010 and DFN0010 targeting coastal species compared to HOK0010 targeting mainly large pelagic species (7 euro/kg). The HOK0010 is the most energy dependent but remain the most performant fleet in terms of fleet and average economic indicators. The value added of this fleet represents 73% of the revenue when it is only 62% for the FPO and DFN. Their gross profit was positive but net profit of both these fleets was negative in 2020. It is important to note that average figures which can be derived from aggregates are difficult to interpret as it includes a significant part of the vessels for which the level of activity (DaS) is low.

Between 2010 and 2020, the most important vessel reduction concerned the PGP0010\* (-45%), the HOK0010 (-37%) and the FPO0010 (-33%) compared to DFN0010 (+28%). The three first segments improved their GVA per vessel (+33%, +57%, +47%) when the fourth decreased (-51%). These evolutions in GVA per vessel seem to be related mainly to availability of species and reduced number of operators in the fishery.

**Table 3.8 – Summary results for the French OMR fleet segments in 2020: Guadeloupe (GP)**

	Number of vessels	Engaged crew	FTE national	Days at sea	Energy consumption (M litres)	Live weight of landings (tonnes)	Value of landings (Million EUR)	Revenue (Million EUR)	Gross Value Added (Million EUR)	Net Value Added (Million EUR)	Gross profit (Million EUR)	Net profit (Million EUR)	Operating Subsidies (Million EUR)
<b>FRA OFR FPO0010 GP</b>	93	149	60	6.768	0,3	250	2,8	2,7	1,7	1,3	0,2	0,2	-
<b>FRA OFR DFn0010 GP</b>	86	150	68	7.037	0,3	257	2,5	2,6	1,6	1,1	0,2	0,3	-
<b>FRA OFR PGP0010 GP*</b>	176	300	167	17.681	1,3	1.032	9,1	9,2	5,9	4,8	1,2	0,1	-
<b>FRA OFR PGP1012 GP*</b>	15	34	11	885	0,1	48	0,4	0,5	0,2	0,1	0,0	0,2	-
<b>FRA OFR HOK0010 GP</b>	101	168	68	7.377	1,2	867	6,3	6,2	4,6	3,9	1,6	0,9	-
<b>FRA OFR PS0010 GP</b>	17	71	34	1.463	0,1	120	0,9	0,9	0,7	0,7	0,3	0,2	-

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Based on incomplete data for economic data.

### Main factors affecting the performance of the fleet

- The lack of suitable and accessible training for the fishers at regional level is a key issue for the sustainability and attractiveness of the sector. The recent digitalisation of administrative procedures is also a significant constraint for fishers. Moreover, the cost of entry (capital cost) to the sector has increased over the last ten years due to the increase of vessels characteristics (size, engine power) and unit price.
- The number of landings points is very important in Guadeloupe. The quality of port infrastructure is heterogeneous over the territory and a key factor for maintaining fishing activity and attracting young fishers.
- Guadeloupe like other OMRs is geographically far from sources of supply. These constraints generate, for the local economic operators additional costs compared to mainland. These additional costs undermine the competitiveness of the fishing sector in particular in 2021 and 2022 due to the increase in fuel price, transportation cost of materials (gears, engines, etc.) to Guadeloupe and more recently supply chains difficulties. A compensation scheme for the additional costs was established and funded by EMFF but the returns and benefits for local fishers are limited in scope.
- The increase in landing prices over the past ten years has been very limited in scope. One of the reasons given is the importation of seafood from international markets in a context of region's high dependence on imports. However, the supply chain of local products is not well organized.
- There is a prefectural act for fisheries management including technical measures (gear regulation, species mesh size) but internal competition within the SSCF sector is a key issue in Guadeloupe. The main reason is the lack of regulation for access to the fishing stocks and fishing grounds. Except the entry permit to the fleet, there are few licences schemes with fixed numbers (*numerus clausus*) for the different fisheries. Moored Fishing aggregating devices (MFADs) regulations are also poorly respected. Local illegal fishing and recreational fishers are also serious competitors. The conch stocks being subject to worry, the fishery was closed for the 2020-2021 season and reopened in October 2021.

- Several no take zones were set up within the National Park area, but the sustainability of the sector is also threatened by the quality of habitats environment dependent on coastal development and agriculture. Permanent pollution of coastal habitats by pesticide (Chlordecone) used by agriculture led to the ban of coastal fishing areas in the southern part of the island (Basse-Terre). Currently, no solution is within sight to resolve these issues except fisher's financial compensation for the prohibited fishing areas due to pesticides.
- Since 2011, massive Sargassum algae inflows (stranded and floating blankets) in the Caribbean led to massive changes in the pelagic and coastal ecosystems with impacts on the fishing stocks. Fishing activity in Guadeloupe is also significantly impacted by these events (difficulties to operate vessels and fishing gears). Dedicated projects are aiming to prevent harbours clogging but with limited effectiveness.
- Marine ecosystems and fishing activity are subject to the occurrence of extreme events. Ten hurricanes occurred between 2004 and 2017.

## MARTINIQUE (MQ)

In 2020, the Martinique fleet comprised 502 active vessels and most of them (97%) were under 10 metres. Total crew was 780 persons corresponding to 195 FTE. Total effort expressed in days at sea was around 22 098 days for total estimated fuel consumption of 2.560 million litres (115 litres/day at sea). Total landings in weight and value were respectively 1 557 tonnes for EUR 18.2 million and average price was 11.6 euro/kg. Economic indicators were not available for the whole fleet<sup>13</sup>. GVA was estimated to EUR 11.25 million (67% of the revenue), NVA was EUR 10.17 million (60%) and gross profit EUR 2.0 million (16.0% margin). The main species in value and weight were large pelagic species (dolphinfish, yellowfin tuna, blue marlin) but also coastal species (conches, spiny lobster, eggs from urchins, coral reef fishes). This landings composition reflects the different fisheries in which the vessels operate. All the landings are sold locally directly to consumers or fish mongers. It is important to note that the Martinique fleet is dependent on species assessed or followed by the ICCAT (Yellowfin tuna, blue marlin, dolphinfish) and the WECAFC (conchs, spiny lobster, ...).

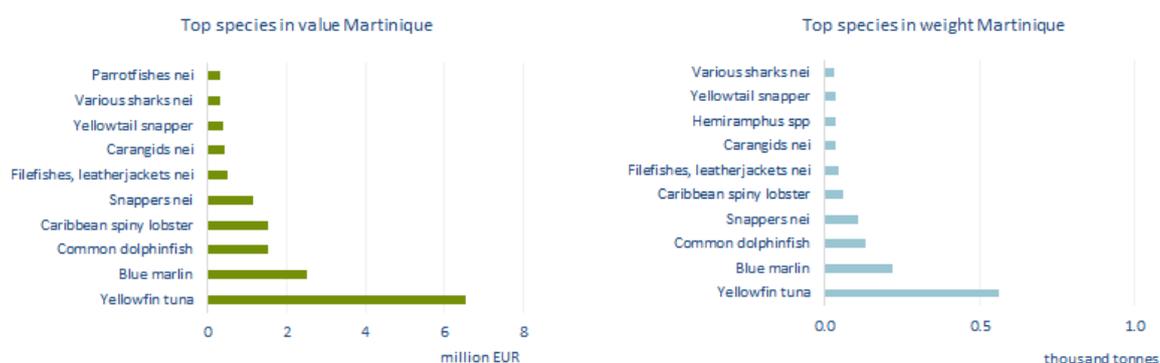


Figure 3.109 Top species landed in value (left) and weight (right) in Martinique, 2020

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

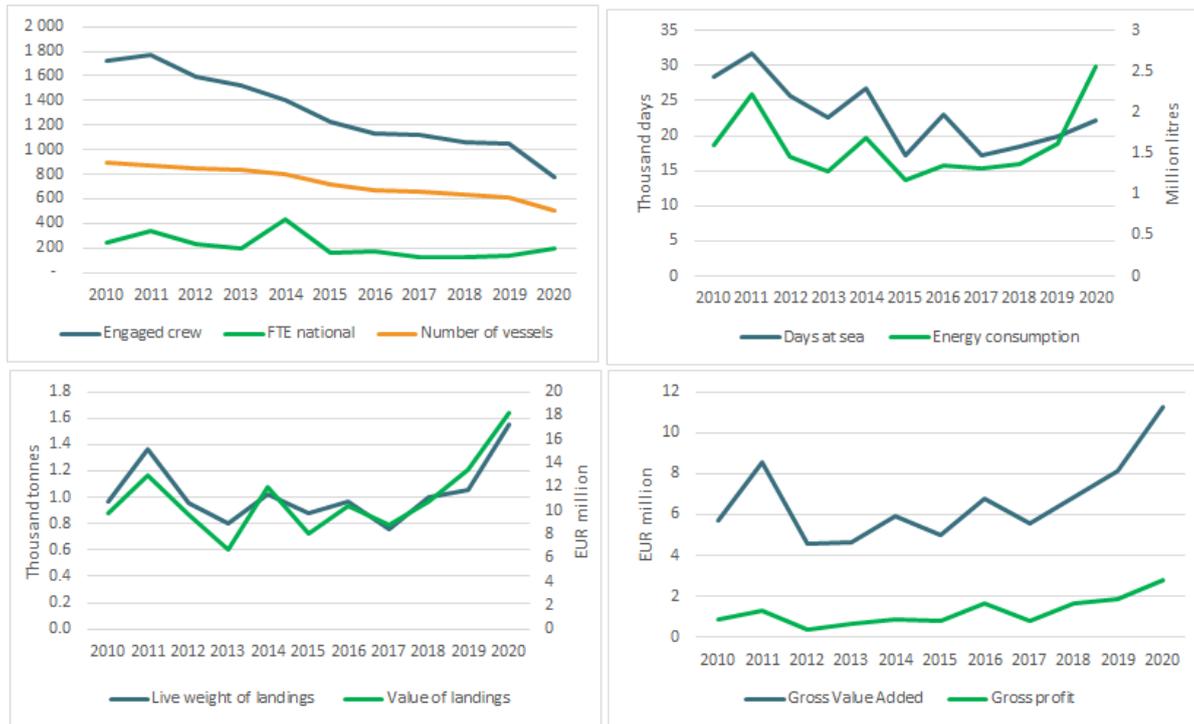
Vessels operate in the different following fisheries around Martinique.

- Coastal insular shelf fisheries: vessels use mainly traps, gillnets, hand line to catch a great diversity of demersal and benthic species, trammel nets to target spiny lobster or stromboid conch, encircle nets to target small pelagic species and beach seine. Snorkelling is also practiced;
- The large pelagic fishery: vessels operate hand lines and trolling lines to target large pelagic species (dolphinfish, yellowfin tuna, blue marlin, wahoo, etc.) on free schools but also around Moored Fishing Aggregating Devices (MFADs).
- Most of active vessels are polyvalent and may operate in the different fisheries using several combinations of gears. The fleet is mainly composed of non-decked vessels with outboard engines operating on a one-day trip basis. However, the fleet includes decked vessels operating longer trips. Few vessels over 12 metres operate in the French Guiana EEZ to target snappers with pots.

<sup>13</sup> Economic indicators were not available for the clustered segment PGO0010 MQ\*.

Average crew is 2 members with some exceptions for vessels using encircle nets or beach seines. Crew members are mainly from Martinique.

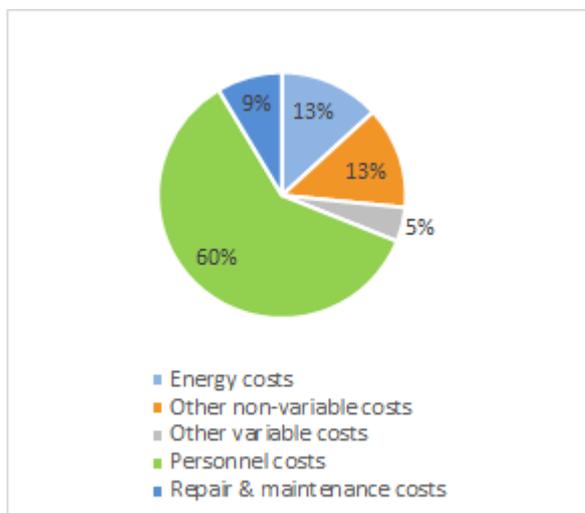
Between 2010 and 2020, the active fleet decreased by -44%, engaged crew (-55%) and FTE by -20%. The days at sea decreased by -22% over the same period but the level of activity was significantly higher in 2020 than in 2019 (+11%). According to the data, energy consumption increased by 60% over the same period which is difficult to interpret. Due to higher level of activity and better yields in 2020 compared to 2019, the landings in weight and value increased by respectively 48% and 35%. Total GVA oscillated between EUR 4.6 and EUR 8.2 between 2010 and 2019 and reached EUR 11.2 million in 2020. Gross profit improved also significantly over the period and most of the improvement is due to 2020. The trends in GVA per vessel and per FTE is also positive with 250% and 150% between 2010 and 2020. Part of these improvements may be explained by the exclusion of a significant part of inactive vessels from the fleet over the recent years.



**Figure 3.110 Trends on capacity, effort, landings, GVA and profit for the Martinique fleet (MQ).**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

In 2020, the cost of energy represented 13% but the dependence to fuel is highly dependent on the segments considered. Vessels targeting large pelagic species with hooks and line around MFADs are more dependent than vessels operating in coastal areas. Non-variable cost represented on average 13% of the total costs. This cost is highly dependent on gear costs and the gears used. Personnel costs include social security costs for which contribution rates are reduced compared to France mainland.



**Figure 3.111 Cost structure for the OMR fleet in Martinique, 2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Fleet structure and key results

The fleet structure is characterised by a high level of gear polyvalence that the main gear based DCF segmentation imperfectly represents. According to this segmentation, the main fleets are the PGP0010 (183 vessels representing 36% of the active fleet, 54% of the days at sea and 56% of the landings in weight), the FPO0010 (123 vessels representing 25%, 22% and 10% of the previous indicators), followed by the HOK0010 (121 vessels, 24%, 15%, 30%) and DFN0010 (49 vessels 10%, 7%, 3%). Average landing price was higher (13 euro/kg) for the FPO0010 targeting coastal species compared to HOK0010 targeting mainly large pelagic species (11.3 euro/kg). The HOK0010 was the most energy dependent fleet (8200 litres per vessel) but remain the most performant fleet in terms of fleet and average economic indicators. The value added of this fleet represented 74% of the revenue when it was only 64% for the PGP and FPO. The gross and net profit were positive for the fleet in 2020 except the net profit for the DFN0010. It is important to note that average figures which can be derived from aggregates are difficult to interpret as it includes a significant part of the vessels for which the level of activity (days at sea) is low.

Between 2010 and 2020, the reduction in the number of vessels concerned all the segments, the PGP0010\* (-49%), the FPO0010 (-47%), DFN0010 (-42%) and to a less extent the HOK0010 (-27%). The HOK0010 and also the PGP0010 improved their GVA per vessel compare to the other segment especially the last three years and mainly in 2022 and thus despite the COVID-19 outbreak. These evolutions in GVA per vessel seems to be related mainly to availability of species and number of operators in the fisheries.

**Table 3.9 – Summary results for the French OMR fleet segments in 2020: Martinique (MQ)**

	Number of vessels	Engaged crew	FTE national	Days at sea	Energy consumption (M litres)	Live weight of landings (tonnes)	Value of landings (Million EUR)	Revenue (Million EUR)	Gross Value Added (Million EUR)	Net Value Added (Million EUR)	Gross profit (Million EUR)	Net profit (Million EUR)	Operating Subsidies (Million EUR)
FRA OFR FPO0010 MQ	123	180	40	4.914	0,2	152	2,1	2,0	1,3	1,0	0,2	0,1	-
FRA OFR DFN0010 MQ	49	68	12	1.525	0,0	42	0,4	0,4	0,2	0,2	0,0	0,0	-
FRA OFR PGP0010 MQ*	183	351	116	12.035	1,3	877	10,2	9,1	5,8	5,8	1,2	1,1	-
FRA OFR HOK0010 MQ	121	180	27	3.244	1,0	464	5,4	5,2	3,9	3,9	1,4	0,7	-
FRA OFR PGO0010 MQ	26	-	-	380	-	22	0,2	0,0	0,0	0,0	0,0	0,0	-

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Based on incomplete data for economic data.

## Main factors affecting the performance of the fleet

- Fuel price and large pelagic species availability are one of the main factors affecting the performance of the fleet.
- Martinique like other OMRs is geographically far from sources of supply. These constraints generate, for the local economic operators additional costs compared to mainland. These additional costs increase the final price of inputs, which may undermine the competitiveness of the fishing sector. A compensation scheme for the additional costs was established and funded by
- European Maritime and Fisheries Fund (EMFF) but the returns for local fishers are limited in scope.
- Even if average landing prices increased over the last decade, the supply from the sector seems to be subject to the competition from imports from international markets and from foreign vessel landing in Martinique.
- Internal competition within the SSCF sector is a key issue in Martinique. The main reason is the lack of regulation for access to the fishing stocks and fishing grounds. Except the entry permit to the fleet, there are few licences schemes with fixed numbers (*numerus clausus*) for the different fisheries. Local illegal fishing and recreational fishers are also serious competitors. A natural marine park was established in 2017 covering the entire Martinique EEZ.
- The sustainability of the sector is also threatened by the quality of habitats environment dependent on coastal development and agriculture. Permanent pollution of coastal habitats by pesticide (Chlordecone) used by agriculture (banana plants) led to the ban of coastal fishing areas in the western part of the island. Currently, no solution is within sight to resolve these issues except fisher's financial compensation for the prohibited fishing areas due to pesticides.

- Since 2011, massive Sargassum algae inflows (stranded and floating blankets) in the Caribbean led to massive changes in the pelagic and coastal ecosystems with impacts on the fishing stocks. Fishing activity in Martinique is also significantly impacted by these events (difficulties to operate vessels and fishing gears). Dedicated projects are aiming to prevent harbours clogging but with limited effectiveness.
- Marine ecosystems and fishing activity are subject to the occurrence of extreme events.
- Landings are distribution over a large number of landings points. The quality of port infrastructure and services is also an important element for maintaining fishing activity and attracting young fishers.

### FRENCH GUIANA (GF)

In 2020, the French Guiana OMR fleet comprised 105 active vessels. Within this fleet, 39 vessels from 00-10m and 57 vessels from 10-12m use drift nets<sup>14</sup>. 9 trawlers from 18-24m targeted tropical shrimps. Total crew was 342 persons corresponding to 191 FTE. Total effort expressed in days at sea was around 10 361 days for total fuel consumption of 400 000 litres. Total landings in weight and value were respectively 1 748 tonnes for around EUR 4.3 million and average price was 2.5 euro/kg. Economic indicators concerned only the small-scale fleet under 12 metres<sup>15</sup>. In 2020, GVA excluding the trawlers fleet was EUR 2.7 million (55% of the revenue), NVA was EUR 2.4 million (49%) and gross profit EUR 0.64 million (13.0% margin). The main species in value and weight were *Acoupa weakfish*, green weakfish targeted with driftnets and sold locally. *Acoupa weakfish* swim blades are also highly value and contribute the revenue of fishers. *Penaeus shrimps nei* are harvested by trawlers and exported. Snappers are also exploited in the French Guiana EEZ but by foreign fleets and thus not reported here<sup>16</sup>. For some species (snappers, shrimps) stock status is followed by the WECAFC.



**Figure 3.112 Top species landed in value (left) and weight (right) in French Guiana, 2020 (GF)**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

A significant part of the driftnet small scale fleet is based around the main city of Cayenne with 36 vessels in Cayenne and 18 vessels in Rémire Montjoly the neighbouring city. The other part of the fleet is distributed along the coast in harbours located in the river mouths. These vessels operate on coastal areas and mainly use driftnets to catch demersal species. The driftnet fishery is subject to competition from foreign IUU in French Guiana EZZ. Even if vessel operators are French, most of these non-EU fishers involved the crews are from Brazil. For the segment composed of bottom shrimp trawlers, all the crew members are from Brazil and Guyana.

Between 2010 and 2019, the active fleet increased slightly (+13%) but it decreased in 2020 compared to 2019 (-9%). Except for 2020 and despite a reduction in the number of active shrimp trawlers, the engaged crew and FTE increased by +4% and +9%, respectively. DaS followed a positive trend (+34%) between 2011 and 2019 but energy consumption decreased by -12% which may be explained

<sup>14</sup> This segment is mainly composed of non-decked vessels with outboard engines also called locally "pirogue", "canots créole" and "canots creoles améliorés". There are also some decked vessels with inboard engine called "tapouilles". These local names reflect the degree of equipment of the vessels that the vessel size categories do not reflect.

<sup>15</sup> Economic indicators were not available for the 18-24m trawlers segment.

<sup>16</sup> Snappers are exploited by 45 Venezuelan hand lines vessels operating with an European license Their landings were estimated at 1 500 tonnes in 2015, a significant part being landed in French Guiana and exported for a significant part to the French Antilles. Snappers are also targeted by few vessels from Martinique (French outermost region) using traps and contributing to less than 10% of total landings.

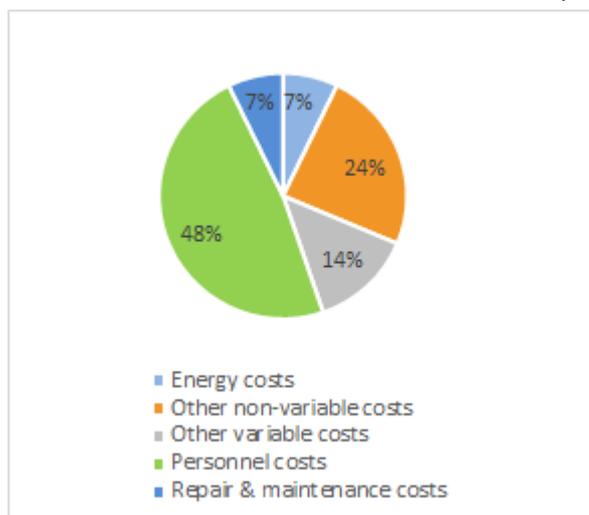
by the change in the structure of the fleet. However, the landings in weight and value decreased by 12% and 37%, respectively. The change in average price (29% lower) is probably explained by the reduction of shrimp's landings with higher prices than fishes in total landings. The year 2020 was marked by a significant reduction in fishing effort (-27%), landings in quantity and value (-37% and -34%) and also GVA (-31%)



**Figure 3.113 Trends on capacity, effort, landings, GVA and profit for the French Guiana fleet (GF).**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

In 2020, the cost of energy for the driftnet segment represented 7% of the total costs which quite low compared to other French OMRs segments (see also fuel consumption per day per segment). Other variable costs and non-variable cost are relatively high and represented 14% and 24% of total costs, respectively. Personnel costs based on the share remuneration system include social security costs for which contribution rates are reduced compared to France mainland.



**Figure 3.114 Cost structure for the Guadeloupe OMR fleet in French Guiana, 2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Fleet structure and key results

In 2020, 39 vessels (42% of the active fleet under 10 metres) made up the DFN0010 segment with 102 crew members engaged (45 FTE). Days at sea were 2992 and total fuel consumption 123 000 litres (40 litres per day at sea). Total landings in weight and value were 470 tonnes for EUR 1.0 million (2.2 euro/kg average price). Total revenue was EUR 1.05 million for a GVA of EUR 0.41 million (39% of the revenue). Gross and net profit were respectively null and negative (EUR -0.07 million). Average

GVA per FTE and per vessel were respectively EUR 9 227 and GVA EUR 10 556. Most of the indicators were divided by two compared to 2019.

57 vessels (58% of the active fleet under 10 metres) made up the DFN1012 segment in 2019 with 196 crew members engaged (126 FTE). DaS were 6 638 and total fuel consumption 278 182 litres (41 litres per DaS). Total landings in weight and value were respectively 1 075 tonnes for EUR 2.8 million (2.6 euro/kg average price). Total revenue was EUR 3.8 million for a GVA of EUR 2.3 million (59% of the revenue) and gross profit EUR 646 000 (17% margin). Average GVA per FTE and per vessel were EUR 18 094 and EUR 40 200, respectively. Most of the indicators were divided by one third compared to 2019.

No economic data was available for the trawlers segment (DTS1824) in 2020 and for the previous years.

Between 2010 and 2020, the fleet structure changed with a reduction in the vessel number for the DFN0010 (-17%) and an increase for the DFN1012 (+67%). The GVA per vessel decreased over the period especially the last two years but more intensively for the DFN2012. The DTS1824 segment faced a sharp reduction in vessel number (60%).

**Table 3.10 – Summary results for the French OMR fleet segments in 2020: French Guiana (GF)**

	Number of vessels	Engaged crew	FTE national	Days at sea	Energy consumption (M litres)	Live weight of landings (tonnes)	Value of landings (Million EUR)	Revenue (Million EUR)	Gross Value Added (Million EUR)	Net Value Added (Million EUR)	Gross profit (Million EUR)	Net profit (Million EUR)	Operating Subsidies (Million EUR)
<b>FRA OFR DFN1012 GF*</b>	57	196	127	6.638	0,3	1.076	2,8	3,9	2,3	2,1	0,6	0,5	-
<b>FRA OFR DTS1824 GF</b>	9	45	20	731	0,0	203	-	-	-	-	-	-	-
<b>FRA OFR DFN0010 GF*</b>	39	102	45	2.992	0,1	470	1,0	1,0	0,4	0,3	0,0	0,1	-

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Based on incomplete data for economic data.

### Main factors affecting the performance of the fleet

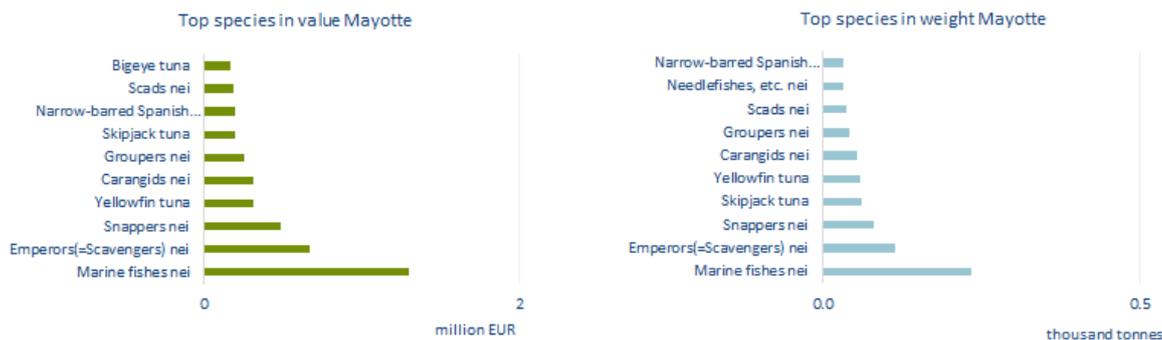
- The recent increase in demand of Asian market for Acoupa weakfish swim blades has significantly transformed the fishing activity in French Guiana, especially for the 00-10m and 10-12m segments using driftnet. This product which was a source of additional income for crew members is now subject to an organized activity to provide Chinese buyers through Brazilian and Surinamese retailers. Acoupa weakfish is now targeted mainly for the value of the swim blade in a context where the landing price of demersal species are low. This product yields additional and significant incomes for the small-scale fleet. However, Acoupa species are subject to concerns in terms of fisheries management. Illegal harvesting is reported for these species.
- Additionally, if national illegal fishing is observed on the west side of the coastal shelf, foreign illegal fishing (IUU) is reported within the French Guiana EZZ. IUU from neighbouring countries was considered to represent vessel number and harvesting considered at least at three times to French Guiana legal fleet, creating serious issues in terms of conflicts at sea, socio-economic consequences and fisheries management.
- Harbour infrastructures, especially for the 00-10m and 10-12m are limited in number and the quality of equipment is poor. Landings in some places depend on the high tide time. There are less than ten landing points for all the SSCF that are sometimes also used by recreational fishers. This situation is source of conflict with sport fishing and in general marine leisure sectors.
- Most of the crew members in the small-scale fleet 00-12m are foreign fishers. The crew turnover is considered high and difficulties in regularizing the residence permits of crew members do not allow all vessels operators to activate their vessels. The lack of attractiveness of the fishing sector does not allow, under the current conditions, to position French crews on board. There is a shortage of around 130 fishers in order the tire Guyanese coastal fishing fleet can be fully operational. The small-scale fleet is, for the most part, unsuited to the requirements of living conditions on board in terms of safety and hygiene.
- Shrimp landings from the trawlers operating on the shelf have strongly decreased in the last decade. Various factors could explain this evolution: the degradation of stock status in a context of global environmental changes; the decrease of shrimp price in international market and

competition aquaculture products; the increase of the fuel price and relative high level of fuel consumption by shrimp trawlers. The extremely humid and oxidizing equatorial climate makes it difficult to maintain the fleet operational. These combined effects of the factors have probably contributed the decline in the economic performance of the segment and the decline in attractiveness of the fishery.

- French Guiana like other OMRs is geographically far from sources of supply. These constraints generate, for the local economic operators additional costs compared to mainland. These additional costs increase the final price of the products, which may undermine the competitiveness of the fishing sector. A compensation scheme for the additional costs was established and funded by EMFF but the returns for local fishers are limited in scope.
- The vast majority of companies in the fishing sector experience difficulties in accessing bank financing, mainly for the following reasons (Under-capitalization, difficulties of pre-financing of investment, ...).

### MAYOTTE (YT)

In 2020, the registered fleet from Mayotte was composed of 100 active vessels. Engaged crew was 253 (149 FTE). Total effort expressed in days at sea was around 10 444 days for a total energy consumption of 0.724 million litres (69 litres per trip). Total landings in weight and value were respectively 950 tonnes for EUR 4.9 million and average price was 5.2 euro/kg. Most of the species are sold locally. GVA was EUR 3.1 million (68% of the revenue), NVA was EUR 2.5 million (56%) and gross profit EUR 0.8 million (18% margin). The main species in value and weight were emperors and snappers, yellowfin tuna, carangids and skipjack. However, marine fishes were reported as the main landing value. Large pelagic species are followed and/or assessed by the IOTC.



**Figure 3.115 Top species landed in value (left) and weight (right) in Mayotte, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

The main gears used are hand lines and trolling lines, followed by nets (gillnets and encircling gillnets), drifting longlines and diving. Vessels operate in the different following fisheries:

- In coastal (lagoon) areas, demersal species are harvested mainly by hand line. A few boats use nets to target small pelagic fish.
- Demersal species are also harvested offshore.
- Outside the lagoon, large pelagic species are targeted by trolling liners on free schools or around MFADs. A few boats target swordfish and tuna (bigeye and yellowfin tuna) within the 20 nautical miles around the barrier reef.

The trips are usually daily but can reach 4 to 5 days for the fleets operating on the outer reefs.

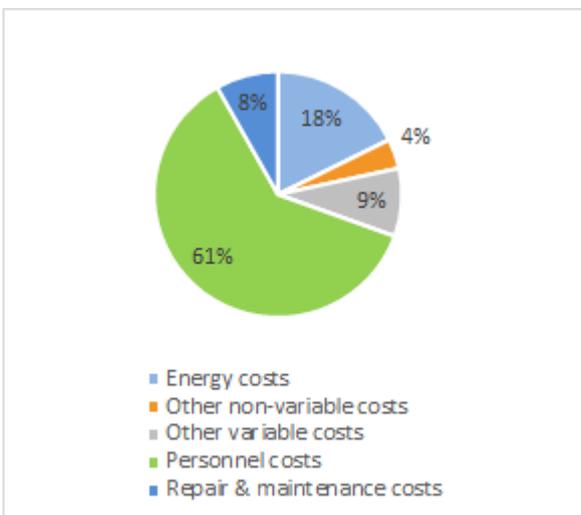
Between 2015 and 2019, the active fleet was quite stable, but a decrease occurred in 2020. The engaged crew decreased by -17% over the same period. Days at sea were stable between 2015-2018 with a slight increase in the most recent years and a decrease in 2020. Landings and value increase from 2015 to 2017 then decreased and stabilized at around 950 tonnes in 2020. Average price ranged from 4 euro/kg to 5 euro/kg over the period. The year 2015 excluded, total GVA, GVA per vessel and per engaged crew improved of the period. GVA per vessel and per engaged crew were respectively 31 000 and 12 200 in 2020



**Figure 3.116 Trends on capacity, effort, landings, GVA and profit for the Mayotte fleet (YT).**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

In 2020, the cost of energy represented 18% of the total costs which is quite high considering the type of fishing in Mayotte. Personnel costs include social security costs for which contribution rates are reduced compared to France mainland.



**Figure 3.117 Cost structure for the OMR fleet in Mayotte, 2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Fleet structure and key results

Hooks and lines and netters were clustered in 2020 meaning that there is now only one segment in the fleet and the trends in the fleet are described before.

**Table 3.11 – Summary results for the French OMR fleet segments in 2020: Mayotte (YT)**

	Number of vessels	Engaged crew	FTE national	Days at sea	Energy consumption (M litre)	Live weight of landings (tonnes)	Value of landings (M EUR)	Revenue (M EUR)	Gross Value Added (M EUR)	Net Value Added (M EUR)	Gross profit (M EUR)	Net profit (M EUR)	Operating Subsidies (M EUR)
<b>FRA OFR HOK0010 YT*</b>	100	253	149	10.444	0,7	951	4,9	4,5	3,1	2,5	0,8	0,3	-

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Based on incomplete data for economic data.

## Main factors affecting the performance of the fleet

- The registered fishing fleets coexist with a subsistence fishing fleet and recreational fleet (around 1 500 vessels) operating in the inner lagoon and barrier reef demersal resources. Even if difficult to estimate, illegal fishing is considered to be around 40% of total fishing pressure. Part of these fleets also operate unfair competition with registered vessels through the informal sale of their catches on local markets. One of the objectives of the authorities and stakeholders is to improve the structuration of the sector with a gradual transition from an informal/illegal activity to a professional activity, more monitored and regulated.
- One of the major problems for the fleet is the lack of suitable infrastructure. Even if there are some exceptions, this current situation does not allow fishers to operate their vessels to land their products in suitable conditions. The objective of the authorities is to create a limited number of landings points in order to provide a correct upstream environment (ice – fuel – bait – fishing equipment) and a better organisation of the local supply chain respecting health and safety rules. These infrastructures are supposed to facilitate the renewal of the fleet.
- The coral reef of Mayotte is subject to high fishing pressure. The lack of reef resources represents an obstacle to the development of the sector, thus making a transition to large pelagic fishing necessary. However, only 0.1% of the Mayotte fleet is able to operate offshore. In order to try to address the demersal resources decline, local authorities and marine Natural Park covering the entire EEZ encouraged fishers to exploit pelagic species, by settling a park of MFADs around the island.
- Only vessels registered in Mayotte and the European flag vessels can obtain authorization to fish in waters less than 100 nautical miles from Mayotte. However, access to Mayotte waters by non-EU fishing vessels is possible subject to fishing agreements concluded with the EU. Mayotte EEZ is also exploited by French, Spanish purse seines (1 000 tonnes in 2019) and Seychelles purse-seiners (2 600 tonnes in 2019) targeting tropical tunas with mainly drifting MFADs.

## LA REUNION (RE)

In 2020, the Reunion fleet was composed of 183 active vessels. Within this fleet, 166 vessels (90%) were 00-12m, 14 vessels were 12-18m (8%) and three vessels (2%) were 18-24m Total crew was 321 persons, corresponding to 186 FTE. Total effort expressed in DaS was around 15 600 days. Total fuel consumption was 2.8 million litres (183 litres/DaS). Total landings in weight and value were respectively 2 700 tonnes for EUR 15.7 million and average price was 5.8 euro/kg. In 2020, GVA was estimated to EUR 6.9 million (45% of revenue), gross profit to EUR 0.3 million (2%) and net profit to EUR -1.3 million (-9%). However, the fleet benefited from operating subsidies from EMMF (EUR 1.9 million) having a significant impact on fleet performance. Total net profit became positive when these subsidies are included to the calculation of this indicator. The main species in value and weight were mainly large pelagic species, swordfish, yellowfin tuna, blue marlin, albacore, bigeye tuna, common dolphinfish and wahoo followed and/or assessed by the IOTC. Demersal species including snappers were also harvested. Swordfish is mainly exported when other species are sold locally.

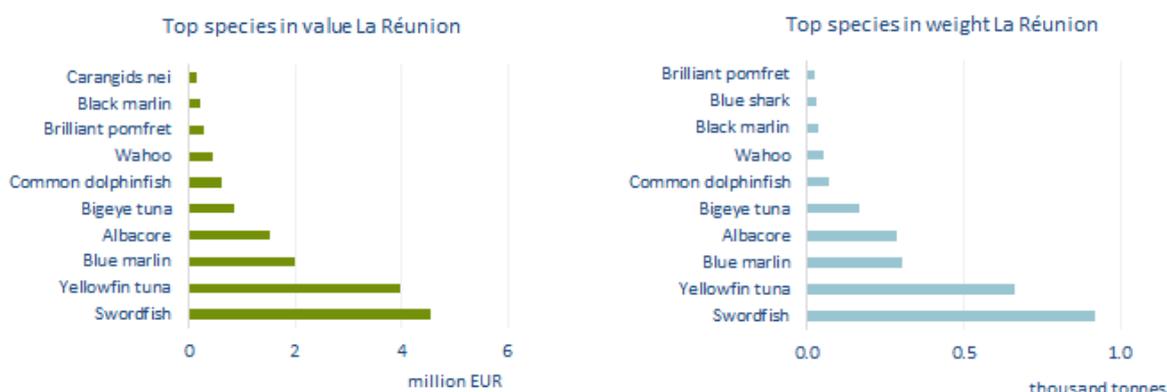


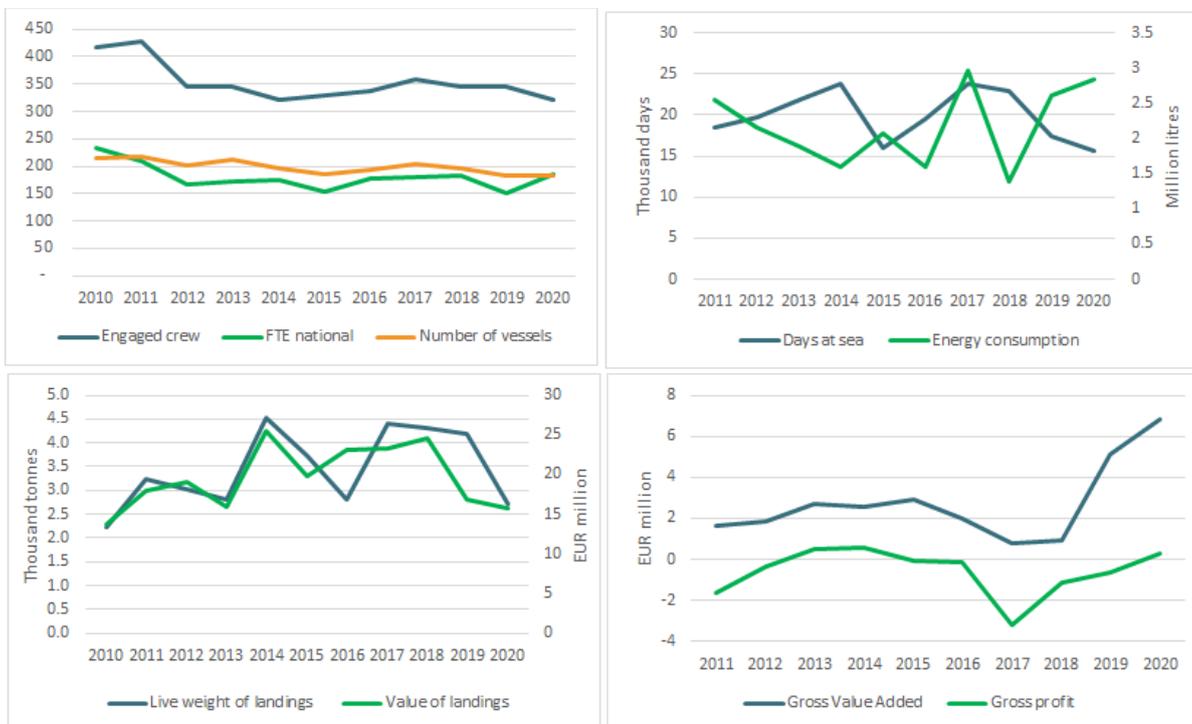
Figure 3.118 Top species landed in value (left) and weight (right) in Reunion, 2020

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Vessels operate in the different following fisheries around Reunion Island:

- Coastal insular shelf fisheries: insular shelf is very limited in size. Gears used by small scale vessels are hand line to target demersal stocks and small pelagic species, beach seines, and various nets to target small pelagic species. The use of pots and traps is limited in scope.
- Slope fishery: small scale vessels mainly target a diversity of deep-sea species including snappers. The gear used is mechanized hand line.
- Coastal large pelagic fishery: vessels operate hand lines and trolling lines to target large pelagic species on free schools or around Moored Fishing Aggregating Devices (MFADs). In The Reunion, MFADs are organized collectively by the regional fisheries committee.
- Offshore large pelagic fishery: vessels operate longlines to target swordfish around Reunion Island and in western waters up to Madagascar.

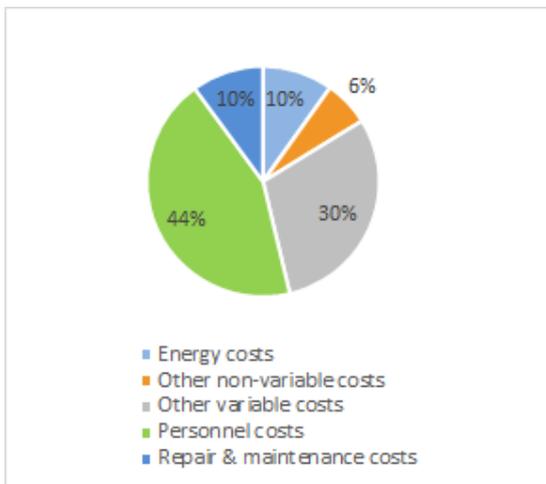
Between 2011 and 2020, the active fleet and days at sea decreased by -15%, engaged crew by -25% and FTE by -11%. Landings in weight and value decreased by -17% and -12% and 37%, respectively. Energy consumption evolution is difficult to interpret. Average price ranged from 4.0 euro/kg to 8.2 euro/kg with no significant trend over the period. Trends in economic indicators are difficult to interpret considering that operating subsidies increased over the period (from EUR 0.5 million in 2011 to around EUR 1.9 million in 2020)



**Figure 3.119 Trends on capacity, effort, landings, GVA and profit for the Reunion fleet (RE).**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

In 2020, the cost of energy represented 10% but the dependence to fuel is highly dependent on the segments considered. Non-variable cost represented on average 30% of the total costs. This cost is highly dependent on gear costs and the gears used. Personnel costs include social security costs for which contribution rates are reduced compared to France mainland.



**Figure 3.120 Cost structure for the Guadeloupe OMR fleet in Reunion, 2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Fleet structure and key results

In 2020, the segment HOK0010\* concerned 166 vessels (91% of the active fleet) with 226 crew members engaged (84 FTE). Total effort expressed in days at sea was around 12 300 days. Fuel consumption was 1.47 million litres (119 litres/DaS). Total landings in weight and value were respectively 1 054 tonnes for EUR 8.3 million and average price was 7.9 euro/kg. In 2020, GVA and NVA were EUR 5.4 million and EUR 4.3 million (66% and 63%), respectively. Gross profit and net profit were EUR 1.6 million and EUR 0.6 million (20% and 7%), respectively. The fleet benefited from operating subsidies from EMMF (EUR 0.4 million representing 5% of the revenue). The main landed in value species were large pelagic species such as yellowfin tuna, common dolphin, swordfish, wahoo, blue marlin and albacore. This segment included vessels using trolling and hand lines but also some small longlines vessels targeting swordfish. The trends in terms of economic indicators are difficult to identify.

Two segments HOK1218 and HOK1824 using longlines were merged. In 2020, 17 vessels (9% of the active fleet) made up this segment with 95 crew members engaged (101 FTE). Total effort expressed in days at sea was around 3 232 days for total fuel consumption of 1.4 million litres (426 litres/DaS). Total landings in weight and value were respectively 1 600 tonnes for EUR 7.5 million and average price was 4.5 euro/kg. The segment benefited from EU EMMF aids for the exportation of the landings and compensation of costs for a total value of EUR 1.4 million (20% of revenue). Operating subsidies included, GVA and NVA was respectively EUR 2.8 million and EUR 2.2 million and gross profit and net profit was EUR 0.1 million and -EUR 0.5 million, respectively. In 2020, the main species in value were swordfish, yellowfin tuna and albacore. The trends in terms of economic indicators are difficult to identify.

**Table 3.12 – Summary results for the French OMR fleet segments in 2020: La Reunion (RE)**

	Number of vessels	Engaged crew	FTE national	Days at sea	Energy consumption (M litres)	Live weight of landings (tonnes)	Value of landings (Million EUR)	Revenue (Million EUR)	Gross Value Added (Million EUR)	Net Value Added (Million EUR)	Gross profit (Million EUR)	Net profit (Million EUR)	Operating Subsidies (Million EUR)
<b>FRA OFR HOK0010 RE*</b>	166	226	84	12328	1,5	1054	8,3	8,2	5,4	4,4	1,6	0,6	0,4
<b>FRA OFR HOK1218 RE</b>	14	72	73	2567	1	120	5,8	5,9	1,4	1	0,8	1,2	1,2
<b>FRA OFR HOK1824 RE</b>	3	23	28	665	0,4	419	1,7	1,2	0,1	0,1	0,5	0,7	0,2

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020). Based on incomplete data for economic data.

### Main factors affecting the performance of the fleet

- Fuel price and large pelagic species availability are one of the main factors affecting the performance of the fleet. However, La Reunion like other OMRs is geographically far from sources of supply. These constraints generate, for the local economic operators' additional costs compared to mainland. These additional costs increase the final price of the products, which may undermine the competitiveness of the fishing sector. A compensation scheme for the additional costs was

established and funded by EMFF as well as EMFF contribution to fish exports which has a significant impact on fleet performance especially for vessels over 12 metres.

- Competition with recreational fishing is particularly high for the small-scale segment. It encompasses different practices, both fishing by vessel or on-foot. There is no recent study on recreational fishing vessels activities in Reunion but an assessment carried out in 2006 estimated at 320 the number of recreational fishing vessel. Recreational fishing includes spearfishing and all fishing practices on demersal and pelagic fishes (beach seine, fishing rod, octopus on reef flat and shoreline fishers...). This competition exists both to access fishing areas and for targeted stocks, such as pelagic fishes on MFADs and the demersal fishes on the insular shelf or on reef flats. Even if sometimes difficult to distinguish recreational and illegal fishing, illegal fishing can be considered as significant and concerns such species as spiny lobsters, and more generally all species with high commercial values.
- If difficult to quantify, the level of competition with sharks has to be considered with potential interaction with sharks' depredation, mostly on demersal fishery using handline seasonally, exceptionally on moored FAD.

### Main drivers for OMR fleet

- Most OMRs are islands and geographically far from sources of supply. These constraints generate, for fishers additional costs compared to mainland. Compensation scheme for the additional costs were established and funded by EMFF but the returns and benefits for local fishers seems to be limited in scope in Guadeloupe, Martinique and French Guiana.
- In a context of fleet reduction over the last five years, the year 2020 with the Covid-19 crisis led a drop in days at sea, landings weight and value between but with contrasted impacts between OMRs. The increase in the cost of capital is considered as a main issue for fleet renewal and access to fisheries for newcomers in most of the OMRs. Fuel price is one of the main factors affecting the performance of the segments, especially the most dependent. Major increases in fuel price and more generally inputs (gears, engines) are reported for 2022 with potential effort reduction. Compensation measures for fuel price increases have been established in some regions in 2022. The landing prices have increased over the past four years for Canaries islands but this trend is not similar in other regions like Guadeloupe or Martinique where the importation and competition from seafood from international markets is high.
- The variations in TACs and Quotas of key species are one of the main factors affecting the performance of the fleets mainly in Canaries Islands, Madeira and Azores. In Guadeloupe, the Conch fishery was closed for the season 2020-2021 with impact on dependent vessels. If fisheries are regulated through technical measures (gear regulation, species mesh size), the lack of access regulations to fisheries (licences ...) is source of internal competition and increased cost of operation within the SSCF sector in most of the French OMRs. The funding of Moored Fishing Aggregating devices and their management is also a key driver of and fisheries and fleet evolution in the OMR where they are used (Mayotte, Reunion, Guadeloupe, Martinique).
- In most OMRs, competition with recreational fishing and illegal fishing is particularly high for the small-scale segments. Poaching fish activities also reduce the market availability affecting also the price. In the Atlantic Ocean and the Indian Ocean, OMRs fleets harvest the same stocks as large-scale fleets especially on large pelagic species.
- In some OMRs, the lack of suitable infrastructures for vessels operations including landings create dis-incentives to enter or to continue to operate in the sector. In most OMRs, the fleets faced the lack of incentives to attract young fishers to the sector with contrasted situation between islands; unemployment or lack of labour. Additionally, this issue is reinforced by the lack training for the fishers at local level and administrative digitalization constraints.
- Marine ecosystems and fishing activity in the OMRs are subject to the occurrence of extreme events (hurricanes or storms) or change in the environment (vase amazon) with impact on gears and

harbour infrastructures. Since 2011, massive Sargassum algae inflows (stranded and floating blankets) in the Caribbean led to massive changes in the pelagic and coastal ecosystems with impacts on the fishing stocks. Fishing activity in Guadeloupe, Martinique and French Guiana was also significantly impacted by these events (difficulties to operate vessels and fishing gears).

- The sustainability of the fishing sector is also threatened by the quality of habitats environment dependent on coastal development and agriculture. Permanent pollution of coastal habitats by pesticide (Chlordecone) used by agriculture led to the ban of coastal fishing areas in Guadeloupe and Martinique.

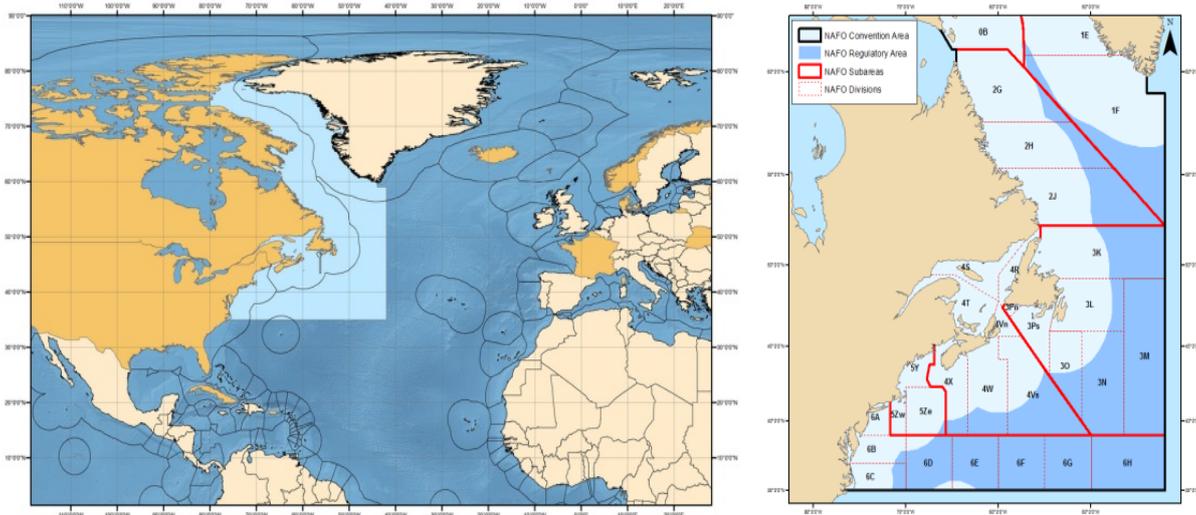
## 3.8.2 Long Distant Fisheries (LDF)

### NAFO - Northwest Atlantic Fisheries Organization

#### Background

Fisheries in the Northwest Atlantic are performed in the exclusive economic zones of the coastal states and on the high seas where fishery is regulated by the Northwest Atlantic Fisheries Organization (NAFO). NAFO was founded to manage most fishery resources in the EEZs of Contracting Parties (straddling stocks) and outside the national jurisdiction in the NAFO Regulatory Area. Currently NAFO has 12 Contracting Parties with the entry of UK in 2020<sup>17</sup>.

The NAFO Regulatory Area is defined in the NAFO Convention as that part of the Convention Area, which lies beyond the areas in which Coastal States exercise fisheries jurisdiction (outside of the Exclusive Economic Zones) (Figure 3.159).



**Figure 3.121. The scientific and statistical subareas, divisions and subdivisions are outlined in Annex I of the NAFO Convention**

Source: NAFO, GEOMAR [http://www.marineplan.es/ES/fichas\\_kml/rfbs.html](http://www.marineplan.es/ES/fichas_kml/rfbs.html)

The three main fisheries regulated in the NAFO area are cod, Greenland halibut, and pelagic redfish. NAFO does not manage sedentary species (e.g., shellfish) and species managed by other fishery bodies, i.e., salmon (NASCO), tunas/marlin (ICCAT), and whales (NAMMCO).

The ground fish (Atlantic cod, Greenland halibut and shrimp) fishery occurs mainly in NAFO Divisions 3LMNO within the *Fishing Footprint* and is conducted using mainly bottom trawls. The moratorium on the 3M shrimp was lifted in 2020 allowing a days-at-sea system (effort regime).

#### Fleet selection and data limitations

In previous editions of the AER (AER from 2019 and 2020), all effort and landings of all species by fleet segments operating within the RA were considered taking into account the following criteria:

- Only fleet segments over 24 metres LOA were included
- High dependency on NAFO CA was set at 40% of landings value

To refine results to the activity of the RFMO and reduce the overlap with the ICCAT analysis, in the AER 2021 it was proposed an updated definition including the following criteria:

- The exclusion of the ICCAT major species<sup>18</sup>
- Consideration of all fleet segments over 18 metres as LDF
- High dependency, set at 20% of value of landings from the CA

<sup>17</sup> Canada, Cuba, Denmark (in respect of Faroe Islands and Greenland), EU, France (in respect of St. Pierre et Miquelon), Iceland, Japan, Norway, Republic of Korea, Russian Federation, Ukraine, United Kingdom and the United States of America.

<sup>18</sup> Further refinement can be made by including only the list of species covered by NAFO.

The EWG 22-06 decided to maintain this approach for the AER 2022 to show the overall activity of the EU fleet with presence in NAFO but focused its analysis in comparing the activity of the two main fleet segments which have a high dependency expressed in 40% or more of value of landings, i.e. the Portuguese and Spanish demersal trawlers over 40 metres LOA. The reason is that the rest of fleet segments have a dependency ratio lower than 10%.

### Brief description of the EU NAFO fleet

In 2020 eight fleet segments from four Member States showed some activity in NAFO (excluding ICCAT major species). All eight fleet segments were over 18 metres LOA, but only two of them showed high dependency, which in this case is 40% or more of the total value of landings in the CA: the demersal trawler segments over 40 metres from Spain and Portugal. It is worthwhile to note that Spain had 14 trawlers with reported days at sea in NAFO RA and Portugal had 10 trawlers (two of them operating in the NEAFC). The methodology, however, based on the value of landings, estimates only seven vessels from Spain and eight from Portugal as highly dependent.

According to the reported EU-MAP data, activity of the EU NAFO fleet was composed of an estimated number of 23 vessels which produced 34 272 tonnes valued at EUR 86.3 million. The total number of active vessels decreased from 26 in 2019 to 23 in 2020. The main fishing nations are Portugal and Spain. Estonia did not report data of activity to EU-MAP for 2020, while the Danish and German fleet consisted of one vessel fishing seasonally in the region of 1 500 tonnes. Lithuania only reported 624 tonnes of catch. France, in respect of St. Pierre et Miquelon and Denmark, in respect of Faroe Islands and Greenland, are not included (no data provided by these under EU-MAP) in the analysis as they are to this effect independent contracting parties.

The decreasing number of vessels (and employment) is consistent with the trend shown since 2012, with only an increase in 2018; however, the volume and value of landings have increased to levels similar than 2015 likely due to concentration of quotas and fishing capacity within fewer vessels.

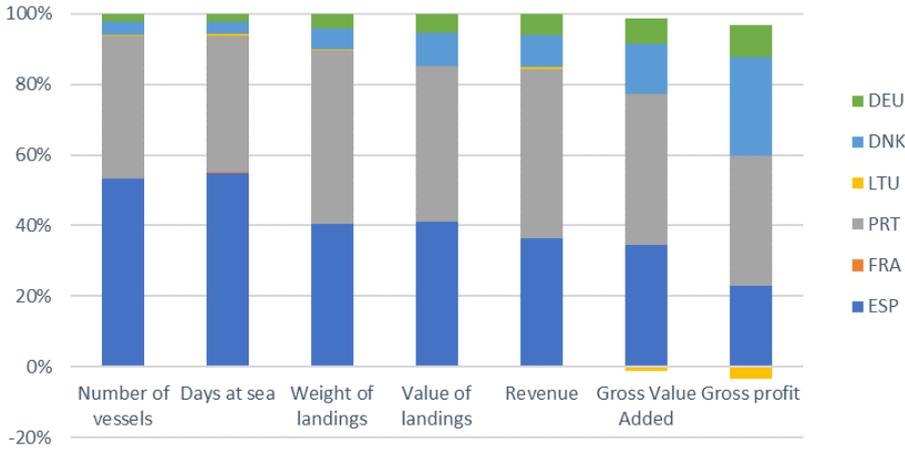
None of the national fleets are heavily dependent on the region, although specifically, Portuguese demersal trawler fleets above 40 metres obtains around 80% of its total landings in value from activity in NAFO. The other Member States' fleets have less than 5% dependency on this area.

Based on the proposed criteria described above, the two industrial demersal trawler segments from Spain and Portugal identified for the EU NAFO LDF (high dependency on NAFO excluding ICCAT major species) landed 37 991 tonnes valued at EUR 79.1 million in 2020 (Table 3.5). That is a considerable increase from that of 2019, where landings were reported on 31 577 tonnes with a value of EUR 75.5 million.

**Table 3.13 – Member State's fleets with activity in NAFO (excluding ICCAT species), 2020**

NAFO	Estimated no. of vessels	% of total NAFO active vessels	% of NAFO FTE	as a % of NAFO DAS	Weight of landings	as a % of NAFO landings	Value of landings	as a % of NAFO value	as a % of NAFO revenue
2020 number	(%)	(%)	(%)	(%)	kg	(%)	€	(%)	(%)
PRT	8	40%	46%	39%	22.321.297	49%	43.442.468	44%	48%
ESP	12	53%	50%	55%	18.776.543	40%	41.466.605	41%	36%
DNK	0,9	4%	1%	3%	2.853.942	6%	9.341.076	9%	9%
DEU	0,5	2%	2%	2%	1.900.363	4%	5.474.440	5%	6%
LTU	0,1	1%	1%	1%	78.829	0%	235.881	0%	1%
FRA	0	0%	0%	0%	2.228	0%	9.443	0%	0%
EU NAFO	23,2	100%	100%	100%	46.551.412	100%	100.848.255	100%	100%

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

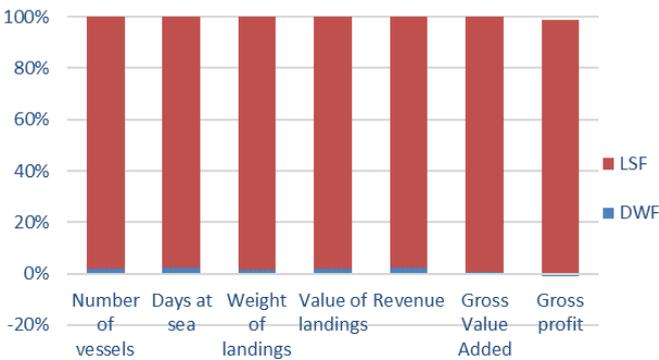


**Figure 3.122. Member State fleet percentage in NAFO (excluding ICCAT species), 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Capacity

In terms of fishing capacity, the Portuguese demersal trawlers show almost doubled in GT (16 109) than in Spanish demersal trawlers (8 645). Both segments represent near 85% of the total fishing capacity displayed in the area by the EU fleet.

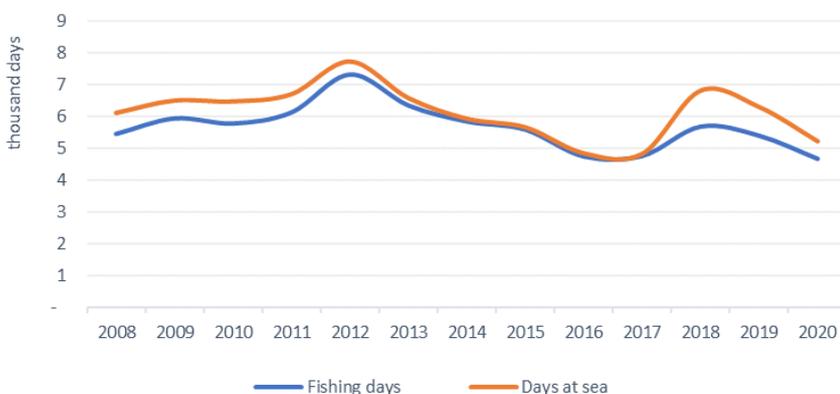


**Figure 3.123. Capacity of EU NAFO fleet targeting non ICCAT major species: 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)).

### Fishing effort

In terms of fishing effort expressed in kw/days and DaS, there was over 500 DaS in excess of total number of fishing days. This is mainly attributable to the Spanish demersal trawler fleet segment over 40 metres, reporting 1 447 days at sea vs 1 159 fishing days.



**Figure 3.124. Trends on fishing effort by the EU fleet operating in NAFO targeting non ICCAT major species: 2008-2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)).

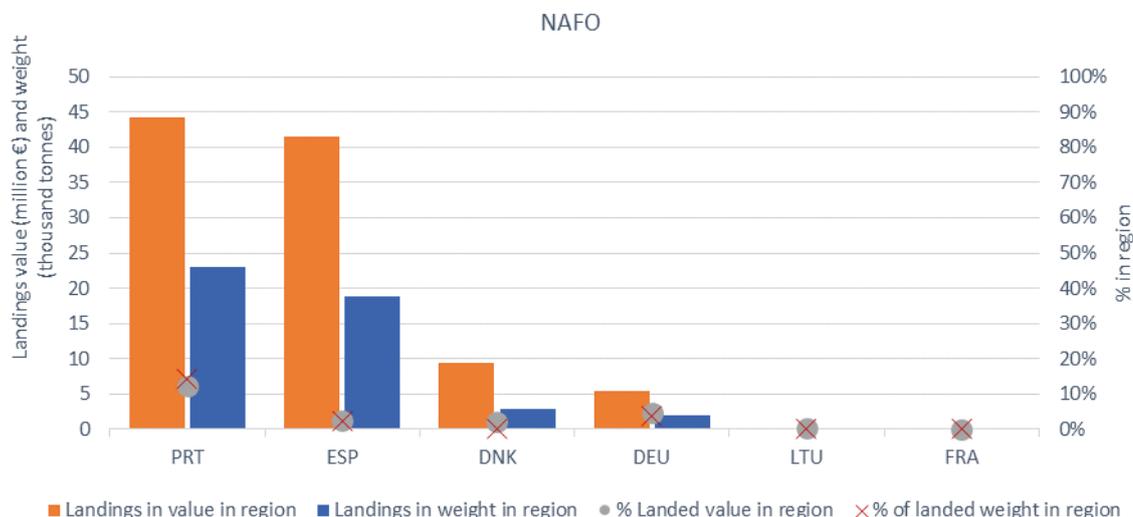


Figure 3.125. Landings and value of landings by MS in NAFO targeting non ICCAT major species: 2020.

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)).

### Landings and dependency

In 2020, Portugal led landings in value (EUR 43.4 million) and in weight (near 22 300 tonnes) followed by Spain with EUR 41.5 million in value and 18 800 tonnes in weight of landings. However, Spain spent more DaS in the region (2 900 vs 2 020). The rest of fleet segments spent less than 200 DaS in the region and they had a minor activity, with Danish and German trawlers catching near 3 000 ad 2 000 tonnes of catch in weight, and 9.3 and 5.5 million Euro in value, respectively. The catch from Lithuania and France were negligible.

Regarding the comparative historical trends, according to EU MAP 2020, landings have reached EUR 100 million in value and 45 551 tonnes in weight. This is a considerable increase from the two previous years (where value was between EUR 94 million and EUR 96 million and weight between 35 000 and 38 200 tonnes, respectively). Regarding the historical period 2008-2020, landings in weight (excluding ICCAT species) have fluctuated between 30 000 and 45 000 tonnes in the period 2008-2020, reaching a peak of 46 554 tonnes in 2015. The value of landings has fluctuated between EUR 86 million and EUR 120 million in the same period, reaching its peak in 2017. Overall, the average price has fluctuated between 2.2 and 3.0 euro/kg in the period 2008-2020. Year 2020 show a particularly low price, of 2.17 euro/kg, a steady decline down from 3.0 euro/kg in 2017

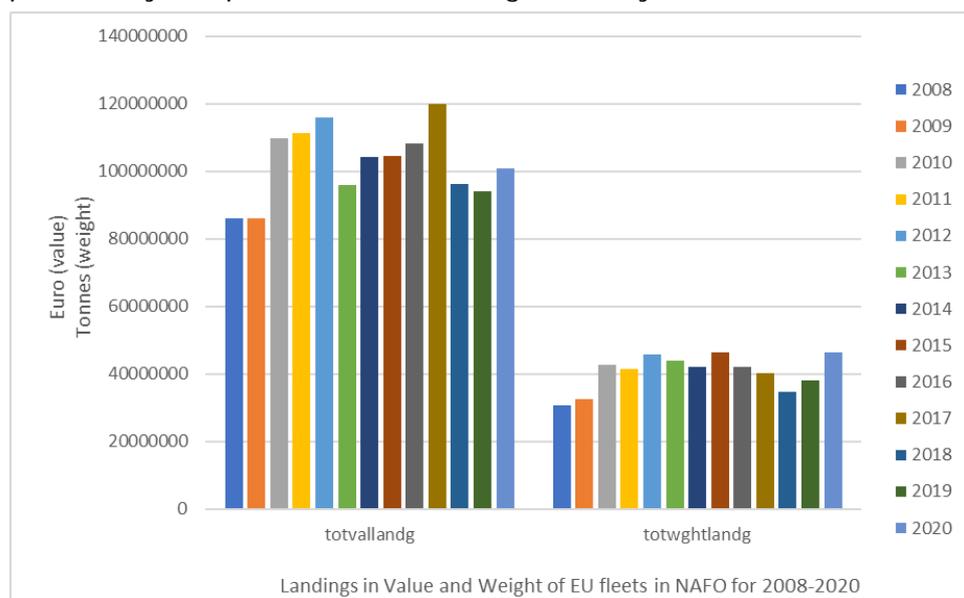
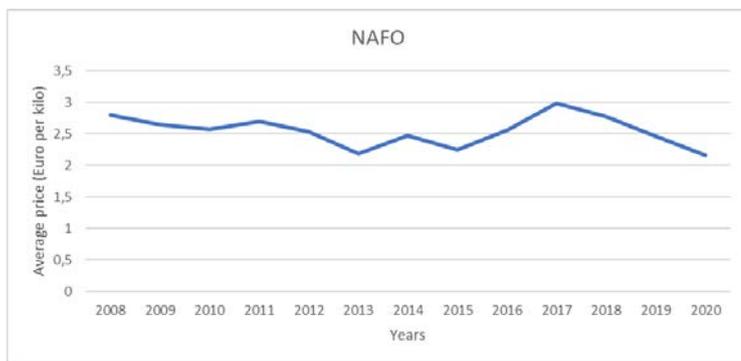


Figure 3.126. Landings and value of landings trends in NAFO targeting non ICCAT major species: 2008-2020.

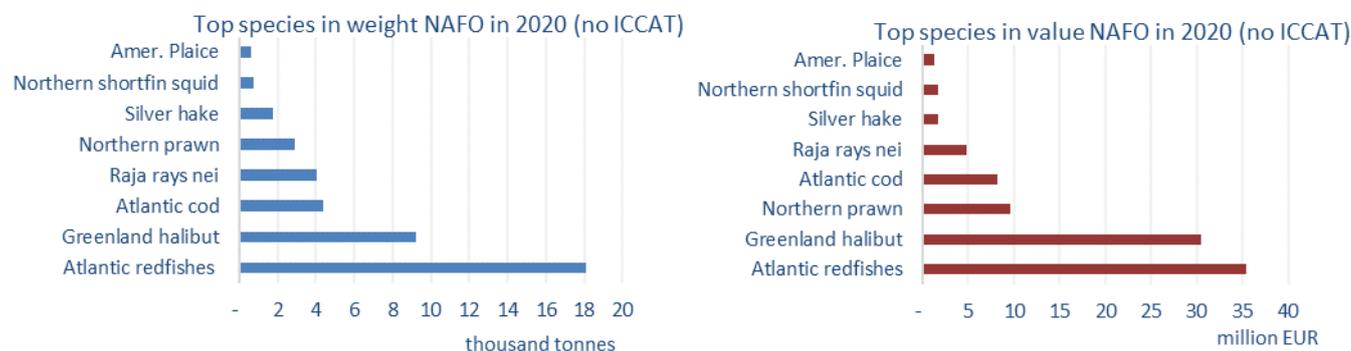
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.127. Average price for fleets operating in NAFO (excluding ICCAT major species), 2008-2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

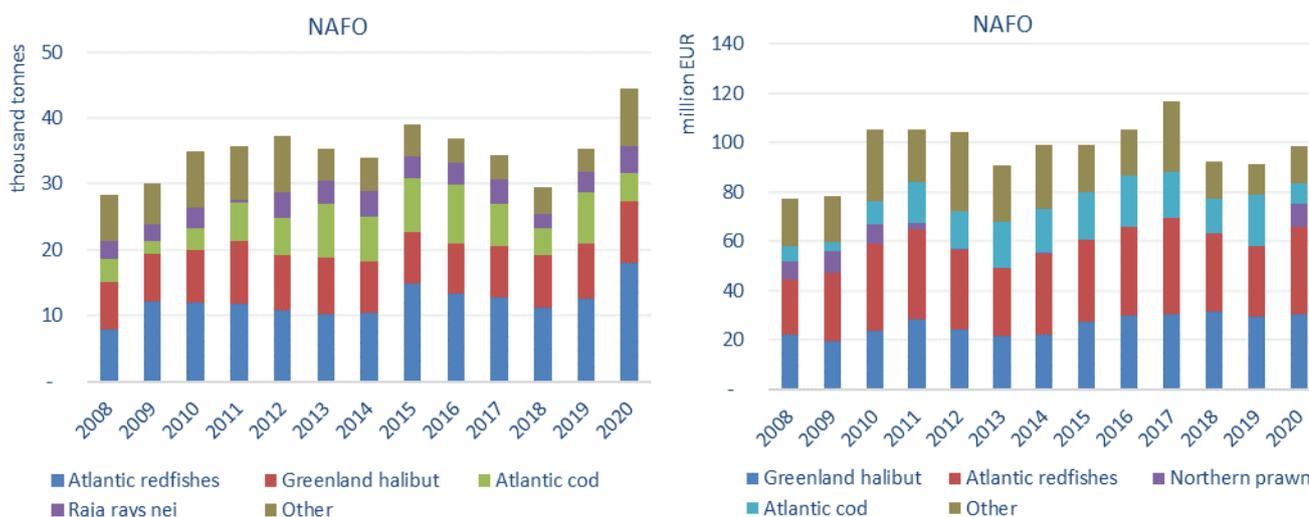
The main species landed from NAFO in 2020 were Atlantic redfish (18 091 tonnes, EUR 35.4 million), Greenland halibut (9 238 tonnes, EUR 30.4 million) and Atlantic cod (4 371 tonnes, EUR 8.2 million) followed closely by rays in terms of volume (4 052 tonnes) but with less value (EUR 4.7 million). Northern prawn has a lower volume of landings (2 933 tonnes) than cod but it a higher value, with over EUR 9.6 million.



**Figure 3.128. Top species landed in value and share by EU fleets operating in NAFO (excluding ICCAT major species), 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

In terms of landings, the Portuguese fleet caught near 27 215 tonnes of Atlantic redfish in 2020 with a value of EUR 13.8 million; 2 753 tonnes of Atlantic cod valued at EUR 3.8 million, and 5 842 tonnes of Greenland Halibut valued at EUR 2.8 million.



Data source: MS data submissions under the 2021 Fleet Economic data call (MARE/A4/ACS(2021)); All monetary values have been adjusted for inflation; constant prices (2015).

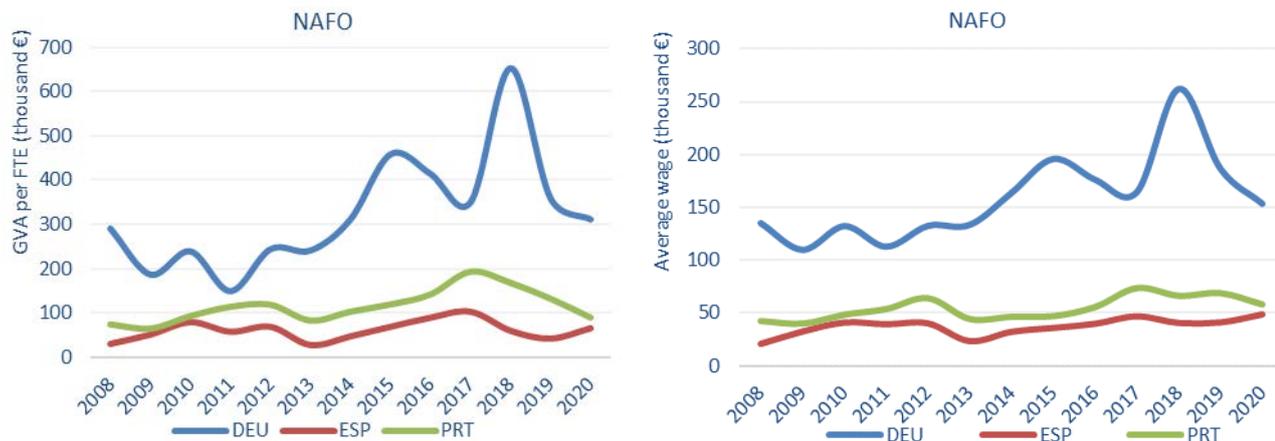
**Figure 3.129. Trends on landings in value and weight by EU fleet operating in NAFO targeting non ICCAT major species, 2008-2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Economic performance

When comparing GVA generated per unit of work (FTE) between the three main fleet states, we can see remarkable differences. Germany shows the higher value with EUR 311 000, while Portugal reports

EUR 88 400 and Spain EUR 65 900. The historical trend 2008-2020 shows that we are in the high range of the average for the three countries, although there is a decreasing trend since 2017 for Spain and Portugal and 2018 for Germany. This might be partially explained to the lower intensive use of crew by German vessels and the higher value obtained in sales.



**Figure 3.130. GVA per FTE and average of EU fleet operating in NAFO targeting non ICCAT major species, 2008-2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

The average wages between these three countries show also a great disparity, which can be partially attributed to overall employer costs. In 2020, there was a difference of nearly EUR 10 000 in average wage between Portugal (EUR 57 942) and Spain (EUR 48 578), although the gap has reduced due to the lower wage averages in Portugal. Germany with one vessel has a higher wage scale, with over EUR 150 000.

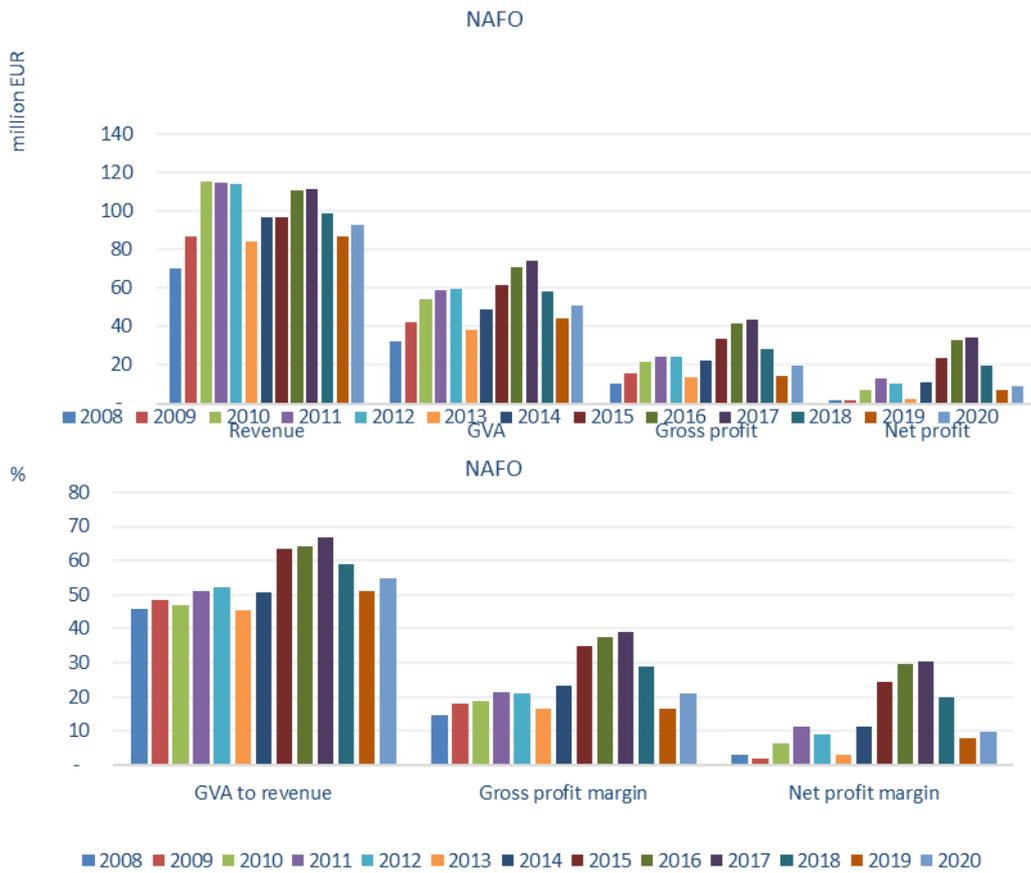
Economic performance results for 2020 shows an increase in revenue, GVA and gross profit for the fleet operating in the area with respect to that of 2019. This could be partially explained for a reduction in operational costs as a result of change in fishing strategies as a result of the pandemic.

The total revenue was EUR 92.5 million (from 85 in 2019), although they are considerably lower than values from the period of 2014-2018, which are all in the region or above of EUR 100 million. The Portuguese (47%) and Spanish (30%) demersal trawlers fleet combined represented 77% of the total revenue with EUR 72 million. In 2020, GVA of the EU NAFO fleet was near EUR 51 million, and gross profit was of EUR 19.3 million. Similarly, the net profit shows a relatively low value in the historical trend of EUR 9 million (but higher than the lowest value shown in 2019 of EUR 6.8 million).

At the fleet segment level, the economic performance of demersal trawlers from Portugal and Spain is quite different. While Portugal has considerably increased its landings in the area from 16 173 tonnes in 2019 to 22 321 tonnes in 2020, Spain has remained relatively stable with a similar level of landings observed and 15 700 tonnes reported in 2020. The value of the landings differs considerably in favour of Portugal (EUR 43.4 million) when compared to Spain (EUR 35.7 million) but the gap has narrowed in comparison to last year, where Portugal reported a similar value with considerably less landings.. This can be partially attributable to the lower average first sale prices of commercial species targeted by the Portuguese fleet, Atlantic redfish, cod and halibut, for consumption of their internal market vis a vis the Spanish catch which is mainly oriented to exports. Furthermore, a significant part of the Spanish fleet landings is made up of rays and skates, with lower value in terms of average first sale prices.

Gross profit generated by the two fleet segments differs more extensively, at EUR 7.7 million for the Portuguese trawlers (from 12.8 in 2019) versus EUR 4.3 million for their Spanish counterparts (from 2.8 in 2019). This year the Portuguese trawlers were slightly more labour intensive in the area than Spain in terms of national FTE, spending also more on wages, on energy consumption (EUR 116 million of fuel vs 99 million), and on variable costs, reversing the trend shown in 2019. In fact, the Portuguese vessels demersal trawlers over 40 metres employed 237 FTEs, averaging 30 FTE per vessel while for the Spanish demersal trawlers average FTE per vessel in 2020 was estimated at 220 FTE by 7 vessels, 29.67 (220 FTE / 7 vessels). This is also reflected in a decrease in labour productivity compared to 2019, with the Portuguese trawlers obtaining a lower GVA per FTE in 2020 (EUR 92 293) than in 2019 (EUR 143 190). The Spanish trawlers also decreased their labour productivity in a similar proportion (EUR 78 343 in 2020 vs EUR 93 652 in 2019).

Net profit margins for Portuguese demersal fleet were of 18% and for Spanish DTS of 15%, while net profit margin was near 7% and 5%, respectively.



**Figure 3.131. Trends on revenue, profits and costs for the fleets operating in the NAFO (left) and cost structure by MS fleet (right)**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Result by Member State

### SPAIN

The Spanish demersal fleet operating in NAFO is composed mainly of freezer trawlers targeting halibut, Atlantic redfish, skates and cod (ESP NAO DTS VL40XX). These vessels generally operate between NAFO (FAO 21) and NEAFC (FAO 27). The Spanish fleet also has longliners operating in the region, targeting mainly blue shark and swordfish which fall within the remit of ICCAT and are therefore excluded from this analysis.

In 2020, the fleet segment of demersal trawlers >40m spent 28% of its fishing effort (days-at-sea) in NAFO, obtaining 35% of its landed value from NAFO (34% in weight). The fleet's dependency on activity in NAFO has increased steadily since 2017.

In NAFO, this fleet mainly targets Greenland halibut, Atlantic redfish, cod and rays in the Flemish Cap (3M) and Grand Bank (3LNO) areas.

Landings (excluding ICCAT species) amounted to 15 669 tonnes, valued at EUR 35.7 million in 2020.

Landings of the top species amounted to 4 356 tonnes for Greenland halibut value at EUR 18 million, closely followed by Atlantic redfish (4 080 tonnes) although with a considerably lower value in relative terms (EUR 7.7 million), which is a reflection of first sale prices. Rays with 3 654 tonnes landed with an estimated value of EUR 4.4 million, and Atlantic cod, at 0.5 tonnes and a value of EUR 1.3 million, shows a better value/weight ratio than redfish

### PORTUGAL

The Portuguese fleet operating in NAFO is mainly composed of the demersal trawlers over 40 metres targeting Atlantic redfish, cod and halibut. There are also some longline vessels operating in the region, catching mainly blue shark, shortfin mako and swordfish.

This segment was composed of eight vessels operating in 2020. Total landings (excluding ICCAT species) amounted to 22 321 tonnes, valued at EUR 43 422 million in 2020. The fleet's dependency on activity in NAFO has generally increased since 2008, stabilising from 2016 onwards, but faced a decrease in 2020. The fleet operates mainly in NAFO Divisions 3LMNO, targeting Atlantic redfish (63% of landing value), cod (16%) and Greenland halibut (13%).

The Portuguese trawlers reported the highest live weight of landings in the region in 2020. However, this is a decrease in value of landings compared to the previous years. Landings (excluding ICCAT species) amounted to 22 321 tonnes, valued at EUR 43.4 million in 2020. According to the NAFO data, catch for Portugal in 2020 was 22 315 tonnes (total coverage of the EU-MAP).

In terms of economic performance, this fleet segment was profitable in 2020 although the average price has fallen. This is also reflected in a decreased GVA and gross profit.

### GERMANY

The German fleet segment with presence in NAFO did not show high dependency, with only 12% of the value of landings reported coming from the area (Table XXX). The fleet segment mainly targets Greenland halibut (1 883 tonnes) and less quantities of beaked redfish (9.0 tonnes), roundnose grenadier (4.7 tonnes), and northern wolffish (2.3 tonnes) in the NAFO CA.

Most of the activity of this fleet segment is in NEAFC, corresponding to 90% of the days at sea and 88% of the value of landings in 2020.

### ESTONIA

Estonia has low activity in NAFO, which brings confidentiality issues that prevent the publication of activity and economic data. Despite a stable level of catches around 5 500 tonnes are shown at the catch estimates provided by NAFO (STATLANT), catches of this fleet have not been reported to the EU in the last years. Their main target species are Atlantic redfish, Atlantic cod and Greenland halibut. These discrepancies in data reporting need to be further explored by the EWG in future reports.

### FRANCE

No data are reported for France on behalf of St. Pierre et Miquelon fleet under the DCF. There is also no reporting of catch under the NAFO official statistics, unlike in previous years where there were catches of 729 tonnes in 2019 and 1 168 tonnes in 2018.

## Main drivers and factors affecting the performance of the fleet

- All the EU fleets presented a good economic performance from 2010 to 2012 and from 2014 to 2017 due to a high value in the key commercial species landed and energy efficiency (lower or stable fuel prices). However, in recent years they showed a decreasing trend in 2018 and 2019 on both weight and value of landings, reaching in 2019 the lowest value of landings of all the time series (EUR 93.8 million). In 2020, there has been a remarkable recovery and increase both in terms of live weight (46 551 tonnes) and value of landings (over EUR 100 million).
- The increase in landings in weight and value in 2020, this has led into higher profitability of the fleets compared to 2019, which was a historical low. However, the high non-variable and variable costs (partly associated to COVID-19 related measures and spending more days at sea) has made the gross profit margin in 2020 to be around 20%, slightly below the historical average of the period 2008-2020 (24%).
- Capacity, effort, and landings in weight have decreased in general since 2013. This seems to be consistent with the adaptive fishing strategies and business plans of the concerned fleets due to lower availability of fishing opportunities in the convention area, particularly for Cod, Redfish, and Prawns. In recent years, demersal fishing trawlers targeting cod and redfish have increased their annual level of catch in other fishing grounds such as the North-East Atlantic (FAO 27) or the South-West Atlantic (FAO 41), targeting other demersal species. This factor could partially explain the overall decrease in days at sea in the area.
- There is a slight but steady decline in employment (in FTE), although this might be partially linked to the modernisation of boats and mechanisation of processing activities at sea, together with a rotation system of the employed full-time staff on several fishing trips.
- The annual wages have experienced remarkable fluctuations depending on the year. This might be linked to the number of fishing trips where the crew is hired. Portugal seems to show high fluctuations on average wages depending on the year with a decreasing trend in the last four years, from a peak of EUR 73 140 in 2017 down to EUR 57 942 in 2020). Spain shows a more stable range of wages at a lower level (between EUR 40 000 and EUR 48 500). This could be also explained in the way the fixed salary is reported without considering in kind contributions or bonus linked to catch. Germany has the highest wages although there are significant differences between years, being 2020 the lowest of the last decade, with EUR 153 200.
- The witch flounder 3NO stock was reopened in 2015, following many years with no directed fishery. This may positively affect the Baltic States which have historical rights to fish it but have a negative effect for Spanish and Portuguese vessels as they could keep on board by-catches for this fishery while it was on moratoria (up to 5% of total catch), and with the reopening they will be forced to discard any catch of this species.
- The HCR for Greenland halibut was adopted at the NAFO Annual Meeting in September 2017 stemming from the new Management Strategy Evaluation, implemented in 2018 with a TAC of 17 500 tonnes. It continues applying and it has contributed to provide a stable framework allowing to adapted fishing strategies and planning for concerned operators.

## Outlook for 2021 and beyond

- The NAFO Conservation and Enforcement Measures (CEM) incorporate all NAFO measures presently in force as adopted by the NAFO Commission in accordance with provisions of Articles VI and XIV of the Convention on Cooperation in the Northwest Atlantic Fisheries. Every year the NAFO CEM is revised by the Commission. These measures shall, unless otherwise provided, apply to all fishing vessels used or intended for use for the purposes of commercial fishing activities conducted on fishery resources in the RA as defined in Article 1 of the NAFO Convention.
- The latest version of the document incorporates amendments which were adopted at the most recent NAFO Annual Meetings held in September 2021.
- The applicable CEM measures for the period analysed in this report (2020): <https://www.nafo.int/Portals/0/PDFs/COM/2020/CEM-2020-web.pdf>

- Also, more information on the historical archive of management measures and quota tables can be consulted at NAFO website: <https://www.nafo.int/Fisheries/Conservation>
- NAFO Scientific Advice is generated through a joint effort by NAFO members (13 CPCs in 2021) and makes use of different data sampling programs carried out by the Member States. Additionally, available statistics on the resources and their environment are also used when producing the advice.
- A Management Strategy Evaluation (MSE) for Greenland halibut was adopted at NAFO Annual Meeting in September 2017 with a starting TAC of 17 500 tonnes. This management plan contains a harvest control rule (HCR) which has proven to be robust to date (2022) and contributed to provide economic stability and predictability in the level of catches in the region of 16 000 tonnes to 17 000 tonnes for the coming years.
- A protocol for exceptional circumstances for Greenland halibut MSE was subsequently developed in 2018 to guarantee that the full process is respected. This protocol has not been used yet as exceptional circumstances have not occurred to date.
- Due to the poor biological situation of the 3M Atlantic Cod stock, a drastic reduction of the TAC has been adopted in recent years. In 2020, the TAC was set in 1 500 tonnes, coming down from 17 500 tonnes in 2018 and from 8 500 tonnes in 2018. However, in 2021 the situation improved slightly and it was agreed to set up a TAC of 4 000 tonnes in line with the scientific advice.

On top of this TAC setting, the following three flanking measures apply since 2021 as additional conservation and control measures to protect spawning aggregations and juvenile fish in the Flemish Cap area on the basis of recommendations made by the NAFO Scientific Council (measures 1 and 2) and STACTIC (measure 3), respectively:

- Time area closure of the directed fishery for the 3M cod stock for January-March.
- Compulsory use of sorting grids for all trawlers with a directed fishery on cod.
- 100% Control of landings for vessels engaging in directed fishery on 3M cod stock.
- The economic impact of the decrease of TAC and the time area closure of the directed fishery for cod in 3M is likely to be very detrimental for Portuguese and Spanish demersal trawlers, as they will be forced to change their fishing strategies in the North Atlantic and look for alternative fishing grounds, at least during the time of the closure. Displacement of fishing effort might occur as well as loss of income for those operators more reliant or with higher dependency on this fishery (in particular, Portuguese demersal trawlers). Also, there might be a switch in the target species towards other demersal species such as redfish, Greenland halibut or hake in the short term.
- It is noticed that only two Spanish demersal trawlers have reported combined activities in NAFO and NEAFC fishing grounds in 2020, while another one reported combined activity in NAFO and the Atlantic South West. This means a switch in the fishing plans from previous years, where there were more than 10 trawlers combining both grounds. The decrease in fishing opportunities in NAFO might explain that the fishing strategies have changed and there is an increasing number of demersal trawlers targeting cod, halibut or other species such as hake in international waters or under the NEAFC/agreement in third country waters with Norway.
- The benchmark review of the cod (3M Subdivision) initiated in 2018 to develop a HCR is now in stand-by. Work will resume soon trying to provide more stability in the long term to the fleets and avoid big fluctuations in TACs between years. However, this task will be extremely challenging given the dire state of the stock and the poor level of recruitments. The HCR has not yet been developed due to scientific issues with the modelling, but further work is ongoing at the Scientific Council.
- The Commission adopted in 2014 an MSE approach for redfish in Division 3LN (FC Doc. 14/29). This approach uses a HCR designed to reach 18 100 tonnes of annual catch by 2019 to 2020 through a stepwise biannual catch increase, with the same amount of increase every two years. At the 2020 annual meeting, it was decided to continue using the HCR and extend the 18 100 tonnes annual TAC for the period 2021 to 2022. The MSE is currently subject to review.
- The 3M shrimp fishery had a high importance and commercial and socioeconomic value for many EU fishing vessels in the past, but it was under a moratorium from 2011 to 2019. The EU is by far

the largest NAFO CPC in terms of quota share for this stock, which was the most valuable one in terms of landings during the period 1995-2010. Within the EU, Estonia is the largest fishing nation of 3M shrimp followed by Lithuania, then Latvia and, to a lesser extent, Denmark, Poland, Spain and Portugal. During the period of closure, there was a slow and gradual improvement of the biomass and in 2019 it was above  $B_{lim}$ . The commercial shrimp fishing was reopened in 2020 in 3M, with an effort scheme based on allocation by CPCs, corresponding to the EU 823 out of the total 2 640 fishing days. However, it was closed again with effect January 2022 as a result of catch limits being exceeded with only 20% of the fishing effort allocated for 2021.

- The uncertainty on the management of this fishery proves that the management system is not fit for purpose and any future reopening of the fishery will be subject to an agreement on a new system that could be based on quotas, fishing effort or being a mixed system. This situation has already caused the loss of significant incomes for the specialised demersal trawl fleet from Estonia and Latvia. NAFO is planning intersessional work to review the current management approach for shrimp in Division 3M and agree on modalities for transition from an effort to a TAC and quota system, provided that there is agreement between the contracting parties in terms of allocation keys based on reference periods of historical catches.
- The development of an ecosystem-based approach to fisheries management in the NAFO regulatory area and the setting of a coherent network of Vulnerable Marine Ecosystem (VME) areas could bring about new closures or expansion of existing ones (e.g., seamounts, sponges and gorgonians, sea pens concentrations, black corals, bryozoans, etc.). In 2021, a rollover of the current VME closures in the NAFO RA was agreed for an additional year, pending a more comprehensive review in 2022.
- A study on the impact of bottom fisheries in the NAFO area was conducted in 2021. However, a preliminary evaluation that assessed eight fisheries in areas where there are VMEs found that while the Greenland halibut fishery does overlap with polygons containing VMEs, the longline cod and the shrimp fisheries do not. Other fisheries analysed showed an intermediate level of overlap. The NAFO Scientific Committee recommended that this first analysis be augmented with more detailed data including VMS and haul data. The outcomes of this study could influence the dynamics of specific EU fleet segments through closures/displacement and/or reduced effort and/or concentration of catches in other areas.
- Proposals from new areas of closure adjacent to fishing grounds can create a risk of fishing effort displacement. The threshold established by the scientists of 60% of protection for specific areas labelled as VMEs may cause significant economic impacts on areas where there are a consolidated fisheries footprint or adjacent to fishing grounds and important for transit or passage.
- Apart from proposals to potentially close certain fishing areas, the NAFO regulatory area will also likely be affected by other human economic activities that impact the seabed; these include oil and gas drilling and deep-sea mineral mining in the continental platform of Canada. Indeed, any licence to prospect or commercially extract known deposits in the seabed might have an adverse effect on the fishing activities of EU fleets operating in the area.
- An EU funded project developing a method for a multispecies assessment in Subdivision 3M for looking at the ecosystem and the predator-prey interactions between cod, redfish and shrimp was finalised and presented in 2019. This includes a bioeconomic tool to test management scenarios and evaluate economic trade-offs. This approach could bring further uncertainty for those fleets dependent on one commercial species and create unexpected changes in their fishing patterns. A roadmap is being developed to include reporting on progress in multi-species models and simulations to evaluate the reliability of decision rules for species aggregated catch levels (total catch indicator indexes).
- The COVID-19 outbreak with the restrictive measures adopted in March and April 2020 in the EU and extending through the years 2020-2022 had significant economic impacts on the behaviour of the DWF, either refraining for starting their fishing season (as it was the case of 3M shrimp for the Estonian fleet) or deciding to extend their fishing trip as they had already started it (e.g. cod and redfish trawlers) to comply with health and safety rules and overcome travel restrictions related to crew rotation or changeover. This might result in significant changes of fishing days or days at sea reported in the area for 2021 and 2022, depending on the specific circumstances of each fleet.

## Landing obligation

The LDAC adopted in September 2016 an advice in response to a consultation on a proposal for a regulatory text from the European Commission ("Delegated Act") following Article 15.2 of the Basic Regulation of the CFP (EU) No. 1380/2013, whereby it establishes a derogation from the LO for such

NAFO stocks in which a specific legal conflict occurs with such articles under NCEM which authorize or require discards in certain cases.

For the three cases identified, the proposal reflected the incompatibility of such NCEM rules with the LO as follows: the requirement not to retain on board redfish in zone 3M once the olympic quota has been completed (NCEM Art 5.3 (c)), the maximum limits to retentions and authorised by-catches involving the obligation to discard the excess (NCEM Art. 6), with the particular case of capelin as a species under a moratorium (NCEM Art. 6.3 (d)), and the mandatory discard of catches with sizes below the minimum included in Annex I.D (NCEM Art. 14).

In all such cases, the priority of the international standard was recognised, and it was made clear that NAFO CEM rules should continue to apply, by specific derogation from the LO.

The LDAC also made a listing and case study of potentially limiting species (choke species) under other situations which could prevent the normal catch of the allocated quotas for the EU Fleets, due to a conflict or a lack of legal certainty between an obligation under NAFO's CEM of not retaining on board, and the obligation to land at a port as provided for under Community legislation.

The content of the LDAC advice is available here:

[http://ldac.eu/images/documents/publications/LDAC\\_Advice\\_on\\_Implementation\\_of\\_LO\\_in\\_NAFO.pdf](http://ldac.eu/images/documents/publications/LDAC_Advice_on_Implementation_of_LO_in_NAFO.pdf)

As a result, the EC adopted a Delegated Act establishing a specific derogation to the application of the LO outside EU waters (Including NAFO RA).

It also requested to STECF to provide scientific advice for those fisheries outside EU waters on possible rules for a *de minimis* exemption for certain target stocks.

The reply of the Commission is available here:

[http://ldac.eu/images/documents/publications/Commision\\_reply\\_to\\_consultation\\_on\\_external\\_dimensions\\_on\\_landing\\_obligation.pdf](http://ldac.eu/images/documents/publications/Commision_reply_to_consultation_on_external_dimensions_on_landing_obligation.pdf)

By proposal of Norway, a study was launched in 2019 to analyse potential implications of adoption of LO in NAFO by looking at the EU and Norwegian legislations with the aim of reflecting at possible measures to be discussed in future years. The results of this study will be presented and discussed at the forthcoming NAFO Working Group on Selectivity, By-Catch and Discards Working Group.

## ICCAT - International Commission for the Conservation of Atlantic Tunas

### Background

The International Commission for the Conservation of Atlantic Tunas (ICCAT) is an intergovernmental regional fisheries management organization responsible for the conservation of tunas and tuna-like species in the Atlantic Ocean and adjacent seas.

ICCAT's area of competence covers all waters of the Atlantic Ocean, including adjacent seas (FAO areas 21, 27, 31, 34, 37, 41, 47 and 48). About 30 species are covered by the Convention. Southern bluefin tuna is also covered, although currently the primary responsibility for assessing and managing this species rests with the Commission for the Conservation of Southern Bluefin Tuna (CCSBT). In 2019, ICCAT was given an extended mandate to manage pelagic oceanic and highly migratory species of sharks and rays. These currently include pelagic oceanic sharks such as shortfin mako and blue shark.

ICCAT regularly performs stock assessments on the main targeted species and stocks under their remit. These assessments evaluate the current and proposed future harvest practices in light of the Commission's objective to maintain the populations at a level that permits their maximum sustainable yield. The main species and stocks regulated by ICCAT targeted by the EU vessels are:

- Tuna (major sp.) - Atlantic and Mediterranean bluefin tuna (BFT), Atlantic and Mediterranean albacore (ALB) and tropical tuna - skipjack (SKJ), yellowfin tuna (YFT) and bigeye tuna (BET);
- Billfish (major sp.) - Atlantic and Mediterranean swordfish (SWO), blue marlin (BUM), Atlantic white marlin (WHM), Atlantic sailfish (SAI)
- Sharks (major sp.) – blue shark (BSH), shortfin mako (SMA) and porbeagle (POR)
- Small tuna and other billfish (small t) - bullet tuna (BLT), Atlantic bonito (BON), frigate tuna (FRI), little tunny (LTA), common dolphinfish (DOL).

**Table 3.14 – List of major species or stocks covered by ICCAT**

Tuna (major sp.)		Tuna (small t)		Sharks (major sp)	
Albacore	ALB	Atlantic bonito	BON	Blue shark	BSH
Atlantic bluefin tuna	BFT	Atlantic Spanish mackerel	SSM	Porbeagle	POR
Atlantic sailfish	SAI	Blackfin tuna	BLF	Shortfin mako	SMA
Atlantic white marlin	WHM	Bullet tuna	BLT		
Bigeye tuna	BET	Cero	CER		
Blue marlin	BUM	Common dolphinfish	DOL		
Longbill spearfish	SPF	Frigate tuna	FRI		
Skipjack tuna	SKJ	King mackerel	KGM		
Southern bluefin tuna	SBF	Little tunny(=Atl.black skipj)	LTA		
Swordfish	SWO	Plain bonito	BOP		
Yellowfin tuna	YFT	Seerfishes nei	KGX		
		Serra Spanish mackerel	BRS		
		Slender tuna	SLT		
		Wahoo	WAH		
		West African Spanish mackerel	MAW		

Source: EWG-22-06.

## Fleet selection and data limitations

Due to its geographical situation, the EU fleet operates in both the Atlantic and Mediterranean Sea. The fleet also targets species covered by ICCAT in coastal, insular and open-sea offshore areas by artisanal, small-scale vessels as well as larger vessels over 40m. The EU fishing fleet operating within the ICCAT RA is therefore not entirely a long-distant fishery.

To capture the full scale of the fishery at the EU level, as well as in the context of the LDF, the activity of the EU fleet is analysed in two main parts: (1) ICCAT major-species fleet and (2) ICCAT LDF fleet.

- The EU ICCAT major-species fleet includes all fleet segments with reported landings of one or more of the major species or stocks (as listed in Table 3.21) in the ICCAT RA (Atlantic and/or Mediterranean Sea) in 2020. Due to the low dependency of some of these fleet segments on these stocks, only a general overview of the activity will be assessed, i.e., the economic performance by fleet segment will not be considered.
- To analyse the EU ICCAT major-species LDF fleet, all fleet segments over 18 metres LOA and with 20% or more of their landings in value obtained in 2020 from one or more of the major species or stocks in the ICCAT RA are selected. This method is the same than the one adopted in AER 2021 but differs to that used in previous AERs in three aspects: (1) only the major ICCAT species and stocks are considered, (2) vessel length group 18-24 metres is included and (3) high dependency on the ICCAT RA in terms of value of landings is set at 20%, as opposed to 40% used in AER 2020 (and 60% used in the AER 2019).

As the effort deployed is 100% in many cases, seeing that the ICCAT RA covers the Atlantic Ocean, the value of landings (provided by sub-region) is used to disaggregate the economic data provided at the fleet segment level by supra-region, instead of a combination of effort and landings variables by fleet segment (as is the case with the other regional analyses). Usually, effort (days at sea) is used to disaggregate the number of vessels of a fleet segment to a region. As a result of this methodology, estimations on capacity (number of vessels, GT, kW), economic (revenue, GVA, etc.) and employment (FTE, etc.) variables may be over or underestimated.

The EWG 22-06 notes that the selection process of the LDF fleet dependant on the ICATT species could have failed, Due to time limitations the EWG could not investigate other selection criteria and therefore, results should be treated with caution.

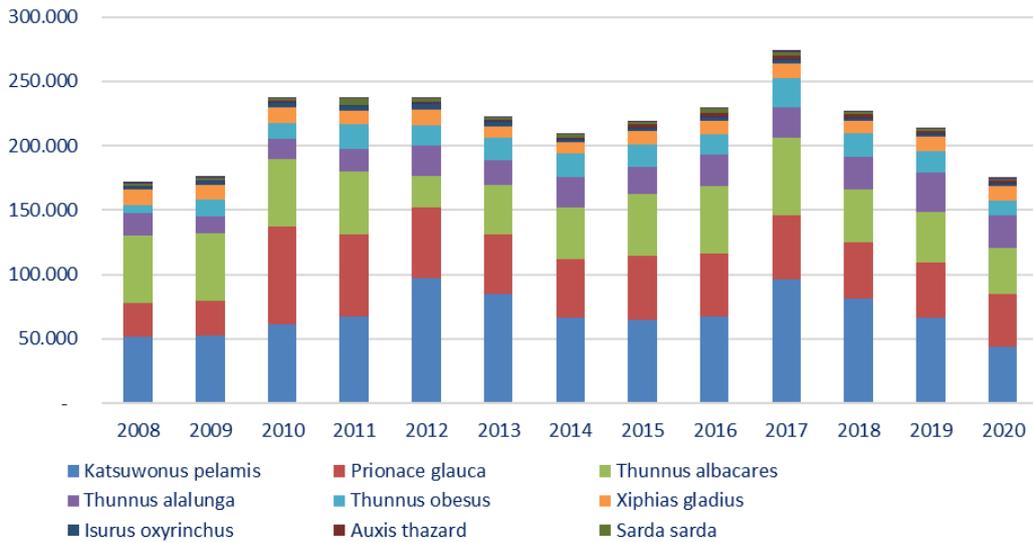
## EU ICCAT Fleet

According to data submitted, the EU fleet numbered 3 190 commercial vessels and total reported EU catches for the main species regulated by ICCAT in the Atlantic Ocean and Mediterranean Sea amounted to 251 802 tonnes in 2020; of which 234 303 tonnes, or 94% of the EU total landings, came from the Atlantic and 15 654 tonnes from the Mediterranean Sea. Nearly 55% of these catches correspond to tropical tunas (yellowfin, bigeye and skipjack), 20% to sharks, and 11% to albacore.

These figures largely match with the results from the DCF data for the EU ICCAT fleet. Overall, it was estimated that these vessels landed 207 441 tonnes valued at EUR 551.7 million in 2020. Landings from Atlantic stocks amounted to 181 283 tonnes (or 87% of total landings) and 26 131 tonnes (13% of landings) from Mediterranean stocks. In 2020, the share of landings from the Mediterranean increased compared to 2019, with 13% of the weight and 34% of the value (up from 11% and 32% in 2019, respectively).

In 2020, landings decreased to 207 414 tonnes and the value also decreased to EUR 551.7 million compared to 2019, giving an average price of 2.6 euro/kg (similar to the one in 2019). The average price varies by main region, with an average of 2 euro/kg for Atlantic stocks and 7.1 euro/kg for Mediterranean stocks in 2020. Landings of Atlantic stocks amounted to 181 284 tonnes valued at EUR 365 million in 2020 and landings of Mediterranean stocks amounted to 26 131 tonnes, valued at EUR 186 million.

The main species landed in 2020 were skipjack (43 538 tonnes, 25% of the total landings), blue shark (41 615 tonnes), yellowfin tuna (35 453 tonnes), albacore (25 601 tonnes) and bigeye tuna (11 021 tonnes). In 2020, 51% of the major species and stocks landed consisted of tropical tuna.



**Figure 3.132. Trends on landings in value and weight by the EU fleet of ICCAT major species**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2015).

As the Atlantic stocks comprise over 87% of the total landings, the top species were the same and landings in 2020 amounted to: skipjack (43 538 tonnes, 25% of the total landings), blue shark (41 564 tonnes), yellowfin tuna (35 453 tonnes), albacore (25 600 tonnes) and bigeye tuna (11 021 tonnes).

In the Mediterranean Sea, bluefin tuna accounted for 52% of the total ICCAT landings, followed by swordfish (17%).

Landings of bluefin tuna amounted to 13 145 tonnes in 2020, 4% more than in 2019 or 98% more than the average landings over the period 2008-2019.



**Figure 3.133. Trends on landings in weight by the EU fleet of ICCAT major Atlantic (left) and Mediterranean (right) stocks**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)).

### LDF Mediterranean with dependency on ICCAT species

Activity of the LDF in the Mediterranean is largely directed towards bluefin tuna by purse seiners and towards swordfish by longliners. Landings of bluefin tuna have increased over the last few years.

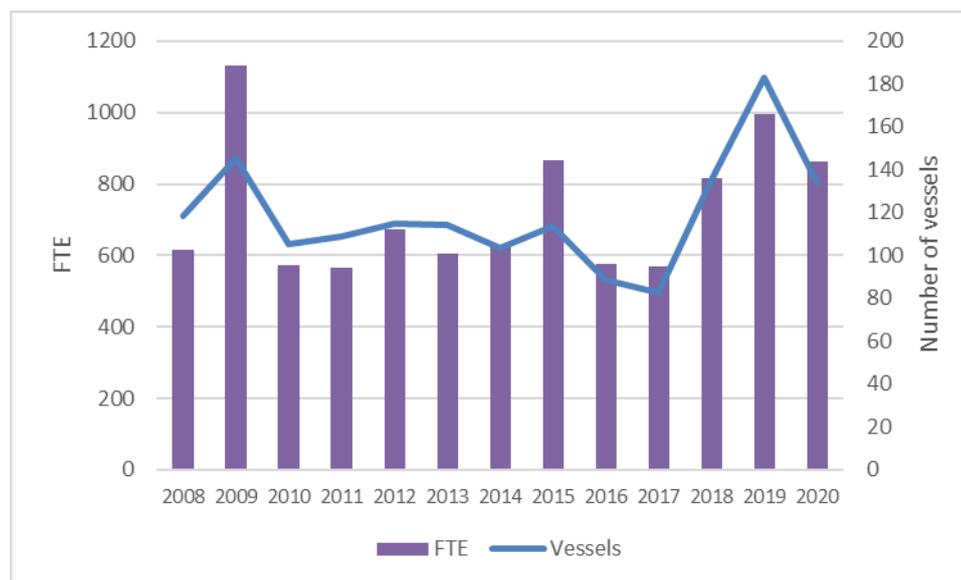
**Table 3.15 – Estimated summary results for the Mediterranean EU ICCAT fleet, highlighting segments with high dependency on activity in the ICCAT RA, 2020.**

ICCAT (EU LDF Mediterranean)	MS	Fleet Segment	Number of vessels	FTE	Revenue (EUR)	GVA (EUR)	Gross Profit (EUR)	Net Profit (EUR)
2020	CYP	CYP MBS PS 1824 NGI	1	-	-	-	-	-
2020	ESP	ESP MBS PS 2440 NGI*	18	156	16.855.498	12.798.473	6.005.989	3.988.458
2020	ESP	ESP MBS HOK1824 LLD*	20	105	5.921.871	2.145.973	374.672	376.969
2020	FRA	FRA MBS PS 2440 NGI*	22	233	54.967.411	38.577.164	9.638.760	9.637.202
2020	ITA	ITA MBS HOK1824 NGI*	44	131	9.237.370	6.235.168	3.465.449	3.460.992
2020	MLT	MLT MBS MGO1824 NGI*	5	28	383.476	269.411	183.740	177.538
2020	ITA	ITA MBS PS 40XX NGI	12	158	19.251.699	15.298.182	7.706.018	7.332.757
2020	MLT	MLT MBS HOK1824 NGI*	13	53	1.623.978	897.567	257.730	257.038

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

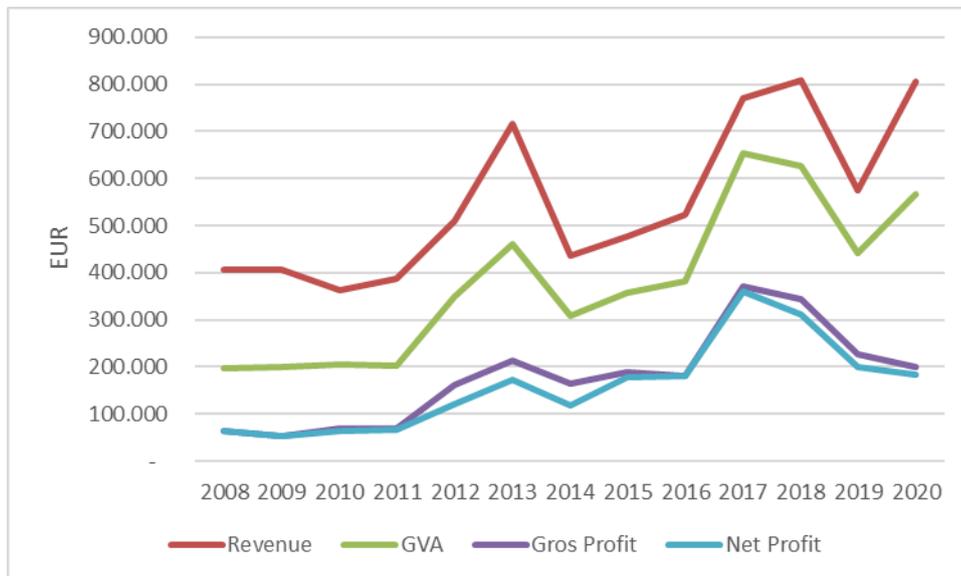
Figures below present the main trends of the selection of the fleet segments representing the LDF (over 18 metres with a  $\geq 20\%$  landings value dependency on ICCAT major species) selected for the Mediterranean.

The selected number of vessels are 134 which implies a big reduction from those obtained in 2019 (183). This also has an impact on the total FTE which has been reduced from 994 in 2019 to 864 in 2020.



**Figure 3.134. Trends on number of vessels and FTE for the EU Mediterranean ICCAT LDF.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022));



**Figure 3.135. Trends economic indicators for the EU Mediterranean ICCAT LDF combined (by average vessel)**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Given the reduction in the number of vessels selected all the aggregated economic indicators present a downward trend. Therefore, it has been decided to calculate the average per vessel. These average indicators also present a better situation than in 2019 for revenue and GVA although a reduction in gross and net profitability.

### LDF Atlantic fleet with high dependency on ICCAT species

Activity of the LDF in the Atlantic is largely directed towards tropical tuna by purse seiners and longliners.

**Table 3.16 – Estimated summary results for the Atlantic EU ICCAT fleet, highlighting segments with high dependency on activity in the ICCAT RA, 2020**

ICCAT (EU LDF Atlantic)	MS	Fleet Segment	Number of vessels	FTE	Revenue (EUR)	GVA (EUR)	Gross Profit (EUR)	Net Profit (EUR)
2020	ESP	ESP NAO HOK2440 LLD*	31	360	19.922.857	7.781.477	102.050	107.758
2020	PRT	PRT NAO HOK2440 P3 *	22	190	7.937.955	4.914.145	810.122	808.349
2020	PRT	PRT NAO HOK2440 NGI	16	145	8.745.111	2.481.089	1.234.938	1.238.817
2020	ESP	ESP OFR HOK2440 LLD	37	699	40.697.666	9.623.580	1.238.757	1.494.871
2020	PRT	PRT OFR HOK2440 IWE*	6	83	4.973.633	519.677	576.085	577.649
2020	ESP	ESP NAO HOK2440 IC *	22	162	8.334.219	4.107.058	390.684	393.892
2020	ESP	ESP NAO HOK1824 NGI	16	110	6.097.308	4.132.801	1.432.712	1.427.888
2020	ESP	ESP NAO PS 2440 NGI*	32	406	31.673.816	22.947.250	6.407.236	6.395.844
2020	PRT	PRT NAO HOK1824 NGI	11	111	5.745.304	3.340.852	753.806	750.432
2020	PRT	PRT NAO HOK1824 P2	1	-	-	-	-	-
2020	PRT	PRT OFR HOK40XX IWE*	2	48	2.445.815	285.559	482.261	482.774
2020	ESP	ESP NAO HOK2440 NGI	20	139	8.467.368	5.555.788	1.237.211	1.233.390
2020	PRT	PRT NAO HOK2440 P2	4	45	1.092.483	492.349	41.150	41.415

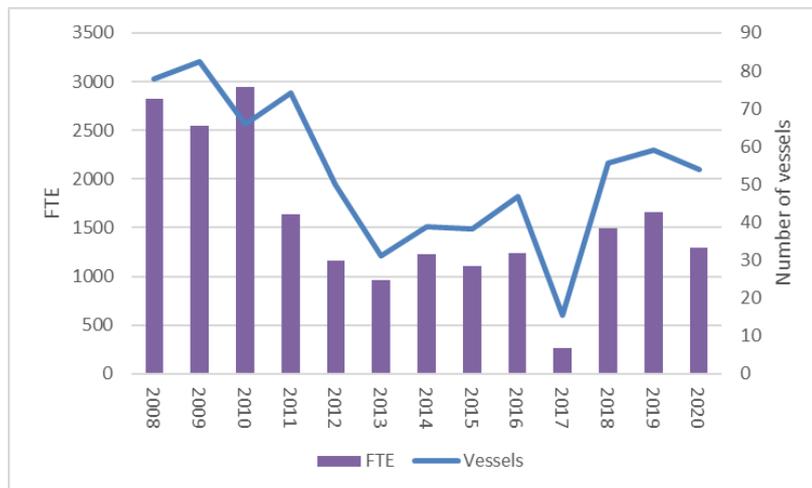
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Figures below present the main trends of the selection of the fleet segments representing the LDF (over 18 metres with a  $\geq 20\%$  landings value dependency on ICCAT major species) selected for the Mediterranean.

The selected number of vessels are 134 which implies a big reduction from those obtained in 2019 (183). This also had an impact on the total FTE which was reduced from 994 in 2019 to 864 in 2020.

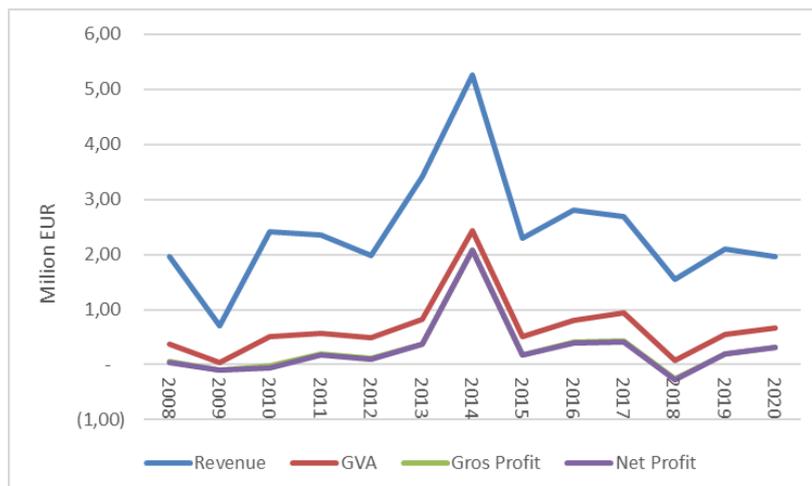
Figures below present the main trends of the selection of the fleet segments representing the LDF (over 18 metres with a  $\geq 20\%$  landings value dependency on ICCAT major species) selected for the Atlantic.

The selected number of vessels are 221 which implies a big reduction from those obtained in 2019 (230). This also has an impact on the total FTE which has been reduced from 3 330 in 2019 to 2 508 in 2020.



**Figure 3.136. Trends on number of vessels and FTE for the EU Atlantic LDF with high dependency on ICCAT species.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022));



**Figure 3.137. Trends economic indicators for the EU Atlantic ICCAT LDF with high dependency on ICCAT species (by average vessel)**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Given the reduction in the number of vessels selected all the aggregated economic indicators present a downward trend. Therefore, it has been decided to calculate the average per vessel. These average indicators also present a worse situation than in 2019, while situation is only comparable with the one in 2008 (in real average terms).

### Main drivers and limiting factors affecting fleet performance in the ICCAT RA

- The main commercial species and stocks regulated by ICCAT targeted by the EU vessels are:
- Tuna (major sp.) - Atlantic and Mediterranean bluefin tuna (BFT), Atlantic and Mediterranean albacore (ALB) and tropical tuna - skipjack (SKJ), yellowfin tuna (YFT) and bigeye tuna (BET);

- Billfish (major sp.) - Atlantic and Mediterranean swordfish (SWO), blue marlin (BUM), Atlantic white marlin (WHM), Atlantic sailfish (SAI)
- Sharks (major sp.) – blue shark (BSH), shortfin mako (SMA).
- In terms of volume and value of landings, the main fisheries in the area are tropical tuna stocks (yellowfin, bigeye and skipjack), albacore, swordfish and great blue shark.
- Both low fuel costs and high average prices (for key stocks) remained relatively stable in 2018 and with a slight increase in 2019.
- In terms of fleet segments, most of EU purse seiners fishing in the Mediterranean and Atlantic have managed to reach positive gross profit margins (between 8-12%) with the exception of French purse seiners over 40m, with a declared gross loss of -2%. Spanish and French longliners between 18-24m and 24-40m generally declared very low levels of profit (many under 1% or close to zero). Many pole and line fleet segments between 18-24m and 24-40m reported losses, and some were from the Outermost Regions of the Canary Islands and Reunion.
- The current regulatory framework with increased control of tuna landings and transshipments coupled with the implementation of technical measures such as 2 months' time closure for FADs might have a negative impact in terms of fleet presence of French and Spanish purse seine active vessels in ICCAT RA.
- Regarding shortfin mako, the Commission could not reach a consensus on annual catch limits but agreed to impose restrictions for vessels to catch and retain on board, tranship or land North Atlantic shortfin mako. Stringent measures and increases in observer coverage might likely have as well an impact in terms of catches of these species reported by Spanish and Portuguese surface longliners and a possible displacement of effort to other areas including the Indian Ocean.
- A full assessment of Atlantic bigeye tuna stock was conducted in 2018 with worrying results in terms of biomass. Efforts are being made to gather and collect missing datasets particularly from non-European longliners and purse seiners. However, the lack of a comprehensive and periodic control system to monitor quota uptake and the unilateral increase of capacity by many CPCs could hamper the process.
- In 2019, full scientific stock assessments were carried out for two species: yellowfin tuna and white marlin, while new projections were provided for the northern shortfin mako shark. Ongoing work will continue in 2020 in terms of assessment for mako which seems to be in a dire situation (according to SC, even with 0t catch, biomass will decline until 2035) where ambitious rebuilding measures might be adopted including an improved data collection and registration of dead individuals as by-catches and release of alive specimens of the sea.

## Outlook for 2021 and beyond

- Due to COVID-19 pandemic and travel restrictions in 2020 and 2021, ICCAT decision-making process has been severely disrupted. The 2020 Annual Meeting, as well as all intersessional and all delegations' consultations in 2021 are taking place by written correspondence procedure. A roll-over of the measures would likely have little impact in changes of fleet activity in these areas in terms of economic performance but a degradation of the biological state of certain stocks such as bigeye tuna compromising the long-term sustainability. Inversely, any drastic decisions could have a knock-on effect on landings and presence in the area in future years.
- ICCAT Annual Plenary Meetings and intersessional Panels have taken place remotely via written correspondence through the website. This has posed a number of logistic and technical challenges, exacerbated by the high number of Contracting Parties (53), mostly developing countries, number of languages, and time difference due to its wide geographical distribution. As a result, no significant progress has been made in passing new conservation and management measures, and work has focused only on a limited number of decisions to extend existing measures.
- The ICCAT Commission agreed to hold a series of intersessional meetings in 2020 and 2021 to develop conservation and management measures for tropical tunas and sharks, with

special attention to the bigeye tuna and the northern shortfin mako. These are the two species that will be dealt with in 2021 as a matter of priority due to the low biological state of both stocks.

- The Atlantic bigeye stock is in a poor state, overfished and subject to overfishing.
- It is possible that Rec 19-02 currently in force will be revised to modify the BET allocation scheme and allow a reduction of the overall TAC for the whole tropical tuna. This might be reduced by setting more stringent catch limits adopting more stringent management measures for the whole of the three tropical species (skipjack, yellowfin and bigeye). Some examples of measures that have been proposed and discussed at 2020 Annual Meeting are: an increase in time of seasonal closures (e.g., from 2 to 3 months in 2021); an increase of its area coverage (e.g., extending the FAD closure from Gulf of Guinea to the entire Atlantic Ocean); limits and reductions in the number of FADs deployed and number of supply vessels per PS fleets; limits in capacity. Such suite of measures could have short term detrimental economic consequences in the performance of the French and Spanish purse seine fleet in terms of catch (landings) and effort (days at sea). They might also bring about unintended shifts in fishing patterns and, potentially, displace fishing effort towards the Indian and, in a lesser extent, the Pacific Oceans.
- Work on developing a Management Strategy Evaluation (MSE) for the tropical tuna species (yellowfin, skipjack and bigeye) is in course, following a similar scientific process that the ones made for Bluefin and albacore tunas. However, it is still pending of agreeing a set of clear objectives as well as improving the effectiveness of management measures currently in place. There are also significant information gaps for some parts of these fisheries (in particular longliners, pole and lines, etc.) and specific allocation keys cannot be set for yellowfin or skipjack for this reason. If data issues were to be overcome and possibilities of setting HCR for each of the stocks coupled with mitigation measures to avoid unintended catches of juveniles of bigeye tuna, this could provide economic stability for the fleets in the long term.
- The adoption of further management measures for FADs will also, potentially, have an impact on the way FAD dependant fisheries are conducted. Such management measures on FADs might include inter alia a limit on the number of deployed FADs, the use of non-entangling and further research on biodegradable ones, monitoring and tracking systems for lost or abandoned FADs, etc. Such measures can be expected to impact the economic performance and profitability of the purse seiners and could, once again, bring about changes to fishing patterns and/or displacement of effort.
- The introduction of a Harvest Control Rule for Northern Atlantic Albacore Tuna in 2018, together with a 20% TAC increase has given increased certainty to EU operators, particularly in Spain and France, around future management of this stock using a set of clear rules. This could bring about increased landings by Spanish and French purse seiners and longliners for the years to come. The aim for 2021 is to consolidate the implementation of the two existing Recommendations in force, as well as adopt a protocol on exceptional circumstances for the MSE and a multiannual management plan.
- Further scientific work is needed to get more reliable and robust data for both the North and South Atlantic swordfish stocks. While total catches are below the EU TAC, at least one EU Member State (Spain) is near full exploitation of its individual quota. In addition, the EU fleet may retain, as by-catch, up to 15% of individuals below the minimum landing size (by number) within its declared catches thereby reducing the degree of discarding.
- Following previous measures in place since 2017, ICCAT adopted its Recommendation 19-06 on the conservation of North Atlantic stock of shortfin mako caught in association with ICCAT fisheries. Technical and spatial conservation measures are already in place, including enhanced reporting of catch, safe handling and release of live specimens to reduce incidental mortality due to high survivability. This will likely have a short-term economic impact in terms of lower landings for the concerned Portuguese and Spanish surface longline fleets. Since 2020, some ICCAT CPCs are proposing to immediately stop any direct fishing by adopting a non-retention policy of both death and alive specimens with no exceptions, to increase the chances of rebuilding the North Atlantic stock of such species. This would mean

a *de facto* close of the fishery with the corresponding loss of economic data for future years for two specific fleet segments: Spanish and Portuguese longliners between 24 and 40 metres.

- In addition to the above, in March 2019, the International Union for the Conservation of Nature (IUCN) classified the Atlantic shortfin mako and the longfin mako as Endangered Species. In August, they were included in the Appendix II Listing of the Convention on International Trade in Endangered Species (CITES), together with other 16 threatened species of sharks and rays this is a valuable fishery for Spanish and Portuguese surface longliners operating in ICCAT RA and it requires extra verification and documentation. This means that a new trade measure is in place in addition to the conservation and management measures, requiring on the operators to provide evidence and documentation on sustainability of the fishery to be sold. This has already raised specific problems in terms of operations and logistics. For example, in 2020, the Spanish Trade Ministry set a quota unilaterally established which does not let allow operators to commercialise legally caught makos from ICCAT which are kept in the meantime stored in freezing facilities. This decision by the Spanish Minister of Energetic Transition has been legally challenged by Spanish longline fleet organisations and will likely produce financial losses as a result of storage and freezing costs and potential loss of income if they cannot sell their catch.
- Regarding blue shark, ICCAT established for the first time at its Annual Meeting in November 2019 a total TAC for the southern Atlantic blue shark of 28 923 tonnes; and a quota allocation for the northern Atlantic blue shark stock of 39 102 tonnes [Rec. 19-07, amending the Rec 16-12]. The EU got a quota allocation for the northern blue shark stock of 32 578 tonnes for 2020. This is in line with current levels of reported catches in the area so there should be no big alterations in forthcoming years.
- The ICCAT Commission finalized in 2019 the protocol to amend the International Convention for the Conservation of Atlantic Tunas, which had been developed over the past six years. The new text modernizes the Commission and provides a mandate to manage oceanic sharks and rays as directed or by-catch fisheries. This will likely result in better accountability and reporting of catch and landings data along with improved control systems for these species.
- In terms of commercial aspects, Spanish and Portuguese surface longliners witnessed a sharp fall in demand in target countries (Italy, Brazil, Senegal...) for swordfish and frozen sharks in 2020 and 2021 so a substantial part of their landings has been stored in freezing facilities in Galicia (Vigo, A Guarda, Marín) or Portugal (Viana do Castelo, Porto).
- Tuna purse seiners saw a drop in the prices due to frozen tuna and tuna loins purchased from China as a result of the new regulation setting autonomous tariff quotas (ATQs) for certain fishery products for the years 2021-2023, for which they can import 30 000 tonnes each year from non-EU countries at a reduced or zero-duty tariff.
- Regarding monitoring, control and surveillance, there is work to develop integrated monitoring measures (IMM) including a set of minimum standards for electronic monitoring is under study. Progress is also being made on a regional observers' program to better implement Rec. 19-02; as well as a review of Statistical Document Schemes

## IOTC - Indian Ocean Tuna Commission

### Background

The IOTC area of competence is the Indian Ocean (FAO statistical areas 51 and 57) and adjacent seas, north of the Antarctic Convergence, insofar as it is necessary to cover such seas for the purpose of conserving and managing stocks that migrate into or out of the Indian Ocean.

The species under the management mandate of IOTC are tropical tuna stocks (i.e., skipjack, yellowfin and bigeye), albacore tuna, frigate tuna and swordfish (Table 3.17). In addition, the IOTC Commission's Secretariat collates data on non-target, associated, and dependent species affected by tuna fishing operations, i.e., marine turtles, marine mammals, seabirds, sharks and fish species caught incidentally (bycatch).

**Table 3.17 - List of major species or stocks covered by IOTC**

Tropical tuna		Temperate tuna		Neritic tuna		Billfish		Sharks	
Bigeye tuna	BET	Albacore	ALB	Bullet tuna	BLT	Black marlin	BLM	Blue shark	BSH
Skipjack tuna	SKJ			Frigate tuna	FRI	Blue marlin	BUM	Oceanic whitetip shark	OCS
Yellowfin tuna	YFT			Kawakawa	KAW	Indo-Pacific sailfish	SFA	Scalloped hammerhead	SPL
				Longtail tuna	LOT	Striped marlin	MLS	Shortfin mako	SMA
						Swordfish	SWO	Silky shark	FAL

Source: EWG 22-06

### Fleet selection and data limitations

Similar to ICCAT, the EU fleet targeting species covered by IOTC are not entirely a LDF. To capture the full scale of the fishery at the EU level, as well as in the context of the LDF, activity of the EU fleet in analyse two main parts: (1) IOTC fleet and (2) IOTC LDF fleet.

The EU IOTC fleet includes all fleet segments with reported landings of one or more of the major species or stocks in the IOTC RA in 2020.

Due to the low dependency of some of these fleet segments on these stocks, only a general overview of the activity will be assessed, i.e., the economic performance by fleet segment with low dependency levels will not be considered.

To analyse the EU IOTC LDF fleet, all fleet segments over 18 metres LOA and with 20% or more of their landings in value obtained in 2020 from one or more of the major species or stocks in the IOTC RA are selected.

This method is the same than the one used in the previous AER 2021 containing three aspects: (1) only the major IOTC species and stocks are considered; (2) the vessel length group 18-24 metres is included, as opposed to 24 metres and over in AER 2018 and 2019 and (3) high dependency on the IOTC RA in terms of value of landings is set at 20%, as opposed to 40% used in AER 2020 (and 60% used in the AER 2019).

### EU IOTC Fleet

According to the EU-MAP IOTC fleet data, four Member States were active in the IOTC Convention region in 2020: France (including Reunion), Portugal, Italy and Spain. The EU fleet active in 2020 consisted of estimated 439 vessels: 303 from France (100 from Mayotte, 192 from Reunion and 11 from mainland fleet), 118 from Spain (91 surface longliners targeting swordfish and 27 purse seiners), 17 from Portugal (all longliners targeting swordfish) and 1 from Italy.

The EU landings amounted to 376 216 tonnes in 2020 valued at EUR 572 million, a significant increase from 2019 (reported on EUR 368.6 million). The top species were the tropical tuna species skipjack, yellowfin and bigeye

## EU IOTC LDF

For the EU IOTC LDF, four fleet segments over 18 metres, with an estimated 51 vessels, showed high dependency on activity in IOTC in 2020 (Table 3.24).

The four fleet segments are: Spanish, French and Italian purse seiners above 40 metres LOA; and French Hook and longliners between 18 and 24 metres from Reunion.

Landings for the IOTC LDF amounted to 303 638 tonnes valued at EUR 423.7 million (Table 3.18). Thus, the IOTC LDF with high dependency covered 81% of the IOTC fleet's landings in weight and 74% of the landings value in 2020.

**Table 3.18 - Selected IOTC LDF fleets, 2020**

MS	2022 AER	% landed value ICCAT	Landed weight	Landed value	No vessels	Fishing days
ESP	ESP OFR PS 40XX NGI	68%	208,330,858	288,891,486	27	4484
	FRA OFR HOK1824 RE	99%	418,702	1,680,526	3	453
FRA	FRA OFR PS 40XX IWE*	64%	89,308,784	126,646,722	20	4987
ITA	ITA OFR PS 40XX IWE	100%	5,579,480	6,482,262	1	164

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2022).

## Results by Member State fleet

### FRANCE

Overall, eight French fleets were active in the IOTC RA in 2020. Two French fleet segments with high dependency on IOTC major stocks are part of the LDF: purse seiners over 40 metres LOA and longliners between 18-24 metres LOA from Reunion. Two other segments with high dependency are OMR fleets below 18 metres LOA from Reunion. An additional OMR fleet segment from Mayotte showed low activity on IOTC stocks in 2020.

#### French industrial purse seiners

The French industrial fleet of Purse Seinners consisted of 21 vessels in 2020 (including the 5 vessels registered on the island of Mayotte), but only 19 vessels were active during the year. The number of fishing vessels in this fleet has remained relatively stable over the years (a new vessel notably joined the fleet in 2020).

The overwhelming majority of this fleet is made of freezer tuna seiners operating in the Indian Ocean (10 vessels in 2020) or Atlantic Ocean (9 vessels in 2020). The average age of those 19 active vessels in this fleet segment reached almost 20 years in 2020. The average length reached by the vessels of this segment amounts to 78 meters. The average full-time employment was around 24 employees by vessel in 2020 (fishers employed come both from France and foreign countries -mostly African-).

In 2020, total volumes of landings of tropical Seinners amounted around 88 000 tonnes for the vessels of the fleet segment, down significantly from the previous year (-22%). The decrease in volumes was also more important in the Atlantic (-28,8%) than in the Indian Ocean (-17,7%). At the global level of the segment, tuna species caught were mainly skipjack tuna (SKJ – 48.3%), yellowfin tuna (YFT – 45.5% of the total volumes of landings), and big eye tuna (BET – 5.2%).

Total values of landings for this fleet segment reached EUR 125,6 million in 2020. According to economic data collected, the three main cost items in 2020 were crew wage, energy costs and non-variable costs. They represented respectively 35.4%, 19.5% and 19.2% of the total income in 2020.

This segment of the French fleet is going through a period of crisis. While 2019 was already a difficult year for the vessels of this segment in terms of profit generated, volumes landed by French tropical purse seinners did fell sharply in 2020. In addition, the price of certain species has decreased: skipjack tuna by -4%.

Fishing companies also suffered a lot from the various health restriction measures (due to COVID-19 crisis) which particularly penalized rotations crews. Fishing days were then lost for vessels because of these unprecedented constraints. The lack of access to Gabon's fishing zone

in 2020 has also penalized vessels operating in the Atlantic Ocean (the agreement signed in 2021 with European Union will once again allow those vessels to work in these important fishing area).

As a result, operating profitability of the first segment of the French fishing fleet (in terms of landed value), remains low in 2020, reaching 2,2%. It also presents contrasting situations according to the different fishing companies, and situations of negative operating profitability are indeed observed for some of them in 2020.

#### **French Reunion hook and line and longliners**

FRA OFR HOK1824RE were made of four vessels, including one longliner of 33 metres – OFR HOK 2440 IWE, which has been clustered here for confidentiality reasons.

#### **SPAIN**

The Spanish industrial fishing fleet operating in the IOTC RA is composed of large (over 40 metres) purse seine and longline (24-40 metres) vessels. The purse seiners target tropical tuna stocks while longliners target swordfish and blue shark (Figure 3.266).

Table 3.44 shows fishing activity and preliminary economic performance statistics for the fleet segments with activity in IOTC RA in 2019. Only one fleet segment – the industrial purse seiner fleet showed high dependency on the RFMO.

#### **Spanish purse seiner fleet over 40m LOA (ESP OFR PS 40XX NGI)**

The Spanish industrial purse seiner fleet is the most important EU fleet in the IOTC RA in terms of landings with over 200 000 tonnes in weight and EUR 289 million in value. It is composed of 14 vessels, employs 781 FTEs and its main target species consist of skipjack, yellowfin tuna and bigeye tuna. This fleet segment was profitable in 2020 with an estimated gross profit of EUR 61 million. However, the gross profit has seen some deterioration since 2017, and is decreased more than 10% with respect of 2019 (EUR 69 million).

#### **Spanish longliners fleet over 24m LOA ESP OFR HOK 2440 NGI LLD AND ESP OFR HOK 40XX NGI LLD)**

The Spanish industrial longliners fleet, fish 57 000 tonnes in weight and EUR 114 million in value. It is composed of 9 vessels and employs 182 FTEs. This fleet segment had a positive revenue, but a negative gross profit and net profit (-EUR 1.7 million each value). In this sense, the gross profit has been worsening since 2016 when gross profit and net profit were positives values.

#### **PORTUGAL**

There were two Portuguese LDF fleet segments active in the IOTC RA, although only one segment showed high dependency on IOTC major stocks in 2020. These longline vessels mainly target swordfish and blue shark).

There were three vessels belonging to the mainland longliners between 24-40m and above 40m LOA fishing exclusively in international waters: PRT OFR HOK VL2440 IWE (12 vessels at the fleet segment level) and PRT OFR HOK VL40XX IWE (5 vessels at the fleet segment level). The activity of the three vessels is confined to the IOTC area. The other vessels in these two fleet segments operate in the Atlantic and Pacific oceans. None of the above segment meet the minimum threshold of 20% to show high dependency on IOTC stocks.

Landing and profitability of this segment linked to IOTC activity has continued to decrease since 2016, exacerbating the gross losses already reported in 2019 with negative gross profits in 2020, for both segments.

#### **ITALY**

Only one Italian vessel was active in the IOTC RA in 2020. This Italian purse seine vessel over 40 metres targets tropical tuna stocks (skipjack, yellowfin tuna and bigeye tuna) exclusively in the IOTC area. Due to confidentiality issues, economic data is unavailable for this fleet (Table 3.46).

## Drivers and limiting factors affecting the performance of the EU fleet

- Skipjack and yellowfin tuna are the two main species fished in this area, both in terms of volume and value of the total landings. It has been noted a considerable increase in 2018, 2019 and 2020 of catches of skipjack, representing near 60% of the total in both years. However, in 2020 it decreased to 57% (similar to 2016-2017 years). Yellowfin, contrary to skipjack, landings have been decreasing due to the catch limits adopted by IOTC since 2017, representing near 30% of the total landings.
- The Spanish and French purse seiners above 40 metres LOA show a high degree of dependency in this area. The Spanish purse seine fleet are around 70% in terms of value of landings the last three years analysed (2018-2020); while the French purse seiners are between 60%-64% in the same period. This confirms that the Indian Ocean is currently the main fishing ground for both fleet segments followed by Atlantic Ocean, where they have over 20% of their value of landings. There is also one Italian purse seiner above 40 meters consistently showing a 100% dependency in this fishing ground for the last years.
- A contraction in their growth and benefits is shown which could be partly explained due to a higher ratio of catches for skipjack (of lower value) vis à vis large yellowfin in the catch composition. The reductions in catch of large yellowfin tuna in the Indian Ocean are the consequence of a sharp reduction of 15% in average in comparison to 2014 levels as a result of a regulatory decision adopted to tackle poor status of the stock in the area.
- Moreover, due to COVID-19, the EU purse seine companies supported increased costs of the sanitary crisis at operational and humanitarian level: crews had to be put in quarantine at hotels before going onboard, vessels were put in quarantine at port due to positive COVID-19 cases onboard, increases in expenses for the purchase of individual protection equipment and the chartering of planes to conduct crew changes when passenger flights were temporally suspended.
- Yellowfin tuna's quota in the Indian Ocean, implemented since 2017, has had an impact on purse seine fishing activity. The EU adopted catch limits assigned to purse seine fleet from Italy, France and Spain. The implementation of the catch limits by each Member State imposed more stringent management to reduce in average 17% of the catch average from the period 2014-2016. If we consider the EU catch by the reference year (2014), the effective reduction by EU flag state differed markedly, with Spain assigned the highest reduction, at 21%, while such reduction was at 4% for the French fleet (Italy had no activity in 2014). In 2019 the Spanish government also implemented a limit on total tropical tuna catch that has reduced fishing opportunities for the Spanish fleet since that year, while such arrangement does not exist for other fleets. The IOTC also imposed enhanced reporting and control obligations coupled with a reduction in the ratio of one supply vessels for two purse seiners. This ratio was then revised to two supply vessels for five purse seiners.
- The measures adopted in 2018 to reduce 15% average catch of yellowfin tuna have been reflected in the DCF data with a proportional decrease in landings of 8 000 tonnes for the EU purse seiner fleet, with a corresponding sudden increase in skipjack which in 2018 and 2019 was caught in higher quantities than in the past while having a lower market value in overall terms.
- The reduction purse seiner's catches is having serious socio-economic consequences not only for the European fleet, but also for the economies and livelihoods of some coastal countries in the Indian Ocean where these companies have investments and work with supply chains. Some of the detrimental effects are reduced access fees, lack of raw material at canning factories, and economic loss due to a drop of services and economic activity in several coastal countries.

## Regulatory framework, data issues and outlook for 2021 and beyond

- In recent years, the IOTC adopted management measures including catch and effort limits for purse seine and other fisheries. For tropical tunas, the measures adopted include Harvest Control Rules for skipjack, catch limits for yellowfin tuna (Resolution 19/01), and measures to limit fishing effort for purse seine fisheries as a whole; as well as procedures on a fish aggregating devices (FADs) management plan, including a limitation on the number of FADs,

more detailed specifications of catch reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species. It also includes a resolution for the conservation of albacore caught in the IOTC area of competence; observer schemes and regional programme for monitoring transshipments at sea.

- At the IOTC Annual Meeting in 2022, there have been proposals that have not been adopted in 2022 on increasing the sustainability of FAD fishery by reducing the number of deployed FADs from 300 to 240 per vessel and imposing the use of biodegradable FADs in 2025 introducing the basis for traceability in the use of FAD. Any feature proposals reducing number and use of FADs, as well as retrieval, are likely to have an impact on those purse seiners relying on the use of FADs for their business plans.
- The Indian Ocean Tuna Commission (IOTC) held its last annual session from 16 to 20 May 2022. The main priorities for the EU at the meeting were to discuss how to address the management of yellowfin tuna stock in the Indian Ocean, the adoption of a new management measures for drifting fish aggregating devices (FADs) and the adoption of catch reduction for skipjack tuna. The IOTC could not agree on any of these items and they will continue to be discussing in forthcoming meetings.
- The 25th Session of the Indian Ocean Tuna Commission (IOTC Annual Meeting), held on 7-11 June 2021, adopted an updated resolution on an interim rebuilding plan for the Indian Ocean yellowfin tuna stock (which has been overfished and subject to overfishing since 2015). The new measure will come into effect on 1 January 2022. If fully implemented, the adopted measure projects a resultant yellowfin tuna catch level of 401 000 tonnes, an amount that meets the recommendation of the IOTC Scientific Committee. The poor biological situation of the yellowfin tuna stocks will likely lead to further catch reductions for those CPCs abided by the Resolutions. Since the establishment of the rebuilding plan for yellowfin tuna in 2016, the EU has continuously reduced its yellowfin tuna catches by more than 21% as compared to 2014 levels (more than 20 000 tonnes).
- There are a number of IOTC members which have refused to abide by this rule to date, with 6 major harvesters: India, Indonesia, Iran, Madagascar, Oman and Somalia that have objected to date to be subject to the rebuilding plan and have increased their catch unilaterally. At the 2022 annual countries, the same countries have reiterated their unwillingness to participate to the conservation effort. Commitment to continue with diplomatic efforts in 2022, a special session will be called to discuss future solutions at latest by the first quarter of 2023.
- The IOTC did not manage to adopt the proposal to bring back the catches of skipjack within the agreed TAC. Some parties of the IOTC were not willing to take action to ensure that the fisheries on skipjack remain sustainable on the long-term. This might be counteractive and exacerbate the risk of deterioration of skipjack stock in the medium term.
- However, the IOTC adopted a far-reaching management procedure on bigeye tuna, an important step forward for well-informed science-based management decisions for the management of the bigeye tuna stock in the future.
- In addition, an EU proposal on observer coverage - creating the basis for the introduction of more electronic monitoring system on board - has been adopted by the IOTC parties.
- The EU accepted a further reduction of 6% in catches of yellowfin tuna, summing up to a total reduction of 21% compared to 2014 catch levels (around 92 000 tonnes). As such, the EU is the main contributor to the catch reduction scheme. For the EU fleet (mainly Spanish and French purse seiners), the cut in the TAC is estimated to be around 4 500 tonnes for 2022 for the Spanish and French tuna purse seiners (from 77 694 tonnes in 2021 to 73 146 tonnes in 2022). This reduction in quota will be coupled with the reduction of supply ancillary vessels from 2 for each 5 purse seiners to 3 for each 10. These measures combined will have a likely effect of effort displacement towards EEZs of countries where the EU has tuna agreements in place (Seychelles, Ivory Coast, Gabon...) or fishing in international waters. Longer fishing trips might also reflect into lower energy efficiency, higher fuel consumption and costs.

- However, it is still uncertain if this reduction in YFT catch will be achieved, given the intent expressed by six IOTC member nations (namely, Oman, Iran, India, Madagascar, Somalia and Indonesia) to object to the measure. These six countries represent near 40% of the total catch of yellowfin and a TAC has not been agreed for this stock for them. In the case that all IOTC parties do not fully implement the yellowfin measure, the catch levels recommended by the IOTC Scientific Committee are likely to be exceeded.
- Failure in recovering this stock could have a direct economic impact in EU and other fleets as many retailers and supermarkets in developed countries (following mandate from organisations such as ISSF or GTA) have agreed to reduce their annual sourcing of Indian Ocean yellowfin tuna in the event that IOTC does not take appropriate action.
- The EU proposal to bring back the catches of skipjack within the agreed Total Allowable Catch (TAC) was not adopted due to opposition of other IOTC parties. However, a proposal submitted by Maldives on skipjack tuna management without allocation keys was adopted. This is not envisaged to produce any short- or medium-term effect in the catch levels for this species.
- The IOTC agreed to the mandatory use of non-entangling and non-meshed material FADs from 1 January 2020 and encouraged the use of biodegradable FADs from 1 January 2022. In addition, the Commission further reduced the limit on active FADs to 300 for 2020 (down from 550 in 2015 and 350 in 2017) and the number acquired annually per purse seiner to 500 (down from 1 100 in 2015 and 700 in 2017). The non-entangling FADs should not have a great economic impact in the fishing activity of French and Spanish purse seiners as they have them already installed and internalized in their operating costs.
- At the IOTC Annual Meeting in 2021, there was a proposal aiming to further regulate the management of drifting fish aggregating devices (dFADs), reducing the number of FADs from 300 to 150 per vessel, which was rejected by a narrow margin. However, the Commission did not agree on whether the 2/3 majority was met as there was disagreement on whether the votes cast as 'abstain' should be included in the total count of votes, and advice from the FAO Legal Office was requested on this matter. The Commission did not report that a CMM on the management of fish aggregating devices in the IOTC area of competence had been adopted.
- The main issue in the IOTC relates to lack of comprehensive and quality scientific data. The result is patchy and incomplete data which is used to underpin the scientific assessments. It is therefore crucial that the IOTC increases activities to assist developing states in improving data collection and reporting, and verification of their capacity to monitor compliance with quotas in near-real time.
- Increase in observer coverage (EMS included) would be needed as up to now only EU purse seiners have a 100% observer coverage. An increase in observer coverage, with a minimum of 20% of the activity covered in all industrial vessels, could help to have a more accurate picture of by-catches (e.g., dolphin fish, wahoo, barracuda, etc.) and discards by gears, to understand interactions with tuna purse seiners and long liners.
- Divergencies have been noted between different sources, e.g., submission of catch data by EU Member States and CPCs to IOTC and via official statistics from EUROSTAT and EU-MAP. This could bring discrepancies on the data collected by the EU-MAP while cross-checked with IOTC to perform analysis.
- Estimate of total catch, including target species and non-target species (by-catch and discards) has to be improved. Currently there is a non-existing level of reporting of by-catch data by most CPCs, with only EU purse seiners and long liners collecting this sort of information. This ends up in a rough estimation of nominal discards. There is a need to fill this gap to improve knowledge in particular of sensitive species such as turtles or silky sharks.
- More information would be desirable in the way fishing effort is accounted for and reported for all gears in the IOTC area. Some CPCs such as Korea, Japan and Mauritius have made already a specific request on this in Annual Meetings. Overfishing and IUU fishing by non-EU fleets undermines conservation and management of tuna stocks and puts in risk the future

economic viability of the fishery for the EU fleet, due to the deterioration of the stock and the vicious circle of decrease of quotas due to the lack of level playing field between all concerned CPCs.

- During its 19th Session held in May 2022, the IOTC Compliance Committee has expressed concern repeatedly with low levels of compliance with the commission's regulations at its latest meeting in 2022. In response, it has produced several recommendations on how to achieve targets set by IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs). In particular, there were low levels of compliance with Resolution 15/02, covering mandatory statistical reporting requirements, and Resolution 17/05, covering the conservation of sharks caught in association with fisheries managed by IOTC. The committee has recommended that the IOTC should carry out a review of its conservation and management measures alongside subsequent reports that point out the challenges encountered during their implementation.
- Within 2022, the committee proposed, the IOTC Secretariat should also provide an analysis highlighting problems and possible solutions on the implementation of resolution 19/04, which concerns the IOTC's records of vessels authorized within its area of competence, so as to guide CPCs in a possible future review.
- Meanwhile, the committee said the IOTC should consider making the use of electronic port-state measures (ePSM) applications mandatory. It should also consider endorsing the Working Party on the Implementation of Conservation and Management Measures' recommendations, with the goal of having the system implemented before the next IOTC compliance assessment in 2023, but IOTC members encountering problems with the system will be allowed to continue using a paper system.

## CECAF - Fishery Committee for the Eastern Central Atlantic

### Background

CECAF is an advisory body and hence has no mandate on fisheries management in its area of competence (Figure 3.276). The Committee covers all living marine resources within its area of competence.

Most of the EU fleet activity in this area falls under the framework of six tuna SFPAs in West Africa (Cape Verde, Ivory Coast, Gabon, Liberia, Sao Tomé e Príncipe, and Senegal) and three Multi-species SFPAs (Guinea-Bissau, Mauritania and Morocco). The mixed or multi-species agreements offer fishing opportunities for demersal and pelagic species, tuna, cephalopods and shrimp, mainly involving trawlers, purse seiners and longliners.

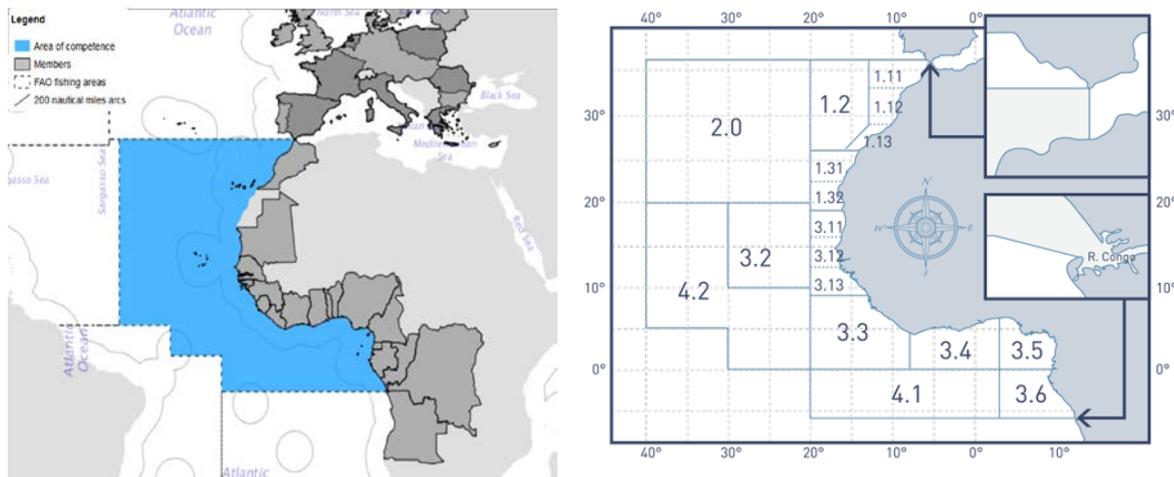


Figure 3.138. Map of the CECAF Area of Competence

Source: FAO <http://www.fao.org/figis/geoserver/factsheets/rfbs.html>

### Fleet selection and data comparisons/limitations

A large part of the activity in the CECAF region is related to the tuna fishery, which overlaps with ICCAT. To refine the results and reduce the overlap with the ICCAT analysis, since AER 2021 two criteria have been introduced: 1. focus is given to the fleets targeting small pelagic and demersal fisheries in the CECAF AC by excluding the ICCAT major species; and 2. vessels over 18 metres are selected to exclude activity of OMR local fleets in national waters (area overlaps, Canaries, Madeira and Azores).

According to the two criteria above mentioned combined, only 6 fleet segments are identified with a dependency >20% on CECAF activity for 2020. The estimated number of vessels amount to 54 with 1 294 FTE. Landings (all species) amounted to 97 293 tonnes valued at EUR 168 million in 2020. These includes only demersal and small pelagic species and excludes all the tropical tuna and big pelagics that are within the remit of ICCAT.

Due to EU-MAP data limitations, it is still not possible to assess fleet activity by SFPA individually, nor undertake an economic performance analysis of these fleets. Lack of more detailed spatial data makes determining the dependency of these fleets on activity in the CECAF regulatory area challenging, e.g., some activity may take place in the Canaries and Madeira (as well as a small part of the Azores) EEZs, which are located in FAO 34. Currently, the analysis identifies the main EU fleet segments with activity in the region targeting non-tuna and tuna-like species, providing a baseline for future developments.

Due to time constraints, the EWG 22-06 was unable to produce an in-depth assessment of these fleets. However, it does provide a summary overview of fleet segments occurring in the area and a brief outline of the average economic performance.

The EWG 22-06 reiterates the statement made by EWGs 21-08 and 20-06 that an in-depth assessment of the economic performance of the EU fleets operating in CECAF could help to better understand the importance of this area as a fishing ground for several small pelagic and demersal stocks. It also notes that, while it will be difficult to overcome the current limitations in the short term, disaggregated data can be made available beforehand for experts to within

the EWGs in the coming years. This will provide useful information for assessing the economic dependence and performance of the EU fleets when getting access to the fishing stocks under SFPAs in third countries waters.

EU-MAP data are unavailable for Latvia. Activity for Greece and Ireland in the area is low, with limited or no data available. France mainly or exclusively targets tuna and tuna-like species in the area in 2019 and 2020 (shown by the absence of CECAF no ICCAT data). Germany, Italy, Lithuania and the Netherlands do not target ICCAT major species in the area, i.e., activity of these fleets are directed towards small pelagics and demersal stocks.

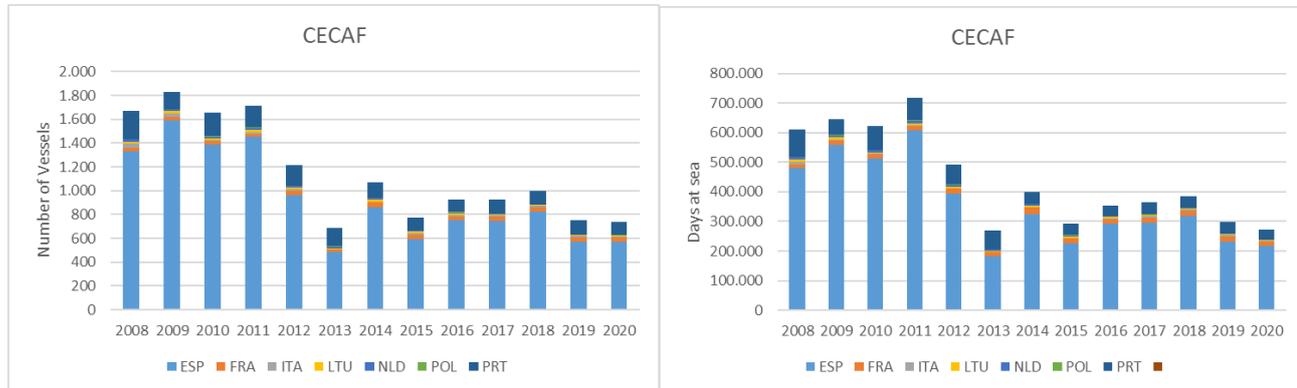
Due to EU-MAP data limitations, it is still not possible to assess fleet activity by SFPAs individually, nor undertake an economic performance analysis of these fleets. Lack of more detailed spatial data makes determining the dependency of these fleets on activity in the CECAF regulatory area challenging, e.g., some activity may take place in the Canaries and Madeira (as well as a small part of the Azores) EEZs, which are located in FAO 34. Currently, the analysis identifies the main EU fleet segments with activity in the region targeting non-tuna and tuna-like species, providing a baseline for future developments.

Due to time constraints, the EWG 22-06 was unable to produce an in-depth assessment of these fleets. However, it does provide a summary overview of fleet activities occurring in the area and a brief outline of its economic performance (when possible).

The EWG 22-08 reiterates the statement made by EWG 21-08 that an in-depth assessment of the economic performance of the EU fleets operating in CECAF could help to better understand the importance of this area as a fishing ground for several small pelagic and demersal stocks. It also notes that, while it will be difficult to overcome the current limitations in the short term, disaggregated data can be made available beforehand for experts to assess and produce a more comprehensive analysis for the area within the EWGs in the coming years. This will provide useful information for assessing the economic dependence and performance of the EU fleets when getting access to the fishing stocks under SFPAs in third countries waters.

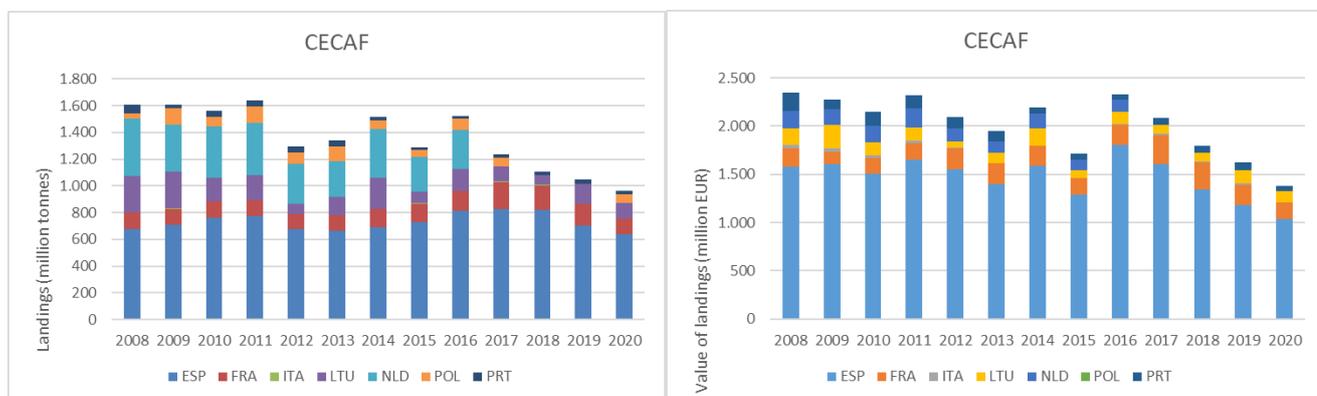
## Brief description of the EU fleet activity in CECAF

The EU large scale fleet over 18 metres LOA with some activity in CECAF in 2020 is made up of 68 fleet segments and comprised an estimated 740 vessels. This represents a decrease of 5 vessels compared to 2019, but a significant decrease compared to the number of vessels from the last decade which was around 1 600 vessels.



**Figure 3.139. Trend on capacity (no. vessels) and effort (days at sea) for the LDF EU fleet active in the CECAF Area of Competence**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.140. Trend on landings in value and weight by LDF EU fleet activity in the CECAF Area of Competence.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

Historically, the main species landed in value are the tropical tunas (yellowfin, skipjack and bigeye tuna), chub mackerel and Senegalese hake. When excluding the ICCAT major stocks, the top species landed in value are Atlantic horse mackerel, chub mackerel, Senegalese hake and sardine.

Most of the tropical tuna are caught by Spain and France. The Spanish fleet also lands most of the Senegalese hake and Atlantic pomfret while the Lithuanian fleet mainly targets small pelagics (sardine, horse and chub mackerel).

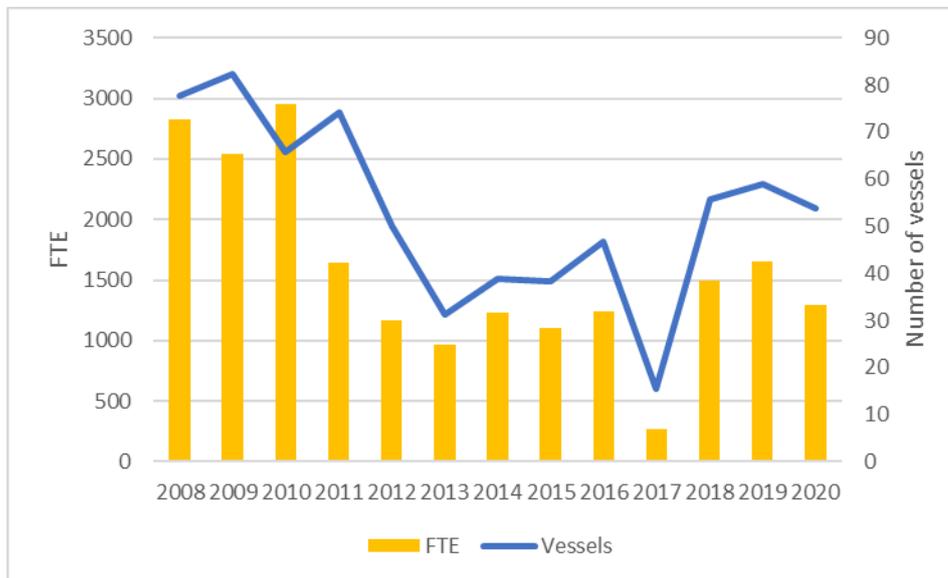
In sum, the French fleet exclusively targets ICCAT major stocks in CECAF while the Italian, Lithuanian and Dutch fleets almost exclusively target demersal and/or small pelagics. For Spain, around 59% of the value of landings comes from ICCAT stocks; while for Portugal ICCAT stocks represent around 66% of the landings in value. Therefore, the number of segments that would be significantly dependant on this area will be reduced.

## Brief description of the EU CECAF LDF with a high dependency on the area

The long-distance fleet, defined as vessels over 18 metres LOA with high dependency on CECAF excluding ICCAT), included an estimated 54 vessels from four Member States<sup>19</sup> in 2020: Spain, Portugal, Italy and Lithuania. This is a small decrease with respect of 2019, where there were 59 vessels from the same Member States.

These vessels combined landed 97 294 tonnes (118 500 tonnes in 2019) in weight with a value of EUR 168 million (EUR 199 in 2019).

The highest number of vessels corresponded to Spain, with 74% of the total (40 vessels including demersal trawlers and longliners), followed by Portugal (6) Italy (5) and Lithuania (3 demersal trawlers).



**Figure 3.141. Trends on number of vessels and FTE for the EU CECAF (no ICCAT) LDF with high dependency in the area.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022));

In terms of fleet segmentation, there were six LDF segments targeting non-ICCAT main species in 2020 (same as in 2019) , namely:

- Two Spanish (one demersal trawler and one longline between 24-40 metres each);
- Two Portuguese (one longliner and one polyvalent active gear 18-24 metres each);
- One Lithuanian pelagic trawler over 40 metres;
- One Italian demersal trawler over 40 metres.

**Table 3.19 Summary results for the 6 long distance fleets over 18 metres LOA operating in the CECAF area with high dependency on non-ICCAT species (EU-MAP)**

CECAF (EU LDF No ICCAT)	MS	Fleet Segment	Number of vessels	FTE	Revenue (EUR)	GVA (EUR)	Gross Profit (EUR)	Net Profit (EUR)
2020	ESP	ESP OFR HOK2440 NGI*	13	211,718	7.550.190	- 3.963.916	- 6.064.301	- 6.153.100
2020	PRT	PRT NAO HOK1824 P2	3	25,6145	690.868	396.367	109.661	109.127
2020	PRT	PRT NAO MGP1824 P2 *	3	23	333.615	206.107	28.166	27.895
2020	LTU	LTU OFR TM 40XX NEU*	3	131,4209	53.839.812	31.238.294	26.188.280	26.187.674
2020	ESP	ESP OFR DTS2440 NGI	27	841,9682	43.583.117	7.545.970	- 3.424.039	- 3.430.636
2020	ITA	ITA OFR DTS40XX IWE	5	60	2.576.864	1.060.821	207.621	61.473

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)). All monetary values have been adjusted for inflation; constant prices (2020).

Amongst these six fleet segments, there were five which had a high degree of dependency on this area, i.e., close to 50% or more of the total share of value of their landings; and four fleet segments were within a range of 70% to 100% in weight. The most dependent fleets were the Italian demersal trawlers over 40 metres operating in international waters; and the Portuguese polyvalent active gear vessels 18-24m based in Madeira reporting 100% and 99% of their value in landings, respectively.

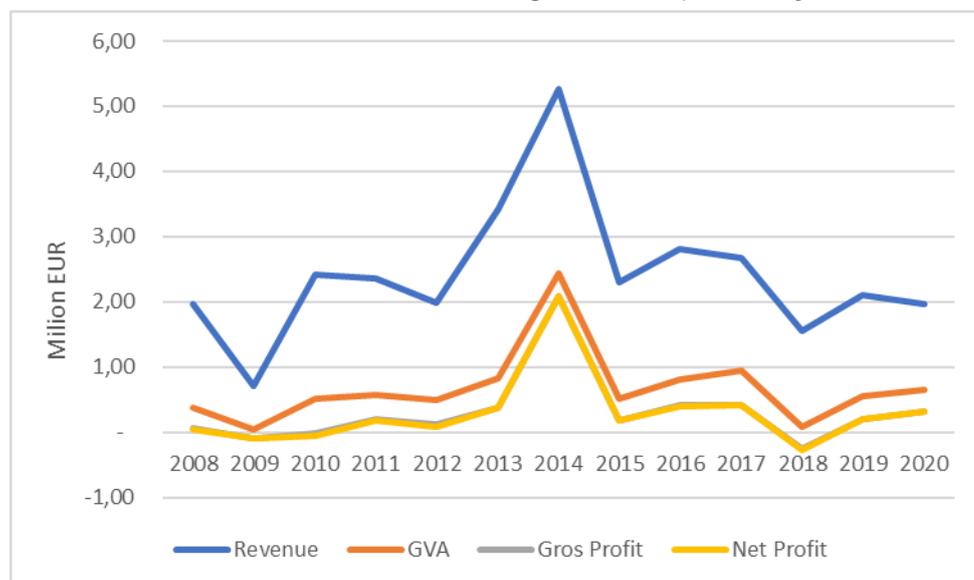
<sup>19</sup> Note: France is not included as the fleet targets only ICCAT species in the area; fleets from Poland, Germany, Latvia and the Netherlands are also not included as only partial DCF data were submitted due to confidentiality issues.

They were followed by the Spanish demersal trawlers 24-40m and the Lithuanian pelagic trawlers over 40m (70%).

The Lithuanian pelagic trawlers over 40m landed the most catch in weight with 70 290 tonnes (showing a similar level than in 2019 where it reported 71 368 tonnes), followed by the Spanish demersal trawlers between 24-40m with 16 920 tonnes (slightly below the 19 400 tonnes reported in 2019).

The Spanish longliners 24-40m have the highest ratio value/weight with 4 311 per tonne, representing a substantial increase from 2019, where it was EUR 3 241 per tonne. They are followed by the Italian demersal trawlers over 40m with 3 057 per tonne, a sharp decrease from last year (EUR 4 624 per tonne), and Portuguese-Madeiran hook and line (EUR 3 018 per tonne), respectively. This might be partially explained due to factors such as proximity to the fishing ground implying low fuel consumption and high energy efficiency, as well as reduced transport and operational costs as most catch is channelled to local consumption from neighbouring markets as the target species are mainly sold in the Spanish and Portuguese auctions and markets.

Figures below present the main trends of the selection of the fleet segments representing the LDF (over 18 metres with a  $\geq 20\%$  landings value dependency on none ICCAT major species).



**Figure 3.142. Trends economic indicators for the EU CEAFC LDF (no ICCAT) with high dependency in the area (by average vessel)**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Combined, the CEAFC LDF with high dependency in the area was profitable in 2020, improving on its loss-making position in 2018 but showing a certain stagnation in respect of 2019. The number of vessels and FTE has decreased as did landings in weight and value.

Due to time constraints, STECF EWG 22-06 was unable to provide a detailed account of the main fishing fleets operating in NEAFC. Furthermore, the EWG requests more guidance on what fleet activity should in essence be assessed in the NEAFC chapter, i.e., activity in the NEAFC convention area or activity in the regulatory area. For the latter, more detailed and digitalised data from NEAFC, such as catches by species and Member State fleet in the RA, would be required.

## Results by Member State fleet

### SPAIN

Spain has several fleet segments operating in FAO 34 landing a total of 191 950 tonnes in 2020, of which 33 432 tonnes (28%) consisted of non ICCAT main species. Only two fleet segments over 18 metres showed a dependency higher than 20% in 2020, i.e., CEECAF LDF (Table 3.20).

These two segments combined (ESP OFR DTS2440 NGI and ESP OFR HOK2440 NGI) caught 25 587 tonnes in weight (88% of the total CEECAF no ICCAT catch) valued at EUR 95 million (87%). It also employed 81% of the total number of jobs in the area (1 053 FTE). These vessels compensate their catch with tropical tuna in the same area under ICCAT. (Table 3.20).

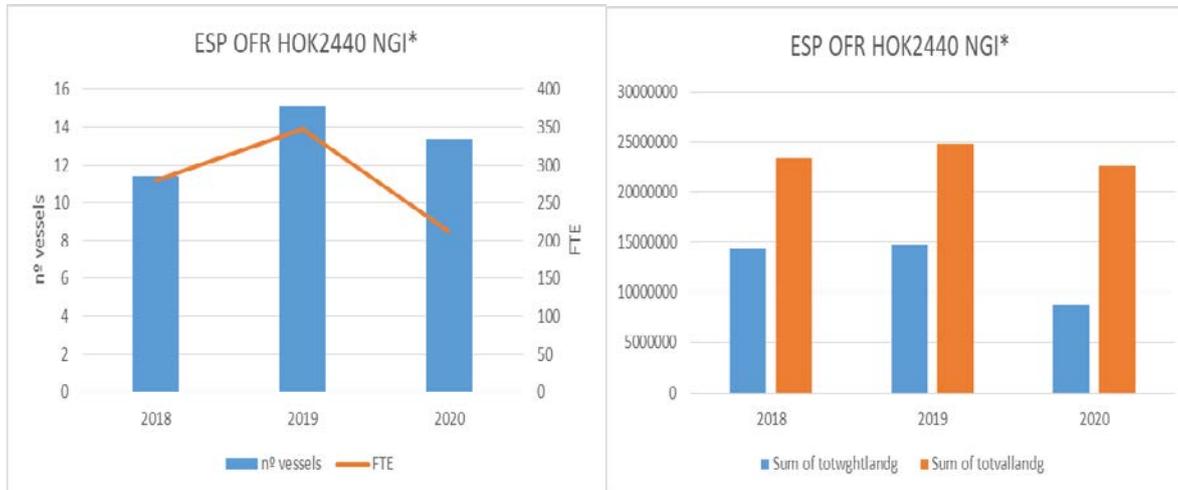
**Table 3.20 Spanish fleet segments with high dependency on non-ICCAT species in CEECAF, 2020**

Fleet segments 2020	Dependency (%)	Weight of landings	Value of landings	Vessels	FTE
ESP OFR DTS2440 NGI	77%	16 919	72 937	27	841
ESP OFR HOK2440 NGI*	40%	8 768	22 662	13	211

### Spanish Hook and line 24-40 segment (ESP OFR HOK 2440 NGI)

The Spanish hook and line 24-40m segment operating in CEECAF (on no ICCAT stocks) was composed of 15 vessels that landed 3 178 tonnes with a value of EUR 10.3 million in 2019. These vessels employed 346 FTE and obtained a negative GVA of -EUR 2.2 million and gross losses of -EUR 6.4 million. The fleet segment obtains most of its revenue from targeting tuna stocks in the same area. Overall, the fleet segment was profitable, generating a gross profit when also considering revenues from ICCAT activity (Table 3.52).

The Spanish hook and line 24-40m segment operating in CEECAF (on no ICCAT stocks) was composed of 13 vessels that landed 8 767 tonnes with a value of EUR 22 million in 2020. These vessels employed 211 FTE. The fleet segment obtains most of its revenue from targeting tuna stocks in the same area. Overall, the fleet segment was profitable, generating a gross profit when also considering revenues from ICCAT activity.



**Figure 3.143. Trends on key indicators for the Spanish hook and line 24-40m segment in CEECAF (no ICCAT major stocks).**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

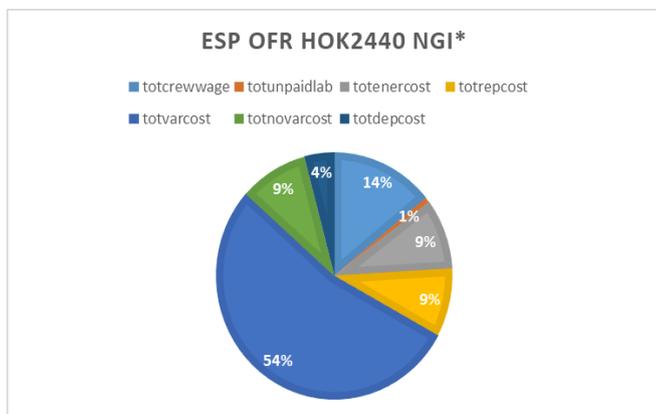


Figure 3.144. Cost structure in 2020 for the Spanish hook and line 24-40m segment in CECAF (no ICCAT major stocks).

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

### Spanish Demersal trawler 24-40 segment (ESP OFR DTS 2440 NGI)

The Spanish demersal trawlers between 24-40 metres, with a high dependency on the fishery (77% of the value of landings and 93% of the weight), reported 27 active vessels that landed 17 000 tonnes in weight (compared to 19 000 tonnes in 2019).

The value of landings amounted to EUR 73 million in 2020 (12% less than in 2019). In terms of employment, they reported 842 FTE (159 less than in 2019). Landings, particularly in value, decreased in 2020 while costs increased by 4%, contributing to the deteriorated performance in 2020.

In terms of employment, FTEs have decreased by almost three times from 2 000–2 400 FTEs in the period 2008–2010 down to 750 in 2011–2013 and then remain within the region of 800–1 000 in the period 2015–2020.

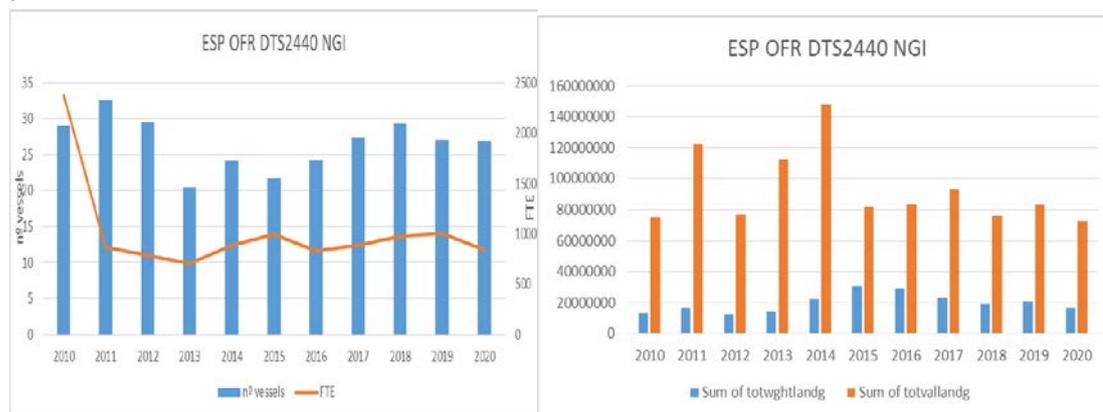


Figure 3.145. Recent trends of the top earning Spanish fleet segment with high dependency on activity in CECAF (no ICCAT major stocks).

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

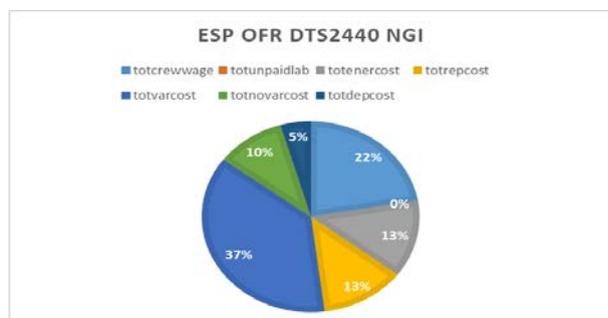


Figure 3.146. Cost structure in 2020 of the Spanish demersal trawler 24-40m segment in CECAF (no ICCAT major stocks).

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

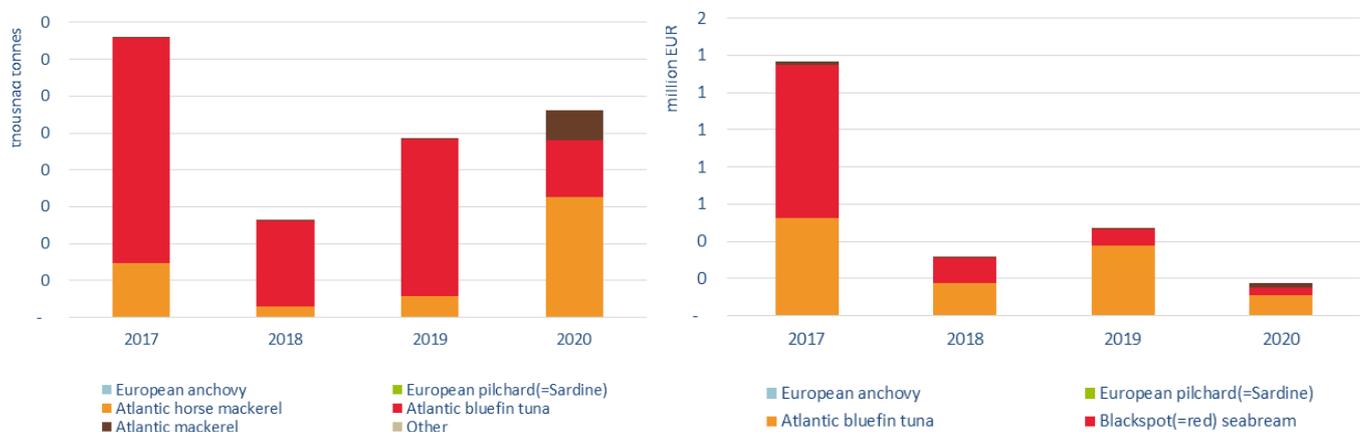
### Spanish longline fleet operating predominately in the Morocco Coastal fishing grounds

The Spanish longline fleet 12-18m (ESP NAO HOK 1218 MA) is a special case as most of the vessels are small-scale and operate mostly in the Morocco Coastal region (FAO area 34.1.1), while some activity occurs in the Mediterranean (GSA 1 and GSA 3) and in FAO area 27.9.a (south coast of Spain).

In 2020, this fleet comprised 12 vessels (25% less than 2019), the majority being vessels under 12 metres in length using hooks. As the number of vessels decreased by 25%, employment (in FTE) and effort (days at sea) also decreased by 80% and 67% compared to 2019, respectively. In the same way, fuel consumption decreased by almost 89% compared to 2019.

Landings (in weight and value) are dominated by Atlantic horse mackerel, Atlantic chub mackerel and Atlantic bluefin tuna.

In addition, in Morocco (34.1.1) we can find six purse seiners (NAO PS 1824) that have caught 658 000 kg of European anchovy and 379 000 kg of Sardine.

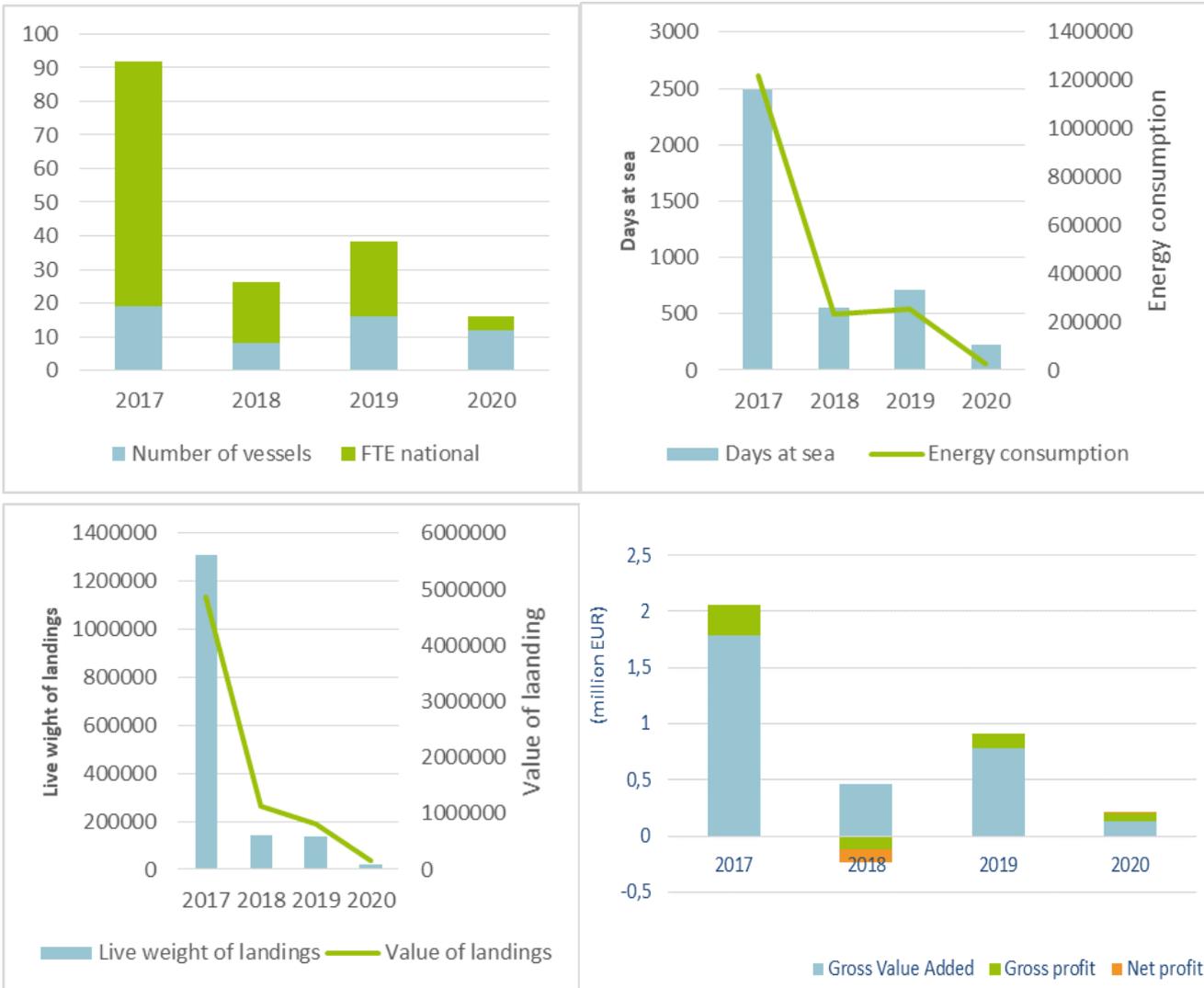


**Figure 3.147. Top species landed by the Spanish longliners 12-18m segment operating in the Morocco Coastal 2017-2020.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

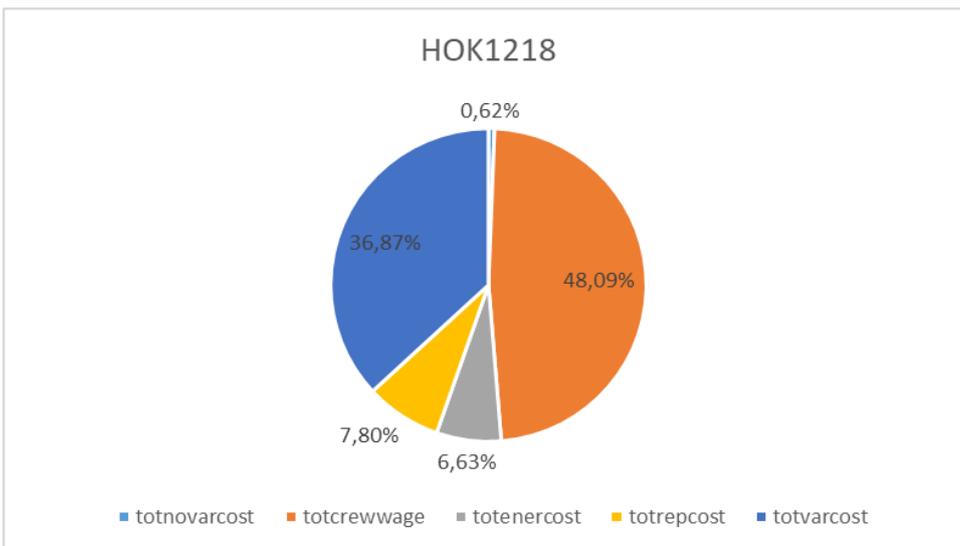
The 12 vessels employed 4 FTE and spent 230 days at sea to landed 20 tonnes with a value of EUR 153 899. The fleet segment obtained a revenue of EUR 201 258 and was profitable in 2020, generating a GVA of EUR 132 716 and gross profit of EUR 63 228.

Regarding cost structures, it is dominated by wages and salaries (48%), followed by other variable costs (36%) and repair cost (8%). Fuel costs are relatively low at 6.6% of operating costs because of the decreased of the price. In line with the decrease in the number of vessels, FTE and days at sea, operating costs decreased in 2020 (Figure 3.148).



**Figure 3.148. Trends on key indicators for the Spanish Morocco Coastal fleet operating in CECAF targeting non ICCAT and ICCAT stocks**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.149. Cost structure for the Spanish Morocco Coastal fleet, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A3/AC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## PORTUGAL

Two fleet segments based in Madeira showed high dependency on CECAF (no ICCAT) activity in 2020: PRT NAO MGP1824 P2 \* and PRT NAO HOK1824 P2 Table 3.21). These vessels target mainly black scabbardfish (HOK1824) and blue jack mackerel (MGP1824) in area 34.1.2 (Figure 3.150). Combined, these vessels caught 590 tonnes of non ICCAT species, valued at EUR 1.5 million, corresponding to 17% and 14% of weight and value of landings of the Madeira fleet. These two segments together created 69 jobs, corresponding to 49 FTE.

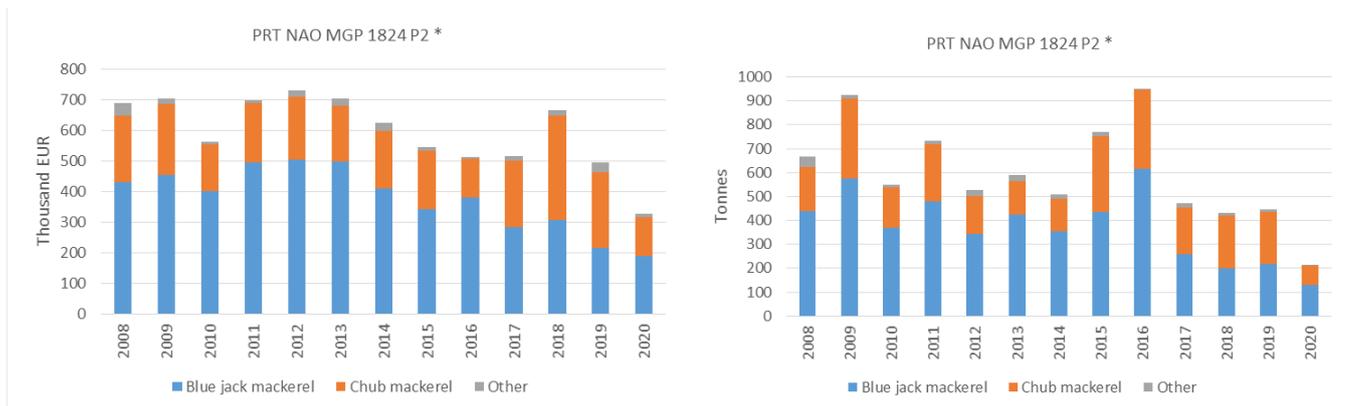
**Table 3.21 – Portuguese fleet segments with high dependency on non-ICCAT species in CECAF, 2020**

Fleet segments 2020	Dependency (%)	Weight of landings	Value of landings	Vessels	FTE
PRT NAO MGP1824 P2 *	100	215 519	326 512	3	23
PRT NAO HOK1824 P2	57	374 847	1 131 135	3	26

### Madeira Passive and Mobile Gear 18-24m segment (PRT NAO MGP1824 P2)

This fleet segment was composed by three vessels fishing exclusively in FAO area 34.1.2 (Canaries/Madeira Insular). Beside the classification of passive and mobile gear, from the species composition it can be concluded that this fleet segment uses only mobile gear (purse seine). This fleet segment generates over 3% of total landings value and around 6% of total weight in Madeira.

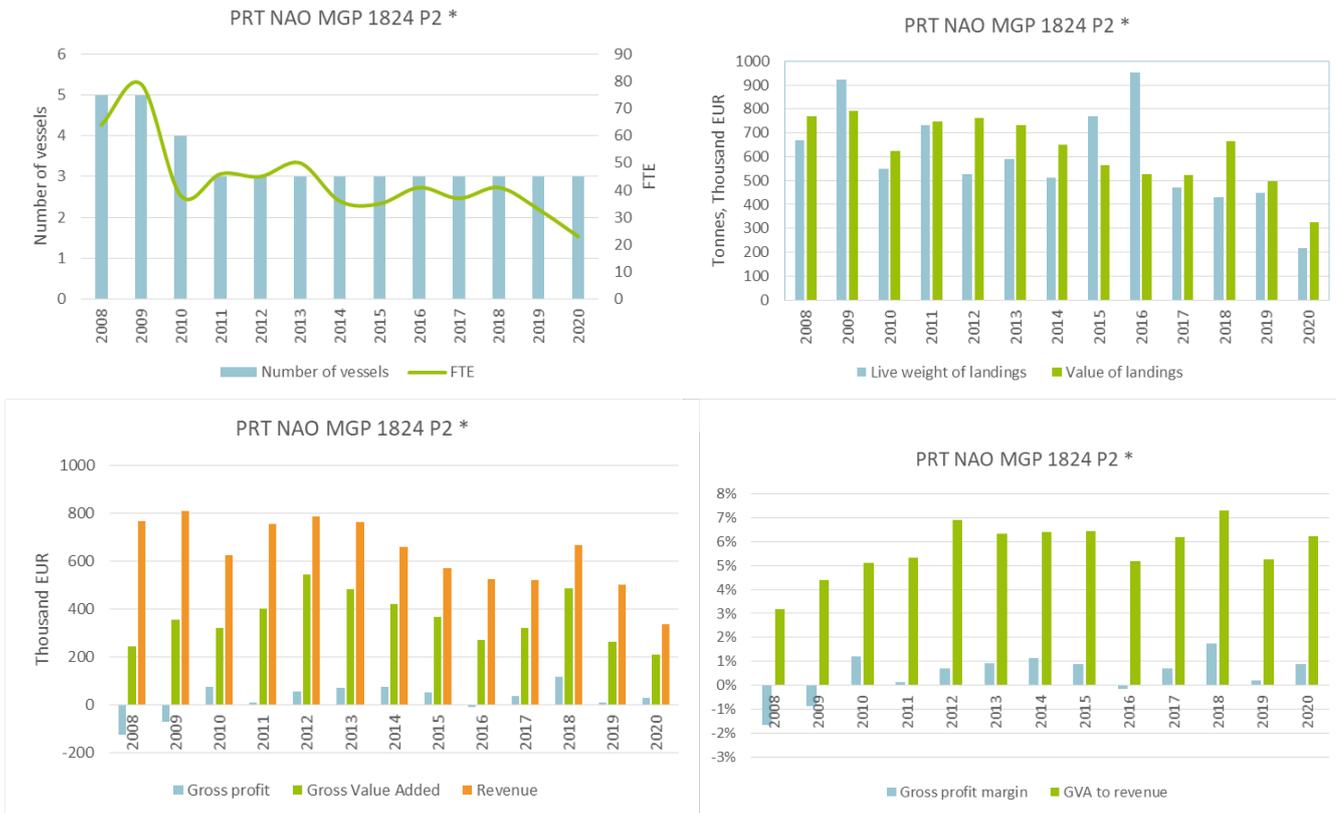
The fleet targets small pelagic species (chub and blue jack mackerel). In 2020, the total value from landings was EUR 0.3 million (34% lower than 2019). The fleet segment employed 23 FTEs. Economic indicators for this fleet reported a gross profit margin of EUR 30 000.



**Figure 3.150. Trends on main species landed by the Portuguese passive and mobile gear 18-24m segment operating in CECAF (no ICCAT species).**

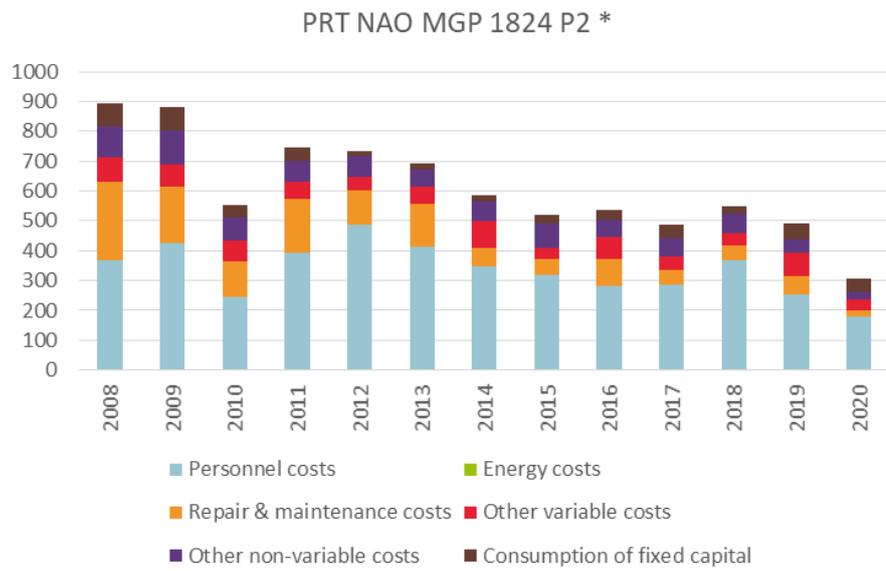
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

In 2008 and 2009, they had negative gross profit and the number of vessels was reduced from 5 to 3. Since then the fleet segment reveals to follow a positive trend but a weak economic performance over the whole period.



**Figure 3.151. Trends on key indicators for the Portuguese passive and mobile gear 18-24m segment operating in CECAF (no ICCAT species).**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.152. Trends on cost structure of the Portuguese passive and mobile 18-24m segment in CECAF (no ICCAT major stocks).**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

**Madeira Hook and line 18-24m segment (PRT NAO HOK1824 P2)**

This fleet segment generates over 11% of total landings value and total weight in Madeira. It's composed by three vessels operating mainly in FAO area 34.1.2 and having some activity in waters around Azores.

The fleet targeted exclusively black scabbardfish as non-ICCAT species in 2020, the total value from landings was EUR 1.1 million (the same as in 2019). The fleet segment employed 26 FTEs (29 jobs). Economic indicators for this fleet reported a gross profit EUR 470 000.



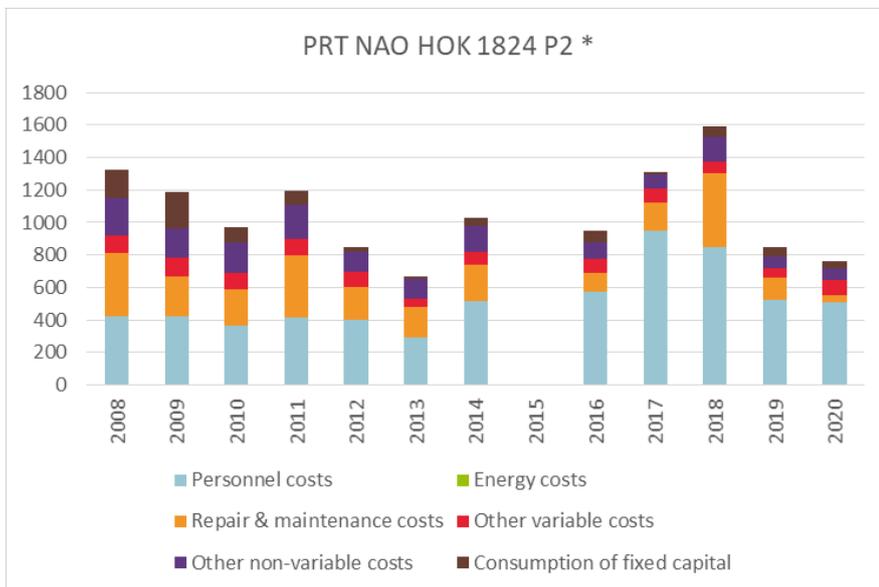
**Figure 3.153. Trends on main species landed by the Portuguese passive and mobile gear 18-24m segment operating in CECAF (no ICCAT species)**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.154. Trends on key indicators for the Portuguese hook and line 18-24m segment with activity in CECAF (no ICCAT major stocks).**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).



**Figure 3.155. Trends on the dependency (left) and cost structure (right) of the Portuguese passive and mobile 18-24m segment in CECAF (no ICCAT major stocks).**

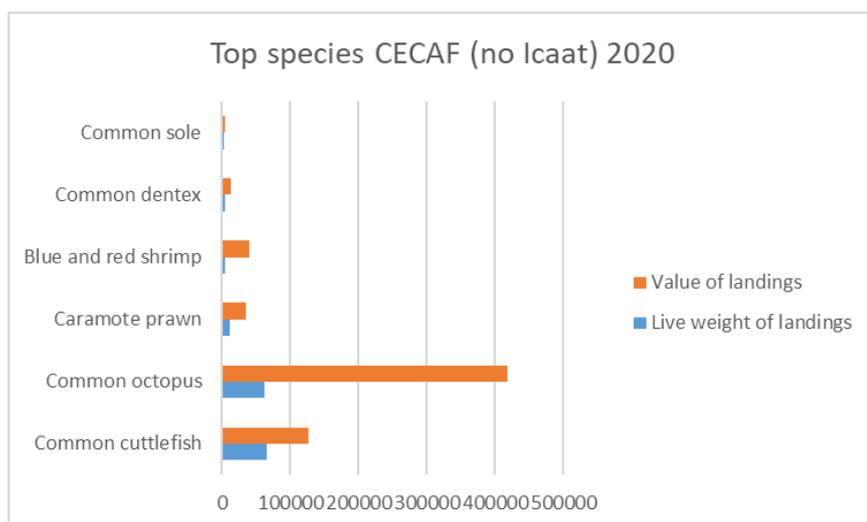
Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## ITALY

The Italian trawlers over 40 metres operating in FAO 34 (Sierra Leone and Senegal) included 5 vessels in 2020, two less than in 2019, belonging to two shipowner companies (Table 3.54). The fleet has a 100% dependency on CECAF activity and mainly targets demersal species, such as common octopus, marine fish and cuttlefish (Figure 3.153).

The fleet landed almost 725 tonnes in 2020, with an estimated value of EUR 2.2 million. Revenue decreased by 54% compared to 2019 as a consequence of a reduction of 37% in the landings and 34% in the average price. Between 2019 and 2020, both labour costs and fuel costs decreased by respectively 35% and 43%.

In fishing effort (capacity and activity) and in the landings, the DWF reported a strong decrease in GVA and gross profit in respect the previous year (Figure 3.154). Despite this, DWF was profitable in 2020 with a GVA of EUR 1.1 million and gross profit of EUR 0.2 million (Table 3.14). The fleet was not active in 2013 and 2014.



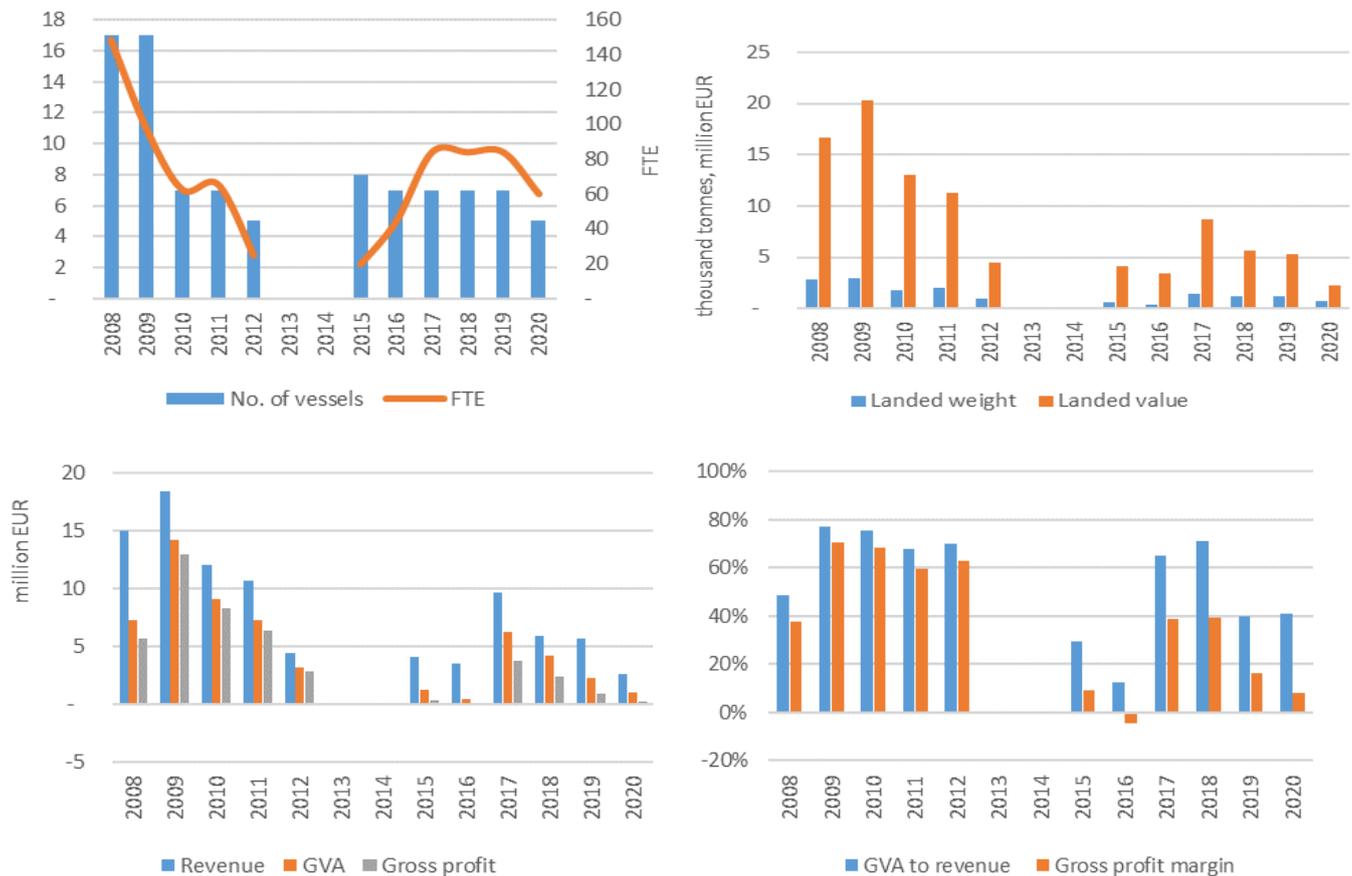
**Figure 3.156. Top species landed by the Italian fleet operating in CECAF targeting non-ICCAT major species**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

**Table 3.22 – Italian fleet segment with high dependency on non-ICCAT species in CECAF, 2020**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Fleet segments 2020	Dependency (%)	Weight of landings	Value of landings	Vessels	FTE	GVA	Gross profit
ITA OFR DTS40XX IWE	100%	725	2.2	5	60	1.1	0.2



**Figure 3.157. Trends on key indicators for the Italian demersal trawler 40XX segment with activity in CECAF (no ICCAT major stocks).**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## LITHUANIA

Lithuanian long-distance fleet predominantly operates in CECAF area but have also reported fishing effort in NEAFC. Due to confidentiality reasons, economic data for DWF is reported by clustered segment and disaggregated by the estimation methods to the level of fishing area. In 2020, two Lithuanian pelagic trawlers were operating in CECAF. Estimated weight of landings in 2020 decreased to 45 300 tonnes, valued at EUR 47.4 million, compared to 71 800 tonnes and EUR 58.3 million in 2019. In comparison with the 2008-2019 average period, the weight of landings in CECAF was 33.6% lower, whereas value was 3.6% higher. Fishing effort in terms of days-at-sea declined by 9% compared to 2019. The decrease was mostly related to the COVID-19 restrictions because fishing opportunities in 2020 remained at the sufficient level. The main species landed included horse mackerel and chub mackerel

Estimated number of employees in CECAF area decreased by 20% to 131 FTE in 2020. Compared to 2008-2019 average number of FTE, this was 17% lower in 2020. Despite the decline in the fishing effort and weight of landings, profitability indicators were considerably higher compared to 2019 and to the 2008-2019 average. For example, in 2020 GVA and gross profit was 47% and 55%, respectively higher compared to 2019. GVA was 240% higher than 2008-2019 average. Increase in profitability was related to record low energy costs since 2008. Labour productivity in terms of GVA/FTE reached EUR 237 700 per FTE and was the highest since 2008.

## GERMANY

One German pelagic trawler TM VL40XX operated mainly in FAO 34.1.3 (Coastal Sahara), targeting sardine and chub mackerel. Confidentiality restrictions apply.

## FRANCE

None of the French fleets active in the region showed high dependency on landings of non ICCAT species in 2020. Two fleet segments showed high dependency on activity in the CECAF area targeting ICCAT main species; the industrial purse seiner fleet (FRA OFR PS 40XX IWE) and a longline fleet from Reunion (FRA OFR HOK1824 RE\*). Therefore, they are not assessed further in CECAF as they are incorporated in the ICCAT analysis.

## THE NETHERLANDS

None of the fleet segments showed high dependency (either on ICCAT or non-ICCAT species). One fleet segment made up of six pelagic freezer trawlers showed low activity (4% of the value of landings) in the CECAF area in 2020, with some fishing activity in Moroccan waters.

## LATVIA

The Latvian fleet had five active distant water vessels with a combined 14 418 GT, a total engine power of 17 604 kW and an average age of 30 years owned by four Latvian companies in 2020. Three vessels with the average length of 60 metres were based predominantly in NEAFC area targeting beaked redfish and two with an average length of 100 metres operated in the CECAF area and targeted Atlantic horse mackerel, Atlantic mackerel, Madeiran sardinella and sardine. In 2020, the main landing ports for these vessels were Cuxhaven, Tromsø, Båtsfjord, Dakhla and Nouadhibou. In 2020 the total weight for the Atlantic catches was 42 476 tonnes of fish with an estimated value of EUR 30.1 million.

## POLAND

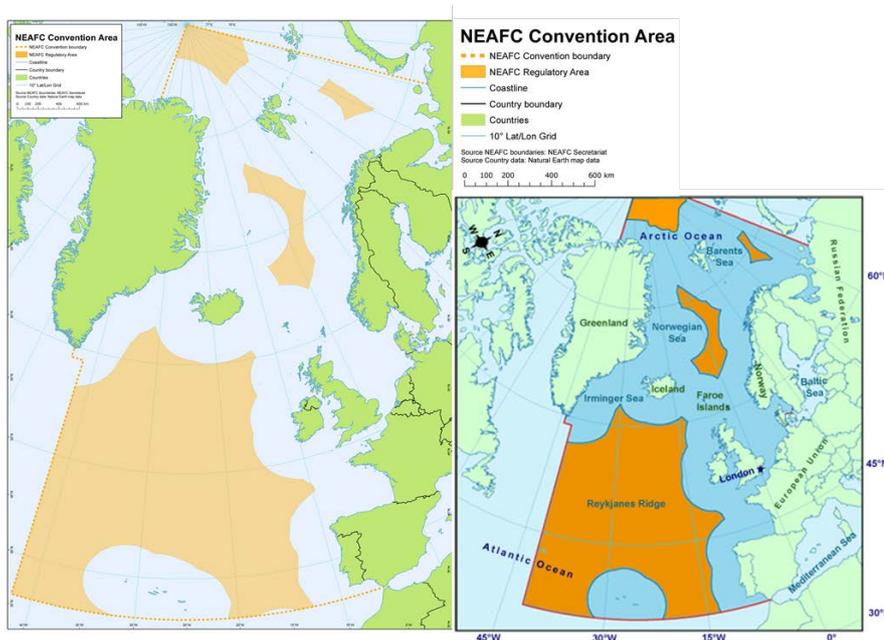
There was one Polish vessel (from the segment TM VL40XX) operating in 2020 in the CECAF area fishing mainly for Atlantic horse mackerel (HOM) (1 300 tonnes) and several other pelagic species like Atlantic pomfret (POA), European hake (HKE), European anchovy (ANE), Chub mackerel (MAS) or Atlantic bonito (BON). Its total catches amounted to 3 000 tonnes of fish captured in two CECAF subdivision 34.1.3.2 and 34.3.1.1 during 63 fishing days (July-August). The vessel left the area in August and continued its activity in North East Atlantic. Due to confidentiality reasons, economic data related to income and costs are not available

## NEAFC - The North East Atlantic Fisheries Commission

### Background

The North East Atlantic Fisheries Commission (NEAFC) is the Regional Fisheries Management Organisation for the North East Atlantic. NEAFC is comprised of six Contracting Parties, namely: Denmark (in respect of the Faroe Islands & Greenland), European Union, Iceland, Norway, the Russian Federation and United Kingdom (since 2020), which have signed up to the Convention on Multilateral Cooperation in North East Atlantic Fisheries, which entered into force in November 1982. They also have three cooperating non-contracting parties, namely Bahamas, Canada and New Zealand.

The area covered by the NEAFC Convention Area stretches from the southern tip of Greenland, east to the Barents Sea, and south to Portugal (Figure 3.158). NEAFC's objective is to ensure the long-term conservation and optimum utilisation of the fishery resources in the Convention Area, providing sustainable economic, environmental and social benefits. To this end, NEAFC adopts conservation and management measures for various fish stocks and control measures to ensure that they are properly implemented. NEAFC also adopts measures to protect other parts of the marine ecosystem, in cooperation with OSPAR, from potential negative impacts of fisheries.



**Figure 3.158. Map of the NEAFC area of competence**

The main fisheries in the NEAFC CA are:

- Redfish (oceanic *Sebastes Mentella* and pelagic deep-sea *Sebastes Mentella*)
- Mackerel
- Haddock
- Herring (Norwegian Spring- Spawning Atlanto-Scandian)
- Blue whiting
- Deep-sea species

Total catches in the North East Atlantic are approximately 10.5 million tonnes. The four top main fisheries regulated in the NEAFC Regulatory Area give catches in the NEAFC Convention Area of approximately 3.3 million tonnes, that is 31 % of total catch.

### Fleet selection and data limitations

All fleet segments over 18 metres with a high dependency on stocks in the (1) NEAFC CA and (2) NEAFC RA, excluding ICCAT major species.

Once agreement is made regarding the area to be assessed (CA or RA), further refinements can be made, such as calculating the dependency of fleet segments only on the species considered by NEAFC.

The main difficulty in providing an accurate assessment of the performance of the EU fleet active in the NEAFC RA is the granularity of the spatial (transversal) data. In the fleet economic data call, effort and landings data are called for at FAO fishing area level 3 (Division) in the North Atlantic, and at level 4 (Sub-division) for the Baltic Sea. Thus, it is currently impossible with the level of data to limit the

analysis to fleet activity only within the NEAFC regulatory areas. One solution would be to call transversal data (effort and landings) at the level of ICES statistical rectangle or by C-square cells, as requested in the FDI data call. A potential issue with this would be related to confidentiality rules, which is already an issue in some cases at level 3 or 4. However, as NEAFC appears to consider catch in the Convention Area (i.e., FAO major fishing area 27), then this is no longer an issue.

Table 3.23 provides summary statistics for the EU fleet operating in the NEAFC RA in 2020 as well as the Member State fleet with high dependency on the area.

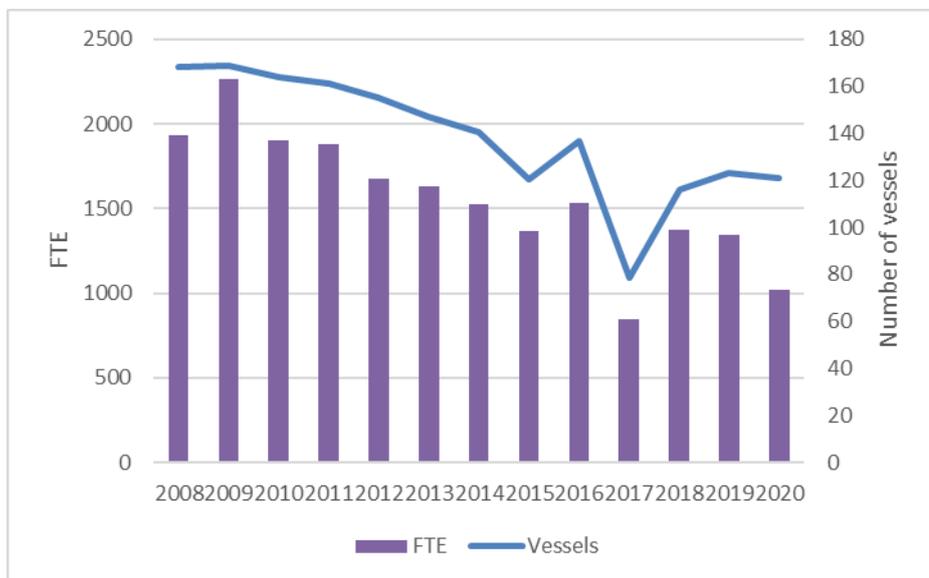
**Table 3.23 – Estimated summary results for the EU NEAFC fleet, highlighting fleet segments with high dependency on activity in the NEAFC RA, 2020**

NEAFC (EU LDF No ICCAT)	MS	Fleet Segment	Estimated N. of vessels	FTE	Revenue (EUR)	GVA (EUR)	Gross Profit (EUR)	Net Profit (EUR)
2020	DNK	DNK NAO DTS2440 NGI	<1	0,2974	403.880	357.172	250.111	239.045
2020	FRA	FRA NAO TM 1824 NGI*	1	4,7096	33.887	541.989	544.278	544.420
2020	GBR	GBR NAO DTS2440 NGI	15		-	-	-	2.824
2020	GBR	GBR NAO TM 40XX NGI*	2		-	-	-	77
2020	BEL	BEL NAO DTS2440 NGI*	<1	0,0854	21.500	7.590	448	444
2020	PRT	PRT NAO HOK2440 NGI	10	84,0604	188.117	3.451.971	3.518.695	3.520.741
2020	DNK	DNK NAO DTS40XX NGI	1	7,8039	13.437.581	11.612.355	9.090.375	8.358.137
2020	ESP	ESP NAO HOK2440 LLD*	12	144,5775	209.667	4.669.433	4.711.238	4.713.496
2020	PRT	PRT NAO HOK1824 NGI	7	71,8645	149.320	1.404.141	1.459.310	1.460.704
2020	NLD	NLD NAO TM 40XX NGI*	1	54,0377	16.515.672	7.444.342	2.616.078	2.615.829
2020	DNK	DNK NAO TM 40XX NGI	1	6,5812	13.355.232	10.543.889	8.663.139	8.007.608
2020	FRA	FRA NAO DFN1824 NGI	3	16,2856	2.108.239	994.300	86.394	85.976
2020	ESP	ESP NAO HOK2440 NGI	9	63,7691	1.658	1.334.198	1.540.346	1.541.726
2020	GBR	GBR NAO DTS1824 NGI	4		-	-	-	510
2020	ESP	ESP NAO DFN1824 NGI*	4	36,7175	4.612	491.070	542.966	543.894
2020	FRA	FRA NAO TM 40XX NGI	1	19,5346	3.987.074	387.989	861.829	861.888
2020	SWE	SWE NAO DTS2440 NGI*	<1	0,0949	88.291	73.704	61.412	61.410
2020	ESP	ESP NAO HOK1824 NGI	8	55,7544	78	998.263	1.083.738	1.084.633
2020	GBR	GBR NAO TBB1824 NGI	<1		-	-	-	1
2020	ESP	ESP MBS HOK1824 LLD*	<1	2,153	14.705	63.070	67.516	67.559
2020	PRT	PRT NAO HOK2440 P3 *	14	124,7963	864.361	1.118.737	1.559.968	1.561.045
2020	FRA	FRA NAO FPO1824 NGI*	1	2,2295	297.199	129.433	5.280	5.360
2020	ESP	ESP OFR HOK2440 LLD	<1	7,0771	8.092	306.558	307.576	310.157
2020	FRA	FRA NAO DTS1824 NGI*	10	43,1866	7.305.204	2.261.589	259.521	261.125
2020	BEL	BEL NAO TBB2440 NGI	<1	0,0325	11.958	6.304	2.235	2.234
2020	PRT	PRT NAO DTS40XX IWE	2	46,0435	9.269.730	5.091.834	2.068.270	2.068.007
2020	GBR	GBR NAO HOK2440 NGI*	1		-	-	-	205
2020	LTU	LTU OFR TM 40XX NEU*	2	125,6111	17.391.295	4.211.071	5.602.890	5.603.435
2020	IRL	IRL NAO TM 2440	6	38,729	3.629.239	78.287	1.638.360	1.638.635
2020	IRL	IRL NAO TM 40XX	6	67,1211	12.029.611	3.328.762	870.382	870.543
2020	IRL	IRL NAO TBB2440 *	<1	0,0518	6.205	309	2.400	2.402

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

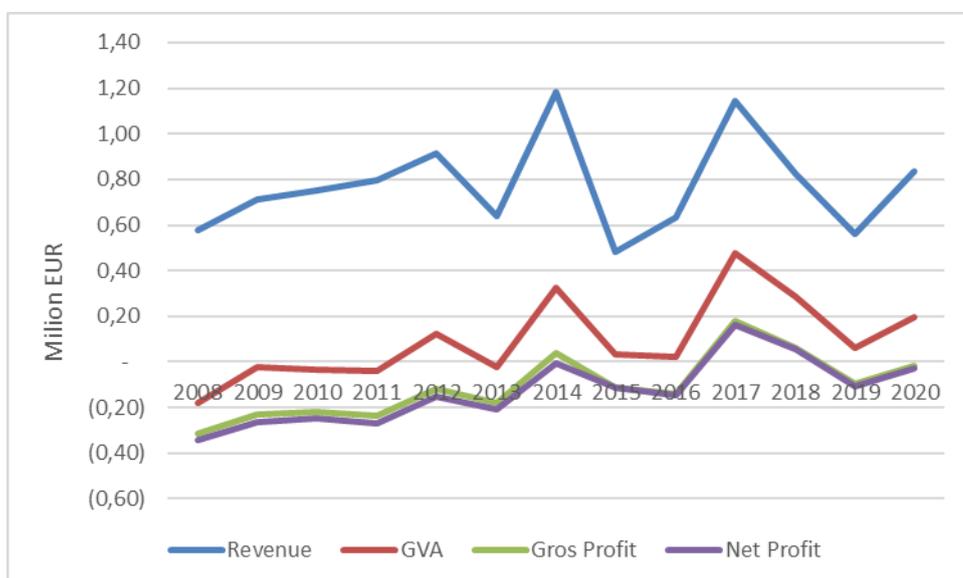
Figures below present the main trends of the selection of the fleet segments representing the LDF (over 18 metres with a  $\geq 20\%$  landings value dependency none ICCAT major species).

The selected number of vessels are 121 which similar to those obtained in 2019 (123). This also has an impact on the total FTE which has been reduced from 1 345 in 2019 to 1 023 in 2020.



**Figure 3.159. Trends on number of vessels and FTE for the EU NEAFC (no ICCAT) LDF.**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022));



**Figure 3.160. Trends economic indicators for the EU NEAFC (no ICCAT) with high dependency in the area (by average vessel)**

Data source: MS data submissions under the 2022 Fleet Economic data call (MARE/A4/ACS(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Given the reduction in the number of vessels selected all the aggregated economic indicators present a downward trend. Therefore, it has been decided to calculate the average per vessel. These average indicators present an improved situation compared to 2019, however, the average vessel is making gross and net losses.

Due to time constraints, STECF EWG 22-06 was unable to provide a detailed account of the main fishing fleets operating in NEAFC. Furthermore, the EWG requests more guidance on what fleet activity should in essence be assessed in the NEAFC chapter, i.e., activity in the NEAFC convention area or activity in the regulatory area. For the latter, more detailed and digitalised data from NEAFC, such as catches by species and Member State fleet in the RA, would be required.

## 4 EU National Chapters

### 4.1 Belgium

#### Short description of the national fleet

##### *Fleet capacity*

In 2020 there were 67 vessels registered in the Belgian national fleet with a capacity of 12 850 GT or 43 500 kW; 63 (94%) of these vessels were active. This is a decrease of 3% compared to 2019 and of 19% when considering the overall time series. In 2021 there are 64 active vessels.

##### *Fleet structure*

The Belgian fleet is small and mainly composed of demersal and beam trawlers. Only a few other fishing gears are used (seiners, dredges, pots, gill nets and trammel nets). Three important fleet segments as defined in the DCF were identified after clustering: large demersal trawlers (DTS VL2440) and beam trawlers (TBB VL1824 and TBB VL2440). Belgium does not have vessels of more than 40 metres.

##### *Employment*

Total number of crew on board was estimated at 322 in 2020, without considering rotation, corresponding to a total employment of 225 FTEs. The segment with the highest employment was TBB VL2440 (60% of the national fleet) with an average of almost 5.5 FTE per vessel. In the DTS VL2440 segment there were 3.1 FTE per vessel, while in TBB VL1824 this further dropped to 1.95 FTE per vessel. These FTE values have been on the rise since before 2018.

##### *Effort*

Belgian vessels operate mainly in the North Sea, English Channel, Bristol Channel and other areas of the North Atlantic. In 2020, a total of 13 250 days were spent at sea; 2% less than in 2019, but 14% less than the average 2008-2019. A clear decreasing effort trend can be observed from 2008 onwards.

##### *Production*

Despite a declining fleet in terms of number of vessels, landed weight showed an increasing trend between 2008 and 2016. Since 2016 the trend is decreasing. Value of landings does not follow a decreasing trend before 2016, but does after 2016.

In 2020, just under 20 000 tonnes of seafood were landed by the fleet, with a value of EUR 74.2 million, 6% and 9% less than the previous year, respectively. The fleet mainly targets demersal species. Sole remained the dominant species, generating the highest landed value (EUR 31.4 million) and representing about 42% of the total landings value. In terms of weight, European plaice remained the top landed species (3 850 tonnes or 19% of the total landed weight) and generated the second highest landed value (EUR 8.3 million, 11% of the total). Values increased for sole but significantly decreased for plaice compared to 2019.

The North Sea (FAO area 27.4) was the most important area in terms of total landed value (33%), followed by the Eastern Channel (27.7.d) with 21%, the Bristol Channel (27.7.f) and the Celtic Sea (27.7.g,h,j) (together 30%), the Irish Sea (27.7.a) (7%), the Western Channel (27.7.e) (4%) and the Bay of Biscay (27.8) (5%). The share of the North Sea decreased, while the combined share of Bristol Channel and Celtic Sea increased compared to 2019.

#### Economic results for 2020 and recent trends

##### *National fleet performance*

The economic performance of the overall fleet remained in an improved state compared to most previous years. After years of being in a loss-making position, net profit was positive between 2015 and 2020. Even if not all fleet segments were profitable in 2020, generally the economic performance of the fleet improved in 2020 compared to 2019.

GVA, gross profit and net profit in 2020 were estimated at EUR 41.5 million, EUR 15.4 million and EUR 7.5 million, respectively. Considering the entire time series, these values represented an increase of 3% for GVA, an increase of 72% for gross profit and 873% for net profit. Compared to 2019, GVA increased by 4%, gross profit and net profit increased by 45% and by 181%, respectively. These results indicate an overall positive economic situation, moreover, 2020 is the first year to break the decreasing trend observed since 2016.

Compared to 2019, in 2020 total income (no income from fishing rights) decreased by 8% to EUR 77.67 million. Revenue decreased equally by 8% to EUR 77.5 million as income from landings decreased by 9%. Direct income subsidies increased by 1% compared to 2019 and decreased by 86% compared to the average of all other years. This is likely a result of the implementation of the new regulation (Commission Implementing Decision EU 2016/1251). The questionnaire was adjusted in 2017 to meet the needs of the New 2016 EU Decision (Commission Implementing Decision EU 2016/1251). Definitions were clarified in the questionnaire, most likely leading to different interpretations.

Total variable costs – excluding unpaid labour- decreased significantly when comparing 2019 to 2020 (-17%). Energy costs decreased by 33% and decreased by 50% compared to the average since 2008 (EUR 12 million). Personnel costs decreased by 11%, while repair and maintenance costs decreased by 15%. Energy and crew costs represent the largest costs (52% in 2020 as in 2019). However, the share of energy costs has been decreasing each year since 2014. The share of labour costs on the other hand increased over these years.

Contrary to the situation in some other Member States, the crew share is a direct percentage of the gross value of landings (without first subtracting variable costs). The crew share usually amounts to about 30% of the value of landings. Value of landings decreased by 9% in 2020. Personnel costs decreased significantly in 2020 while number of total FTE increased by 9%. Caution must be used when translating this into what the crew earned. Pay related social insurance taxes are not taken into account. As in 2019, personnel costs represented 32% of the value of landings in 2020.

The value of physical capital of the Belgian fleet was estimated at EUR 52 million. The average age of the vessels is high and increases by one unit every year (so no replacement of vessels). Newly built or younger vessels rarely enter the fleet to replace older ones. Investments increased by 20% in 2020. They had been steeply increasing in 2016 and 2017 and decreased again in 2018. However, they remained high in recent years when compared to previous years (before 2016).

### *Resource productivity and efficiency indicators*

The gross profit margin in 2020 was 20%. This was higher than previous years, and moreover was highest second only to 2016. This indicates an improved operating efficiency of the sector compared to previous years. Net profit margin was estimated at almost 10% in 2020. This is positive, and a turnaround from the lowest positive net profit margin in 2019. It remains to be seen if this positive trend will continue in 2021 and more future years.

RoFTA also highly increased in 2015 (13%) and 2016 (52%) compared to earlier years. In 2017 RoFTA was not as high as in 2016, however, still higher than in all other years (22%). In 2018, it decreased to 8% and to 5% in 2019. In 2020 RoFTA increased again to 14% closer to the RoFTA of 2012.

Landings per unit of fishing effort (kg per day at sea) have followed an increasing trend until 2016, but now appears to be decreasing continuously.

Energy consumption per landed tonne has followed an overall decreasing trend since 2008, with the lowest estimated value in 2016 of 1 390 litres per landed tonne. During a 5 year time period (2013-2017) energy consumption has stagnated around 1 500 litres, increasing to 1 600 litres in 2018 and even 1 760 litres per landed tonne in 2019. The increasing litres per landed tonne trend continued in 2020 with a value of 1 800 litres per landed tonne. In 2020, the total amount of energy consumed by the fleet decreased by 3% compared to 2019, while landings decreased by 6%.

In general, efforts have been made since the 2008 fuel crisis to use more fuel-efficient engines, include fuel monitoring systems, and more efficient fishing techniques, including lighter gears. Fuel prices were particularly high in 2008 and 2012. One of the reasons behind a still relatively high fuel consumption is that the fishing grounds are spread out and sometimes far away from the Belgian coast. Another explanation is related to the use of trawling gear, as the focus remains on catching demersal species. Despite this, the fleet still seems to be making efforts to reduce their fuel consumption and improve their overall efficiency.

Labour productivity (GVA/FTE) also increased significantly over the years, peaking in 2016 and still remaining high in the following years. Overall income from landings has increased or remained similar

while energy costs decreased (other operational costs included in GVA are less important) and the number of FTE also show a decreasing trend. This indicates that a unit of labour input is producing more output or that the same amount of output is being produced with fewer units of labour. Labour productivity may also provide an indicator of worker's wellbeing or living standards, assuming that increases in productivity are matched by wage increases, which seems to be the case. In recent years (from 2016 onwards) a decreasing trend of labour productivity has been noted. This decrease appears to lessen from 2018.

## Performance by fishing activity

### *Small-scale coastal fleet*

In 2014, there was only one active fishing vessel under 12 metres long, but there were no vessels belonging to a SSCF according to the European definition. Since 2016, one vessel was introduced that meets the SSCF definition used in this report (vessel under 12 metres using passive gears).

## Performance results of selected fleet segments

The Belgian fleet is dominated by trawlers (beam, shrimp and otter). In 2020, as was the case in 2019, the larger beam trawlers (TBB VL2440) appear to perform better than the smaller ones (TBB VL1824) in terms of GVA, revenue, profit and profit margins. The demersal trawlers (DTS VL2440) also have lower profits than the larger beam trawlers (less vessels). Their profit margins were higher in 2017 and 2018, running a loss in 2019 and remained stable in 2020 compared in to 2019. In earlier years, this fleet segment seemed to be relatively performing the best, but this is not the case for 2019 or 2020. It must be noted that this is a clustered fleet segment containing a wide range of length categories.

This national division of fleet segments based on engine power forms the basis for management measures such as effort limitations and quota distribution. Roughly TBB VL2440 corresponds to the nationally defined "*large-fleet segment*" (engine power of >221 kW), consisting of vessels that make longer trips and visit the faraway fishing grounds. On the other hand, TBB VL1824 is a clustered segment and more or less corresponds to the "*small-fleet segment*" (engine power of ≤221 kW). These are the coastal vessels and *Eurocutters* that are allowed to fish within 12 nautical miles of the coast.

### Beam Trawl 24-40m

There were 25 active vessels operating in FAO fishing area 27, predominantly in FAO area 27.7, but also in the North Sea (27.4) and Bay of Biscay (27.8). With fishing rights in the distant North Sea and the Northeast Atlantic, many vessels fish in campaigns. In between two fishing trips, these vessels do not return home, but land fish in foreign harbours. In 2020, the value of landings amounted to EUR 49.5 million, representing 67% of total landed value (similar to 2019). The vessels in this fleet segment target a variety of species, particularly common sole (34% total value of landings), European plaice (7%) and anglerfish (5%).

This fleet segment reported a positive gross profit of EUR 10.7 million and a net profit of EUR 6.4 million in 2020, an increase of 18% and 36% compared to 2019. Average crew wage per FTE was highest in this fleet segment. Labour productivity was also relatively high compared to other fleet segments. The profitability of this fleet segment was esteemed weak in 2018 and 2019, while it was reasonable both in 2016 and 2017. This Fleet segment regained a reasonable profitability in 2020. The gross and net profit margin were 21% and 12%, respectively.

Energy consumed per landed tonne has increased compared to the value in 2019 (~2 000 litre/tonne), a value coming close to values seen in 2010 where notably more active vessels were still present in the fleet.

### Beam trawl 18-24m

There were 19 active vessels operating predominantly in the North Sea, Eastern and Western English Channel, employing a little over 16% of total FTE. Value of landings amounted to EUR 7.9 million, 11% of total national landings (a small decrease compared to 2019). These vessels target a variety of species including common shrimp (3.4% of total value of landings), common sole (4%) and European plaice (~1%).

Gross profit increased in 2020 compared to 2019 (EUR 1.2 million) and thus a positive net profit of EUR 0.28 million was generated. However, this is still much less compared to the EUR 1.1 million in 2018). GVA was EUR 4.2 million (~14%). While the profitability of this fleet segment was reasonable in

2016, it was esteemed weak in 2017, reasonable in 2018 and weak again in 2019. The profitability remained weak in 2020. The gross and net profit margins were 15% and 4%, respectively in 2020, an improvement over 2019.

This fleet segment includes part of the smaller scale (coastal) section of the Belgian fleet. These vessels are less efficient than vessels in the larger fleet segment as they make short coastal trips and land low volumes. However, they are likely more vulnerable.

### Demersal trawlers

This segment operates predominantly in the North Sea (27.4) and Eastern Channel (27.7d) and employed 22% of total FTE. Value of landings amounted to EUR 15.5 million (21% of totals; a small decrease compared to 2019). Targeted species include Norway lobster (4% of value of landings), European plaice (3%) and common sole (4%).

Profitability in 2020 was weak with a negative net profit of -EUR 0.03 million. Still negative but much less compared to the -EUR 662 000 in 2019. The gross and net profit margin were 16% and 0%, respectively. Energy consumed per landed tonne was lowest for this fleet segment (1 485 litres/tonne). This fleet segment seems to have performed the best both in 2016 and 2017, but this was not the case in the 2018-2020 period.

### Drivers affecting the economic performance trends

Since 2013, fuel prices have been decreasing and efforts have been made to reduce average fuel consumption leading to proportionally lower energy costs. Fish prices also increased leading to lucrative wages for the crew members. Overall economic performance improved between and figures between 2015 and 2017 were positive. In 2018 figures were still positive, however profitability decreased, a trend that continued in 2019. The year 2020 appeared to represent a first year of profit growth after three years of profit decline.

Despite higher average fish prices in 2018, the total value of landings was lower and fuel costs were higher. The value of landings in 2019 was the lowest record since 2014 with the same number of vessels and even lower in 2020.

Events such as the full implementation of the LO, COVID-19 outbreak (which still may happen in the coming years) as well as Brexit and heavily fluctuating fuel prices due to the Russian/Ukraine crisis make for less optimistic forecast in the years to come.

### Markets and Trade (including fish price)

The average landed prices of sole decreased in 2017 but increased again in 2018. In 2019, the highest yearly average of the time series was reached: 12.1 euro/kg. This value dropped again in 2020 but remained high: 11.1 euro/kg. The value of landings for sole increased by 6% compared to 2019 (~42% of the total value of landings).

Plaice prices have been increasing since 2013 and reached the highest yearly average in 2018: 2.5 euro/kg. This in part accounts for the profitability of TBB VL2440 and TBB VL1824. It slightly decreased in 2019 to 2.4 euro/kg and again in 2020 to 2.2 euro/kg. Both value of landings and landed weight were lower in 2019 and again in 2020.

Furthermore, average landed prices of common shrimp increased by 50% in 2016 compared to 2015. This led to an increase by 146% in the value of landings of shrimp, making the fleet segment targeting common shrimp (TBB VL1824) profitable for the first time in the time series. They remained profitable in 2017 and 2018, even though shrimp prices decreased by 47% in 2018 as landed weight increased by 112% and value of landings by 10% compared to 2017. In 2019, they were slightly lower than in 2018 and this fleet segment was not profitable. In 2020, the average landed price for common shrimp increased again (by 20%) and this fleet segment although weak, became profitable again.

Prices for Norway lobster increased considerably between 2014 and 2016, but decreased in 2017, 2018, 2019 and again considerably in 2020 (-30% compared to 2019). Value of landings and landed weight decreased compared to 2019. However, 2018 and 2019 were difficult years for DTS VL2440 and in 2019 they were not profitable. The DTS VL2440 fleet remains non-profitable in 2020, even though value of landings and landed weight of *Nephrops* decreased this fleet segment managed to reduce their non-profitability compared to 2019, likely due to a higher common sole catch, which retained a high yearly average price.

Over the years common squid have become more important reaching the highest landings and value of landings in the time series in 2019 (516 tonnes; EUR 3.7 million). These species do not fall under quota measures and their introduction may be a response to policy measures such as the LO.

The dependency on the Netherlands markets was remarkable in previous years but decreased significantly in 2020. Still 51% of landings in foreign harbours occurs in Dutch ports in the Netherlands. However, in 2020 also 33% was landed in Denmark and an increasing amount was landed both in France (11%) and Spain (4%). The increased landings in Denmark are a direct effect of the weighing obligation in their ports. No landings were made in the United Kingdom in 2020, as a direct consequence of the BREXIT. Almost 40% of the fleet is also owned by Dutch nationals (Velghe et al., 2022). These tend to land in their home ports, where the price for plaice is generally higher than in Belgium (higher demand). Sole tends to remain more valuable on internal Belgian markets. Belgium is a net exporter of plaice. France (shellfish) and the Netherlands (fish and crustaceans) are important trading partners. Exports to Spain and Italy either direct or indirectly (through the Netherlands), have also become important.

### *Management instruments and regulation (policy)*

The fleet is managed mainly through TACs for some species together with a range of additional effort limitations. Fishing rights are collectively managed by the Flemish authorities in Belgium. Several rather complex mechanisms have been put into place to manage catches. They usually use species, area and the nationally defined fleet segment (mainly based on engine power) as parameters. Sometimes gear is an additional specification and there exist a number of exceptions, especially for passive gears. It may be interesting to note that quota allocation and effort restrictions are on a vessel level and not on a company level. Leasing or hiring fishing rights is not possible.

### *The Landing Obligation*

The LO was gradually implemented and prohibits discarding all species with a TAC as of 2019. Measures were put into place to allow for some flexibility, such as quota uplifts. In Belgium, a *de minimis* exemption was set in the sole fisheries. In 2020 this exemption consisted of 105 tonnes of sole spread out over the different areas (51 tonnes in the North Sea) (Velghe et al., 2022). Once this amount exceeded, sole below the minimum conservation reference size was landed and subtracted from the national quota.

In 2020 a total of 87 kg of cod, 1 745 kg plaice, 2 721 kg of sole and 2 604 kg of anglerfish below minimum conservation reference size were landed in Belgian harbours; for the first three species a decrease of 95%, 53% and 42% compared to 2019 (Velghe et al., 2022), respectively. The reduction is an effect of the decreased landings of these species.

In some cases an exemption with regards to high survivability is permitted. For e.g., undersized plaice may be discarded in the North Sea for beam trawlers with mesh sizes 80-119 mm (vessels above 221 kW) if a benthos release panel is included in the gear. Vessels below 221 kW may discard undersized plaice if trawling time was less than 90 minutes.

### *Stock status, TACs and quotas*

Initial quota for Norway lobster and sole decreased in 2020 (-8% for sole) but increased in 2020 (+34% compared to 2019 for sole) and again in 2021 (+8% compared to 2020 for sole). Quota for plaice saw a yearly decrease between 2017 and 2021, however, was still relatively high (esteemed positive stock status). Initial quota for cod decreased significantly in 2019 (-32% compared to 2018) and 2020 (-59% compared to 2019) and again in 2021 (-29% compared to 2019). This is mainly caused by a decline of North Sea cod quota and it's unfavourable stock status.

The Belgian fishery applies quota swaps in the framework of correct management of stocks and to allow fishers to fish year round, while aiming to catch the quota (Velghe et al., 2022). The total quota for sole, which is especially important for the Belgian fleet, was initially 3 583 tonnes and 4 391 tonnes after swaps (63% of this was caught) (Velghe et al., 2022). The sole stocks in the Western English Channel (27.7.e), Eastern English Channel (27.7.d), Celtic Sea (27.7.fg) and in the Bay of Biscay (27.8ab) are currently exploited at sustainable levels. The North Sea stock (27.4) have dropped under their approximating precautionary approach limits. The fishing mortality was above the  $F_{MSY}$  reference point in 2019, while the spawning stock biomass (SSB) remained low (below all reference points), however is predicted to rise above reference points in the coming years (ICES advice, 2021).

SSB of sole in the Irish Sea (27.7.a) has been below sustainable levels since 2003, reaching a historical lowest point in 2014. Therefore, quota restrictions were implemented.

The quota for plaice was 8 678 tonnes after swaps in 2020 (-13% compared to 2019); 73% of this was caught (Velghe et al., 2022). Plaice stocks have developed favourably under the current management plans. Plaice stocks in the North Sea, the Irish Sea and the Bristol Channel (27.7.f,g) were exploited at sustainable levels according to ICES advice. Caution must still be applied as discard rates for plaice were estimated to be high. However, this information points towards a healthy stock status. Plaice stocks in the Eastern English and Western English Channel were harvested above the  $F_{MSY}$  reference point in 2020 (ICES advice, 2021).

The quota for cod was 816 tonnes after swaps in 2020 (-37% compared to 2019) and 86% of this allowance was caught; North Sea cod was harvested unsustainably for many years. Despite the implementation of the cod management plan since 2003 and some signs of stock recovery, cod in the North Sea and Eastern English Channel remains a point of concern. Fishing mortality declined since year 2000 but increased since 2016. In 2019 fishing mortality was above precautionary approach limits. Similarly, SSB decreased since 2015 and was below precautionary approach limits in 2019, a trend that continues in 2020 (ICES advice, 2021).

### *Operational costs (external factors)*

Crew costs and fuel costs represent the most important operational costs. Minimum crew shares have been legally set and are therefore, not as variable as energy costs. The only possibility for vessel owners to save on crew costs is by employing- less crew. However, this option is also very limited, as a minimum number of members on board is nationally defined for safety reasons.

Average fuel prices have been decreasing since 2013, started to increase again in 2017 and 2018, but decreased in 2019 and 2020. From the second quarter of 2020 fuel prices were on the rise again, progressing to prices at similar levels of the full economic crises in 2008 and 2012 at the time the current report is being written. The Belgian fleet is dominated by trawlers, both beam and demersal trawlers. Therefore, as trawling is typically fuel intensive, even slight decreases of the fuel price might make a difference. Fluctuations in fuel prices are therefore a key driver for the profitability of the fleet.

### *Innovation and Development*

Research on technical innovations and alternatives for the beam trawler in the flatfish and shrimp fishery is on-going. The fuel crisis of 2008 forced the fleet to adjust to the rapidly increasing fuel costs. A number of vessels changed from traditional beam trawling to alternative beam trawling methods. For example, to reduce drag forces, a beam on wheels was introduced (Ecoroll) or the beam was replaced by a wing (SumWing). Some vessels even adopted a combination of both. Other adjustments were to reduce the overall weight of the used gears and replace old engines, nozzles and propellers. Subsidies were granted to encourage taking these measures. Currently investments are made in modern engines that will be built in new ships. This modern engines can run on fossil fuel as well as on hydrogen fuel provided that an extra investment has to be made in order for these modern engines to run on hydrogen fuels.

Facing the implementation of the LO, research on gear selectivity has been on-going as well. Selectivity can be improved by using more selective gears (or by reallocating activities to areas with a different catch composition). Therefore, devices such as cut-away top panels, square mesh top panels, benthos release panels, T-90 cod-ends, square mesh cod-ends, narrow cod-ends and tunnels in square meshes are being developed and tested in Belgium. Furthermore, collaborative projects on technological innovations with the aim to reduce the bottom impact of trawling are ongoing.

### *Socioeconomic impact*

Specific programmes of the EU CFP oriented to decommissioning lead to an exponential decline in the number of active vessels. In 1992, there were 205 fishing vessels, while in 2002 there were 130 (-37%). This number remained relatively stable for some years. The fuel crisis in 2008 led to a further large decrease in the capacity and to poor economic performances. Furthermore, the commercial market plays an important role in determining fish prices. These have been low, leading to relatively lower revenue from landings. The decreasing number of vessels has had an impact on the number of jobs on board, presumably making the fishing profession much less attractive than other economic activities. In 2020 low fuel prices and eventually strong average fish prices resulted in a first more profitable year after three years of decline in profits. If this trend can continue, where the fishing fleet improves their economic performance, the social aspect of the fishing profession could improve. A good economic performance may provide the incentive to make fishing an attractive profession again.

## Nowcasts for 2021-22 and beyond

### Model results

Overall, it is expected that 2021 and 2022 will be less profitable than in 2020. However, **there is a difference between these two years. While in 2021 a reduced overall positive profitability of the fleet compared to 2020 is forecasted, the model predicts for 2022 a strong negative profitability of all variables, likely driven by increase in the energy costs and increase in the personnel costs.**

### Outlook

Initial quota for 2022 decreased for sole, increased for plaice, and remained more or less similar for cod and Norway lobster. However, regardless of the fishing opportunities, 2022 has been a **more standard year (cfr. Pre-COVID year) for fishing activity. It remains to be seen if normal fishing activity can continue in the future due to increasing fuel prices as a consequence of the Russian-Ukrainian conflict. Average fish price remains however high meaning that the demand for fishing products remained strong. It remains however to be seen how long this positive trend will continue in 2022 and if indeed this will last in the future with current increasing interest rates and financial inflation. The value of landings did increase in 2022 (6%), while the landed weight decreased (-5%). Notable is that the number of active vessels increased from 67 in 2020 to 75 in 2022.**

### Landing obligation

With the full implementation of the LO as of 2019, its effects on fishing activities and performance may become more visible than in previous years.

It is believed that the socioeconomic impact of the LO will not be negligible. Fishers fear that the LO will have a large impact on their profitability and that they may have more difficulty to find crew. It is furthermore expected that the concerns related to choke species, will become apparent as of 2019. Dab and brill are potential choke species for the Belgian fleet.

Despite exemption measures, the landings of species below minimum landing size increased in 2018 and 2019 compared to 2017. At the time of writing, the total quota and *de minimis* amounts for 2021 were not final awaiting further agreements with the United Kingdom in the framework of Brexit.

### BREXIT

At the end of 2020, an agreement was reached between the EU and the United Kingdom. Belgium will still be permitted to harvest sole, anglerfish, plaice and rays from British waters and retain access to the 6-12 nm zone for the next 5.5 years. Additionally, 25% of the value of landings extracted from British waters will have to be refunded to the United Kingdom. Furthermore, a yearly quota reduction of 25% is foreseen.

At the time of writing this report uncertainty remains concerning the implementation of these agreements. Especially considering the landings that could happen in the United Kingdom. Vessels therefore journey to Irish or French ports, losing valuable fishing time, increasing fuel cost and impacting product freshness. However, as things are now, this will certainly have an impact on the Belgian fleet. The Belgian fleet is highly dependent on landings from within British waters and this transition period is relatively short. European support is foreseen, however, the industry will need to adjust quickly.

Quota distributions for 2021 were only set for the first quarter. Furthermore, delays in distributing permits for Belgian vessels to access the 12nm zone were observed. By the end of January 2021 most permits were granted. Many vessels decided to proceed with activities in the North Sea due to uncertainty regarding landings in British harbours (unclear administrative paperwork). As a consequence, sole landings in January and February 2021 were much lower than in the same period in 2019 and 2020, while the plaice landings increased.

### COVID-19

In March 2020 Belgium went into lockdown. This had an impact on the organization of the entire country. The fishing sector was permitted to continue its activity. However, the demand for fish largely decreased while the supply remained the same. As a consequence, first sale prices dropped up to 50%

for some species. Only the prices of sole remained stable during the first lockdown (March to June 2020).

Some reasons for this sudden change in demand were:

- Closing of the HORECA sector (mainly restaurants), schools, public markets and fresh subsections of supermarkets;
- A reduction of exports, for e.g. cuttlefish and flatfish to Spain and Italy;
- Favoring using vacuum packaged products, for e.g. in retirement homes;
- fish processing companies were also affected as it was no longer possible to supply to for e.g. restaurants.

As a result, fishers had to make a cost benefit analysis to decide if they would set sail, given low fish prices on one hand and low fuel prices on the other hand. Even though prices for sole remained relatively high, there was an additional fear that if targeted too much, the quota would not be sufficient to last through the year. As a consequence, some vessels decided to remain in the harbor. Fishers who temporarily stopped working fell under a special status (technically unemployed) and received an unemployment benefit.

To stabilize the prices, a rotation system was introduced to reduce supply between the 1<sup>st</sup> of May and the 31<sup>st</sup> of August. Financial support was given during this period for remaining in the harbor. This was a weekly compensation for maximum three weeks. Additionally, a maximum of 40% of the total fleet may remain in the harbor while applying for a compensation. The distribution is as follows:

- EUR 6 000 /week for vessels > 221kW;
- EUR 1 500 /week for coastal vessels;
- EUR 2 250 /week for other vessels ≤ 221kW (non-coastal vessels).

Later in 2020 there was a brief reopening of the HORECA sector (a few months). It was closed again and remained so until May 2021. Measures were implemented throughout 2020 and 2021 to prevent COVID-19 from spreading during fishing activities. These entailed a number of logistical complications for fishing companies and their crew.

With measures implemented in the general population such as social distance, vaccination and the Covid Safety Ticket, most operational sectors such as HORECA and the industrial sectors and primary industry remained functional. Although catches were good early 2021, resulting in quota being fulfilled rather sooner in the year, fuel prices started to rise. This cost increase for the fishing industry was minimized or even cancelled due to strong average fish prices from May 2021 onwards. These prices remained stable throughout 2021 and even well into 2022. However, fuel prices kept rising at the end of 2021 and early 2022 at alarming rates.

The COVID-19 impact on 2021 appears to be less than expected with a profitable year of the fishery industry in 2020. Still, total landings decreased by 6% and its value decreased by 9%. Sole remained the most important species, its share to the value of landings increased (44% in 2021 compared to 42% in 2020). The share of plaice decreased to 9% of the value of landings (11% in 2020). The total effort was lower. As crew wages are correlated to the value of landings, these will also decrease compared to previous years.

Overall, 2021 appears to be a year where fisheries in Belgium is back on the rise while 2022 will be a challenging year due to ever increasing fuel prices and the Russian/Ukrainian conflict.

## Increasing fuel prices

Fuel prices were on the rise during 2021 and continued to rise in 2022. A conflict that started in February 2022 between Russia and Ukraine only exacerbated the rise in fuel prices. Although fuel prices are generally high (at the time of writing), they can also fluctuate heavily. The small Belgian fleet can manage some bulking of fuel, and thus can buy fuel at times when prices are lower. As the Belgian fleet cost structure is highly dependent on fuel prices, the short-term direct impact will be felt by the fishery industry. Specifically, the direct impact will be mainly felt in the cost for the vessel owners and consequently lead to reduction of the ability to create some financial reserve, the ability to pay for maintenance or refurbishment works, and or the ability to pay loans for new vessels.

As the Belgian fishing sector is still being faced by consequences of the Brexit (e.g. what to do with landings in the United Kingdom) and the weighing obligation in landing ports (coming in 2022), the compounding direct impact of high fuel prices may again decrease the attractiveness of the fishing profession. Although there are some clear direct impacts of the high fuel prices, the potential longer-term effects could be more worrisome. High fuel prices also affect other industries and the purchasing power of seafood consumers. This could lead to a decreased general financial performance and

increased inflation. Such long-term inflation will increase the crew costs on top of other costs that vessel owners have. Taken together, the cost-benefit balance may shift to cost and thus may result in vessels not fishing. When vessel owners decide not to fish, potentially the most severe long-term impact may be the loss of key personnel with expert operating knowledge (motorists, fishers, captains, etc.) from the fishing sector. Crew members that flow from the fishing profession into another profession very rarely return and can lead to a net loss of knowledge of fishing.

Although 2022 and potentially future years may look bleak, some solutions can balance the costs. For example, keeping average fish prices high by including the extra costs in these fish prices, and decreasing fossil fuel dependency, may be key strategies for the profitable operation of the Belgian fishing fleet. Seven new vessels are underway for the Belgian fishing fleet, and will operate on engines that with an extra but reasonable investment can be rebuilt to work on hydrogen gas.

Although coming years will be challenging for the Belgian fishing sector, keened out investment strategies in personnel and technological innovations may help to shape the future of this sector.

## Methodological considerations and data issues

Data comes from the Department of Agriculture and Fisheries of the Flemish Government who conducts the data collection. The questionnaire was adjusted in 2017 and fine-tuned in 2018 to meet the needs of the New 2016 EU Decision. This may have an impact on the time series of certain variables requested in this data call. For example, investments increased enormously, and this may be an anomaly as a result of interpreting this variable differently. Furthermore, subsidies were now split into different variables and definitions annexed to the questionnaire were clarified, leading to some unusual trends. Direct income subsidies decreased by 51% in 2017.

Response rate with regards to number of unpaid labour was too low in 2017 and 2018 to make sensible estimations. In 2019 and 2020 an estimation was made; however, this value may not be representative. Similarly, response rate to total hours worked was very low and may not be very relevant to the Belgian case, explaining why it is so difficult to obtain this information.

Capital value and capital cost variables for inactive vessels are not known (refusal respond rate of 100%). Only about 6% of the fleet was inactive in 2020 (four vessels).

As the Belgian fleet is small, fleet segment aggregation (clustering) has been inevitable. The Belgian fleet is mainly composed of demersal trawlers and beam trawlers. Only a few other fishing gears were in use (seiners, dredges, gill nets and trammel nets, and pots and traps). As the number of vessels using these as their main gear has been very low throughout the years, they were grouped in a separate fleet segment (PMP VL1824).

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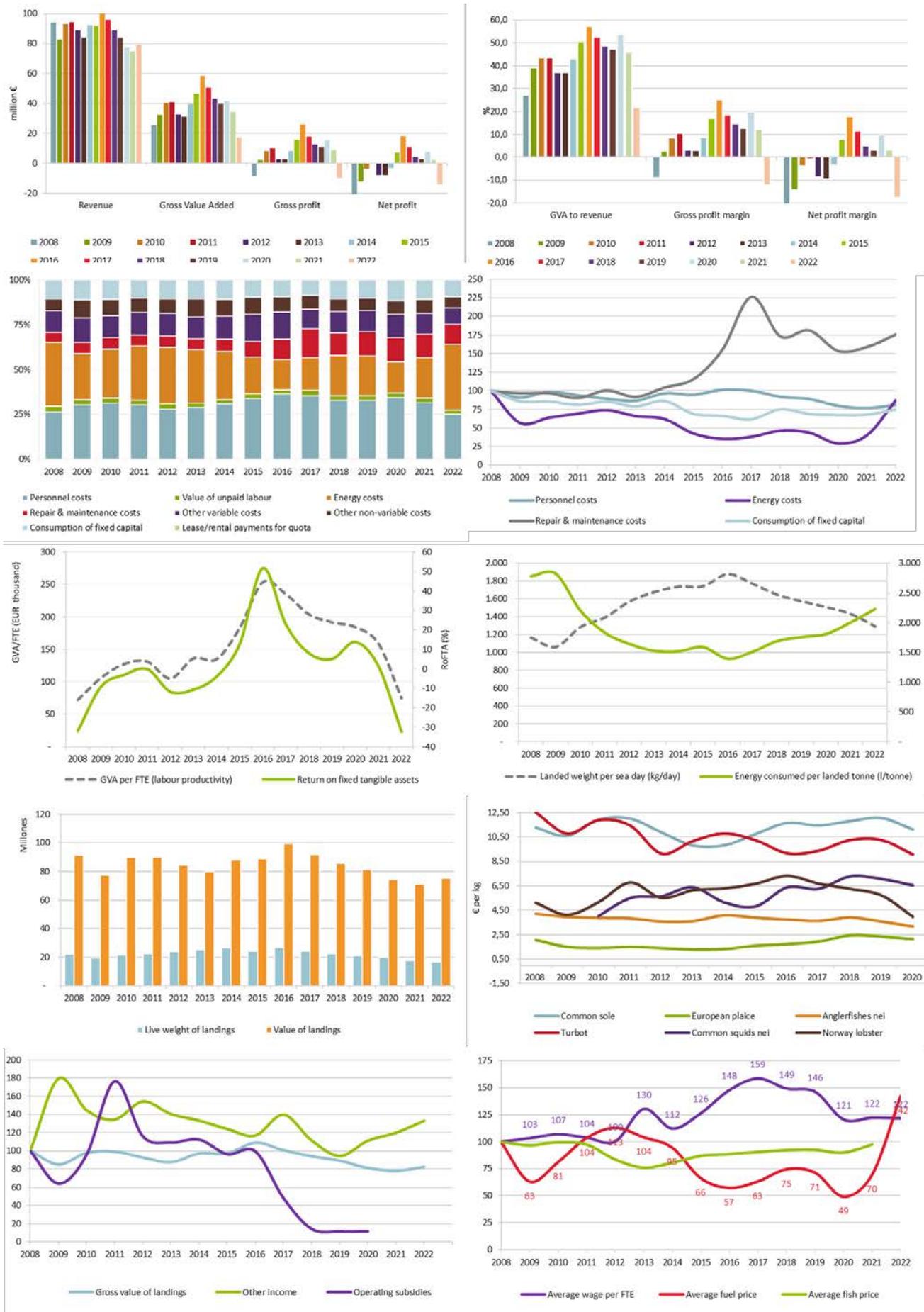


Figure 4.1 Belgium: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.2 Bulgaria

### Short description of the national fleet

#### Fleet capacity

In 2021, the Bulgarian fishing fleet consisted of 1 821 registered vessels, of which 1 182 were active and the remaining 639 vessels were inactive. The active fleet had a combined GT of 4 699 tonnes, engine power of 38 274 kW and an average age of 26 years.

#### Fleet structure

The Bulgarian fishing fleet is divided into a SSCF (1 136 vessels, representing 92% in 2020) with an engine power of 24.1 kW and a LSF segment (97 vessels, representing 8% in 2020) with an engine power of 16.3 kW. The overall size of the Bulgarian fishing fleet decreased by 1% between 2019 and 2020, and by 14% compared with the average for the period 2008-2019. Between 2019 and 2020, the inactive vessels decreased by 17% while the number of active vessels increased by 10%. Compared to 2019, in 2020, the active SSCF increased by 12%, while the active LSF decreased by 8%. In the active SSCF, GT and kW increased by 14% and in the active LSF, GT and kW decreased by 1%.

#### Employment

Total employment in 2020 was estimated at 1 761 jobs, corresponding to 619 FTEs with an average of 0.5 FTE per active vessel. The level of employment increased between 2019 and 2020 by 9% and the total employment for 2020 remains 16% higher compared to the average total employed for the period 2008-2019. The increase in employment might be because of the increasing of active SSCF vessels. The number of employed workers includes the number of unpaid labour. After unpaid employment became a possible choice in the questionnaire, a significant part of the fishers declared that they are unpaid labour. This can be explained by fact that 64% of the active vessels in 2020 had between 1 and 10 days at sea (DaS) and 16% had between 11 and 20 DaS for the whole year. Mainly the owner or family member uses these vessels.

#### Effort

The Bulgarian fleet spent 22 831 DaS in 2020, a 2% increase compared to 2019 and a 13% increase over the period 2008-2019. While the DaS remained steady in the period 2013-2015, data for 2016 and 2017 indicated almost 20% increase compared to the period. In 2021 the days-at-sea were at the same level as in 2019 and 2021 (23 040 days).

#### Production

2020 was the year with lowest landings for the period 2008-2020. The total landed weight was 6 227 tonnes of seafood, with a landed value of EUR 4.8 million. Compared to the analysed period (2008-2019) the total weight of landings decreased by 28% and the value decreased by 23%. Compared to 2019 the total weight decreased by 39% and the value by 26%.

Regarding the top species in terms of value, the price of sea snails for 2020 followed the trend from the previous years and decreased by 21% compared to 2019 and compared to the period 2008-2019, decreased by 25%. The average first sale price for 2020 for European sprat was the same in 2020 and 2019, but compared to the period 2008-2019 decreased by 25%. The price of sand gaper decreased by 12% compared to 2019 but it was 6% higher than the average for the period 2013-2019. In 2020 the price of bluefish decreased by 25% compared to 2019, while the price of red mullet increased by 14%. Turbot continued to be very important due to the quota, but the price has decreased by 22% compared to 2019.

The main landed species for the Bulgarian fleet as a percentage of the total are the sea snails, with 44% in terms of weight and 22% in value, followed by the European sprat, with 26% in weight and 12% in value. Even though the sand gaper was on third place in terms of value with 7% in terms of weight it is taking the first place with 26%.

### Economic results for 2020 and recent trends

## National fleet performance

The amount of income from landings generated in 2020 was EUR 4.8 million while non-fishing income amounted to a further EUR 0.38 million, and the total amount of income EUR 5.2 million. In 2020, the income from landings decreased by 26% compared to 2019 and it was 23% lower than the average for the period 2008-2019. The decrease in income from landings was due to the decrease in the total landings due to the restriction connected with COVID-19, combined with the reduction of the first sale price to some of the main commercial species. The other income, which is mainly coming from tourism activities, increased by 17% to 2019 but they are still far from the 2015 level, when it was more than EUR 2 million.

In general, total costs decreased by 5% between 2019 and 2020. On the contrary, wages and salaries of the crew increased by 5% in 2020 compared to 2019, but decreased by 45% to the period 2008-2019. The most valuable cost, energy costs, also decreased and in 2020 it was 17% lower than in 2019.

The operating costs in 2020 amounted to EUR 2.98 million. Energy costs and crew costs were the two major cost items (EUR 1.01 million and EUR 1.02 million, respectively). However, EUR 0.16 million of crew cost were estimated for the unpaid labour which remained in the hands of the fishers as working capital. Between 2019 and 2020, operating costs decreased by 6%.

In terms of economic performance, the GVA, gross profit and net profit in 2020 were estimated at EUR 3.6 million, EUR 2.2 million and EUR 2 million, respectively. The net profit in 2010, 2011 and 2014 was negative, the value for 2015 to 2017 showed improvement but in 2019 and 2020 the value continued to decrease compared to 2018 and 2017.

In 2020, the Bulgarian fleet had an estimated value of physical capital of EUR 16.1 million and investments amounted to EUR 0.1 million, which is a 3% decrease of the value of physical capital and keeping the same level of investments, compared to 2019. The estimated value of total assets in 2019 and 2020 was EUR 15.8 million.

The distribution of the fleet has not changed significantly over time. According to the number of vessels, SSCF is the main fleet in Bulgaria, with 1 136 active vessels in 2020. They spent 14 172 DaS and landed 2 024 tonnes of fish for EUR 2.15 million. The LSF engaged 97 vessels, which spent 8 659 DaS and landed 4 203 tonnes of fish for EUR 2.7 million.

The difficult access to funding by the Operational Program under EMFF for SSCF is the main reason for the very low value of investments during the last years. Fishers spent their own funds or use additional funding and generate debts that amounted near EUR 0.12 million.

## Resource productivity and efficiency indicators

In 2020, the gross profit margin was 42.53%, indicating a 11% decrease in operating efficiency of the sector compared to 2019. However, if it is compared to the period 2008-2019 an increase of 20% is observed. This also can be seen in the net profit margin for 2020 which decreased by 17% compared to 2019, but increased by 16% over the period 2008-2019. A RoFTA near 11% in 2020, which is 10% less than in 2019 derives from the significant decrease in the net profit.

In 2020 labour productivity decreased by 34% compared to 2019 and drop down even more than the level of 2014. The indicator for 2020 was 41% lower than in the period 2008-2019.

Fuel consumption per landed tonne followed an overall increasing trend since 2008. In 2020, it reached new peak with 504 litres per landed tonne, which was 225 litres more per landed tonne compared to 2019 and 240 litre higher compared to the amount of 263 litres per landed tonne during the period 2008-2019. In 2020 except the average age of the fleet for which the consumption was standard in previous year, COVID-19 crisis let to a significant decrease of landed weight, which was not accompanied by such significant reduction in the DaS.

Landings in weight per unit of effort (in DaS) followed the increasing trend starting from 2017 (after the lowest value in 2016) and after an increase by 22% in 2019, in 2020 it decreased by 21% compared to 2019 and 40% than the average for 2008-2019.

## Performance by fishing activity

### Small-scale coastal fleet

The majority of the vessels in 2020 (1 136 from 1 233 active vessels) had a total length under 12 metres, used only passive gears and carried out mainly a small-scale coastal, seasonal fishing. Their preferred fishing gear was gillnet (anchored) and for catching sea snail they used the manual method by scuba diving. The total number of employees was 1 521, but this number includes also the unpaid labour (1 371). For the majority of people involved in this type of fishing, this is a seasonal activity closer to a hobby or a small family business. Most of the small-scale fishers use the catches for private consumption by themselves and their families or they sell them in their own restaurant. The live weight of landings was 2 025 tonnes, decreased by 19% compared to 2019 and decreased by 20% to the period 2008-2019. The value of the landings in 2020 decreased by 21% to 2019 and it was 3% lower than the average for 2008-2019. The net profit for 2020 decreased by 34% compared to 2019, but it was 57% higher than the average for the period 2008-2019.

There was a decrease of the net profit margin by 17% from 2019 to 2020, but compared to the period 2008-2019 it was 152%. These significant differences were possible because over the period 2008-2020 there were 3 years (2011, 2013 and 2014) in which the net profit was actually a net loss, because the expenses of the SSCF exceed the income or total revenue produced during the years.

### Large-scale fleet

The Bulgarian LSF consisted of 197 vessels in 2020: 14 of them were under 12 metres, but with active gears (eight of them were between 0-6m using beach seines, three were between 6-12m using beach seines, three were between 6-12m using mid-water trawls). The FTE was 184 in 2020, which is 4% lower than in 2019 (representing 240 total employed -5% less) were employed in the LSF segment.

This LSF produced 4 203 tonnes of landings, which were 67% of the landings of the whole fleet. Its value was estimated at EUR 2.7 million, representing 55% of the value of all landings.

The income from landings decreased by 30% and it reached the lowest levels for the whole period, but the other income was stable. In 2020 wages and salaries of crew increased by 5% compared to 2019, but remained 10% lower compared to the overall period 2008-2019. The value of unpaid labour decreased significantly compared to 2019 (by 65%). The number of unpaid labour in LSF was 51, or 3.6% of the total in the fleet. The main expenditure - energy costs, decreased by 22%, the repair and maintenance costs by 10%. The other non-variable costs and other variable costs decreased by 21% and 29%, respectively. The most significant changes between the values of variables in 2020 and the period 2008-2019 were the decrease of the value of unpaid labour and the decrease of the other variable costs, by 91% and 68%.

## Performance results of selected fleet segments

The fleet is diverse with a broad range of vessel types targeting different species only in the Black Sea. The national fleet consisted of 24 active fleet segments in 2020, with a further 597 inactive vessels. The clustering scheme was changed in 2017 and based on it and on the low number of vessels in some fleet segments, there are 15 segments/clusters. It should be noted that the clusters are used only to keep the confidentiality of the data, but not for data collection. The data collection scheme is a *census* and covers all vessels.

In 2020, the Bulgarian fleet was clustered in six segments: drift net 12-18m (23 vessels), Vessels using hooks 6-12m (25 vessels), purse seiners 0-6m (11 vessels), vessels using active and passive gears 12-18m (17 vessels), vessels using *pots and traps* 6-12m (37 vessels), pelagic trawls 12-18m (21 vessels) and vessels using passive gears only 6-12m (10 vessels).

Two fleet segments obtained more than 1 000 tonnes in live weight of landings, followed by two fleet segments with more than 800 tonnes:

### Pelagic trawlers 24-40m

In 2020, 10 vessels made up this segment that targets a variety of species but in particular European sprat and sea snail exploited by some vessels which had as a second fishing gear the beam trawl in the segment. In 2020, the total live weight of landings was 1 598 tonnes with a value EUR 0.87 million (decreased 27% compared to 2019) and 49 FTEs were employed in this fleet segment. The profitability of the segment is high, and according to the economic development, the trend is improved. In 2020, the net profit margin increased by 325% compared over the period 2008-2019.

## Polyvalent active and passive gears 6-12m

In 2020, 132 vessels made up the segment that targets mainly sea snails, sand gaper, red mullet and Mediterranean horse mackerel. In 2020, the total live weight of landings was 1 240 tonnes with a value EUR 1.3 million (a decrease of 14% compared to 2019) and the fleet segment employed 75 FTEs, corresponding to 187 total employees. The profitability of the segment is the highest from all segments and the net profit margin in 2020 increased by 5% compared to the period 2008-2019.

## Pelagic trawlers 12-18m

In 2020, 25 vessels made up this clustered segment targets European sprat, sea snail and red mullet. In 2020, the total live weight of landings was 822 tonnes with a value EUR 0.55 million (a decrease of 22% compared to 2019) and 43 FTEs were employed in this fleet segment.

The profitability of seven fleet segments, which involve 264 vessels, was high for 2020, while six of the segments (618 vessels) were with reasonable profitability, and the remaining two segments, represented by the rest of 351 vessels, showed weak profitability.

## Polyvalent active and passive gears 12-18m

In 2020, 17 vessels made up this segment that targets a variety of species but in particular red mullet, sea snails, and turbot. In 2020, the total live weight of landings was 860 tonnes with a value EUR 0.51 million and the fleet segment employed 28 FTEs.

## Drivers affecting the economic performance trends

The Bulgarian catches in 2020 decreased compared to 2019 (-39%) and compared to the average for the 2008-2019 period the total catches increased by 28%.

The prices of fish and fuel remain the main driving forces behind the overall sustainability of the fleet.

The decrease in the average price of some important species with significant landings for the Bulgarian fleet as sea snail, together with the reduced landings of sprat, had a negative impact on the profitability of some segments of the fleet.

## Markets and Trade

The domestic market has not increased the demand for the local fishery so that the catches are similar levels for small pelagic, as well as for demersal species. The yearly consumption of fish and fish products had a slight increase from 5.2 kg per capita in 2018 to 5.3 kg for 2019 and 5.6 kg for 2020. The local products are facing the competition of imported fish, especially from the supermarket chains. These supermarkets are offering a large variety of species, oceanic fish mainly, also salmon (from aquaculture), mackerel, bream, and others seafood, trout with a very competitive price, well presented and in large quantities.

According to the data from the National Statistical Institute, in 2020, total imports of fish and fishery products in Bulgaria amounted to 37 644 tonnes, which is 12,7% decrease compared to 2019. The decrease of supplies of frozen fish, fillets, salted and dried fish, molluscs, aquatic invertebrates was compensated by the increase in the live, fresh and chilled fish, ready meals and canned fish and canned crustaceans.

About 64% of the total quantities of imported fish and fisheries products in 2020 were from the EU (24 359 tonnes, 11% less than in the previous year). Imports from third countries decreased by 16% for the same period and amounted 13 285 tonnes.

The total Bulgarian export of fish, aquatic and fishery products in 2020 amounted to 15 140 tonnes, 4.7% lower than the previous year, due to the reduction in exports of frozen fish.

78% of the total export of fish and fish products during 2020 was for the EU. The amount of 11 813 tonnes allocated to the EU decreased by 4.6% compared to 2019.

The most significant dispatches were for Romania, Sweden, Greece, Belgium, Lithuania, Poland, Spain and the Netherlands. Exports of fish and fishery products to third countries decreased by 5% compared to 2019.

The situation in Bulgarian markets is complicated because the big quantity of imported fish and fish products are imported at a lower price than the price of Bulgarian catches from the Black Sea. Therefore, fishers cannot compete in this respect, even after processing and added value.

## Management instruments

As EU Member State and a contracting party to GFCM Bulgaria is applying monitoring, control and surveillance (MCS) activities in combating IUU fishing system and, consequently is working in strong cooperation with EFCA, of sound fisheries management to increase the control and monitoring of landings of all species and especially of turbot. All measures as designated ports to land turbot, equipment of all turbot fishing vessels with a tracking device, introduced minimum size for turbot, etc. have a very positive impact on reducing IUU-fishing.

Furthermore, an international scheme for joint inspection and surveillance in the Black Sea was established. Ensuring the minimization of the risk of IUU turbot fisheries all vessels who receive a permit to catch turbot are obliged to be equipped with tracking devices regardless of their length. The fleet is managed mainly through TACs, together with a range of input controls. With the Recommendation, GFCM/43/2019/3 the multiannual management plan for turbot fisheries in the Black sea, which lay down a list of measures and total allowable catch for 2017-2019 was amended for the period 2020-2022.

## TACs and quotas

There are two species with quotas in Bulgaria. Turbot and sprat TAC for the Black Sea (quota system) was introduced in 2008 following the accession of Bulgaria and Romania to the EU.

In 2017, quotas were 43.2 tonnes of turbot and 8 032.5 tonnes of sprat and landings were 41.8 tonnes of turbot and 3 189 tonnes sprat, respectively.

At its 41st Annual Meeting in 2017, the General Fisheries Commission for the Mediterranean (GFCM) adopted Recommendation GFCM/41/2017/4 on a multiannual management plan for turbot fisheries in the Black Sea. The recommendation a total allowable catch (TAC) for turbot for 2 years (2018-2019) with a temporary allocation of quotas. With the adoption of Council Regulation (EU), 2017/2360 of 11 December 2017 quota for sprat was fixed at the same level as in 2017 while the quota for turbot was allocated to 57 tonnes for Bulgaria which is 32% more than in 2017.

After amendments of the multiannual management plan for turbot due to decisions taken during Working Group on the Black Sea (WGBS) held in September 2019 was adopted Council Regulation (EU) 2019/2236 of 16 December 2019 fixing for 2020 the fishing opportunities for certain fish stocks and groups of fish stocks applicable in the Mediterranean and the Black Sea. With the regulation quota for sprat remains the same while turbot quota was increased to 75 tonnes for Bulgaria, 32% compared to the previous one and for EU Black Sea countries was allocated to 150 tonnes which is 17.5% of the total quota for the basin. The other quotas were fixed to 497 tonnes (58%) for Turkey, 160 tonnes (18.7%) for Ukraine, 20 tonnes (2.3%) for Georgia, and 30 tonnes (3.5%) for others. Whit Council Regulation (EU) 2021/90 of 28 January 2021 and Council Regulation (EU) 2022/110 of 27 January 2022 the same fishing opportunities were fixed for 2021 and 2022 in the Black Sea.

The total number of vessels engaged in fishing for turbot in Bulgaria was constant during the last years. In 2019, the fishing vessels, which were engaged in fishing for turbot, were 116, while in 2020, their number increase to 124, which is 7% increase, and this measure helps for improving part of fleet performance. The trend continues and in 2021 and in 2022 where 126 vessels are allocated to catch turbot.

## Operational costs (external factors)

After many years (2008-2017) in which the Personnel costs were the major costs item, from 2018 the energy costs represented 40% of the operational costs in 2018 and 46% in 2019. In 2020 the personal costs and the energy costs shared the first place with 30% for each of them. The sector continues to offer very low wages, compared to the other sectors in the country. This is why the larger percentage of vessels` owners perceive fishing as a family work for livelihood, not as a business.

The price of fuel is not particularly constant, but from 2014 up to 2016 decreased year by year, in 2017 it increased again in 2018. 2020 was following the trend from 2019 and the price of fuel decreased slightly, which was a factor for reducing the energy costs near 70% of the active vessels from the Bulgarian fleet.

## Innovation and Development

Under Operational Programme for support from the EMFF for the development of the Bulgarian fisheries sector for a Programming period 2014-2020, EUR 25.5 million was allocated to ensure the

viability and sustainable development of the Bulgarian fisheries sector as well as the protection of its fishing/marine resources. The amount represents 22.47% of the total OP financial support.

In 2020, EUR 9 000 in subsidies for investments were provided to Bulgarian fishers. The support was mainly used for improving electronic equipment and for safety measures for the crew. The tendency from last years for basic development on the gear or engine reparation, as well as on improving terms of fish preservation or the processing is still valid which is understandable from fishers point of view which main aim is increasing product quality and value.

## Nowcasts for 2021-22 and beyond

### Model results

Based on the available data showing an increase in volume and value of landings for 2021, the economic performance during 2021 showed an improvement which corresponds to the overall performance in the years before 2020. In regards to the projection for 2022 the overall improvement of the Bulgarian fishing fleet is expected to continue following the increase of landings in volume and value which is the main factor for increasing the revenue. Fuel prices are the next driving force for the fleet which in 2022 are showing a substantial increase as a consequence of the lower supply from Russia due to the invasion in the Ukraine.

### Outlook

In 2021, 8 919 tonnes of seafood were landed by the Bulgarian fleet, with a value of EUR 8.1 million which is 43% higher than the value of landings from 2020. The increase in the landings of sprat by more than 100% compensate the decrease by 21% of the landing of rapa whelk and together with the increase 64% of the landings of sand gaper are the main reason for the increasing of the total landings in 2021 by 43% and reaching the level of landings from 2018.

### COVID-19

The pandemic period in 2020 was accompanied by numerous restrictions on travel and work, which, together with the increase in the prices of the main species, due to the decrease in imports and exports, had an extremely negative impact on the Bulgarian fishing sector. 2021 was a year with a reduction of many measures related to the pandemic and a gradual return to the normal workload, which helped the sector to reach its potential.

In 2020, the government has started different measures aimed at reducing the economic impact of the COVID-19 pandemic on businesses and individuals. The support took the form of reduction of certain taxes, deferred payment of certain credits, and compensatory payments. With the support of the EU and EMFF in 2021, 61 Bulgarian vessels (35 companies) were compensated under the measures due to COVID-19 with a total of EUR 1 151 896, which is 24% more than the spent funds in 2020.

## Methodological considerations and data issues

### Identify changes in respect to previous years

There were no changes in respect to the previous years. All the clusters were used only for data reporting, not for data collection because the data was collecting through questionnaires from all vessels.

### Improvements achieved within 2020 data collection

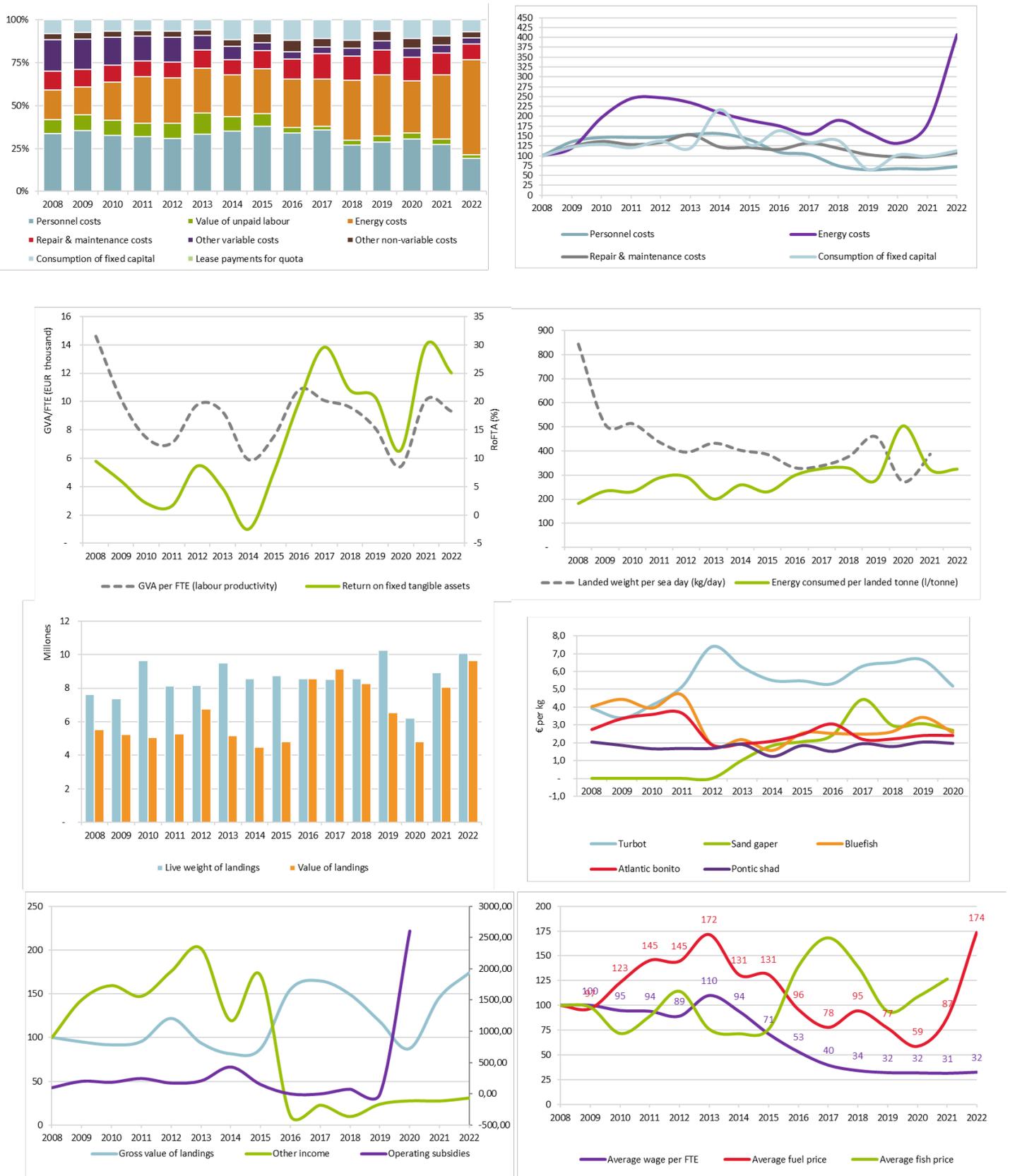
No major improvements were achieved during the last year. The overall performance in last years continues and during the last data call.

### Problems identified

No problems were identified.

### Remaining issues

No major data issues were identified during the meeting.



**Figure 4.2 Bulgaria: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (EUR/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.3 Croatia

### Short description of the national fleet

#### Fleet capacity

In 2020 Croatian fishing fleet consisted of 7 808 vessels of which 6 251 were active (80,1%). Fleet capacity remained stable in 2020, with increase of 1% in the number of vessels compared to 2019 and decrease by 1% compared to the average value 2015-2019. GT and kW have been reduced by 9%, compared to average values 2015-2019. Inactive vessels represented 19,94% of the total fleet registered in 2020.

#### Fleet structure

The Croatian fleet, which operates solely in the Northern Adriatic Sea, is divided into main commercial fleet and a category of small-scale artisanal coastal fisheries for personal needs consisting of some 3 500 vessels. These vessels were transferred into the commercial SSCF in 2015, pursuant to Croatia's Accession Treaty, however they continue to operate mostly for personal needs and are kept as a separate legal category with specific requirements and constrains.

In 2020, the active fleet was divided into 86% SSCF (5 369 vessels) and 14% LSF (882 vessels). Decline in fleet capacity in 2018 is due to reduction of LSF by 7% in number of vessels, 11% in GT and 10% in kW compared to 2017, as scrapping of PS, DTS and DRB vessels has continued in 2018.

The number of fishing enterprises totalled 5 601, with the majority (88%) owning a single fishing vessel, as is typical of artisanal fleets. More than 45% of Croatia's fishing vessels are registered as multipurpose vessels with a possibility to use different gears over the course of the year.

#### Employment

The total number of employees remained stable in 2020 and is estimated at 7 952, corresponding to 3 125 FTEs. Engaged crew in SSCF amounted to 70% (45% FTEs) and to 30% in LSF (55% FTEs). The level of employment is steadily increasing since 2012, and compared to 2012-2019 average, engaged crew increased by 32% and FTE by 19%. However, this increase is mostly due to activation of SSCF vessels in 2015, while engaged crew in LSC decreased by 11% compared to 2012-2019 average.

#### Effort

In total around 318 500 days were spent at sea in 2020 (+4% compared to 2019) of which 69% in SSCF. In line with the limitation of effort for purse seiners for small-pelagic fish and temporal cessation in pelagic and demersal fishery, reduction of effort (expressed in sea days) compared to 2014 is evident in LSF which is continued in 2019 (-2% compared to 2012-2019 average). In contrast, effort increased in SSCF by 5% compared to 2019, and by 61% compared to 2015, which is consistent with the inclusion of small-scale artisanal coastal vessels to the commercial fleet in 2015.

#### Production

The overall landing of seafood has been gradually decreasing since 2014 due to management measures in the Adriatic Sea until 2019. Compared to 2014 when it has been at its highest, landings decreased by 11% to 70 330 tonnes of landed seafood products in 2020, while landed value has decreased by 5% amounting to EUR 61.1 million in 2020.

More than 120 species are caught commercially in Croatia as is typical of multispecies fisheries. However, small pelagic species targeted in purse seine fisheries, of which sardine and anchovy are most important, by far dominate the overall catch structure and accounted for 91% of total volume and 54% total value of products landed in 2020. Higher value species targeted by demersal fisheries, hake, red mullet, Norway lobster and deep-water rose shrimp, account for 4% in terms of quantity, but 17% in terms of the value.

Prices obtained for the key species targeted by the fleet generally remain stable in the period 2012-2020. Slight annual variations of the prices are mostly resulting from changes in volume of landings over the period. Annual variations in prices are more evident for higher value demersal species.

As in previous years, in 2020 purse seiners from 24 to 40 metres LoA contributed for the majority of landed weight and value, 50% and 30%, respectively. Overall, purse seine segments amount to over

91% of volume and 51% of value of products landed, and are managed under the provisions of a multiannual management plan for small pelagic fish in the Adriatic Sea as adopted under the GFCM.

## Economic results for 2020 and recent trends

### National fleet performance

In 2020, the economic performance of the overall fleet remained stable compared to previous years. Total revenue estimated at EUR 90.1 million has slightly increased by 3% compared to 2019 but compared to 2012-2019 average revenue increased by 17%. The major factor for the positive trend is higher revenues from landing income and an increase in income from other sources which has more than tripled since 2016 and represents 30% of all income in 2020.

The total amount of GVA and gross profit in comparison to 2019 increased by 13% and 28%, EUR 58.9 million and EUR 31.2 million, respectively, while net profit increased by 143% (EUR 9.9 million).

Total operating costs decreased in 2020 by 7% compared to 2019 and amounted to EUR 58.8 million. Decreased fuel costs (-24% compared to 2019) are a result of lower fuel prices in 2020, from 0.61 euro/litre in 2019 to 0.45 euro/litre in 2020, while energy consumption has remained almost the same (+4% compared to 2019). As in previous years, personnel costs have the highest share of 31% and followed by energy costs with 15% of all costs.

Decreasing trend of value of physical capital which started in 2015 has stabilized in 2020 and estimated (depreciated) replacement value amounted to EUR 280 million.

### Resource productivity and efficiency indicators

An overall improved development trend is present as of 2017. The gross profit margin in 2020 was 35%. Net profit margin was estimated at 11% in 2020, an increase since 2019.

Labour productivity (GVA per FTE) amounted to EUR 18 716, slightly increasing by 12% compared to 2019 and by 34% compared to the 2012-2019 average as both FTE and GVA increased by 17% and 55%, respectively, in the same period. Similarly, return on fixed tangible assets was 4% in 2020. Average wage remained stable in 2020 and amounted to 8 800 EUR/FTE.

Fuel intensity decreased to 381 litre/tonne in comparison to 408 litre/tonne in 2019, while landed weight per sea day stabilized to 221 kg/day in 2020 from 207 kg/day in 2019. In the period from 2012-2020 the Croatian fleet on average landed 278 kg/day with a fuel intensity of 367 litre/tonne. Overall, the fleet has been most efficient in 2014, mostly due to larger quantity of small pelagic fish caught in purse seine fisheries, and since then the ratio between landed weight per sea day and fuel consumed per sea day has decreased. One of the reasons for that is scrapping of purse seiners for small-pelagic fish and demersal trawlers and therefore changing the productivity and efficiency of the remaining fleet. Lower volume of landings of purse seiners mostly affected the productivity and fuel efficiency since these vessels have the best ratio between landed weight and energy use.

### Performance by fishing activity

The Croatian fleet has a range of vessel types using various gears and targeting different species exclusively in the Northern Adriatic Sea. In 2020, the fleet consisted of 23 (DCF) active fleet segments, 10 in SSCF (DFN, FPO, HOK, PGP and PMP) and 13 in LSF (DFNVL1218, DRB, DTS, MGO and PS), and five inactive length classes.

### Small-scale coastal fleet

SSCF covers 86% (5 369) of active vessels and 2% and 15% of landed weight and value, respectively, in 2020. Number of fishers has remained stable in 2020 amounting to 5 635 persons and corresponding to 1 437 FTEs. The ratio between unpaid and paid fishers is much higher than in LSF, as 84% (4 736) fishers in SSCF are unpaid (self-employed, family workers or retired).

The amount of revenue generated by SSCF in 2020 was EUR 24 million or 27% of total revenue in 2020. Landings income constitutes 18% of total landings income and has decreased in 2020 by 6% to EUR 9.3 million, but overall landings income increased by 16% compared to the 2012-2019 average.

In the period from 2012-2020, GVA, gross profit and net profit have gradually improved even though a substantial fall was recorded in 2015 and 2016. The major factors causing the improvement in economic performance in this period included increases in landing income and a substantial increase of income from other sources (+90% in 2020 compared to 2012-2019 average) while operational costs

remained relatively stable during the same period. Other income constitutes almost 58% of total income in SSCF in 2020, and only 19% in LSF. In 2020, the SSCF had an estimated (depreciated) replacement value of EUR 67.9 million. Investments by the fleet amounted to EUR 5.4 million in 2020.

In 2020 average length of SSCF vessels was less than 6 metres with an average age of 39 years, limiting fishing activities to fishing grounds near the port and to one-day fishing trips. Fishing activity of SSCF vessels has a distinct seasonal character with spring and autumn peaks, depending on migration of target species to the inshore area during the warmer period of the year, but also depending on other integrated activities such as tourism, transport, processing, aquaculture and agriculture. Catch is mainly sold on the local market and income from fishing is supplemented with other sources of income; 58% of income in 2020 was from other income.

The most prominent fleet segments with an important traditional and social character are the segments using fixed nets (DFN). Even though relatively low profitability is indicated for the fleet in relation to number of vessels, with low landing values, fixed nets segments are considered to be primarily highly artisanal and important in terms of social and economic elements for local population and communities.

The oldest segment is PGP in general (average vessel age of 41) and average vessels licence holders' age of 65 in 2020. This group of vessels, previously categorised as "for personal needs", falls into a separate category of commercial fleet. Most of the fishers are retired and occasionally engaged in fishing activities. Due to legal restrictions, authorized persons in this category can only be natural persons without legal rights to be involved in first sales and without obligations to pay social security fees. Since there is no landing income or salaries all of the participants in PGP are considered as unpaid labour. Still, this category with a large number of participants is of great social importance as supplementary activity and food security for households.

## Large-scale fleet

Majority of LSF in Croatia is constituted of high activity commercial purse seiners and demersal trawlers which are under a strict management regime. The number of LSF (882 vessels) stabilized in 2020 (-12%) compared to 2012-2019 average. In the period since 2012 capacity was reduced by 17% in GT and 16% in kW. Effort remained on the same levels in 2020 compared to 2019 (on average 113 days at sea per vessel).

Employment (2 351 engaged crew) has decreased by 11% compared to 2012-2019 average, which is consistent with the reduction of number of vessels by 12% in the same period. Number of FTEs (1 709 FTEs in 2020) is consistent in the period. The ratio between paid and unpaid workers is reversed in comparison to SSCF as 80% of persons in 2020 are paid workers.

In 2020, volume of landings (68 600 tonnes) and landing income increased by 11% and 5%, respectively, compared to 2019 mostly due to increased landing of small pelagic fish. Landings income constituted 71% of income in 2020, while income from other sources was only 19%. Due to strict management measures and reductions both in effort and catch the viability of LSF highly relies on EMFF support mostly through implementation of temporary cessation of fishing activities. In 2020, operating subsidies have increased by 16% compared to 2019 amounting to almost 10% of total income.

Operating costs in LSF (EUR 45 million) have decreased in 2020 by 9% compared to 2019, with a decrease of 11% compared to 2012-2019 average, mainly due to significant decrease in energy costs (-25% compared to 2019).

In 2020, GVA, gross profit and net profit increased by 50%, 52% and 186%, respectively. LSF had an estimated (depreciated) replacement value of EUR 135.6 million. Investments by the fleet amounted to EUR 7.8 million in 2020.

## Performance results of selected fleet segments

In 2020 the Croatian fleet consisted of 23 active fleet segments. Almost all segments with the exception of dredges from 6 to 12 meters and PGP vessels showed improved economic development trend compared to 2019. Based on the net profit margin, eight fleet segments showed high profitability, four segments a reasonable profitability and 9 a weak profitability. Net losses are registered for seven segments (DTS0612, DTS2440, DRB1218, DFN1218, PGP0006, PGP0612 and PMP0006).

In 2020, the most important fleet segment in terms of landing percentage was purse seiners (PS, 91% of total landings), whereas the largest number of vessels (17%) were active in fixed nets segment (DFN, in Croatia fixed nets – gill nets and trammel nets, 1 037 active vessels). In terms of landing of

demersal fish most important segment is DTS VL1218 with 44% of total DTS landing. In purse seine segments, most significant are PS VL2440 with 56% and PS VL1824 with 29% of total purse seiner landings.

Most important segments in terms of contribution to total revenue are PS2440, DFN0612, PS1824 and DTS1218, with 23%, 15%, 11% and 10% share in total revenue, respectively.

### Drift and fixed netters 6-12m

Not taking into account PGP vessels, although this segment had the highest share of active commercial vessels (27%) in 2020, its share in total volume and value of landing in the same year was small, 1% and 6%, respectively. These fishers operate predominantly in coastal areas targeting different species and using fixed nets, hooks, traps and longlines. The segment employed 16% of total FTE (excluding PGP), and in 2020 it had landing value of EUR 3.9 million, while income from other sources amounted to EUR 9.6 million, representing 67% of total revenue of this fleet segment. It reported a positive gross profit of EUR 7.4 million and a net profit of EUR 5.8 million in 2020. Average wage per FTE was EUR 7 000.

### Demersal trawlers / seiners 12-18m

In 2020, 159 demersal trawlers (6% of active commercial fleet) operated in GSA 17 targeting different demersal species, mostly European hake, Norway lobster, red mullet and deep-water rose shrimp. This segment employed 10% of total FTE in 2020, and its share in landing volume and value was 3% and 10%, respectively. It reported a positive gross profit of EUR 2.6 million, and a net profit of EUR 1.3 million in 2020. Average wage per FTE was EUR 8 300. Segment contributed to 10% of total revenue.

## Drivers affecting the economic performance trends

### Markets and Trade

In 2020 average landed price of 1.5 euro/kg decreased by 7% compared to 2019 but increased overall by 9% compared to average in the period 2012-2019. Of the top six commercially most important species Norway lobster and Common sole had the highest prices (12.6 and 8 euro/kg, respectively) in 2020, while sardine and anchovy were sold at relatively low prices (0.4 and 0.9 euro/kg, respectively). A high influence on fish prices of small pelagic species has the product destination. As Croatia is a bluefin tuna farming country, a large quantity of small pelagic fish landed on the landing sites is designated for tuna feeding. The small pelagic fish intended for tuna feeding are declared with low prices in the sales notes. These low prices have a minimizing effect on the average price of small pelagic fish. For the purpose of tuna feeding Croatia has a pronounced import of herring from other countries.

Croatia's accession to the EU had a substantial influence on fish market, along with facilitating transport it brought increased competition. Domestic market is still slow to adapt to the EU market in terms of competitiveness and prices, however higher prices are achieved in direct sales activities in local markets.

Croatia is a net exporter of fish and seafood products. Both import and export have been gradually increasing in the period 2012-2020. Within the EU, Italy, Slovenia and Spain are the main export destinations for fresh and salted fishery products. Sardine and anchovy originating from purse seine fisheries are the main species exported mainly to neighbouring countries, Italy and Slovenia. Demersal fish and cephalopods are exported fresh mainly to Italy where fishers achieve higher fish prices than on domestic market which contributes to the profitability of demersal trawlers. Croatia is one of the main EU exporters of farmed Bluefin tuna which is exported almost exclusively to Japan. Export of fish and seafood in 2020 amounted to EUR 240.6 million and 68 000 tonnes, while main export partners are Italy, Japan, Spain and Slovenia. Imports originated mainly from Italy, Spain, Slovenia and the Netherlands and amounted to EUR 150.5 million and 70 300 tonnes in 2020 (EUMOFA, 2022).

Fish consumption in Croatia is lower than the EU average (24.4 kg in 2017) with a highly seasonal demand. According to latest data on consumption in 2019, apparent consumption was estimated at 20.82 kg per capita, a 7% increase compared with 18.7 kg per capita in 2017 (EUMOFA, 2020).

### Operational costs

The most important operational costs are personnel costs followed by fuel costs. Trends from the five-year period are followed in terms of share of personnel costs, and fuel costs in total costs. In 2020,

share of fuel cost of 15% decreased compared to the average in the period 2012-2019. At the same time share of personnel costs increased to 31%, compared to 26% average value in the period 2012-2019 which is line with trend of increase of average wage. Other costs such as repair and maintenance, unpaid labour and other variable costs have been stable over period accounting for 9%, 5% and 9%, respectively, in 2020. The increasing trend of the fuel price in the period 2016-2019 affected profitability in fuel intensive fleet segments such as demersal trawlers, however in 2020 fuel costs were lowest since 2012.

## Management instruments

Croatian fleet is managed through capacity and effort limitations, as well as through temporal and spatial restrictions. Effort regulations are related to restrictions on issuing fishing licences and transfer of fishing rights from one license to another in terms of permitted fishing gears or fishing zones, as well as through issuing additional authorisations for fisheries under management plans. This system is preventing an increase of fishing effort related to fishing gear or fishing zone, or even subzone. Capacity limitation is related to increase of vessel power and length in terms of total national fleet capacity and total capacity for specific fisheries. Additionally, national regulations restrict transfer of effort between fishing zones of inner and outer fishing sea, preventing increase of effort in the most vulnerable areas of inner sea. Spatial and temporal closures have been used in past years for management of purse seine and trawling fishery. In the recent period this has become an effective measure in preventing catch of smaller categories of small pelagic as well as in protection of areas important for recruitment of target species.

In addition to the aforementioned, from 2014 GFCM management plan for small pelagic fish in GSA 17 has been in force. By the provisions of this plan maximum number of fishing days for targeting sardine and anchovy has been set, as well as temporal closure period. Given full implementation of these measures and additional national restrictions implemented for protection of small pelagic, the total number of days-at-sea will probably decrease further in the future.

In 2015, Italy and Croatia adopted joint management measures at the national level establishing no-take zone for bottom trawls in the area of Jabuka/Pomo pit. This regime was introduced from July 2015 to October 2016 after which a more stringent regime has been established for the three-year period. On the top of national legislations this new regime was also transposed into GFCM Recommendation 41/2017/3 on the establishment of a fisheries restricted area in the Jabuka/Pomo Pit in the Adriatic Sea.

In 2015 Italy and Croatia adopted joint management measures at the national level establishing no-take zone for demersal trawls in the area of Jabuka/Pomo Pit. This regime was introduced from July 2015 to October 2016 after which regime was modified and more stringent one has been established for the three-year period. On the top of national legislations this new regime was also transposed into GFCM Recommendation 41/2017/3 on the establishment of a fisheries restricted area in the Jabuka/Pomo Pit in the Adriatic Sea. New regime includes three zones where particular management regime applies, one in the middle where all kind of demersal (trawls and longlines) and sport fishery is prohibited, and two side zones where only limited number of authorised vessels can operate for limited time of two days per week. This is the first FRA area in the Adriatic Sea and an important measure for demersal fishery which has a significant impact on the fleets.

## Status of key stocks, TACs and quotas

Fishery in Croatia is based mostly on catch and effort management, spatio-temporal closures while only Bluefin tuna and swordfish fishery is restricted by TAC.

- Bluefin tuna: National quota was nationally allocated to commercial fleets: PS and HL fleet with the quantity also allocated to by-catch from commercial vessels not authorised for BFT fishery, and non-commercial fleets: sports, recreational and scientific. Quota after swaps was adjusted to 915.03 tonnes. Total catch in 2020 was 907.65 tonnes (99.2% of adjusted quota).
- Swordfish: in line with the ICCAT Recommendation 16-05, the Croatian Administration established the national list of vessels authorised to fish for swordfish and regulated the use of fishing gears. After three quota swaps the adjusted Croatian SWO quota was 56.94 tonnes for 2020. Total amount of catch in 2020 was 23.17 tonnes (40% of adjusted quota). Croatia applies approach of allocating individual quota per vessel for swordfish LL fishery, while swordfish HL fishery operates under the "Olympic" system with only the overall quota for the segment set.

- Small pelagic species in Adriatic Sea: in December 2016, for the first time, the Council set a catch limit for the EU concerning small pelagic species in the Adriatic Sea for 2017 (112 700 tonnes of small pelagic species - anchovy and sardine) -Annex IL of Regulation 2017/0127. Furthermore, Recommendation GFCM/42/2018/8 set an obligation to progressively over a three-year period (2019-2021) decrease the level of the catches of sardine and anchovy by 5% annually starting with the level of catches reported for 2014. This obligation was transposed into EU legislation which has for 2020 set a maximum catch limit for sardine and anchovy in Adriatic for EU Member States (Croatia, Italy and Slovenia) to a level of 101 711 tonnes.

GFCM working groups on stock assessment revised a total of 13 Adriatic Sea stocks in 2021 (11 demersal, 2 small pelagic), providing advice for all, including one instance of precautionary advice for blackbellied angler. Two stocks were considered overexploited with low fishing mortality (common cuttlefish and mantis shrimp), European hake was considered in overexploitation with biomass above the reference point, great Mediterranean scallop in overexploitation and depleted; deepwater rose shrimp and red mullet two in overexploitation with high biomass, while sardine and anchovy were considered to be overexploited and in overexploitation.

Following establishment of Jabuka/Pomo Pit FRA, according to recent years' monitoring programmes (MEDITS and FRA JABUKA/POMO survey), it is evident that these measures have already yielded positive results in increased abundance and size of many priority species within the FRA.

## Innovation and Development

In 2020, investments remained stable compared to 2019. Although investments increased by 39% compared to 2012-2019 average the level of investment is still low (an average of EUR 5 200 per active vessel in 2020, excluding PGP vessels). LSF accounts for 59% of total investments and investments are much higher (EUR 9 000 per vessel) compared to investments in SSCF (EUR 1 000 per vessel).

After Croatia's accession to the EU in 2013, and changes that followed due to a full implementation of Mediterranean regulation, economic performance still cannot be considered stable. Firstly, this is because of the process of permanent cessation which was ongoing by the end of 2018 and which affected LSF purse seines, bottom trawlers and dredgers, but also due to a process of inclusion of large number of vessels in the small-scale PGP segment. In connection to the progressive, but still limited, increase of fishing activities in PGP segment, an overall increasing trend is expected in the values of fishing activity and economic indices. Nevertheless, due to their large number these vessels have a visible impact on the performance of the entire fleet.

Key challenges in Croatian fisheries sector are in ensuring competitiveness and sustainability of enterprises, including SSCF.

Investments over the segments are based on gear or engine reparation, improving selectivity of gears, as well as terms of fish preservation or processing aimed at increasing product quality and value. This trend can be expected in the future as well in line with EMFF and EMFAF.

In 2016 GFCM adopted Recommendation GFCM/40/2016/3 with additional restricting measures for 2017 and 2018 for small pelagic fisheries in Adriatic. In 2017, European Commission presented a proposal for multi-annual plan for small pelagic stocks in the Adriatic Sea and the fisheries exploiting those stocks. With the new plan for Adriatic small pelagic stocks, which are exploited mainly by Croatian and Italian fishing vessels, the Commission proposed to introduce a major shift in fisheries management in this area, currently based on fishing effort, by setting TACs. In 2018, Parliament's Committee on Fisheries (PECH) supported maintaining the current fishing effort regime and opposed the introduction of TACs. It also required that catch limits for small pelagics are set in 2019 at the level of the 2014 catches, and reduced by 4% annually between 2020 and 2022. The improvement of safety and working conditions on-board is a high priority, especially since fishers are forced to conduct fishing activities in unfavourable conditions as number of possible days at sea has been limited due to spatial-temporal closures and limitations of catch and effort. Dependence of the sector on two species, sardine and anchovy, which are in poor condition, leads to the need for diversification in the production targeting different species and for value addition for the two species, in order to increase the income of fishers.

## Socio-economic impact

Overexploitation and management measures implemented as a result of the stocks status remains to have a significant influence on the economic performance of the sector. This is true primarily for small pelagic fleets which have been under strong restrictions from 2015. These were also followed with

appropriate measures from the EMFF which compensate their effect to a certain level. As the sector is heavily dependent on small-pelagic fish the effects of management measures, mainly temporary and permanent cessation of fishing activities, is expected to have a positive impact as Croatia intends to continue with the measures provided within the framework of the EMFF and EMFAF. Same measures have been implemented in the demersal fishery. Assuming that fuel prices remain fairly constant and fish prices continue to increase, the effects of conservation measures are expected to have a positive long-term impact on the general recovery of the sector. As for the demersal fleet, Fisheries Restricted Area (FRA) in the Jabuka/Pomo Pit is having a positive impact on the performance of demersal trawlers and longliners, since status of demersal stocks in the area has significantly improved.

## Nowcasts for 2021-22 and beyond

### Model results

Number of active vessels in 2021 remained stable (6 235 vessels), while landed weight decreased by 11% and landed value dropped by 3%. Projections suggest that operating costs increased, due to increase in fuel prices in 2021. Forecasts indicate that the Croatian fleet operated at a profit in 2021.

### Outlook

In 2021, over 61 000 tonnes of seafood were landed by the Croatian fleet, with a value of over EUR 60 million (provisional figures) while the overall days-at-sea slightly increased. Deterioration of economic performance is expected with lower Gross profit and an increase in the number of fleet segments with net loss. The negative economic trend is mainly due to the COVID-19 outbreak and decreased landing volume in value, so as increased fuel prices in 2021. Another important factor that could impact the performances of the fleet is the reduction in fishing days for demersal trawlers and purse seiners. Concerning the period beyond 2021, in line with management measures further reduction of fishing effort can be expected in the main commercial fleet - PS and DTS segments.

### Landing obligation

Commission Delegated Regulation (EU) 2018/161 of 23 October 2017 established *de minimis* exemptions to the landing obligation in the small pelagic mid-water trawl and purse seines fisheries for certain small pelagic fisheries in the Mediterranean Sea until 31 December 2020.

In 2018, the Commission Delegated Regulation (EU) No 2018/2036 (amending Delegated Regulation (EU) 2017/86 establishing a discard plan for certain demersal fisheries in the Mediterranean Sea) extended current survivability and *de minimis* exemptions for various single species or introduced new *de minimis* exemptions for some groups of species until 31 December 2021.

As *de minimis* exemptions were applicable until the end of 2020 in the case of small pelagic fish, and in force until the end of 2021 in the case of demersal species, the LO has not yet been fully implemented.

### COVID-19

SSCF was not affected as much due to quick reorganization of fish marketing, distribution and sales (fish is placed mostly locally and sold directly to end consumers). Nonetheless, in order to mitigate the economic losses caused by this crisis, the amount of *de minimis* state aid support per beneficiary was increased, especially in relation to SSCF.

The closure of fish markets and restaurants and a number of restrictions imposed to curb the spread of the coronavirus have dealt a severe blow to Croatian fisheries. In order to reduce the damage and support fishers to overcome the crisis, several measures were adopted whose main goal is to mitigate the negative impact on business.

Following a swift procedure, national legislation was amended to make it easier for fishers to distribute and sell their products on the domestic market directly to end consumers.

LSF was heavily affected with the crisis therefore temporary cessation of fishing activities due to COVID-19 was launched following amendments to the EMFF Regulation from April 2020. This measure was enabled for purse seiners for small pelagic fish from 8 April-1 May and entire December 2020 and demersal trawlers from 15 April-15 June and from 20 November-31 December 2020. Although the cessation was non-mandatory most purse seiners and demersal trawlers participated (either they could not ensure safe conditions on-board or due to problems with market demand/placement), especially since measure was also applicable to vessels that have already reached the maximum six-month duration of EMFF support for temporary cessation.

Bluefin tuna longliners started their fishing activity as most of the landing was sold to Spanish buyers. Bluefin tuna purse seining season (26 May-15 July) was not affected.

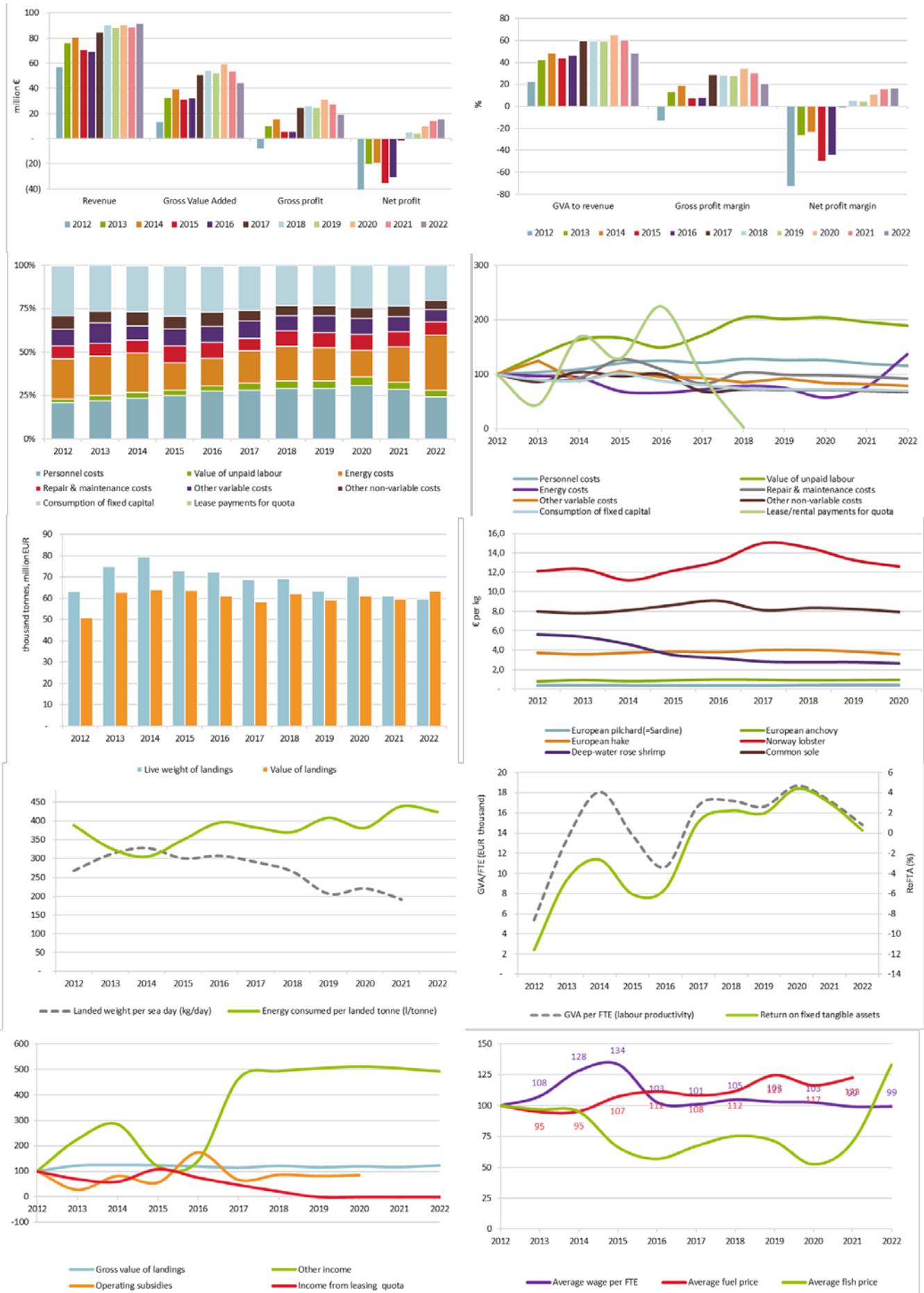
### Methodological considerations and data issues

No major issues detected. All fleet segments with major contribution to the total catch of the Croatian fleet have been sampled with satisfactory response rates. Where possible, administrative sources were used to include data for all vessels (including energy consumption, energy costs and subsidies).

Capacity, effort and landing data is collected for the entire fleet according to the Control Regulation and national legislation. Fishing reports are used for reporting on fishing activity for vessels below 12 metres LoA using passive gears.

Methodologies for estimation of value of unpaid labour, value of physical capital and consumption of fixed capital have been improved to allow more consistent results over time series. As a result of these changes values and figures may differ from previous reports.

With regard to the 3 500 small-scale vessels which were transferred into the commercial SSCF in 2015, all these vessels fall under the polyvalent passive gears segment (PGP), however, these fishers are not full-time engaged in fishery and most had very limited activity in 2015-2020. Therefore, economic indicators for the PGP segment should be taken with caution. Landing value has been estimated for these vessels, however most PGP vessels cannot place their catch on the market due to national legislation in force.



**Figure 4.3 Croatia: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2012=100). Nowcast figures for 2021 and 2022.**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.4 Cyprus

### Short description of the national fleet

The Cypriot fishery is dominated by small-scale vessels dispersed across many landing places that use a variety of fishing gears, usually on the same fishing trip. Fisheries in the Mediterranean Sea are of mixed-species type, where more than one species are present in the area being fished and caught by the fishing gear no matter if these species are not the targeted ones.

A new fleet segment was introduced in the national fleet in 2017; the purse seiner segment targeting bluefin tuna. This fleet segment includes only one vessel and despite the fact that it was taking into account for data collection purposes it was not included in the economic analysis for confidentiality reasons. Cyprus has provided landings and effort information regarding this vessel.

### Fleet capacity

Fleet capacity in 2020 was increased slightly compared to previous year; not following the declining trend that lasted until 2018. Actually, it consisted of 864 registered vessels with a combined gross tonnage of about 3 900 GT and total engine power of around 41 000 kW.

On average, there was a reduction of 12% in the number of vessels if compared to the period 2008-2019 resulting in, both the combined gross tonnage and the total engine power be decreased by 3% and 5%, respectively. Yet, the number of the vessels increased slightly by 1% when compared to 2019, meaning that new vessels were introduced in the Fleet Vessel Register or some vessels have substituted their engines with others with higher engine power.

Even though the active small-scale vessels decreased by 6% during the period 2008-2019, the large-scale ones increased by over 30%. This is strengthened by the fact that the total vessel tonnage and engine power where both of them increased by 23% and 27%, respectively, for the same time period.

The reduction in the number of SSCF vessels during the period 2008-2019 had a negative impact of 5% on the total engine power and 10% on the combined gross tonnage.

It is noted that vessels which ceased their fishing activities were scrapped in 2013 and end of 2015 through structural aid within the framework of the EFF 2007-2013 and EMFF 2014-2020. All of these vessels were part of the SSCF.

### Fleet structure

In Cyprus, the fishing fleet related with the active vessels can be divided into a LSF consisting of vessels over 12 metres length overall with a total engine power of 8 049 kW in 2020 and SSCF consisting of vessels of less than 12 metres length overall with total engine power of 29 068 kW in 2020.

The LSF is mainly composed of polyvalent vessels with passive gears and few trawlers fishing in international and territorial waters. The large majority of the vessels belong in the length group 12-18m and thus, for sampling purposes, as well as for confidentiality reasons due to small number of vessels all the polyvalent vessels were regrouped in the 12-18m length group. It is noted that all the groups of vessels using polyvalent passive gears with length over 12 metres are engaged in the same metiers since these vessels target the same group of species with the same gears despite their vessel's length. The vessels of this fleet segment are engaged in two fisheries; mainly in the large pelagic fishery using drifting longlines and operating in Cyprus waters and the eastern Mediterranean (targeting swordfish, bluefin tuna and albacore), but also in the inshore demersal fishery using mostly set nets and set longlines. A limited number of licenses are provided for this segment annually.

Demersal trawlers range from 19-27 metres. The demersal trawlers fleet segment below 24 metres are only two vessels and thus, for confidentiality reasons as it is impossible to report data without identifying these companies, they were regrouped in the over 24 metres length group. It is emphasised though, that both groups are engaged in the same metier and they target the same group of species with the same gear despite their vessel length. The licensed trawlers are categorised, based on their type of license, in those fishing in the territorial waters of Cyprus and those fishing in international waters (eastern and central Mediterranean). For the trawlers fishing in territorial waters a limited number of licenses is provided every year, and an extended closed season (from 1 June until the 7 November) is employed.

The SSCF is mainly operated using bottom set nets and bottom longlines, targeting demersal species. Cyprus Fisheries Law<sup>20</sup> provides for a limited number of licenses for this segment annually and divides it into three subcategories: vessels with fishing license category A' (full-time activity in fisheries), vessels with fishing license category B' (part-time activity in fisheries) and vessels with fishing license category C' (periodic activity in fisheries). The professional fishing license category (C') was introduced by a new national law and based on this law their fishing activity is performed on a periodic basis since they are allowed to fish only a total of around 100 days each year. Consequently, their income from fisheries activities is too low. Thus, this new professional licence category with the low fishery activity was not grouped in the same category with the professional licences of category A' and B'. The vessels with fishing licence categories A' and B' belong to the fleet segment PG 0-6m and PG 6-12m whereas the vessels with fishing licence category C' belong to the fleet segment PGO 0-6m and PGO 6-12m.

## Employment

Employment was estimated at 1 267 jobs in 2020, an increase of 4% compared to the period 2008-2019.

In 2020, the total jobs corresponded to 793 FTEs, a significant increase of 7% compared to 2019 (741 FTEs), which it is very important if taken into account the increase of only 2% of the previous decade and the fact that 2020 is a year of health crisis that affected almost all sectors of the economy.

## Effort

An estimated 47 851 days were spent at sea in 2020, a great reduction of around 40% compared to 2019 (41 246 DaS). If compared to the period 2008-2019 the reduction reaches 14%. This reduction was expected due to the COVID-19 pandemic and the many measures taken by governments to stem the spread of the virus like lockdowns that 'froze' the market and significantly reduced the demand. In addition to this, Cyprus has implemented a scheme of temporary cessation of fishing activities for 2 months, resulting in the reduction of fishing effort and thus, of fishing days.

The big decrease in fishing days for the small-scale fleet resulted in the amount of energy consumed to be reduced by 5% when compared to the previous year 2019. Together with the reduction in the fishing trips performed by 16% compared to 2019, the energy cost was reduced as well, by 15% in comparison to previous year. Taking into account the significant decrease in fuel price, together with the decrease in the amount of energy consumed and the fact that SSCF performs shorter (closer to the shore) fishing trips than the LSF and thus it consumes lower amount of fuel in each trip resulted in, this part of the Cyprus fleet, to follow a declining trend as regards the energy cost; a significant reduction by nearly 50% when compared the year 2020 to the period 2008-2019.

On the other hand, despite the temporary cessation scheme days spent at sea for the LSF were increased by 20% compared to the previous year. The same stands for the energy consumed which was increased by 10% in comparison to 2019. It is worth mentioning that the scheme was voluntary and many of the vessels did not want to join the scheme or did not meet its terms and conditions and thus could not join it. Moreover, the period of validity of the scheme was not the period of the main fishery where most of the trips take place. On the contrary, the number of fishing trips performed were decreased by 20%. This implies that the vessels were performing longer fishing trips. Despite the increase in fishing days and the energy consumed this fleet segment enjoyed a reduction of 11% in energy cost due to the significant decrease in fuel price (0.615 euro/litre in 2020, 0.766 euro/litre in 2019).

## Production

The weight of seafood landed reached 1 245 tonnes a significant decrease of 16%, with a value of EUR 6.34 million in 2020 representing a reduction of 15% compared to 2019. The landed weight per sea day (kg/day) decreased slightly reaching 30 kg/day in 2020.

The bottom trawl fishery in the territorial waters and the inshore fishery with polyvalent passive gears target a mix of demersal species, as it is the case in all Mediterranean demersal fisheries. The exploited stocks are not shared with other countries' fleets. Landings of both fisheries are mainly composed by picarel bogue, red mullet, surmullet, common pandora and cephalopods: common octopus, musky octopus, European squid and common cuttlefish. The inshore fishery with polyvalent

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<sup>20</sup> Basic Fisheries Law Cap. 135 and subsequent amendments of 1961 to 2007, Fisheries Regulations of 1990 to 2012 based on Article 6 of the Basic Law.

passive gears catches also relatively large quantities of parrotfish, blotched picarel and spinefeet or rabbitfishes.

Concerning the large pelagic fishery, polyvalent vessels operate in the Eastern Mediterranean, catching basically swordfish, albacore and Atlantic bluefin tuna with drifting longlines. For the first time in 2017, Atlantic bluefin tuna has been caught by a purse seiner.

## Economic results for 2020 and recent trends

### National fleet performance

The Cypriot national fleet was in a net loss-making position in 2020 (around EUR 1.8 million) and its economic performance was much worse when compared to 2019, showing a significant decrease of net loss of about 170%. In addition, the economic performance also deteriorated compared to the period 2008-2019 by over 60%.

The total revenue obtained by the Cyprus fleet in 2020, basically the income generated from landings since there is no other source of income, was estimated at EUR 6.3 million. The decrease in total value of landings in current year by 15% compared to last year, is the main reason driving the negative economic results since it is not able to cover all expenses.

It is important to have in mind the rise by nearly 90% in operating subsidies for the SSCF from EUR 426 728 in 2019 to EUR 808 191 in 2020. As for the LSF, the operating subsidies were increased even more in 2020 (EUR 108 727) compared to 2019 (EUR 41 470); by 162%. Most of the operating subsidies given to fishers' concern the scheme of temporary cessation of fishing activities as a measure to mitigate the effects of COVID-19. Operating subsidies were not included in other income and thus, not in the estimation of calculating Net Profit.

The Gross Value Added (GVA) decreased in 2020 by 17% compared to 2019, and it was estimated at EUR 2.76 million (EUR 3.34 million in 2019). Nevertheless, it is showing a considerable rise (more than 160%) compared to the period 2008-2019. Gross profit and net profit in 2020 were estimated at EUR 1.146 million and -EUR 1.81 million, respectively, showing a significant deterioration in the economic performance compared to the previous year 2019, especially in the case of net profit which decreased by around 170%.

The consumption of fixed capital (annual depreciation), the energy costs (fuel) and the variable cost are the main cost items for the Cyprus national fleet for 2020 of 31%, 18% and 15%, respectively. In 2020, the consumption of fixed capital estimated was more or less steady compared to 2019. Other variable costs and energy cost were both significantly reduced by around 14%.

Another operating cost item, the personnel costs (wages and salaries) which contributes around 14% to the total expenditures, was rather constant between the years 2019 and 2020. variable is related only to the LSF and thus it does not affect the economic results of the SSCF. Value of unpaid labour, which is mostly related to the SSCF, decreased by over 10% but increased significantly by 85% if compared to the period 2008-2019 for the SSCF.

The total expenditures in 2020 decreased by nearly 12% compared to 2019 having a positive impact on the profitability of the sector. However, the significant decline by 15% in total value of landings in 2020 had a more negative effect on the profitability of the fleet leading to a net-loss making position.

### Resource productivity and efficiency indicators

The gross profit margin in 2020 was positive, approximately at 20%, indicating operating efficiency of the fisheries sector but at a lower rate (-14%) compared to last year's one. Considering that there were negative values in the past decade for this indicator it is not a surprise that it has been greatly improved compared to the period 2008-2019. The net profit margin in 2020 was negative estimated at -32% showing a decrease of approximately 230%. Yet, it is much improved (52%) in comparison to the period 2008-2019.

The RoFTA turned to -18% in 2020, showing a significant deterioration compared to 2019 which was estimated at -0.9%. However, it shows a significant increase when compared to the whole period 2008 to 2018, of over 70%. Except for 2017 for which it was positive and 2018 which was nearly zero, RoFTA has been negative for the whole period 2008 to 2020.

There is an overall declining trend when compared to previous year 2019 in all indicators but for most of them improvement is showing if compared to the period 2008-2019. This picture is also reflected in labour productivity (GVA/FTE) which after being negative for the period 2009-2012 it has become positive the last years, strengthening the economic performance but it has decreased in 2020 at

EUR 3 486 per FTE, showing a decrease of 23% compared to 2019. In addition, in 2020 GVA estimated at EUR 2.76 million and GVA to revenue estimated at 49%, both increased tremendously compared to the last decade (2008-2019). But GVA decreased by 17% compared to 2019, whereas GVA to revenue is rather constant. Moreover, the number of total people employed increased compared to 2019 at 1 267 persons (1 241 in 2019). The same picture stands for the number of FTE showing an increase of 7% at 793 which is very important if you consider we going through a period of pandemic.

Fuel consumption per landed tonne did not continue its decreasing trend in 2020 but it increased at 1.54 litres/tonne, having a negative impact on the profitability of the Cyprus fleet. In 2019, this indicator was at 1.21 litres per landed tonne and 1.179 in 2018, reaching the lowest value of the whole period 2008 to 2020.

The declining trend of the variable landings in weight per unit of effort (in weight per Days at Sea) during the period 2008-2012 followed an increasing trend for the period 2013-2017. In 2017, landed weight per sea day was at its peak reaching 34 kg/day but then, it has followed a declining trend and in 2019 the landings went down to 31 kg per sea day (in 2018 were 33 kg/day).

## Socioeconomic Impact

The fishery sector contributes less than 0.5% to the Cyprus Gross National Product. However, it is an important sector for the fisheries dependent areas for direct employment (vessel owners and crew members) and auxiliary services such as fishmongers, gear repair, vessel repair and construction and families of fishers who help them in getting the fish out of the nets and fishery tourism, especially during the summer season. Also, it is significant, for other activities closely related to fishing activities like fish taverns and restaurants.

## Performance by fishing activity

### Small-scale coastal fleet

The Cyprus fleet is dominated by the SSCF, which is by far the most significant segment of the Cyprus fleet representing around the 95% of the total fleet both in 2019 and in 2020 in terms of number of vessels and employment. In addition, it represents 30% of the total weight of landings and accounts of 45% of total value of landings in 2020. The higher percentage in relation to value of landings compared to their weight is that SSCF generally improves production price to a higher degree than the LSF, and the gap between prices at first sale can be very high. These gaps may be explained by the differences in quality linked to freshness and the size of the products, but also by the marketing channels. The selling prices of SSCF are high. The same species caught by SSCF are much higher than the ones caught by demersal trawlers (LSF).

Apart from the high quality of the landings and high selling prices the main patterns of this part of the Cyprus fleet are the small family-owned businesses usually of one physical person, area of operation closest to landing points (operated in Cyprus waters i.e., less than 12 nautical miles), use of one or more passive gears even in the same fishing trip and very limited daily landings. The main gears used are trammel nets (GTR), set gillnets (GNS) and set longlines (LLS).

The number of the small-scale vessels increased slightly in 2020 by ten vessels (1% increase) compared to 2019 with a combined gross tonnage of 1 708 GT and a total engine power of 29 068 kW.

An estimated 37 458 days were spent at sea in 2020 for the SSCF, a decrease of 16% compared to 2019, which account for almost 91% of the total sea days of the Cyprus fleet for 2020 and 95% of the total sea days for 2019. This part of the fleet consumed 52% of the energy consumption of the Cyprus fleet, around 1 million litres of fuel.

The income generated from landings was not enough to cover all expenses made by SSCF and thus, it is in a net loss-making position in 2020 of EUR -679 143. In 2019 the fleet segment was in net-loss making position, as well but the loss was much less at around -EUR 86 676. The downfall in Net profit by 684% compared to 2019, indicates the significant deterioration of the economic performance of this fleet segment. One of the main reasons is the health crisis and the measures taken to stem the spread of the virus resulting in the reduction of the demand for fishery products. Over the last decade this part of the fleet had positive net profits only the last two years. Unsurprisingly, the GVA went down by 19% compared to 2019, reaching EUR 1.5 million.

It is worth noticing that when considering the operating subsidies as part of other income, the fleet segment in 2020 is not in a net-loss making position but in a net profit-making position with profits of EUR 129 048

## Large-scale fleet

The LSF is composed of polyvalent passive gears vessels and trawlers with length  $\geq 12$ m. In 2020 the number of vessels increased slightly reaching 42 vessels (two more vessels than in 2019) with a combined gross tonnage of 1 843 GT and a total engine power of 8 049 kW.

In 2020, there was a significant increase of 20% in the days spent at sea compared to 2019, reaching the 3 787 days. On the other hand, the fishing trips were decreased by 20% performing 1 640 trips in 2020. Additionally, energy consumption increased, as 10% more litres were consumed by this part of the fleet compared to the previous year.

Both weight and value of landings were down by around 15% in 2020 compared to 2019. Consequently, the income generated from landings was not enough to cover all the expenditure of the LSF resulting in a net loss-making position (approximately to EUR 1 million). Most of the expenditures were decreased significantly compared to 2019. The biggest decrease was shown in the repairs and maintenance which were reduced by 52% compared to 2019. Moreover, the variable costs, non-variable costs, energy costs were decreased by 23%, 31% and 11% respectively. The personnel costs were at the same level as in 2019. The economic performance improved compared to the period 2008-2019 but deteriorated if compared to 2019, mainly due to the reduction in the value of landings.

## Performance results of selected fleet segments

### Polyvalent 'passive' gears 6-12m

The most important SSCF segment is the *Polyvalent 'passive' gears with length 6-12m* since it represents 38% of the total number of active vessels and thus of employment. In 2020, there were 299 active vessels of this small-scale part of the fleet operating in territorial waters, i.e., less than 12 n.m., an increase of 8 vessels compared to 2019 where there were 291 vessels. It is noted that during 2015, 66 vessels from this fleet category were permanently withdrawn and their licences were cancelled through structural aid within the framework of the EMFF 2014-2020. In 2020 the FTEs increased to 460 from the 453 in 2019.

In 2020 the value of landings amounted to EUR 2.4 million, 38% of the total value of landings of the Cyprus fleet (including the landings from the bluefin tuna purse-seiner). The income obtained was sufficient to cover all the operating expenditures and this fleet segment generated gross profit of EUR 0.94 million. Due to the significant decrease in value of landings of around 16% compared to 2019 and as a consequence of the reduction of revenues, the segment could not cover all the expenditures resulting in being in net-loss making position. The segment had a small net loss of EUR 38 346. Another important indicator is the net profit margin whose economic development trend was improved by 95% during the period 2008-2019. All the above estimated indicators, clearly show the deterioration of economic position for the year 2020, mainly due to the decrease in the value of landings by 16%. All of the expenditures besides the depreciation cost were decreased in 2020 compared to previous year.

The GVA reached the amount of EUR 1.54 million in 2020 a decrease of nearly 15% compared to 2019 (EUR 1.8 million). The GVA to revenue is at the same level as in 2019, around 63%.

Fuel consumption was estimated at 2 064 litres per tonne of landed fish in 2020, well above of that in 2019 which was estimated at 1 823 litres. On the contrary, the landed weight per sea day reduced from 11.88 kg per day in 2019 to 11.47 kg per day in 2020.

There was a significant decrease in the overall days-at-sea of the segment since the vessels spent 34 687 days in 2020 but only 29 178 DaS in 2019. The fuel consumption in 2020 continued its declining trend observed since 2014 showing a 9% decrease compared to 2019. Moreover, in 2020 the energy cost was well down the one in 2019 since it was reduced by 27% due to lower fuel prices and fewer fishing days performed.

Overall, the main economic indicators in 2020 improved compared to the period 2008-2019 but worsen when compared to the year 2019.

### Vessels using Polyvalent 'passive' gears with length $\geq 12$ m

The most important LSF segment is the *Polyvalent 'passive' gears with length  $\geq 12$ m*. It is the second most important segment in terms of revenues (29% of the total value of landings) after the *Polyvalent 'passive' gears with length 6-12m* segment. The vessels of this category range from 12-26m (the large majority from 12-18m) and are engaged in two fisheries; mainly in the large pelagic fishery using drifting longlines and operating around Cyprus waters and the eastern Mediterranean (targeting

swordfish, bluefin tuna and albacore), but also in the inshore demersal fishery using mostly set nets and set longlines. A limited number of licenses are provided for this segment annually.

In 2020 this fleet segment consisted of 36 active vessels. Due to the introduction of two more vessels (34 vessels in 2019), the FTE national increased from 125 in 2019 to 153 in 2020. It is noted, though, that the vast majority of the crew comes from third countries (mainly Egypt) for as long as the duration of the fishery of albacore lasts.

In 2020 the value of landings amounted to EUR 1.84 million and it accounted for 29% of total value of landings of the Cyprus fleet (including the landings from the bluefin tuna purse-seiner). Due to the decrease in value of landings by around 16% compared to 2019, the income was such that all the operating expenditures could be covered, and the fleet segment could generate positive gross profit of EUR 166 866 for the year 2020. However, the fleet segment was operating at a net loss-making situation in 2020; net loss at EUR 0.8 million, a deterioration compared to 2019 where the net loss reached EUR 0.44 million. The main factor behind this economic deterioration is the great decrease in value of landings and thus, in revenues. Also, crew wages were increased by 10%.

## Drivers affecting the economic performance trends

The good condition of some of the main commercially exploited fish stocks may have a positive impact on the revenue of the sector.

In 2017 the lessepsians species like *Lagocephalos sceleratus* and the recently reported in Cyprus waters, lionfish, greatly affect the biodiversity and thus, the economic performance of the fisheries sector.

The attacks to the fisher's nets and catch by some of the protected species mainly by dolphins and sea turtles can have a negative impact on the limited fishing income and as a result, put at a risk the economic sustainability of the fleet segments especially the one of the small-scale inshore fishery fleet and of the polyvalent 'passive' gears vessels with length  $\geq 12m$ .

Recreational fishery is another driver that can negatively affect the economic performance of the professional fishers. The sport fishers are large in numbers and can have an important production in some species even in overfished species.

A significant reduction in the number of SSCF vessels, 107 in 2013 and 66 in the end of 2015, after decommissioning schemes through structural funds have become a driving force for the improvement of the economic performance of the Cyprus fleet overall but especially for the SSCF over time.

The only species managed in the Mediterranean by quotas until 2016 was the bluefin tuna. Cyprus after many years has issued a purse seiner license for bluefin tuna. Thus, from 2017 a new fleet segment, with only one vessel, exists. Since 2017, swordfish is the second species that it is managed by quotas. The allocation of quotas between the EU countries and the recovery plan for the species has been implemented since 2017. This fact could have a negative impact on the activities and economic performance of the Polyvalent 'passive' gears with length  $\geq 12m$  fleet segment at least in the short-run. From 2022 Albacore, the most important species of Cyprus pelagic fishery, will also be managed by quotas. The annual quota allocated to Cyprus is much less than the average quantity fished by the Polyvalent 'passive' gears with length  $\geq 12m$  fleet segment the last five years and thus, it is expected to seriously affect the income of this specific fleet segment.

## Markets and trade

In Cyprus the fish is mostly sold fresh. The processing fishing industry in Cyprus is at its early stages.

Cyprus has a negative trade balance in fresh fishery products both in value and weight. The fish prices are relatively high compared to other Mediterranean countries and the main reason is the Cyprus trade deficit of fresh products.

It is noted that the small-scale fishery has small daily landings that are of high quality and thus they can enjoy higher selling prices compared to the ones obtained by trawlers for the same species.

In Cyprus there are no auctions. Around 30% of the fish of small-scale fishers is sold directly to consumers and the rest to wholesalers. In contrary, the catch of the large-scale-vessels is channelled to domestic wholesalers or, for the case of the large pelagic fishery, exported.

## Management instruments

The fleet in Cyprus is managed mainly through effort limitations and technical measures. A limited number of licenses are provided for each segment annually. Furthermore, closed seasons, restriction

measures on the use of gears and MCRS are employed, in accordance to national and European regulations.

Regarding the SSCF, the fleet segments *Polyvalent passive gears with length 0-< 6m and 6-< 12m* (category license A' and B') are allowed to operate every day all year round, with a number of restriction measures on the use of fishing gears and MCRS, according to the national and community law. In 2015, 66 vessels of A' and B' category of SSCF were scrapped with public aid within the framework of the Scheme of Permanent Cessation, co-funded by the EMFF 2014-2020 and their licences were cancelled, resulting in a significant reduction in the number of licenced vessels. The good news for these two fleet segments were the decision of the Cyprus Department of Fisheries and Marine Research to allow the fishers belonging in these groups to use nets of up to 600 m length of lower mesh sizes for targeting the *Spicara smaris* species for a certain period (25 February to end of April), increasing their value of landings and as a result, their income.

The fleet segments Polyvalent passive gears with length 0-< 6m and 6-< 12m (vessels with license category C') have a limited fishing period, with a maximum of 100 working days and strict measures on the use of fishing gears.

For the trawlers fishing in territorial waters a limited number of licenses (two) is provided every year, and an extended closed season (from 1 June until the 7 November) is employed. Furthermore, restriction measures on the use of trawl nets and minimum landing sizes are employed for all licensed trawlers, in accordance with national and community law.

As for the polyvalent passive gears with length  $\geq 12m$ , a closed period for the swordfish is applied as required by the EU law.

## TACs and quotas

In 2016, the only species managed in the Mediterranean by quotas was the bluefin tuna and the total initial available quotas (TAC) for the Cyprus fleet in 2016 amounted to around 98 tonnes. The quota was distributed only to the *Polyvalent 'passive' gears with length  $\geq 12m$*  fleet segment operating with drifting longlines. The bluefin tuna TAC for 2017, 2018, 2019, 2020 and 2021 increased, and Cyprus was entitled to 117.7 tonnes, 138.65 tonnes, 153.4 tonnes, 169.35 tonnes and 168.94 respectively. In 2022 the quota is the same as in 2021. For the first time, in 2017 Cyprus distributed part of the quota, 60 tonnes, to a purse seiner targeting bluefin tuna leaving the rest of the quota for the *Polyvalent 'passive' gears with length  $\geq 12m$*  vessels. Thus, since 2017, there is a new national fleet segment, the purse seiner, which includes only one vessel. The quota distributed to this vessel for 2018 was 75 tonnes, 85 tonnes for 2019, 95 tonnes for both 2020 and 2021 and 90 tonnes for 2022.

Since 2017, swordfish is the second species in Mediterranean that has a TAC within the recovery plan of this species adopted by ICCAT. Cyprus, based on the allocation key between the EU Member States, was entitled to 59 tonnes in 2017, 57.2 tonnes in 2018, 55.5 tonnes in 2019 and 53.85 tonnes in 2020, 52.23 tonnes in 2021 and 50.66 tonnes in 2022. The implementation of such a management measure is expected to negatively affect the Polyvalent 'passive' gears with length over 12 metres fleet segment at least in the short-run.

During the ICCAT annual meeting in November 2021, a new multiannual plan was adopted for the restoration of the albacore (*Thunnus alalunga*) reserve in the Mediterranean (ICCAT Rec.21-06). The plan will be implemented from 2022 and includes, among other measures, the adoption of a quota for the species. The distribution of the quota allocated to the Republic of Cyprus amounts to 431.94 tonnes which corresponds to 19.9% of the total quota of the EU (2 169.68 tonnes). This is the most important species for the LSF and it is expected to negatively affect its viability at least in the short-run.

## Status of Key Stocks

In 2017, Cyprus has performed stock assessment for two of the main commercially important demersal stocks in GSA 25, bogue and stripped red mullet and both were found in low overexploitation status. It is noted that the assessment of stripped red mullet has been endorsed as 'accepted with qualitative advice', therefore, only qualitative information is given for the status of the stock. The time series used was 2005-2016 for both stock assessments performed. They were presented and endorsed by GFCM relevant scientific group.

In 2018, Cyprus performed a stock assessment for one of the main commercially important demersal stocks in GSA 25, common pandora (*Pagellus erythrinus*) which was found to be in a sustainable exploitation status with high SSB. The time series used was 1975-2017. The stock assessment was endorsed by the GFCM relevant scientific group.

In 2019 two stock assessments were presented and validated by the GFCM WGSAD, using a number of methods. Scientific advice for red mullet (*Mullus barbatus*) was given based on Extended Survivor Analysis (XSA) and diagnosis of the stock status showed a slight over-exploitation with intermediate SSB. An auxiliary cross validation and comparison exercise was also presented with four other models (LB-SPR, LBB, AMSY, and CMSY BSM) showing similar qualitative indications. The second stock for that year, common pandora (*Pagellus erythrinus*) was assessed based on Surplus Production in Continuous Time method (SPiCT). The stock was found to be in sustainable exploitation with relatively high biomass. Similar results were obtained from runs using JABBA, LiME (length based), LBB (length based), LBSPR (length based), AMSY (survey based), CMSY BSM and an empirical indicator derived from the length trend of the 95th percentile of the larger individuals of the species from MEDITS survey data.

In 2020, a transitional assessment of red mullet was presented from XSA to the more robust Statistical Catch At Age (SCAA) type of models. A number of methods (XSA, LBSPR, LBB, Empirical Indicators) and variations were presented in order to demonstrate all possible combinations to the group and prove the concept. Scientific advice was given based on SAM SCAA model and the stock was found to be in over-exploitation with high SSB.

In 2022, within the framework of the GFCM WGSAD which was held online in February 2022, four stock assessments were presented. More specifically, a preliminary study of the alien species SRI was presented, showing a consistently steady biomass, despite the high rates of exploitation. The species CBR and MUR were accepted as qualitative assessments with the first one showing a sustainably exploited stock ( $F/F_{MSY}=0.669$ ,  $B/B_{MSY}=1.28$ ) and the second one a stock in overexploitation status with relatively low biomass ( $F/F_{MSY}=3.48$ ). For the species SBA the assessment was endorsed as quantitative showing a stock in low overfishing status ( $F/F_{MSY}=1.05$ ) with intermediate levels of biomass.

## Operational costs

The most important operational costs are the wages and salaries of the crew members and the fuel cost. Personnel costs include all the expenditures paid by the employers, including social security. The SSCF employs only individuals and their assistants. Neither the vessels' owners-fishers nor their assistants are paid any wages nor salaries. They get share of the value of landings. Consequently, for the SSCF the value of the unpaid labour (for example the vessel owner's own labour) is estimated based on a minimum wage. Thus, this amount per vessel is fixed according to the number of assistants.

On the other hand, the LSF fleet owners (trawlers and polyvalent passive gears with length  $\geq 12\text{m}$ ) employ crew from third countries and these crew members are paid based on an agreed salary. It includes temporary, seasonal as well as rotation crew. These wages can vary from year to year but not remarkably. Currently, the crew wages are much higher during the period of the albacore fishing season, which it is the main fishing activity of the LSF and the vessels' owners hire a significant number of fishers from Egypt.

Fuel prices, with the exception of 2018 and 2019, followed a decreasing trend from 2012 to 2020. There has been a significant decrease in fuel prices by nearly 20% to 0.615 euro/litre in 2020 compared to 2019.

## Innovation and Development

The SSCF is not very technical advanced and neither the polyvalent segment. Only the trawlers segment does it use more advanced technology but even in this case, not at a great extent. Investing in new technology needs capital and the return is not assured.

The vessels can get funding for modernisation of their vessel for specific purposes such as hygiene and safety from the EMFF 2014-2020. Moreover, under the Operational Program, 'Thalassa' artificial reefs were created for the improvement of biodiversity and the protection of fish stocks. Improving quality of the marine environment will increase the fish stocks resulting in increasing the income of the fishers and their economic sustainability.

Also, fishers through the structural funds could participate in seminars for improving their skills and their fishing knowledge. There is great interest by fishers for attending seminars that promotes sustainable fishing and new fishing technologies.

## Nowcasts for 2021-22 and beyond

### Model results

Preliminary results for 2021 forecast a relatively stable situation compared to 2020, with the economic performance driven by the stability in both operating expenses and revenues. A small decline in the total number of vessels and as a result, GT and KW is expected but, this is not the case for the active vessels where it is suggested that they will remain similar to 2020. Projections for 2021 suggest operating costs will be rather stable with the exception of the energy cost which it is expected to be increased due to the increase in fuel prices. The income is expected to be such that all the operating expenditures can be covered, and the Cyprus fleet can generate positive gross profit having a small increase compared to 2020. GVA is expected to be slightly reduced in 2021. A significant increase is suggested for the net profit for 2021 (Net Loss for 2020). However, in 2022 the increase in fuel prices for 2022 drives all profitability (gross profit) down. For the LSF the gross profit becomes negative, suggesting that the sector is not economically viable. Definitely, the results of 2022 suggest a deteriorated picture of the Cyprus fleet.

### COVID-19

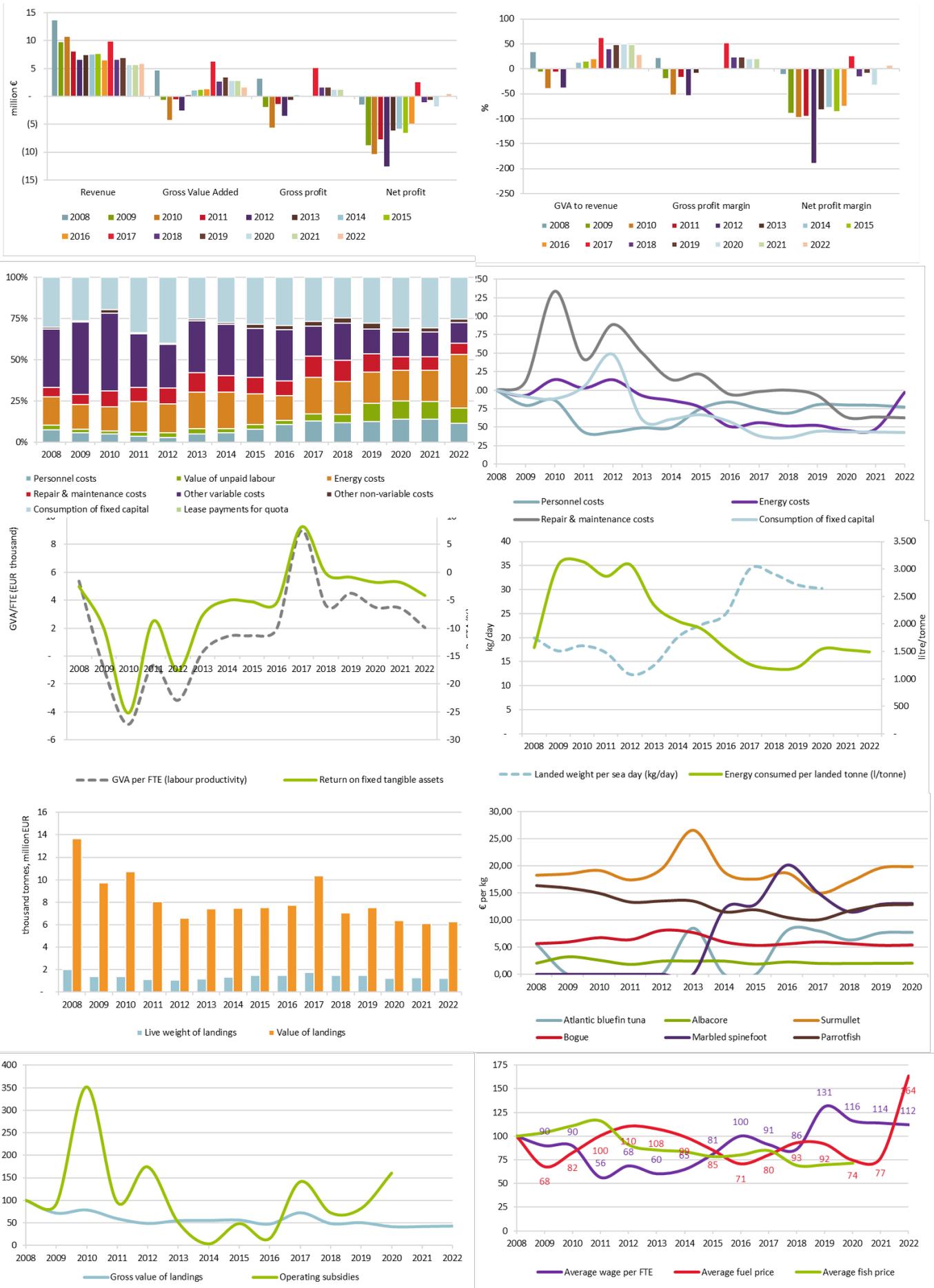
The fisheries conditions have been deteriorated since the mid of March 2020 when the COVID-19 appeared in Cyprus and the Government had to take measures to stem the spread of this virus. The mandatory closure of restaurants and hotel units has seriously negatively affected the quantity demanded, the prices and the trade chain. Fisheries activities have been reduced, with many vessels, mainly the small-scale ones, ceasing their activities completely since they were operating at a loss-making situation. Furthermore, polyvalent vessels could not start fishing pelagic species (mainly albacore) during mid-May 2020 as they normally did, as trading depends to a large extent, on exports to Italy and Spain. The economic viability of the fisheries sector is at stake.

Cyprus, in order to mitigate the effects of the spread of the COVID-19, implemented through the EMFF, a scheme of temporary cessation of fishing activities for two months for the period mid-April to mid-June 2020 for the SSCF segments, polyvalent 'passive' gears with length 0-6m and 6-12m, and for the large-scale fleet segment Polyvalent passive gears vessels with length  $\geq 12$ m. The monthly compensation was EUR 1000 for the small-scale vessels and EUR 1500 for the polyvalent vessels. The budget of the program was EUR 750 000 but at the end around EUR 445 000 was paid to the 251 vessels entering in this program.

The same temporary cessation of fishing activities scheme was also implemented during the end of the 2020. Polyvalent vessels ceased their fishing activities during the period 16/10/2020 until 31/12/2021. The monthly compensation was the same as in the previous scheme i.e. EUR 1500 and the total amount of the aid for this fleet segment was about EUR 116 000 with 31 owners entering this scheme. As for the small-scale fleet segment, polyvalent 'passive' gears with length 0-6m and 6-12m, the duration of the scheme was from 16/11/2020 until 31/12/2021. The monthly compensation was the same as in the previous scheme i.e. EUR 1000 and the total amount of the aid for this fleet segment was over EUR 300 000 with approximately 220 owners entering this scheme.

### Methodological considerations and data issues

No major issues that need reporting.



**Figure 4.4 Cyprus: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in cost items; productivity and efficiency indicators; landings and average price (euro/kg) of top species; variation in income and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.**

Data source: MS data submissions under the DCF 2022Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.5 Denmark

### Short description of the national fleet

#### Fleet capacity

In 2020, the Danish fishing fleet consisted of 1 618 registered vessels, with a combined vessel tonnage of 67 307 GTs and engine power of 203 315 kW. The 1 618 vessels represent production units, which may be active or inactive, and some of these production units can include more than one vessel. In 2020, there were 1 210 active and 408 inactive production units. The number of registered fishing vessels decreased by 3% between 2019 and 2020. Comparing 2020 to the average for the period 2008 to 2019, the number of vessels were 24% lower in 2020; tonnage was 2% lower, while engine power was 9% lower. Since 2008, the number of vessels has decreased with 42%, tonnage with 15% and engine power with 28%.

#### Fleet structure

Around 71% of the active part of the fleet consists of vessels below 10 metres in 2020. These made up an even larger part of the fleet when including inactive vessels, because the major part of these inactive vessels are below 10 metres. The vessels between 24-40m and the ones above 40 metres corresponded to less than 3% each of the total number of active vessels in 2020 but accounted for 15% and 55% of the total landings value, respectively. 62% of the Danish active vessels used passive gears only, 17% used demersal trawls or seine or both, 13% used both active and passive gears, while a minority of vessels (7%) used dredge, pelagic trawl, or beam trawl. The largest landings in 2020 in terms of value and weight continues to be made by the pelagic trawlers above 40 metres, catching species for human consumption (Atlantic herring, Atlantic cod, and Atlantic mackerel) and species for fishmeal and fish oil production (sprat, sandeel, and blue whiting).

#### Employment

Total number of employed was in 2020 estimated to be 1 238 jobs, which is a small increase compared to 1 228 employed in 2019. Converting into FTEs there were 990 FTEs employed in 2020. This is an increase of 6 FTEs compared to 2019.

#### Effort

In 2020, the Danish fleet spent a total of around 81 000 DaS. The total number of days at sea decreased by 5% between 2019 and 2020. Fuel consumption was 106 million litres in 2019 and increased 5% compared to 2019.

#### Production

In 2020, the total weight landed by the Danish fleet was 821 000 tonnes of seafood with a real landing value of EUR 449 million. In 2019, the weight was 634 000 tonnes and the real value EUR 420 million. Thus, the total weight of landings increased from 2019 to 2020 by 30%, while the value of landings increased by 7%.

Again in 2020, the primary species driving the development in total weight landed were the industrial species, primarily sandeel, Norwegian pout and sprat with increases of 85 000 tonnes, 92 000 tonnes and 23 000 tonnes. However, landings of central consumptions species such as cod and saithe decreased, thus reducing the increase of 30% in landed weight to a 7% increase in value of landings.

### Economic results for 2020 and recent trends

#### National fleet performance

The total income generated by the Danish fleet in 2020 was EUR 473 million, an increase of 6% compared to 2019. The total income generated from direct fishing activities accounted for EUR 422 million (almost unchanged compared to 2019), EUR 34 million in non-fishing income (+114% compared to 2019) and EUR 16 million from leasing out fishing rights (+84% compared to 2019).

The three major variable costs consisted of labour (excl. the value of unpaid labour), energy and repair & maintenance. The costs for labour were EUR 81 million (almost unchanged compared to 2019),

energy costs were EUR 38 million (-27% compared to 2019) and repair & maintenance costs increased with 12% to EUR 52 million.

The annual depreciation costs, which are the major group of capital costs, increased 18% compared to 2019 to EUR 100 million.

In terms of economic fleet performance, GVA increased 10%, gross profit increased 15% and net profit increased 10% compared to 2019. So, the increase in the three performance measures were larger than the increase in total income. Thus the fishing fleet has also been able to reduce the costs per landed Euro compared to the averages in 2019.

In 2020, the Danish fleet had a value of physical capital (estimated replacement value) of EUR 935 million and an estimated value of fishing rights of around EUR 2.1 billion. Compared to 2019, the value of the physical capital increased by 3% and the estimated value of fishing rights increased by 6%. Investments by the fleet amounted EUR 66 million in 2020, an increase of 117% from 2019, but almost at the same level as in 2018. Generally, the investment levels varies considerably between the years.

## Resource productivity and efficiency indicators

The Danish fleet had a gross profit margin of 35% in 2020, which is a reduction compared to 2019, where it was 38%. The net profit margin was 12% in 2020, thus being 8 percentage points lower than in 2019.

Labour productivity, measured as GVA against FTE decreased 51% from the record high level in 2019, thus being at the same levels as in 2017 and 2018.

The total energy consumption was 100 million litres in 2020, thus being at the same level as in 2019. The landed weight per energy consumed, was 7.2 kg/litre in 2020 compared to 6.2 kg/litre in 2019. Per landed tonne, the fuel use was in 2020 on average 129 litres/tonne compared to 159 litres/tonne in 2019.

The weight of landings per unit of effort (in DaS) in 2020 increased 36% compared to 2019. In 2019, almost 0.75 tonnes were landed per day at sea on average, while it increased to 1.02 tonnes in 2020.

## Performance by fishing activity

### Small-scale coastal fleet

The Danish SSCF operates mostly on the Baltic Sea, the Sounds and Kattegat, and consisted in 2020 of 867 vessels compared to 864 vessels in 2019, with a total vessel tonnage of 3 192 GT (-2%) and a total engine power of 37 939 kW (2%) in 2020. Compared to the average of the period 2008-2019, the number of vessels decreased by 17%, total vessel tonnage decreased 18% and total vessel power decreased 8%.

The value of the landings decreased 14% from 2019 to 2020 being EUR 19 million in 2020, which is 4% of the national landings value for fisheries. Total costs including crew costs were unchanged from 2019 to 2020, but fluctuations are observed within the underlying cost variables. For instance, energy costs decreased 18% to EUR 1.4 million, while repair and maintenance costs increased with 23% to EUR 4.2 million. Other variable costs decreased with 18%, while non-variable costs increased with 18%, when comparing 2019 and 2020, thus being EUR 3.5 million and EUR 3.4 million, respectively. Crew costs (incl. unpaid labour value) are a major expense for the SSCF, although it decreased with 2% from EUR 12.2 million in 2019 to EUR 11.9 million in 2020.

Looking at the economic performance indicators, gross profit decreased further from -EUR 1.3 million in 2019 to -EUR 2.9 million in 2020. Net profit continues being negative for this fleet, and a further worsening was observed in 2020 compared to 2019. In 2019, net profit was -EUR 3.1 million, while it was -EUR 5.6 in 2020.

### Large-scale fleet

The Danish LSF operates to varying degree in all waters around Denmark, i.e. the Baltic Sea, the Sounds, Kattegat, Skagerrak, the North Sea, and some even further away in the Norwegian Sea, Faroese water, the Bay of Biscay, the English channel etc. In 2020 the LSF consisted of 352 vessels (-1% compared to 2019) with a total vessel tonnage at 62 330 GT (-5%) and a total vessel power of 150 923 kW (+1%). Compared to the average of the period 2008-2018 number of vessels has decreased 22%, total vessel tonnage has increased 2% and total vessel power has decreased 6%.

The value of the landings increased 9% to EUR 430 million, which is 96% of the national landings value for Danish fisheries. Total cost including crew costs decreased 2% to EUR 241 million. For the LCF, crew costs are the primary expense. It increased 2% to EUR 107 million (incl. unpaid labour value) in 2020. Energy costs decreased 27% to EUR 37 million, maintenance costs increased 11% to EUR 48 million, while the remaining costs increased with 5% from EUR 48 million in 2019 to EUR 50 million in 2020.

For the key economic performance indicators, gross profit increased 16% to EUR 194 million in 2020, while net profit increased 12% to EUR 103 million in 2020.

## Performance results of selected fleet segments

The Danish fleet is highly diversified with a broad range of vessel types operating and targeting different species predominantly in the North Sea, Baltic Sea, and North Atlantic. The national fleet consisted of 19 DCF fleet segments in 2020. Looking at gross profit, eight fleet segments made losses, while 11 fleet segments had a positive gross profit, which is a deterioration compared to 2019, where the numbers were three and 16 respectively. The Annex 2 provides a breakdown of the 2020 key performance indicators by all 19 fleet segments. The importance of a fleet segment can be based on an array of indicators, ranging from the number of vessels in a segment, their share of the total value of Danish landings, severe management impacts or a combination of several indicators.

The following fleet segments have thus been selected for a more detailed presentation of their economic performance:

- PGP 10-12m is selected due to their high dependency on fishing in the Baltic Sea
- DTS 12-18m is selected to reflect a fleet segment conducting a diversified fishery in several fishing waters also in the Baltic Sea, have a reasonable share of the total Danish landings value and involving around one hundred fishing vessels.
- TM 40XXm is selected due to the fact that they take a high share of the total value of Danish landing and furthermore do it in primarily do it in the economic exclusive zone of the UK

### Fleet segment: PGP 1012m

PGP 1012m (polyvalent passive gears 10-12m) consisted of 45 vessels in 2020. Their overall importance in the Danish fishery is limited, they took around 1% of the total Danish landings value in 2020. However, most of these vessels have historically been dependent on fishing in the Baltic Sea, where the quotas in recent years have been reduced significantly to a level, where fewer vessels can make a living from this fishery. This implies that the vessels must either find other quotas to fish on or alternatively stop fishing.

In 2020, the total value of landings for this fleet was EUR 4.0 million and 31 FTEs were employed in this fleet segment. The total gross profit was -EUR 1.0 million and the net profit was -EUR 1.8 million. This is a major reduction in economic performance compared to 2019, where the numbers were EUR 0.5 million and EUR 0.07 million. Given that the outlook for the key stocks (cod and herring) in the parts of the Baltic Sea important for Danish fishers is not positive for the years to come, the vessels mostly dependent on fishing in the Baltic Sea must consider whether to continue fishing in other fishing areas, which implies buying quotas in these areas, or alternatively decommission. With respect to the latter possibility considerations are made regarding this, and approximately EUR 3 million have been reserved to a decommissioning scheme.

### Fleet segment: DTS1218m

The fleet segment DTS1218m (Demersal trawl 12-18m) consisted of 106 vessels in 2020. These vessels contribute to approximately 8% of the total Danish landings value in 2020, which is a bit less than in 2019. These vessels fish in all the fishing areas around Denmark, but primarily Skagerrak (43%), Kattegat (32%) and the Baltic Sea (15%) and to a minor extend in the North Sea (10%). Lobster is the most important species for this fleet accounting for around 42% of their landings value, while European plaice and Atlantic cod account for 17% and 11%, respectively. Sandeel (8%), European sprat (5%), sole (3%) and Norwegian pout (3%) are other important species. This fleet is thus an example of the multispecies and multiarea fishery that many Danish vessels conducts. Such a diversified behaviour gives them some robustness with respect to their economic performance, at least looking at it from an overall perspective.

In 2020, the total value of landing for this fleet was EUR 35 million and 156 FTEs were employed in this fleet segment. Total gross profit was EUR 3.4 million in 2020, which is a deterioration from

EUR 4.5 million in 2019. Net profit also deteriorated compared to 2019 from EUR 0.2 million to - EUR 1.7 million. The reason for this worsening in economic performance is not completely clear, but given their dependency on lobster, which is a high quality/high price product, the COVID-19 pandemic is considered to have had an impact. The average price of lobster thus decreased from 2019 to 2020 and so did the landings of lobster.

### **Fleet segment: TM 40XXm**

TM 40XX (Pelagic trawl >40m) consisted of 12 vessels which operates predominantly in the North Sea and the Norwegian Sea. The fleet targets pelagic species for consumption (mackerel and herring) as well as reduction species such as sandeel, European sprat, and blue whiting. These vessels are thus expected to be affected by Brexit.

This fleet segment is without question the one taking the highest share of the total Danish landings value, which in 2020 was 32%. In 2020, the total value of landings was EUR 146 million and 80 FTEs were employed in this fleet segment. This fleet segment reported a total gross profit of EUR 100 million and total net profit of EUR 64 million in 2020.

As mentioned in the beginning, Brexit will have an increasingly influence for the vessels in this fleet as the reductions in various quotas are implemented in the years until being fully implemented by 2025. For now, only minor reduction in the value of landings and economic performance measures are observed. However, it is in the forthcoming years going to be interesting to observe the potential effects for this fleet following Brexit, but also the consequences of changed access to the Norwegian waters and any unilateral United Kingdom regulatory initiatives that might affect these vessels, because of their high dependency on fishing in the United Kingdom economic exclusive zone.

## **Drivers affecting the economic performance trends**

### **Markets and Trade**

The average landed fish price of the five by value most important species in the Danish fishery in 2020 decreased for four of these. For the most important species, herring, the price decreased with 1% from 0.55 euro/kilo in 2019 to 0.54 euro/kilo in 2020, for European sprat by 4% from 0.28 euro/kilo to 0.27 euro/kilo in 2020, Atlantic Mackerel with 10% from 1.34 euro/kilo to 1.21 euro/kilo and Norway pout by 6% from 0.26 euro/kilo to 0.25 euro/kilo. Only for the second most important species, sandeel, the price increased with 4% from 0.26 euro/kilo to 0.27 euro/kilo.

### **Management instruments**

Most of the Danish fishing fleet is managed through variations of individual property rights schemes. These schemes have gradually been introduced since 2003, with the majority of the demersal fishery from 2007, and this has implied an increase in the capacity reductions observed in the Danish fishing fleet in number of vessels, tonnage and engine power.

The schemes have generally been in place for more than 10 years, and despite that restructuring is still occurring the indications are that this is happening at a reduced speed compared to the first years. New vessels are built, generally being larger and having new engines with better efficiency. In addition, focus is towards making the work environment and work safety conditions better for the crew.

Given that the system is generally considered to be well functioning, there are no current plans regarding changing the system fundamentally. However, adjustments are sometimes made to account for unwanted situations, such as quota concentration.

Also, major 'chocks' such as Brexit and the deteriorating stock situation in the Baltic Sea have required considerations about how to assist fishers with adapting to these situations. Given that these are 'chocks' have an effect within a short time, the fleets have potential problems with adapting to this without, at least from a political perspective, severe negative effects. Therefore, various compensation schemes are and have been considered in order to handle these situations.

### **Status of Key Stocks, TACs and quotas**

The Danish quotas of the most valuable species to the Danish fishery were in 2020 the following: Atlantic herring 112 000 tonnes, sandeels 205 000 tonnes, European sprat 163 000 tonnes, Atlantic mackerel 35 000 tonnes and Norway pout 72 000 tonnes.

Compared to 2019, the quotas for European sprat and Atlantic herring have decreased with 4% and 12%, while the quotas for sandeels increased 77%, Atlantic mackerel 31%, and Norway pout 18%.

The important consumption species Atlantic cod and Norway lobster were in 2020, outside the top 5 of most important species. However, they are still important for many of the multispecies fleets in Danish fisheries. The quotas for these species were for Atlantic cod reduced with 61% but increased with 7% for Norway lobster. For the Atlantic cod, it was primarily the deteriorating stock situation in the Baltic Sea that drove the reduction.

Besides the general fluctuations in the quotas in the different fishing areas, a special focus is currently on the quotas in the North Sea due to the consequences following Brexit and the Baltic Sea following the severe conditions for the stocks in this area. Despite that the Baltic Sea only accounts for around 6% of the Danish total fishing value, the quota reductions will have severe economic consequences for especially the fishers highly dependent on the Baltic Sea. The Atlantic cod quota in Eastern Baltic Sea has been reduced from 6 300 tonnes in 2019 to 459 tonnes in 2020, while the quota in the Western Baltic Sea was reduced from 4 486 tonnes in 2019 to 2 275 tonnes in 2020.

## Innovation and Development

Danish fishers work in a competitive environment, where focus is on delivering a high quality product and making an economic outcome securing a profit for the owner(s) and an attractive salary for the crew.

A range of initiatives can contribute to this. High product quality will also have an influence on the price obtained for the landed fish. Danish fishery is focused on this together with the processing industry in order to find innovative solutions to get the best product and the highest price. In addition, using invasive species and landings because of the landing obligation has been investigated, but it takes time for such innovations to be analysed and potentially put into a production process.

An important part of the economic outcome comes from the cost side. For instance, optimising the fuel use, sometimes by installing new engines, improving the engine technology etc. will have a direct effect on the cost of any fishing activity. Also, improving selectivity will reduce the cost of sorting and handling the fish afterwards. All such initiatives are ongoing in partnerships between the fishers, processors, gear technologists, researchers etc. in order to identify, test and implement the most promising ideas.

## Nowcasts for 2021-22 and beyond

### Model results

Preliminary results for 2021 forecast a relatively stable situation from 2021, with the results driven by the slightly decline of the number of vessels. Projections for 2021 suggest operating costs will increase, primarily driven by increased energy cost, however the results are improved compared to 2020. However, in 2022 the increase in fuel prices for 2022 drives all the profitability down. It should be mentioned that although overall, the Danish fleet keeps its positive profitability even in 2022, if we consider only the SSCF all the relevant indicators are reduced, specially GVA by 11%. This deteriorates the already (in 2020) bad situation of this segment of the Danish fleet (similar to all the SSCF of the Baltic sea).

### Outlook

The TACs and thus quotas continue to be one of the most important factors that influence the fleet performance, although in 2022 the situation with fuel price simply adds more complexity to the profitability of the fleet, specially of the SSCF.

A look at some of the most significant changes in the Danish quotas is relevant to consider, when foreseeing the trends in economic performance in 2020-21

Quotas for the most important species are described here: sandeel 205 000 tonnes in 2020 and 102 000 tonnes in 2021, European sprat 163 000 tonnes in 2020 and 195 000 tonnes in 2021, Atlantic herring 112 000 tonnes in 2020 and 82 000 tonnes in 2021, European plaice 41 000 tonnes in 2020 and 30 000 tonnes in 2021, Atlantic mackerel 35 000 tonnes in 2020 and 32 000 tonnes in 2021 and Atlantic cod goes from 8 000 tonnes in 2020 to 6 000 tonnes in 2021.

Except for sprat, all quotas for the most important species decrease in 2019 and 2020.

Prices developed in 2020 with a mixed picture compared to 2019. The price for Atlantic cod and sandeel increased by 14% and 4% respectively, while the price for European plaice, Atlantic herring,

Atlantic mackerel, Norway lobster, and European sprat decreased 14%, 1%, 14%, 14 and 4%, respectively.

## BREXIT

Brexit is expected to have an impact for many fleet segments in Danish fisheries either directly or indirectly. The TCA resulted in reduced Danish quotas for several important species. The fishing opportunities for e.g. cod, haddock, hake and sole, the pelagic consumption species herring and mackerel plus the primarily industrial species Norway pout, and to a minor degree sprat and blue whiting. Calculating the potential effects of Brexit for Danish fisheries is a complex issue. The loss of fishing opportunities can affect the value of the quota shares, which Danish fishers own and can sell amongst each other. Reduced quotas implies a lower annual absolute allocation of quota to each fisher, thus implying that the relative value of the shares will be reduced. Thus, the capital value of some fishing rights are expected to be reduced.

However, looking at the day-to-day effect, some of the quotas being reduced following Brexit are currently not fully utilised. Thus, the current landings can in some situations still be caught, thus implying no loss in landings value everything else being equal. For some quotas, the reduction is so large that current landings cannot be sustained. This is for example expected to be the case for herring, mackerel, saithe and hake.

Furthermore, the consequences of Brexit become even more difficult to assess due to the indirect effect on the agreements with Norway. The previous agreement between EU and Norway included access to United Kingdom waters. However, this is not a part of the agreement now, thus implying that the negotiation position for the EU towards Norway is reduced. Given that Danish fishers fish important species in Norwegian waters, the economic effects following Brexit might be even bigger due to this.

## COVID-19

The COVID-19 outbreak affected the Danish fleet in some degree, but it varies between fleets. At the overall level, total landings in weight increased in 2020 compared to 2019, but the total landings value decreased. Many factors have contributed to this, lower quotas on some high priced fish, lower quota utilisation, price decreases etc. However, it is not straight forward to easily distinguish between the different effects, and also how much have been driven by COVID-19 or other factors.

However, generally the fishers delivering to the fresh markets, primarily to restaurants have had issues with selling their landings at the normal price. Much of fish are exported to restaurants in other countries, and these have been closed to a different degree, like it has in Denmark. An example of this is the *Nephrops* fishery, which delivers to restaurants. Despite increased quota in the North Sea, landings have been reduced and so have the sales price. It is likely that much of this is driven by COVID-19.

As a general note, the Danish fleet has been supported financially by the national government during the COVID-19 outbreak covering income support, support for fixed costs and guaranteed loans. Local governments have also granted financial support to some extent.

## Methodological considerations and data issues

### Identify changes in respect to previous years.

The calculations of FTE have now been adjusted to secure that the number of fishers are not above the number of FTEs.

### Improvements achieved within 2020 data collection

None.

### Problems identified

Capacity data for [YEAR]+1 is always delayed from Denmark. Validated data are available in May, but data is requested in the data call in February/March. This always causes troubles in the calculation of 2021 forecast data. Denmark is still trying to obtain preliminary data that can be reported to the data call. The preliminary data will then be corrected, verified, and submitted the following year.

Three fleet segments have a total number of fishing days higher than the number of days-at-sea (DNK NAO DRB1012 NGI, DNK NAO TBB1218 NGI, DNK NAO TBB1824 NGI). The information originates from the vessel logbook. The observed problem is most likely due to the use of several gear types.

In 2019, the Danish fishing fleet consisted of 1 671 registered vessels, with a combined vessel tonnage of 71 436 GTs and engine power of 205 393 000 kW. The 1 671 vessels represent production units, which may be active or inactive, and some of these production units can include more than one vessel. In 2019, there were 1 219 active and 452 inactive production units. The number of registered fishing vessels decreased by 2% between 2018 and 2019. Comparing 2019 to the average for the period 2008 to 2018, the number of vessels were 19% lower in 2019; tonnage was 9% lower, while engine power was 4% higher. Since 2008, the number of vessels have decreased with 41%, tonnage with 9% and engine power with 27%.

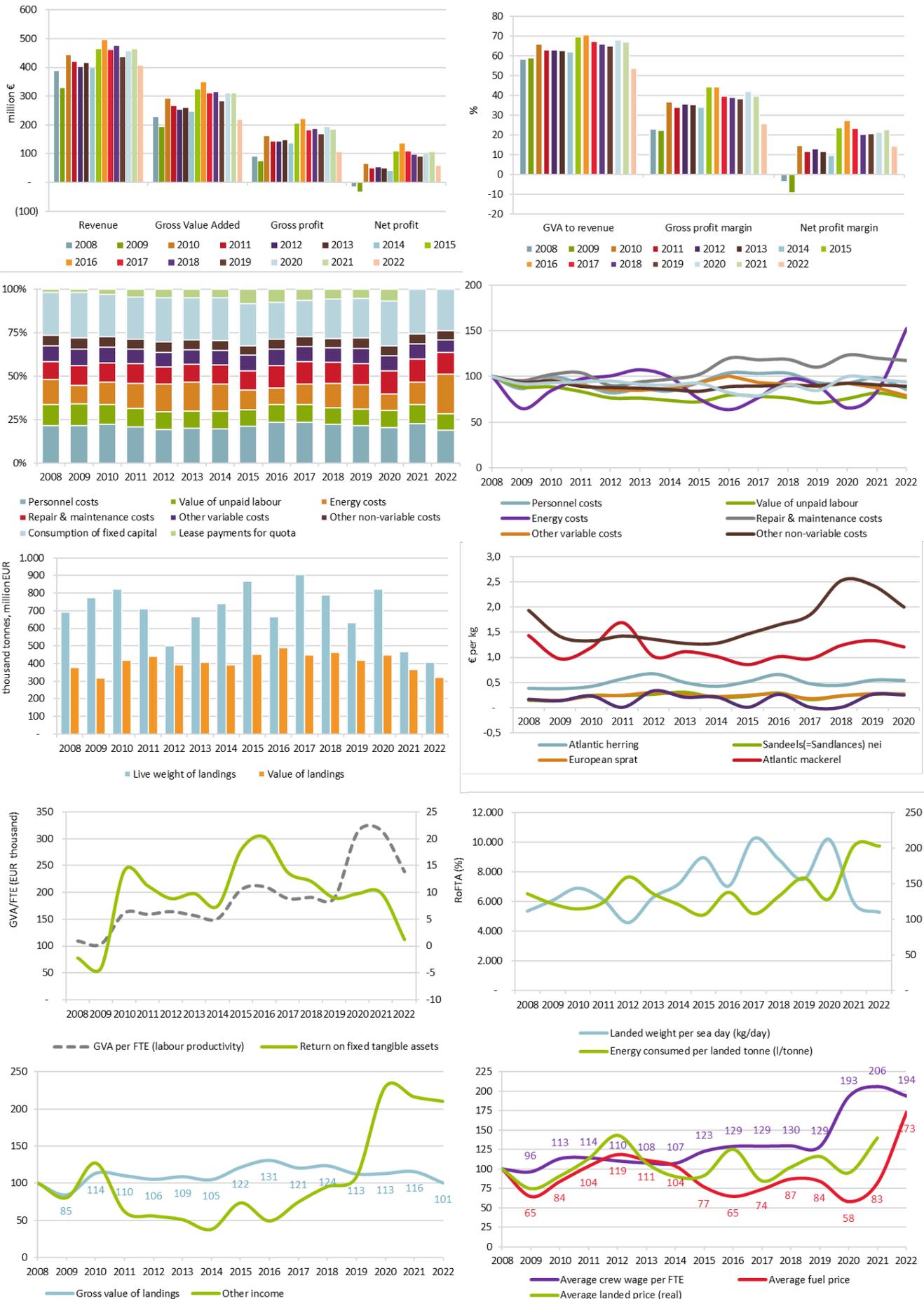


Figure 4.5 Demark: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.6 Estonia

### Short description of the national fleet

#### Fleet capacity

In 2020, total number of registered vessels continued to increase by 4% and reached 1 896 vessels. This increase was related to the registration of SSCF boats into the fishing fleet register. The estimated number of active vessels was 1 322, 9% higher compared to 2019. The active fleet was divided in 2% of LSF (32 vessels) and 97% of SSCF (1 290 vessels). The LSF can be divided into trawlers operating in the Baltic Sea and outside the Baltic Sea (NAFO and Eastern Arctic; two and four vessels, respectively). The SSCF operates in Estonian coastal waters using mainly passive gears.

#### Fishing activity and production

An estimated 62 059 days were spent at sea in 2020; decreasing 3% compared to 2019.

The live weight landed by the Estonian Baltic Sea fleet in 2020 was 55 776 tonnes of seafood, with a landed value of EUR 13.2 million. The total weight and the total value of landings decreased 16% and 13% compared to previous year, respectively.

In 2020, Atlantic herring generated the highest value (EUR 5.3 million) landed by the Estonian Baltic Sea fleet, followed by European sprat (EUR 4.1 million) and European perch (EUR 1.9 million). In terms of landings weight, Atlantic herring landings were 28 608 tonnes, European sprat 24 310 tonnes and European perch 748 tonnes.

#### Employment and average salaries

Employment was estimated at 1 318 jobs, corresponding to 321 FTEs in 2020. The big difference between numbers of total employed and FTE refers that there are many persons in the sector for whom fishing is not the only source of income. It mainly concerns the SSCF. Compared to 2019, the number of engaged crew increased 13% and FTE decreased 2% in 2020. Average wage per FTE amounted to EUR 18 339; increasing 3% compared to 2019.

### Economic results for 2020 and recent trends

#### National fleet performance

The national fleet as a whole made a loss in 2020. Revenue, estimated at EUR 13.7 million in 2020, decreased by 13% compared to a year ago.

GVA, gross profit and net profit were estimated at EUR 8.4 million, EUR 2.5 million and -EUR 0.2 million, respectively. Compared to 2019, GVA, gross profit and net profit decreased 6%, 21% and 121%, respectively.

Total costs amounted to EUR 14.2 million. Compared to 2019, total cost decreased 8%.

The (depreciated) replacement value of the Estonian fleet was estimated at EUR 23.4 million in 2020 and investments amounted to EUR 2.8 million, which was three times higher than in 2019.

#### Resource productivity and efficiency indicators

The gross profit margin in 2020 was 18%. Net profit margin was estimated at -1%, which decreased 124% compared to 2019.

The RoFTA was estimated at -0.1% and decreased 104% in comparison to 2019. Labour productivity (GVA/FTE) decreased 5% compared to 2019.

Fuel consumption per landed tonne has followed rather decreasing trend compared to time period before 2012, with 55 litres per tonne in 2020. Compared to 2019, landings in weight per unit of effort (in DaS) decreased in 2020 with 899 kg per sea day.

#### Drivers affecting the economic performance trends

Compared to 2019, the total weight and value of landings of the Estonian Baltic Sea fleet decreased by 16% and 13% in 2020, respectively. However, the main reason for this was not the COVID-19 outbreak, but reduction in the Estonian trawl fleet's sprat and herring quotas by total 16%, which in

turn led to a decline in revenue and costs. Repair & maintenance costs, fuel costs and labour costs decreased the most. In addition to less effort, also a lower fuel price contributed to the reduction in fuel costs. The average fuel price in 2020 was 0.58 euro/litre, which is 0.07 euro/litre lower than in 2019. There were no significant changes in average first-sale prices of the key species (herring, sprat and perch) in 2020, compared to 2019.

## Markets and Trade

Key species as sprat and herring were mainly landed at Estonian ports, where the catch was sold to fish freezing or processing companies, unless the fishing company itself was engaged in the processing and marketing of fish. Fish was also landed at ports in Latvia, Finland and Sweden. The proportion of catch landed at foreign ports decreased from 10% in 2019 to 5% in 2020.

The export volume of frozen fish (sprat and herring) of Estonian origin was recovering after the loss of the Russian market in 2014. The main export market continued to be Ukraine in 2020. Large quantities of sprat and herring were also sold to Latvia, Denmark and Moldova.

Compared with 2019, the average first-sale prices of sprat and herring remained the same in 2020, amounting to 0.17 and 0.18 euro/kg, respectively.

## Operational costs

Main changes took place in repair & maintenance costs, fuel costs and labour costs. Compared to 2019, repair & maintenance costs decreased 41% in 2020. Fuel costs and labour costs followed the same trend by 22% and 12%, respectively.

## Status of key stocks, changes in TACs and quotas

Herring, sprat and cod have been main internationally regulated/managed fish species targeted by the Estonian Baltic Sea fishing fleet.

International acoustic surveys of pelagic fish stocks conducted in the Baltic Sea in recent years show that the lion's share of the sprat stock is currently located in the central and north-eastern parts of the sea. Thus, the current status of the sprat stock in the economic zone of Estonia can still be regarded as relatively satisfactory.

Unlike sprat, which is treated as a single stock unit, i.e., population across the Baltic Sea, in the case of herring the state of stocks is assessed and advice for exploitation is given for four stock units in different subdivisions of the Baltic Sea. Only two stock units, Central Baltic herring and Gulf of Riga herring, are offering more interest to Estonian fishers. The current status of Gulf of Riga herring is regarded as relatively good, but the status of Central Baltic herring has deteriorated.

In 2020 the Estonian trawl fleet's final sprat and herring quotas were 25 504 and 22 548 tonnes, respectively. The sprat quota had shown an upward trend in the previous three years but decreased by 19% in 2020. The herring quota continued decrease in 2020 by 12%. Quota uptake rates for trawlers remained high, amounting to 93% for herring and 95% for sprat. The final herring quota for the Estonian coastal fishers were 9 730 tonnes in 2020 and quota uptake rate amounted to 80%. Like in the preceding year, targeted fishing for cod was non-existent in 2020. Trawling companies explained the termination of cod fishing by the scarcity of fish, which makes fishing economically unviable.

## Management instruments

The main management tools in Estonia are landings volume quotas (ITQs) in the open water fisheries (trawling) and gear usage quotas (ITE -Individual transferable effort-) in the coastal fisheries. Fishing quotas are allocated according to the historic fishing rights. The Estonian experience shows that ITQs can be considered an effective method for increasing the allocation of fishing rights to the most efficient enterprises and speeding the process of reducing excessive fleet capacity. The size of the Baltic Sea trawling fleet decreased 58% between 2008 and 2020 (from 64 to 27 vessels). The main reason for that change was capacity reduction to achieve balance between the size of the fishing fleet and fishing opportunities.

## Innovation and Development

Innovation and development of the Estonian fishing fleet were supported through EMFF for three actions in 2020:

- Support for gear improvement. The support was used for reduction of unwanted by-catches and mitigation of negative impact of seals.

- Support for innovation in fishing. The purpose of the support is to maintain the good state of fish stocks, to develop sustainable and environmentally friendly solutions for fishing, to develop innovative technologies to add value throughout the supply chain and to make efficient use of new, untapped living aquatic resources.
- Support for cooperation between scientists and fishermen. The purpose of the support is to increase the competitiveness and economic performance of the fisheries sector.

## Performance by fishing activity

### Large-scale fleet

The LSF of the Baltic Sea operates outside the coastal zone using pelagic trawls. The fleet targets pelagic species such as sprat and herring. The live weight landed by the large-scale fleet in 2020 was 44 919 tonnes of seafood, with a landed value of EUR 7.6 million. Compared to 2019, the weight of landings and the value of landings decreased 19% and 21%, respectively. The main reason of this was reduction in the Estonian trawl fleet's sprat and herring quotas. In spite of that the fleet was profitable. Total costs amounted to EUR 6.3 million in 2020 (EUR 7.7 million in 2019) and decreased mainly due to the reduction in repair & maintenance costs, personnel costs and energy costs. GVA, gross profit and net profit in 2020 were estimated at EUR 5.5 million, EUR 2.9 million and EUR 1.5 million, respectively. GVA, gross profit and net profit decreased 20%, 24% and 45%, compared to 2019. The (depreciated) replacement value of the LSF was estimated at EUR 12.6 million and investments amounted to EUR 1.8 million in 2020 (EUR 0.2 million in 2019).

### Small-scale coastal fleet

The SSCF operates in Estonian coastal waters. The largest catches taken in 2020 were of herring, followed by smelt and perch. The live weight landed by the SSCF in 2020 was 10 856 tonnes of seafood, with a landed value of EUR 5.6 million. The fleet made a loss. In 2020, the weight of landings remained stable and the value of landings increased 1%. Total costs amounted to EUR 7.9 million in 2020 (EUR 7.7 million in 2019) and increased mainly due to the rise in value of unpaid labour. GVA, gross profit and net profit in 2020 were estimated at EUR 2.9 million, –EUR 0.4 million and –EUR 1.6 million, respectively. The (depreciated) replacement value of the SSCF was estimated at EUR 10.8 million and investments amounted to EUR 1.1 million in 2020, increased 50% compared to 2019.

## Performance results of selected fleet segments

### Pelagic trawlers 24-40m

The 24-40 meter pelagic trawlers are the most important segment in the Estonian fishing fleet in the Baltic Sea. In 2020 this fleet segment consisted of 27 active vessels. The number of vessels increased by one compared to 2019. Employment in 2020 was estimated at 138 jobs, corresponding to 104 FTEs. The segment targets pelagic species such as sprat and herring. The total value of landings was EUR 7.6 million in 2020. The fleet segment was profitable. GVA, gross profit and net profit in 2020 were estimated at EUR 5.5 million, EUR 2.9 million and EUR 1.5 million, respectively. Economic development trend shows improved situation.

### Passive gears <10m

The segment with the highest number of vessels and employment in the Estonian fleet is the 0-10 meter passive gears segment that operates in the coastal fishery. In 2020, this segment consisted of 1 248 active vessels. The employment in 2020 was estimated at 1109 jobs, corresponding to 195 FTEs. The fleet targets mostly freshwater species, such as perch, pikeperch, but also marine species such as flounder and herring. The total value of landings was EUR 4 million in 2020. The fleet segment made a loss. GVA, gross profit and net profit in 2020 were estimated at EUR 2.2 million, –EUR 0.9 million and –EUR 2 million, respectively. Economic development trend shows deteriorated situation.

## Nowcasts for 2021-22 and beyond

### Model results

Data projections for 2021 indicate improved economic development and the Estonian Baltic Sea fleet as a whole turns a profit unlike the previous year. This is driven by growth of revenue. GVA, gross profit and net profit is predicted at EUR 8.5 million, EUR 2.6 million and EUR 1.2 million in 2021, respectively. Compared to 2020, GVA, gross profit and net profit increase 1%, 4% and 768%, respectively.

Forecasts for 2022 suggest a lower economic performance compared to 2021. Although the net profit increases 3% up to EUR 1.24 million, GVA and gross profit decrease 25% and 83%, respectively. A sharp increase in energy costs is predicted in 2022 which leads to an increase in operating costs.

Predictions for 2022 must be treated with caution because Russia's aggression against Ukraine could significantly affect the income of the Estonian fishing fleet in 2022 and beyond, as a large part of the fish caught by the Estonian Baltic Sea trawlers has been exported to Ukraine.

### Outlook

Official catch data indicate that similarly to the previous year the COVID-19 did not play a important role in the fishing activity of the Estonian Baltic Sea fleet in 2021. Compared to 2020, the total weight of landings remained stable. However the total value of landings made through a slight rise (3%). The reason for that was increase in average first-sale prices of the key species (herring and sprat). If the average first-sale prices of sprat and herring were 0.17 euro/kg and 0.18 euro/kg in 2020, then the average prices increased to 0.19 and 0.20 euro/kg in 2021, respectively.

In 2021 and 2022, it is expected an increase in energy prices that will negatively affects the economic performance. Also Russia's aggression against Ukraine could significantly affect the income of the Estonian fishing fleet in 2022 and beyond, as a large part of the fish caught by the Estonian Baltic Sea trawlers is exported to Ukraine.

### Methodological considerations and data issues

Data for 2018 and following years is affected by a change in the data collection which was done to ensure better data availability. In particular, it affected the data of SSCF. Due to the low response rates in voluntary based surveys in previous years, Estonia changed the data collector. As the governmental organisation Statistics Estonia has a stronger legal base for obtaining the data they took the leading role in economic data collection in 2019. At the same time, official databases related to coastal fishing also improved which made it possible to obtain more precise data on vessels activity in SSCF.

Due to confidentiality issues, only capacity data was submitted for the vessels operating in the NAFO and Eastern Arctic areas, where the Estonian fishing fleet is represented by two and four vessels, respectively.

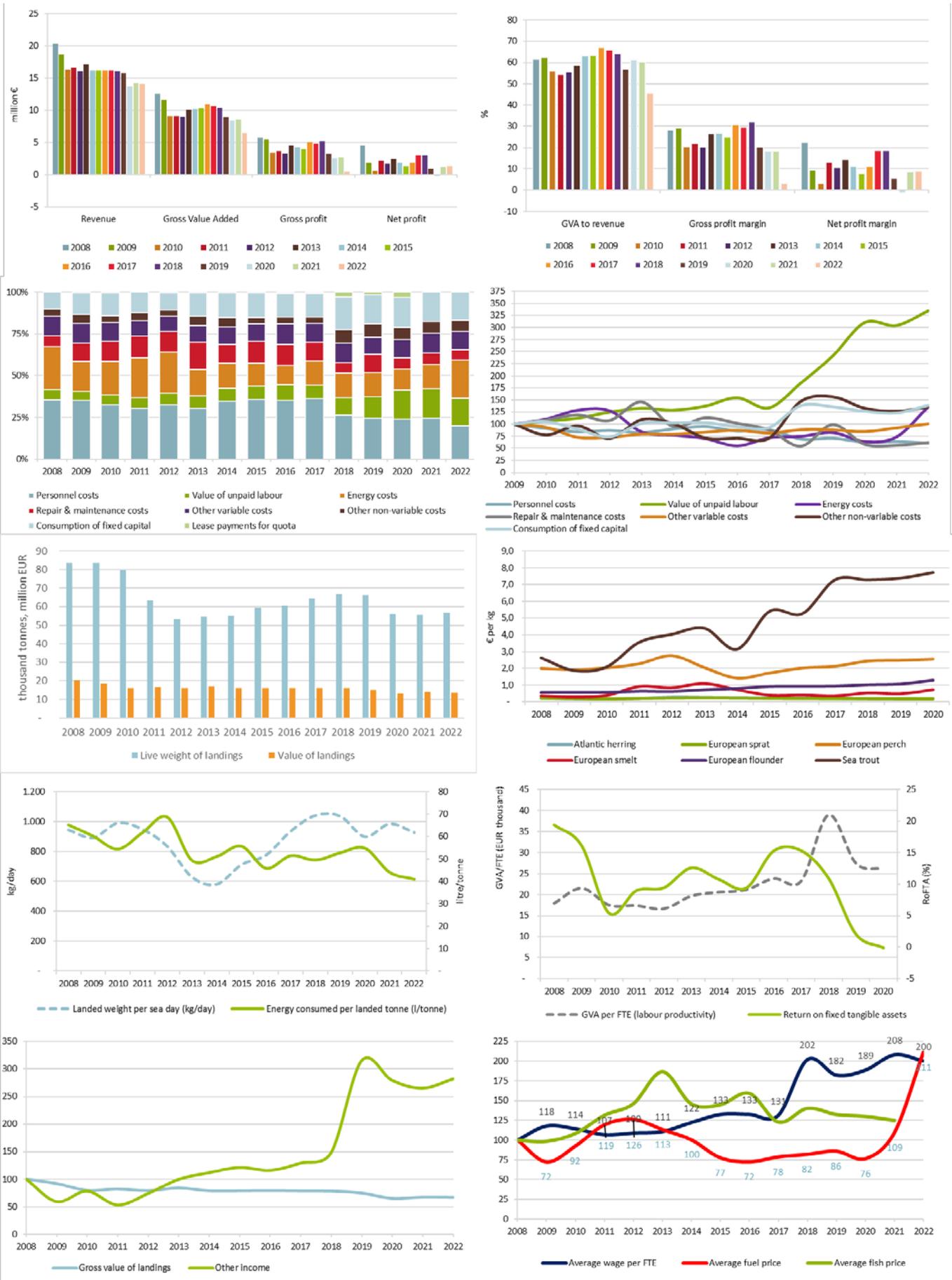


Figure 4.6 Estonia: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.7 Finland

### Short description of the national fleet

#### Fleet capacity

The Finnish fishing fleet consisted of 3 352 registered vessels of which 2 016 were inactive in 2020; the active fleet consisted of 1 336 vessels, with a combined gross tonnage of 12 250 GT and a total power of 89 000 kW. The capacity of active fleet increased some 3% with the number of active vessels from 2019.

#### Fleet structure

The Finnish fishing fleet is dominated by small-scale vessels: 1 289 out of 1 336 (96%) active vessels were operating in SSCF. However, the 47 trawlers (LSF) accounted for the majority (76%) of the total fleet capacity in terms of tonnage.

#### Employment

Total employment in 2020 was estimated at 1 256 jobs. Majority of the jobs (89%) are created by the SSCF that perform mainly seasonal fisheries and therefore the employment in that segment is usually only part-time. In terms of FTE the total fleet added up to 402 FTE. There was a significant rise in the total FTE which is solely the consequence of the increase in the activity of SSCF. The number of fishers has been dropping for a long time and the average age of fishers is high.

#### Effort

The total effort in 2020 was 73 000 fishing days. The SSCF accounted for 95% of the total effort and there has been declining trend during the past decade. After implementation of the ITQ system in pelagic fisheries in 2017 also the effort of LSF has been decreasing. Finnish fleet operates exclusively in the Baltic Sea.

#### Production

The total weight landed by the Finnish fleet in 2020 amounted 112 000 tonnes of seafood with value of EUR 31 million. The bulk of this catch consisted of Baltic herring and sprat caught by the trawler fleet. Catches of these pelagic species were increasing until 2017 due to strong herring stocks especially in the most important fishing grounds for Finnish fleet in northern Baltic Sea. However, from 2018 onwards the TACs for Baltic herring were cut and the catches have decreased substantially. In 2020 the weight and the value of landings for LSF decreased by one fifth. At the same time the landings in SSCF increased by nearly 30%. Value of landings did not follow such notable positive trend but increased 5% from 2019.

Baltic herring accounted for the highest landed value (EUR 20 million), followed by European sprat (EUR 2.2 million). The Russian embargo on EU food stuff as a countermeasure to EU sanctions due to the Ukraine crisis led to a loss of the most important market for pelagic fish that resulted in drop in pelagic fish prices in 2015; the price of herring for industrial use and sprat dropped 20%.

Temperate winter together with seal population and local impact of strong cormorant populations continued to hamper the small-scale coastal fishing. However, the landing weight of the SSCF was in peak value of recent years. SSCF targets mostly various freshwater fish species and the most important species for the segment were European whitefish, perch, smelt, pike-perch and salmon.

### Economic results for 2020 and recent trends

#### National fleet performance

The amount of income generated by the Finnish fleet in 2020 was EUR 35.9 million, with a slight decrease of 4%. Income consisted of EUR 33.9 million in landings income and EUR 2 million in other income.

Profitability of the national fleet has been improving in recent years and in 2020 the GVA increased to EUR 22 million, 24% higher than in 2019. Gross profit increased also to EUR 15 million resulting in positive net profit for the national fleet with EUR 2.8 million.

## Resource productivity and efficiency indicators

The GVA generated of the Finnish national fleet in 2020 was EUR 22 million with an increase of 24% from previous year. The gross profit margin increased to 43%, and the net profit improved. The improving profitability originated mainly from the potent economic performance in the trawler segments (LSF) but also the profitability of the SSCF improved. In the SSCF there are large number of low activity vessels and accounting the consumption of capital of all these vessels turned the segment's net profit negative.

Both LSF and SSCF made positive gross profits. LSF registered also positive net profit with EUR 2.8 million. However, the capital costs turned the long-term profitability of SSCF negative. In 2020 the profitability of both segments improved.

The relative share of energy costs to total operational costs has been decreasing for the total fleet. In 2020 the energy costs covered less than 10% of operation costs which is the lowest value in the time series. The landed weight per sea day has been increasing until 2019 but descended in 2020. Energy consumed per landed tonne dropped in 2016 and has stayed in lower level indicating improved energy efficiency, especially in the pelagic trawler fleet where some old vessels have left the business. Labour productivity (GVA/FTE) increased in 2015-2018 and was again significantly higher in 2020 than year before.

## Performance by fishing activity

### Small-scale coastal fleet

The Finnish fishing fleet is dominated by small-scale vessels: 1 289 out of 1 336 (96%) active vessels were operating in SSCF.

Usually, the segment account approximately one fourth of the national total value of landings that is dominated by the pelagic trawler fleet. However, in 2020 the SSCF recorded 44% of the national total value of landings with 44%. This was mainly due the lower value of landings reported by the trawlers which decreased by 22%. At the same time the segment covers 89% of all fishers and employs over half of the total national total in terms of FTE. In fact, in 2020 the share of the FTE by the SSCF was highest ever recorded covering almost 75% of the national total FTE. Therefore, the segment is very important from the social point of view.

Catches of coastal fisheries have been in declining trend for the past years but in 2020 there was an increase in landing weight and value.

In 2020, landed weight of the segment increased by 30% and total revenues increased to EUR 11.7 million. The segment generated EUR 6.7 million of GVA and gross profit of EUR 4.8 million. However, accounting the value of capital of all these vessels, including low-activity vessels, turned the net profit slightly negative.

The profitability of the most active part of the segment is higher than those with low activity. In 2015, the new fishing law, commercial fishing enterprises are defined in two groups: the first category (I) consists of enterprises that are value added tax liable (annual turnover over EUR 10 000); the rest are classified as the second category (II) fishers. The first category fishers are the priority in the fisheries management; and only these enterprises are eligible for EMFF funding.

In 2020, 342 fishing units in the SSCF exceeded the VAT threshold and categorised as category I. These enterprises accounted for nearly 90% of the total value of landings in the SSCF segment. Therefore, the average turnover of a fishing unit in this category was over EUR 22 000; much higher compared to that for the whole small-scale segment (EUR 8 500). The increase in the average size has a significant impact on the economic performance. Profitability of the category I fishers is higher compared to the whole segment.

## Performance results of selected fleet segments

The Finnish fleet operates exclusively in the Baltic Sea and is based on two main fisheries: pelagic trawlers (LSF) and the SSCF. Pelagic trawlers are divided into three segments. The SSCF is highly diversified with a range of vessel types mainly using nets and traps targeting various species in waters along the Finnish coastline.

## Passive gears <10m and 10-12m (SSCF)

The SSCF is the biggest Finnish fleet segment in terms of number of boats with 1 289 vessels in 2020. The SSCF consists of diversified vessels targeting mainly freshwater fish species; European whitefish, perch, smelt, pike-perch and salmon. In 2020, the total revenue of the small-scale fishery was EUR 11.1 million making a gross value added of EUR 6.7 million. The profitability in terms of Gross profit margin was 44% and it was just enough to cover the estimated capital costs: the SSCF made zero profit.

The coastal fleet is operating mostly seasonally, and there is also a high variation in the activity of the vessels. The most active part of the segment classified as category I fishing units make up 87% of the total SSCF landings value. These most active vessels are highly profitable compared to the low activity vessels which have relatively high capital costs. The overall economic performance of the whole SSCF has been poor for years but in 2020 SSCF managed to record zero net profit.

## Pelagic trawlers 24-40m

Pelagic trawlers 24-40m is economically the most important fleet segment in Finland targeting herring and sprat in the Baltic Sea. In 2020 these 20 vessels accounted for more than half of the total value landed by the Finnish fleet and employed 82 FTE. The average vessel revenue was EUR 1 million, employing four FTEs. The fleet segment generated a GVA of EUR 11.7 million. In 2020 the Gross profit margin was 40 % which led to an improved economic performance with a net profit margin of 6%.

## Pelagic trawlers 18-24m

Pelagic trawlers 18-24m segment consisted of seven vessels in 2020, also targeting Baltic herring and sprat. The average vessel revenue was EUR 386 000, second highest in the Finnish fleet and average on-board employment is 1.6 FTE. The segment generated EUR 2.2 million of GVA. The fleet made Gross profit of EUR 1.4 million with the highest national gross profit margin of 53%. Also, the net profit margin (34%) was the highest among the national fleet segments.

## Pelagic trawlers 12-18m

Pelagic trawlers 12-18m is the smallest trawler segment in terms of individual vessel size and consists of 20 vessels. The average vessel revenue was EUR 130 000. An average vessel employed 0.7 FTE. In 2020 the segment generated EUR 1.8 million of GVA and EUR 1.3 million gross profit with 50% margin. Gross profit was high enough to cover the estimated capital costs and the fleet was making profits with net profit margin of 29%.

## Drivers affecting the economic performance trends

Most important driver for fisheries is the state of fish stocks. For several years due to the good status of the most important fish stocks for Finnish fleet – pelagic stocks - the total weight of landings broke the all-time record year after year.

However, since 2018 there has been quota reductions in Baltic pelagic stocks and particularly significant cuts in the most important Baltic herring stocks for Finnish fisheries. The total Finnish pelagic quotas in 2021 is less than half of that in 2017 and that will have marked impact on the fleet economic performance on the current year.

The most important drivers for economic performance are the prices of fish and inputs, especially fuel prices. Prices for pelagic species remained stable in 2019 and 2020, while the price of herring for human consumption increased significantly in 2020 and remained high in 2021. The price development of the most important species for coastal fishing have been rather favourable compensating low catches, but in 2020 also many of these prices decreased. Contrary, the price of salmon increased moderately in 2020. Fuel costs are major cost item especially for the trawler fleet. The fuel prices were at the lowest level of the decade in 2016 but have increased since then and this have had an impact on the profitability of the sector. Fuel prices increased from 2016 until 2019, but due to COVID-19 economic slowdown in 2020 there was a marked drop in global fuel prices. In fact, the fuel prices were in record low during the year 2020 which affected especially the energy costs of bigger vessels. This favourable shock on fuel prices has since turned completely backwards and fuel prices in 2022 are record high which will have drastic impact on the profitability of the trawlers.

## Markets and trade

Russia has traditionally been an important market for Baltic herring and sprat. Therefore, the continued Russian embargo for EU food stuff has forced Finnish fishers to find alternative markets in neighbouring countries for pelagic species. The average prices of pelagic species dropped significantly in 2015 as landings have been more heavily used as feed and domestically in fishmeal factories. COVID-19 has had an impact on fish markets: especially the fresh fish markets have been down which has a price impact on most valuable species affecting the profitability of SSCF.

## Management instruments and regulation (policy)

The offshore fleet is managed mainly through TACs that are shared between Baltic Sea countries. Apart from salmon and herring the coastal fleet target mostly freshwater species that do not have quotas but are managed with licences and other time and gear restrictions.

From the beginning of 2017, ITQ regime was introduced in the Finnish pelagic fisheries and salmon fishery. The allocation of the fishing rights was based on grandfathering. The new management regime will most likely have a major impact to the trawler fleet structure and performance. In 2020 there were 47 active trawlers operating under ITQ. That is 16 vessels less than when the ITQ was introduced. In 2021 the number of active trawlers diminished even further and only 39 vessels were operating. The outcome of the impact of ITQ on Finnish trawler fleet will be realised in the coming years, and the potentially improving profitability of the trawler fleet is still to be fully realised.

## Stock status, TACs and quotas

Pelagic fisheries are the most important for the Finnish fleet by terms of weight and value. Both Baltic herring and sprat stocks were considered to be at biomass levels compatible with producing MSY in 2017.

Baltic herring stocks have been exceptionally strong in the past especially in the most important fishing grounds in the Bothnian Sea. However, after the highest recorded catches of herring in 2015-2017 there was a cut of TACs and catches in 2018.

There were further quota cuts for herring in 2019, 2020 and 2021, and the total pelagic quotas in 2021 were only 45% compared to the 2017 level. This implies significant impact on the fleet economic performance on the pelagic trawler segments and the depending downstream activities in the value chain.

The main quota species for the SSCF is salmon. Salmon quotas have been decreasing during the past 5 years. However, the most important salmon rivers in the Baltic Sea – river Tornio and river Kalix – show that they are on the recovery path towards MSY.

## Operational costs (external factors)

Fuel prices are the most important cost item especially for the larger pelagic trawlers. Fuel prices have been steadily growing between 2016 and 2020. However, in the early 2020 there was a severe decline in the fuel prices due to COVID-19 related impact. The fuel prices decreased by some 10-20% depending on the fuel type. The consumer price for gasoline and diesel went down by 7% and 10% respectively, while the consumer price for light fuel oil went down by 22%. This favourable trend in fuel prices affected the profitability of trawlers and especially the energy costs of the bigger vessels were record low. The labour costs are the second major cost item and follows the revenue.

## Innovation and Development

The Finnish government has launched a development programme for promoting the use of domestic fish aiming at Finns eating double the amount of domestic fish in 2027 that they are currently eating. The biggest potential for increasing the supply of domestic food fish lies in the trawler fishing of Baltic herring. Currently, majority of the herring catch is utilized as feed for fur farms or in the fishmeal factories. These fishmeal factories use some one third of the total Baltic herring catch in Finland. If used for human consumption the Baltic herring catch would bring more income for fishers through considerably higher prices than what is paid for herring for feed or industrial use. The price of foodstuff Baltic herring can be even triple the one that is paid for the herring for feed.

## Socioeconomic impact

The number of fishers has been dropping for a long time and the average age has been increasing. The decline in the number of fishers and vessels has been particularly true for the SSCF. However, in 2020 there was a significant rise in the number and activity of fishers and vessels in the SSCF.

ITQ system was introduced in the beginning of 2017. In other Nordic countries the implementation of ITQ led to a significant decrease in number of vessels and employment. Similar development may be expected in the Finnish pelagic segment. By 2021 the number of trawlers has decreased 30% since introducing the ITQ.

Already one third of the landings are landed abroad and many of the pelagic trawlers in the Finnish fleet have a foreign owner. The fisheries management together with the industry are urgently seeking new solutions for improving the domestic demand of Baltic herring to improve the economic situation of the Finnish trawlers and to maintain the employment.

## Nowcasts for 2021-22 and beyond

### Model results

Baltic herring stocks have been exceptionally strong in the past especially in the most important fishing grounds in the Bothnian Sea. However, after the highest recorded catches of herring in 2015-2017 there was a cut of TACs and catches in 2018. There were further quota cuts for herring in 2019 and 2020. This implies significant impact on the fleet economic performance on the pelagic trawler segments and the depending downstream activities in the value chain.

Revenue of trawler fleet is projected to decrease in 2022 with the decreasing TACs and the revenue is estimated to decline by one fifth of that in 2020. This is projected to have significant negative impact on the trawler fleet profitability in 2022.

In the SSCF the revenue development is projected to improve. In 2021 landings decreased substantially and the profitability is projected to remain negative. However, in 2022, the economic performance of the SSCF is projected to improve. If projected economic indicators do realise, it would be the first time that the SSCF operates with positive net profit in Finland.

### Outlook

A total of 77 million kilos of Baltic herring and 15 million kilos of sprat were caught in 2021. The Baltic herring catch decreased by 15 million kilos from the previous year, while the sprat catch increased by three million kilos. Despite the drop of herring catch the quota was not fully utilised.

The Finnish government has launched a development programme for promoting the use of domestic fish aiming at doubling the amount of domestic fish eaten by 2027. In the commercial fisheries, the potential for increasing the supply for domestic fish is in the trawler fishing of Baltic herring. If used for human consumption instead of current high use for feed fish or fishmeal, the Baltic herring catch would bring more income for fishers and boost the profitability of trawlers.

### COVID-19

COVID-19 did not have a significant impact on the trawler segment, as herring is mainly used as a raw material for the fish feed industry. However, it had a significant impact on the fresh fish market: weak demand for fresh fish affected fish prices. This lowered especially prices of high value fish that are important for the SSCF. In 2020 the government has provided temporary operating subsidies ranging from EUR 2 000 to EUR 120 000 for commercial fishers in category I whose economic situation has been significantly weaker due to the COVID-19. However, no COVID-19 related subsidies were paid to commercial fisheries during the year 2020.

## Methodological considerations and data issues

Capacity, logbook and landings data are derived from sources which are covered by different legislation. All these data are available exhaustively. The bigger vessels are covered by logbooks and smaller vessels are covered by the coastal fishing reports. However, in the SSCF the method for correcting non-response was changed in 2014 based on the response loss survey. Furthermore, the fishing law reform sanctioned the coastal fishing reports mandatory for all SSCF vessels from the beginning of 2015 and therefore the estimation of non-response has been abolished. Therefore, there is a break in the time series relating to the SSCF. In addition, the financial results of the TM VL1820

segment in 2018 are exceptionally high because the figures include the sales revenue of one vessel, including fishing rights.

Economic data collection is based on a hierarchical multi-stage survey that combines information from different data sources. The main sources are the central control register on the commercial fishery (includes landings data, the vessel register, and first-hand sales of quota species), the financial database in Statistics Finland (SF) and additional account surveys for coastal fishers and trawlers. Starting from 2016, the account data is collected by the Natural Resources Institute Finland.

Due to the good coverage of the data collection and an efficient estimation method the achieved precision of the economic variables is satisfactory. However, there is a break in the time series of the number of active vessels in small-scale fishing in 2012 when the recording of active vessels was re-specified and then again in 2014 and 2015 due to the methodological changes described above.

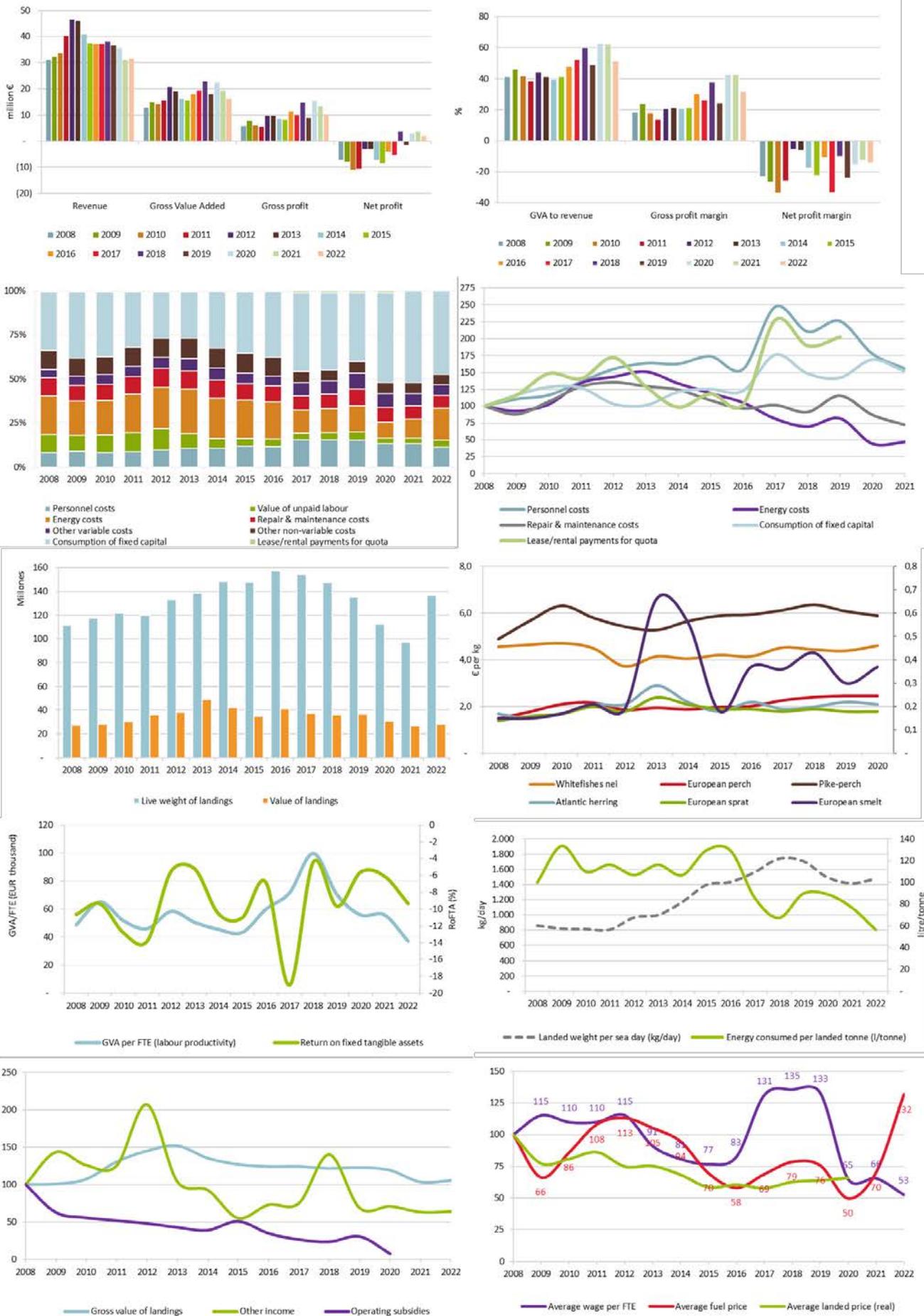


Figure 4.7 Finland: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.8 France

### Short description of the national fleet

#### Fleet capacity

In 2020, the national fleet capacity consisted of 6 223 vessels (including 954 inactive), having a combined GT of 179 400 tonnes and engine power of 964 400 kW. The number of vessels decreased by 4 % compared to 2019.

#### Fleet structure

The French fishing fleet is nationally divided into:

- A SSCF (71 % of total active vessels, but 8% of the whole gross tonnage) which was mainly composed of vessels less than 10 metres long with a large diversity of métiers and an important part of polyvalent vessels.
- A LSF (28% of total active vessels) which was mainly made up of vessels using active gears, especially demersal trawlers and dredgers with lengths ranging from less than 10 metres to more than 40 metres. Even though they were active in all the French regions, the major proportion of those vessels was based in North East Atlantic and North Sea regions. As they were most of time larger than SSCF vessels, they represented the major part of the fleet regarding the gross tonnage (64%).
- A DWF<sup>21</sup> composed of 19 tropical purse seiners over 40 metres catching tuna in South Atlantic and Indian Oceans; even if they represented only a small part of the fleet in terms of number, these vessels generated 11% of the national fleet's income.

In 2021, the number of fishing enterprises amounted to 5 043, with the vast majority (85%) owning a single vessel. The percentage of individual companies slightly decreased over the years, at an average rate of 2% between 2008 and 2021.

#### Fishing activity and production

An estimated 565 000 days were spent at sea, -8% down compared to 2019. Fishing days also decreased in the same percentage.

After 2 years of increase (2018 and 2019), fuel consumption decreased significantly by 14% in 2020, lowest level ever reached. This was mainly due to the impact of the COVID-19. The most affected are LSF and DWF, with their consumption decreasing (-16% and -13%, respectively). The major part of fuel is, moreover, used by LSF, representing 69% of the whole fleet consumption.

In 2020, fuel price reached an average price of 0.46 EUR/litre. Fuel price decreased slightly after many years of increases. This, combined with fuel consumption decreasing, led fishers to reduce their energy costs, with a 32% decrease in 2020 compared to 2019.

National production has been increasing between 2012 and 2018 by 16% in value. But since 2019 production decreased by 7% and by 11% in 2020 reaching EUR 1.163 billion as well as landings in weight decreased by 9% in 2020 at 472 500 tonnes of seafood. Landings have increased continuously since 2010, except in 2015 (-3%), and decreased since 2019.

In 2020, European hake landings generated the highest value by the national fleet (EUR 95 million), decreasing to 2019 by 18% and also a weight of landings decreasing to 2019 (- 2%). Price of European hake decreased from 3.3 euro/kg to 3.1 euro/kg. This species followed by great Atlantic scallop (EUR 92 million), yellowfin tuna (EUR 92 million) and monkfishes (EUR 75 million). The high average landed price of common sole and European seabass (14.2 and 13.2 euro/kg) allowed these species to reach a value of EUR 63 million and EUR 38 million, respectively.

Seafood production by the SSCF represented 83 700 tonnes with a value of EUR 268 million, comprising 18% and 23% of the national production, respectively.

The total production landed by the French LSF decreased by 13% in weight from 2019 to 2020 and the value decreased by 14% reaching EUR 756 million in 2020. It represented 64% of the total landings weight and 66% of the total landings value of the national fleet.

<sup>21</sup> In the AER report, the French distant water fleet takes into account a vessel using hooks of 33m length.

## Employment and average salaries

Employment was estimated at 12 417 jobs in 2020, distributed as follows: 49% to the SSCF, 47% to the LSF, and 4% to the DWF. With smaller vessels, the SSCF displayed an average of 2 jobs per vessel, comparing to 4 for LSF and 25 for DWF, whose vessels were large and navigate further into the ocean.

In 2020, the level of employment decreased by 5% compared to 2019. A constant decrease has been observed since 2010.

Between 2010 and 2019, the average wage by FTE increased by 16%. In 2020, this average decreased by 3.2% compared to 2019.

## Economic results for 2020 and recent trends

### National fleet performance

At the national level, the French fleet, after reaching in 2016 its highest economic performances since 2008, driven by a high income from landings, decreased by 11% in 2020 compared to 2019.

Revenue, estimated at EUR 1.16 billion, consisted mainly of landed value (97%) and other income (2.8%). Other income increased 12% compared to 2019. Operating subsidies amounted to EUR 20 million. This strong increase by 193% in 2020 (EUR 6 million in 2019). Increases in these two items are due to COVID-19 related stops, in order to compensate the lack of income. Operating subsidies represented 1.7% of total revenues (no income from fishing rights in France).

Total operational costs represented 89% of the total income (excluding operating subsidies). Fuel costs represented 11% of the revenue in 2020.

Aside from the increase in fuel dependence, the operating cost structure have remained stable since 2016.

GVA, gross profit and net profit in 2020 were estimated at EUR 601 million, EUR 131 million and EUR 29.5 million<sup>22</sup>, respectively and decreased by 4%, 8% and 32% compared to 2019. These results indicated a strong declining trend for economic performance of the French fleet in 2020, as in 2019, much more than in 2018 and 2017, but after a very good year in 2016.

### Resource productivity and efficiency

At the national level, the national landing weight continued to decrease in 2020 compared to 2019 by 9%, as in 2019, after an increase over the period 2008-2018 by 3%.

Energy consumption per landed tonne decreased in 2020 compared to 2019 (6%) after 4 years of stability and 2019 up. Thanks to that, the gross profit margin in 2020 was 11%, indicating an operating profitability of the French fisheries sector, similar to 2019, but down compared to the last 4 years (2015-2018).

The net profit margin was 3% in 2020, as in 2019, but lower compared to the 10% and 9% in 2017 and 2018, respectively.

## Drivers affecting the economic performance

### Markets and Trade (including fish price)

The metropolitan French fishing sector is supplied daily by landings made in the 60 French fishing ports.

After landing, the fishery products are taken to the fish market, where they are sorted, checked, weighted and kept in a cold room while awaiting their first sale. In France, 37 auctions are allowed to sale fish. The new conditions offered for sale, with new mechanisms (connected market places and remote sales) have had a positive effect on the fish prices.

COVID-19 pandemic has led to closures of the catering market (collective or commercial). Restrictions to certain export markets also negatively impacted the overall seafood market in France in 2020.

<sup>22</sup> Net profit is overestimated as capital costs are not fully available for the DWF.

Because of this crisis situation, quantities sold in auction sales in 2020 decreased by 11% compared to 2019. At the same time, average price (all species combined) decreased by 2%, causing a decrease of 12% of the landings value in auctions.

The top three species in terms of value landed in 2020, and sold in auctions were, great Atlantic scallop, sole and monkfish (they represent respectively 10.0%, 9.9% and 9.1% of the total landed values sold in auctions during year 2020).

Depending on the target species, destination markets (tropical tuna for example), vessel operating modes (freezer vessels) or historical patterns, all vessels did not use this sales method to sell their production. Direct sale is still particularly developed for species such as the great Atlantic scallop (which 2020 season remained correct) or some species of crustaceans. For some species such as whelks, horse mackerel or anchovies, the amounts sold off-auction represent more than half of the total amounts sold over the observed period.

Regarding foreign trade, the French seafood imports were around EUR 5.5 billion in 2020, and seafood exports were EUR 1.4 billion. Thereby, France's overall trade deficit reached EUR 4.1 billion in 2020. In terms of live weight equivalent volumes, trade deficit of fishery (and aquaculture) products intended for human consumption reaches approximately 1.4 million tonnes in 2020.

France exported species like tuna (to Asia), smoked salmon, frozen shrimp, fresh species like cuttlefish, cod or squid to Italy, Spain, Germany, Belgium, etc. France also imported major species like salmon (Norway and the United Kingdom), shrimp (Ecuador, India, Venezuela, etc.), tunas (Spain, Seychelles, Ghana, Ecuador and Mauritius) and cod (Iceland).

### Operational costs (external factors)

The major cost items for the fleet of French fishing vessels were labour and energy costs in 2020 (representing 41% and 12% of the gross value of landings, respectively).

The decrease in fuel prices had a positive impact on the operating profitability of fishing companies. So, despite the COVID-19 crisis, the Gross profit margin reached 11%, 1% higher than in 2019.

### Stock status, TACs and quotas

European hake (three stocks, one main stock for France): **good news for North East Atlantic stocks.**

For the first time, the main stock (ICES areas 3a,4,6,7,8abd) was considered as in good state as fishing mortality is now below  $F_{msy}$ .

Common sole (Eight stocks, four main stocks for France): **stocks still mostly overfished**

The Eastern English Channel stock (ICES division 7d) is considered overfished and degraded as it was exploited over  $F_{msy}$  in 2020 with stable fishing mortality and increasing biomass, but the biomass is still below the reference biomass. The Western English Channel stock (ICES division 7e) is considered overfished with fishing mortality above  $F_{msy}$  but increasing and above reference biomass but decreasing. Attention should be taken as biomass is decreasing. For the Bay of Biscay stock (ICES divisions 8abd), biomass fall below the reference biomass, and fishing mortality is over  $F_{msy}$  – thus the stock is considered overfished and degraded. Biomass for the North Sea stock is now considered overfished with its status improving: biomass is now above reference biomass, due to a very strong recruitment was observed in 2019 and strong increase of biomass of genitors in 2020. However, fishing mortality is decreasing and below  $F_{pa}$  but is still above  $F_{msy}$  in 2020, thus the stock is not considered as impaired, but still overfished.

Gadoids in the Celtic Sea (7 e-k, three stocks): **Worrying stock status except for haddock**

None of the three gadoids stocks were exploited at fishing rates consistent with  $F_{msy}$  ranges. The cod stock status is worrying as biomass is still under reference point, and the stock is considered overfished. For whiting, fishing mortality is now below  $F_{lim}$  and getting closer to  $F_{msy}$ , but the biomass is still low. Haddock stock is improving as it switched as it is no longer overfished from this year advice: biomass of haddock has significantly increased in 2019 and stable in 2020, and fishing mortality is now slightly below  $F_{msy}$ .

European seabass (two stocks, two main stocks for France): Good news for the **North East Atlantic** stock. The fishing pressure for the North Sea / Irish Sea / English Channel / Celtic Sea stock (ICES divisions 4bc,7a,d-h) strongly decreased between 2012 and 2019, and is now way below  $F_{MSY}$  – caution should be still taken as  $F$  is recently increasing. Biomass is still below reference, though recently increasing. For the Bay of Biscay stock (ICES divisions 8ab) fishing pressure was estimated to be below  $F_{msy}$  in 2020 and biomass was estimated to be above reference biomass.

**Norway lobster: good news for Bay of Biscay stock** (ICES divisions 8abd). The harvest rate in 2020 was assessed to be below  $F_{msy}$ .

**Bluefin tuna (One stock): recovery of the stock confirmed.** The evaluation for 2020 confirmed that the stock (27+37) was exploited below  $F_{msy}$ . It was considered possible that the stock may have already rebuilt to the reference biomass, although considerable uncertainty remained.

**Sardine:** Bay of Biscay -

TACs and quotas (source: FIDES):

Total available quota (TAC) for the French fleet in 2020 was 351 000 tonnes a reduction of -8%/- (32 509 tonnes) compared to 2019.

Looking at the main species for France in terms of value of landings, the quota trends between 2019 and 2020 showed:

**Table 4.1 – Quota trends for French main species**

SPECIES	QUOTA 2019 IN T	QUOTA 2020 IN T	VARIATION	2020 ECONOMIC VALUE IN M€ (APPROXIMATE)
Anglerfish (ANF)	32874	34156	3,90 %	75,9
Bluefin tuna (BFT)	5458	6026	10,41 %	8,1
Cod (COD)	10542	8414	-20,19 %	31,3
European Hake (HKE)	79578	66594	-16,32 %	92,5
Mackerel (MAC)	18671	22763	21,92 %	24,9
Norway Lobster (NEP)	10066	9035	-10,24 %	31,2
Saithe (POK)	30874	26720	-13,45 %	16,3
Common Sole (SOL)	6652	6551	-1,52 %	60,1
Blue Whiting (WHB)	17924	13982	-21,99 %	10,5
Whiting (WHG)	18396	12052	-34,49 %	11,2

Among the 126 stocks under TAC exploited by the French fleet in 2020, six stocks (five species) presented a quota uptake higher than 90% with an adapted quota higher than 1 000 tonnes:

**Table 4.2 – Quota uptakes for French main species**

	Species	Area	Adapted	Catches	Quota
			Quota		Uptake
Stock					Level
Thon rouge Atlantique Est	BFT	AE45WM	6 026.600	5 867.755	97.36
Cabillaud Svalbard et International 1, 2b	COD	1/2B.	3 745.000	3 593.858	95.96
Merlu UE zones 2a et 4a	HKE	2AC4-C	1 381.635	1 305.008	94.45
Maquereau 2a, 3 et 4	MAC	2A34.	1 958.917	1 847.787	94.33
Hareng 4a, 4b	HER	4AB.	13 846.976	12 780.213	92.30
Hareng, 4c, 7d	HER	4CXB7D	7 687.481	6 973.537	90.71

Among the species whose stocks in the Mediterranean are:

- recoverable/recovering: Atlantic-Mediterranean bluefin tuna\* (26.2%), anchovy in the Gulf of Lion (5.3%), sardine\* in the Gulf of Lion (1.5%) and swordfish (0.4%);
- overfished: red mullet in the Gulf of Lion (2.0%);
- overfished and degraded: albacore (0.1%);
- collapsed: Gulf of Lion hake (2.5%) and eel (1.4%).

Among the species not assessed are: octopus, mackerel, gilthead bream, anglerfish

\* For these two stocks (bluefin tuna and sardine, there is no reference point for the biomass); for bluefin tuna the biomass is increasing sharply; sardine is considered to be in ecological disequilibrium, with a status on the borderline between 'recoverable' and 'collapsed'.

## Management instruments

The French fleet is managed through several management tools, as TACs and quotas related to the area and fishing stock, fishing license or multiannual management plans under national regulations. Each plan or fishing license (assigned to the pair "vessel\*owner") targets a particular species or a type of gear in a specific area. They specify the field of application and all the corresponding technical requirements such as:

- Gear type and dimension (meshing);
- Vessel size;
- Depth;
- Exemptions (e.g., if catches are below a threshold by year of meshing above a threshold);
- Fishing prohibition area or season (e.g. spawning area for Eastern English Channel sole, spawning season for netters targeting sole in Bay of Biscay or season for swordfish in the Mediterranean Sea);
- Maximum catches by year.

## Innovation and Development

Some studies have been conducted to:

Improve the knowledge:

COPECO : the objective of the COPECO research program is to assess the impacts of the health crisis linked to COVID-19 on the seafood sectors, in particular for the fresh sector.

RECCRU: develop one or more methods to estimate the level of recruitment of lobster, edible crab, spider crab and spiny lobster on an annual basis.

DREAM: The project aims to understand the process of reintegrating discards into the ecosystem to propose avenues for improvement that would limit the impact of fishing on this compartment.

Langolf-TV: using underwater video to count langoustine burrows has been tested. This method has proven to be applicable in the context of the Great Mudflat.

eDNAbyss: the project aims to improve counting using the environmental DNA method. Marine organisms leave traces of DNA in seawater as they pass through. It will be possible to identify from a simple water sample the species present in a given environment and the population density.

Improve selectivity:

Game of Trawls: would allow fishers to detect the presence of too much "by-catch", such as dolphins or sea bass, and to activate a device to let them escape or to change the fishing area.

In the Lorient basin, researchers have carried out tests with green LEDs to repel whiting to encourage unwanted species to escape from the trawl meshes.

Improve gears:

REIP PECHE: Indicator of physical impact of fishing gears. This project proposes to assess some of these impacts using simple and "low-cost" instrumentation to extend the observations to a large number of vessels, and which can give an immediate and more accurate picture than a qualitative approach.

## Economic performance by fishing activity

### Small-scale coastal fleet

The French SSCF with 3 762 active vessels covered almost 71% of the whole national active fleet in 2020 and was spread over all the French supra-regions: 36% in the NE Atlantic, 28% in the Mediterranean Sea and 36% of vessels in Other Fishing Regions. It represented 51% of vessels in the NE Atlantic fleet, 90% in the Mediterranean Sea fleet and 95% in the Other Regions fleet.

Overall, the SSCF production was EUR 268 million accounting for 23% of the French landings value. The situation of the SSCF was different depending on the fishing area: In the NE Atlantic, in 2020, the SSCF consisted of 1 373 active vessels. Compared to 2019, number of active vessels was stable, but total activity expressed in sea days decreased by 5%. Landings in value decreased by 7%. In 2020, the SSCF in NE Atlantic was profitable, generating a gross profit of EUR 27 million and a gross profit margin of 16%. The labour productivity indicator (GVA/FTE) was EUR 92 600 and the value of landings per vessel about EUR 119 600.

In the Mediterranean Sea, the SSCF consisted of 1 044 active vessels. Compared to 2019, number of active vessels decreased by 6% and days at sea decreased by 9%. Landings in volume and in value decreased slightly (5% and 3%, respectively). In 2020, the fleet was profitable generating a gross profit of EUR 12 million and a gross profit margin of 23%. The labour productivity indicator (GVA/FTE) was EUR 76 200 and the value of landings per vessel about EUR 45 350.

In Other Fishing Regions, the SSCF consisted of 1 345 active vessels. Compared to 2019, number of active vessels decreased by 11% and days at sea decreased by 6%. Landings in volume decreased by 7% while landings in value increased by 5%. In 2020, the fleet was profitable generating a gross profit of EUR 9 million and a gross profit margin of 16%. The labour productivity indicator (GVA/FTE) was EUR 37 000 and the value of landings per vessel about EUR 42 000.

## Distant water fleet

The French industrial fleet of Purse Seiners consisted of 21 vessels in 2020 (including 5 vessels registered on the island of Mayotte), but only 19 vessels were active during the year. The number of fishing vessels in this fleet has remained relatively stable over the years (a new vessel notably joined the fleet in 2020).

The overwhelming majority of this fleet is made of freezer tuna seiners operating in the Indian Ocean (10 vessels in 2020) or Atlantic Ocean (9 vessels in 2020). The average age of those 19 active vessels in this fleet segment reached almost 20 years in 2020. The average length reached by the vessels of this segment amounts to 78 metres. The average FTE was around 28 employees by vessel in 2020 (fishers employed come from both France and foreign countries (mostly African)).

In 2020, total volumes of landings of tropical seiners amounted around 88 000 tonnes for the vessels of the fleet segment, down significantly from the previous year (-22%). The decrease in volumes was also more important in the Atlantic (-28,8%) than in the Indian Ocean (-17,7%). At the global level of the segment, tuna species caught were mainly skipjack (48.3%), yellowfin tuna (45.5% of the total volumes of landings), and big eye tuna (5.2%).

Total values of landings for this fleet segment reached EUR 125.6 million in 2020. According to economic data collected, the three main cost items in 2020 were crew wages, energy costs and non-variable costs. They represented 35.4%, 19.5% and 19.2% of the total income in 2020, respectively.

This segment of the French fleet is going through a period of crisis. While 2019 was already a difficult year for the vessels of this segment in terms of profit generated, volumes landed by French tropical purse seiners did fell sharply in 2020. In addition, the price of certain species has decreased: skipjack tuna by -4%.

Fishing companies also suffered a lot from the various health restriction measures (due to COVID-19 crisis) which particularly penalized crew rotations. Fishing days were then lost for vessels because of these unprecedented constraints. The lack of access to Gabon's fishing zone in 2020 also penalized vessels operating in the Atlantic Ocean (the agreement signed in 2021 with the EU will once again allow those vessels to operate in these important fishing area).

As a result, operating profitability of the first segment of the French fishing fleet (in terms of landed value), remains low in 2020, reaching 2.2%. It also presents contrasting situations according to the different fishing companies, and situations of negative operating profitability are indeed observed for some of them in 2020.

## Performance results of selected fleet segments

The French fleet is highly diversified with a broad range of vessel types targeting different species predominantly in the North East Atlantic, but also in the Mediterranean and in more distant fisheries.

A short description of five important segments in terms of total landings value or employment is provided below. Some of these segments include one, two or three clustered small segments and economic indicators refer to these combined segments. Generally, these smaller segments only have a marginal impact on the indicators. Other segments are important to the economy of the national

sector: the "tropical" purse seiners are discussed in the chapter dealing with long distant fisheries, some segments contain too few vessels (or a small number of companies that own these vessels), such as pelagic trawlers and demersal trawlers or seiners over 40 metres, others are very heterogeneous such as trawlers and seiners from 24 to 40 metres.

### **Drift and fixed nets 10-12m in NE Atlantic**

138 vessels, 417 engaged crew (231 FTE) made up this segment which operated in the NE Atlantic. The fleet targeted a variety of species, in particular, common sole, spinous spider crab and monkfish (32.2%, 11% and 6,6% of the total value of landings of this fleet segment, respectively). The total value of landings decreased significantly in 2020 to EUR 34.2 million, contributing to 3.1% of total value of landings generated by the French fishing fleet. This fleet segment produced a gross profit of around EUR 5.7 million and the net profit represented 7.5% of the revenue.

### **Drift and fixed nets 06-12m of the Mediterranean sea**

With 524 vessels and 622 engaged crew (270 FTE), this segment was the largest in terms of number of vessels in France in 2020. The fleet operated in the Mediterranean region and targeted gilthead seabream (22% of the total value of landings of this fleet segment) and a wide range of species contributing less than 10% to the total value of landings (for example European seabass, common sole and European hake). In 2020, common spiny lobster production dropped significantly while Atlantic bluefin tuna became the 6th most important species by value. Total value of landings slightly increased to EUR 24.7 million, contributing to 1.9% of total value of landings in France. This fleet segment produced a gross profit of around EUR 4.9 million and the net profit represented 12.5% of the income.

### **Demersal trawlers / seiners 12-18m**

141 vessels make up this segment in 2020 and they are predominantly based in the NE Atlantic, located in particular on the ports of Guilvinec and Lorient, in Brittany.

These vessels target a variety of species. The top three species in terms of landed value in 2020 were Norway lobster, great Atlantic scallop and common sole (30.8%, 12.2% and 7.8% of the total value of landings of this fleet segment, respectively).

Total income was EUR 65.4 million for this segment in 2020, accounting for 5.8% of the national fleet income. It decreased by 5.9% compared to 2019, in particular because of the crisis period linked to covid-19, which disrupted the entire fishing industry for several weeks. Volumes caught by trawlers in this segment also decreased in 2019, by 8.7%.

Around 370 FTEs contributed to the segment in 2020. Despite the COVID-19 crisis, it generated a gross profit of EUR 9.5 million in 2020 (14.6% of the income), with an increase compared to 2019, explained in particular by the reduction in energy costs.

### **Demersal trawlers / seiners 18-24m**

155 vessels made up this segment in 2020. The vast majority (76%) of these vessels operate in the Atlantic, North Sea and Channel, 18% of the vessels operate in the Mediterranean Sea and 6% in French Guyana (only landings data are available for this last Region). Considering the clusters made for this fleet segment, 162 vessels made up this fishing fleet in 2020.

Depending on the supra region, vessels have different fishing activities in terms of target species or number of days-at-sea. The vessels operating in the Atlantic, North Sea and the Channel target a variety of species, such as monkfish (21.5% of the total values of landings of this fleet segment), squids and common cuttlefish (8.6% and 6.2%, respectively). In terms of volumes landed, monkfishes and Atlantic mackerel represented 14.6% and 8.4% of the total volumes of landings in 2020, respectively. In the Mediterranean Sea, vessels targeted hake (10.2% of the total values of landings of this fleet segment), octopuses and monkfishes (9.7% and 8.3%, respectively). In French Guyana, vessels mainly caught *Penaeus* shrimp.

In 2020, total income value for this fleet segment was EUR 135.5 million, contributing to 12% of the total income from landings generated in the national fishing fleet. Landed values fell by 7.8% in 2019 and 2020. This fleet segment produced a gross profit of around EUR 10 million in the Atlantic area and EUR 2.8 million in the Mediterranean.

In addition to the COVID-19 crisis, which has had an impact on the levels of volumes landed, whether in the Atlantic or the Mediterranean, fishing companies have had to adapt to this new uncertain context. In the Mediterranean, for example, some ports have organized vessel rotations, sharing outings at sea in order to improve the flow of fishery products.

If economic situation varies by the supra-region observed, two reasons for concern stand out clearly:

- Uncertainties linked to Brexit, for French vessels which are used to working in British waters;
- The implementation of the management plan for professional trawl fishing in the Mediterranean Sea for French vessels: the imposed reduction in fishing effort and spatio-temporal closures are a major source of concern for professional fishers.

## Dredgers 12-18m

82 vessels, plus 7 dredgers between 18 and 24 metres and one vessel between 24 and 40 metres, made up this segment in 2020 (90 vessels for this cluster), which operates exclusively in the North Atlantic. The fleet mainly targets great Atlantic scallop (more than 78% of the total value of landings of this clustered segment in 2020). Total income was around EUR 40.0 million in 2020 for all the vessel of the cluster, accounting for 3.6% of the national fleet.

Despite the COVID-19 crisis, the dredger fleet segment has resisted in 2020, thanks in particular to a good scallop campaign. The decrease in quantities landed, due to the two months disrupted by COVID-19 during the spring season, was partially offset by an increase in the average price. Overall, turnover decreased by 14% in 2020, compared to 2019, but financial health of fishing companies targeting scallops remained at a correct level in 2020, and gross profit maintained its stability, reached 16.6%.

The scallop fishery is framed at both community, national and regional levels. In France the shell season generally begins around the month of October and ends in May of the following year. The fishing zones are open as the season advances. European fishers are all regulated in terms of size of the catches, and in France, they can be regulated by quotas distributed between vessels, or by suitable fishing times.

## Nowcast for 2021 and 2022 and beyond

### Model results

In 2021, the economic recovery has been gradual. After a year of declining activity in 2020, the French fleet continues to decline but more slowly. Value of landings and landed weight decreased substantially by 2.5% in 2021 compared to 2020. Projections suggest for 2021 a sharp increase in energy costs (39%), which will even double by 2022, due to the war in Ukraine. Thus, despite a projected increase in the value of landings (4%), the cost of energy is too high, so the GVA falls by almost 30% in 2022. And all economic indicators fall sharply in 2021 and 2022 to historically unprecedented levels. It is for this reason that the French government is taking measures to support the cost of energy for fishers, in order to avoid this expected economic collapse if nothing is done for the profession.

### COVID-19

In 2020, two strict containments were established at national level (from 17th March to 11th May and from 30th October and 15th December 2020) in the context of state of health emergency. This led first to exports and disruption, to the closure of out of home catering and to the perturbation of seafood markets and supply chains. The government set national measures regarding health and support to the economy including the fishery sector. Several possibilities of socio-economic supports were proposed to fishing firms including: temporary cessation of fishing activity to compensate fixed costs funded by measure 33 of the EMFF of the CFP, solidarity funds to prevent bankruptcy of small scale firms (not specific to fishing companies), compensation payments for partial activity (unemployment) scheme adapted for crew members and other public supports (acceptance of delays for social security charges, loans payments, ...). Around EUR 27 million were paid for the EMMF cessation of fishing activity. In

France mainland (excluding the distant fleet and the outermost regions), the days at sea, the landings in weight and value were reduced by respectively -10%, -13% and -12% in 2020 compared to the average of the year 2018-2019.

France accounted for approximately 20-25% of the landings in UK waters, in weight. The implementation of Brexit from 2021 to 2026 will not improve this uncertain and destabilizing situation for French fisheries. Brexit constitutes a triple uncertainty, both legal, socio-economic and ecological, which could lead to an economic, social and environmental drama never before experienced by European fisheries. An agreement reached at the end of December between the EU and the United Kingdom provides for European fishers to have access to United Kingdom waters for a transitional period of five and a half years, during which the Europeans will have to gradually give up 25% of their catches. But the precise catch quotas for 2021 for the shared stocks (over 70 are concerned) had not been defined.

As for the accompanying plan, the European Commission has validated the content of the French plan (at this stage informally), which includes the use of the compensation for loss of turnover mechanism for the first quarter of 2021 and the temporary cessation mechanism for the first 6 months of the year.

The French data collected for this report tried to consider these supports to the vessels. However, according to bookkeeping practices, public aids were allocated to the equivalent of "operating subsidies" or "other income" indicators. In the case of support to crew member for partial activity, the "Personal costs" indicator includes the gross remuneration to the crew members less the public aids for crew members. The "personal cost" indicator is net of public aids and these public aids were identifiable per se. Note that for some vessels under 12 metres data collection of public support was not possible in 2020. This should be taken into account when reading the tables presented in this report.

## Methodological considerations and data issues

The different types of support systems (national and European) in the context of the covid-19 crisis and their impact on the data collected and presented in the AER.

In order to help the French fishing industry during the COVID-19 pandemic, France implemented exceptional aid measures for fishing companies in difficulty. These measures have been supplemented by those already existing at European level.

At the national level, several measures have been adopted such as:

- Coverage of the wages of fishermen under the "partial unemployment" system;
- Deferral of payment of social security contributions;
- National Security Fund in the event of a decrease of more than 50% in activity during the period observed.
- At European level, the main mechanism was as follows:
  - Vessels subject to temporary cessation of fishing activities were compensated for their operating fixed costs, with the support of the European Maritime and Fisheries Fund.

The French data collected in this report takes into account various aids presented above. While partial unemployment benefits are neutralized at the level of the "crew wage costs" indicator, the other types of aids are mainly found in two indicators:

- Operating subsidies
- Other income

This dual allocation is explained by the methods of recording these aids in the accounts, which may vary between these two items of operating income.

Amounts of aid mentioned above have been collected for a large part of the French fishing fleet. However, for some vessels under 12 metres essentially, data collection was not possible in 2020. The reader should take this into account when reading the various tables presented in this report.

## Data source Effort and production data

In France, detailed landings and effort data per vessel are available through the SACROIS platform. SACROIS<sup>23</sup> is a cross-validation tool for the fisheries statistics, aiming at providing the best possible fishing statistics data by cross-checking available data from the different declarative control regulation sources, as requested in article 145 of the EU control Regulation (*EC Reg. 404/2011*). The application is crossing information, at the most disaggregated level, from the fishing fleet register, logbooks and coastal logbooks, sales notes data, geolocalisation data (*VMS*) and vessel fishing activity calendar census survey (*VFACCS*), in order to build the most accurate and complete dataset compiling French fleet' fishing trips with their associated features (*dates, fishing area, metier, gear and mesh size, total weight and value of landings by species*).

Complementary data collection has been implemented for some fleets for which the coverage of their available declarative data is evaluated as insufficient. This is the case of A/the French fishing fleet less than 12 metres length operating in the Outermost regions (French Guiana, Guadeloupe and Martinique, La Réunion and Mayotte) for which complementary on-site sampling data are collected and calculation of their reference fishing activity' estimates is applied on this basis and B/ the French fishing fleet less than 12 metres length operating in the supra-region Mediterranean for which a re-evaluation methodology<sup>24</sup> on the basis of the annual fishing activity calendars survey is applied to calculate their reference fishing activity' estimates.

## Identify changes in respect to previous years

From 2020, it is proposed to use a calibration on direct margins as a method of processing non-response (since 2017). The new weights have spread and dispersion properties very comparable to the old ones. The impact on macroeconomic results is small and is much more the result of calibration than the abandonment of a prior response model. Beyond the treatment of non-response, the calibration on margins allows us to have weights calibrated on the main objectives of data communication.

## Improvements achieved

Thanks to the change in methodology described above, the difference between Value of landings and Gross value of landings (Income), coming from two different sources has been reduced for the NE Atlantic and Mediterranean Sea supra regions.

The series of effort for Outermost regions are now complete. Also, data of effort for purse seiners over 40 metres length were corrected last year. Estimation of economic data have been calculated for less than 10 metres in Martinique for 2010 to 2020. An estimation for Mayotte and for less than 12 metres in the French islands of Reunion have been calculated for 2019 and 2020.

## Issues still remaining

Economic data are not complete because data is missing for a fleet segment in French Guiana. This concerns 9 vessels of more than 18 metres.

## Survey for economic data

A method of probability sampling has been applied to the 2020 data, on a similar way as previous years (set up in 2012): vessels have been selected by using a systematic random sampling, and the fleet has been classified inside each segment by size and maritime quarter, to ensure a good representativeness of the overall diversity of the French fleet.

<sup>23</sup> IFREMER SIH (2022). SACROIS - Algorithme de consolidation des données déclaratives. IFREMER SIH (2022). <https://doi.org/10.12770/6510e8e0-788d-45ba-9792-3d0585fe1009> IFREMER SIH (2022). <https://sih.ifremer.fr/Debarquements-effort-de-peche/Sacrois>

Sébastien DEMANECHÉ, Eric BEGOT, Antoine GOUELLO, Jérémie HABASQUE, Claude MERRIEN, Emilie LEBLOND, Patrick BERTHOUE, Valérie HARSCOAT, Manon FRITSCH, Clément LENEVEU, Martial LAURANS (2010). **Projet SACROIS "IFREMER/DPMA" - Rapport final - Convention SACROIS 2008-2010.**

Sébastien DEMANECHÉ, Eric BEGOT, Antoine GOUELLO, Claude MERRIEN, Jérôme WEISS, Emilie LEBLOND, Céline VIGNOT, Armelle ROUYER (2021). **Rapport d'activité Sacrois - Valid & Expertise sur les données d'activité de pêche. Convention Socle Halieutique DPMA-Ifremer 2020.** Article 3.3 Accompagnement de la maîtrise d'ouvrage de la DPMA, relatif à son expertise halieutique, dans le cadre des projets Sacrois et Valid.

<sup>24</sup> details about the re-evaluation methodology applied is described in the 9th IFOMC proceedings p°105-108, <https://ifomcvigo.com/wp-content/uploads/2018/08/proceedings-9th-ifomc.pdf>.

When fishing vessel owners didn't answer, a statistical method was used to know the criteria (explanatory variables) that could explain the response rate. Then, vessels were merged into clusters according to that predicted response probability. Those clusters were used to weight again responding vessels, by increasing their weight. Concerning the partial non-responses, imputations of costs and earnings have been made.

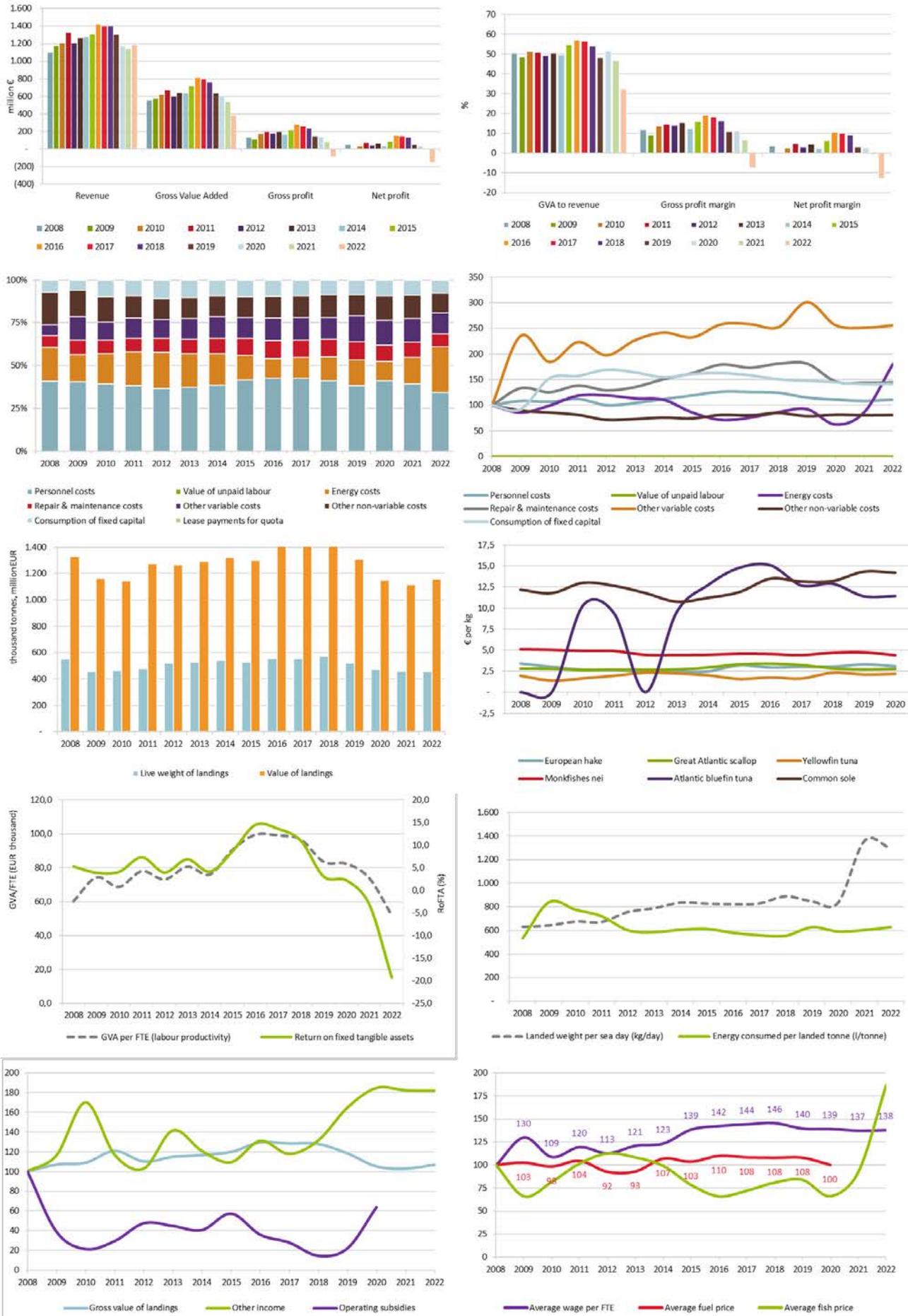
Direct subsidies and other income are not available for few segments, in particular, segments of over 40 metres, and segments in outermost region, less than 12 metres.

Data on total personnel costs for a sample of vessels is available. Currently, we consider that they represent wages and salaries of crew for all vessels and we do not disseminate data on the value of unpaid labour. It would be possible to estimate the value of unpaid labour considering that it represents the total personnel costs for vessels with only one crew member. For the remaining vessels, we would consider that, with the crew share system, the value of imputed labour is zero and there are only wages and salaries of crew.

## **Outermost fleet**

Distant water fleet gathers 19 purse seiners over 40 metres length in 2020. All operating in the Indian Ocean and in the South Atlantic Ocean. Data for purse seiners are provided only for 13 vessels. Another source enables to get all landings for those six missing vessels (which have been included in the analysis), then values are computed with species' prices (mainly tuna) reported on other fleet segments.

For those of French hooks 12-18m and 18-24m in the Indian Ocean, economic data are available for 2011 to 2020. Economic data for less than 12 metres in Guadeloupe, and French Guiana are available since 2010. In other fishing regions, consisting mainly of vessels less than 12 metres based in the French islands of Reunion and Martinique economic data are not collected but estimation calculated for 2019 in Reunion and since 2010 for Martinique. Economic data are available in Mayotte for 2015 to 2020.



**Figure 4.8 France: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.9 Germany

### Short description of the national fleet

#### Fleet capacity

The national fleet capacity continued to decline, with a total of 1 279 vessels, 374 of which were inactive in 2021. The total fleet had a combined GT of 55 326 tonnes and engine power of 126 028 kW. In 2021, the total number of vessels decreased by 18 compared to 2020. Almost all the 374 inactive vessels belong to the smallest length class (below 10 metres). In that length class about 35% of the registered vessels have reported no activity in 2021 (similar to previous years). The percentage of inactive vessels decreases with increasing length – in the length classes above 18 metres only nine vessels were filed inactive.

Vessels targeting blue mussels are not included in the analysis even though they are included in the fishing fleet. They are defined as operating in the aquaculture sector and are therefore covered in the aquaculture report.

The German pelagic trawler fleet is excluded from the analysis except for capacity and weight and value of landings data as practically the entire segment is owned by one parent company. For confidentiality reasons the data cannot be published.

#### Fleet structure

In 2021, the German LSF consisted of 237 active vessels (27% of active fleet), whereas 668 active vessels (73% of the active fleet) were accounted for the SSCF. The decrease in number of vessels applied mainly to the SSCF (15 vessels less) while the LSF decreased by three vessels in 2021. However, the overall decrease in number of vessels was lower than in previous years, especially for the SSCF. Both the total engine power and the gross tonnage increased slightly by about 2% in 2021.

#### Employment

Employment was estimated at 1 209 jobs in 2020, corresponding to 740 FTEs. These figures follow the overall decreasing trend over time. However, it has to be taken into account that until 2019 data were estimates, while from 2020 official totals are available. This results in a discontinuity in the time series.

#### Effort

About 81 000 days were spent at sea by the non-pelagic fleet in 2021, a decrease of 3% from 2020 (83 500 days). The energy consumed in 2020 amounted to an estimated 33.5 million litres and was thus lower (-7%) than in 2019. As fuel prices decreased sensibly in 2020, the energy costs decreased from about EUR 17.1 million in 2019 to EUR 11.9 million in 2019 (-30%).

German SSCF operates almost exclusively in the Baltic Sea, whereas cutters (<500 GT) above 12m fish in the North Sea and in the Baltic Sea. German high seas trawlers operate mainly in the North Atlantic and Eastern Arctic area, but to some extent also in African and in some years in Southern Pacific waters.

#### Total Production

Total production shows an increasing trend from 2012 up to 2018 with a live weight of landings increasing from 198 000 tonnes to 258 000 tonnes. Since 2019, however, the weight of landings shows a steep decreasing trend from 207 000 tonnes in 2019 to 195 000 tonnes in 2020 and 174 000 tonnes in 2021 (-33% since 2018). Between 2019 and 2021 catches were considerably lower than the average between 2008 and 2018. The main species are herring, blue whiting, cod, mackerel, common shrimp and Greenland halibut. In terms of weight blue whiting replaced herring as the dominant species in 2020, whereas the highest revenue was generated through common shrimp.

### Economic results for 2020 and recent trends

#### National fleet performance

Overall, the German non-pelagic fleet generated a net profit from 2010 (with the exception of 2011 when brown shrimp prices dropped below a critical level) to 2018. In 2019, however, the economic

performance turned into a significant loss. The situation improved slightly in 2020, but the final result remained negative. Profits were mediocre for the high seas fleet and negative for almost the entire remaining fleet.

The total revenue of the German fleet, excluding direct income subsidies, was estimated at EUR 186 million (EUR 121 million for the non-pelagic fleet) for 2020 and EUR 160 million for 2021 (EUR 101 million for the non-pelagic fleet).

Direct income subsidies accounted for about EUR 4.7 million in 2020, a 120% decrease, compared to 2019. Figures were still high compared to preceding years, mainly due to payments for temporary cessation in the Baltic Sea.

Total operating costs of the non-pelagic fleet decreased by -10% from EUR 93 million in 2019 to EUR 84 million in 2020 (-2%). All cost types decreased from 2019 to 2020, in particular fuel costs (-31%) and repair and maintenance cost (-13%). For the non-pelagic fleet, GVA, gross profit and net profit in 2020 were estimated at EUR 66.2 million, EUR 21.4 million and -EUR 3.0 million, respectively.

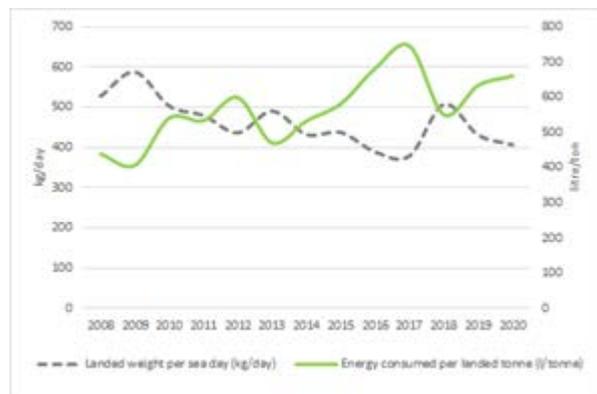
The (depreciated) replacement value of the German fleet was estimated at EUR 140 million in 2020, about EUR 10 million less than in 2019, while investments amounted to EUR 42 million (+17%). Overall, the cost structure has undergone some alterations, mainly due to the changing energy costs. Personnel costs develop proportional to the value of landings as wages are in most cases paid as crew share.

## Resource productivity and efficiency indicators

The gross profit margin in 2020 was 17.3%. Net profit margin was estimated at -2.4%. The Rate of RoFTA improved only slightly from -7% in 2019 to -3% in 2020.

Labour productivity (GVA/FTE) for 2020 was estimated at EUR 89.503 per FTE, a 36% increase compared with a relatively low value in 2019.

In 2020, the fuel consumption rate was around 659 litres/tonne of catch for the non-pelagic fleet, grossly varying between fleet segments. The fuel consumption rate shows no clear trend. However, the fuel consumption per tonne is determined not only by vessel characteristics, but also by the catch per unit of effort, which also depends on the stock status. As the figures exclude the pelagic fleet with its very high fuel efficiency, the national total might appear high compared with other fleets.



**Figure 4.9 Weight of landings per unit of effort excluding the pelagic fleet**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)).

Excluding the pelagic fleet, the weight of landings per unit of effort (in days-at-sea) has fluctuated considerably throughout the time series since 2008 between 378 kg/day in 2017 and 588 kg/day in 2009. The value for 2020 was 406 kg/day. However, this figure is grossly determined by the segment of vessels below 10m, accounting for more than 60% of the total days, but less than 5% of the catch.

## Performance by fishing activity

### Large-scale fleet

In 2020, 260 active vessels were assigned to the LSF. These vessels mainly operate in the North Sea and the Baltic Sea, while the large trawlers fish also in the North Atlantic, Eastern Arctic and in distant areas. The cutters (<500 GT) target mainly brown shrimp, cod and saithe while the high seas trawlers fish herring, cod, Greenland halibut and other small pelagic species like mackerel.

The value of landings of the LSF increased continuously from 2011 to 2018 by about 21% altogether. The weight of landings also increased substantially, with some decline in 2015, but with a noticeable increase since then. However, for 2019 a sharp decrease (about -21%) took place. The figures for 2020 changed only slightly compared to 2019 (weight -3%, value +2%). In 2021, though, weight (-11%) and value (-14%) dropped again.

Labour costs decreased -1% in 2020 and energy costs dropped by -31%, repair and maintenance costs dropped by -14% and other variable costs by -8%, while consumption of fixed capital dropped by -10% and other non-variable costs dropped by -9%. Gross profit increased slightly (+13%) and net profit became positive at very low level (EUR 360 000, compared to -EUR 3.7 million in 2019).

The number of people employed in the LSF was estimated at 924 in 2020.

For confidentiality reasons these observations refer only to the non-pelagic fleet. Only the weight and value of landings include the pelagic segment.

### Small-scale coastal fleet

In 2020, 657 active vessels were assigned to the small-scale fleet according to the EU definition (vessels under 12 metres using passive gears). These vessels almost exclusively operate in the Baltic Sea, targeting mainly herring and cod and also freshwater species which are not managed under a TAC regime.

The weight of landings of the SSCF decreased by about -25% from 2019 to 2020 (2 966 vs 4 337 tonnes.) while the value of landings dropped by -22% from EUR 6.0 million to EUR 5.4 million. The 2021 figures were again lower (-14% and -15%, respectively). The estimated total effort in terms of days-at-sea decreased from 58 200 days in 2019 to 55 080 in 2020. The overall costs for the SSCF dropped slightly by about 3% in 2020. While personnel costs remained almost unchanged (-3%), energy costs (-23%), repair and maintenance costs (-6%) and other non-variable costs (-12%) decreased, whereas other variable costs (-59.6%) increased considerably (+92%) but were at average level compared with previous years.

In 2020, the SSCF ended up with a gross loss of -EUR 2.0 million and a net loss of -EUR 3.3 million.

The number of people engaged on-board, including the skippers, was estimated at 869 in 2020.

### Performance results of selected fleet segments

The German cutter fleet (below 500 GT) is dominated by beam trawlers and, to a lesser extent, demersal trawlers.

#### Beam trawlers

German beam trawlers operate in the North Sea. Vessels up to 27 metres target almost exclusively brown shrimp. There are a few large beam trawlers over 27 metres targeting mainly flatfish. Thus, the beam trawler segment 24-40 metres contains both types of vessels.

The owners of the brown shrimp beam trawlers are usually also the skippers. They operate in coastal waters: smaller vessels with shallow draught can fish in the tide-ways and the Wadden area between the islands and the coast. These vessels depend on the tide and return to the port daily. These vessels usually do not fish in winter as the target species migrates to deeper areas. Larger vessels operate in greater depths and can also fish year-round. They stay at sea for several days.

Shrimp prices and fuel costs are the crucial elements for the economic performance of shrimp beam trawlers. 2020 was regarded unsatisfactory.

The pandemic affected the brown shrimp fishery: The vast majority of the catch is shelled manually in Morocco. Due to the lockdown the shelling capacity decreased considerably, and the cold storage capacities reached their limits. The brown shrimp fishery, backbone of the cutter fleet, was severely hit by both a price drop and a decrease in landings in 2019 already (54% of average weight 2008-2018, 48% of value). In 2020, the catch could be increased only slightly (60% av. weight, 70% av. value). In 2021 the situation did not improve sensibly (58% av. weight, 76% av. value).

Both fuel consumption (-43%) and fuel costs (-55%) of the shrimp beam trawlers decreased considerably. Thus, after an economically detrimental year 2019 (-EUR 8.7 million) the net profit of beam trawlers up to 24 metres could recover to EUR 1.1 million in 2020 which is still only about 1/6 of the average net profit (2008-2018) of this fishery.

Six flatfish beam trawlers flying the German flag are owned and operated mainly by Dutch fishers. They target mainly sole, plaice, and turbot. All of them are equipped with pulse gear. In 2021, a ban of

this technique has become effective, thus increasing the energy consumption considerably. The catch is landed exclusively in the Netherlands. In 2020, the value of landings was EUR 8.2 million for these vessels, a slight increase could be obtained in 2021 (EUR 8.5 million). The segment of beam trawlers above 24 metres (including two shrimp trawlers) experienced a net profit of EUR 0.4 million in 2020, a 50% decrease from 2019 and only 27% of the 2008-2018 average.

### Demersal trawlers

The German demersal trawler fleet can be divided into high seas trawlers above 45 metres, large cutters between 23 and 45 metres and smaller cutters below 23 metres. The high seas trawlers target mainly Greenland halibut, cod and redfish in Eastern Arctic and Greenland waters, the large cutters target saithe, cod, hake and haddock, the ones around 24 metres (eurocutters) also fish *Nephrops*. These vessels fish almost exclusively in the North Sea and Skagerrak. Some eurocutters shift temporarily to shrimp beam trawling or pelagic trawling for herring. The vessels of 20 metres and below almost exclusively fish in the Baltic Sea, targeting mainly cod, flatfish and – seasonally switching to pelagic gear – herring and sprat.

This indicates that the DCF length thresholds divide the demersal fleet into segments with heterogeneous fishing patterns. Thus, the performance indicators in most cases represent a mixture of different fisheries. For 2020, a net profit of demersal trawlers over 40 metres was estimated at EUR 2.4 million, a net loss of demersal trawlers between 24 and 40 metres was estimated at -EUR 1.0 million.

The profit of the vessels >40m is partly estimated upon internal prices as the vessels are part of companies that also operate in fish processing. This means that the profit is not necessarily assigned to the vessels only, but may be made at an advanced stage of the value chain as well. One new high seas' demersal trawler entered the fleet in 2015 and two more in 2017. Two newly built vessels slightly below 40 metres entered the fleet in 2019. These investment activities are a clear indication of long-term profitable fisheries. However, due to uncertainties as consequence of Brexit and negotiations with Greenland and Norway one of the newly built large trawlers was sold in 2021 and replaced by a smaller, but older trawler.

For the segments with medium sized demersal trawlers (18-24 metres) net losses were determined (-EUR 0.7 million), but as described before, this is a mixture of North Sea and Baltic Sea vessels. For the vessels below 18 metres, net losses were estimated at -EUR 0.8 million. In both cases, the poor status of Western Baltic cod had a negative impact on the profitability.

### Vessels using fixed nets and other passive gear

Larger fixed netters and potters (between 26 and 31 metres) operated almost exclusively in Western waters, targeting anglerfish or red crab. For the related segment a net loss of -EUR 1.2 million in 2020 was estimated. Smaller vessels using passive gear almost exclusively operate in the coastal areas of the Baltic Sea. Main target species are cod, herring, and to some extent freshwater species in the brackish Bodden areas. In 2020, the small segment of fixed netters 12-18m achieved net profits of EUR 260 000, net losses of -EUR 1.0 million were calculated for the 10-12m length class. The passive gear segment with vessels below 10m faced net losses of -EUR 2.3 million. All these vessels fishing in the Baltic Sea suffered from the decreasing TAC of Western Baltic cod and herring.

### Drivers affecting the economic performance trends

As the German fleet is dominated by trawlers, the fuel price always has a major impact on the overall economic performance. In 2020, fuel expenses decreased considerably (about -30%) from 2019. However, the lower cost coincided with less effort and in particular less revenues.

Prices for brown shrimp have a significant influence on the performance of the national fleet, as it had been the most important species in terms of value until 2019. In 2019, landings decreased considerably by about 51% from an average level, while prices per kg also dropped (-25%), and thus the total value of brown shrimp landings decreased dramatically by about 63% compared to 2018. In 2020, both prices and landings increased slightly, but due to still low catches the revenues remained very low compared to years prior to 2019. In 2021, slightly higher average prices could be achieved (+10%).

For all other species with major importance only minor price alterations could be observed.

The MSC certification remains important for sales of fish. Certification results in stable or higher prices. In several cases it has become a prerequisite for sales due to market requirements. For the high seas fisheries, important pelagic fisheries (North Sea herring, Atlanto-Scandian herring, blue whiting), were

MSC-certified until the end of 2020. In March 2019, the mackerel certificate was suspended due to a lack of comprehensive international agreement on quotas (according to MSC), while by the end of 2020, MSC certificates on Atlanto-Scandian herring and blue whiting were suspended, due to an insufficient stock management (according to the MSC). The Atlanto-Scandian herring catches account for about 50% of the total MSC-certified herring catches. In March 2020, the European South Pacific mid water trawl jack mackerel fishery was certified for five years. In 2020, the Baltic sprat fishery was certified.

All demersal roundfish fisheries of the high seas fleet are MSC certified (cod, haddock, saithe in Norwegian waters, North Sea saithe). In 2019, certification of Western Greenland halibut was finalised. All 2020 audits were successfully finalised. The North Sea cod certification was suspended in 2019 as the stock dropped below safe biological limit.

The cutter fishery on brown shrimp was certified in 2017.

## Markets and Trade

Brown shrimp has been the most important species in previous years. It is mainly landed in Germany, to some extent also in the Netherlands. The wholesale market is dominated by two companies which have a huge influence on the price. However, as fishers formed a producer organisation to gain market power the detrimental results of 2011 did not repeat. Just to the contrary, prices for brown shrimp developed favourably until 2019, thus increasing the profitability of the related fishery. However, in 2019 the market was saturated as a considerable amount of the catch had been deposited in cold storage. As a consequence, prices dropped considerably, even though the catch dropped as well. In summer 2019 there was a temporary closure of the shrimp fishery.

Overall, in 2020 only about 28% of the total catch was landed in German ports, corresponding to about 50% of the total value. Almost the entire catch of pelagic species, with high volume, but low price, is landed abroad, mainly in the Netherlands. About 48% of the catch was landed in the Netherlands, about 15% in Denmark, and about 8% in Morocco. The degree of self-sufficiency for fish is rather low in Germany, about 16%. Thus, international trade plays a crucial role for the supply of the German market with fish products.

## Management instruments

The predominant management measure are TACs.

The introduction of the LO was implemented with little extra effort in the pelagic as well as in the saithe fisheries as these fisheries traditionally have had low bycatch rates. In the case of cod and flatfish fisheries serious problems have been reported. In the Baltic Sea high amounts of undersized cod were observed. According to the industry no technical measures are available to solve that problem.

In 2019 and 2020, the closure of fisheries due to choke species could be avoided by quota exchange, to a considerable amount with the United Kingdom. The initial ban of quota exchange with the United Kingdom in 2021 was a problem for certain fisheries in the North Sea.

The pelagic industry is striving for EU membership in the North Pacific Fisheries Commission in order to complement fishing activities in the Southern Pacific with fishing activities in the Northern Pacific and thus increase the overall efficiency. The EU application was launched in 2018, the contract was finally concluded in spring 2021, suggesting extended catch opportunities for the high seas pelagic fleet in the future.

## TACs and quotas, status of key stocks

Most stocks targeted by the German high seas fleet, e.g. Arctic and Greenland cod, Arctic haddock and saithe, are managed at MSY level. However, the certificates for Atlanto-Scandian herring and blue whiting were suspended by the end of 2020 due to an insufficient stock management, according to the MSC. In 2020, about 67% of the catch of the German high seas fleet in the Northern Atlantic was MSC certified.

Quota for 2020 remained stable for the most important herring stocks and increased for mackerel (+41%) while the blue whiting dropped again by about 20%. As in previous years, the horse mackerel quota decreased further (-40%), yet the quota was exploited by less than 20% only, resulting in a catch reduction from 9 000 tonnes in 2019 to about 1 000 tonnes in 2020. High seas pelagic fisheries in European waters targeted herring, mackerel, horse mackerel and blue whiting in European waters as well as sardine and mackerel in Moroccan waters. According to the industry, high seas pelagic catches in European waters decreased 6.4% in 2020.

The demersal sector is mainly affected by severely reduced cod quotas in the North Sea (-50%) and in Greenland waters (-7%) while quota in ICES areas 1 and 2 remained unchanged. Quota on cod and redfish stocks targeted by the high seas fleet were changed only slightly. The quota for Greenland halibut remained unchanged.

High seas demersal trawlers achieved positive results in Norwegian waters, Svalbard and the Barents Sea. Targeted species were saithe, cod and haddock. As in preceding years no directed fishery on saithe took place in the North Sea. Again, Greenland halibut fisheries in Eastern and Western Greenland waters were highly efficient, the quota could be fully exploited. In 2020, the Greenland cod quota was exchanged for Greenland halibut. The 2020 season of pelagic redfish fishery in the Irminger Sea as well as the demersal redfish fisheries in Eastern Greenland waters were regarded successful as well. Starting in July 2020, three vessels were involved in the pelagic redfish fishery in Eastern Arctic waters (ICES areas 1 and 2). Catches from this fishery were slightly higher than in 2019. According to the industry, fisheries agreements with Greenland and Norway remain a backbone of the performance of the German high seas demersal fleet.

As in previous years the LO was no major issue for the high seas fleet. The total weight of bycatch landed by the high seas fleet amounted to 209t in 2020.

Brown shrimp, for most years the most important species of the German fleet, is not subject to TAC. Catches depend mainly on abundance, effort and prices. In 2020 catches increased slightly by 12%, while prices increased 32%. Catches in 2021 remained low (-3%) while prices increased slightly (+12%).

Most relevant North Sea stocks (herring, saithe, plaice, haddock, sole and *Nephrops*) are managed at MSY level. In 2020 North Sea herring quota remained unchanged while and North Sea cod quota was cut by 50%. Plaice quota remained almost unchanged (-3%) while saithe quota decreased by -15%.

The quota for Eastern Baltic cod stock was cut by 92% in 2020, thus ending in a moratorium for the targeted fishery. This quota is used for bycatch only. The quota for Western Baltic cod stock was decreased by -60% from an already low level (2 030 tonnes in 2019). In the past, the Western cod stock has provided substantial amounts to the income of coastal fisheries and the continuing decline of quota over the last years caused a tense economic situation. Alternative fishing options, e.g. on herring or freshwater species, are limited and do not allow for a full compensation of losses in the cod fishery. Moreover, the Western Baltic herring quota was cut by 65% in 2020, thus amounting to less than 1 800 tonnes, which is about 11% of the 2017 quota. The quota for Eastern Baltic herring, which is of minor importance for the German fleet than the Western herring quota, was also cut (-10%). The sprat quota remained almost unchanged in 2019 and decreased 22% in 2020. Baltic plaice quota increased 43% in 2019, but dropped again in 2020 by 32%, which means that the absolute quota in 2020 was even below the 2018 quota. Overall, the ongoing unfavourable development of the Baltic Sea stocks is seriously threatening the existence of commercial fisheries.

In 2017, management measures for the recreational cod fishery (western Baltic stock) were introduced in the Baltic Sea to share the burden of rebuilding the western Baltic cod stock. These included a bag limit of three cod per day and angler in the closed season (Feb + March) and five cod per day and angler during the rest of the year. For 2020 the bag limit was set at five per day. Conditions for the closed season were kept constant. For 2022, the bag limit for Western cod was set at 1 fish per day, and a limit of 1 salmon per day was introduced.

## Nowcasts for 2021-22 and beyond

### Model results and outlook for 2021

Landed weight decreased substantially by about 11% in 2021 compared to 2020, with a 14% decrease in landed value. Projections suggest that operating costs of the non-pelagic fleet decreased by 6% in 2021. However, the decrease in value of landings in 2021 could not be fully compensated by lower costs. Gross value added dropped by 31%, while gross profit decreased even further (-63%) from a very low level (EUR 21 million in 2020), while net profit remained negative (-EUR -13 million).

Projection results, suggesting that the German fleet operated at a loss in 2021, are in line with recent statements from the industry. Negative economic developments can also be seen in performance indicators GVA to revenue (44% in 2021, after 49% in 2019 and 45% in 2020) and gross profit margin (7% in 2021, after 14% in 2019 and 17% in 2020).

The main driver for a considerable decrease in profitability in 2021 was the decrease in catch and revenues, only partly as consequence of the COVID-19 pandemic. This is due to an overall decrease in most of the main quota while both catch and prices for brown shrimp, a species without TAC and the

most important species for the cutter fleet, remained at a low level. Sales of fresh fish caught by the cutter fleet were still hampered by the COVID-19 pandemic as restaurants and touristic facilities were temporarily closed due to the lockdown.

Fuel prices increased sharply in 2022 after a year 2021 with already increasing, but still average fuel prices.

For 2021, the COVID-19 pandemic again is expected to have only a minor impact on the economic performance of the German fleet as most lockdown measures or other restrictions which might have an impact on fisheries have been cancelled.

Parts of the fleet were suffering from uncertain fishing opportunities in British, Norwegian and Greenland waters as the fishing agreements were signed only in the second quarter of 2022. Some fisheries highly depend on quota exchange with the United Kingdom, which is not feasible during most of the year 2021.

### *HIGH SEAS FLEET*

Overall, 2021 was regarded negative by the high seas sector for both demersal and pelagic fisheries. Total landings dropped about 9% from 2020. COVID-19 related issues were not the main problem in 2021. Instead, unresolved issues in the Brexit context had substantial negative effects.

The demersal sector was affected by heavily delayed negotiations with Greenland and Norway. Both treaties are of utmost importance for the German fleet. Given these circumstances, the high seas demersal trawlers achieved positive results in the demersal fisheries in Norwegian waters, Svalbard and the Barents Sea. However, catches dropped 36%, compared to 2020. Targeted species were saithe, cod and haddock. In contrast to preceding years, a directed fishery on saithe took place in the North Sea, however, success was limited. Again, Greenland halibut fisheries in Eastern and Western Greenland waters were highly efficient, but due to poor weather conditions and the delayed start the Eastern Greenland quota could not be fully exploited. The Greenland quota on cod, redfish and Western Greenland halibut were fully exploited. The 2021 season of pelagic redfish fishery in the Irminger Sea was less satisfactory than in 2020.

High seas pelagic fisheries in European waters targeted herring, mackerel, horse mackerel and blue whiting in European waters as well as sardine and mackerel in Moroccan waters. In some years, jack mackerel in the South Pacific is targeted by one vessel. Quota for the important North Sea herring dropped further by -14%, mackerel quota was decreased by -22% and blue whiting dropped considerably (-35%). The horse mackerel quota remained stable (+2%).

The German high seas pelagic fleet consists of three trawlers. Their total catch dropped 20% in European waters and 30% in Moroccan waters in 2021. One German pelagic trawler temporarily performed fisheries in the South Pacific under an EU-wide quota pooling. However, this fishery could not compensate for the losses in the other pelagic fisheries.

As in previous years the LO was no major issue for the high seas fleet.

By the end of 2020, MSC certificates on Atlanto-scandian herring and blue whiting were suspended, due to an insufficient stock management, according to the MSC. Hence, the only herring fishery with certificate was the one on North Sea herring. All demersal whitefish fisheries (cod, haddock, saithe) in Norwegian and Svalbard waters as well as the Greenland halibut fishery were certified, as well as the North Sea saithe fishery. All annual audits were finalized successfully.

### *CUTTER AND SMALL-SCALE FLEET*

After the two subsequent challenging years the cutter and small-scale fleet was again facing economically severe circumstances in 2021. In the beginning of the COVID-19 pandemic, sales of fresh fish had been grossly affected. Sales to the restaurant and catering sector had dropped severely as these facilities had been closed for a long time. These losses could only partly be compensated by private consumption. Due to lower restrictions in 2021, sales to restaurants and catering could recover while private consumption remained stable, even in case of increased prices. In the Baltic area catches dropped due to further severe quota cuts (-50% for Western herring, -70% for Eastern cod). Thus, the amount of fish for local sales was limited.

The brown shrimp fishery, backbone of the cutter fleet, was severely hit by both a price drop and a decrease in landings in 2019 and 2020. Figures for both catches and revenues remained at a low level, resulting in low or negative profits of the segment.

The North Sea flat fish fishery was affected by the ban of pulse fishing, thus increasing fuel expenses considerably. Only one third of the plaice quota and half the sole quota was exploited. As the German Nephrops quota is very low, the fishery has been based grossly on quota exchanges with the United

Kingdom. Due to limitations in quota exchange as consequence of Brexit, this fishery was overall unsatisfactory in 2020.

Baltic fisheries suffered from another year with severe quota cuts for all relevant species. In 2021, quotas were reduced by 50% for Western herring (after -60% in 2020) and by -70% for Eastern cod (after -92% in 2020), while Western cod quota remained at a very low level (+5%). A moratorium was set on targeted cod fisheries, and the quota was used for bycatch only. Plaice and sprat quota remained almost unchanged (+5% and +6%, resp.). Payments for temporary and permanent cessation have been carried out by the German authorities.

## Model results and outlook for 2022

In general, the major factors influencing the profitability of the German fisheries are fuel price and revenues. With few exceptions (e.g. brown shrimp) fish prices do not fluctuate considerably. Thus, the volume of catches is the main factor which determines the revenues. Most important species targeted by the German fleet are managed under a TAC regime. Fuel prices are showing a substantial increase in 2022 as a consequence of the Russian invasion in the Ukraine. Unfavourable quota development and still the COVID-19 lockdown affect the performance of the German fisheries also in 2022. Some fleets are suffering from quota reductions as a consequence of the Brexit.

The stop of quota exchange opportunities with the United Kingdom has been an issue for the German fleet in 2021 as these exchanges have been to mutual benefit for both parties. The industry expects a long-term legal basis for quota exchanges in the near future.

### HIGH SEAS FISHERIES

For 2022, North Sea herring quota increased 22% after a 14% drop in 2021. Mackerel in the North-Eastern Atlantic further decreased 9%, while Arctic cod and Greenland halibut remained unchanged. Redfish in Greenland waters was lowered substantially by 33%. The outcome of the negotiations with Norway on the cod fishery in the Svalbard area is still pending and could negatively affect the performance of the demersal trawlers.

The impact of COVID-19 measures on the high seas fleet has been limited. Currently no major effect is expected for the economic performance in 2022.

### CUTTER AND SMALL-SCALE FLEET

The quotas for North Sea stocks relevant for the German cutter fishery underwent some changes in 2022. The North Sea haddock and cod quota remained stable (+1% and -2%, resp.), while North Sea plaice quota decreased by 10%. The important saithe quota was decreased again by 25%, after a 30% drop in 2021. Brown shrimp being the most important species for the German cutter fishery is not managed by TAC. As there is no stock assessment the abundance and thus the catches of brown shrimp cannot be properly forecasted. Almost all enterprises managed to survive three detrimental years in a row. However, as the 2022 season started with a substantial increase in fuel price while catches and revenues appear mediocre so far, some bankruptcies might be inevitable, according to the industry.

Another substantial 50% drop of the quota for Western Baltic herring for a second year in a row exacerbates the desperate economic situation for Baltic coastal fishers. Western Baltic cod quota dropped -88%, thus the remaining quota is barely sufficient for bycatch in flatfish fisheries. A directed fishery has been ceased. The quota for Eastern cod was remained at 54 tonnes (compared to e.g. 2 203 tonnes in 2019), thus allowing no directed fishery either. The moratorium will stay in place, the quota is being used only for bycatch. Plaice (+25%) and sprat (+13%) quota increased but cannot compensate for the ongoing losses for the main species herring and cod.

Payments for temporary and permanent cessation by the German authorities are likely to be continued, but can only compensate for a fraction of the loss due to the quota cuts. In addition, in 2020, the COVID-19 lockdown hampered severely sales to local markets and restaurants, so that prices dropped together with catches. This effect might come to an end with cessation of COVID-19 related restrictions as already observed in 2021. However, due to the quota cuts in the Baltic region there is little local fresh fish available to sell.

## Methodological considerations and data issues

### General remarks

Capacity, logbook and landings data are derived from sources which are covered by different legislations. All these data are available exhaustively. That means that all capacity, landings and effort data are represented at 100%.

The only exception is the group of vessels below 8 metres without logbook obligation. These vessels are sampled for effort data. The remaining variables (cost, employment, fuel consumption) are estimated based on results from an accountants' network and from surveys with questionnaires.

All data on the high seas fleet were collected exhaustively (100%).

The data basis for fleet segment level estimations has become broad over the years. All fleet segments with major contribution to the total catches of the German fleet have been sampled with satisfactory response rates. As segments are not necessarily homogeneous, the results can be quite variable which is reflected in higher coefficients of variation.

The German fishing fleet contains a small number of pelagic vessels which are owned mainly by one company and therefore, for confidentiality reasons, it is impossible to publish this data by segment. Clustering the pelagic vessels with other vessels is not feasible as the pelagic vessels have unique characteristics that would completely bias "pure" segments when clustered. Therefore, the only pelagic fleet data in this report is capacity and weight and value of landings data, which is public, so please consider this when interpreting national totals; the German pelagic fleet accounts for a substantial part of the national fleets' costs and earnings.

All data have been collected, also for the pelagic fleet. As in previous years, confidentiality of most of the data on pelagic vessels affects regional analyses. The pelagic fleet mainly operates in the North Sea and North Atlantic (herring, mackerel, blue whiting). Data on pelagic fisheries in the Baltic are hardly affected, as they are performed on a seasonal basis, and vessels are assigned to the DTS segment, which reflects their major activity during the year.

Vessels which targeted blue mussels were excluded from the analysis because they are defined as operating in the aquaculture sector. Not all of the participating vessels can be identified by the first gear entry in the fleet register as some vessels are using beam trawls. Instead, the relative catch of blue mussel was used, thus allowing an unambiguous identification of aquaculture vessels. Usually, the only catch of these vessels are blue mussels.

For the year 2020 and beyond the total number of jobs will be available exhaustively (see below under "Changes..."). On this basis, fulltime equivalents are estimated with reference to the days-at-sea and the crew size. This information is also used to estimate the figures by fleet segment.

It has to be pointed out that German employment data follow the approach of minimum requirement of activity, i.e., a person that goes fishing for twenty days or less during the year is not accounted for one employed person. If one day at sea would qualify for counting a "person employed" figures would exceed official statistics by at least 50%.

### Changes in respect to previous years

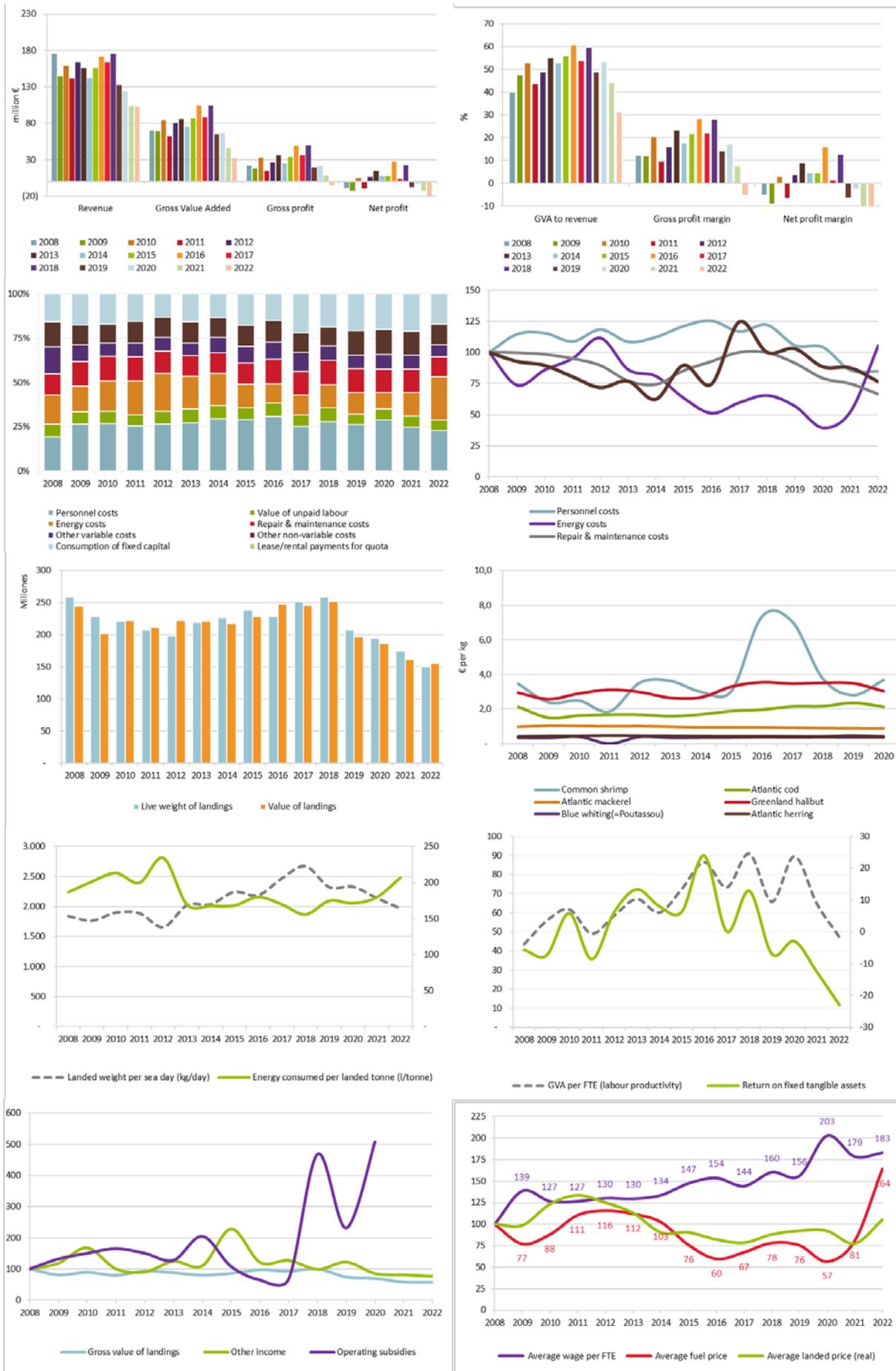
For 2020, employment and demographic data are exhaustively available from the totals from the Employer's Liability Insurance Association. This results in a break in the time series as data from former years were estimated with reference to days at sea and crew size, thus resulting in some cases in an over-estimation. Insurance data are not resolved at fleet segment level. Therefore, the figures are assigned proportional to effort and vessel information.

### Improvements achieved within data collection for 2020

The aforementioned change in data availability for employment and demographic data is a step forward in quality.

### Problems identified

An increasing reluctance of responding to questionnaires had to be observed. This applies in particular to vessels with foreign ownership, forming segments with few vessels only. In these cases, estimation and raising procedures are based on few or even no response at all and are thus limited in robustness.



**Figure 4.10 Germany: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.10 Greece

### Short description of the national fleet

#### Fleet capacity

In 2021, the Greek fishing fleet consisted of 12 247 registered vessels with a combined gross tonnage of 62 534 GT and total power of 360 933 kW. The average vessel age is 32 years. The overall capacity of the Greek fleet has a falling trend between 2020 and the previous decade (average 2012-2019). The size of the Greek fishing fleet decreased, with the number of vessels falling by 7%, while total tonnage and power also reduced by 7% and 8%, respectively. The decreasing number of vessels stemmed from the reduction in the small-scale vessels. A significant reason is the ageing of the population without any attractive motive for successors to stay in business. Furthermore, in 2020, the Greek fishing fleet significantly decreased due to EMFF Measure 6.1.10 under the Union Priority 1 for permanent cessation (751 vessels decided to be excluded from the registry). Finally, we have to mention the high inactivity (18%) that the Greek fleet faces, mainly concentrated on small-scale fisheries in 2020 compared to 2019, and the problems caused due to the COVID-19 pandemic.

#### Fleet structure

In 2020, the Greek fleet had 11 400 active vessels. The majority of the active vessels (10 604) were part of the SSCF with a combined gross tonnage of 21 211 GT and total power of 196 270 kW. Additionally, there were 796 LSF with a combined GT of 36 626 and total power of 134 146 kW.

#### Employment

Employment was estimated at 18 693 jobs, corresponding to 14 528 FTEs with a very low average annual wage per FTE and total employed (EUR 9 296 and EUR 7 225, respectively) in 2020. As a result, employment in the sector faces a decreasing trend. Total jobs decreased by 2% and FTE by 10% in 2020 compared to 2019.

#### Effort

In 2020, the Greek fleet spent 1.6 million days at sea (DaS) of which 7% refers to the LSF and 93% to the SSCF. The amount of energy consumed was estimated at 78 million litres and thus was slightly lower than in 2019 (-7%). The average amount of energy consumption was 6 932 litres per vessel. Energy costs were reduced, slightly decreasing from about EUR 63.2 million in 2019 to EUR 50.8 million in 2020. This decrease is due to the reduction of the total number of vessels, active vessels, and related restrictive measures on the activity due to the COVID-19 pandemic. The fishing effort is concentrated mainly in Aegean (GSA 22), approximately 73% and the remaining effort is deployed in the Ionian (GSA 20) 23.5% and Crete (GSA 23) 3.5%.

#### Production

The Greek fishing fleet targets a variety of species. The leading Greek species regarding the landing weight are European anchovy, European pilchard, European hake, common octopus, caramote prawn, surmullet, red mullet, and red porgy. The core Greek species regarding landings value are European hake, European anchovy, European pilchard, red mullet, common octopus, surmullet, deep water rose shrimp, caramote prawn, and red porgy.

### Economic results for 2020 and recent trends

#### National fleet performance

Total revenue (income from landings and other income) earned by the Greek fleet in 2020 was estimated at EUR 347 million, following a significant reduction of 19% compared to 2019 due to the COVID-19 pandemic and the related restrictive measures on fishing activity. The total revenue of the Greek fleet was generated 55.5% (EUR 193 million) by the LSF and 44.5% (EUR 154 million) by the SSCF. Greek fishing vessels' primary source of income is the income from landings, while some segments also receive direct subsidies stemming from duties refunds. No other source of income appears (e.g. income from fishing rights, recreational fishing, and tourism). However, it should be

mentioned that fishing tourism activities are fast-growing, and next year's outcomes are expected to include and reflect this source of income.

Moreover, for 2020, it is essential to mention that the Greek Ministry of Rural Development provided support to alleviate the fishing sector from the financial consequences of COVID-19. It activated the de minimis aid for SSCF, and 11 113 applications were submitted, corresponding to 9 956 fishing vessels, for a total aid amount of approximately EUR 11.3 million. In addition, under Measure 3.1.9 "Temporary cessation of fishing activities as a consequence of the pandemic outbreak of COVID-19" of the Greek Operational Program 2014-2020, 689 vessels received the aid of approximately EUR 19.1 million. More specifically, 158 SSCF vessels were supported with roughly EUR 1.2 million, while the remaining 531 were LSF vessels supported with approximately EUR 17.9 million.

Regarding the unusual situation for 2020, the income generated from landings covered the expenses for the Greek fleet. Therefore, the amount of GVA, gross profit, and net profit generated by the fleet in 2020 were EUR 205 million, EUR 70 million, and EUR 19 million. Overall, the Greek fleet made a net profit without including the operating subsidies for COVID-19. Once we have the amount of aid for COVID-19, the GVA, gross profit, and net profit will be EUR 240 million, EUR 105 million, and EUR 58 million, respectively.

Moreover, including the imputed value of unpaid labour provides the activity with a high positive income for fishers in 2020. As the majority of the Greek fishing vessels are mainly based on family labour, this figure provides a clearer picture of the sector's economic sustainability improvement. It is also important to emphasize that this figure is estimated as the opportunity cost of labour, using the average daily wage per fisher. However, in many cases, due to the lack of labour demand in local economies, which is even more intense due to the on-going financial recession, the opportunity cost of labour is lower or even zero.

The total expenses of the Greek fleet are EUR 323 million, which decreased compared to 2019. The main expenses of the fishing vessels are personnel costs (42%), more precisely wage and salaries (18%), and the imputed value of unpaid labour (24%). Energy costs and other variables costs follow with 18% share, respectively. Energy costs exceed a total of EUR 68 million, which means a decrease compared to 2019. Specifically, wages and salaries were equal to EUR 58 million, and they derived mainly from LSF. Imputed labour costs were estimated to EUR 76 million and derived mainly from small-scale vessels.

Other variable costs, including commercial costs and other operating costs, are also important, and they present an increase compared to the previous year. These costs were estimated at EUR 59 million. The non-variable costs were EUR 9 million, representing only 3% of total expenses, while repairs and maintenance costs reached around EUR 22 million, revealing lower levels compared to 2019. Finally, the annual depreciation costs accounted for 14% of total costs (EUR 46 million).

As far as the value of physical capital (depreciated replacement value) is concerned, it was equal to EUR 152 million. Moreover, the total investments in physical capital in 2020 were around EUR 33 million.

Overall, the operational cost has had a slightly decreasing trend. Energy costs decreased mainly due to considerably lower fuel prices in the previous years, due to the decreasing trend of vessel numbers and the influence of lockdown measures from the COVID-19 pandemic. Wages followed a slightly increasing trend, and unpaid labour focused mainly on small-scale fisheries, which revealed a slight decrease.

## Resource productivity and efficiency indicators

The fleet average gross profit margin in 2020 was 20%, indicating a reasonable operating efficiency for the sector. The Net profit margin was estimated at 6%, following a significant reduction due to COVID-19 effect. The RoFTA was positive in 2020.

Labour productivity (GVA/FTE) for 2020 was estimated at EUR 14 188 per FTE, following a significant decrease in contrast to the last three years' slightly increasing trend. The average wage per FTE was estimated at EUR 9 296 following a slight increase from the previous 5 years.

Fuel consumption per landed tonne was estimated at 1 325 litres/tonne of landed fish in 2020, and it has followed a slightly increasing trend since 2017. The landed weight per sea day was estimated at 36 kg/day.

## Performance by fishing activity

### Small-scale coastal fleet

In Greece, 93% of the vessels were SSCF. Specifically, there were 10 604 SSCF vessels with a combined 21 211 GT and total power of 196 270 kW in 2020. The number of SSCF vessels decreased slightly by 1% from 2020 to the previous year, following the general trend of the Greek fishing fleet. In 2020, the value of landings of the SSCF was estimated at EUR 154 million, accounting for 44.5% of the Greek landings value. The value of landings and the revenue faced a significant reduction due to the related restrictive measures on the activity for the COVID-19 pandemic.

In 2020, SSCF spent 93% of the Greek days at sea and consumed 29 million liters of fuel, less compared to 2019. The corresponding energy costs continue to be high. The SSCF fishers, due to their limited access to credit, do not have the flexibility to buy their fuel in advance; instead, they buy a limited amount to cover only their very short-term needs. This is the main factor for increases in the energy cost because they do not take full advantage of the reduced fuel prices.

The income generated from landings was significantly less than the expenses for the SSCF fleet. Therefore, the Greek SSCF made losses despite the economic performance improvement in the previous 5 years (AGRERI, 2022). The amount of GVA and the gross profit generated by the SSCF fleet in 2020 were EUR 77 million and -EUR 23 million, respectively. The resource productivity and efficiency indicators are low compared to the same indicators calculated for all the Greek fleets. The labour productivity indicator (GVA/FTE) was EUR 6 702, half of the national average labour productivity, and the revenue per vessel was EUR 14 593.

The SSCF employs a total of 14 340 engaged crew, thus contributing to 77% of the total national employment of the sector. The majority of the engaged crew is unpaid labour, mainly members of the captains' family. This result refers to the significant contribution of the SSCF to local employment.

The SSCF mainly exploits the extensive Greek coastline, using polyvalent passive gears (specifically nets, longlines, pots, and traps). The vessels are primarily family-owned and characterized by low invested capital. Moreover, their landings are sold at higher prices than the LSF, and they are mainly directed to the market through very short supply chains. Although the vessels of this segment are small, they are vital for the local economies regarding job opportunities and have strong ties to them. They usually offer income and employment to poor and isolated areas with few alternative economic activities. Therefore, this segment highly contributes to the social and economic sustainability of the coastal communities.

### Large-scale fleet

The LSF contained 796 active vessels with a combined 36 622 GT and total power of 134 146 kW. As larger vessels have higher levels of engine power, they can conduct more fishing operations in deeper fishing grounds. These vessels mainly use active gears (bottom trawlers and purse seiners) and are characterized by high operating costs.

In 2020, LSF spent 7% of the Greek days at sea and consumed 49 million litres of fuel. The income generated from landings was high enough to cover expenses for the LSF fleet. The amount of GVA, the gross profit, and the net profit generated by the LSF fleet in 2020 were EUR 128 million, EUR 93 million, and EUR 71 million, respectively. Overall, the Greek LSF made a positive profit. Still, the economic performance has been affected by COVID-19 with a significant reduction unless an improvement has been explored in the last 5 five years (AGRERI, 2021). Nevertheless, the resource productivity and efficiency indicators are positive. The labour productivity indicator (GVA/FTE) for LSF was EUR 43 128, presenting an increase. The profitability measured in terms of net margin is higher for the fleet segments DTS24-40m, DTS18-24m, and PS24-40m, and with positive profitability also for PS12-18m.

## Performance results of selected fleet segments

The Greek fleet is highly diversified, with a broad range of vessel types targeting different species. The national fleet consisted of 16 (DCF) fleet segments and 11 604 active vessels in 2020. Overall, the Greek fleet had positive profitability. More specifically, five fleet segments had high profitability, one reasonable, and nine weak profitability. The performance results of selected fleet segments are presented below.

## Netters 6-12m

This is the largest fleet segment of the Greek fishing fleet, containing 5 003 vessels. The total value of landings was EUR 85 million, having the first position with a 25% share of the Greek total landings value. DFN06-12m segment employed 6 423 FTEs, having the first rank in terms of employed persons, representing 44% of the Greek fishing fleet. The recent years DFN0612m faced a decreasing trend in terms of the number of vessels and employed persons. Furthermore, in 2020, DFN 06-12m segment faced significant effects due to COVID-19.

It is also important to mention that this segment produces from the highest GVA among fleet segments, which is equal to EUR 44 million, a fact that reveals its substantial importance. Taking into consideration that the majority of these vessels operates in poor and isolated areas, with very few alternative economic activities, the importance of this sector to the local economies is even more apparent. The imputed value of unpaid labour is the main cost item (35% of total expenses) and represents the family contribution to labour. In 2020, the fleet segment of DFN0612 had weak profitability with losses (-27% net profit margin). This segment spends, on average, 174 DaS per year. The average wage per FTE is at EUR 8 777, per employed at EUR 7 716 and the labour productivity at EUR 6 843. Moreover, the profit and the imputed value of labour provide a substantial income to the families of many coastal areas.

## Netters <6m

It is the second most crucial fish segment in Greece regarding the number of vessels employed in 2 530 small vessels. These vessels target multi-species (e.g. *Mullus barbatus*, *Mullus surmuletus*, *Merluccius merluccius* and others). The total value of landings is EUR 17 million, following a significant reduction compared to 2020. This fleet segment employed 1 622 FTEs. Considering that the majority of these vessels are family-owned, they usually utilize only family labour. The share of the segment in both the total national value of landings and the national contribution to employment indicates its high importance (5% and 11%, respectively).

Unlike large-scale fisheries, the main cost element is the imputed value of unpaid labour (45%), followed by labour cost (12%) and energy costs (12% of total expenses). Finally, it is worth noticing that although this segment includes very small vessels, it highly contributes to the national economy (GVA of about EUR 8 million) and provides livelihood and income for fishers with limited alternative employment. Admittedly, the economic performance is weak, the net profit is negative, but it also has a social contribution to providing labour to the families of many coastal areas. The average wage per employed is EUR 5 451, and labour productivity EUR 4 936.

## Longliners 6-12m

Longliner's total fleet is made up mostly of small vessels less than 12 metres, around 2 754 vessels. This segment has a substantial contribution either to landings or employment. In total, it contributes with 3 224 FTEs representing 17% of the Greek fishing fleet, unless the significant reduction in 2020 from the related restrictive measures on the activity due to COVID-19 pandemic. This figure highlights the major importance to the local rural economies. The imputed cost of labour is the primary type of cost, representing the family contribution to the labour. This has a significant effect due to limiting alternatives for jobs in some specific coastal areas.

HOK06-12m is the third largest fleet segment of the Greek fishing fleet, with 1 058 vessels. The total value of landings was EUR 32 million, and the total FTEs employed in this fleet segment were 2 424, representing 17% of the Greek fishing fleet. These figures highlight the importance of this segment to the local and rural economies. The imputed value of unpaid labour was the primary type of cost (30% of total expenses), and as in the previous segment, it represents the family contribution to the labour. This segment spends, on average, 168 DaS per year. Energy costs are also important, contributing to 13% of total costs. It is essential to mention that this segment is a GVA of EUR 14 million, revealing its high importance to the rural economies. However, the economic results are weak and made losses in 2020. The labour productivity was only EUR 6 021.

## Bottom trawlers 24-40m

The bottom trawlers' fleet segment included 259 active vessels with a total value of landings of EUR 60 million, significantly reduced compared to 2019 (EUR 92 million) and total employment that corresponds to 1 461 FTEs. Bottom trawlers have multi-species characteristics and capture numerous fish species, such as *Penaecus kerathurus*, European hake, deep-water rose shrimp, red mullet, surmullet, *Pagellus erythrinus*, picarel, common octopus, bogue, and many others. This segment

spends, on average, 205 DaS per year. Management regulations include seasonal (June 1-September 30) and spatial closures, net size changes, as well as a minimum landing size. Overall, bottom trawlers had positive profitability and followed an improved economic development trend.

DTS 24-40m segment had 140 vessels, with an 18 647 GT and total power of 44 688 kW. The average age of these vessels is low (26 years), which is an indication of increased welfare. They spend, on average, 204 DaS per year with a total value of landings of EUR 67 million. The total FTEs is 908, representing around 6% of the FTEs in the sector. The main expenses are energy costs (28%), wages and salaries (21%), and other variable costs (20%). As far as the value of physical capital is concerned, it represents 15% of the total national value of physical capital, while it represents 7.5% of the total national investment for 2020. Finally, it should be noted that this segment appears to have improved economic performance, mainly due to reduced energy costs. It has a high net profit margin (43.6%) and return on fixed tangible assets (107.9%), which provide high profitability for this fleet segment. The landings contributed 20% of this segment to the national economy and 22% to the total revenue. The labour productivity is very high (EUR 50 656). Overall, the DTS24-40m had a high profitability development.

### Purse seiners 18-24m

This segment includes 189 vessels operating predominately in areas Aegean (GSA 22) and Ionian GSA 20. Aegean has 85% of the fishing effort and Ionian 15%. Purse seiners fishery is the main fishing gear for small pelagic species, mainly European anchovy, and European pilchard, which consist of about 75% of the weight and volume of the landing. The purse seiners conduct daily trips, and each vessel is responsible for fish searching, catching, and transporting its catches to port. Fishing operations are carried out exclusively during night hours, with each vessel carrying around 8–10 persons. Each per seiner spends, on average, 198 DaS per year. Management regulations currently in force for the purse seine fishery include mesh size regulations (14 mm), technical measures such as time closure (December–February), area closure, and fishing prohibitions within specific distances from the coast (100 m).

PS18-24m segment included 123 vessels with a value of landings equal to EUR 59 million (14% of the total national landings). Each vessel spends, on average, 198 DaS per year. The segment employs a total of 342 FTEs, and thus it contributes to 2.3% of the national total. Variable costs and wages and salaries are the largest cost elements in this segment, together representing 65% of the total cost. This year, the economic performance improved; it has the second-highest net profit margin among all the Greek fleet segments. Moreover, it also presented high labour productivity (EUR 98 908) and a high average wage/FTE, equal to EUR 23 930.

### Pots and Traps

This fleet included 323 vessels, with the majority of them (267 vessels) to be categorized in the 6-12m length class. It offers 289 FTEs representing 1.9% of the total FTEs of the Greek fishing sector. Pots and Traps have multi-species characteristics, but almost 90% of landings stem from the capture of common octopus. Other species that this fishing gear targets are the common cuttlefish, Norway lobster, black seabream and picarel. The main characteristics of this segment are the high average vessel age (more than 30 years); the main cost element is the imputed value of unpaid labour, which mainly represents the family contribution to the labour. In 2020, the FPO0612m segment faced high profitability.

### Drivers affecting the economic performance trends

The main drivers affecting the economic performance of the Greek fishing sector involve the effects of COVID-19 shock, the general economic environment and specific sector characteristics. Results show that the overall economic performance of the Greek fleet has a significant impact due to COVID-19 pandemic. The previous economic improvement coincides with overall reductions in fleet capacity, mainly SSCF, the high rate of inactivity, and low consumption and fuel use intensity which means that the Greek fleet has become more efficient. In addition, a recent scientific publication documented that the presence of women has a positive outcome on several social and economic indicators that reflect the wealth of both fishing households and employees (Liontakis et al., 2020).

There are many challenges ahead, like the cash flow shortage, the limited access to credit, the increasing social-security contributions, and taxation, together with the high value of inputs, which creates unfavourable conditions for fishers and their activities. Low prices of the main target species are also linked to the low spending power of Greek households despite the fact that the Greek economy has just got over a 10-year financial crisis.

Furthermore, one of the main problems fishers reports concern the damage of the fishing gears, caused by protected species like dolphins, seals, sea turtles, and seabirds. These damages increase the repair and maintenance costs of the vessels and negatively affect their overall economic performance, keeping in mind that fishers do not receive any compensation for their losses. Moreover, the invasion of alien species, such as *Lagocephalus sceleratus*, can cause damage to the fishing gears but, more importantly, can negatively affect the biodiversity of Greek seas and contribute to significantly lower catches and income for fishers.

Additionally, the reduction of fishing stocks in the Mediterranean Sea affects the economic performance of the Greek fishing sector. Pressure on stocks is increased due to the competition of the Greek fishing vessels with vessels from other countries that do not have to follow EU legislation and restrictions, like Turkey. There is also a variety of vessels operating in the same fishing areas, and this can lead to conflicts. In particular, there is a strong conflict between the small-scale and large-scale fleets that were highlighted by fishers as a major factor impacting their financial performance. There is also a conflict between professional and recreational fishers who usually fish in coastal areas and illegally sell their catch at low prices.

## Markets and Trade

As far as the market structure is concerned, fishers reported that, on average, 50% of their catch is channelled to wholesalers and fish auctions, while 45% involves direct sales to consumers. Direct sales refer mainly to small-scale vessels. However, if only large-scale vessels are considered (bottom trawlers and purse seiners), fishers report that about 80% of the catch is channelled to wholesalers and fish auctions.

Analysing from the consumer's point of view, and specifically consumer preferences on purchasing channels, Greek consumers prefer to buy mainly from fishmongers or specialist shop (68%) and secondary from the grocery store, super, or hypermarket (56%), while at the EU level, consumers prefer to buy mainly from the grocery store, super, or hypermarket (79%) and secondary from fishmongers or specialist shop (43%) (EUMOFA, 2022). Regular consumers, namely those who eat fishery and aquaculture products at least once a month, mainly belong to age groups 40-54 and over 55 (EUMOFA, 2022). Young people (15-24) are less inclined to consume fish in Greece, as well as at the EU level (EUMOFA, 2022). However, regular consumers in this category cover 70% of the total, which is higher than at the EU level (67%) (EUMOFA, 2022). Greeks consume mainly fresh products; loose fish is much more frequently consumed (92%) than at the EU level (68%) (EUMOFA, 2022). Regarding the purchasing factors of fish, Greek consumers place more emphasis than other EU consumers on the factors: product's appearance (73% vs 58%), cost of the product (68% vs 54%), and origin of the product (67% vs 49%) (EUMOFA, 2022). However, compared to other EU consumers, they place less emphasis on factors such as: brand or quality labels (19% vs 26%), how easy and quick it is to prepare (11% vs 24%), and environmental, social, or ethical impact (10% vs 16%) (EUMOFA, 2022). In addition, Greek consumers reveal a greater preference for wild products over farmed products (53% vs 4%), while a significant percentage of consumers (22%) are indifferent between wild products and farmed products (EUMOFA, 2022).

## Operational costs (external factors)

In 2020, the overall economic performance of the Greek fleet revealed a deterioration. This refers to the result of the COVID-19 pandemic effects. The sector had lower operating costs, particularly the low cost of fuel, the low wages, and the reduced value for the variable and non-variable costs. Moreover, in 2020, the number of inactive vessels increased, so the remained vessels improved especially in LCF, their economic performance.

As already discussed above, the main costs of the Greek fishing vessels are the energy cost and wages and salaries of the crew. According to the data collected, energy cost had a decrease (-22%) compared to 2019. The average fuel price decreased even the small-scale vessels have a higher fuel price than LSF. Wages and salaries of the crew, which is also an important cost element, remained at the same level compared to the previous year. The opposite we had with unpaid labour, which decreased (-15%). This was mainly due to COVID-19 effects with the specific restrictions for the limited activity of the fishers.

Another external factor that affects the costs of the fishing activity is damage caused to fishing gear, especially nets, from mammals like dolphins, but also sea turtles, crabs, and sea birds. These damages are frequent and reported by the majority of fishers, although currently, no compensation is received.

## Innovation and Development

The Greek fleet consists mainly of small-scale, family-owned vessels that use traditional fishing gears. Furthermore, investments are limited due to the economic crisis, while the average age of the vessels is increasing. This environment leaves little room for new and innovative techniques for small-scale fisheries and large vessels since the latter also faces high running costs. However, as mentioned above, the Greek Operational Programme for 2014-2020 aimed at the modernization of the fisheries sector and its sustainability mainly through supporting the use of more selective fishing gear as well as other on-board investments and equipment, the modernization of infrastructures, and the improvement of fisheries monitoring and control.

As part of the Greek Operational Program for the period 2014-2020, 187 fishing vessels are funded for modernization through supportive investments, which will ensure a higher level of hygiene, safety, and energy efficiency of ships (Measures 3.1.8 and 4.1.20). The funding budget is around EUR 5.5 million.

Also, 158 fishing vessels are funded to enhance the added value and quality of fish products but also to rationally manage waste disposal through eligible investments on board, such as refrigeration equipment, fish waste and waste disposal equipment, quality management, etc. (Measure 3.1.22). The funding budget is around EUR 4.5 million.

At this point, it should be noted that in the framework of the National Fisheries Data Collection Program for the reference year 2020, the majority of fishing enterprises in the sample expressed a willingness to participate in measures related to the modernization of the vessels and fishing gears. Also, the majority of fishing enterprises showed significant interest in fishing education, stating that they would be interested in education through seminars such as sustainable fishing, sustainable fish stocks management, and new fishing technologies.

Furthermore, for successful management instruments and policies that can promote sustainability and the development of the fisheries sector, the Greek Fisheries Institute, the Hellenic Centre for Marine Research, and the Greek Agricultural Economics Research Institute are providing the necessary scientific knowledge.

## Nowcasts for 2021-22 and beyond

### Model results

Nowcasts suggest a decrease in 2021 and 2022 results compared to 2020, driven by the increase in fuel prices.

### COVID-19

The Greek fishery sector has faced significant adverse effects from the COVID-19 pandemic, as demand has sudden instability. The impact of COVID-19 on fishing was severe, especially on small-scale fishing on Greek islands, as its distribution network is linked to the tourism industry and includes local hotels, restaurants, and individual tourists who buy directly from fishers. Due to the fact that the beginning of the tourist season coincided with the ban on travel for the treatment of COVID-19 led to a significantly reduced demand for fish and, consequently, a reduction in fishing activity and income. Although the lifting of travel bans began in mid-June, a significant decrease in tourist arrivals appeared in the rest of the tourist season (July-August), which is considered the peak period for tourism in Greece. Therefore, a dramatic reduction in the incomes of small-scale fishers happened, resulting in the viability of fishing enterprises and their households being seriously endangered.

## Methodological considerations and data issues

There have not been significant data issues in producing this chapter. The implementation of the DCF National Work Plan has not faced difficulties for 2020 like the previous years, which had resulted in an interrupted time series on the economic data. The figures for costs come from a survey based on probability sampling, and the response rate was satisfactory for 2020.

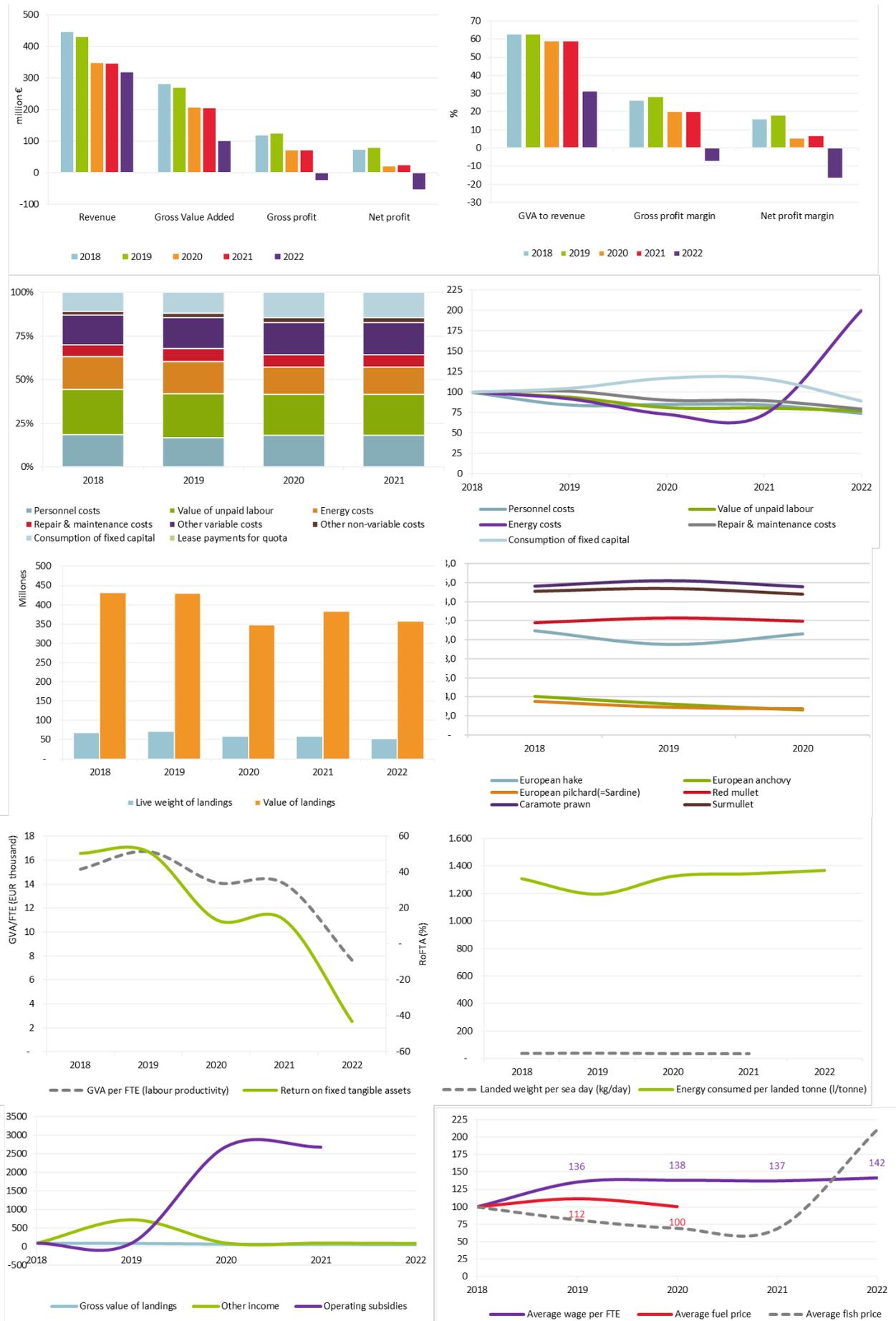
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**Figure 4.11 Greece: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2018=100). Nowcast figures for 2021 and 2022.**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.11 Ireland

### Short description of the national fleet

#### Fleet capacity

The capacity of the national fleet has remained relatively stable since 2008. In 2020, there were 1 938 registered vessels (excluding those registered in the aquaculture segment), with a total capacity of 60 328 GT and 183 958 kW. The estimated total number of inactive vessels in 2020 was 547, the majority of which (81%) are in the less than 10 metres segments. While inactivity for vessels over 10m LOA is known from logbook data, inactivity in the less than 10 metres LOA fleet has been estimated using data from equivalent (i.e., gear, target species etc.) fleets in the 10-12m segment and information from sales notes.

#### Fleet structure

National segmentation of the Irish fishing fleet does not match DCF segmentation in every case. For example, the polyvalent segment (see below) includes a variety of vessel lengths and fishing techniques. Nationally, the fishing fleet is divided into five segments:

1. Refrigerated Seawater (RSW) Pelagic segment: This segment is engaged predominantly in fishing for pelagic species (i.e., herring, mackerel, horse mackerel, blue whiting, and boarfish).
2. Beam Trawler segment: This contains vessels dedicated to beam trawling, a simple trawling method used predominantly in Irish inshore waters except in the southeast, where it is used to catch flatfish such as megrim, sole and plaice as well as species such as anglerfish and rays.
3. Polyvalent segment: This segment contains the vast majority of the fleet. These vessels are multi-purpose and include small inshore vessels (netters and potters), along with medium and large offshore vessels targeting whitefish, pelagic fish, crustacea and bivalve molluscs.
4. Specific segment: This segment contains vessels which are permitted to fish for bivalve molluscs and aquaculture species.
5. Aquaculture segment: These vessels are used exclusively in the management, development, and servicing of aquaculture areas. They collect spat from wild mussel stocks as part of a service to aquaculture installations. The aquaculture segment, while on the fleet register, is excluded from analysis in this report.

#### Employment

Fleet employment in 2020 was estimated at 2 928 jobs. This corresponds to 2 684 FTEs with an average of four and one FTE per vessel for the LSF and SSCF, respectively (excluding inactive vessels). Total engaged crew has shown a 5% decrease from 2019 but FTE has remained stable. Employment in the Irish fishing industry is particularly important to coastal communities.

Indicative figures from the national annual employment survey suggest that 32% of active fishers were aged 50 years and over in 2020. The majority (54%) of fishers are aged 30-50 years old with fishers ages 20-30 making up 11%. Younger fishers make up a small percentage of the total with 4% aged less than 20 years. Attracting young people to the industry remains a challenge.

Average crew wage for the entire fleet remains consistent and was EUR 33 474 per job and EUR 35 639 per FTE in 2020 which is lower than the average national annual earnings of EUR 50 076. However, there are variations in the average wage depending on the size and gear of the vessel and the systems of crew share.

#### Effort

The Irish fishing fleet operates primarily in the North Atlantic, Celtic and Irish Seas. In 2020, the national fleet spent 57 460 days at sea (DaS) of which 84% were fishing days. DaS and fishing days

decreased by 16% and 17%, respectively from 2019 to 2020<sup>25</sup>. Energy consumption decreased by 35% over the same period reflecting the decrease in effort.

## Production

Landings by weight in 2020 increased 5% from 208 447 tonnes (valued at EUR 218 million) in 2019 to 218 617 tonnes (valued at EUR 263 million). Provisional figures for 2021 indicate that total landings will be 232 000 tonnes with an associated value of EUR 244 million.

Adjusting for price errors in the landings data and including improved estimates for income for the less than 10m segments, landing income for 2020 is estimated as EUR 312 million.

Production trends are highly influenced by quota changes for pelagic species, particularly mackerel. Indeed, many of the historical fluctuations in the value and weight of landings have been driven by mackerel, as mackerel quota accounts for approximately 34.4% of the total Irish quota from 2015 to 2020.

The 2016 mackerel quota, 76 000 tonnes, included an increase of 46 560 tonnes worth an estimated EUR 59 million. The 2017 mackerel quota, 86 000 tonnes, resulted in landings of 87 000 tonnes worth an estimated EUR 58 million. In 2018, the quota decreased to 69 000 tonnes worth an estimated EUR 47 million and was reduced again in 2019 to 55 000 tonnes but increased again to over 77 000 tonnes in 2020. Mackerel has again topped the landed species by value in 2020 with estimated values of EUR 52.7 million. *Nephrops* are the second most landed species worth EUR 35.4 million in 2020 with associated landings of 5 712 tonnes. This decrease in *Nephrops* was largely driven by a reduction in quota of 35% from 2019 to 2020.

## Economic results for 2020 and recent trends

### National fleet performance

In 2020, the Irish fleet recorded a gross profit. GVA was estimated at EUR 161.6 million, gross profit at EUR 66.5 million and a net profit of EUR 32.3 million. These represent increases in GVA and gross profit from 2019 but a marked reduction in net profit of 20%. Additionally, limited returns from certain fleet segments may have affected the estimation of key variables in the calculations of GVA, gross profit and net profit.

It should be noted that these figures are strongly influenced by the larger pelagic vessels (TM VL40XX), the value assigned to its cost structures and capital values along with fish prices can greatly affect their total landings revenue and profit due to the large volumes of their catches.

Total landed values for the SSCF and LSF have decreased by 29% and 6% with values of EUR 20.6 million and EUR 242.5 million, respectively. It should be noted that the landings value for the inshore sector is under-represented due to data deficiencies. Conservative estimated revenue for this fishing activity is EUR 45 million.

Overall, the cost structure of the fleet in 2020 has remained relatively stable with a small increase in all costs except non variable costs. Operating costs totalled EUR 255 million in 2020, a slight increase of 1% from 2019. Energy costs increased by approximately 10%. When capital costs are included, the total cost of operating the national fleet rose by 4% since 2019 to EUR 278.5 million.

### Resource productivity and efficiency indicators

The fleet average Gross profit margin in 2020 was 21%, an increase of 4% from 2019. The Net profit margin decreased from 13% in 2019 to 10% in 2020, and the RoFTA at 7%, was a decrease from 8% in 2019.

In 2020, fuel consumption was estimated to be 462 litres per tonne landed; the corresponding figure for 2019 was 591 litres, representing a 22% decrease. While fuel consumption had remained relatively stable from 2012 to 2014, the data demonstrates a sharp increase (141%) in fuel consumption each year up until 2019 from 245 litres to 591 litres before decreasing in 2020.

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<sup>25</sup> Note: Prior to 2015, effort was estimated using only data for the over 10m segment. The lack of logbook data for vessels under 10m has meant that the reporting of transversal, landings, activity and true economic performance of this segment (which makes up a large proportion of the Irish fleet) is based solely on this limited results from the a sentinel vessel programme that collects daily effort and economic data from a small sample of the SSCF and sales notes data.

There was a decrease in energy consumption by 9% from 2019 (111 million litres) to 2020 (101 million litres). From 2019 and 2020, there was an increase of approximately 10% in the cost of fuel, from 0.38 euro/litre to 0.42 euro/litre which may have been a factor in the decreased effort in 2020.

Total average fleet landings per unit of effort (LPUE) (i.e., days-at-sea) have fluctuated since 2008. In 2019, the fleet LPUE averaged 2.6 tonnes/day; in 2020 the corresponding figure increased to 3.2 tonnes/day. This average fleet figure may mask performance in specific segments.

## Performance by fishing activity

### Small-scale coastal fleet

There were an estimated 927 active vessels registered in the SSCF in 2020. The number of active vessels in this fleet has seen an increase of approximately 3%, on average, from 2019. There are a number of vessels using active gears below 12 metres that are not included in the definition of SSCF. This results in discrepancies between the data presented in this report and how the fleet would be examined at a national level which examines all vessel under 12 metres irrespective of gear being active or passive.

Data for the under 10m segments can be deficient which in turn impacts the estimates of economic indicators for the SSCF. As survey returns for economic data for the small-scale increase, higher quality estimates of economic variables can be deduced. In 2020, SSCF activity recorded a GVA of EUR 29.8 million, gross profit close to EUR 21 million and net profit of EUR 3.8 million, demonstrating an increase in these economic indicators since 2019. While the SSCF makes up nearly 14% of the total revenue of the Irish fleet, in 2020, its importance to local coastal communities should not be diminished.

SSCF offer employment in often deprived, peripheral areas and bring much needed money to local communities and their hinterlands. The SSCF employs 1 180 fishers corresponding to 1 060 FTEs in 2020. This demonstrates an increase of just over 1% in engaged crew and an 8% increase in FTE from 2019 to 2020. This increase is strongly correlated to the increase in the total number of active vessels. Total employment is based, in part, on the total number of active vessels in the SSCF. Consequently, as activity for the less than 10 metres is estimated from a combination of national expert knowledge and available sales notes, the figures may be under or over estimated. As a result, employment figures when compared over years may not be comparable.

## Performance results of selected fleet segments

The Irish national fishing fleet is highly diversified with a broad range of vessel types targeting different species or species groups often in mixed fisheries. The fleet operates from as far north as Norway and Iceland, south to the coast of Africa but carries out the bulk of its operations in area 27.6 (i.e., Rockall, Northwest Coast of Scotland, and North Ireland) and 27.7 (Irish Sea, West of Ireland, Porcupine Bank, Eastern and Western English Channel)

In 2020, the national fleet consisted of 21 (DCF) fleet segments, there were 13 segments (both clustered and un-clustered) that had sufficient data to calculate profitability. Of these, three demonstrated high profitability and ten weak profitability. Overall, this shows a deteriorating economic development trend for the industry in 2020. However, caution should be taken as data returns for the national economic survey in 2020 were extremely poor and the resulting estimates may be a under-estimation of the performance of the fleet.

The fleet is dominated by the polyvalent segment (nationally defined), a diverse group including small inshore vessels (netters and potters), medium and large offshore vessels targeting *Nephrops*, mixed whitefish, some pelagic species (including mackerel, herring, and tuna) as well as a range of vessels, from small to large-scale, targeting bivalve molluscs and crustaceans.

The Refrigerated Seawater (RSW) pelagic segment targets exclusively pelagic species (i.e., mackerel, horse mackerel, herring, blue whiting, and boarfish) and equated to the TM VL40XX segmentation.

### Pelagic Trawl over 40m

Pelagic Trawlers over 40 metres (TM VL40XX) are part of the, nationally defined, RSW segment. Currently, there are 20 vessels classified as TM VL40XX and these are generally considered to be amongst the best performing components of the national fleet. These vessels land large quantities of pelagic fish (e.g. Atlantic mackerel, horse mackerel, herring, blue whiting, albacore tuna and boarfish) and operate mainly in ICES areas 6a and 7b,c,j,k. Mackerel, blue whiting and horse mackerel

constitute 65%, 17% and 14%, respectively of the total value of landings in 2020. Ireland's pelagic fleet operates seasonally (i.e., January to early April and in the autumn months), reflecting both the annual distribution patterns of the target species as well as quota limitations.

The majority of the fleet operates out of Killybegs, county Donegal and Castletownbere, county Cork; both areas are strongly dependent on the fishing sector. For example, in 2020, it was estimated that the seafood sector in Killybegs and its hinterland accounts for 29% of its economy and 45% of all employment. Similarly, in Castletownbere and its hinterland, it has been estimated that the sector accounts for 42% of the economy and 53% of all employment in 2020. In 2020, landings (all species) by pelagic trawlers over 40m amounted to 116 250 tonnes (live weight), up 8% from 2019 and valued at EUR 59 million, representing a decrease of 12% from 2019. This decrease is in part due to an increase in TAC for horse mackerel and decreasing prices for mackerel.

No survey data on this segment was received for 2020 (nor 2019) so estimates have been made from the 2018 cost structures and 2020 landings data. Therefore, the following data must be used with extreme caution.

- On-board employment is estimated to be comprised of 225 FTE in 2020 or almost 8% of total fleet employment nationally.
- GVA by the segment in 2020 was EUR 37.8 million generating a gross profit of EUR 14 million.
- Total Revenue for this segment was close to EUR 67 million accounting for 21% of the total revenue of the fleet.

### Demersal Trawl 18m-24m

Currently there are 58 polyvalent vessels classified as Demersal Trawlers 18-24m. They target a wide variety of species including *Nephrops*, whiting, and anglerfishes nei. In 2020, the total value of landings by 18-24m demersal trawlers was EUR 39.4 million (down 34% from 2019) with 354 FTEs employed, contributing 15% and 13% of the total income from landings and FTE generated by the Irish fishing fleet, respectively.

The value of landings predominantly comes from *Nephrops*, anglerfishes nei and haddock which constitute 48%, 15% and 7% of total landings value, respectively. This fleet segment recorded a gross profit of EUR 5.6 million and net profit of EUR 730 000 in 2020 representing a significant increase in profitability since 2019 (i.e., negative gross profit of EUR 2.9 million and net profit loss of EUR 5 million, in 2019).

### Demersal Trawl 24m-40m

Currently there are 44 polyvalent vessels classified as Demersal Trawlers 24-40 metres. They target a wide variety of species including *Nephrops*, Atlantic herring, whiting, European sprat. In 2020, the total value of landings was almost EUR 42.7 million with 322 FTEs employed, contributing 12% and 16% of the total income from landings and FTEs generated by the Irish fishing fleet, respectively.

The value of landings predominantly comes from *Nephrops*, anglerfish, haddock and hake which constitute 35%, 14%, 10% and 7.5% of total landings value, respectively. This fleet segment generated a gross profit of over EUR 4.5 million and net profit of EUR 1.1 million in 2020. This indicates a significant decrease in profitability for 2020 compared to 2019.

### Potters 0m-10m

There are currently an estimated 577 active polyvalent and polyvalent potting vessels classified as Potters 0-10 metres. They make up a large and important segment within the SSCF and target a wide variety of species including brown crab, lobster, and whelk. Collectively these species constitute 72% of the total landed value. In 2020, the total value of landings was over EUR 7.3 million with an estimated 605 FTEs employed. While the total value seems low, due to poor data on this segment, this value in reality is believed to be much higher. This fleet segment generated a gross profit of over EUR 11.8 million in 2020.

## Drivers affecting the economic performance trends

Brexit, COVID-19, fuel costs, higher average fish prices for some species, and the impact of capacity/effort reduction were the main driving forces behind an overall improvement in the economic performance of the Irish fleet.

## BREXIT

At the beginning of January 2021, the United Kingdom (UK) left the European Union. The EU/UK Trade & Cooperation Agreement (TCA) had previously been negotiated between the UK and the European Commission and was finalised in late December 2020. On December 25th 2020, the EU Commission published plans for a Brexit Adjustment Reserve (BAR) to 'mitigate the economic impacts of the withdrawal of the UK and to show solidarity with member states, especially those most affected'. In February 2021, the Irish Government set up a Task Force to examine the implications of the TCA for the fishing industry and coastal communities and to consider initiatives to address those implications.

The Brexit/TCA deal brought about a sudden and dramatic shift in the landscape for the entire Irish seafood sector, in several respects:

- Irish fleet has lost access to 15% of its annual quota, affecting pelagic stocks, prawns (Nephrops) and whitefish stocks such as megrim, monkfish, and haddock.
- Irish seafood exports to UK, a key market, worth EUR 80 million pre-Brexit, are impacted.
- Irish seafood imports from UK (worth EUR 219 million in 2018), a key input to the Irish retail and processing supply chain, have been disrupted.
- Vital seafood export routes, primarily via the 'UK land-bridge', have been curtailed.
- Established Irish/UK links at scientific and policy levels in the EU and ICES have been lost.

The Task Force delivered its report<sup>26</sup> in October 2021. It recommended a suite of initiatives, one of which was a temporary tie-up scheme for fishing vessels at the end of 2021. A summary of the number of applications and the total amount paid is included in the table below.

Tie-Up Month	No. of payments	Total Amount
October	27	€1,132,700
November	27	€1,577,000
December	128	€7,244,600
<b>Total</b>	<b>182</b>	<b>€9,954,300</b>

## COVID-19

In May 2020, the Irish government announced a temporary voluntary fleet tie-up scheme for fishing vessels in the Polyvalent, Beam Trawl and Specific segments of the fishing fleet. Vessels that were eligible were supported to voluntarily tie-up for one, two or three months (i.e., June, July, August). The scheme was implemented under Ireland's European Maritime and Fisheries Fund (EMFF) Operational Programme 2014-2020, co-funded by the Government of Ireland and the EU. The scheme was designed to complement the COVID-19 wage supports and loan arrangements already provided by the Government to the fishing sector.

The aim of this scheme was to reduce the volume of seafood entering the market (which had been depressed by the COVID-19 pandemic), while at the same time keeping an adequate number of vessels fishing to maintain a food supply. The scheme contributed to the fixed costs incurred by fishing vessels while tied-up. The tie-up scheme was available to a maximum of 66% of the fishing fleet, in the different size categories, in any one month. The voluntary scheme operated over the calendar months of June, July, and August 2020, to coincide with the monthly fisheries quota management periods, in order to adjust the supply of fish coming onto a currently depressed market and protect quota availability for later in the year. Any vessel not receiving support to tie-up in any particular month was permitted to continue to fish.

Certain conditions were attached this support scheme. Only vessels which had carried out fishing activities at sea for at least 120 days in total over the calendar years 2018 and 2019, and which made a total, to a minimum value, of EUR 5 000 in the calendar year 2019, by reference to the Irish Sales Note System administered by the Sea Fisheries Protection Authority (SFPA) were eligible to apply.

The Irish COVID-19 Temporary Fleet Tie-up scheme was launched in June 2020. Its aim was to reduce the volume of seafood entering the market that had been depressed due to COVID-19 related

<sup>26</sup> Report of the Seafood Task Force. Navigating Change The way forward for our Seafood Sector and Coastal Communities in the wake of the EU/UK Trade & Cooperation Agreement October 2021. <https://bim.ie/wp-content/uploads/2022/01/Report-of-the-Seafood-Taskforce.pdf>.

restriction (such as lockdowns) while ensuring an adequate number of vessels continue to fish to maintain a food supply.

In total, 93 vessels applied to the COVID Tie-Up scheme valued at EUR 203 300. This figure has not been included in the 'other income' or 'subsidies' variables for 2020. A breakdown of the payments and amounts by vessel length are provided in the table below along with how much the payments represented in terms of total Revenue for 2020. Overall, the amount paid to the vessels was a minor % of overall revenue so their exclusion from the reporting will not make a significant difference to the economic indicators.

No of Vessels	Sum of Paid Grant	% Total Revenue for 2020
57	€59,500.00	0.13%
13	€12,000.00	0.07%
9	€26,800.00	0.09%
9	€69,000.00	0.13%
5	€36,000.00	0.02%

### Markets and Trade (including fish price)

During 2020, average prices remained relatively unchanged for many species. There were some exceptions; *Nephrops* (13% of total value of landings) fell from 7.7 euro/kg in 2018 to 6.1 euro/kg in 2019, rising slightly to 6.2 euro/kg in 2020. Prices for pelagic species tend to have a dramatic effect on the total income given the scale of the pelagic TAC. The average prices indicated from the national regulatory authority (SFPA) responsible for landings declarations indicate that the average prices of Atlantic mackerel (20% of total value of landings) were maintained at 0.6 euro/kg between 2016 and 2017. The prices rose to 0.7 euro/kg in 2018 and to 0.9 euro/kg in 2019 which helped offset the reduced income because of the decrease in TAC. The average price for Atlantic mackerel decreased again in 2020 back to 0.7 euro/kg.

### Management instruments and regulation (policy)

Fishery management policy is developed through a transparent system that includes a quota management regime agreed with the Producer Organisations and other key stakeholders. Monthly allocation arrangements are designed to be responsive to criteria such as stock availability, remaining quota, market demand and other marketing initiatives.

The strengths of the fleet management system include a strict entry/exit regime that ensures the fleet remains within its prescribed reference levels. It also delivers a practical segmentation of the fleet along traditional fishing line and ensures that monthly vessel catch limits are respected.

### Russian invasion of Ukraine

The fishing industry has already been adversely affected by the COVID-19 pandemic and Brexit. Increasing fuel price because of the Russian invasion of Ukraine would drive more fleets to operational losses. Since the end of 2021, fuel prices have continually increased month-by-month with annual averages increasing 9% from 2020 to 2021 and 68% from 2021 to 2022.

If the fuel price increased remains at its current elevated level or continue to rise further, many fishing fleets will fall into negative operating profits and will force some vessels to tie-up. The increase in operational costs is particularly challenging for vessels that have crew shares as there are reduced wages for fishers once fuel and other operational costs are removed from any income incurred. This may lead to crew deciding not to go to sea meaning vessels have to tie up. The increase in price has recently been exacerbated by the supply of fuel with many ports not having enough supply to allow vessels to fish.

### Status of some key stocks

The Irish Marine Institute's 2021 stock book advises on 63 stocks. Several of the stocks of interest to Ireland are or have been managed under Long Term Management plans. The number of sustainably fished stocks has increased from 33 (in 2020) to 35 (in 2021) out of 74 (47%). The number of stocks with biomasses higher than sustainable trigger reference levels has increased from 25 (in 2020) to 27 (in 2021) out of 74 (36%). The percentage (15%) and number of stocks (11) overfished has continued to decrease. There is a gradual progress towards long-term sustainable use of the resource since 2012.

## Nowcasts for 2021-22 and beyond

It is important to note that the preliminary effort data for the less than 10m fleets were not complete with only partial effort data available for some under 10m segments, (FPO and DRB). As such, the results provided should be used with caution.

## Model results and Outlook

Estimations for years 2021 and 2022 demonstrate an overall significant decreasing revenue and profitability. There is an increase in Live weight of landings 2020 to 2021 (6%) and a decrease in value of -7.5%. Data projections for 2021 indicate a deteriorating outcome with decreasing revenue (-10%) to EUR 283 million and decreasing GVA (-26%) to EUR 120 million. In addition, in 2021 gross profit is predicted to decrease significantly (-58%) to EUR 27.6 million combined with a decreasing net profit (-75%) to EUR 8.1 million.

Nowcast for 2022 suggest an overall lower economic performance compared to 2021 driven by decreases in both landings weight but an increase in value. In terms of economic indicators, revenue and net profit are predicted to increase with GVA and gross profit decreasing, driven primarily by rising inflation and energy costs.

## Methodological considerations and data issues

### Identify changes in respect to previous years

Values and figures may differ somewhat from those in previous annual economic reports. Additional survey returns, received after last year's AER meeting, have improved the precisions of many of the variables and indicators.

### Improvements achieved

Effort has been made to improve data availability for the data-poor SSCF segments. In 2020, all vessels under 10m were contacted to complete an economic survey to augment the usual data collection through a sentinel vessel programme. This resulted in more data for the under 10m segments.

### Remaining and novel issues

For some small segments, survey returns are low. In these cases, data submission is not possible, or the variables must be imputed based on known data for similar segmentations. In 2021, data for 2020 was not received from the important TM VL40XX segment. As this is a majorly important segment for the Irish fishing industry, this was problematic. Data for 2020 was estimated using 2020 landings data and cost structures for 2018. The failure to comply with the survey is believed to be a direct result of the difficulties the industry is experiencing with COVID-19 and Brexit.

Ireland launched its annual economic survey on a new on-line portal in 2021 allowing fishers to complete the survey through a secure web-based survey. However, transition to the new platform was poorly adopted by the industry and consequently, the planned sample rate was not achieved. Given the current challenges faced by the industry presently and particularly since 2020 (i.e., COVID-19, Brexit, TCA, and the fuel crisis), the industry has understandably not been focused on engaging with the annual economic survey. All efforts are being made to increase these returns going forward. A paper-based survey is being launched in 2022 in tandem with the online survey to increase return rates for those members of the industry who may have digital literacy issues.

The effort data in the tables and graphs is not complete for some segments less than 10m. Specifically, from 2015 onwards, effort is only reported for less than 10m for the segments DRB and FPO. To report effort for these segments, several assumptions had to be made mainly that a sale event for a vessel represents a day of fishing. Effort data for the remaining segments is not possible to estimate given the lack of logbook data for the less than 10m fleet.

Subsidies data includes EMFF funding programmes administered by the Irish Seafood Development Agency (BIM) including programmes on sustainability, safety grants and assistance to young fishermen. Fishers may also be receiving subsidies from other state agencies but these are unknown and not reported.

The operational division of the fleet into 'small-scale' and 'large-scale' fisheries is not a satisfactory aggregation for the Irish Fleet. The exclusion of active gears from the small-scale fishery definition

means that many segments for which there is data, for <10m vessels, are eschewed from this fishing activity and added to the large-scale fishery instead. Therefore, the definition of SSCF defined in this report excludes a large part of the Irish fleet in vessel numbers (around 223) as they are below 12m in length and use active gears and thereby excludes important economic data for the small-scale fishery which instead are added to the large-scale fishery

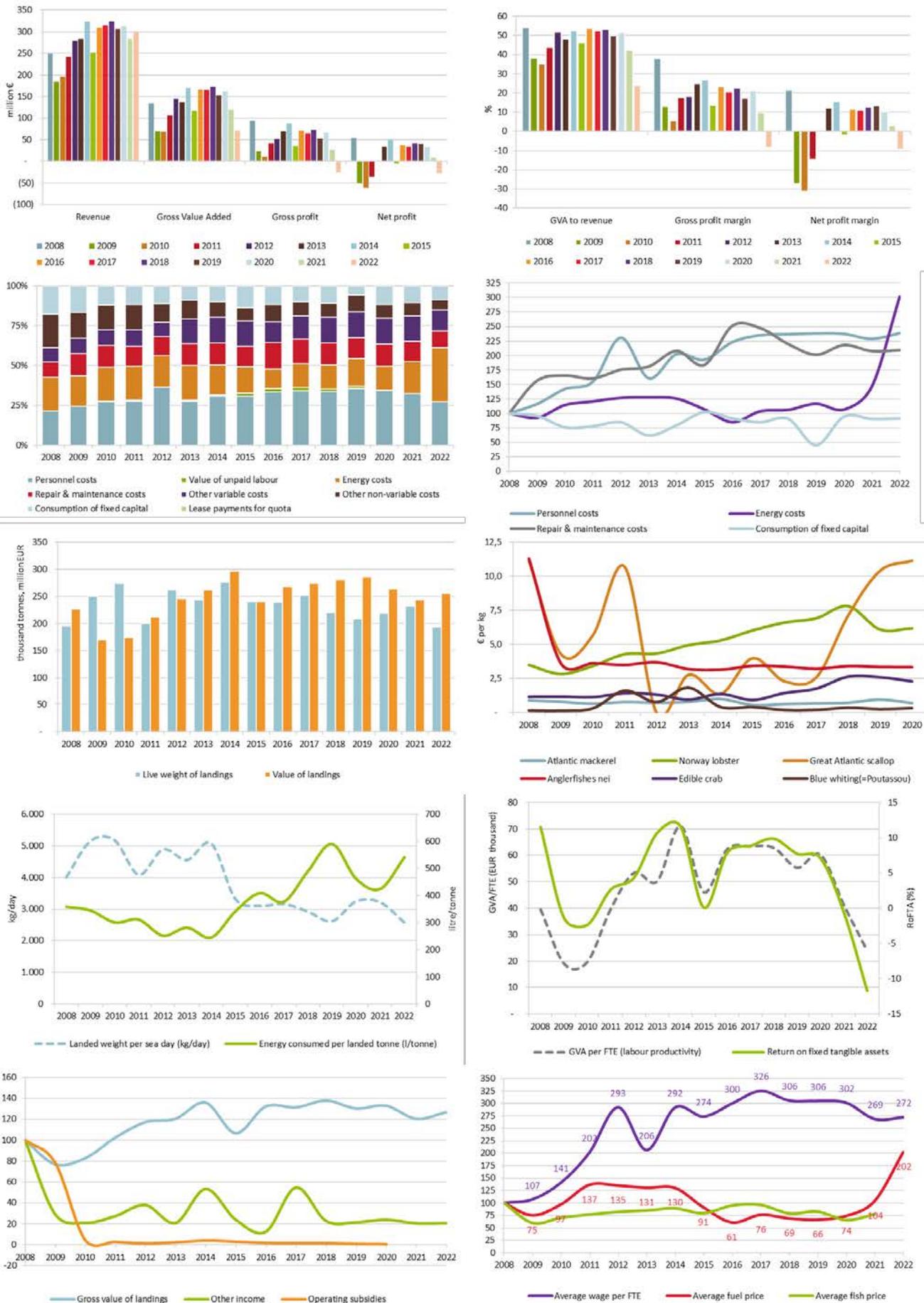


Figure 4.12 Ireland: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.12 Italy

### Short description of the national fleet

#### Fleet structure

In 2020, Italian fishing fleet consisted of 11 951 vessels of which 10 233 were active. Compared to 2019, a reduction of 6% was registered for the active vessels. Compared to the average values 2008-2019, a reduction by 6% and 12% was registered in the number of total vessels and active vessels respectively. Over the same period, GT and kW of the total fleet have been reduced by 15% and 11% respectively. Inactive vessels represented 14% of the total fleet registered in 2020, with an increase of around 50% compared to the previous year.

The decrease in the active fleet in 2020 was mainly due to a reduction of LSF by 13% in the number of vessels, 14% in GT and 14% in kW, compared to 2019.

The Italian fishing fleet is nationally divided into:

- A small-scale coastal fleet (66% of total active vessels, but 9% of the whole active gross tonnage).
- A large-scale fleet (34% of total active vessels), which was mainly made up of vessels using active gears, especially demersal trawlers.
- A distant water fleet of six active vessels: five trawlers operating in in the Eastern Central Atlantic and one vessel operating as a purse seiner in the Indian Ocean.

At the end of 2020 the number of fishing enterprises amounted to 7 374, with the vast majority (85%) owning a single vessel.

#### Fleet activity and production

In 2020, the fleet spent a total of around 990 million days-at-sea (DaS). Effort, in DaS, decreased by 21%, compared to 2019, and by 38% between 2008 and 2020. In 2020, the average days-at-sea per vessel was 97, the lowest level since 2008, which is 16% lower than the value registered in 2019. Even though the reduction in the fishing effort for the DTS fleet segments was partially expected due to the entry into force of the National Management Plans for demersal fisheries and of the EU Multiannual Management Plan for the Western Mediterranean, the main factor reducing the fishing days of trawlers and other fleet segments was the outbreak of the COVID-19 outbreak.

In 2020, the total volume of products landed decreased by 24% compared to the previous year. The deterioration in the productive performance was completely due to the LSF, which worsened by 29% compared to 2019. The total value of landings decreased by 27%, with the strongest reduction (33%) registered for the LSF.

Giant red shrimp, deep-water rose shrimp, striped venus, European hake, European anchovy, common cuttlefish, common octopus, and swordfish contributed to more than a third of total landings value and almost 32% of total landings weight.

#### Employment and average salaries

In 2020, the Italian fishing sector employed 21 368 fishers, corresponding to 13 193 FTEs; 46% of the total jobs were employed in small-scale fishing operations. Compared to the average for 2008-2018 period, total employment and FTE in 2020 decreased by 21% and 36% respectively, while the GVA per FTE increased by 8%. Compared to 2019, the reduction in FTE was almost double than in the number of employees, 23% and 12% respectively. This strong discrepancy reflects the relevant decrease in the time spent in fishing activities due to the COVID-19 outbreak.

### Economic performance results for 2020 and recent trends

#### National fleet performance

The economic performance of the Italian national fleet declined in 2020 mainly because of the COVID-19 outbreak. After some years of improving economic performances (over the period 2014-2017), the main economic indicators showed a first slightly decrease in 2018 and 2019 followed by a strong reduction in 2020.

The total amount of income generated by the national fleet in 2020 was EUR 664.4 million. This consisted of EUR 644.7 million landings value and around EUR 19.7 million in non-fishing income. Some vessels, mainly small-scale vessels, are involved in non-fishing activities, like “pescaturismo”, in tourism-oriented coastal areas or in supporting the traditional aquaculture and capture fishing activities for the harvest of Philippine clams in coastal lagoons in the North Adriatic regions. Direct income subsidies accounted for almost EUR 23 million in 2020 and strongly increased compared to 2019; these include the grants to vessel owners for temporary cessation of fishing activities and compensation schemes to support fishing enterprises affected by COVID-19 restrictions. All fishing enterprises received financial compensation for days of inactivity due to the pandemic and a one-off contribution in relation to vessel size.

Total income decreased between 2019 and 2020 due to the strong reduction in fishing activity and thus in the landings.

The two major variable costs are labour and energy. In 2020, the costs for labour were EUR 212 million, while energy costs accounted for EUR 123 million. The labour costs decreased by 18% from 2019 to 2020 because of the predominance of the share contract in the Italian labour system, where wages are linked to the income from landings. The energy costs decreased by 32% because of the reduced number of days at sea.

In terms of the economic fleet performance, GVA, gross profit, and net profit generated by the national fleet in 2020 were EUR 422 million, EUR 210 million and EUR 55 million, respectively. Compared to 2019, these values determined decreases by 25%, 31% and 61%, respectively.

In 2020, the Italian fleet (depreciated) replacement value was estimated in EUR 570 million, around 5% lower than that estimated in the previous year.

The 2020 negative performance in the economic indicators was mainly due to the LSF, while SSCF maintained approximately the same values registered in 2019. The LSF was characterized by an increasing trend in profitability until 2017, a slightly decrease in 2018 and 2019, and a strong reduction in 2020. On the contrary, profitability for SSCF showed a decreasing trend in the period 2017-2019, and stable values in 2020.

### Resource productivity and efficiency

The gross profit margin in 2020 was 32%, indicating an operating efficiency of the sector. This percentage showed an increasing trend in the period 2013-2017, and a stable trend with fluctuations thereafter. On the contrary, both net profit margin and the Rate of Return on Fixed Tangible Assets (RoFTA) showed strong reductions in 2020, moving from 16% to 8% and from 25% to 11%, respectively.

Labour productivity (GVA/FTE), estimated in EUR 32 thousand for 2020, showed a slightly decrease by 3% compared to 2019.

In 2020, fuel costs as a proportion of revenue were estimated at 18%, lower than the value registered in 2019 (20%). This reduction was largely due to the lower fuel prices registered in 2020. Fuel prices showed a declined trend from 2012 to 2016, increases in 2017 and 2018, and further decreases in the subsequent two years. The average price of 0.50 euro/litre registered in 2020, together with that registered in 2016, represents the lowest value in the period 2008-2020.

Fuel intensity, expressed in terms of energy consumed per landed tonne, was estimated in 2020 at 1 784 litres, with a slightly increase by 3% compared to the previous year.

### Drivers affecting the economic performance

The fishing sector has significantly been affected by the COVID-19 crisis. The lockdown restrictions, the closure of the HORECA sector and the difficulties in adopting the social distancing measures deeply affected the fishing activities. In general, the lockdown measures have led to a reduction in fishing effort.

Lower income from landings, which depends mainly on the lower fishing effort, was the main driving force behind the overall deterioration in the economic performance.

### Markets and Trade (including first sale prices)

In 2020, despite the strong decrease in landings (-24% compared to 2019), the average price saw a slight increase (4%); the first sale prices of some of the most important target species (anchovy, deep-water rose shrimp and striped Venus) showed a negative trend, while the average prices of European hake and common cuttlefish remained rather stable compared to 2019. Blue and red shrimp

and Norway lobster were the two species with the highest prices (29.26 euro/kg and 21.07 euro/kg, respectively).

Italian per capita apparent consumption increased by 1% from 2019 to 2020. This growth was most likely due to the closings in the HORECA sector due to the COVID-19 outbreak, and the consequent increase in at home consumption. The rise was driven by an increase trend in frozen and preserved or processed seafood, while household consumption of fresh fishery dropped by 8% in volume and 7% in value as a consequence of the less landed volumes for the most important commercial species (anchovy, European hake, deep rose shrimps, swordfish) (EUMOFA, 2021).

Fishers adopted several actions to mitigate the adverse economic effects of the Covid-19 crisis. The economic fallout of the lockdown has variously affected the fishing sector, and a wide range of measures have been adopted to contrast the collapse of demand in the different areas and fisheries, such as new approach on the marketing side, with a focus on new channels (i.e., direct selling) and commercial agreements between the large-scale retailers and the fishing operators on a more local level (Russo, 2022)

### Operating costs (external factors)

The most important operational costs are the wages and salaries of the crew members and the fuel costs.

Fuel costs are the major cost item especially for the trawler fleet; fuel prices were at the lowest level since 2014; nevertheless this, the reduction in energy costs doesn't compensate the negative trend in income.

Annual wages and salaries decreased (-18%); the reduction can be linked to the negative trend in revenues; labour costs are directly related to revenues as the traditional based income sharing system between the ship-owner and the crew is the most prevalent. For some fishing segments (i.e., DTS1218, DTS1824, PS1218 and PS1824 and PGP), the crew wage for employee strongly decreased in 2020 due to the long period of inactivity in the first part of the year. To mitigate the impact of the COVID-19, a daily allowance was payable to fishers whose vessels were not working (wages guarantee fund). The allowance was for fishers, including the self-employee and the owner on board.

### Status of Key Stocks, changes in TACs and quotas

Most stocks for which validated assessments are available, continue to be fished outside biologically sustainable limits. Nevertheless, the recent trend shows some little improvements; according to GFCM (FAO, 2020). There are large differences between GSAs in the overexploitation status of species; for some species, an improvement in exploitation rates and biomass is observed (STECF 2021-11 and STECF 2021-15). In Western Mediterranean Sea, biomass is increasing for hake, deep-water rose shrimp and red mullet; biomass is decreasing for Norway lobster and giant red shrimp.

The assessments for Adriatic Sea indicate that 3 out of the 7 assessed stocks are being significantly overfished (hake in GSAs 17-18, spottail mantis shrimp in GSAs 17-18 and deep-water shrimp in GSAs 17-18), one is being fished close to  $F_{MSY}$  (hake in GSA 19). Three stocks estimated to be fished below  $F_{MSY}$  are nephrops in GSAs 17-18, red mullet in GSAs 17-18 and common cuttlefish in GSAs 17-18.

Three fisheries are managed through TACs and quotas in Italy:

- Bluefin tuna: quota is allocated among purse seines, longlines, cages, a quota set aside for compensations (slightly less than 3.5%), and recreational fishing (0.5%). A TAC of 4 756 tonnes was set in 2020 (Council Regulation No 2020/123).
- Swordfish: in line with the ICCAT recommendations, the Italian Administration established the national list of vessels authorised to fish for swordfish and regulated the use of fishing gears; a TAC of 3 419 tonnes was set in 2020 (Council Regulation No 2020/123).
- Small pelagic species in Adriatic Sea: the catch limit for the EU concerning small pelagic species in the Adriatic Sea was set on 2020 (101711 tonnes of anchovy plus sardine - Council Regulation 2019/2236). Except the indication that the catch for Slovenia should not exceed 300 tonnes, the Council did not, however, define the share (quotas) of the total fishing opportunities between Croatia and Italy.

### Management instruments

2020 was the first year of implementation of the Multiannual Plan established by Regulation (EU) 2019/1022 entered into force on 16 July 2019. For the first year of implementation of the plan (2020) the maximum allowable fishing effort was reduced by 10% compared to the baseline. For the second

(2021) to the fifth year (2024) of the implementation of the plan, the maximum allowable fishing effort shall be reduced by a maximum of 30 % during that period.

In addition to the limitation of fishing effort, national administration established closure areas to protect juveniles of European hake. 10 Fishery Restricted Areas (FRAs) were implemented in the Ligurian and the Tyrrhenian Seas in order to reduce the catch of undersized hake (Ministerial Decree on Identification of areas prohibited for professional fishing pursuant to art. 11, paragraph 2 of Reg. (EU) No. 1022/2019). These new FRAs add to other fishing areas closed in the previous years (the Pomo/Jabuka Pit in the Adriatic Sea and the three fisheries restricted areas in the Strait of Sicily (Reg. (UE) 2019/982).

The new management measures introduced in the last two years (in particular, the restrictions of the fishing effort introduced with the West Med MAP and spatial closures) had socioeconomic impact on fishers in so far as they need technical and behaviour adaptations. Fishers are concerned that these measures will have a negative impact on their profits in the future.

### **Innovation and Development (role of the EMFF)**

In 2020, investments decreased by 10% compared to 2019. Large scale accounts for 78% of total investments; small scale fleet has few or no investments. In 2020, SSCF experimented new marketing approaches to mitigate the impact of the Covid-19. FLAGS (Fisheries Local Action Groups) implemented some measures to sustain fishermen in diversifying their sales channels. These initiatives allowed them to supply a fairly large number of their consumers who were interested in home delivery and also to attract new customers who had never previously tried zero-mile food and home delivery (Sabatella, 2021).

Innovation and Development EMFF funds foresee measures for investments to the fishing fleet to improve selectivity of the gears or for technical adjustments. In 2020, subsidies for investments increased compared to 2019 and were estimated at EUR 1.8 million. The projects under EMFF have been funded by national and regional authorities; they concerned projects improving hygiene, health, safety and working conditions for fishers, limitation of the impact of fishing on the marine environment, replacement or modernisation of engines.

## **Economic performance by fishing activity**

### **Small-scale coastal fleet**

The Italian SSCF with 6 772 active vessels cover almost 66% of active vessels in 2020. In 2020, the SSCF production was EUR 151 million accounting for 23% of the Italian landings value. The Italian SSCF is mainly concentrated in length class 06-12m (70% of SSCF). The main gears are set gillnets, trammel nets, pots and traps, set longlines. The main target species are common cuttlefish, common octopus, swordfish, European hake, mullets, blotched picarel, surmullet and spottail mantis squillid; these species are among the most commercially valuable species and the average prices are very high consequently.

In 2020, total activity expressed in sea days decreased by 19%; while landings in volume and value remained quite stable. The fishing effort declined in the first five months of the year, when fishermen were unprepared in dealing with the Covid 19 emergency; in the following months, fishers have been particularly skilled and effective to face the difficulties generated by the pandemic and improved the direct sells to consumers or restaurants.

The stability of landings and market first sale price contributed to sustain an overall gross profit and positive economic performance. In 2020, the SSCF was profitable, generating a profit of EUR 31 million in 2020, stable compared to 2019. Net profit subsidised increased by 12% due to operating subsidies that increased in 2020. All fishing enterprises received financial compensation for days of inactivity due to the pandemic and a one-off contribution in relation to vessel size. In addition, support measures have been directed to fishermen through temporary lay-off scheme for fishermen. The aim was to sustain fishermen during the weeks of inactivity (social assistance subsidies for the crew are not included in operating subsidies).

### **Large-scale fleet**

Large-scale fleet segments, with 3 455 active vessels cover almost 34% of active vessels in 2020. They represent most of the active fleet in terms of gross tonnage (87%) and engine power (77%). The LSF is mainly made up of vessels using active gears, especially demersal trawlers and beam trawlers.

Demersal trawlers operate mainly in the Adriatic Sea and in the Strait of Sicily (62% in terms of number), while the pelagic fleet is prevalent in the Northern Adriatic (pelagic trawlers) and in the

Tyrrhenian Sea (purse seiners). Employment registered a reduction by 18% in 2020, moving to 11 435 jobs, which accounts for 54% of the total number of employees in the Italian fishing fleet.

In the period 2008-2020, the number of vessels belonging to LSF decreased by 15%. Over the same period, a huge reduction in activity has been reported (-30% in terms of fishing days). The fleet segments with the greatest reduction in the number of fishing days were DTS1218m, PGP1218m and DTS1824m; a decrease mainly due to the limitations imposed on the fishing effort by recent national and European regulations and, in the last year, by the COVID-19 outbreak.

In 2020, because of the effort reduction, landings in volume and value, compared to 2019, decreased by 29% and 33% respectively. At the same time, energy costs, which accounted for 23% of total LSF costs, decreased by 35%, and labour costs, accounting for one third of total costs, decreased by 19%. Even though all cost items registered reductions from 2019 to 2020, this mitigated only partially the impact of the reduction of income on the main economic performance indicators. GVA registered a decrease by 32%, the Gross Profit by 39% and the Net Profit by 66%.

## Economic performance of selected fleet segments

In 2020 the Italian fleet consisted of 23 fleet segments. Based on the net profit margin, four fleet segments showed high profitability, seven a reasonable profitability and eleven a weak profitability (a fleet segment with a single vessel is not evaluated for confidentiality reasons). Net losses are registered for five segments (DTS1824m, TBB1218m, TBB1824m, DTS0612m, and DTS40XXm in OFR).

Both in terms of number of vessels and production value, the fleet is dominated by polyvalent passive segments, large demersal trawlers, and dredgers. The performance of the polyvalent passive vessels is described in the section on the SSCF, which includes the fleet segments PGP0006m and PGP0612m.

### Demersal trawlers 12-18m

In 2020, this fleet segment included 1 048 active vessels producing a total value of landings of EUR 112 million and employing a total of 2 491 FTEs. Demersal trawlers have a multi-species landings composition, capturing several species, such as deep-water rose shrimp, European hake, common cuttlefish, spottail mantis squillid, blue and red shrimp, red mullet, caramote prawn and Norway lobster.

In 2020, this fleet contributed to the total national landings in weight and value by 11% and 17%, respectively. Compared to 2019, the value of landings decreased by 36%, mainly because of the reduction in fishing days due to the COVID-19 outbreak.

The fleet segment registered a gross profit of EUR 33 million and a net profit of EUR 17 million. Even though the economic performance was much lower than the previous year, the profitability of this fleet segment remained reasonable.

### Demersal trawlers 18-24m

In 2020, this fleet segment consisted of 553 active vessels, which contributed to the total value of landings for EUR 113 million, almost the same value registered for the length class 12-18 described above, but with around a half of those vessels. The fleet segment employed 1 940 people, equivalent to a total of 1 838 FTEs. Demersal trawlers have a multi-species landings composition. The species contributing the most to the total landings value of this fleet segment are deep-water rose shrimp, European hake, Norway lobster, red mullet, giant red shrimp, common cuttlefish, blue and red shrimp and caramote prawn.

Compared to 2019, because of the reduced number of days at sea (-21%), the value of landings in 2020 decreased by 31%. The main reason for this decline was the COVID-19 outbreak.

Even though the main costs items registered reductions over the same period (-38% for energy costs and -18% for labour costs), these were not sufficient to counterbalance the declined income. In 2020, the fleet segment registered a gross value added of EUR 60 million, one fourth lower than the previous year, a gross profit of EUR 26 million, 36% lower than the value registered in 2019, and a negative net profit of EUR 4 million.

### Dredges 12-18m

This fleet segment consisted of 628 vessels operating mainly in GSA 17 and predominantly in the Adriatic administrative Regions of Marche, Veneto and Abruzzo. Striped Venus (*Chamelea gallina*) is the main target species, representing 83% of the landing value and 91% of the landing weight. This

fishing activity is traditionally managed by local Consortia, which can enforce limitations to the fishing days and the maximum quantities of daily catch. In 2017, the Discard Plan for mollusc bivalve Venus species entered into force specifying minimum conservation reference size (regulation (EU) 2020/2237). A national management plan for the management of fishing activities with the hydraulic dredges was adopted in 2020 (Directorial Decree 9913 of 17/06/2019); it provides for a reduction in fishing effort (both capacity and DaS) and maximum landings per days.

The derogation from minimum size rules made possible to reduce the daily fishing hours with a positive effect on operating costs and, therefore, profitability in the period 2017-2019. In 2020, an opposite trend was observed; even if the profitability of this fleet segment continued to be reasonable, performance deteriorated compared to 2019: GVA and gross profits reduced by 12% and 28%, respectively. This was largely due to the negative trend in the average prices of the target specie that decreased for the first time since 2016. During the pandemic, logistic and transport issues have impacted to supply domestic and foreign markets.

## Nowcast for 2021 and 2022 and beyond

### Model results

Overall, it is expected that 2021 and 2022 will be less profitable than in 2020 as a consequence of the increase in energy costs (triplicated compared to 2020). For 2022, the model forecasts a 35% decrease in gross value added and an 81% decrease in gross profit compared to 2021. It is estimated GVA will reach EUR 239 million, gross profit EUR 31 million; a net loss at EUR 89 million is estimated for 2021.

### Outlook

In 2021, a slight decrease of economic performance is expected with lower Gross Profit compared to 2020. The COVID-19 pandemic is expected to have an impact also on the economic performance in 2021 as restrictions and social distance have been imposed for a substantial part of the year. The economic performance reached before the pandemic will not be achieved in 2021. In addition, an increase of operational costs may be expected as the fuel price raised in 2021.

Another important factor that impacted the performances of the Italian fisheries is the reduction in the fishing days for demersal trawlers in Tyrrhenian Sea and Adriatic Sea that was imposed by the entry in force of the new effort regimes.

### Impact of fuel prices crisis

Italian fishing fleet is facing a serious economic crisis caused by the increase in fuel price since the beginning of 2022. Energy costs represents a significant component of the operational costs of the fishing fleets and, as a result, the profitability of the fishing fleets is very sensitive to fuel price variations. The crisis has affected all fleet segments, although pelagic fleet and trawlers are the most vulnerable fleet segments. Fishers have reacted by reducing the days spent at sea or stopping activity. To mitigate fuel cost impact, financial compensations have been provided to the owners of the fishing vessels (a one-off contribution in relation to vessel size). The crew is facing a huge social and economic crisis. The long periods of inactivity have a direct impact on the wages. Fishermen complain about the absence of social safety nets.

## Methodological considerations and data issues

### Identify changes in respect to previous years and improvements achieved within 2020 data collection.

Subsidies and financial measures to support the fishery sector during the pandemic were included in the operating subsidies (grants to vessel owners for temporary cessation and one-off contribution in relation to vessel size); social assistance subsidies for the crew are not included in operating subsidies.

## Remaining issues

All fleet segments with major contribution to the total catches of the Italian fleet have been sampled with satisfactory response rates.

Except for capacity and weight of landings, no data for the OFR purse seiners segment 40 metres or larger could be published due to confidentiality issues (one vessel in 2020).

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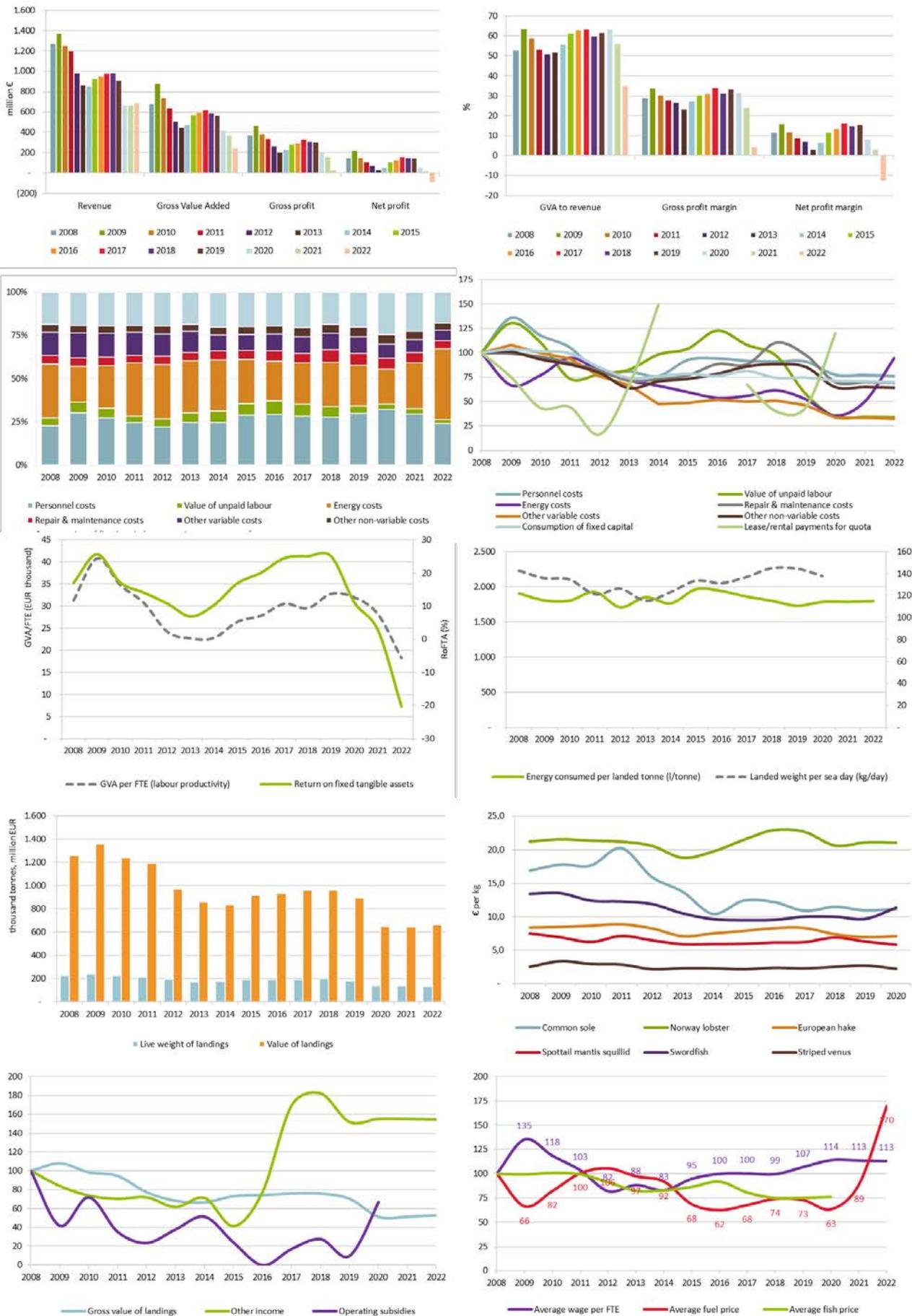


Figure 4.13 Italy: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (EUR/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.13 Latvia

### A short description of the national fleet

#### Fleet capacity

In 2020, the Latvian Baltic Sea fishing fleet consisted of 313 registered vessels including 82 inactive vessels, with a combined 5 448 GT, a total engine power of 16 883 kW and an average age of 36 years. The size of the fleet followed a decreasing trend between 2008 and 2020. The gross tonnage declined by 36% while the total engine power of the fleet declined by 29% during the analysed period from 2008 to 2020. The reason for the changes was related to the vessels scrapping according to the multi-annual management plan aimed at achieving a better balance between fishing capacity and the available resources. The fishing vessels were "reassigned for activities outside fishing (by scrapping or selling)".

#### Fleet structure

The Latvian fleet is divided into several segments by length, fishing gear and operating area: the Baltic Sea fleet (segment trawlers VL2440 m), fleet operating predominantly in the Gulf of Riga (trawlers VL1218 m), the small coastal fleet operating in the coastal zone (segment with polyvalent fishing gears VL0010 m) and a distant water fleet (segment trawlers VL40XX m) operating in the Atlantic NEAFC Barents Sea (FAO fishing area 27) and CECAF Morocco and Mauritania (FAO fishing area 34) areas.

Differences in the number of vessels and in other related variables were observed between 2010 and 2011 when the fleet size decreased by 364 vessels or 53%. The major factor causing the fleet to decrease was the exclusion of a part of small coastal vessels less than 10 metres from the economic analysis. The excluded vessels have licenses and obligation to fill the coastal logbooks but fish only for self-consumption and are not involved in a commercial fishery. The excluded volume corresponds to 1% to gross tonnage and 2% to engine power in Latvian Baltic Sea fleet in 2020. The exclusion of recreational vessels does not affect the total engine power of the fishing fleet and gross tonnage.

#### Employment

Fishers in the Baltic Sea vessels are usually local Latvia inhabitants. For the crew on board on distant water vessels there may also be invited residents of the developing countries.

The employment of the Baltic Sea fleet was estimated around 541 jobs; corresponding to 247 FTEs in 2020. The total employment and the FTE decreased by 40% and 38%, respectively between 2008 and 2020 while the GVA per FTE increased by 90%. Compared to other Member States, Latvia has a low wage per fisher. However, the average salary in the fishery sector was 31% higher than the average salary in Latvia in 2020. The average salary per FTE has increased by 63% between 2008 and 2020.

#### Effort

The Baltic fleet spent a total of around 14 638 days-at-sea in 2020 but total number of fishing days calculated for each gear were 14 461. The number of sea days stay relatively stable, and the number of fishing days decreased by 7%, respectively between 2019 and 2020 while the live weight per sea day decreased by 12%. The quantity of fuel consumed per landed tonne has a sharp increase by 35% mainly connected with the changes in large scale fleet structure and was 65 litres per tonne in 2020. The trawlers VL1218 operating in the Gulf of Riga and trawlers VL2440 operating in the Baltic Sea used 75% and 59% respectively of their capacity in 2020 while the coastal segment VL0010 used only 26% from their gross tonnage in 2020.

#### Production

The total weight landed by the Baltic Sea fleet in 2020 was 60 729 tonnes of fish with a landed value of EUR 17.4 million. The total weight of landings decreased by 13% between 2019 and 2020 while the landed value stayed relatively stable during the same period. The changes have occurred due to the increase in average price for the target species. The average first market price for the European sprat increased by 0.05 euro/kg or 17% while the price for Atlantic herring by 0.01 euro/kg or 4%, respectively from 2019 to 2020. Even such seemingly insignificant changes in a price as increase by 0.01 euro/kg can affect the changes in total landing value due to the large catch volumes of these commercial species. The sharp increase was observed in the average price for Atlantic cod by 0.70

euro/kg or 35%. The increase in price has occurred due to the reduction of the available limits for cod catches in 2020.

In 2020, in terms of landings composition, European sprat and Atlantic herring were the most common species landed in weight – 28 893 tonnes and 26 965 tonnes, respectively. The European sprat also achieved the highest landed value EUR 8.4 million for the national fleet followed by Atlantic herring EUR 7.0 million in 2020. European sprat and Atlantic herring accounted for 49% and 41%, respectively of the total landings value in 2020 and contributed to 48% and 45% to the total landed weight, respectively.

The sharp decline for Atlantic cod by 79% in weight and 85% in value, respectively is observed due to the reduction of TAC for Atlantic cod in 2019. The same tendency follows in 2020 when the decline for Atlantic cod by 69% in weight and 51% in value, respectively is observed.

## Economic results for 2020 and recent trends

### National fleet performance

The economic performance for the Latvian fleet in 2020 improved compared to 2019. The amount of revenue generated by the Latvian national fleet in 2020 was EUR 21.7 million including EUR 17.4 million of income from fish sales and EUR 4.3 million of non-fishing income. The revenue increased by 12% compared to 2019.

The total operating costs decreased by 16% between 2019 and 2020, due to the sharp decrease in the items for other variable costs by 56%, energy costs by 28% and repair and maintenance costs by 18%. In its turn, the increase in personal costs by 9% was observed in 2020.

In terms of profitability the total amount of GVA, gross profit and net profit generated by the Latvian national fleet in 2020 were around EUR 13.2 million, EUR 8.2 million and EUR 7.7 million, respectively. The GVA and gross profit increased by 59% and 138%, respectively while net profit increased by 156% between 2019 and 2020.

Towards the end of 2008 and 2009, the Latvian fishery sector was negatively affected by the global economic crisis which led to significant decrease of the net profit produced in 2009 and 2010. High values of net profit in 2008 were due to the negative values of the opportunity cost of capital (-EUR 5.19 million) caused by the negative real interest rates used to estimate this opportunity cost. The economic efficiency of the fleet started to improve in 2011 and reached the net profit maximum of EUR 6.7 million. However, the net profit declined by 72% between 2011 and 2013 due to the Russian ban for products trade from EU countries. Russian embargo was applied to beef, pork, fruit, vegetables, poultry, cheese, milk products and also fish and fish products, although the embargo list did not include sprat, canned meat and canned fish. The second reason which negatively influenced the fishery between 2015 and 2016 and deteriorated the profitability of the fishing sector was a temporary ban on the import of all fish and fish products from Latvia and Estonia by the Russian food safety authority Rosselkhoznadzor from the 4<sup>th</sup> June 2015. As a result, around 40 enterprises which exported their production to the Russian market suffered in Latvia. Despite the economic crisis and Russian ban which affected severely the profitability of the fishery enterprises, the Baltic Sea fleet in overall remained on the profit-making positions between 2009 and 2020.

### Resource productivity and efficiency indicators

The gross profit margin increased by 114% in 2020 and was 38% indicating high operating efficiency of the sector. Net profit margin was estimated at 19% in 2020 (increase by 130%) and the share of GVA to revenue 61% (increase by 43%) in the same year. The labour productivity (GVA/FTE) increased by 69% between 2019 and 2020 while the numbers of FTE decreased by 6%.

The tangible assets (replacement) had low values in 2020 and was around EUR 3.8 million (including inactive vessels). The major factors were a long service life of vessels (around 36 years) and obsolete equipment. The total assets value was EUR 13.1 million in 2020.

The following RoFTA values are indicated in 2020: 249.7, 402.1 and 136.3 for the segment Baltic Sea trawlers VL2440, trawlers VL1218 operating in the Gulf of Riga and coastal zone segment VL0010, respectively. The RoFTA positive and greater than low risk long term interest rate indicates the profitable fishery in the long-term for all segments.

The potential fleet capacity could be 20–40% higher than the current one for some vessels in segments such as VL1218 and VL2440. If intensity of fishing for some vessels in segments VL1218 and VL2440 increases, these segments could obtain a greater amount of catch and a higher revenue from

sales which in turn can facilitate the profit growth. However, the main impact on the productivity of the Latvian fleet is exerted by the available fish stocks for the three target species: sprat, herring and cod.

From 2008 to 2020, the total number of vessels and total engine power decreased by 32% and 29%, respectively while the average engine power per vessel increased by 26%. The number of the DaS per vessel increased by 19% between 2008 and 2020. The landings and weight per unit of effort (in DaS) has had a sharp increase by 47% since 2008. The landed weight per vessel also had a sharp increase by 51% between 2008 and 2020 while the landed value per vessel increased by 57% during the same period. A sharp increase is observed in average wage per FTE by 63% between 2008 and 2020. The main factor which caused the increase in profitability of the Baltic Sea fleet was the decommissioning of the vessels from 2008 to 2017 and the increase of fishing intensity per vessel.

## Performance by fishing activity

### Small-scale coastal fleet

The number of the SSCF vessels was stable between 2019 and 2020. The vessels are included in the segment VL0010 m which use polyvalent or passive gears and target at Atlantic salmon, Atlantic cod, European flounder, European eel and other coastal species. The SSCF production is oriented to the local market. The usual fishing trip is less than 24 hours and the weather conditions as cold winters may highly influence the turnover of the segment. The coastal species achieved the highest average price (2.24 euro/kg). Despite the high prices for coastal species, the amount in the total landing composition had negligible values, 5% and 9%, respectively from the total weight and value of landings in 2020 and did not have remarkable influence for total fishing fleet economic performance. The landings weight for the SSCF decreased by 1% while the value of landing increased by 32% and was around 3 127 tonnes and EUR 1.4 million, respectively in 2020. The SSCF is important for employment in coastal regions which was estimated at 272 jobs, corresponding to 106 FTEs. The GVA and gross profit had a sharp increase by 518% and 613%, respectively. Due to the sharp increase in landed volume and value for the SSCF the segment from around EUR 0.276 of million loss in 2019 switched to profit of around EUR 1.4 million in 2020.

### Large-scale fleet

A decreasing trend was observed for the LSF operating in the Baltic Sea and the Gulf of Riga. The LSF targets at European sprat, Atlantic herring and Atlantic cod and composed by 41 vessels included in two segments VL2440 and VL1218 metres. The segments contributed 84% to total revenue and 80% to Net profit in 2020. Employment was estimated at 269 jobs in 2020, corresponding to 141 FTEs. The total employment and FTEs decreased by 14% and 3%, respectively over the observed period from 2019 to 2020 followed by the decrease in vessel number and capacity by 15% and 10%, respectively. The income from landings decreased by 3% between 2019 and 2020 while the net profit had a sharp increase during the same period by 90% due to the increase in other income by 63% and decline in total operational costs by 16%.

### Distant water fleet

There were five active distant water vessels which made up the segment of vessels over 40m with a combined 14 418 GT, a total engine power of 17 704 kW and an average age of 35 years owned by four Latvian companies in 2020. Three vessels with the average length of 60 metres were based predominantly in NEAFC area targeting Northern prawn, Atlantic cod and other pelagic species. Two other vessels with an average length of 100 metres operated in the CECAF area and targeted Atlantic horse mackerel, Atlantic mackerel, Madeiran sardinella and sardine. In 2020, the main landing ports for these vessels were Cuxhaven, Tromsø, Båtsfjord, Dakhla, Agadir, Nouakchott and Nouadhibou. In 2020 the total weight for the Atlantic catches was 42 476 tonnes of fish with an estimated value of landing of EUR 30.1 million.

## Performance results of selected fleet segments

The Baltic Sea fleet consisted of three active fleet segments in 2020. A short description for the segments is provided below.

## Pelagic trawl 24-40 metres

32 vessels made up this segment in 2020 and vessels operated predominantly in the Baltic Sea. These vessels target species such as European sprat, Atlantic herring and Atlantic cod. The total value of landings was EUR 13.3 million and around 103 FTEs were employed in the fleet segment in 2020 contributing 77% and 42% to the total income from landings generated and FTEs in the national fleet, respectively. The fleet segment was profitable with a reported gross profit of around EUR 5.7 million and a net profit of around EUR 5.4 million in 2020.

## Pelagic trawl 12-18 metres

Nine vessels made up this segment in 2020 and the vessels were operating predominantly in the Gulf of Riga. These vessels targeted at European sprat and Atlantic herring. The total value of landings was EUR 2.5 million and only 38 FTEs were supported in 2020 contributing 15% and 15% of the total income from landings generated and FTEs in the national fleet. The segment made profit in 2020, thus gross profit and net profit in 2020 were estimated at EUR 1.1 million and EUR 1.0 million, respectively.

## Polyvalent or passive gears <10 metres

190 vessels made up this segment in 2020 and the vessels were operating predominantly in the Baltic Sea and the coastal zone of the Gulf of Riga. These vessels targeted a variety of Atlantic cod, Atlantic salmon, European flounder, European eel, Atlantic herring and other coastal species. The total value of landings was EUR 1.4 million and 106 FTEs were supported in 2020 contributing to 9% and 43% of the total income from landings generated and FTEs in the national fleet, respectively. In case of profitability the segment gross profit and net profit were reported as EUR 1.3 million gross loss and EUR 1.4 million in 2020, respectively.

## Drivers affecting the trends of the economic performance

### Operational costs, including fuel prices

The operating costs for the Latvian fleet in 2020 were EUR 14.0 million amounting to 64% of revenue. Overall, the operational cost structure stayed relatively stable between 2008 and 2020. The sharpest decrease by 56% was observed for the other variable costs between 2019 and 2020. The other positions in operating costs such as energy costs and other repair and maintenance costs decreased by 28%, and 18% respectively during the same period. The item with the largest cost in 2020 was personal costs contributed 35% to the total operational costs. The average fuel price per vessel in 2020 was 0.38 euro/litre, which decreased by 53% from 2019 to 2020 while the average landed fish price increased by 16%.

### Markets and Trade

The average price obtained for European sprat increased by 17% while the Atlantic herring price increased by 4%, between 2019 and 2020 and the price of the Atlantic cod increase sharply by 65% during the same period.

The fishery sector in Latvia depends on the economic situation of external markets as well as on the turnover of the fish processing enterprises. The most important buyers of fresh fish are fish processing enterprises in Latvia and in neighbouring countries. The main produced product types are fresh or frozen fish and prepared or canned fish. The total exported value of the production to the EU countries increased by 2% and was EUR 129.9 million in 2020 while exported volume of the production decreased by 6% or around 2.9 tonnes between 2019 and 2020. The increase in exports to the non-EU countries was observed by 6% or EUR 12.2 million from 2019 to 2020.

The Lithuania ranked in the first place in terms of the total exported Latvian production value (13%), followed by Denmark, Estonia, Germany and Ukraine with the share of 11%, 8%, 7% and 7%, respectively in 2020. In terms of total exported Latvian production volume, the Ukraine, Lithuania, Estonia, Germany and Poland were important with the share of 10%, 7%, 4%, 3% and 2%, respectively for the same observed period.

### Management instruments

A list of measures was proposed by the Latvian government and the Ministry of Agriculture to mitigate the negative impact from COVID-19 to the economic situation in Latvia. In the frame of these measures the compensations in a total volume of EUR 1.5 million were paid to the fishing companies'

owners if the catch decreased by 20% in the period of 2020 compared to the corresponding period in 2019. The amount of aid to cover the decommissioning costs of a fishing vessel and the value of the catch was obtained by the fishing vessel for each fishing enterprise owner depended on the vessel gross tonnage and the catches made during the decommissioning period in 2019. For a fisherman (fishing vessel crew member), the amount of aid depended on the number of working days lost due to the downtime of the fishing vessel, applying a fixed rate of aid for each working day lost.

The scrapping of seven vessels was implemented according to the "Action plan for 2015-2017 to reach the balance between the Latvian fishing fleet's capacity and the fish resources for fleet segment VL24-40 m netters targeting at Eastern Baltic Cod". The other two vessels which potentially may operate as netters for the economic analysis have been included in the segment trawlers VL2440m. The vessels decommissioning scheme was finalised in 2017. Nevertheless, due to the low stock biomass of cod several vessels in segment VL2440 oriented to the cod fishery applied decommissioning scheme in 2021. Therefore, due to bad stock status for cod the nine vessels from the segment VL2440 with the total 1 040 GT of and 2 661 kW, were scrapped.

Due to come into force a reg. 2021/1888 setting out the fishing opportunities in the Baltic Sea for 2022 and which also provides a total ban on cod fishing in the eastern Baltic Sea, several measures continued to be applied for the cod fishery limitation. However, EU Regulations 2021/1888 allows a small by-catch of cod which is necessary in order not to endanger fishing opportunities for herring, sprat, flounder and other species in the Baltic Sea. In order to ensure bycatch quota (51 tonnes for Latvia) is not exceeded and does not have to suspend all fishing for Latvia, the Ministry of Agriculture in cooperation with the fishing industry has developed a number of additional fisheries regulation measures. Some measures provide that commercial fisher fishing on the sea are required to submit data for cod by-catches every ten days from the beginning of the month. In addition to the measures mentioned above, those commercial fishers who fish in the coastal waters of Rucava, Nīca, Grobiņa and Pāvilosta counties and the city of Liepāja must carefully monitor the amount of cod caught as a by-catch in the catch of other species. If the bycatch of cod reaches 10% or more when the gear is removed, the next time the fisher shall deploy the gear no closer than two nautical miles from the location where the by-catch of cod was found or resume fishing at the same location no earlier than 72 hours after fishing operation. Additional requirements also set for fishing of herring and sprat in the Baltic Sea (except the Gulf of Riga) offshore. If the bycatches of cod exceed one percent of the total catch, next time the fishing operation should be made no closer than 10 nautical miles north of the point where the by-catch of cod occurs, or restart fishing activities in that place not earlier than 72 hours after the fishing operation. Taking into consideration that offshore and coastal fishery may have a cod bycatch and if cod by-catch quota (51 tonnes) be fully utilized before the end of 2021 Latvia will have to close all fisheries in the Baltic Sea and the Gulf of Riga in both offshore and in coastal zones.

Latvia has one multilateral agreement for data sampling in CECAF area. Starting in 2012 the sampling of pelagic fishery has been performed on the basis of multi-lateral agreement between Germany, Latvia, Lithuania, the Netherlands and Poland by local observers.

## TACs and quotas

The economic effectiveness of the Latvian fishing fleet is fully dependent on the quota received for the three target species. The fishing quota for the European sprat increase by 13% between 2021 and 2022 and was 34 855 tonnes. The quota for the Atlantic herring in the Gulf of Riga increased by 17% while in the central region of the Baltic Sea decreased by 45% compared to 2021. The fishing quota of the Atlantic herring in the Gulf of Riga and the central region of the Baltic Sea are 25 671 and 1 488 tonnes, respectively in 2022. The fishing quotas for the Atlantic salmon in the Baltic Sea are 8411 by the number of individual fish. The fishing quota of the Atlantic cod continued been sharply reduced in the Eastern and Western part of the Baltic Sea by 65% compared to 2021. The fishing quotas of the Atlantic cod in the Western and Eastern part are 51 and 18 tonnes, respectively. Latvia fulfils the fishing quotas of the sprat and Baltic herring assigned thereto almost completely. The fishing quotas of the salmon are used in a very small-scale. However, the remaining salmon share is used in the international quotas for the exchange for sprat.

## Improvements and Development

For the elaboration of the national Fisheries Policy the Integrated Control and Information System (ICIS) was developed and improved during 2020. ICIS is used for general management of fishing licences, control and enforcement of fishing activities. The database contains information from the vessel electronic logbooks as well as information from the coastal logbooks for the SSCF. The improvements were applied for the ICIS coastal logbooks section in 2020. The changes include the opportunity for the fishers to submit the coastal logbooks to the ICIS database electronically.

Development of the ICIS provides better collaboration between Latvian fishing fleet management institutions and improves work of the staff with the data base as well as simplifies the process of data validation and allows to make cross checks and reports automatically.

## Nowcasts for 2021 and 2022 and beyond

### Model results

Preliminary results for 2021 forecast that although GVA will be reduced slightly profitability margins will increase compared to 2020.

Results indicate that the Latvian fleet operated at a profit in 2021: with an estimated gross and net profit of EUR 7.9 million and EUR 7.5 million, respectively. The increase of economic developments can be seen in performance indicators GVA to FTE (1%). Gross profit margin will no change and net profit margin will slightly increase compared to 2020 (+2%).

Projection suggests that Latvian fleet will keep the profit-making position in 2022. However, the fuel increase will impact by reducing gross and net profits by 17% and 14%, respectively.

### Outlook

On March 12 the Latvian government decided to declare a state of emergency until June 9, 2020.

The list of measures proposed by the Latvian government to mitigate the negative impact from COVID-19 to the economic situation in Latvia. In the frame of these measures the following compensations were foreseen:

- compensation for the temporary cessation of fishing activities and aid for storage of fishery products.
- compensation to the aquaculture companies for the reduction in sales in aquaculture.
- compensation to the fish processing companies for the turnover reduction.

The compensation for temporary cessation of fishing activities due to the cod fishery deterioration was received in 2020 by 41 fishing vessels and 139 fishers, including 17 fishing vessels and 64 fishers which also received the compensation connected to COVID-19 restrictions.

Fishers continue to modernize fishing ports and fish landing sites - 15 projects have been implemented so far. As a result of the implementation of 16 projects, both specialized transport and special equipment, technological lines, treatment plants, extension of piers and other works that significantly improve the work of fishers have been purchased. Industry management hopes that there will be more applications in the future to produce competitive products.

## Methodological considerations and data issues

### Identify changes in respect to previous years

The estimated values for the costs were used for 2015 and 2020. Restructuring of the costs between segments of the fleet was implemented for 2015 and 2020 in a relative proportion to the value of landings. The main reason for restructuring the costs is the data collected from the companies which own vessels included in different segments. In some of such cases value and volume of landings precisely correspond to the segment but expenditures are attributed to the biggest segment.

### Improvements achieved

The new R script was developed in 2020 for the more precise procedure of days-at-sea and fishing days calculation for the coastal fishery. The new approach does not allow to the values for fishing days be higher than the values for days-at-sea. The algorithm is based on the following formulas:

- Day at Sea =  $1/\max\text{Gears}$ ;

Days-at-sea are counted per each boat (one day is divided proportionally between all fishing gear).

- Fishing day =  $1/\max\text{Vessels}$ .

Fishing Days are counted per each fishing gear (one day is divided proportionally among all boats).

## Problems identified

The observed difference between 2010 and 2011 for the depreciated replacement value was caused by the necessary changes regarding data collection methodology implemented for more reliable data collection in 2010. The first data collected by the new approach was received for 2011. The data for 2008 and 2010 was imputed based on formulas for vessel scrapping. More reliable data for the depreciated replacement value was obtained by the questionnaire for 2011- 2017. For the variables Consumption of fixed capital and Value of physical capital PIM method is applied from 2018.

## Remaining issues

The data for the distant water fleet (segment VL40XX) operating in the Atlantic area 27 (NEAFC) and area 34 (CECAF) was collected but have not been submitted to ensure data confidentiality. In requested format, the data should be separated by supra regions and fishing technique. There were two segments which operated in the Atlantic in 2020: VL40XX TBS NEAFC AREA 27 (three vessel) and VL40XX TM CECAF AREA 34 (two vessels). The economic data cannot be provided for an individual vessel or for the vessels belonging to different companies (four companies in 2020).

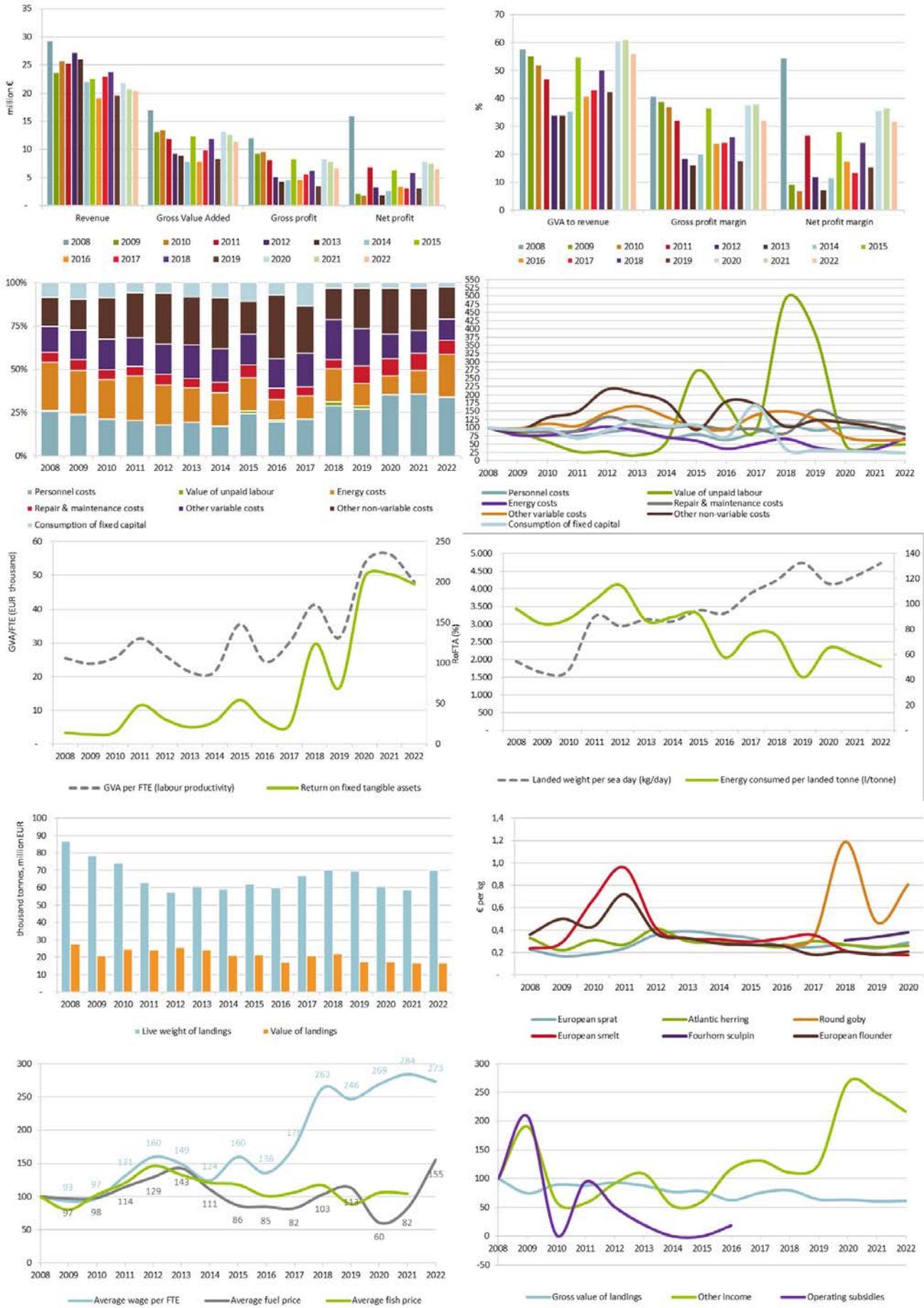


Figure 4.14 Latvia: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.14 Lithuania

### Short description of the national fleet

#### Fleet capacity

In 2020, Lithuanian fishing fleet consisted in 141 registered vessels and compare to 2019 it decreased by 2%. In 2020 national fleet used around 56% of the capacity corresponding to 79 active vessels, total GT decreased by 9%. Compared to the 2008-2019 average, total number of vessels and GT was lower 17% and 25%, respectively.

#### Fleet structure

Lithuanian fishing fleet consists of SSCF operating in the coastal area of the Baltic Sea (75% of active vessels and 0.5% of total GT), LSF operating in the Baltic Sea (18% of active vessels and 8% of total GT) and LDF (8% of active vessels and 87% of total GT). SSCF fleet consists in three segments: coastal vessels under 10 metres length (55 vessels) fishing with passive gears, vessels 10-12 metres (3 vessels) operating in coastal area and 24-40 metres netters fishing in Baltic Sea (1 vessel). Due to confidentiality, two netters 24 metres in length are clustered with coastal fleet segments. In 2020 LSF consisted in pelagic trawler segment operating in Baltic Sea. Due to the closure of cod fisheries in Baltic Sea, demersal trawler segment was not present in the fleet structure. LDF was dominant in terms of landings and capacity. It consisted in demersal trawlers and/or demersal seiners over 40 metres (2 vessels) and pelagic trawlers over 40 metres (4 vessels).

#### Employment

In 2020 total national fleet employed 431 fishers with 5% annual decrease. Employment in Lithuanian national fleet has a constant decreasing trend since 2008 and in 2020. Number of employees and FTE was 28% and 9% lower compared to the 2008-2019 average. However, number of FTE has stabilized since 2016. Major decline was influenced by the restructuration process of the LDF fleet to the decreased fishing opportunities roughly from 2015 and in LSF particularly demersal trawler segment due to the deteriorating of Baltic cod fisheries. In 2020 Lithuanian fishing sector employed 449 fishers, corresponding to 408 FTE.

#### Effort

In 2020 fleet had 6 400 days at sea (DaS) of fishing effort and compare to 2019 decreased by 14%. Considering long term trend of fishing efforts, number of days at sea in 2020 was 31% lower than the 2008 to 2018 average indicating a substantial decline of fishing opportunities mostly in the Baltic Sea. Decrease in fishing effort occurred also due to the COVID-19 control management, lockdown and quarantine requirements, mostly in the SSCF and LSF fleets. However, fishing effort in 2021 recovered by 4% compared to 2020, but still remained in relatively low level compare to multiannual average.

#### Production

In 2020 Lithuanian fishing fleet landed 87 355 tonnes of seafood production, corresponding to EUR 72.8 million value. Compare to 2019, weight and value of landings declined by 16% and 17% respectively. LDF fisheries in 2020 covered 80% of national total weight of landings. The structure of landings in LDF remained unchanged, with the largest share coming from small pelagic species (MAS and HOM) accounting for 60% (EUR 45 million) of total national fleet landings. Compared to previous periods, increased quantity of blue whiting was landed, corresponding to 14% of total LDF landings. In terms of landing value, Northern prawn contributed by 13% (EUR 13 million) of total national value of landings in 2020. In 2021 weight of landings in LDF recovered by 17% to the highest level since 2017. Concerning large scale fisheries in the Baltic Sea (subarea 27.3.d), weight of landings in 2020 decreased by 25% to 16 674 tonnes generating 3.7 EUR million. The largest share of the LSF production value in 2020 came from the Baltic sprat, corresponding to 68% (EUR 2.55 million) of the total value from Baltic Sea, followed by Baltic herring with 31% (EUR 1.18 million). Landings of Baltic cod in 2020 were left only for bycatch, corresponding to 7.1 tonnes. Bycatch of cod did not show the choke effect on other fisheries in Baltic Sea. In 2021 weight and value of landings in LSF fleet decreased again by 6% and 11%, respectively, mostly influenced by significant decline in herring quota. In 2020 the SSCF landed 389 tonnes of seafood production, corresponding to EUR 0.42 million and compared to 2019, it decreased by 23% and 24%, respectively. Dominant species in terms of landings value were European smelt which accounted for 60% of the total value of production in the

SSCF. Compare to 2019 value of European smelt declined by 34%. Herring and Round goby together accounted for 16% of value of landings in SSCF. In 2021 weight of landings in SSCF decreased by another 3% to the lowest level since 2008, however the value of landings due to higher prices of main species improved by 27% compared to 2020.

## Economic results for 2020 and recent trends

### National fleet performance

As the economic indicators of the national fleet are highly dependent on the activity of the LDF, factors that affect the performance of other fleet segments have a minor impact at national level. Around 94% of total national revenues were generated from LDF in 2020. Total revenue decreased by 5% compared to 2019. Taking into account LDF dominance in national fleet, economic performance will be provided separately by each segment and fishing area in further sections of the report.

The total amount of revenues in 2020, generated by the Lithuanian national fleet was EUR 87.8 million and compared to 2019 it increased by 2%. GVA generated by the Lithuanian national fleet in 2020 was EUR 30.0 million, 54% higher than in 2019. Gross profit increased to EUR 21.2 million in 2020, compared to EUR 4.7 million corresponding to the 2008-2019 multiannual average. Value of physical capital of active fleet decreased by 9% to EUR 103.0 million compared to 2019. In 2020 national fleet generated EUR 12.6 million net profit (including opportunity cost of capital), compared to EUR 3.2 million in 2019. Increase in economic performance was influenced by considerably decreased energy costs in 2020 when oil price in world market hit the record lows.

### Resource productivity and efficiency indicators

In 2020, labour productivity of national fleet increased by 49% to the EUR 73 557 per FTE and reached the highest level during 2008-2019. National fleet efficiency indicators are highly dependent on LDF economic performance and has a volatile pattern as well as huge difference between fisheries. For example, in 2020 LDF fleet increased GVA/FTE to EUR 91 103, whereas LSF Baltic Sea and SSCF fisheries decreased GVA/FTE to EUR 22 370 and EUR 4 205, respectively.

In terms of capital productivity Lithuanian fleet has negative returns since 2013, due to the low profitability of LDF fisheries, however, in 2019 ROFTA turned to positive returns and in 2020 increased to 11%. Due to the remarkable drop of the profits in SSCF under COVID-19 conditions, ROFTA in SSCF declined to the lowest level since 2008.

Fishing efficiency in terms of landing weight per days at sea per active vessel (CPUE) in 2020 improved by 7% compared to 2019 and was 44% higher compared to 2008-2019 multiannual average.

In 2020 fuel efficiency in terms of landed weight of seafood per litter of fuel consumed, decreased by 7% compared to 2008-2019 multiannual average.

## Performance by fishing activity

### Small-scale coastal fleet

SSCF consists of two fleet segments – NAO PG 0-10 and NAO DFN 10-12 which due to confidentiality reasons were clustered with one vessel 24-40 m operating in the Baltic Sea with gillnets. In 2020, SSCF consisted of 59 active vessels with 6% decrease compared to 2019. Fishing effort declined by 18% to 3 746 days at sea, the lowest level since 2008. Decrease was related to the COVID-19 impact on small-scale fleet. Decrease of cod stocks have not resulted in noticeable decline of fishing effort since 2015. Decline in fishing effort resulted 24% annual drop of weight of landings and 27% in revenues. In 2020, profitability indicators also tended to decrease, GVA declined by 54% to EUR 149 000. Decline in 2020 profitability was related to constrains of sales due to lockdown measures also by the closure of cod fisheries in 2019 and afterwards. Cod was one of the main target species for DFN 10-12 and DFN 24-40 segments and significant decline in cod landings contributed to the obtained net losses in 2020. SSCF fleet employed 140 fishers (crew and people on shore, related to fisheries) corresponding to 35 FTE. Compared to 2019, FTE decreased by 8%.

### Large-scale fleets

In 2020 Lithuanian LSF fleet consisted of pelagic trawler segment as demersal fisheries are closed due to insufficient cod stocks in Baltic Sea. LSF consisted of 14 active vessels with 2 956 GT and 6 302 kW capacity and compared to 2019, GT and kW decreased by around 11% and 10%, respectively. Total

number of days at sea decreased by 7% compared to 2019 resulting 25% drop in weight of landings corresponding to 16 674 tonnes. Value of landings decreased by 13% to EUR 3.7 million. Concerning economic performance in 2020, LSF generated EUR 1.3 million GVA, a 24% decline compared to 2019. Gross profit decreased by 70% to EUR 0.17 million. Large scale fleet obtained net losses in 2020. Decline in LSF economic performance was a result of complex of circumstances, related to COVID-19 restrictions, from 2018 declining fishing opportunities for herring, closed cod fisheries. Deterioration of profitability led to constant decrease of employment. In 2020 LSF employed 81 crew members, a 45% decrease compared to 2008-2019 average.

### **Distant water fleet**

In 2020, LDF consisted of six active vessels corresponding to 31 524 GT and 30 191 kW and compared to 2019 it decreased by 4% and 7%, respectively. Fishing effort in terms of days at sea and fishing days declined by 9% and in the context of COVID-19 it can be stated that the impact was relatively low. Lithuanian LDF are predominantly operating in CECAF (area 34) and some vessels have efforts in NAFO and NEAFC. Fleet targets mostly small pelagic species such as Atlantic horse mackerel (HOM) and chub mackerel (MAS), whereas from demersal fisheries the largest landings were for blue whiting (WHB) and northern prawns (PRA). In 2020 weight of landings decreased by 13% with 18% decline in value. GVA in LDF increased by 64% to EUR 28.6 million and EUR 21.1 million gross profit. Total number of crew members in 2020 decreased by 10% whereas FTE increased by 3% to 313 FTE. Due to LDF segment specificity, number of FTE is always higher than average number of employees.

### **Performance results of selected fleet segments**

In 2020 national fleet consisted from four main fleet segments, representing four type of fisheries, SSCF (two segments), LSF pelagic trawlers operating in the Baltic Sea and the LDF. From 2020 due to the closure of cod fisheries in Baltic Sea, demersal trawler segment DTS 24-40 suspended fishing operations and is excluded from the analysis.

#### **Passive Gears (PG) <10m**

In 2020, 55 active vessels represented NAO PG 00-10 segment and it operated entirely in coastal area of Baltic Sea with the passive gears. Segment represents 70% of total active vessels and 0.2 total GT in national fleet. Compared to 2019, capacity in GT increased by 3% but was 5% lower than multiannual 2008-2019 average. The main species for this segment was European smelt corresponding to 58% of total share in value of landings. In 2020 total revenue declined by 26% to EUR 0.43 million but was 8% higher than multiannual 2008-2019 average. GVA dropped by 52% to EUR 0.2 million with 18% and segment obtained gross losses first time since 2008 as a result of COVID-19 restrictions. In 2020 the total number of FTE decreased by 7%.

#### **Pelagic Trawlers (TM) 24-40**

In 2020, pelagic trawler segment consisted in 14 active vessels and compared to 2019 it decreased by 18%. This segment represents Baltic large-scale fleet and main economic indicators are presented under the section "Performance by fishing activity" under Large-scale fleet section.

#### **Pelagic Trawlers (TM) 40XX, distant water fleet**

This fleet segment represents Lithuanian long-distance fisheries and main economic indicators are presented under the section "Performance by fishing activity" under Distant water fleet section.

### **Drivers affecting the economic performance trends**

#### **Markets and Trade**

Long distance fleet which operates in CECAF, NAFO and SPRFMO all production is exported. In 2020 around 64% of LDF catches, mainly small pelagic species, were landed in West African ports (Mauritania and Morocco). Compared to 2019 share of landings in West African ports declined by 22 percentage points, whereas landings in Netherlands jumped from 3 thousand tones in 2019 to 18 000 tonnes in 2020. The main export market for northern prawns is Norway and Iceland. Atlantic horse mackerel (MAS) and Chub mackerel (MAS) together were accounted for 49% of total weight of landings. In 2020 average price for MAS and HOM increased by 38% and 4%, respectively, having a huge impact on the total value of landings for long distance fleet. Average price for Northern prawn

recently had decreasing trend and in 2020 declined by 8%. For Northern prawn fisheries there are concerns regarding cessation of prawn fisheries in NAFO 3M in 2022 due to the decline in stocks.

In 2020 total weight of landings from LSF consisted of 66.8% of sprat (11 135 tonnes), 32.9% Baltic herring (5 481 tonnes) and 0.3% other species. Around 88% of total landings from Baltic Sea were exported. The main export market for sprat was Denmark, accounted for 64% of total sprat export and 37% of total Baltic herring export. However, in 2020 total fish landings in Denmark decreased from 69% of total landings from Baltic Sea to 55%. It was likely a result of the COVID-19 management restrictions. Landings were reallocated to national Klaipėda port and Latvian ports. A growing trend of price was observed in 2020. Average prices for Baltic sprat increased by 27% and herring by 4%.

Main species supplied by SSCF are European smelt with 60% of total coastal value of landings, Gobies, Baltic herring and European flounder together contributing 21% of landings. All SSCF seafood production are landed to local ports and distributed with large share to Latvia and internal market for fresh production. In 2020 supply of fresh seafood production from SSCF decreased by 24% in volume, mostly influenced by COVID-19 restrictions. Average prices for European smelt increased by 16% compared to 2019, price for Gobies and Baltic herring improved by 31% and 7%, respectively. SSCF lacks logistics facilities and infrastructure to store landed production which could be distributed to local markets and supply fresh seafood production to internal market. Investments to the infrastructure of landing sites are foreseen.

### Management instruments (policy)

In 2020 fishing rights to individual transferable quota (ITQ) were allocated to fishing companies, operating in coastal area of Baltic Sea, open Baltic Sea and long-distance fisheries. Duration of fishing rights is for 2020-2034 period. For coastal fleet, fishing rights were allocated to use certain commercial fishing gear in each coastal fishing bar. For Baltic large scale fleet fishing rights were allocated as opportunities to use ITQ during 2020-2034 for sprat, Baltic herring, Baltic cod (bycatch) and salmon.

### Status of Key Stocks, changes in TACs and quotas

In the Baltic Sea, Lithuania has quotas for cod, herring, sprat and salmon. From species with quotas, landings of sprat and herring are predominant. Cod fisheries during recent years had a remarkable decline in landings after decreased TAC's. Recently they were closed leaving 202 tonnes bycatch. In 2021 cod quota termination is prolonged, leaving 127 tonnes bycatch availability. In 2020 herring quota in Baltic Sea for Lithuanian fleet decreased by 10% to 4 478 tonnes and in 2021 it dropped by 36% to 2 848 tonnes. Sprat quota in 2020 decreased by 22% to 10 517 tonnes and recovered by 6% in 2021 to 11 158 tonnes. Small pelagic species in the Baltic Sea is the main source of income to LSF fleet after cod fisheries were closed to restore stocks. Decreasing opportunities of pelagic fish for the LSF fleet where capacity from demersal fisheries were shifted, is decreasing a profitability expectation and increase risk of overcapacity.

In Mauritania and Morocco, the Lithuanian fleet operates under EU fishery partnership bilateral agreements with third countries. The new agreement with Mauritania came into force at the very end of 2015 and for each year 57 600 tonnes of pelagic species were allocated to Lithuanian vessels and it remains until 2020. In 2021 quota for pelagic species in Mauritania and Morocco increased by 18% and 4%, respectively to altogether 87 255 tonnes. Quota for small pelagic species in SPRFMO region in 2021 increased by 15% to 8 359 tonnes.

### Operational costs (external factors)

In 2020 total operating costs incurred by Lithuanian fleet were EUR 66.7 million and compared to 2019 it decreased by 10%. Energy costs accounted for the 17% of total operating cost, other variable cost for 24%. Compared to 2019, energy product prices decreased by 32% and was 31% lower than multiannual 2008-2019 average. Such decline in energy costs saved returns and profitability for LDF and reduced losses in other fisheries under the conditions of COVID-19. Labour costs continued an increasing trend and in 2020 improved by 10% compared to 2019 and was 18% higher than 2008-2019 average. Other variable costs in 2020 decreased in line with fishing effort by 15%. Non-variable costs remained unchanged compared to 2019.

Structure of operating costs is specific for each type of fisheries. In SSCF fleet largest share of operational costs was for wages and salaries – 48%, following by non-variable costs (including fishing right costs) – 31% and other variable costs of 9% in total share. Compared to 2019, SSCF personnel costs increased by 5%. Total energy costs declined by 35%, when days at sea decreased by 18%. In 2020 for the LSF non-variable costs (including fishing right costs) and personnel costs took the largest share in operational cost structure with 36% and 25%, respectively. Energy costs contributed by 14%

in total operation cost structure and decreased by 40% compared to 2019. In LDF fleet other non-variable costs including expenditures on quota and other fishing rights were predominant in total operating costs with 37% of total share. Other variable costs and energy costs contributed by 25% and 17% to total share, respectively. In 2020 total operating costs in LDF increased by 11.6%.

## Socioeconomic impact

During recent years, wages in Lithuanian fisheries have increased following the overall industry trends. In 2020, LDF salaries increased by 15% to EUR 23 600 per FTE per year. Average wages in LSF fleet decreased by 14% compared to 2019, to EUR 19 600 per FTE per year but were 29% higher compared to 2009-2019 average. In SSCF segments annual remuneration to fishers increased by 5% to EUR 8 000 per FTE in 2020.

## Nowcasts for 2021-22 and beyond

### Model results

With a predicted increase in the number of vessels in 2022 compared to 2020, the fleet is predicted to obtain higher landings and value of landings, both, in 2021 and 2022. However, in both cases, the higher energy cost will reduce the gross profit in both years. However, the fleet is predicted to obtain positive economic performance in both gross and net terms, for years 2021 and 2022

### Outlook

In 2021 fishing effort of national fleet in terms of days at sea increased by 4% to 98 302 tonnes of landed seafood production valued EUR 79.5 million. Compared to 2020, weight and value of landings increased by 13% and 9%, respectively. Fleet profitability in 2021 is projected to slightly decrease compare to 2020 corresponding to EUR 28.6 million GVA and EUR 11.1 million net profit with 12% net profit margin. Employment in 2021 is foreseen to increase by 7% to 437 FTE. After decline of fishing effort during 2020, when COVID19 crisis started, in 2021 fishing fleet restored income from landings. SSCF and LDF fleets generated increased revenues and economic performance is expected to improve for these fleets in 2021 whereas LSF continued a decreasing trend in effort, revenues and capacity. LSF decline was mostly influenced by decreasing fishing opportunities in Baltic Sea for pelagic species and closed cod fisheries. In 2022 quotas for Baltic herring decreased by 45%, whereas sprat improved by 13%. Small pelagic quota for LDF in 2022 remained the same as in 2021. Fishing opportunities in 2022 gives an expectation to have a steady fishing effort in comparison to 2021. However, after the war in Ukraine a sharp increase of fuel price in 2022 to record high levels give a consideration that economic performance will be strongly affected and will decrease profitability for LSF and LDF fleets. Trading restrictions with Russia in 2022 is not expected to have a major impact on the fleet as seafood production is not supplied directly to Russian market.

### COVID-19

COVID-19 lockdown measures in Lithuania were applied from March 2020. The impact on the fisheries from COVID-19 control measures resulted in the reduction of fishing effort and sales, especially export, with increased extraordinary expenditures and remaining high non-variable costs reducing profitability for Baltic fleet. In terms of economic performance, SSCF fleet was mostly affected by COVID-19. Income from landings in SSCF dropped by 27% compare to 2019 and was 40% lower than 2018-2019 average. GVA declined by 54% and was 62% lower than 2008-2019 average. All SSCF landings are landed in national ports, but a large share of landings is sold and transported to Latvia. Lockdown restrictions on cross border and in transport connections between local municipalities had a significant impact resulted in reduced sales and profits. LSF fleet facing a poor stock issues and additional impact from COVID-19 measures resulted in 70% decline in gross profit during 2020. LDF fleet had 9% reduced days at sea and 5% lower income from landings. However, profitability indicators were remarkably higher compared to 2019. In order to mitigate COVID-19 impact, operating subsidies in terms of compensation were allocated to the industry. Aid to the industry resulted in positive returns, as subsidized net profit (including operating subsidies on COVID-19 and other operating subsidies) in 2020 in SSCF fleet was accounted for EUR 0.3 million and LSF for EUR 0.5 million, compared to -EUR 0.19 million and -EUR 0.07 million net losses excluding subsidies for SSCF and LSF, respectively.

## Methodological considerations and data issues

### Improvements achieved

Variable “value of quota and other fishing rights” for 2017-2020 was estimated according to the established and tested applicable methodology. For estimation of variable modified Discounted Cash Flow method was used, using LAFPMIS, FDIS, Fleet register and other data sources. New methodology is prepared in accordance with PGECON 2019 Recommendations 1.1 and 1.4 as well as conclusions on Tor 4 from PGECON WS on Capital value estimations (Salerno, 2019).

### Problems identified

No data issues were identified.

### Methodological considerations

Revenues and value of landings reported from two separate data sources. Value of landings is estimated as the weight of landings from logbooks times average price, whereas income from landings is collected from fishing enterprise accountancy. In Lithuania, income from landings together with other socio-economic indicators, such as expenditure, employment and capital value are collected through census survey with a one-year lag whereas estimated value of landings is available one year prior to economic data.

Depreciation costs of capital and capital value at Member State level is recalculated for the total data set 2008-2017 after PIM method was revised and updated, whereas at fleet segment level data for capital depreciation costs and capital value from 2008 to 2016 left unchanged. The reason to leave previous data is because historic data were used for the fleet management with respectively addressed management measures.

For long distance fleet FTE is always higher than the number of employees and it is sector specific deviation. According to national law, one person can be employed for 1.5 FTE and conversion to 1 FTE per employed person in the case it exceeds would misrepresent the employment statistics for national fleet.

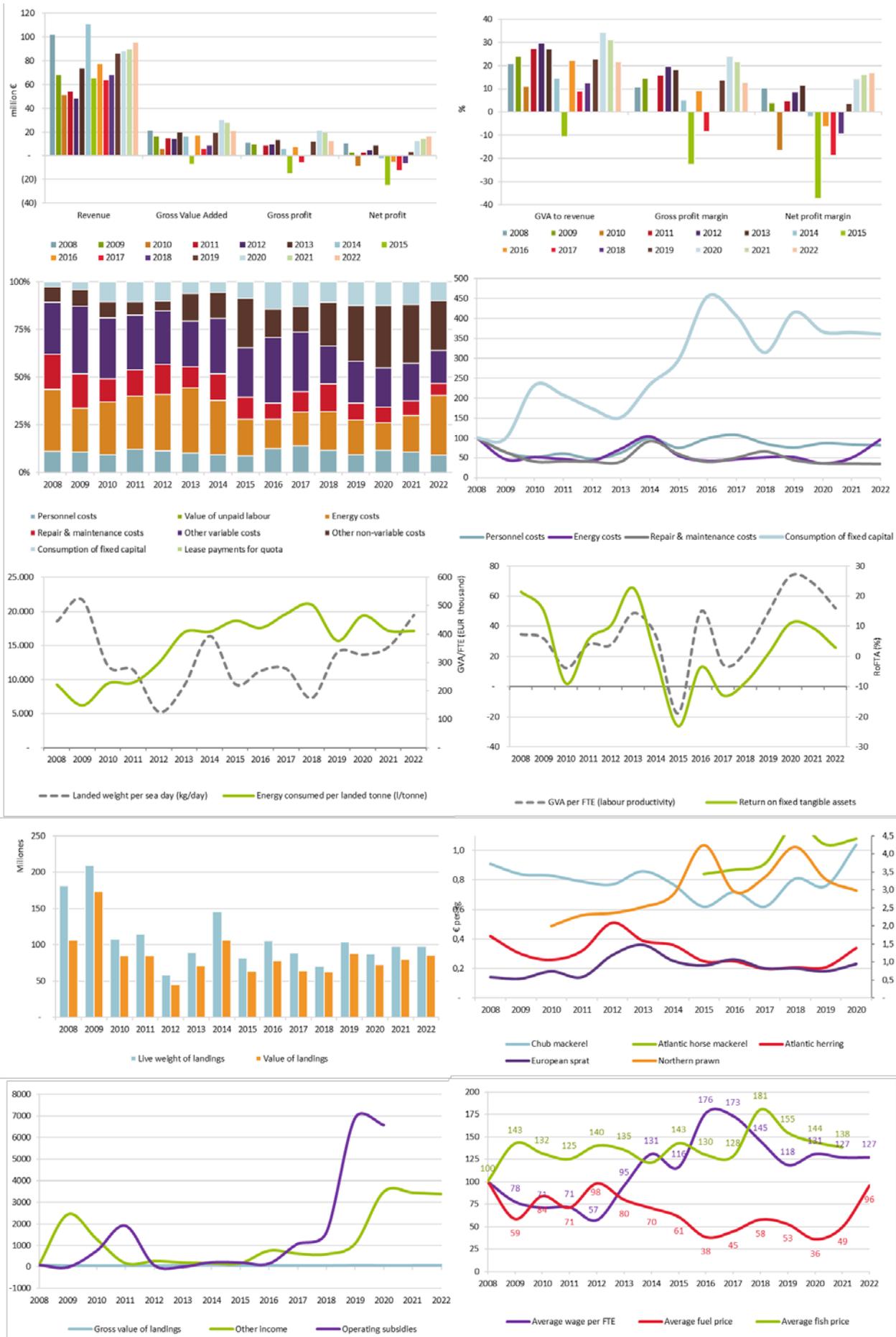


Figure 4.15 Lithuania: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.15 Malta

### Short description of the national fleet

#### Fleet Structure

The Maltese fishing sector is relatively small and is comprised mostly of typical Mediterranean artisanal fisheries. It is generally described as a multi-species and multi-gear fishery, where the majority of the fishers switch from one gear to another several times throughout the year. The vast majority of the Maltese active fishing fleet is composed of SSCF vessels with an engine power of 37 785 kW and a combined 1 511 GT.

During 2021, the Maltese fishing fleet consisted of 859 registered vessels, 235 of which were inactive, having a combined 6 421 GT, engine power of 71 100 kW and an average age of 28 years. Out of the vessel power and tonnage registered in the fleet, 25% (1 621 GT) and 27% (18 857 Kw) pertained to the inactive vessels. The vast majority of the inactive vessels are below 12 metres. In 2021, the number of vessels in the fleet decreased by 41 from 2020. The Maltese Fishing Vessel Register (FVR) did not open for new registrations during 2020, though registrations were accepted for recreational vessels. Furthermore, due to a storm in February 2019, a number of vessels were severely damaged, meaning that the fluctuations in total vessels could probably derive from vessel replacement and/or vessels still onshore being repaired.

The declining trend in the Maltese fishing fleet's overall capacity continue, with the number of vessels in 2021 being 14% less than 2008 to 2020 average; the fishing capacity, in terms of GT and kW has also been showing the same trend, being 21% and 7% lower, respectively.

#### Fishing Activity and Production

The Maltese fleet spent a total of around 23 919 days-at-sea (DaS) in 2021, 21 596 of which were fishing days. The total number of DaS increased by 5% between 2020 and 2021, whereas fishing days increased by 6% over the same period. Since 2008 the total number of DaS has decreased by 41%.

The quantity of fuel consumed in 2020 totalled around 4 million litres. Energy costs did not significantly change between 2019 and 2020, primarily due to the fact that fuel price has decreased by 17% over this period.

The total weight landed by the Maltese fleet in 2020 was 2 127 tonnes, with a landed value of EUR 10.3 million, a 21% decrease on 2019. The average weight of landings per vessel has also decreased (2%) during the period analysed.

Provisional data for 2021 is showing that the total weight landed by the Maltese fleet was around 2.5 million kilos, with a landed value of around EUR 13.7 million. This means a 19% and 33% increase in landings weight and value in 2020, respectively. Value of landings is 14% below the 2008-2019 average while weight of landings remains relatively stable during the same period.

The main exploited species include swordfish, common dolphinfish, Atlantic bluefin tuna, mackerel, silver scabbard fish, a number of demersal and small pelagic species, and a number of additional species some of which although caught in smaller quantities, have a high commercial value such as the giant red shrimps and red scorpion fish.

In 2020 the real landed prices of key species such as swordfish, Atlantic Bluefin tuna, and silver scabbard fish saw decreases over 2019, by 5%, 53%, and 15% respectively. On the other hand, key species such as common dolphinfish, recorded increases by 3%.

In 2020, Swordfish produced the highest landed real value (EUR 2.9 million), followed by common dolphinfish (EUR 1.5 million) and silver scabbard fish (EUR 1 million). These aforementioned species contribute to 80% of the total value of landings for the fleet. In terms of landings weight for these species, swordfish landings amounted to 360 tonnes, common dolphinfish to 372 tonnes and silver scabbard fish to 300 tonnes. Compared to 2019, these species recorded -11%, -10% and 120% changes in the live weight of landings.

#### Employment

Employment in 2020 decreased by 5% compared to 2019, from 1 039 to 987. The FTE of the industry is that of 524 or 0.85 per vessel. 78% of the total jobs were employed in small-scale fishing, implying this sector's fundamental importance to the social and economic environment of the Maltese fishing fleet. It is important to note that the decrease in total employment within the industry derived from

the LSF, as it recorded a 21% decrease over 2019. This being the lowest number of employment since 2008.

Data shows that the average wage across all wage indicators (including per vessel, per FTE etc.) decreased over 2018.

## Economic results for 2020 and recent trends

### National fleet performance

The total amount of income generated by the Maltese national fleet in 2020 was EUR 11.2 million, a 22% decrease from 2019. This change derived from a 21% decrease in the total landing income (EUR 10.2 million) and a 23% decrease in other income (EUR 1 million). When adding also the income generated in the sector, from leasing out fishing rights (EUR 1.1 million) and the income received from subsidies (EUR 0.9 million), total income amounts to EUR 14.2 million.

The operating costs in 2020 amounted to EUR 11.7 million. In terms of total costs, crew costs, energy costs and repair & maintenance costs were the three major expenditure items (EUR 1.8 million, EUR 2.3 million, and EUR 1.3 million, respectively). However, EUR 1.6 million of crew costs were estimated for unpaid labour which remained in the hands of the fishers as working capital. Between 2019 and 2020, operating costs decreased by 16%.

Economic performance indicators such as gross profit and net profit decrease in 2020 related to 2019 (-27% and -75%). The total amount of GVA, was estimated at EUR 6 million. Between 2019 and 2020, the GVA of the industry decreased by 25%. This indicates that the economic situation of the Maltese fishing fleet has slightly declined when compared to the positive turn around recorded in 2018, still such figures are 11% better when compared to the 2008-2019 average.

In 2020, the Maltese fishing fleet had an estimated (depreciated) replacement value of EUR 26.6 million and invested EUR 1.4 million in capital, an 18% decrease compared to 2019.

### Resource productivity and efficiency

In 2020, the Maltese fleet had a gross profit margin was 24%, implying negative trend in the operating efficiency levels for the sector from the 26% recorded in the previous year. This is also observed in the net profit margin for 2020 (5%) which decreased by 70% over 2019 (17%).

The RoFTA was 1%, in 2020, a decrease (90%) when compared to the previous year. Labour productivity (GVA/FTE) has decreased by 19% between 2019 and 2020, which is still 45% higher than the indicator result over the last 12 years.

Fuel consumption per landed tonne has followed an overall decreasing trend since 2008. In 2020, it is estimated at an average of 1 881 litres per tonne landed.

Landings in weight per unit of effort (in DaS) followed an increasing trend since 2008. In 2020, this indicator reported a decrease of 16% regarding 2019, and amounted 108kg per sea day.

## Performance by fishing activity

### Small-scale coastal fleet (SSCF)

In 2020, there were 561 active vessels categorised under SSCF. This represents circa 90% of active fishing fleet.

Fisheries in Malta is a relatively small industry where its social significance and impact on the coastal communities and blue economy outweigh its overall macro-economic contribution in terms of GDP and GVA. It can be described as an artisanal or traditional activity which operates on a small-scale, producing small volumes of a valuable primary products. The industry is mainly artisanal, and it is considered as a typical fishery found in many Mediterranean countries. The majority of the small-scale fishing vessels conduct their coastal activities on a seasonal basis. There are no inland fisheries in Malta.

The Maltese national fishing fleet is mainly divided into two categories: The professional full-time fishing vessels and the part-time fishing vessels.

In 2020, 78% (766 employees) of the total 984 employed in the Maltese fishing industry worked on small-scale fishing vessels. This corresponds to 315 FTEs. In 2020, there was 8% decrease in the total jobs of the small-scale fishing vessels compared to 2019. FTE indicator is rather low compared to the

total jobs potentially due to seasonal employment in several fisheries, in particular the common dolphinfish season, where additional crew members are recruited specifically for this fishery alone. Data on the labour force in the sector shows that there have been constant fluctuations in the crew costs across the years due to unpaid labour and due to the fact that crew in this sector may also be paid a share of revenues/profits. In 2020, crew expenditure amounted to EUR 609 124 while the unpaid labour cost amounted to EUR 1.24 million. The vast majority of the personnel in the small-scale fishing are the owners themselves with no employees. Others have their families and friends who voluntarily help them during a fishing trip working in certain fishing seasons or on a casual basis.

The landings value of the small-scale fishery increased by 14% from 2020 to 2019. In terms of profitability, in 2020, the economic performance of the small-scale fishery improved since its registered improvements in net loss, as it improved by 91% over 2019 from EUR 0.9 million to EUR 0.08 million. Gross profit increased 176% and became positive in 2020. In 2019, the SSCF contributed to 36% of the GVA of the fishing industry.

### Large-scale fleet (LSF)

The large-scale fishing vessels that were active during 2020 amounted to 51. This represents approximately 10% of the active Maltese fishing vessels. All large-scale fishing vessels work on a full-time basis in the fishing industry.

In 2020, 22% of the total jobs (218 employees) in the Maltese fishing industry worked with the large-scale fishing vessels. This corresponds to 209 FTEs. In 2020, there was 21% decrease in the total jobs of the LSF compared to 2019.

The landings value of the large-scale fishing vessels decreased significantly by 50% over 2019. In 2020 this fleet category contributed to 48% to total income from fishing activity. In 2020, the LSF reported a net profit of EUR 1.3 million. In terms of profitability, GVA, gross profit, and net profit decreased by 41%, 45% and 58%, respectively, over 2019.

### Performance results of selected fleet segments

The Maltese fishing fleet is highly diversified with a broad range of vessel types targeting different species in the Mediterranean. The Maltese national fleet consisted of 17 active (DCF) fleet segments in 2020, which were clustered into six fleet segments and five inactive fleet segments. These vessels are classed as inactive if they do not record at least one day at sea during the reference year.

#### Vessels using other active gears 06-12m

10 vessels made up this segment in 2020, which operates predominantly in the Mediterranean. This segment employed 27 FTEs during the same period. The fleet targets mainly common dolphinfish by using Fishing Aggregation Devices (FAD). In 2020, the total value of landings was about EUR 0.26 million; the segment generated 2% of the fleet's total revenue. In the same year, this segment generated a net loss of EUR 0.05 million. The net profit margin is 68% over the 2008-2019 average. Losses were driven by the decrease in landing volume which subsequently resulted in a decrease in landings income and an overall reduction in the price per kg of targeted landed species.

#### Vessels using active and passive gears 06-12m

128 vessels made up this segment in 2020, which operates predominantly in the Mediterranean. This segment employed 106 FTE during the same period. This fleet segment targets several species, mainly common dolphinfish, common octopus, Atlantic Bluefin tuna and swordfish by using fish aggregating devices (FADs), and drifting long-lines (LLD), respectively. In 2020, the total value of landings was about EUR 1.4 million and generated a net loss of -EUR 0.3 million. Although recording significant losses, the net profit margin for this segment is still 75% over the 2008-2019 average, and has shown improvements in the economic development trends. The segment is still in a weak position in terms of profitability.

#### Vessels using polyvalent passive gears only 06-12m

148 vessels made up this clustered segment in 2020, which operates predominantly in the Mediterranean. This segment employed 121 FTEs during the same period. This fleet segment uses different metiers. The net profit, gross profit and GVA amounted to -EUR 0.3 million, EUR 0.5 million and EUR 1.5 million, respectively.

### Vessels using hooks 18-24m

15 vessels made up this segment in 2020, which operates predominantly in the Mediterranean. This segment employed 60 FTEs during the same period. The fleet targets a variety of species mainly by using surface and bottom long-liners. Surface long-liners target mainly large pelagic species such as Atlantic bluefin tuna, swordfish, and common dolphinfish while bottom long-liners target demersal species such as bluntnose sixgill shark, red scorpion fish, silver scabbardfish species, among others. In 2020, the total value of landings was about EUR 1.5 million. This segment recorded a net loss of EUR 0.04 million and gross profit of EUR 0.3 million.

### Demersal trawlers 24-40m

Nine vessels made up this clustered segment in 2020, which operates predominantly in the Mediterranean. This segment employed 35 FTEs in 2020. The fleet targets a variety of species but in particular demersal and deep water species, such as deep water rose shrimp, giant red shrimp and red mullets. In 2020, the total value of landings was approximately EUR 1.1 million. The segment reported a gross profit of around EUR 0.4 million and recorded a net loss of EUR 0.1 million. This still indicates a weak profitability for the year, though it is significant improvement upon previous year. The main driver behind this weak profitability is the high costs incurred relative to the income earned.

### Vessels using polyvalent passive gears only 00-06m

261 vessels made up this segment in 2020, which operates predominantly in the Mediterranean. This segment employed 71 FTEs in 2020. In 2020, the total value of landings was about EUR 0.7 million. This fleet segment was not profitable in 2020, with a reported gross loss of around EUR 0.03 million and a net loss of EUR 0.1 million. Regardless poor profitability, this segment shows improved economic development trend in 2020.

### Drivers affecting the economic performance trends

Between 2019 and 2020, there was an 12% decrease in the weight of landings and Fluctuations, both positive and negative, in key species landed have overall decreased total landings income by 21%. Expenditure amongst the fleet has decreased by 16%, mainly due to significant decreases in labour costs, other variable costs, and Repair & maintenance costs. Regardless the reduction in costs, the negative trend in the economic performance between 2019 and 2020 is recorded. The main drivers behind this situation are reduction in terms of size of active fleet and value and weight of landings.

### Markets and Trade (including fish price)

Fishing in Malta is mainly a traditional artisanal activity which operates on a small-scale. The majority of the fish landed is sold in the local market. In recent years, the status of the fish stock may have potentially reduced, consequently leading to responses and fluctuations in the prices for some of the key species. In 2018 Malta consumed approximately 86 kg per capita, the largest domestic market for seafood per capita in the EU. EUMOFA (2020) states that the significant per capita consumption growth from 2017 to 2018 was largely driven by increased imports. It is reasonable to say that Malta's market generally offers fish all year round and efforts are made from the authorities to promote sustainable fish consumption through local publicity campaigns which aim at educating consumers, increasing consumer awareness, and diversifying national consumption patterns. EUMOFA's remark with respect to imports should also be considered an important factor, as obviously imports can hinder the local fishing operations.

Blue and red shrimp (ARA), giant red shrimp (ARS), red porgy (RPG), red scorpionfish (RSE), European Squid (SQR), Mottled Grouper (MKU) and surmullet (MUR) attained the highest prices amongst all species landed by the Maltese fishing fleet. This is due to the fact that these species are characterised by a high demand both locally and abroad. In the latter case the main export markets for giant red shrimp is in Europe while Japan is the main export market for Atlantic bluefin tuna.

### Management instruments and regulation (policy)

Currently there are three management plans in place within the 25nM FMZ. These were developed in line with Article 19 of Council Regulation 1967/2006 and include: lampara purse seine fishery, bottom otter trawler fishery and lampuki FAD fisheries. The main objectives of management plans are to ensure the sustainability of stocks through better monitoring and to ensure financial stability for fishers.

Lampara fishery targets mainly small pelagic species, including chub mackerel (*Scomber japonicus*) and round sardinella (*Sardinella aurita*). The objectives of the lampara fishery management plan are to ensure that stocks are fished at sustainable levels, ensuring financial stability for fishers and safeguarding artisanal fishing activity. Following this management plan, the lampara vessel activities are monitored by a tracking system and catch logbooks and the fishing capacity in terms of GT and dimensions of the gear is frozen. In addition, the lampara management plans established that an implementation of a 20% reduction, in line with the precautionary approach, on the current lampara capacity in terms of number of vessels is to be carried out until the end of 2015. This action was then extended up until 2017.

The bottom otter trawl fishery main targets are shared stocks including red shrimps (*Aristaeomorpha foliacea*), red mullets (*Mullus* spp.) and deep water rose shrimp (*Parapenaeus longirostris*). The status of the latter stock together with that of European hake (*Merluccius merluccius*) is monitored annually at a regional level. The statuses of both stocks are in overexploitation. This management plan target to aid in the recovery of the stocks whilst at the same time ensuring economic returns and financial stability of fishers. The plan implemented a 20% capacity reduction, together with a temporal reduction in effort of 10%, via a one month cessation (closed season), up until the end of 2017.

The lampuki fish aggregating device (FAD) fishery targets juvenile species of *Coryphaena hippurus*. Lampuki is a highly migratory species and stocks are shared between diverse Mediterranean countries. The management plan for this fishery affects Maltese fishing fleet licensed to fish for the lampuki using FADs inside and outside the 25nM FMZ. The number of fishing vessels authorised to fish in the FAD fishery are frozen at 130 vessels. Following this management plan, the activities of all these vessels are monitored by means of tracking system and catch logbook. Moreover, the management plan stated that the Department of Fisheries and Aquaculture will continue to enhance data collection and research on the stock. This policy tool is expected to be reviewed in 2018.

The multiannual management plan for the fisheries exploiting European hake and deep-water rose shrimp in the Strait of Sicily (GSA12 to 16) targets:

- Exploitation at MSY for the species in discussion by 2020;
- protection of nursery areas and essential fish habitats important for the stocks of species in discussion in the strait of Sicily;
- gradual elimination of discards, by avoiding and reducing unwanted catches and ensuring that catches are landed;
- implementation of measures to adjust fishing capacity of fleets to levels of fishing mortalities consistent with the MSY, whilst maintaining economic sustainability of fleets without overexploiting marine biological resources.

The plan establishes that up until three years; target fishing mortality rates to be achieved and maintained by 2020 and onwards, fisheries restricted areas in three areas if the Strait of Sicily, temporary cessation of fishing effort, that the contracting and co-operating non-contracting parties (CPCs) are to implement monitoring and management procedures, that CPCs have to establish designated ports in which landings of European hake and deep-water rose shrimp from the Strait of Sicily may take place and implement an observation and inspection programme to ensure compliance with the measures in the management plan. The plan also states that the CPCs are to carry out scientific monitoring, and ongoing adaptation and revision of the plan.

## Stock status

The status of some of the fish stocks in the Mediterranean are overexploited with 90% of the fish stocks being overfished.  $F$  and  $F_{MSY}$  or  $F_{0.1}$  are unavailable for most of the fish stocks for Malta. In 2021, the joint stock assessments for European hake and deep-water pink shrimp in GSAs 12-16 were updated by Maltese, Tunisian and Italian scientists, combining data collected throughout the Central Mediterranean. The stock assessments were conducted under the auspices of the MedSudMed project, and were finalised at the 2021 GFCM demersal working group. The assessments showed that hake was in overexploitation and overexploited, and the deep water rose shrimp was considered in intermediate overfishing status and relative intermediate biomass

One of the main problems of the economic performance of the Maltese national fleet is the status of fish stocks in the Mediterranean that have been declining for many years.

## TACs and quotas

The bluefin tuna fishery in Malta has been managed under an IQ system. In 2009, the transferability of quotas was allowed and the system changed from IQ to ITQ. In 2015, for the first time since the establishment of the bluefin tuna recovery plan in 2006, there was an increase in the quota, as the EU

is allowed to fish over 9 372 tonnes. The annual increase in quota of 20% over three years (2015-2017) is due to the progressive recovery of the stock, as demonstrated by scientific evidence. As a result, Malta has benefitted and obtained an increase in the TACs of bluefin tuna.

In 2019, bluefin tuna represented the fourth most landed species for Maltese fleets in terms of landings (336 tonnes in 2019), just after swordfish and common dolphinfish, and the second most important species in terms of income generated from landings (EUR 2.3 million). In 2019, bluefin tuna recorded an average first-sale price of 6.8 euro/kg in 2019, a 23% decrease from 2018. This decrease in price was the main driver towards the 15% decrease in landings income recorded from the specie, as landed weight had increased by 10% in the same period.

The established quota on swordfish has been in place since 2017. This catch limit, has impacted the landings of swordfish both in 2017 and 2018, as Malta recorded a 19% drop in 2017 since 2016, and a further 6.6% drop in 2018. Although the revenue earned from this specie dropped in 2017, it fluctuated back to pre-quota levels in 2018.

### Operational costs (external factors)

In 2020, both the small and large-scale fishing vessels in Malta experienced an overall decrease in their operating costs, by 4% and 31%, respectively over 2019. Major decreases were recorded particularly in crew costs (both paid and unpaid labour) and Repair & maintenance costs.

In 2020 the number of DaS has decreased for 18% in large-scale vessels over 2019. On the other hand, in SSCF an increase in days-at-sea was recorded (+13%) in the same period. Fishing days in the SSCF also increased by 12% though the fishing days for the LSF decreased by 21%.

The decrease in efficiency by the fleet in terms of fuel, landed weight per sea day and energy consumed per landed tonne were drivers that contributed to the negative trend in the overall economic performance of the Maltese fishing fleet in 2020 regarding 2019.

### Innovation and Development

A number of projects, co-financed by the EFF, involving upgrading of landing facilities in Gozo and designated ports in the southern regions of Malta were completed in 2016 with the aim to help fishers become more cost efficient.

A number of high standard training courses are being provided to all interested registered fishers. This investment was completed by the end of 2018 and involved courses with the aim of improving the knowledge and skills of those working in the local fishing industry, with the ultimate aim being that of increasing the overall standard of the local fishing industry. Another training course is expected to be launched in 2019.

A publicity campaign “Nesploraw Flimkien it-Teżori tal-Baħar!” was launched and completed by the end October 2018. This publicity campaign’s main aim was to communicate the importance of staying aware on the state of the local fish stocks, sustainable fish consumption, and the role of each individual in assisting conservation efforts.

A scientific study was also currently carried out to improve trawl gear selectivity so as to reduce discards of *Merluccius merluccius* and *Parapenaeus longirostris*. This study’s recommendations can assist the Maltese otter board trawling fleet to be more sustainable and economically efficient.

Such innovations and developments will support coastal communities in diversifying their economies and improve economic performance.

### Socioeconomic impact

Although the Maltese fishing fleet is benefiting from a number of young people who voluntarily help their family whilst at sea, on a seasonal basis, the Maltese fishing industry is experiencing the challenge to obtain the young generation into the profession of fishing. Fishing in Malta is mainly seasonal and as a consequence some of the full-time fishers own at least one small and one large vessel which enable them to practice off-shore fishing during the milder seasons and coastal activities during the winter months. Additionally, extra hands are sometimes recruited for bluefin tuna seines and common dolphinfish seasons.

Circa 90% of the active fishing vessels are small-scale fishers who fish more or less a quarter of the total catches. These jobs are at risk as fish stocks in the Mediterranean are depleting. Food security, livelihoods, and regional stability and security are all under threat.

Although the Maltese fisheries contribute a small percentage to Malta’s GDP, the sector and the coastal communities contribute to other industries of the blue economy, mainly tourism and catering.

## Nowcasts for 2021-22 and beyond

### Model results

Malta is expected to have a severe decrease in all the main economic indicators in the year 2022, although for 2021 and increase in gross and net profit is predicted derived from a sharp increase in the weight and value of landings. All this makes that in 2022 is projected to have negative gross and net profits, from a positive situation for both indicators in 2020 and 2021.

### Landing Obligation

Commission Delegated Regulation (EU) 2018/161 of 23 October 2017 established a de minimis exemption to the landing obligation in the small pelagic mid-water trawl and purse seines fisheries for certain small pelagic species in the Mediterranean Sea until 31 December 2020. In conjunction, Commission Delegated Regulation (EU) 2018/2036 of 18 October 2018 established a discard plan for certain demersal fisheries in the Mediterranean Sea.

### COVID-19

Although Malta did not go under strict lockdown, this pandemic has left its effect on multiple industries, including fisheries. Overall, the main impact on the sector and on fishers was that the supply chain was interrupted. This implies that export channels for species such as the silver scabbardfish was interrupted, restaurants and hotels were partially or fully closed meaning that demand dropped significantly, traditional village markets were done open, and the remaining channels to sell the catch was either through the fish market or directly to households. The drop in demand created a problem of excess supply causing prices of species to drop significantly. This in turn has created a reluctance by fishers to operate and fish for normally targeted species.

Whilst small-scale vessels which are generally operated by the owner or few individuals had the possibility to still operate large vessels which require a crew of approximately four individuals or more could not operate due to safety regulations issued by the Health Authorities. In particular those large vessels that engage foreign crew, as most of these crew members returned back to their home country.

Considering that by May, many COVID-19 related measures started to be eased out, the impact on the sector, although existing, will hopefully be recovered in the upcoming months. Especially when considering that the bluefin tuna season was not significantly impacted and in August Common dolphinfish season opened and fishers were allowed to operate normally.

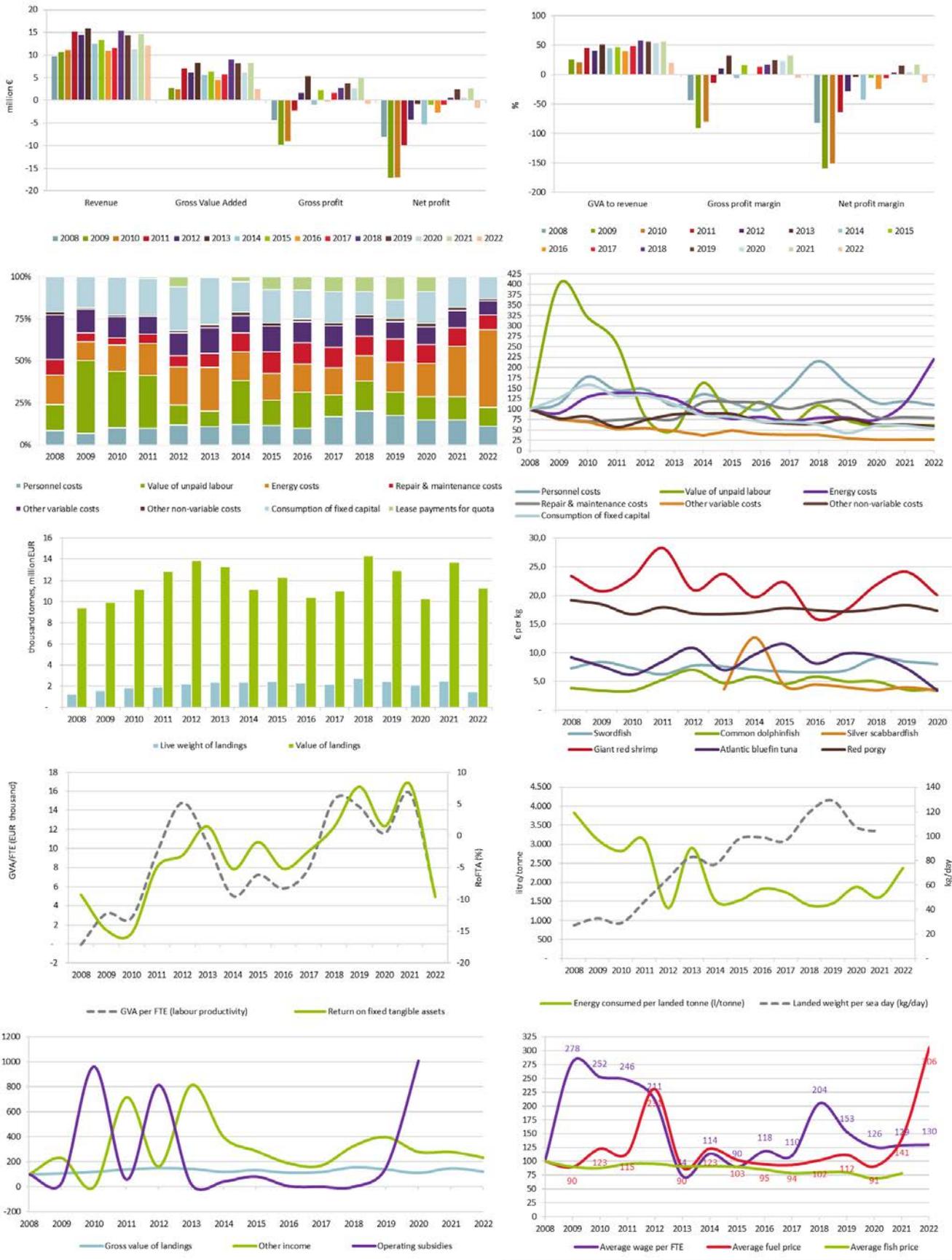
The Department of Fisheries and Aquaculture is expected to issue a COVID-19 Compensation scheme via EMFF 2014-2020 where fishers will be given a subsidy on income based on the period on which they didn't operate.

### Other

In February 2019, Malta was hit by a storm, the worst since October 1982. This storm caused considerable amount of damage to the country. The fishing and aquaculture sector were also negatively impacted by this storm. Specifically, a number of fishers had their vessel severely damaged and were left inoperable for the remainder of the year. Since then a damage compensation scheme was launched to assist the impacted fishers and assist them in restarting their fishing operation once more.

### Methodological considerations and data issues

Although no major issues were detected given that the Maltese fishing fleet is mainly composed of small-scale fisheries, it is very challenging to collect precise and complete data from the fishers. The reason being that the majority of small-scale fishery do not engage an accountant and thus they do not have professional bookkeeping. Having said this, Malta does its best to enhance the quality of the data at data collection level and also at analysis level.



**Figure 4.16 Malta: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.16 Netherlands

### Short description of the national fleet

#### Fleet capacity

In 2020, the Dutch fishing fleet consisted of 720 registered vessels. Compared to 2019 this was almost similar fleet size (724 vessels). Since 2008 the size of the fishing fleet fluctuated between 712 to 740 vessels. The mean age per vessel has slightly increased by the years from 27 years (2008) to 33 years (2020). Of all registered vessels 74% (531) was active which slightly higher (+2%) compared to last year. However, the employment decreased with 4% (to 1 893 total jobs) and -10% in FTE (1 504) between 2019-2020. The total vessel power of the fleet remained equally to a total of 245 600 kW) as total tonnage increased with 1% (to 100 000 GT) last year.

In 2020, the number of fishing enterprises totalled 561, with the vast majority (81%), owning a single vessel. Around 19% of the enterprises owned two to five fishing vessels and only a single enterprise owned more than five vessels.

In 2020 the active fleet has a comparable division (in percentages) as 2019, with 36% SSCF (191 vessels) and 64% LSF (340 vessels). The SSCF (+6%) increased where the LSF (-13%) diminished compared to the years from 2008 on. In particular, the number of pelagic freezer trawlers (TM40XX) strongly decreased through the years (-57%). In 2008 there were 14 pelagic (freezer) trawlers, in 2020 only six left among the Dutch flag. Most of them were and are operative among foreign flag, often to better utilize EU pelagic species quota owned by other Member States.

The mean length of SSCF was 8 metres, where this was 28 metres for the LSF between the period 2008 to 2020. The largest share of the LSF consists of cutters targeting Common shrimp (max. 221 kW) and cutters targeting flat fish (max. 1 468 kW). Both cutter segments fish often with beam trawl (TBB). Since last 5 years multiple new building orders were given of modern vessels often with a combination of demersal trawl and Danish/Scottish seines (DTS2440) (so called fly shoot or purse seine). Some single orders were given for conventional beam trawl (TBB40XX) with flat fish (plaice or common Sole) as target species. Due to challenges for the fisheries fleet (high fuel prices due to the Russia-Ukraine war, decreasing landing volumes, spatial planning at the North Sea and lack of sufficient crew) many demersal trawling enterprises are hesitant with investing into new vessels.

#### Fishing activity

In 2020, the Dutch fleet spent a total of 48 665 days-at-sea (DaS), an increase of 10% from 2019. These less DaS could be mainly clarified by the higher fishing effort from shrimp cutters (TBB1824). Compared with 2008-2020 the average of effort (DaS) by the Dutch fleet decreased by 4%. The number of fishing days increased (10%) to a total of 42 591 from 2019-2020. Since the increased effort in 2020, the quantity of fuel consumed was estimated around 176 million litres, an increase of 11% from 2019 and a decrease of 26% compared with the mean of time series 2008-2020. The major factors causing the overall decrease in fuel consumption over this period include:

- A decrease of overall effort (DaS and fishing days) by the fleet.
- The results of implementation of alternative or innovative fishing techniques. For instance, pulse, purse seine and twin rig techniques. For pulse technique, there was a 40-50% less fuel consumption used per vessel per day at sea (Oostenbrugge et al, 2018<sup>27</sup>) compared to the conventional beam trawl technique. It is expected that the total fuel consumption will increase in the next few years due to the ban on pulse fishing. Most of these pulse vessels will switch to the traditional beam trawl technique (with tickler chains).
- A lower average engine power per vessel. In order to save fuel costs, new or refitted vessels contains more energy saving engines and hulls. The average kW per vessels decreased with 18%, from 416 (2008) to 341 (2020).

#### Production

Compared to 2019, the total live weight of landings decreased by 4% as landed value decreased by 6% in 2020. The total live weight of fish and shellfish landed by the Dutch fleet in 2020 was 304 643

<sup>27</sup> Oostenbrugge et al., 2018. Economic aspects of pulse fisheries. *Wageningen Economic Research*, [https://www.wur.nl/upload\\_mm/b/f/8/c5e084a5-250e-4f90-8bf1-2e92edb16030\\_Economische%20aspecten%20pulsvisserij.pdf](https://www.wur.nl/upload_mm/b/f/8/c5e084a5-250e-4f90-8bf1-2e92edb16030_Economische%20aspecten%20pulsvisserij.pdf).

tonnes, with a value of EUR 333 million. The decrease in weight is caused by less landed volumes for multiple top species in 2020 compared to the previous year:

- Blue whiting (-20%) for the pelagic freezer trawlers.
- European plaice (-12%). Not clear for what reason(s) the landed volume was lower. According to ICES the biomass of plaice should be above sustainable levels.

The average weight landings per sea day for the Dutch LSF was estimated around 6.5 tonne per day at sea in 2020, a decrease of 13% compared to 2020. This drop in landings was in particular a result of the decreased caught volumes of demersal (European plaice) and pelagic species. The average LPUE for the pelagic trawler fleet (TM40XX) amounted 145 tonnes per DaS in 2020 compared to 149 tonnes per DaS (2019).

The demersal fleet targets mainly flatfish and common shrimp. In terms of economic value, the top landed flatfish species were in 2020:

1. Common sole (EUR 65 million)
2. Common shrimp (EUR 49 million)
3. European plaice (EUR 39 million)
4. Turbot (EUR 16 million)

The pelagic freezer trawler fleet (TM40XX) has landed the following pelagic species ranked as most important in terms of economic value:

1. Atlantic herring (EUR 31 million)
2. Atlantic mackerel (EUR 25 million)
3. Blue whiting (=Poutassou) (EUR 19 million)
4. Atlantic horse mackerel (EUR 12 million)

## Employment and average salaries

Around 18% of the jobs come from the SSCF, whereas the rest comes from the LSF (67% from demersal cutter fleet and 15% from the pelagic trawler fleet). If expressed in FTE, the contribution of the small coastal fleet is much lower: about 3% of the total. The trend from 2008-2015 was downward for employment mainly due to decreasing number of vessels characterized by years of economic losses or small net profits (between losses of EUR 36 million up to profits of EUR 30 million for the total fleet). In 2016 there was a kind of renewed hope by high profits which resulted into new investments (e.g. new vessels) and therefore (re)entering of crew into the fleet. From 2016 the number of pelagic freezer trawlers was decreasing which clarifies the again drop of engaged crew in the fleet. Since the year of 2020 there are increasingly concerns among vessels to have sufficient crew onboard to operate. Due to decreasing economic performances by lower landing volumes more and more fishing crew are transferring to other maritime jobs such as offshore or inland shipping.

## Economic performance results for 2020 and recent trends

### National fleet performance

The economic performance of the Dutch national fleet decreased in 2020 compared to 2016-2019. In 2020 the net economic result (profit) was still positive (EUR 33 million) with a small increase (18%) compared to 2019. In 2016 the net profit of the Dutch fleet was the highest of the last decade with EUR 97 million.

After years of economic losses (before 2014) the profits increased between 2014 and 2016. This latter was a year with relatively high landing prices and high live weight landings for the largest part of the Dutch fleet, which is demersal (mainly shrimp and flat fish). From 2017 the weight of landings decreased more and more by year.

In 2020, the total amount of income generated by the Dutch national fleet decreased with 4%. This consisted of EUR 333 million landings value and around EUR 8 million in non-fishing income. When including income from leasing fishing rights and direct income subsidies, total income amounted to EUR 351 million.

Total costs in 2020 were EUR 316 million. A decrease of 8% from 2019. In particular, labour costs (crew wages) decreased with 7% due to lower economic results. Labour and energy costs, normally the two major fishing expenses, amounted to EUR 87 and EUR 59 million, respectively in 2020.

In 2020, GVA, gross profit and net profit generated increased for the Dutch national fleet. Respectively +1%, +19% and +18% compared with the previous year. In similar order, these parameters were estimated at EUR 159 million, EUR 56 million and EUR 33 million.

For 2020, the Dutch fleet had a (depreciated) replacement value of EUR 218 million, which was 2% lower than the year before. The value of fishing rights was unknown, but it was expected to decrease. The main cause is an annually lower uptake of quota for the major species: plaice and common sole. Fishing rights and quota are transferable in the Netherlands. Selling/buying and leasing these rights are quite common and prices fluctuate substantially from year to year, depending on market availability (e.g. quota for sole or plaice available or not). Since the introduction of the pulse fishing technique (high selectivity for sole) sole prices grew substantially (average lease prices of around EUR 3.35 per kg in 2015) but dropped again in 2016 due to a higher TAC and a lower uptake in 2017-2020. Investments by the Dutch fleet in general amounted to EUR 10 million in 2020 and were 7% lower compared to one year ago.

Dutch vessels are becoming older: the average age was 33 years despite multiple new build vessels has been introduced in previous years. The improved economic performance stimulates further fleet renewal in the cutter fleet last years. New flyshoot (purse seiner), twinrig (DTS) and shrimp vessels (TBB) are built or ordered since 2016. Uncertainties like Brexit, spatial multi-use of the North Sea (offshore wind parks for instance), the landing obligation, ban for pulse fishery next to high energy costs and a shortage of qualified crew have an inhibiting effect on the speed of the fleet renewal.

### Resource productivity and efficiency indicators

The gross profit margin in 2020 was 16%, a 25% improvement of this operating efficiency of the sector compared to previous year. This percentage fluctuated although increased yearly from 2011 (gross profit margin of 6%) till 2016 (27%). From 2017 it annually decreased, mainly by lower landings value of the demersal fleet. Net profit margin was estimated at 9%, an increase (+24%) from 2019 (profit margin of 8%). The Rate of Return on Fixed Tangible Assets (RoFTA) increased (+37%) in comparison with 2019 (10%) to a total of 13%.

Labour productivity (GVA/FTE) increased between 2019 and 2020 with 13% from previous year to a total of EUR 105 820 per FTE. In 2020, fuel consumption per landed tonne increased with 15% compared to 2019 and amounted 577 litres per tonne landed in 2020.

### Small-scale coastal fleet

In 2020, the SSCF had a lower productivity relative to 2019. This fleet generated EUR 2.0 million of GVA (-23%). Similarly, a gross profit of EUR 1.3 million (-25%) and EUR 0.7 million of net profit (-53%). This decreased performance could be mainly clarified by the less gross value of landings (-21%) by the SSCF.

## Large-scale fleet

The LSF had an increased productivity compared to previous year. In 2020, the segment generated EUR 157 million of GVA (+2%), EUR 54 million of gross profit (+20%) and EUR 33 million of net profit (+23%).

## Drivers affecting the economic performance trends

There were several driving forces behind the strong decreased (relative to 2019) but still profitable economic performance in 2020 by the Dutch fleet. Main reason for this decreased economic performance by the Dutch fleet were lower landed weight (-4%) and landed value (-6%). Similar to other MS, the COVID-19 outbreak hit the Dutch fisheries fleet as well. In particular the temporarily closures of HoReCa during lockdowns in Europe resulted into markets shocks as the demand for luxury fish products (e.g. sole, turbot, brill and seabass) ceased.

Despite the market shock by COVID-19 outbreak, the average fuel price (0.34 euro/litre) decreased compared to 2019 (0.47 euro/litre). In 2012 fuel prices were at a much higher level (0.64 euro/litre). With regarding to energy consumption and fuel prices there are concerns by the Dutch fishing fleet about further decreasing performances when all exemptions for pulse fishing technique are no longer valid (2020/2021). This innovative fishing technique is known by its fuel efficiency with 40-50% less fuel consumption compared to the conventional beam trawling technique. Pulse fishing technique was available under scientific observation via exemptions. The Dutch demersal fishing fleet is dominated by beam trawlers and demersal trawlers. As trawling is typically fuel intensive, fluctuations in fuel consumption and fuel prices are therefore, key drivers of the fleet's profitability.

## Markets and Trade (including first sale prices)

The main challenge for the Dutch fisheries in 2017-2020 was to meet the demanded raw materials (in volume) from market. Due to decreasing landed weight for flatfish species after 2016, it was difficult for the processing and trade industry to maintain their customers satisfied if they were not able to deliver the demanded volumes during seasons. European plaice generally competes with other (non-) European flatfish species e.g. Pacific plaice. European plaice products also compete with whitefish species on the similar international market in and outside Europe. An increased dollar exchange rate could help this flatfish to become more competitive, where comparable non-European whitefish species becomes less competitive due to relatively higher import prices. On the other hand, the total availability of (non-) European flatfish species and substitutes for these species dropped in previous years. Due to pending contracts from last year high prices are paid to fulfil the contracted volumes. The plaice processing companies were willing to pay these higher prices to a certain extend for this scarcer raw material in order to perform the supply contracts with their customers (wholesalers and retailers etc.).

More and more originally plaice processors are diversifying to other species, like salmon often imported from aquaculture in Norway and Scotland. Multiple Dutch processors were forced to introduce new salmon processing machinery (e.g. filleting and packaging) in order to remain profitable and to optimize utilisation of production and labour capacity. However, due to the growing international market demand of salmon this species has become more important in sales value and production volume than plaice for many Dutch fish processors. However, processing and trade of North Sea fish species still remains the core business for many Dutch processing and wholesale companies.

Most flatfish caught by the Dutch fishing sector is consumed in southern Europe in countries like Italy, Spain and France. In northern Europe, Germany is an important country for the consumption of flat fish fillets and Belgium for the peeled common shrimp (*Crangon crangon*).

In 2020 the first sales prices for common shrimp increased slightly relatively to previous year. In 2019 there was a surplus of landed shrimps (from 2018) that led to large volumes in the cold stores of Dutch companies resulted into lower first sales prices for the fisheries. In 2020 there were in particular issues with peeling capacity by COVID-19 1.5 metre distance in the Moroccan peeling centres. This bottleneck in the supply chain affected the upstream side of the chain as for reduced effort by the shrimps fisheries.

For the main commercial species there were lower landings prices expected due to closed restaurants in order to avoid expansion of the COVID-19. Common sole prices will be decreased (-11%) from 11.13 euro/kilo (2019) to 9.91 euro/kilo. For Plaice the prices will drop (-13%) from EUR 2.33/kilo (2019) to 2.02 euro/kilo (2020). With regarding to Turbot a decreased price (-22%) is expected as in 2019 the price was EUR 9.89 euro/kilo /kilo and in 2020 it is expected to be EUR 7.68 euro/kilo /kilo. For Common shrimp (*Crangon crangon*) a price increase (+27%) will be expected from EUR 2.60/kilo

to EUR 3.39/kilo from 2019-2020. Main reason for this expected price increase could be partly clarified by the volume scarcity to EU retail as peeling capacity in Morocco was limited by the 1.5 metres distance between peeling employees in the companies.

The fish processing and trade companies were negatively impacted by COVID-19 pandemic as the food service and restaurants cancelled many orders by the lockdowns in EU. Despite an increase demand for fish products (mainly frozen or canned) by the EU retail, this was not compensating the lacking product orders by the out-of-home market. Another determinant was international competition for sea container freight. Prices for this transport were sometimes five times higher due to scarcity. Another foreseen market development that could have a negative impact on fish prices is the surplus of frozen stored fish. Due to the expected drop in demand during the pandemic many fish processing and trade companies are freezing their high priced fish. When all these fish are sold at the time of re-opened restaurants (after lockdowns) a surplus is expected that will result into lower prices for the fishing industry. Also frozen fish are perishable after a certain time of frozen storage. As quality deterioration is expected after many months of lockdowns, the market will value this frozen fish with lower prices or even not accept these fish from food safety or taste perception.

### **Status of key stocks, changes in TACs and quotas**

Most of the imported stocks fished by the Dutch fleet such as sole and plaice in the North Sea are fished at sustainable levels, below or at MSY. Some other stocks (like cod) are still vulnerable in terms of a biomass below sustainable yields. These species (like cod) are caught as bycatch or a target for only a couple of vessels.

The Dutch quota for sole which is important as a valuable target species for the Dutch fleet, increased strongly (+38%) (including top up for the purpose of the landing obligation) to 13 601 tonnes from 2019-2020. ICES suggested an increased catch volume based on scientific measurements due to further improvement of the fish biomass stock for sole. The Dutch quota for European plaice from ICES area 4, union waters of areas 2a and 3 (excluding Skagerrak and Kattegat) decreased with 3% (including top up for the purpose of the landing obligation), on 37 107 tonnes.

The Netherlands conducts quota swaps with other Member States. This, together with the transferable quota from previous year, allowed for a sufficient amount of quota for important fish species like sole, plaice and Norwegian lobster (nephrops) in 2020. In total quota (after quota swaps) for sole increased in 2020 by 32%, amounting to a total of 13 982 tonnes. For European plaice this amounted to a total of 44 119 tonnes (-8%).

In 2020, lease prices for sole were on average 0.25 euro/kg. Sole and plaice quota were not fully utilised in 2020. This fact and the EU ban of pulse fishing technique exemptions brought back the lease price for sole the last 5 years. In 2015 the lease quota prices for sole were more than 3 euro/kg.

### **Operating costs (external factors)**

Next to important internal factors (wages and salaries, repair and maintenance, depreciation, fishing gear, quota etc.) there are multiple external factors for the operating costs. A regular impactful factor is global fuel prices (23% of total costs in 2019). Another relevant external factor for the operating cost is steel prices, in particular in case of renovation or newly built vessels. Most of the Dutch fleet consist of vessels with hulls older than 30 years. These vessels are vulnerable for necessarily repairment or renewing costs for broken engine or replacing of the entire vessel by new to build one.

Quota prices are another external factor which could hardly be influenced by an individual company in a market with many actors. The last 5 years quota lease prices have decreased for many target species (e.g. sole and plaice), however in other times it was especially for starting fishing companies with insufficient quota difficult to lease or purchase quota by high market prices.

### **Management instruments**

The Dutch fleet is managed mainly through ITQs for the most important species, together with a range of input controls.

In the context of the recovery of cod stocks, a number of effort measures (including real time closures) were implemented depending on the fishing gear in the North Sea, the Irish Sea, Skagerrak and west of Scotland. Many additional yearly restrictions exist, depending on the fleet segment, the species and area. In 2015, the North Sea cod management plan was discontinued and limits on days-at-sea in the North Sea stopped.

Due to Natura 2000, demersal and pelagic trawl fisheries are facing many area closures. Third countries such as Norway and United Kingdom (UK) could unilateral decide to implement certain

restrictions for their waters. For instance, Norway and the UK are planning closed areas for beam bottom trawling as indicated marine protected areas (MPA). Besides that, other activities in the North Sea such as windmill parks claim more and more space. As a result, fisheries are forced to change their fishing areas or even techniques.

The EU Green Deal is in short term another challenge that faces the fisheries fleet. In this EU plan a closure for fishing activity to 30% of EU waters is planned, in order to safeguard the biodiversity of these envisaged marine protected area. This ambition is valid for the entire EU fisheries fleet. Among the Biodiversity Strategy plan there is legislation named Fit-for-55 which means EU shipping industry (including fisheries) has to reduce their emission with 55% relatively to 1990.

Specifically for the Dutch coastal fleet (e.g. shrimp and mussel cutters) there is a more strict nitrogen emission regulation in place. The fisheries vessels operate in Natura 2000 waters where a nature protection permit is required. These permits are only (bi)annually obtained if nitrogen emissions are not exceeding the minimum level. In 2020, the current permits were still valid but for next years it is expected that the emission levels will be exceeded by the vessels their fuel usage. If no solutions are found it could result into no extension of the nature protection permits which means no allowance to fish in the Dutch Natura 2000 waters.

## Landing Obligation

In the Netherlands a *de minimis* exemption was set for multiple quota species between 2016 and 2020 in the North Sea. For instance, for species as plaice, common sole, Norwegian lobster (nephrops), turbot, ray and common shrimps.

Different projects, partly funded by the EMFF, are started in the Netherlands for finding solutions for a workable landing obligation (LO). The projects mainly focus on increasing survivability of quoted unwanted fish species and improving selectivity of nets. By increasing survivability species like sole and turbot could be excluded from the LO. Improving selectivity will reduce the amount of unwanted bycatch. Especially in Norwegian lobster (nephrops) fisheries net adjustments improved selectivity. The developed SEPNEP, a net with two cod ends that separate the nephrops from the other fish, reduces unwanted bycatch up to 65% (unwanted plaice and dab by -69% and -78% respectively) without losing (too much) marketable fish.

Another project started to monitor discards, named Fully Documentary Fisheries. Around 5-10 fisheries vessels have cameras on board to monitor the enforcement of the LO by the European fleet.

Dutch fishers fear that the discard ban will not be workable. Beside of the extra costs and the need of additional crew, the most important concern is related to choke species<sup>28</sup>, i.e. losing catches of species where quota are still available. Discards are highly variable depending on the fishery in terms of quantity and composition. It is expected that a quota uplift may not be sufficient in some fisheries to prevent a "choke". In such a situation, the fishing activities are halted regardless of the available quota for other species. Particularly in a mixed fishery where the stocks and quotas of the target species are high, this could be an issue as many species are caught at the same time and multiple choke species may occur. Rays, turbot and brill are potential choke species candidates in mixed demersal fisheries.

## Innovation and development (role of the EMFF)

For 2021 the new programme EMFAF will start as the successor of EMFF. In 2020 EMFF is utilized as support scheme for Dutch demersal fisheries due to the COVID-19 outbreak. The fishery sector has been particularly hard hit by the market disruption generated by a significant drop in demand. The closure of sales venues, markets, outlets and distribution channels has seen prices and volumes drop substantially. The drop in demand and prices combined with the vulnerability and complexity of the supply chain (perishable products, important need of workforce) made the operations of fishing fleets and seafood production loss-making. Consequently, fishers are forced to stay in port. In 2020, a temporary aid scheme<sup>29</sup> is used from the EMFF by Dutch demersal fisheries to mitigate the impact of the COVID-19 outbreak in the fishery, by financially compensate fisheries for temporarily staying in harbour.

With regarding to innovation, around 80 commercial vessels have used using pulse technique via the obtained exemptions in three tranches since the beginning of last decade. By using the pulse technique fuel consumption could be reduced up to 40-50%. Most of these vessels target flatfish (in particular,

<sup>28</sup> A choke species is a species for which available quota is insufficient to cover catches.

<sup>29</sup> Regulation (EU) No 1379/2013 and Regulation (EU) No 508/2014.

sole). A few, targeted shrimps. The European Parliament voted against the pulse fishing technique in European waters since 16 April 2019. This means that the legal exemptions will be revoked. In June and by the end of December 2019 exemptions that were approved from 2014 for a 5 year period will not be prolonged. The other exemptions for an infinite period will be revoked from July 2021 when there is a total ban on pulse fisheries in the EU. Especially the Dutch fleet has a large pulse fishing fleet. In 2019 almost 30% of the active cutters applies this technique. The topic of pulse fishing is highly controversial at the moment, due to discussion about the ecological effect. In the beginning of 2020, the research program about this ecological effect of pulse fishing finished. ICES advised based on the latest scientific research that the change from conventional beam trawling to pulse trawling when exploiting the total allowable catch of North Sea sole contributes to reducing the ecosystem/environmental impacts of the sole fishery<sup>30</sup>. Single Dutch fishers are testing alternative fishing techniques in case the pulse fisheries ban will be maintained for the nearby future. An alternative technique which currently is test, is the called water spray technique. With limited water sprays to bottom of the seabed, flatfish is stimulated to swim upwards into the fishing net. This technique needs more scientific validation in order to evaluate the ecological impact and economic feasibility.

Another development is new types of vessels that have lower fuel usage. Within the innovation programme 'Master plan sustainable fisheries' (in Dutch MDV) multiple vessels were build<sup>31</sup>. Subsequently, several French fishers have ordered similar Dutch designed vessels as well.

New projects focus more on the fisheries' selectivity approaching landing obligation and innovative fishing gear (less energy consumption). The Dutch fisheries and scientific research are exploring opportunities for zero emission fisheries vessels. However, this will be a long-term innovation ambition as many technical and economic hurdles need to be overcome before it is marketable.

## Nowcasts for 2021-22 and beyond

### Model results

For 2021 the expectation is that the economic performance will decrease with a net profit estimated at EUR 28 million. This is a forecasted decrease of 50% from 2020 (net profit: EUR 6.5 million). Higher fuel prices from previous year (2020) are expected to determine the forecasted lower economic performance in 2021. The nowcast predicts an even higher decrease of -354% in gross profit in 2022 compared to 2020, which in fact will make the fleet to move to an overall loss position in gross but also in net terms.

### Expected TACs and quotas 2021 and 2022

Total initial available quota (based on TACs) for the Dutch fleet are 237 000 tonnes for the most important demersal and pelagic species cumulative in 2021. This is a decrease (-8%) from 2020. For many species, quota is managed through ITQs. For following commercial target species for the Dutch fleet there were developments in TACs from 2020-2021:

- Common sole (+10%) to a total of 14 997 tonnes.
- Plaice (-3%) to a total of 36 136 tonnes.
- Herring (-9%) to a total of 67 977 tonnes.
- Mackerel (-21%) to a total of 28 344 tonnes.

For 2022 it is expected that negotiations between EU and the United Kingdom will give a delay to determine the final TACs. The United Kingdom will require a large share for multiple commercial fish species by a transfer from the EU in accordance to the Brexit deal. In return for quota transfer there is allowance to maintain access to British waters by the EU fishing fleet. This will complicate not only the determination of TACs but also the swapping of quota during the year between Member States, Norway and United Kingdom. For the first three months of 2022 there is 25% of the quota in 2021 agreed.

Following preliminary TACs are agreed for the Dutch fleet from 2021-2022 based on the nowcast:

- Common sole (unknown as many other species).
- Plaice (-15%).
- Herring (+20%).

<sup>30</sup> ICES Advice 2020 – sr.2020.03 – <https://doi.org/10.17895/ices.advice.6020>.

<sup>31</sup> Veenstra F. (2017) Multicriteria Fishing Vessel Design Methodology. J Fish Aqua Dev: JFAD- 127. DOI:10.29011/JFAD-127/100027.

- Mackerel (-7%).

## Outlook

There are multiple main drivers that could impact the performances of the Dutch fisheries in the nearby future.

Firstly, more and more areas of the North Sea are closed or to be closed because of marine nature protection or due to offshore wind farms. Most of these closed areas do contain important fishing spots for Dutch vessels. This will limit their operations to a certain extent and therefore likely their performance (e.g. landings). The Dutch government is aiming for a multi-stakeholder agreement about the future spatial planning for the Dutch waters of the North Sea. This so called 'North Sea Agreement' is in a preliminary phase in order to be signed by all users of the North Sea like green energy (offshore wind parks) and oil companies, nature and environmental protection (including animal like bird protection) organizations, marine navy (defence), Merchant navy and fisheries. In 2020 the majority of the POs of Dutch fisheries was not willing to sign the agreement due to lacking future perspective (e.g. space to fish at sea) according to these fishers. It is expected that the North Sea Agreement with establishing spatial plans will continue with or without the approval of the Dutch fisheries.

Secondly, due to multiple *de minimis* exemptions in certain Member States including the Netherlands, the impact of the LO (lading obligation) on social economic performance of the Dutch fleet is still limited. There are several studies conducted to calculate the impact of the LO when there are no exemptions for quota species. Without adaptations the extra costs for demersal trawlers targeting common sole and Nephrops will range between EUR 6 and EUR 28 million per year<sup>3233</sup>.

Another important factor that will determine the performance of the Dutch fleet is the outcome of the negotiation after the current Brexit deal (until 2025). In general, up to 60% of the weight in landings by demersal trawlers and pelagic freezer trawlers (TM40XX) are caught in British waters<sup>34</sup>. The impact of Brexit is high for the Dutch fisheries and entire fish industry.

Fourthly, fuel prices will be essential for the economic performance of in particular beam trawling vessels. Since the EU ban of pulse technique many demersal trawlers had to rely on the conventional beam trawling technique. The pulse technique reduced 30-50% fuel consumption compared to the beam trawling technique.

## Methodological considerations and data issues

Most of the segments in the Dutch fishing fleet were well covered. In some of the smaller segments (DRB 0-10 m, DRB 24-40 m, DTS 0-10 m and TBB 12-18 m) variation in activity levels was high resulting in high uncertainty in the economic indicators estimates and large fluctuations from year to year. Moreover, the smaller fleet segments are clusters of vessels using different fishing techniques:

- Drift and/or fixed netters 12-18m include drift and/or fixed netters 12-18m and vessels using pots and/or traps 12-18m;
- Drift and/or fixed netters 18-24m include drift and/or fixed netters 18-24m, vessels using pots and/or traps 18-24m and vessel using other active gears 18-24m;
- Dredgers 24-40m include drift and/or fixed netters 24-40m, dredgers 24-40m and dredgers 40m or larger;
- Beam trawlers 0-10m include demersal trawlers and/or demersal seiners 10-12m, purse seiners 0-10m, beam trawlers 0-10m, beam trawlers 10-12m, pelagic trawlers 0-10m and pelagic trawlers 10-12m;
- Beam trawlers 12-18m include demersal trawlers and/or demersal seiners 12-18m, beam trawlers 12-18m and pelagic trawlers 12-18m.

Because of low response rates for the data collection in the segments above in 2016, clusters were combined to estimate the economic parameters: Demersal trawlers and/or demersal seiners 0-< 10 m, Beam trawlers 0-< 10 m and Beam trawlers 12-< 18 m were combined and Dredgers 24-< 40 m and

<sup>32</sup> Buisman et al., 2013. Economic effects of Landing Obligation for Dutch fisheries. LEI Wageningen UR. <https://edepot.wur.nl/283011>.

<sup>33</sup> Exploring economic impact Landing Obligation for Dutch cutter fisheries, 2015. <https://www.vissersbond.nl/wp-content/uploads/2014/04/Eindrapportage-Flynth-LEI-Verkenning-economische-impact-aanlandplicht-op-de-Nederlandse-kottervloot.pdf>.

<sup>34</sup> Turenhout et al., 2017. Brexit and the Dutch Fishing industry. Eurochoices 16 (2): p.24-25: <https://onlinelibrary.wiley.com/doi/full/10.1111/1746-692X.12159>.

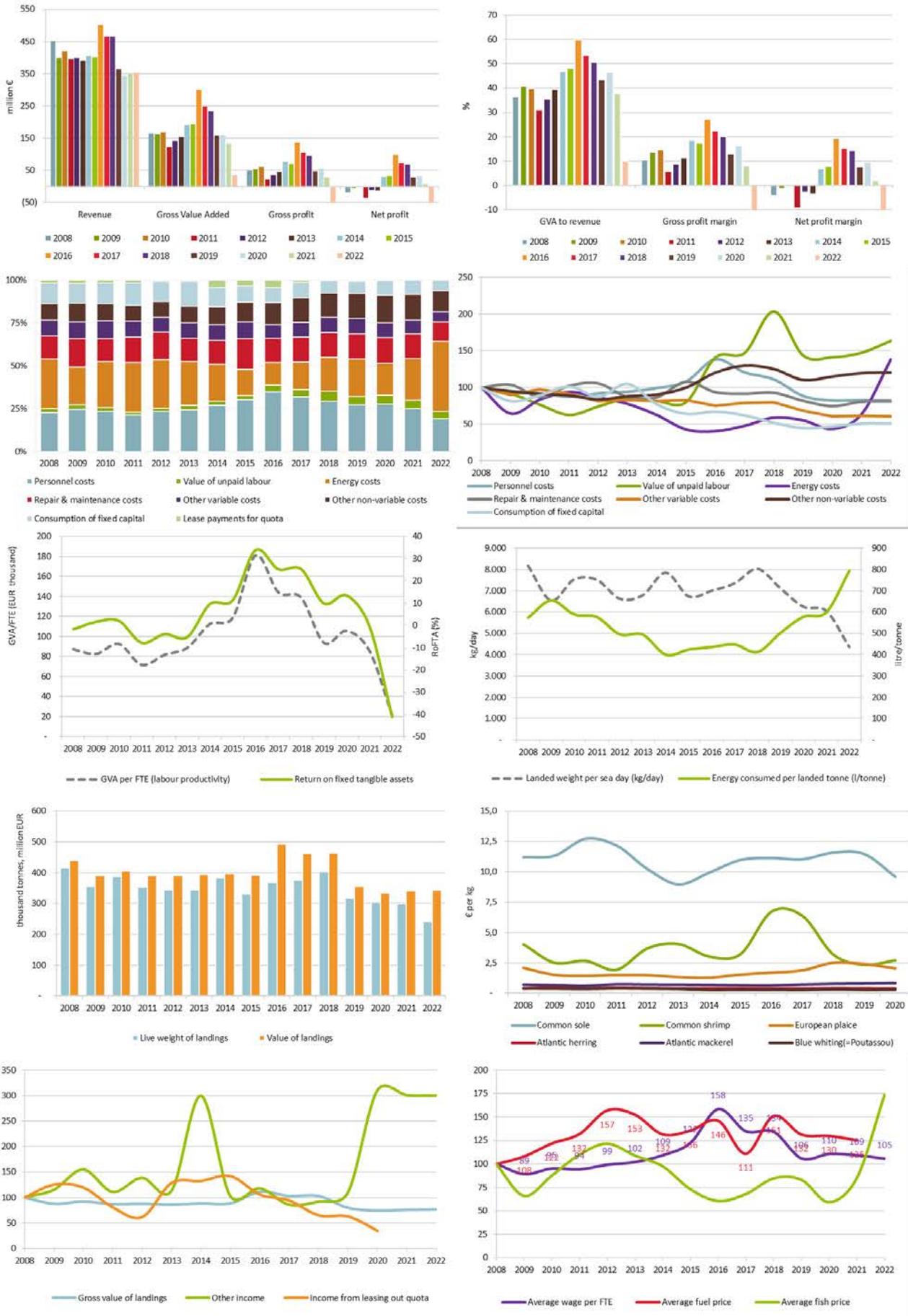
Drift and/or fixed netters 12- < 18 m were combined. Therefore, these figures should be viewed as indicative for the size of the sector rather than describing the exact trends. Currently, work is being carried out to improve the estimation procedures.

### ***Prices of pelagic fish***

The prices of pelagic fish used to calculate the fishing revenue of the pelagic trawler fleet are not actual prices. They are internal prices used within the fishing companies to calculate the wage of the fishing crew. The integrated companies cover the whole production chain from fishing to the consumer and there are no real ex-vessel prices available. Those prices probably underestimate the value of landings of pelagic fish.

### ***Renovation costs of pelagic trawler(s) in 2015***

In 2015 renovation costs for pelagic trawler(s) has been administered as investment (in 2021) instead of costs. Therefore, this modification has reduced the total costs with EUR 12 million in 2015. The net profit of the pelagic fleet segment (TM40XX) changed therefore from -EUR 24 million (loss given) to -EUR 12 million (less loss given) in 2015.



**Figure 4.17 Netherlands: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.17 Poland

### Short description of the national fleet

#### Fleet capacity

In 2020 the number of Polish fishing vessels remained almost unchanged - 831 (830 in 2019), engine power and capacity did not change as well. The number of vessels in 2020 compared to total time series (2008-2019) did not change as well however engine power and capacity decreased by 6% and 8%. The decrease was caused by changes in the number of distant fleet vessels. The number of inactive vessels decreased to 22 from 41 in 2019, which constitutes 2.6% of the total fleet. The majority of inactive vessels belonged to two smallest length classes (<10m, and 10-12m).

#### Fleet structure

The structure of the Polish fleet did not change remarkably in 2020. The LSF fleet (length >12m) consisted of 164 vessels (-1% compared to 2019), whereas 645 vessels (4% increase) were accounted for the SSCF. Relative changes compared to total time series for these two groups of vessels were -16% and 12%. The reduction in LSF was caused by the decommissioning program addressed for these vessels in the previous years (has not been in place since 2012).

#### Employment

Employment decreased in 2020 by 3% or 8% compared to total time series in terms of total number of people employed or decreased by 5% and 13%, respectively for FTE.

#### Effort

Effort estimated in days-at-sea or fishing days in 2020 was significantly lower (-38%) compared to 2019 and compared to the period 2008-2019 (-36%) which can be linked with the cod fishery crisis. The PG0010, DTS1218 and DTS1824 segments were the most affected by the cod stock collapse, their effort decreased by -46%, -47% and -82%, respectively.

#### Total Production

Production in 2020 decreased compared to 2019, with a weight of landings of 191 862 tonnes (203 146 tonnes in 2019). European sprat remained the most important in terms of volume landed, followed by Atlantic herring and European flounder. Landings of these species decreased -19%, -8% and -12% respectively. Landed value of Baltic fish decreased from EUR 45.5 million in 2019 to EUR 34.7 million in 2020 (-24%). Baltic cod collapse was the main effect in terms of the reduction of the value of fisheries production.

### Economic results for 2020 and recent trends

#### National fleet performance

Economic performance of the fleet had gradually deteriorated since 2012 to 2014, improved in 2015 remained good in 2016 and worsened afterwards. This was mainly caused by the mentioned deteriorating condition of Baltic cod stocks. In the mid of 2019, the cod fishery was closed and in 2020 the cod quota was significantly lowered to a small amount available for bycatches only.

Revenue, estimated at EUR 35.9 million in 2020 (EUR 45.9 million in 2019), decreased by 23% and compared the period 2008-2019 by 32%.

Total costs amounted to EUR 37,5 million, a 9% decrease compared to 2019 but not yet exceeding total revenue and generating a gross profit of EUR 0,8 million (-88% compared to 2019). Energy costs (-27%) and fixed costs (-28%) reductions contributed the most to the decrease of operating costs.

GVA in 2019 were estimated at EUR 19.2 million (compared to EUR 25.2 million in 2019), a decrease of 24%. According to the estimation for 2021, this indicator will continue deteriorating trend as a consequence of landings value decrease.

In 2020 investments decreased by 52% and amounted to EUR 1.0 million (EUR 2.1 million in 2019). This can be explained by a difficult economic situation of the fishing sector in Poland (cod crisis and in less extend negative COVID-19 impact) as well as exhausted EFF/EMFF money.

Generally, the cost structure has remained relatively constant over the years. In 2020 however, fuel costs contribution (14%) to the total costs decreased by 4 percentage points. Similarly to 2019 fuel costs followed the decrease in fishing effort of the fleet segments belonging to LSF. Finally, personnel costs decreased by only 3% and contributed to as much as 30% in the costs structure.

## Resource productivity and efficiency indicators

The gross and net profit margin slumped in 2020 compared to 2008-2018 and compared to 2019 by almost 90%.

GVA/revenue indicator slightly deteriorated in 2020 (by 1 percentage point) and was 4 percentage points higher than the total time series average. GVA per FTE indicator deteriorated by 19% and ROI was negative (-2%).

## Performance results of selected fleet segments

### Pelagic trawlers (24-40)

Pelagic trawlers 24-40 metres length is the most important segment in terms of economic output (landings volume and value or GVA). The vessels belonging to the segment operate exclusively in the Baltic Sea. In 2020, 43 vessels make up this segment (no change compared to 2019). Employment (FTE) in the segment decreased compared to 2019 by 13% (+4% in 2019). In 2019, the segment contribution to the total value and volume of landings generated by the Polish Baltic fishing fleet amounted to 51% (+6%) and 60% (-4%) respectively. The segment targets pelagic species, such as sprat and herring.

In 2020, the total value of landings of the segment was EUR 17.8 million (12% less compared to 2019). The decrease was caused by lower sprat and herring catches (resulted from reduced TACs).

Available sprat quota in 2020 to the segment was 26% smaller than in 2019 and available herring quota was 17% lower than in 2019. Fishing opportunities deteriorated further in 2021 following cuts in the TAC for Baltic herring. Available for 2440 TM segment herring quota was again 36% smaller in 2021 compared to 2020. Sprat quota was slightly higher (+3%).

The economic performance of the segment, despite decreased landings value remained satisfying. This can be explained by good production efficiency. Regardless productivity and efficiency indicators deteriorated profitability of the segment remained "high". In 2020 energy and labour costs decreased by 5% and 3%, respectively. The reason behind this was the lower effort deployed in 2020 compared to 2019 (number of sea days decreased by 13%).

In 2020 this fleet segment was profitable, with a reported gross profit of EUR 6.1 million compared to EUR 7.2 million in 2019 (-16%) and produced a net profit of EUR 5.5 million (14% decrease compared to 2019). Net profit margin was positive (30.8%) and did not change significantly compared to 2019 (35.5%).

### Passive gears <10 m

The passive gears <10 m segment constituted of 525 in 2020 vessels (in 2019, 517 fishing units) operating in the Baltic Sea including lagoon brackish waters. The segment is the most important in Poland from the social point of view. In 2020 there was 1 035 FTE people employed on board vessels belonged to the segment (48% of the total employment).

The fleet targets a variety of saltwater species: Atlantic herring, European flounder and a variety of freshwater species, such as freshwater bream, pike perch, perch and pike. In 2020 the total volume of landings were 2 900 tonnes (-58% compared to 2019) worth EUR 3.7 million (56% decrease compared to 2019). Slump in herring catches affected the most the production output. Herring landings decreased in 2020 by 62% in volume or 53% in value. The second most important species – freshwater bream volume of catches decreased 65% or 70% in terms of value.

The gross result of the segment was negative and deteriorated in 2020 (-EUR 4.5 million) compared to EUR - 1.5 million in 2019. Net profit margin was as well highly negative -104% compared to -19% in 2019. The profitability indicator of the segment was at "weak" level. Gross value added generated by the segment was 65% lower than in 2019.

The segment remained being affected by the poor stock status of the Eastern Baltic cod which used to be the most important species in terms of landings value before 2012. In 2020 cod landings amounted to only 21 tonnes compared to 255 tonnes in 2019.

Despite of the revenues collapse total costs of the segment fell only by 14%, energy costs (-35%) and other variable costs (-43%) were two item costs that contributed to the decrease the most. Finally, costs decreased by only 4% which can be explained by enormous subsidies paid to the segment in 2020.

In 2020 the PG0010 received EUR 19.5 million operating subsidies - over twice the amount paid in 2019 (EUR 8.1 million), except for compensation for a temporary cessation of fishing activities in 2020 it was mostly financial aid aimed at mitigating of negative effect of COVID-19 outbreak.

## Drivers affecting the economic performance trends

Bad stock status of Eastern cod (poor recruitment) caused that the European Commission decided to close the fishery at the end of July 2019 and prolonged the constraints to 2020 and 2021. It negatively influenced the performance of the demersal fleet segments targeting cod (i.e. DTS, DFN, HOK as well as PG1012). Additionally, the SSCF is affected by the limited abundance of this stock in coastal waters which is commonly attributed to environmental changes in the Baltic Sea.

Another driver that negatively affected the economic performance of the Polish fleet was the Central Baltic herring and sprat quota cut (-10% and -22%, respectively) . This resulted in 7% lower herring and -19% sprat landings compared to 2019.

In 2020 the industry received EUR 34.7 million (EUR 12.4 million in 2019) of operating subsidies paid for mitigating negative COVID-19 effects or for temporary cessation of fishing activity. This might contributed again to decreased fishing effort observed for the SSCF vessels.

## Markets and Trade

Fish and fish products consumption in Poland continued in 2020 an upward trend and amounted to 13.33 kg per capita (live weight), a 1.6% increase compared to 2019. Atlantic herring – 2.73 kg (2.64 kg) following by Alaska Pollock – 2.04 kg (2.03 kg) and Atlantic mackerel – 1.16 (1.33 kg) were three of the most important consumed species (2019 figures in brackets).

The Polish fish processing production value scored a record value of EUR 3.0 billion in 2020. The production volume amounted to 615 800 tonnes (+4.6% compared to 2019). Canned and marinated products kept dominated position in the production (30%). Both product categories are based on species caught by Polish fleet (sprat and herring) as well as imported raw material (herring and mackerel).

The domestic market is strongly dependant on imported products. In 2020 import of fish products amounted to 968 000 tonnes – live weight (936 000 tonnes in 2019) compared to about 100 000 tonnes of national catches placed on domestic market. Atlantic salmon (imported mostly from Norway) dominated in the species structure of imported fish followed by the Atlantic herring, Atlantic mackerel and Alaska Pollock.

Retail prices of fish and fish products index in 2020 was 104.2 (102.3 in 2019) year to year compared to 103.4 of the index of consumption goods and services. The producer price index for fish and fish products was 101.1 in 2020 compared to 102.1 in 2019.

## Management instruments

The Polish Baltic fleet is managed mainly through TACs and subsequently - individual quotas imposed for all TAC species (sprat, herring, cod, and salmon) except for plaice. In 2020 the quota allocation system did change in case of cod in order to adjust it to the Baltic TAC changes. The individual quota ceilings were established for vessel length groups limiting maximum catches to only 1.0-1.2 tonnes per vessel. The coefficients of allocation of Central Baltic herring were also changed in favour of bigger vessels (exceeding 20 metre length) to avoid choke species issue.

Cod, sprat and Central Baltic herring quotas were allocated to users based on the vessel size (there were six vessel's length groups) or based on historical rights (in case of salmon and Western Baltic herring). Small-scale fisheries (vessels under 8 metres length or 12 metre in sprat fisheries) were exempted from the quota system.

LO in the Baltic Sea came into force since 1 January 2015 for salmon, sprat, cod, and herring and, since 1 January 2017, also for plaice. The regulation had neutral impact on the industry in 2020. Fish below MLS/MCRS are directed mostly for reduction to fishmeal since (they are usually handled with no special care (no chilling on board)). No special solutions related to the LO were implemented in Poland.

A multiannual plan for the stocks of cod, herring and sprat in the Baltic Sea and the fisheries exploiting those stocks was adopted by European Parliament and the council on 6 July 2016. According to this

regulation, a target fishing mortality for the stocks concerned shall be achieved as soon as possible and, on a progressive, incremental basis, by 2020. The regulation set up mortality ranges for six Baltic fish stocks while left undefined for two (Eastern Baltic cod and Bothnian Bay herring).

Taking into account the critical condition of the two cod stocks, the Commission announced emergency measures for eastern Baltic cod on 23 July, 2019. Emergency measures banned, with immediate effect, commercial fishing for cod in most of the Baltic Sea until 31 December 2019. The decision affected all fishing vessels and applied in all areas of the Baltic Sea where the largest part of the stock is present (i.e. subdivisions 24-26), except for some specific targeted derogations. The measures were extended to 2020. In 2020 fishing for Atlantic cod in eastern Baltic (ICES 25-32) were limited to bycatches only and strictly prohibited during the summer spawning time (from May to August)<sup>35</sup>.

In 2020 severe restriction was imposed on Atlantic salmon and sea trout as a response to the high level of misreporting in salmon catches (32% according to ICES). Fishing for sea trout beyond four nautical miles measured from the baselines in ICES subdivisions 22-32 was prohibited for fishing vessels from 1 January to 31 December 2020. When fishing for salmon in those waters, by-catches of sea trout shall not exceed 3% of the total catch of salmon and sea trout at any moment on board or landed after each fishing trip.

## TACs and quotas

The 2020 quotas available for Poland on the Baltic Sea (after swaps) amounted to 109 370 tonnes (-20% compared to 2019). Available Atlantic herring quotas decreased by 9%, Atlantic cod by 88%, Atlantic salmon by 35% and sprat by 17% (changes include swaps). The 2021 TAC allocated to Poland for Baltic species decreased again by 10% compared to 2020. Reductions affected: Central Baltic herring – 36%, Western Baltic cod – 60% salmon – 35% while Western Baltic cod, Atlantic salmon TACs went up and plaice did not change. TAC for Baltic species for 2022 is 11% lower compared to 2021. The highest reduction affected Western Baltic cod (-88%) following by Western and Central Baltic herring (-50% and – 45%). Sprat quota was set 13% higher compared 2021.

## Performance by fishing activity

### Small-scale coastal fleet

645 vessels belonged to the SSCF in 2020 - 4% more than in 2019 or 12% increase compared to total time series. The small scale fleet operates exclusively in the Baltic Sea and two adjacent brackish water lagoons, targeting mainly flounder (21%), herring (20%) and various freshwater species like freshwater bream (16%), roach (12%), perch (11%) and others. In 2020 the fleet landings decreased by 48% compared to 2019 or 51% compared to 2008-2019 period. Value of landings shrunk to EUR 5.5 million (-51%). SSCF is affected by Baltic cod resources crisis. This species contributed in 2018 to 22% of total landings revenue to 10% in 2019 and to 1% in 2020 only. The fleet tried to survived the difficult situation redirecting its effort on alternative however cheaper species like Atlantic herring, flounder or various freshwater species. In 2019 Atlantic herring volume and value landings increased by 23% and 37%, respectively. However in 2020 slumped by 62% and 53% which was mainly a result of poor spawning migration of herring entering the Vistula Lagoon area as well as COVID-19 outbreak restriction impact (catches recovered in 2021). The fleet suffered also the decrease of perch and pike perch (high value species) catches that shrunk by 62% and 35% respectively in terms of volume or 63% and 44% in terms of value landed. The other driver behind SSCF catches collapse was subsidies paid out for temporary cessation of fishing activity (related to COVID-19 outbreak), collecting of lost nets as well as bycatch of birds observations.

In 2020 GVA of the fleet slumped by 66% or 70% compared to 2008-2019 (mainly as a consequence of landings income collapse). The SSCF produced negative gross and net profit of EUR 6.8 million and EUR 6.4 million, respectively. However net profit subsidised was highly positive: EUR 17.9 million compared to EUR 8.4 million in 2019. The number of people working in the fleet (engaged crew) remain unchanged compared to 2019 or even 9% higher compared to 2008-2019 long time average.

<sup>35</sup> COUNCIL REGULATION (EU) 2019/1838 of 30 October 2019 fixing for 2020 the fishing opportunities for certain fish stocks and groups of fish stocks applicable in the Baltic Sea and amending Regulation (EU) 2019/124 as regards certain fishing opportunities in other waters.

## Large-scale fleet

In 2020, 164 active vessels were assigned to the large-scale fleet 1% more compared to 2019 or 16% less compared to long time average (2008-2019). The vessels operate in the Baltic Sea or in the North Atlantic (no combined activity). The Baltic vessels target mainly sprats and herring. The vessels fishing outside Baltic Sea harvested blue whiting, mackerel and horse mackerel in North Western Waters Atlantic cod and Northern prawn mainly in Svalbard or horse mackerel and Atlantic pomfret in CECAF waters. In 2020 the Baltic LSF landed 127 400 tonnes fish worth EUR 31 million (decrease -8% and -13%, respectively compared to 2019). 17% sprat TAC cut was the main reason for lower landings.

Profitability of the Baltic LSF deteriorated by 12% (gross profit) or improved 3% (net profit). Long term changes of profitability was negative for gross profit (-20%) and positive for net profit (+38%). The fleet generated EUR 16.9 million GVA (-9% compared to 2019 or -13% long term change). In 2020 energy costs were as much as 26% lower compared to 2019 (37% decrease in fuel consumption). The vessels belonging to the fleet fishing in the Baltic spent in 2020 17% less days at sea compared to 2019. The economic performance of the Baltic vessels may deteriorate in 2021 following reduction of Central herring TAC.

## Nowcasts for 2021-22 and beyond

### Model results

According to preliminary figures landings volume and value decreased by 4% and 8% respectively in 2021. Landings from the Baltic Sea decreased by % since deep-sea fleet landings increased by 2%. Atlantic herring (-27%), Small sandeel (-37%) and Sandeel (-37%) contributed the most to the landings decline. Landings value of these three species decreased by 27%, 42% and 37%, respectively. 43% lower available Baltic herring quota in 2021 affected pelagic segments the most. TM2440 segment landings volume decreased by 8% or value by 7%, TM1824 vessels landed 5% by volume or 3% by value less fish than in 2020. On the other hand the small scale segment PG0010 reported 72% higher in terms of volume or 54% in terms of value landings which was mostly the impact of very low base year level. The 2021 catches were still 23% lower compared to 2019.

As expected emergency restriction measures implemented to protect Baltic cod as well Baltic herring quota cut were main reasons of the decline. Downward trend is expected to be continued in 2022 as a result of further 45% cut of central herring quota. The economic results of the fleet will likely deteriorate in 2021 for pelagic segments however should remain profitable. The economic condition of other segments that used to be dependent on cod catches will again deteriorate and remain negative.

### Outlook

It is not expected that the LO neither the Brexit will negatively influence the sector. Value of Polish fish products exported in 2019 to the United Kingdom amounted to EUR 88 million (19 000 tonnes) or EUR 108 million (25 000 tonnes) in 2020 and constituted mostly goods processed from imported fish raw material. The Baltic fisheries rely mostly on species that are directed on local not United Kingdom markets. In 2020 there was one distant water vessel operating in the United Kingdom EEZ (ICES 6a) in the Polish fleet which can be affected by possible changes in fishing grounds access.

No remarkable negative COVID-19 effects on fisheries were observed in 2021 and is foreseen in 2022. The war on Ukraine may have a direct negative effect mostly on fish processing sector in Poland and limited on fishing sector. Total fish and fish products value of exported goods to Ukraine amounted to EUR 9.4 million in 2020, of which EUR 225 800 constituted frozen sprats EUR 1.1 million frozen herring. Value of fish and fish products exported from Poland to Russia amounted to EUR 2.9 million in 2020 the vast amount (EUR 2.4 million) constituted fats and oils.

## Methodological considerations and data issues

Due to confidentiality reasons, distant water fleet (vessels over 40 metre fishing outside Baltic Sea) were excluded from the economic analysis. However, transversal data (except for value of landings) and employment data were provided for all fleet segments. In order to ensure consistency with data provided for previous years, premiums paid by government for scrapped vessels were taken into account when calculating invested capital (not the PIM method). Because change in methodology of reporting capacity, 2017 onwards figures are not fully comparable with the earlier years.

In 2019 the number of Polish fishing vessels remained unchanged, with a total of 830. However, engine power and capacity decreased by 6% and 19%, respectively as a consequence of withdrawal of

a distant water vessel. The number of vessels in 2019 compared to total time series (2008-2018) remained unchanged, engine power and capacity decreased by 7% and 9%. The decrease was caused again by changes in the number of distant fleet vessels. There were 41 inactive vessels in the fleet (5% of the total fleet). The number of inactive vessels decreased by 16% (eight vessels) and the majority of them belonged to two smallest length classes (<10m, and 10-12m).

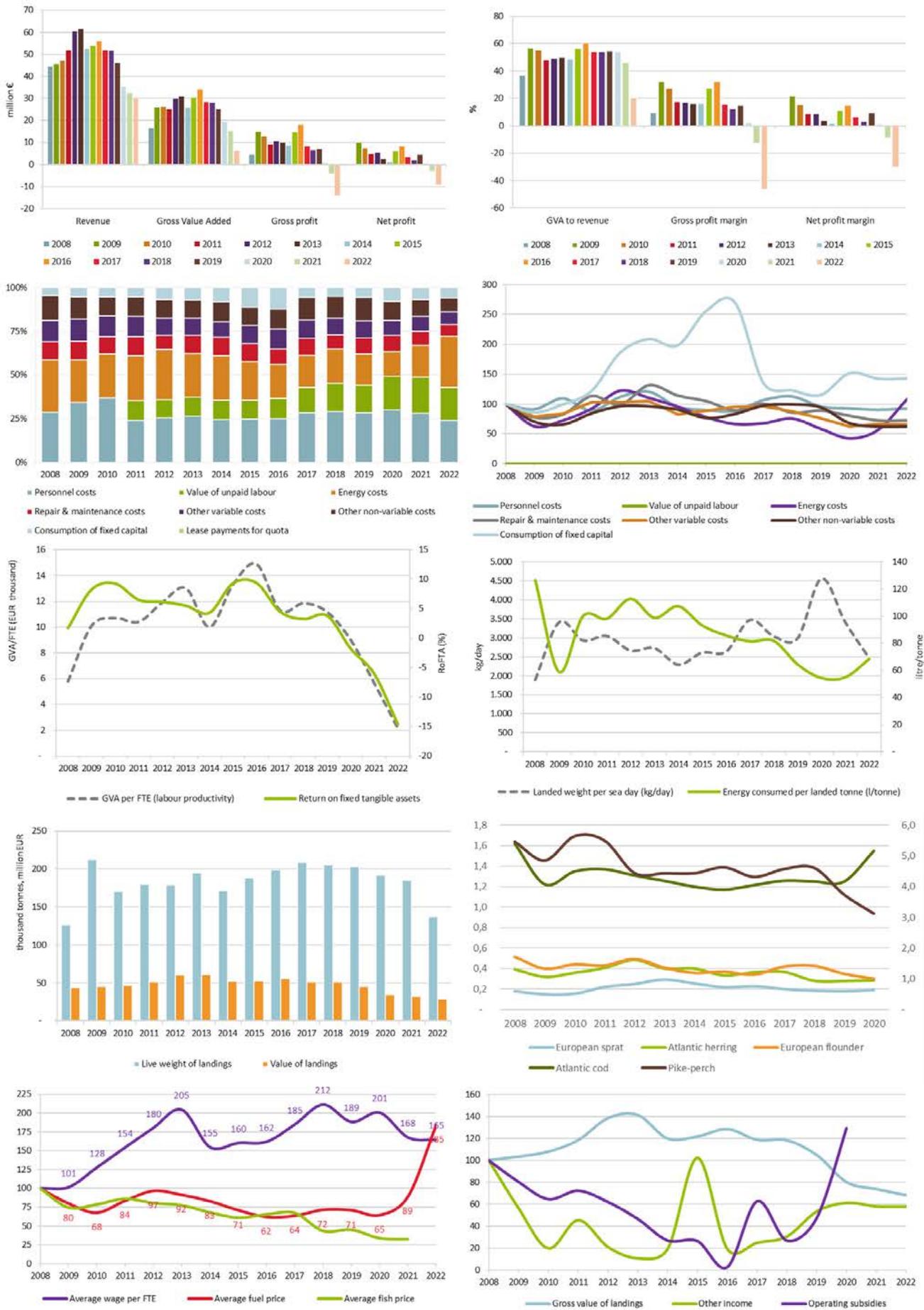


Figure 4.18 Poland: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.18 Portugal

### Short description of the national fleet

#### Fleet capacity

In 2020, the national fleet capacity was composed of 7 726 vessels, having a combined gross tonnage (GT) of 86 403 tonnes and engine power of 345 054 kW, distributed by Mainland Fleet, Azores and Madeira. In 2020, 36 vessels entered the Portuguese fleet, while 80 were withdrawn<sup>36</sup>.

The active fleet represents 46% of the national fleet and is characterised by a prevalence of small fishing vessels, with length of less than 12 metre representing 85% of the all fleet in number of vessels and 11% of GT, and 42% of kW. The average length is 9 metre and the age of the active fleet is 25 years.

Despite the large percentage in the number of inactive vessels (54%), this fleet represents a very low capacity (22.5% and 17.5% of the total kW and GT, respectively, and 5.9 metre average LOA).

#### Fleet structure

The Portuguese fishing fleet includes the Mainland fleet, Azores and Madeira, developing the respective fisheries in accordance with the operating areas and gears. The national fleet contains vessels from small-scale, large-scale and vessels which operate in distant waters and are grouped into 11 major segments (DFN, DRB, DTS, FPO, HOK, MGO, PS, TBB, MGP, PGP and PMP). The most important segments in terms of value from landings are: DTS40XX, DTS2440, PGP0010 and PS1824 that together represent 45% in value landings.

#### Employment

Employment was estimated at 13 415 jobs (7 200 FTEs) with an average of 2.0 FTE per active vessel. The average wage per FTE reached the maximum value over the 2008-2020 period in 2019 in which it had increased by 10% compared to 2018. Although, this indicator decreased 2% in 2020, setting a value of EUR 19 059. The Portuguese official statistics reports three different age-classes to classify the age of the fishers: below 35 (22%), between 35 and 55 (60%) and over 55 (18%).

#### Effort

The effort decreased trend in fishing days observed along the period 2008-2019 remained in 2020, with a decrease of 4% compared to 2019 and reaching the lowest value of the period 2008-2020. The average DaS per vessel also shows the same trend: 2014 achieved the lowest value of 85 days of activity per vessel. In 2020 the observed value was 87, 2 days of activity less than in 2019. Landed weight per sea day was 524 kg/sea day, 2% lower than in 2019. The energy consumption decreased 7% compared to 2019.

Vessels operate, mainly, in the Northwest Atlantic, NAFO and Svalbard/Irmingier areas (demersal trawlers), Indian and Pacific oceans (surface longliners) and in the coastal waters of Madeira.

#### Production

In 2020 the landings decreased 16% compared to 2019 and 19% compared to the average (2008-2019). The landings value decreased 9% compared to 2019 and 10% with the average (2008-2019).

The mean price of fish reached the value of 2.64 euro/kg increased 8% compared to 2019.

In terms of landed weight, chub mackerel is the most representative species 14% of total catches followed by European pilchard (10%), and Atlantic horse mackerel (9%).

These three species represent 33% and 23% of the total Portuguese weight and value of landings, respectively.

Despite the reduction of the National value of landings, some relevant species recorded an increase, being noteworthy the European sardine, with the 16 000 tonnes caught in 2020 representing an increase of 36% compared to 2019.

<sup>36</sup> In the data files the difference between number of vessels in 2019 and 2020 is higher, given that there is a delay in the register of the withdrawn.

As in previous years, the management of sardines was regulated, and their catch was prohibited until 30 May on the mainland. The authorisation to reopen fishing from 1 June to 31 July set a discharge limit for this period, taking into account the ICES advice issued in mid-June. However, the recovery of the resource, resulting from the Bilateral Cooperation Plan between Portugal and Spain, was recognised by the available scientific data and justified the limits set for 1 August onwards, representing less containment compared to the same period the previous year. Subsequently, a new ban on catches was determined from 10 October 2020, a situation that was maintained until the end of the year.

The average price of the European pilchard increases from 0.7 euro/kg in 2008 to a value in 2014-2016 of 2.0 euro/kg (in 2015 the price reached the maximum value of 2.2 euro/kg). In 2017 a reduction of the European pilchard price was observed (1.6 euro/kg) due to a strong concentration of daily landings that pushed the prices down. In 2018 the price recovered reaching the 2014-2016 levels with a value of 2.1 euro/kg. In 2019 the price dropped to 1.9 euro/kg, and in 2020 went down to 1.5 euro/kg. This reduction was a consequence of the epidemiological situation caused by the COVID-19 that led to a sharp decrease in consumer demand, intensified by the closure of restaurants and the ban of the summer feasts where this species is traditionally consumed.

## Economic results for 2020 and recent trends

### National fleet performance

In 2020, the Portuguese national fleet worsened its economic performance compared to 2019 by 59% in net profit. The reason for that was mainly due to the 9% decrease in revenue, once the costs decreased only by 4%. In terms of variable costs, only the Repair and Maintenance costs increased (3%) from 2019 to 2020, once the ship owners took the opportunity of the fishing stop imposed by the COVID-19 to make repairs on the vessels. All other variable costs have fallen due to the decrease in activity.

Personnel costs represented 40% of the total costs while energy costs signified 14%.

Revenue decreased 9% compared with 2019 and 10% from the average of (2008-2019). GVA in 2020 decreased 12% and 15%, respectively compared to 2019 and over the 2008 to 2019 period, gross profit decreased 22% and 29%, respectively.

### Resource productivity and efficiency indicators

The gross profit margin in 2020 was 21%, indicating a satisfactory operating efficiency of the sector, although this indicator has been decreasing since 2015.

The RoFTA has been improving since 2012, where it achieved a minimum of 6.8% due to the drop of landings revenue and high fuel prices. Since then, decreasing operational costs has been observed, because of the reduction in fuel prices. This decrease contributed to a better economic performance of the fishing fleet, peaking in 2016 and 2017 at over 20%. Due to changes in the estimation of the consumption of fixed capital in 2018, the value of RoFTA drops to 13.4%. In 2019 RoFTA went down to 9.1% and, in 2020, the figure stood at 4.2%.

Labour productivity (GVA/FTE) decreased in 2020 to EUR 30 000 (-9.0% compared to 2019).

Fuel consumption was 483 litres per tonne landed (-1.0% compared to 2019). Landings in weight per unit of effort (in days at sea) were 524 kg/day (-2.0% compared to 2019).

## Performance by fishing activity

### Small-scale coastal fleet

In 2020, SSCF comprised 2 819 vessels, GT of 6 883 and total power of 100 606 kW. The majority of SSCF, up to 56%, operated along the coast using several gears (PGP - nets, longlines, pots and traps) catching a diverse number of species. The cephalopods (octopus and cuttlefish) are the major group of catch species, achieving 34% of the SSCF value of landings. Pelagic and Demersal species like chub mackerel and conger are, in weight, the following species that with cephalopods represents 35% of SSCF landings. FTE corresponds to 34% of the FTE national. The average fleet activity in 2020 reached a value of 71 days at sea/vessel.

Landings in weight decreased 5% and 6% in value compared to 2019. When compared with the period (2008-2019) the live weight of landings decreased 11% but the value increased 1% following the

improving trend in fish prices in this fleet segment. In 2020, landings from the SSCF represented 11% in weight and 24% in value of the total Portuguese landings, revealing high quality of the fresh product caught by this fleet segment.

In terms of economic performance, the GVA decreased 9% and gross profit by 4%. The performance in terms of profit, the fleet has improved consistently since 2014 to 2018 but suffered a deterioration from 2019. It is important to notice that this part of the national fleet contributes significantly to the economic and social sustainability of local fishing communities.

The cost structure of the fleet remained stable over the period 2008-20, with wages and salaries of the crew being the major cost and highly linked to the income from landings.

## Large-scale Fleet

The LSF comprised 740 vessels and it represented 21% of the active Portuguese fleet. Also represented 45% of the total vessel power (155 587 KW) and 66% of GT of the active fleet. Almost 60% of the LSF use mobile gears (purse seine, demersal trawl and dredges). FTE corresponds to 63% of the FTE national. In 2020, the activity decreased 10% in landing weight and 8% in value of landings, compared to the previous year. The economic performance (GVA, gross and net profit) deteriorated when compared to 2019 (-10%, -25% and -58%, respectively).

## Distant water fleet

The distant water fleet comprised 17 vessels, GT of 6 954 and total power of 11 324 kW. This segment is composed mostly of longliners and has 259 FTE.

## Outermost region fleets

### Madeira

The Madeiran fleet consisted of 86 active vessels in 2020, GT of 1 491 and an engine power of 8 692 kW. Most of this fleet belongs to SSCF (63%). The Madeiran fleet develops its activity mainly in Subarea 2 ZEE-Madeira, with vessels operating in certain seasons of the year in Azorean. Most of the active vessels operated with longliners and the most representative species are black scabbardfish and bigeye tuna, representing 58% and 16% of value landings, respectively.

### Azores

In 2020, the fleet of Azores consisted of 520 active vessels, 5 945 GT and an engine power of 36 659 kW, 82.9% of this fleet belongs to SSCF. The Azorean fleet develops its activity mainly in the Azores EEZ and operates mostly with longliners (83.3%) and passive gears such as drift and netters (6.5%). The most representative species in terms of value of landings are: blackspot seabream (19.2%), bigeye tuna (15.4%), veined squid (12.2%) and albacore (11.7%).

## Other fishing regions

### NAFO

The fleet operated in NAFO waters is composed of eight vessels (DTS40XX), with a total capacity of 16 109 GT and 17 751 kW. In 2020 the average effort in this region was 276 fishing days per vessel and the catches for each fishing day were around 12.4 tonnes. The most representative species are Atlantic redfish (61%), Atlantic cod (15%) and Greenland halibut (13%).

### NEAFC

In 2020, Portugal had only one vessel targeting Atlantic cod and redfish in the NEAFC regulatory area. This fleet belongs to the DTS40XX and for confidentiality issues it is not possible to detail the activity in this regulatory area.

### ICCAT

Based on what was decided in the EWG 21-08 EWG, the ICCAT fleet is obtained using the following criteria: vessels over 18m in length where the value of ICCAT main species represents at least 20% of the total value of landings. This fleet is composed by 67 vessels (23 from Azores, 38 from mainland and 6 from Madeira) with 11 616 GT and 27 026 kW.

The main gear used by this fleet is the surface long line for the mainland fleet and pole and line for the outermost regions (Azores and Madeira). The total landings for the main species that are fully assessed by ICCAT, represent 11.23% of the Portuguese landings, 9.0% in landing value. The main species in value by this fleet are: blue shark (37.5%), swordfish (29.8%), bigeye tuna (13.4%), albacore (11.7%) and shortfin mako (3.7%).

## Inter-American Tropical Tuna Commission (IATTC)

In 2020, Portugal had four vessels targeting big pelagic species in the Pacific Ocean, in the area regulated by the IATTC. The four vessels operated exclusively in this regulatory area. This fleet belongs to the HOK40XX and HOK2440 segments and has a total capacity of 1 718 GT and 2 745 kW. In 2020 the average effort in this region was 299 fishing days per vessel and the catches were around 1.7 tonnes per fishing day. The most representative species are swordfish (53.1%) and blue shark (30.1%).

## Indian Ocean Tuna Commission (IOTC)

In 2020, Portugal had three vessels targeting big pelagic species in the Pacific Ocean, in the area regulated by the IOTC. This fleet, composed of longliners up to 24 metre, is exclusively affected to the IOTC area and has a total capacity of 1 009 GT and 1 502 kW. In 2020 the average effort in this region was 215 fishing days per vessel and the catches for each fishing day were around 1.5 tonnes. The most representative species are swordfish (49.0%) and blue shark (34.0%).

## Performance results of selected fleet segments

The Portuguese fleet is highly diversified with a broad range of vessel types targeting different species predominantly in the Portuguese Exclusive Economic Zone (27.IX.a for the mainland fleet, 27.X for the Azores's fleet and CECAF 34.1.2 for the Madeira's fleet). The national fleet consisted of 53 (DCF) fleet segments in 2020 and 6 inactive length classes. A short description of the most important segments is provided below.

**DTS40XX IWE (mainland fleet)** – 10 vessels made up this segment which operates predominantly in Area 27 and 21 (NAFO, Norway, Banana hole and Irminger). The fleet targets a variety of species, in particular, Atlantic redfish (52.3%), Atlantic cod (27.9%) and Greenland halibut (10.9%) of the total value of landings. In 2020, the value of landings represents 15.3% of the total landing value and the FTE 4.2% of the national value. The fleet segment reported a negative performance in the 2008-2019 period, but in 2020 the net profit margin was positive (5.6%).

**DTS2440 (mainland fleet)** – 58 vessels made up this segment in 2020, which operates predominantly in Area 27 (27.9.a and 27.8c); the fleet targets a variety of species but in particular Atlantic horse mackerel (25.0%), deep water rose shrimp (13.6%), Atlantic mackerel (12.5%) and blue whiting (9.4%). In 2020, the value of landings represented 12.7% of the total landings value and the FTE 6.4% of the national value. This fleet segment shows a significant improvement in the economic performance in 2008-2019 period. In 2020 the net profit margin increases to 0.4%, in comparison with the previous year (-2.5%).

**PGP0010 (mainland fleet)** – This fleet segment represents the major one with 1 573 vessels. The fleet targets a large variety of species, such as common cuttlefish (13.9%), common octopus (13.6%), European seabass (11.1%) and meagre (4.4%). In 2020, the value of landings represented 10.3% of the total landings value and the FTE 14.1% of the national value. Net profit margin reached 29.1% (+4.4% in comparison with the previous year).

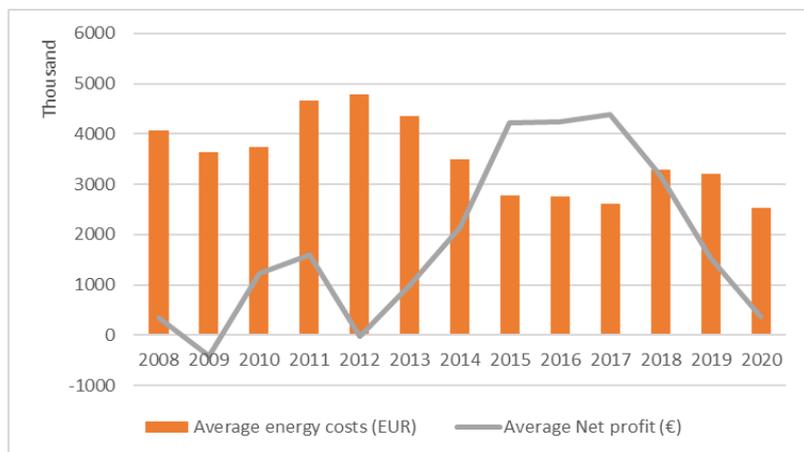
**PS1824 (mainland fleet)** – 51 vessels made up this segment in 2020. The fleet targets small pelagic fishes, such as European pilchard (47.9%), European anchovy (25.4%), chub mackerel (14.3%) and Atlantic horse mackerel (7.5%). In 2020, the value of landings represented 6.3% of the total landings value and the FTE 7.0% of the national value. In 2020 the net profit margin is -2.5%, decreased compared with the previous year (12.3%).

**FPO0010 (mainland fleet)** – 270 vessels made up this segment in 2020. The Common octopus is the most representative species in terms of landing value (94.9%). In 2020, the value of landings represented 4.1% of the total landings value and the FTE 3.3% of the national value. Net profit margin reached 43.3% (+10.2% in comparison with the previous year).

## Drivers affecting the economic performance trends

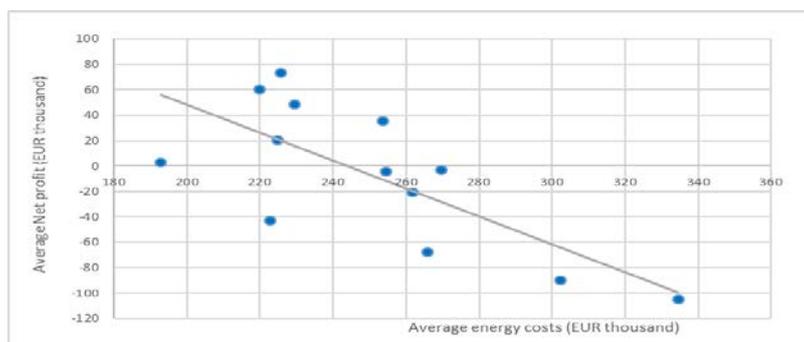
Fish prices, fuel costs and effort are the main driving forces behind the overall fleet performance. Historical correlation between energy costs and net profit can be found, especially in DTS and HOK LLS (surface long lines) segments.

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**Figure 4.19 Average energy costs and net profit (2008-2020)**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

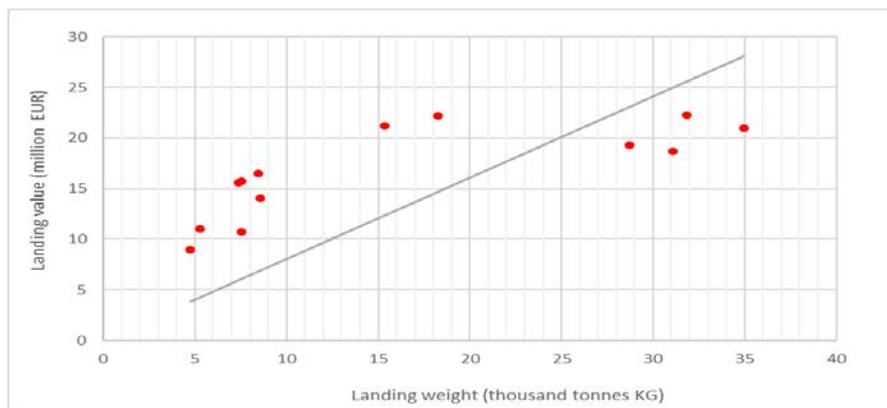


**Figure 4.20 Energy costs and net profit relationship in DTS2440 mainland fleet (2008-2020)**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

In general, the increase in the average prices was a consequence of the lower supply of fish.

Some species do not follow exactly the same trend, like the sardine. In this case, the strong decrease of weight landings did not affect, in the same manner, the landings value. In fact, the landings value for 15 000 and 30 000 tonnes were similar.



**Figure 4.21 Landing weight and value relationship for the European pilchard (2008-2020) in PS 1824 mainland fleet.**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## Markets and Trade

Landings in foreign harbours represent around 16% of the total landings. The most important countries are: Spain (68.2%), Uruguay (9.1%) and Germany (4.8%).

According to the Portuguese official statistics, in 2020, 17 Producers Organisation were recognized, in which 14 are based on the mainland. These organisations account for 51.5% of total active vessels. Purse seiners are the most represented segment in those structures and sardine, chub mackerel and horse mackerel the main species landed. Around 98% of sardine, 78% of horse mackerel and 82% of chub mackerel landed in Portugal were accounted for by the producers' organisations.

The average annual price of fresh fish landed in 2020 in national harbours increased 10.4% in relation to 2019, from 2.08 euro/kg to 2.3 euro/kg.

## Management instruments

The Portuguese Administration applied a variety of tools to manage national fisheries and to respect international fishing agreements and partnerships. The overarching objective of the policies followed is to achieve the MSY in all fisheries where Portugal maintains commercial interests, either within or outside the borders of the EU.

Therefore, year after year, the trend in the number of licenses follows a decreasing trajectory even when momentary pending commitments require the restitution of some fishing permissions that had previously been suspended. This policy, however, is not restrictive, in the sense that under specific circumstances, the administration allows gear transfers between vessels, providing that both economic viability and general health and safety of those aboard the vessels are improved, without any increase in the deployed effort.

In general, the condition of most EU stocks has been improving, much in response to the firm management commitments, which have allowed the improvement in fishing opportunities and the reinforcement of the profitability of the commercial operations.

In 2020, the following measures and management plans/adjustment of fishing effort or capacity control schemes were in force:

- The multiannual plan for stocks caught in Western Atlantic and adjacent waters, which applies to demersal stocks (hake, Norway lobster, seabass, megrims, anglerfish and common sole) and deep-sea stocks (black scabbardfish and red seabream) was followed. The plan, implemented on an ecosystem-approach to fisheries management, aims to maintain these stocks above levels which can produce MSY (or within the MSY ranges).
- Fishing permit limitations were issued for all vessels operating in deep waters (in compliance with the EU Regulation 2016/2336), in different capacities depending on the individual history of recorded catches, resulting in a limitation of the species and quantities allowed, having nonetheless not changed the total number of licenses.
- Several modifications and various tuning decrees were published throughout the year, aiming to adjust the fishing effort to new rules of management and permitting a rapid response management plan to further promote the recovery of the Iberian sardine stock.
- Adjustment of fishing effort for surface longline vessels targeting swordfish in the north Atlantic with the aim to maintain the sustainability of the fishery. A capacity reduction objective still exists, aiming to allow an adequate balance between fishing effort and available quotas, but for the time being the administration was able to secure additional quota swaps with Spain;
- An eel management plan is still being followed, including fishing gear restrictions, limited catching seasons and a complete ban on recreational fishing.

## TACs and quotas

Fishing opportunities were kept mostly unaltered in 2020. The stock of horse mackerel was in excellent condition, providing very significant fishing opportunities and having become the dominant stock in Portuguese TACs, accounting for more than 50% of all fishing opportunities. This implies that this stock accounts for most of the fluctuations in global opportunities. As it is being managed using the MSY objective, any small fluctuations in the MSY reference level could have large implications to the overall Portuguese fishing opportunities. Thus, for horse mackerel there was an increase of 24% compared to the 2019 TAC, in line with the maximum estimated in the scientific advice. In the opposite direction, the perception of the condition of the southern stock of hake has remained poor, albeit based on uncertain assumptions. However, after a revision of the specific conditions, it was possible to limit the reduction to 5%, as opposed to the initial proposal of a 20% decrease. For monkfish and Norway lobster there were small reductions in quotas, between 3% and 4%. The condition of the megrim stocks improved, resulting in an increase of 24% in the fishing opportunities. For sole and plaice, there were quota reductions of 20% and 10%, respectively. For skates and rays the quota level fixed in 2019 was maintained.

The TAC for anchovy (a short life span species with very variable abundances) was increased by about 53% after a favourable assessment, benefiting the Portuguese purse seine fleet, which is highly dependent on small pelagic stocks (anchovy, sardine, mackerel and horse mackerel).

For deep sea species, fishing opportunities, which are fixed biannually (2019-2020), maintained the reduction already established in 2019 for almost all stocks (black scabbardfish 6%, alfonsinos 10% and red seabream (FAO 27.9) 9%) and the increase of 12% of the quota of red seabream caught in area 27.10. This decrease in deep sea species quota is related with the need to protect these vulnerable stocks in order to maintain a sustainable fishing effort.

The state of exploitation of the resources captured by the Portuguese fleet in national waters continues to show a positive evolution, with fluctuations more compatible with the natural evolution of living stocks managed at MSY.

As is commonly done, during 2020, there were several fishing opportunity swaps with other Member States sharing the same management units. The quotas available for undulate ray, megrim, red seabream (FAO 27.9) and swordfish (Atlantic Ocean, north of 5° N) were increased through the mechanism of exchange quotas between Member States, as provided for in Article 16(8) of the Regulation (EC) No 1380/2013. An additional increase in quotas was also possible for anglerfish, black-scabbard fish, herring, hake, horse mackerel (FAO 27.8c and 27.9), megrims, mackerel and blue whiting, from the quantities initially allocated, through the mechanism provided for in Article 4 (2) of Regulation (EC) No 847/96, allowing the transfer to the following year of up to 10% of the allocated and unused quota of units subject to an analytical assessment.

Portugal also has fishing possibilities under the regional fisheries agreements in the field of international waters and the fishing protocols annexed to the partnership agreements of the EU and third countries for exclusive economic zones. In the case of RFMOs, the activity of the national fleet is traditionally carried out in the areas of NAFO, NEAFC, ICCAT, IOTC, and IATTC. Under the Sustainable Fisheries Partnership Agreements (SFPAs) between the EU and third countries in 2020, fishing opportunities were used under four fisheries protocols off the West African coast.

As for ICCAT managed resources, in 2020 we highlight the increase in the bluefin tuna's Portuguese quota, from 520 tonnes to 574 tonnes. Also, a slight increase in the national quota of the northern swordfish, from 1 010.39 tonnes to 1 047.82 tonnes. Swordfish and blue shark remained the main targeted species for the surface longline segment, while tropical and northern albacore was the main targeted species for the bait boat segment from Azores and Madeira and considering the flexibility introduced by a recommendation in 2018 the vessels from those Portuguese archipelagos operating with bait boats are allowed to fish bluefin tuna directly in 2020. Due to the COVID-19 pandemic the ICCAT annual meeting did not take place. It was decided a rollover of all the conservation and management measures. No changes occurred in the tropical group of species, where bigeye and skipjack are the two main species for the bait boat and artisanal/small-scale fisheries of Azores and Madeira.

As for IATTC managed resources, we have to mention the entrance in force in 2018 of a recommendation for the conservation measures for yellowfin tuna, bigeye tuna, and skipjack for 2018 to 2020. Four vessels were actively operated in the IATTC area during 2020.

In the IOTC Area of Competence, three vessels were actively operating in 2020.

In the Northwest Atlantic, there was an increase, during 2020, of around 9 000 tonnes on the NAFO 3M cod which is one of the most important species caught in that area. Overall, the remaining NAFO species observed certain stability concerning the established figures.

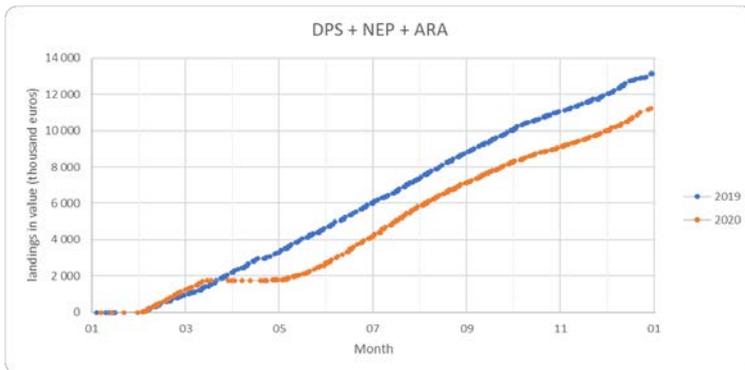
Regarding Northeast Atlantic, there was a reduction of 500 tonnes in the TAC for redfish in the Irminger Sea, during 2020, which meant a reduction from 119 tonnes to 109 tonnes in the Portuguese quota compared to the previous year, maintaining the descending trend. In general, the species regulated by NEAFC remained stable. Concerning the other stocks, there was no change in the possibilities, specifically for Norwegian cod. However, there was an increase of 490 tonnes of Svalbard cod.

As regards partnership agreements with third countries, there was an overall increase in the requests of these fishing possibilities. Regarding the activity of the national fleet during 2020 under the Sustainable Fisheries Partnership Agreements (SFPAs) four longliners vessels operated in Morocco, Seychelles, São Tomé and Príncipe and one trawler fishing for crustaceans other than spiny lobster and crab in Mauritania.

## COVID-19

In 2020 two different aspects related to COVID-19 affected the fishing activity: markets and health. One of the major fleet segments affected by this epidemic was the DTS catching crustaceans (deep-water rose shrimp, Norway lobster and red shrimp) due to market reasons.

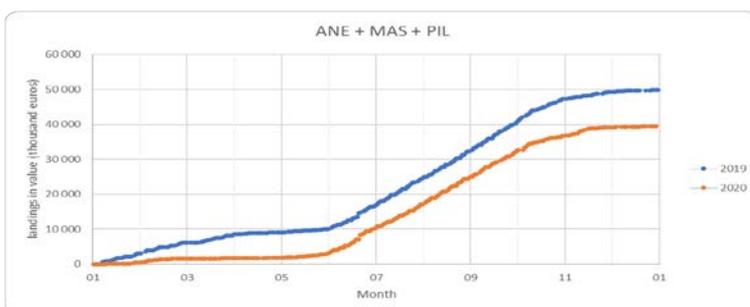
This fleet operates mainly in the south of Portugal (Algarve) and the main market is Portugal and Spain for fresh consumption, mainly for restaurants. The prices for all species just dropped at the beginning of the pandemic in Portugal and the whole fleet stopped in the middle of March of 2020. Few vessels returned to activity at the end of March, but the major fleet only started to operate in the beginning of May. The next figure illustrates accumulated landing values for the most important species (source: first sales in Portuguese ports).



**Figure 4.22 Accumulated landing value DPS + NEP + ARA.**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

The 2020 value of landings and revenues of this fleet segment were affected by the drop of fish prices due to the observed lack of demand for these species and cessation of activity. In 2020 the value of landings for these three species decreased by 15% compared to 2019.



**Figure 4.23 Accumulated landing value ANE + MAS + PIL.**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

Another reason for the cessation of activities was the health care of the fishers. Keeping the social distance in fishing vessels is a difficult task. This aspect is particularly relevant in the purse seine fleet segment where the number of crew is high, the crew area is small and normally the fishers stay in the sea overnight. Almost all the purse seine fleet only started activity in the beginning of June.

The previous figure illustrates the time history of the accumulated landing value of the most important species targeted by purse seiner fleet segments for 2019 and 2020: Anchovy, chub mackerel and Iberian pilchard. In 2020 the landing value of these three species decreased 20% when compared with 2019.

The remaining coastal fleet was also affected by the COVID-19 outbreak. According to the Portuguese statistics for 2020 the landings in fresh fish in national ports, which normally represents 75% of the overall in weight, decreased 19.8% in weight and 11.2% in value when compared to 2019.

Landings in foreign ports and frozen fish in national ports revealed a decrease by 4.4% when compared to 2019.

Although economic performance may not have been so affected, given the lower costs of fuel and labour, the pandemic caused social and economic issues for the national fleet, especially the coastal fleet.

## Nowcasts for 2021-22 and beyond

## Model results

Preliminary results for 2021 forecast that GVA will be reduced -9% compared to 2020 and further 43% in 2022, Estimates suggest that the economic performance of the fleet will be severely impacted by the fuel price increase.

## Fuel prices crisis

It is not possible to make an evaluation of the direct and indirect impacts of the actual war between Russia and Ukraine in the fishing sector, but it is important to highlight the significant increase in the price of diesel per litre. In 2021 the average of the value of diesel per litre increased 15% when compared to 2020. In the first quarter of 2022 there was an increase of approximately 19% compared to 2021 and 36% compared to 2020. In accordance with the Portuguese legislation, coloured diesel is used in the agricultural, forestry and fishing sectors, and also registered an increase in the average price (+22% and +28% in 2021 and 2022, respectively). If this upward trend continues, it is expected to have a negative impact on the economic performance.

## COVID-19

In 2021 many restrictions remained due to COVID-19, with several lockdowns due to the spread of the pandemic situation.

According with Cesam<sup>37</sup> the main factors of COVID-19's socio-economic impact is related to tourism, international markets and HORECA.

In the national context the repeated lockdown situation in 2021 has contributed to a decrease in the demand of fresh fish, compared to the year before the pandemic (2019).

There were many restrictions on restaurant opening hours and also in the number of people inside each establishment for example. Besides that, the number of tourists sharply decreased, compared to 2019.

## Fleet structure

Since 2005 (the year when the public support to new vessel construction stopped) the investment costs with new vessel construction have been very low. However, in 2020 the vessel construction represents 44% of the total new entries into the Portuguese fishing fleet (16 vessels), 85% GT and 61% in terms of engine power, demonstrating an effort to renew the fleet.

The majority of the vessels entering and leaving the fleet were vessels in the polyvalent fishing segment (PGP), mostly in the context of renewal of the fishing fleet.

It is observed also that the average age of vessels has increased since 2008 (26.3 years), presenting an average of 35.6 years in 2020. The ship-owners tend to keep the vessel to an over age limit, doing only some repairs, since they have size constraints for the new vessel, which represents a large investment for one unit that will be equivalent in terms of GT to the one they own.

In 2020, Portugal complied with the fishing capacity ceilings laid down in Annex II to the CFP Regulation, in the case of the fleet registered on the mainland (MFL) and the fleets registered in the outermost regions.

## Methodological considerations and data issues

### Identify changes in respect to previous years.

Response to the survey to collect socio-economic data on fishing became mandatory by law to renew the fishing licence, which led to a higher response rate within the active fleet segments. However, in 2021 the renewal of the licence was excepted from this obligation as due to COVID-19 fishers found difficulties in meeting with the accountants or association for support in filling the questionnaire.

Some work was done to improve the data, using some cross checks between the several sources of information.

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<sup>37</sup> Centre for Environment and Sea Studies of the University of Aveiro.

Possibly, the quality of the responses to the questionnaires could have been higher, as ship-owners tend to rely on accountants and industry associations, and the restrictions imposed by COVID-19 probably made it difficult or impossible to contact these agents.

For 2020, the landings were calculated in terms of live weight, instead of landed weight.

### **Problems identified.**

It was planned to implement some improvements in data collection through the cooperation of associations and auction houses, but it couldn't be done due to the difficulties in holding meetings with externals in the COVID-19 context.

One of the difficulties encountered is linked to the fact that in many cases the surveys are answered by accountants who, in many cases, bias the answers once they have a different view from that of economists.

Since the weight of landings was reported in live weight in 2020 and in landed weight in the years before, this variable, and some species prices and indicators, are not comparable with the time series.

The wage compensation for stopping fishing activities (due to COVID-19 or legal impositions) was not reported as no framework was found for this type of item in the data call.

### **Remaining issues**

It is intended to improve the survey in order to adapt it according to the vessel's fleet segment and thereby obtain better answers.

A project is being implemented to restructure the databases in order to integrate and harmonise all data sources. Data processing and analysis will be performed on a new platform. It is expected that the methodological procedures will be revised and improved when the migration takes place.

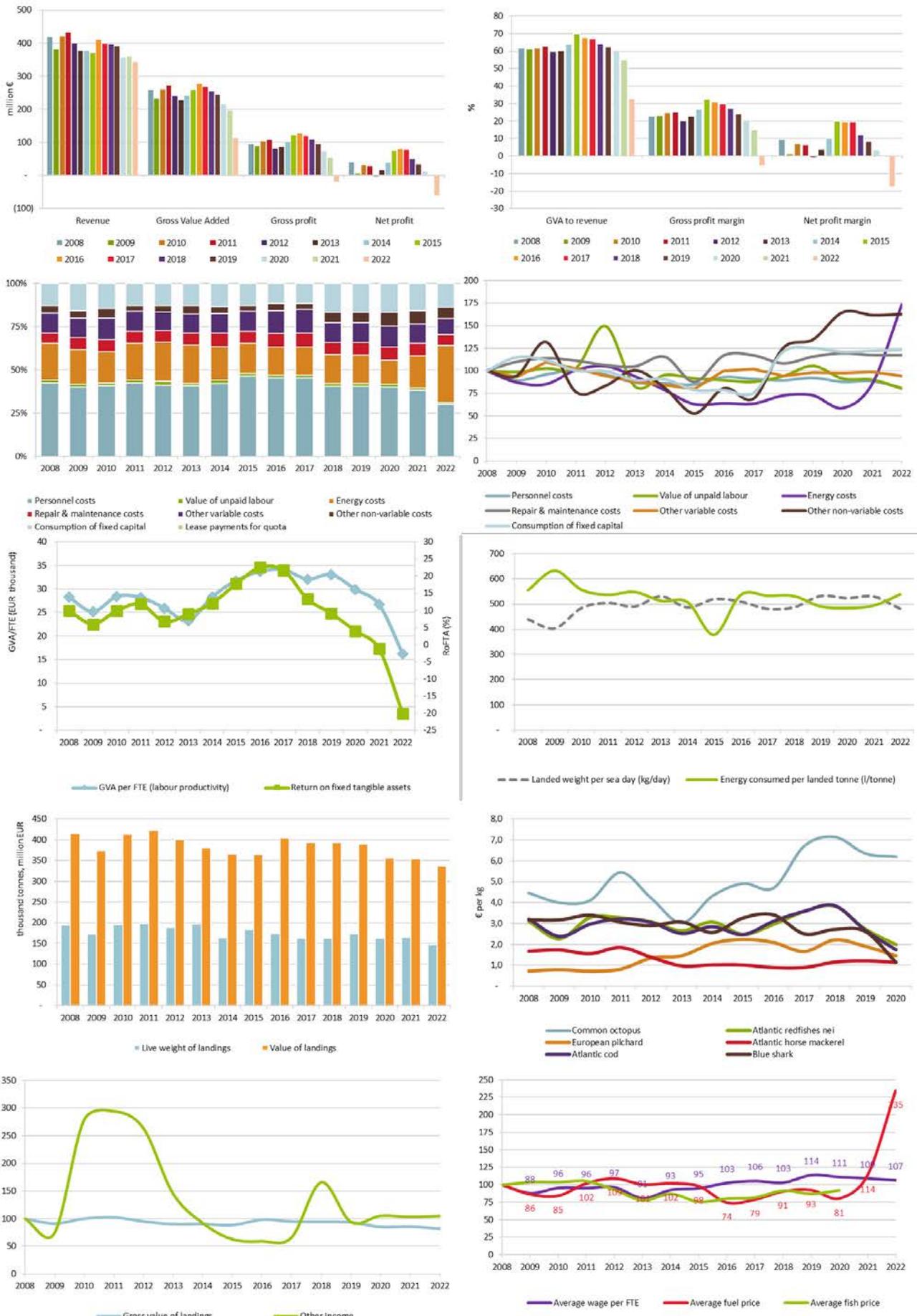


Figure 4.24 Portugal: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (EUR/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.19 Romania

### Short description of the national fleet

#### Fleet capacity

In 2021, the Romanian fishing fleet consisted of 163 registered vessels, with a combined gross tonnage of 1 575 GT (-45 GT compared to 2020) and a total power of 6 198 kW (-80 kW compared with 2020), 130 active vessels and 33 inactive vessels, 20.25% from the total; 79.75% of vessels in the fishing fleet register were active. The size of the Romanian fishing fleet continues decreasing between 2008 and 2021, by 278 vessels, a decrease of 37% compared to the average for the period, due to the scrapping vessels, mainly. Total engine power registered in 2021 is was GT 1 575, and compared to the average for the period 2008-2020 the GT, increased by 22%, while the kW decreased by 4% compared to the same period. The percentage of inactive vessels is still high – 20.25%, and 33 numbers due to the seasonal activity of vessels in the SSCF segment, and inconstant fishing activity of fishers in this segment, directly linked with the decline of economic interest due to the less demand of the market for pelagic fish species; the market is facing high competition from supermarket chains, and, not secondary, another cause is the less concentration of fishers in associations/organizations producers leading to a fable position on the sector and atomization of efforts to achieve real results and positive role on the implementation of the fishing plan, annual and multiannual for the stabilisation of the sector as a whole; also, the representativeness in the Black Sea Advisory Council is not strong, not at parity level with Bulgarian members.

Should be underlined the unsatisfactory fishing infrastructure. There is not a spatialized fishing port in Romania, due to the incapacity of management authority on European fishery fund implementation in the past, nowadays a project for modernization of the existing fable facilities on Midia port, North part of Romanian fishing area in the EEZ waters, is still under the preliminary phase of implementation, hoping to become operational in 2022/2023. The fishery infrastructure on the onshore is defined by landing points located really, on the beach, with no geographical advantages allowing proper location for minimum berth construction, in the absence of an enlarged interest of local authorities to develop such activity, not only touristic ones.

#### Fleet structure

The fishing fleet in 2021 is composed of the small-scale fleet segment up to 12 metres in length (small boats with or without engine) 108 active vessels, a number, that represents 83%, that can be considered as the main segment of the SSCF fleet. The SSCF capacity in numbers is of 1 772 kW and 320 GT. The remaining 17% is for another fleet segment – large-scale fishery LSF - 12-40m, comprising only 22 vessels but counting for 3 560 kW and 1 031 GT.

The number of fishing vessels has considerably decreased, because a procedure to remove inactive vessels started in 2012. The main reasons for that were poor technical condition, no annual frequent activities, orientation to other activities, like tourism, commercial fishing in continental waters and even owning some restaurants.

The general objective of Romanian authorities is to have a fishing fleet, at a “minimum Vitalis” level, due to the celling capacity imposed by the CFP Regulation EC no. 1378/2013, annex 2.

A large number of poorly equipped small-scale fishers, inadaptability of large-scale fishers, along with discordance among fishing, producing, and marketing capabilities brought the sector to a dependency observed by the decrease of total landings, both in volume and value.

#### Employment

The total engaged crew in 2020 totalized 439 jobs, a higher number than in 2019 (416), an increase of 6%; the number of jobs is foreseen to be almost the same in 2021 which could be evaluated as a stability of the fishery, as a whole. The level of employment decreased, between 2008 and 2019, from 875 jobs in 2008 to 416 jobs in 2019. Compared to the average for the 2008-2019 period employment in 2020 increased by 4%.

In the SSCF segment total employment in 2020 was 286 jobs, corresponding to 16 FTEs. The level of employment in SSCF decreased between 2008 and 2017, from 790 jobs in 2008 to 307 jobs in 2017. Compared to the average for the 2008-2019 period employment in 2020 decreased by 21%, and FTEs by 39%. The employment in LSF for 2020 was 153 corresponding to 38 FTEs. The employment

engaged in LSF in 2020 increased by 33% compared to 2019 and 158% compared to the average for the 2008-2019 period.

In 2020 wages and salaries of crew decreased by 17% compared to 2019 but increased by 20% compared to the overall period 2008-2019.

The average wage per FTE in 2020 decreased by 11% compared to 2019 and by 9% compared to the average for the 2008-2019 period. The negative impact due to less demand encountered an issue on the market, for both species Rapa whelk and Turbot, as in LSF segment, is observed because of COVID-19. Also, total landings as volume and value decreased in 2020, compared to 2019.

Despite the COVID-19 the employment in LSF was not affected. .

## Effort

The Romanian fleet spent around 4 363 DaS in 2020, a decrease of 22% compared to the days at sea in 2019, but an increase of 9% compared to the 2008-2019 period average. The decrease is comparable to the total landings reported by fleet. Also, similarity is encountered analysing the fishing days over the analysed period, namely in 2019, 4 907 total fishing days were reported, versus 3 957 total fishing days in 2020. The same trend is estimated for 2021 for around 3 383 total fishing days.

As in the previous report statement, the major factor causing this evolution is the number of days at sea spend by fishers manually catching Rapa whelk as scuba-divers, as well as trips for bigger vessels fishing Rapa whelk who is migrating to the North part of Romanian waters fishing area. The main characteristic of the vessels catching Rapa whelk, who counts for the most catches of this species in total fleet catches, is the use of PMP gears on the North part of the Romanian littoral waters, but not exceeding 24 hrs/day fishing operations. The SSCF is also catching Rapa whelk by scuba-divers, mainly, as well by FPO.

Both fleet segments reported small catches of pelagic species, compared with Rapa whelk species catches, due to the market constant demand of Rapa whelk and the opportunities of this stock status relative stability, and limitations of turbot EU TACs, imposed in order to ensure the positive trend on increased biomass value of the stock in the area of the Romanian Black Sea waters. In the Black Sea area, Romania has the second smallest fleet of all riparian countries, as per GTs and kW totals.

This issue was addressed by the national authority at the regional GFCM-WGBS and EU Commission level, aiming to rebalance the level fleets and fishing effort for all riparian countries for achieving a level playing field in the area.

## Production

The total weight of landings of the Romanian fleet in 2020 was 4 462 tonnes of fish and seafood. Compared with 2019 the total weight of landings in 2020 decreased by 38%, the same percentage is presented and the decrease of the value of landings, EUR 2.77 million in 2020 versus million EUR 4.45 in 2019. The decrease is explained mainly by the reduced quantities of Rapa whelk species landings. The current status of fishing in Romania is similar to 2018 and 2019. Fishing activities are being carried out only in the waters of the Black Sea under Romania's jurisdiction. There are no fishing activities in other regions or catches of other species than in the area of Romania's Black Sea coast. Trends in landings were stable over time, with small pelagic species having a reduction percentage in the total landings' composition. Small pelagic species constituting significant species in terms of volume are represented by sprat and anchovy in total landings, also horse mackerel and other pelagic species in small quantities.

The landings of Rapa whelk, the most important species for the Romanian fleet, decreased and in 2020 represented 92.22% of the total landed volume. In 2017 this species represented 96.77% of the total landed volume during the year. In 2020 the Mediterranean mussels represented 2.62% of 2020 catches while turbot (which is under approved TACs) 1.57%.

The vessels operate up to 30-35 marine miles out of shore. The climate conditions have a big influence on the presence of living aquatic resources in the area. Fishing activity is seasonal because of the strict dependence on specific conditions and the general poor technical conditions of the fleet. It could be considered that the fishing fleet activity is dependent on the TACs under EU regulation for turbot and sprat, and, also on Rapa whelk and mussels, based on the stock abundance, and annual ministerial order establishing annual national limits, as quotas for all other commercial fish species. As above mentioned, the abundance of stock during the fishing season offers better opportunities for fishers. The other significant conclusion is that the national fleet is 100% dependent on catches in waters under the national jurisdiction of Romania, due to the limited capacity for navigation of the vessels. The quantity of fuel consumed in 2020 was 802 186 litre and decreased by 19% compared to 2019. The major

factor causing this decrease includes the scrapping of several vessels in the fleet, including two of the largest vessels.

The average prices for the five key species are for 2020 decreased compared to 2019. This turbot registered an increasing trend in price up to 2016 achieving the highest value at 10.6 euro/kg. From 2017 the price decreased constantly and in 2020 reached 7.9 euro/kg. Turbot represents the most valuable stock among the five key stocks exploited by the Romanian fleets. While the other four fish species have lower-level prices. Should be mentioned that seafood, like Rapa whelk for which is an increasing demand market fresh, whole, and counting more and more in total landings volume have just the level of 0.43 euro/kg, as first sale prices.

## Economic results for 2020 and recent trends

### National fleet performance

In 2020 the amount of income from landings generated by the Romanian national fleet was around EUR 2.77 million. The total income of the Romanian fleet in 2020 amounted to EUR 2.88 million and decreased by 35% compared to 2019. Due to the reduced landings, Romanian fishers are looking for the opportunity to generate earnings in other industries, such as tourism. Total expenditure accounted by the fleet in 2020 equated to EUR 2.18 million. Personnel and energy costs were the two major fishing expenses represented together with 56% of total expenditures. Total operating costs in 2020 decreased by 15% compared to 2019 but increased by 25% compared to the average for the 2008-2019 period, largely due to an increase in the fishing effort. The results of changes in landings are also increasing depreciation costs, personnel costs, and repair and maintenance costs.

In terms of economic performance, the GVA, gross profit and net profit in 2020 were estimated at EUR 1.78 million, EUR 1.03 million and EUR 0.6 million, respectively. The net profit in 2008, 2009 and 2010 was negative, the value for 2016 and 2017 showed improvement but in 2018 the value again decreased. Comparing 2020 with 2019 the net profit decreased by 69%.

In 2020, the Romanian fleet had an estimated value of physical capital of EUR 9.5 million and investments amounted to EUR 0.6 million. If the value of physical capital is stable the investments decreased by 33%, compared to 2019. The estimated value of total assets in 2020 was EUR 5.2 million.

Should be emphasized that the value of landings is causing a significant reduction of average wage by 25% in 2020 compared with 2019.

It is also a negative impact on less demand encountered on the market, as a significant issue, especially for Rapa whelk and Turbot species, due to the COVID-19. Also total landings, as volume and value decreased in 2020 compared to 2019.

### Resource productivity and efficiency indicators

The gross profit margin and net profit margin decreased in 2020 compared to 2019 by 30% and 52%, respectively. When comparing both indicators to the average for the period 2008-2018 they are almost stable with an increase of just 4%.

Labour productivity (GVA/FTE) recorded a decrease in 2020 by 39% compared to 2019 and by 19% in the period 2008-2019. If GVA decreased as well as labour productivity decreased the number of FTE increased by 24% comparing 2020 to the 2008-2019 period.

Fuel consumption per landed tonne followed an overall increasing trend since 2017. In 2020, it was estimated at 180 litres per landed tonne which were 41 litres more per landed tonne compared to 2019 and a 28% decrease compared to the amount of 251 litres per landed tonne during the period 2008-2019. The fuel consumption is explained based on direct proportionality between total landings in each analysed year of evolution.

Landings in weight per unit of effort (in DaS) followed the decreasing trend starting from 2017 and in 2020 decreased by 20% compared to 2019 but increased by 29% than the average for 2008-2019. Greater volume of landings of segments engaged in last few years in Rapa whelk contributed also to the improvement of productivity and efficiency indicators since this type of catch has huge importance in total catches.

In 2020 RoFTA, amounting to 8%, decreased compared to the previous year by 63%, and decreased by 43% compared to the average 2008-2019.

## Performance by fishing activity

The fishing fleet has totalized a number of 175 vessels in 2020, out of which 130 active and 45 inactive vessels and targeting different species only in the Black Sea EEZ waters of Romania.

### Small-scale coastal fleet

In 2020, there were 104 active vessels classified in SSCF, representing 80% of the total number of active vessels. The amount of income totalized by Romanian SSCF in 2020 was EUR 1.33 million. Landings' income generated in 2020 decreased by 34% compared to 2019 and by 5% on the average level 2008-2019. In terms of economic performance, the amounts of GVA, gross profit, and net profit generated by the SSCF were EUR 0.8 million, EUR 0.41 million, and EUR 0.34 million, respectively. Compared to the average of 2008-2019, GVA and gross profit decreased by 6%, while net profit increased by 7%. It should be mentioned that in this fleet segment, the scuba divers collecting Rapa whelk manually are included.

The most important factor with a negative impact on the improvement in economic performance in the period analysed included a decrease in the landing income in 2020 and an increase in some costs.

### Large-scale fleet

In 2020 the LSF fleet counted 26 active vessels (20% of the total active vessels), with a total crew of 153 fishers an increase from 2019. In 2020, the total revenue, generated was EUR 1.55 million, a decrease of 41% compared to 2019, but an increase of 9% compared to the average for the 2008-2019 period. The main explanation is that in 2020 the 2 934 tonnes total landings decrease, from the 4 701 tonnes in 2019. The GVA amounted to EUR 0.98 million in 2020, a substantial decrease over 2018 and 2019, due to the decrease in total catches, as above mentioned. The gross profit in 2020 amounted to EUR 0.6 million, a decrease of 57% compared to 2019. The net profit was EUR 0.28 million in 2020 which was a significant decrease of 76% due to the diminished total landings, and the decrease of Rapa whelk especially.

Due to the COVID-19 outbreak and, also, the decline in Rapa whelk total catches, since the entire fleet is dependent on this stock species and catches the profile of the LSF is significantly affected.

## Performance results of selected fleet segments

In 2020 the entire active Romanian fleet generated a gross profit of EUR 1.03 million. The national fleet is characterised by four fleet segments and all of them made profits in 2020.

### Vessels using passive gears only for vessels 00-12m

Both fleet segments PG VL0006 and PG VL0612 totalised 93 active vessels in 2020 and the analyses are done considering the similarity of both segments, the single difference between them being just the length of vessels. The value of landings was 1 477 tonnes and EUR 1.16 million, representing around 40% of the national fleet. This fleet registered a gross profit of EUR 0.41 million and a net profit of EUR 0.34 million in 2020. These vessels use passive gears (mainly traps) and include also fishers who catch Rapa whelk manually – scuba divers. The segment was encountered difficulties in the sale of fish catches, each crew acting on its own, mainly, due to the fact the enterprises are for one to five vessels. The generated GVA in 2020 was EUR 0.76 million, gross profit EUR 0.4 million, and net profit EUR 0.34 million; the catches are represented by small pelagic species: Rapa whelk, gobies, sprat, *Mugilidae*, anchovy, and accidentally as not target species - turbot.

### Vessels using polyvalent fishing gears PMP 1218m

22 vessels operating in the Romanian coastal areas of the Black Sea are targeting turbot, mainly with gillnets, and Rapa whelk using beam trawlers. In 2020 the landings in the volume are for 2 217 tonnes and EUR 1.2 million and 30 FTE, counting for 56% of total fleet FTEs. In 2020 this fleet segment made a gross profit of EUR 0.52 million, a net profit of EUR 0.27 million, around 50% gross profit, and around 83% net profit of the total Romanian fishing fleet.

### Vessels PMP gears belonging to the segments 24-40m

The fourth segment of the Romanian fishing fleet is PMP VL2440. Four vessels that produce a total value of landings totalizing EUR 0.319 million, 12% of the total value of landings, and. These vessels target demersal species such as turbot and Rapa whelk. This segment includes mainly vessels using GNS for catching turbot, and beam trawlers for Rapa whelk. They are not specialized by gear types,

switching from one gear to another pending on the abundance of both stocks during the year, and the market request.

## Drivers affecting the economic performance trends

The Romanian catches in 2020 decreased compared to 2019 (-38%), while compared to the average for the 2008-2019 period the total catches increased by 27%. Starting with 2013 Rapa whelk became the most important species in total catches. This trend is affecting all performance of the fleet, and the evolution of stocks and market demand for this species, which is leading to a dependency of the whole fleet of Rapa whelk catches. Also, the most valuable fish species caught, turbot, is subject to TACs limitation under EU Regulations, and this is resulting in very limited money amounts earned by fishers.

## Markets and Trade

The trade balance in Romania for fish and seafood is negative. First of all, due to the small dimensions of the fleet and therefore, total catches, and also, due to the huge quantities imported by the supermarket chains. At the same time should be noted the weaknesses of the processing sector development is not able to use properly the internal production availabilities. It should be noted the interest by the Romanian consumers for ocean fish species and other fish species not available in the Black Sea waters.

## Management instruments

In Romania, fisheries are the responsibility of the Ministry of Agriculture and Rural Development, having in subordination National Agency for Fisheries and Aquaculture, which implements the specific legislation for fisheries, as well as for the aquaculture sector. The Agency is on the way to implementing the contract for a new information system and centralized database of the agency, including – a new component of the contract data collection database, in order to connect data on marine species, landings, register of the fishing fleet, and socio-economic data, as well as all other data covered by the DCF. The data will be available for each fishing vessel and enable assessment of the status of marine fisheries. It is the aim of this database to be used for the improvement of management implementation aims such as adopting measures for sustainable development and for the CFP implementation strengthening.

Fisheries management is designed based on EU regulations/decisions which introduced capacity limitations and temporal restrictions (in the fishing seasons for turbot. i.e.). Romania's fleet capacity is very small compared with the other riparian countries' fleets, in terms of total GT and kW. Should be mentioned that no modern fishing port is available, although, there is a new project for the modernization port of Midia in the next future. In 2019, the GFCM adopted rules for the monitoring of turbot fishery, introducing annually, catch limits for this stock, establishing a maximum number of fishing days for targeting turbot, and restricting the number of fishing vessels licenses.

## TACs and quotas

Romania has TACs for turbot and sprat, under EU regulations. Additionally, for other commercial fish stocks, at national level limitation of quotas are approved annually based on the scientific advised of the research institute, and under GFCM recommendations implementation decreasing number of days at sea and fishing days are adopted. From the provisional data available in 2020 year, the value of landings is decreased by 38%, in 2020 compared to 2019, as well as in value of landings. This is a result of limited fishing possibilities and COVID-19 effects.

## Operating costs

Compared to the average for the analysed period 2008-2019, the total costs of the fleet in 2020 increased by 25%, due to changes in the fleet structure and due to the more than 10 times increase in total catches from the beginning of the period. Personnel costs and energy costs are the major expenditure items, with a 39% and 26% share of the operating costs, respectively. This could be explained by the almost stable level of salaries during this period and also by a small decrease in the days at sea accompanied by the rising fuel prices.

## Nowcasts for 2021-22 and beyond

### Model results

Considering the estimated figures for 2021, the number of total vessels was diminished by twelve vessels as a number, but no significant decreases in total GT and kW are foreseen. These figures would not implicate changes, in terms of total jobs and FTE. The days at sea in 2021 decreased by 17% compared to 2020 and this led to a decrease in total landings in volume and value by 30% and 22% respectively. The decline of the revenue continues in 2021 and together with the increase of fuel prices caused a very low profitability of the Romanian fishing fleet.

The nowcast model for 2022 shows even bigger deterioration compared to 2021. The significant increase of the fuel prices and the decreasing revenue could strongly affect the Romanian fleet which regarding to the model result would generate a net profit very close to net loss.

### Landing obligation

Landing obligation has a small impact due to the fact that the bulk of the national fleet is composed of the SSCF. Its catches have no individuals caught under the minimum conservation reference size required to be retained on board. Only, in the Rapa whelk fishery, the catches of undersized turbot individuals are subject to derogation granted for this fishery. Due to the very low catches, especially for the small pelagic species, for fishers is too costly to separate, store and land very small quantities (very often less than one kg), for vessels below 12 metres; this is representing a disproportioned burden, with implications on the financial costs and technical issues that are to be addressed, especially, by the fishers from SSCF, that occurred additional storage space and labour needs. These vessels are not suitable for investments allowing the execution of these operations.

### COVID-19

Starting at the beginning of March until the middle of May 2020 Romania declared the COVID-19 emergency situation. In the first 20-15 days, fishers were blocked in ports, and after that period the activity started again, but very slowly. Comparing the records received/collected by NAFA inspectors, the volume of landings was very small. Comparing the same period 2019/2020, quantities are around the same level, due to the fact that in this period of the fishing season the weather conditions are not so different. Additionally, the weather conditions are influencing the level of fishing activities; these activities depend mainly on the seasonality of touristic activity among the littoral, and the season is opening, usually, after 1 of June. This year opening was delayed to the end of June, but the influence hasn't been important for the fishery due to the low level of catches, allowed under TACs limitations. Meantime the level of fishers engaged is relatively low and decreased as FTEs in 2020, this situation conducted to less interest for authorities to adopt specific measures. Prices of some species increased in the period March-May 2020 according to the period March-May 2019, i.e. for turbot by 5%, but more influenced by the closure period of fishing starting with half of April. For fisheries, no specific measures were adopted to balance the impact of the COVID-19 crisis, due to the small dimensions of the sector, the bigger importance of agriculture issues, and the huge dimensions of supermarket chains importing and large quantities of fish and fish products, which includes fish species not present in the Black Sea area.

### Methodological considerations and data issues

No specific issues were detected on the data submitted, considering the previous last annual report. It should be noted that the establishment/implementation of a centralized database of the national agency for Fisheries and Aquaculture will allow the increase in the process of collection, storage, and cross-checking, and in general the quality of data. Due to the importance of data validation at the national level, the member state is to improve the methods used in order to get better results and have the capacity to obtain dynamic reports on further data analysis. Moreover, should be specified that missing values in the tables for the variables, Other income, Operating subsidies, and Income from leasing out quota, are because these values are reported as zeros.

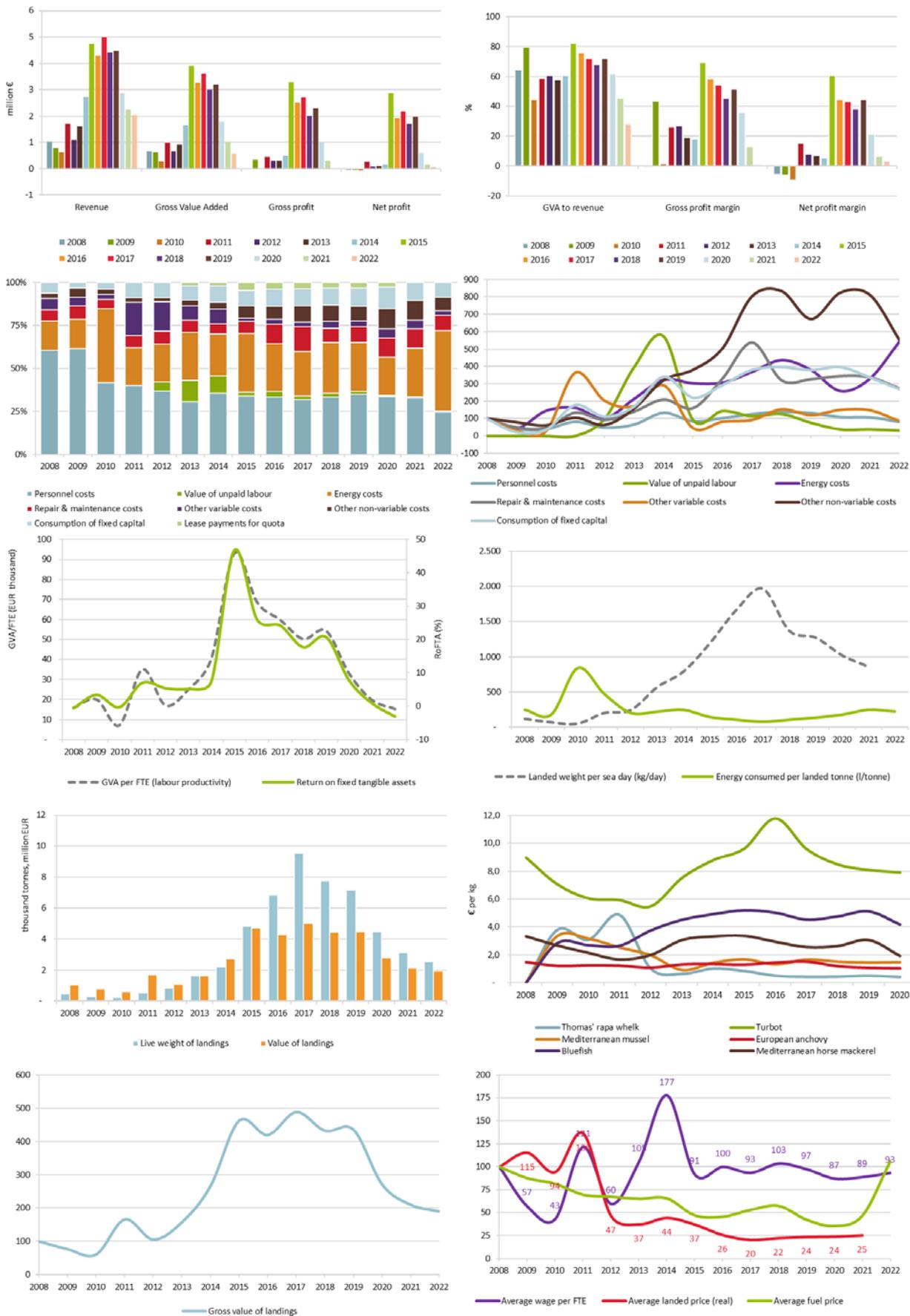


Figure 4.25 Romania: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.20 Slovenia

### Short description of the national fleet

#### Fleet capacity

In 2021, the Slovenian fishing fleet consisted of 137 registered vessels (a decrease of 1% compared to 2020), with a combined 668 GT (-1% compared to 2020), a total power of 8 693 kW (-1.7% compared to 2020) and an average age of 43.5 years. The average length of the fishing vessels was 9 metres in the same year. The size of the fleet decreased between 2008 and 2021; the number of vessels by 20% and GT and kW by 11% and 6%, respectively. The major factor causing the fleet to decrease was the scrapping of vessels, including two of the largest vessels in Slovenian fishing fleet. A decrease of 22% in number of vessels is recorded in 2018 regarding 2017. In 2018, Slovenia updated the register of fishing vessels. All inactive vessels, with no fishing license, were, with the permission of the owner, deleted from the registry.

In 2021, there were 72 active vessels which represent 52% of all fishing vessels. The number of all active vessel increase by 7% from 2008-2015, while a decrease of 18% was recorded in 2021 compared to 2015. One of the reasons for the increased number of active vessels (2008-2015) is the scrapping of some large vessels. Many fishers lost their jobs and decided to start fishing on their own. Also the economic crisis over the past few years had a similar effect on the increased number of active vessels. One of the reasons for the drop from 2016 to 2020 was the crisis in the purse seiners sector where the number of vessels decreased by two thirds in the period 2016 to 2018 while, from 2019 onwards, there were no more vessels in this segment. Regardless of the increased number of active vessels, the number of inactive vessels is still high. The case is complex and there are several reasons for this situation. One of the reasons is the high age of these vessels. Many vessels are very old and they are no longer suitable for fishing. Also many owners cannot fish anymore because they are retired but they do not have a successor to continue with the fishing activity. In many cases, fishers found a new job outside the fishing sector, because they could no longer earn a living from fishing, but still own the fishing vessel.

#### Fleet structure

The Slovenian fishing fleet is divided into SSCF (87% of all active vessels in 2021) with an engine power of 3 544 kW (+4% compared to 2020) and a LSF segment (13% of all active vessels in 2021) with an engine power of 1 692 kW (same value as in 2020). The number of vessels in the SSCF has decreased by 10% from 2008-2020, while the number of LSF vessels has decreased by 46% in the same period. Scrapping is the major factor for the decreased LSF. Additionally, those fishers who lost their jobs because of scrapping, starts to fish on their own, which results in a higher, number of small-scale vessels.

The Slovenian national economy is not dependant on the marine fisheries sector. However, the sector has a social impact in terms of employment. The watershed moment for Slovenian marine fisheries began with Slovenian independency in the year 1991. The period after the independency marked a decrease in the extent of fishing regions and a substantial loss of market for fish products. A large number of poorly equipped small-scale fishers, inadaptability of large-scale fisher, along with the discordance among fishers, producing and marketing capabilities brought the sector into crisis. Landings of almost 6 000 tonnes in 1990 decreased to less than 200 tonnes in 2021.

The existence of two sea fishery reserves where all fishing activities are banned (Portorož and Strunjan fishery reserves) further limit the reduced Slovenian fishing area. Moreover, there is an important industrial port in the Gulf of Koper. Due to safety and international rules, a common routing system and traffic separation scheme was established in the Northern Adriatic, which impacted fisheries. For the last few years, this has had a negative impact, particularly on those fishers who are engaged only in small-scale coastal fishing.

#### Employment and average salaries

In 2020, the number of fishing enterprises totalled 66, with the majority (71%) owning a single vessel. 29% of the enterprises owned two to five fishing vessels and none of the enterprises owned six or more vessels. Total employment in 2020 was estimated at 84 jobs, corresponding to 47 FTEs. The level of employment decreased between 2008 and 2020, with total employed decreasing by 24%, while the number of FTEs decreased by 36 %.

In 2020 the average wage per employee was EUR 3 036 (EUR 5 474 per FTE) and it was below the average Slovenian salary in 2020, which amounted to EUR 23 304. Furthermore, the average wage per FTE was also below the Slovenian minimum wage in 2020 (EUR 11 286). The Demersal trawlers and demersal seiners 12-18m segment recorded the highest average mean wage of EUR 6 713 (EUR 10 553 per FTE). This segment also had the lowest value of other income in total income (EUR 120 835 in 2020). Slovenian fishers earn only part of their wages in fishing and the rest of their salaries with other activities, such as tourism, aquaculture etc.

The Slovenian fishing fleet consists predominantly of small vessels of less than 12 metre (mainly vessels of 6 metre). Self-employed fishers who own one fishing vessel about six metres long represent a typical Slovenian fishing enterprise.

## Fishing activity

In 2020, the fleet spent a total of around 6 164 days-at-sea. Effort, in days-at-sea, increased 29% between 2008 and 2015, while in the period 2016 to 2020 decreased for 20%, compared to 2015. The fisheries in the Adriatic Sea is very intense, consequently most of the fish stocks are overexploited. Slovenian fisheries have a negligible effect on fish stocks because the relatively small size of its fishing sector. However, it is affected by the intensive fishing in the area, which results in lower landings and increased effort to keep the level of landings. Furthermore, the fisheries sector, particularly the SSCF, is affected by the limited size of marine fishing area. Most of the fleet is poorly equipped and unable to operate in international waters. One of the reasons for the increased days-at-sea number, in the period 2008 – 2015, is also the high price of fuel in these years, which encouraged the fishers to do shorter but more frequent trips. Additionally, the reason for the declined fishing days after 2015 can be attributed to the crisis in purse seiners sector and reduced effort in DFN 00-06m segment. Fluctuation in number of vessels and number of fishing days in small-scale sector is mainly related with the activity of occasional fishers, i.e., those whom fishing is not the only source of income. During the economic crises, when incomes were lower, they went to the sea more often to earn some additional income. Also, effort increases when the season for fishing of some “high market price” species, e.g. sole, turbot, is very good.

The quantity of fuel consumed in 2020 was around 260 000 litres, a decrease of 60% from 2008. The major factor causing this decrease is the scrapping of several vessels in the fleet, including two of the largest vessels.

The system of fuel price subsidies for fishers in Slovenia is quite complex. Tax incentives for the purchase of fuel are claimed only by larger fishing vessels, i.e. those with higher fuel consumption (mainly trawlers). The average final price of diesel fuel in 2020 was 1.06 euro/litre, while the price without excise duty was 0.68 euro/litre the same year. The share of excise duty in the final price of fuel thus amounted to more than 30%.

## Production

The total weight of seafood landed in 2020 was around 156 tonnes, with a landed value of EUR 1.23 million. The total weight and value of landings decreased by 59% and 21%, respectively, over the period analysed. In 2009, the national fleet generated the highest landed value (EUR 2.4 million), followed by 2008 (EUR 2.3 million). In terms of landings weight, in 2009 the fleet landed around 866 tonnes, 2010 (764 tonnes) and 2011 (719 tonnes). The major factor causing the decrease in landed weight and value, especially for European anchovy and sardine, include scrapping of fishing vessels. In the last quarter of 2011, Slovenia sent the two largest vessels to be scrapped (pelagic trawlers 24-40m); those vessels targeted mainly sardine and anchovy and represented around 50% of the Slovenian landed weight. The climate change could be also one of the reasons for the observed reduction in landings. The Northern Adriatic Sea was very warm over the past few years, which could be the reason for the reduced presence of certain fish species, e.g. whiting. The landings volume of whiting decreased from 2012 to 2018 by 70% compared to previous years.

Prices obtained for the key species targeted by the fleet generally remained stable between 2008 and 2020. Slight annual variations of the prices are the results of increased or decreased volume of landings over the period. European pilchard and European anchovy, most important species in period 2008 - 2012 (together accounted around 50% of the total landings value obtained by the Slovenian fleet) in 2020 recorded a negligible catch – around 1% in landing value. Gilthead sea bream records increased value of landings from 2008-2020 for 10%. Consequently, the price for species mentioned decreased by 5% in the same period.

Slovenia, in the last period, invested a large amount of money in marine aquaculture, especially in shellfish farming. Increased production of shellfish could be one of the reasons for more frequent

occurrence of gilthead sea bream in the Slovenian sea since it is mainly fed with shellfish. Damage on shellfish farms caused by sea bream is estimated at 550 tonnes per year which represent around 60% of Slovenian shellfish sales volume in 2020.

## Economic results for 2020 and recent trends

### National fleet performance

The amount of income generated by the Slovenian national fleet in 2020 was EUR 3.59 million. This consisted of EUR 1.23 million in landings value, EUR 2 million in non-fishing income and EUR 0.36 in subsidies. The Slovenian fleet's landings income decreased for more than 20% between 2008 and 2020, while other income doubled in value during the same period. Due to reduced landings, Slovenian fishers are looking for the opportunity to generate earnings in other economic sectors, such as tourism, aquaculture etc.

Large increase in subsidies was recorded in 2015. The reason for this were payments to fishers implemented by Slovenia through the "Socio-economic compensation for the management of the Community fishing fleet in the framework of OP EFF 2007-2013" measure which was a consequence of Croatia's accession to the EU. Through Croatia's Accession Treaty which entered into force on 1 July 2013, the provision became applicable in EU legal order that Slovenia may finance a scheme of individual premiums for fishers who would benefit from the access regime laid down in Part 11 of Annex I to Regulation (EC) No 2371/2002 (this access regime is now provided for in point 8 of Annex I to Regulation (EU) No 1380/2013) as amended by the Act of Accession of Croatia. The scheme may only apply during the period 2014 to 2015 or, if this occurs earlier, up until the date of the full implementation of the arbitration award resulting from the Arbitration Agreement between the Government of the Republic of Slovenia and the Government of the Republic of Croatia, signed in Stockholm on 4 November 2009.

Total operating costs incurred by the fleet in 2020 equated to EUR 0.80 million 22% of total income. Personnel and energy costs, the two major fishing expenses, represented 32% and 25% of total operating costs, respectively. Between 2008 and 2020, total operating costs decreased more than 60%, largely due to scrapping of several vessels. In the last few years, especially in 2012 and 2013, Slovenian fisheries sector has recorded an increased value of direct income subsidies. It has been intended primarily to diversify their activities. The results of these investments are the increased depreciation costs (period 2013-2015) and other income.

Between 2008 and 2020, GVA increased by 41%, while gross profit and net profit increased 136% and 192%, respectively. Although the Slovenian fishing fleet was in a poor economic condition because of old and poorly equipped fleet and reduced catches, still records a positive trend in almost all the economic indicators. The reason for the positive trend is primarily because of higher revenues from other sources.

In 2020, the Slovenian fleet had an estimated (depreciated) replacement value of EUR 3.4 million. Investments by the fleet amounted to EUR 0.08 million in 2020.

### Resource productivity and efficiency indicators

The gross profit margin and net profit margin also increased from 2008 to 2020 for 93% and 135%, respectively.

Labour productivity (GVA/FTE) also record increase in period 2008- 2020 for 117%: GVA increased for 41% while the number of FTE decreased by 36% in the period analysed.

Labour productivity of the Slovenian fishing fleet was EUR 59 618 in 2020, which is above the GVA per employee average in the entire Slovenian agricultural sector (EUR 25 049) and also above the Slovenian GVA/employee average, which amounted to EUR 42 413 in 2020 (Source; [SiStat Database](#)).

Fuel consumption per landed tonne has followed an overall increasing trend since 2008 and amounted 1 663 litres per tonne landed in 2020 (an increase of more than 40% from 2008). The landed weight per sea day decreased significantly for more than 50% from 2008 to 2020 and amounted 25kg per sea day in 2020. One of the reasons for that is the scrapping of some large vessels with high volume of landings and, subsequently, changed composition of the fleet consisting now in a majority of smaller vessels with lower landed weight per sea day. Lower volume of landings of purse seiners segment in the last few years than in previous ones also affected the productivity and efficiency indicators since this segment has the best ratio between the weight of catches and fuel consumption.

## Social impact

The marine fishing sector is small but with a strong social impact on the Slovene coastal region in terms of employment. Besides, this activity is also important for maritime identity and tourism. In addition to directly creating employment opportunities, it is linked to the economy of the entire region, especially to tourism and catering. As said before, the value and volume of landings, as key drivers do not have affect only fishers but also the people on shore. Slovenian fish processing industry, on the other hand, less depends on Slovenian fisheries because most of the raw materials are imported from another, mostly EU, countries. However, the crisis in purse seiners segment had negative impact on some smaller processors which produce salted fillets of anchovies.

## Performance by fishing activity

The Slovenian fleet has a range of vessel types targeting different species predominantly in the Adriatic Sea. The fleet consisted of seven (DCF) fleet segments in 2020, with four inactive length classes consisting of 66 vessels. Two of the active segments (DFN VL00-06, DFN VL06-12) belongs to SSCF and one (DTS VL12-18) belongs to the LSF.

### Small-scale coastal fleet

In 2020, there were 70 active vessels of which 87% are classified as small-scale (a decrease of 10% from 2008). The majority of these vessels operate in the coastal waters of Slovenia.

The amount of income generated by the Slovenian SSCF in 2020 was EUR 2.2 million or 67% of all income in 2020. Landings' income decreased 19% between 2008 and 2020, while other income increased 90% during the same period. Due to reduced landings, Slovenian fishers are looking for the opportunity to generate earnings in other economic sectors, such as tourism, aquaculture etc.

Between 2008 and 2020, GVA, gross profit and net profit had a positive trend (although the substantial fall was recorded in 2015). The major factors causing the improvement in economic performance in period analysed included increases in landing income and income from other sources. Operation costs remained relative stable during the period analysed. In 2020, the SSCF had an estimated (depreciated) replacement value of EUR 1.6 million. Investments by the fleet amounted EUR 0.05 million in 2020.

### Large-scale fleet

Nine vessels (12% of all active vessels) represent Slovenian large-scale sector in 2019. The majority of these vessels operate in the coastal waters of Slovenia.

The income generated by the Slovenian LSF in 2020 was EUR 1.03 million (33% of all income). Landings' income decreased 21% between 2008 and 2020. The major factor for decreased value of landings income was scrapping of some vessels and in the last few years a crisis in the purse seiner segment, which is deeper from year to year. Moreover, this segment did not operate at all beyond 2018.

Between 2008 and 2020, GVA decreased by 11%, while gross profit and net profit increased by 59% and 100%, respectively. The major factor causing for decreasing GVA was the crisis in the purse seine sector and scrapping of some vessels. The major drivers for increased value of gross and net profit are higher values of landings and other income in 2020.

In 2020, the LSF had an estimated (depreciated) replacement value of EUR 0.93 million. Investments by the fleet amounted to EUR 0.03 million in 2020.

## Performance results of selected fleet segments

The entire active fleet made an overall profit in 2020. All segments also improved their economic performance in 2020.

### Demersal trawlers and demersal seiners 12-18m

Nine vessels based predominantly in the Adriatic. This fleet targets a variety of species, the most important being whiting, musky octopus and European squid. The value of landings was EUR 0.79 million and 11 FTEs were employed in this fleet segment in 2020, contributing to 49% and 25% of the total income from landings and FTEs generated by the Member State's fishing fleet, respectively. This fleet segment made a profit in 2020.

This segment records a significant improvement in economic performance, which is largely due to increased landings and higher other incomes in 2020. Volume of landings increased by 51% compared to 2019. The increase was mainly due to higher catches of whiting (+40% compared to 2019), which is one of targeting species in DTS segments. One of the reasons for the increased landings could be the reduced fishing effort of Italy and Croatia fishing fleets due to COVID-19 restrictions.

### **Drift and fixed netters <6m**

23 vessels operating in the Slovenian coastal areas of the Adriatic. These vessels target demersal species, such as Sole, Mulletts and Sea bream. The total value of landings was EUR 0.14 million and 14 FTEs were employed in this fleet segment in 2020, contributing 12% and 30% of the total income from landings and FTEs generated by the national fleet, respectively. This fleet segment made a profit in 2020.

### **Drift and fixed netters 6-12m**

38 vessels operating in the Slovenian coastal areas of the Adriatic. These vessels target demersal species, such as sole, common pandora and sea bream. The total value of landings was EUR 0.30 million and 21 FTEs were employed in this fleet segment in 2020, contributing 24% and 47% of the total income from landings and FTEs generated by the national fleet, respectively. This fleet segment made a profit in 2020.

## **Drivers affecting the economic performance trends**

Higher income from landings (which depends, mainly, on the status of fish stocks), reduced operating costs and higher income from other sources were the main driving forces behind the overall improved trend.

The Slovenian fleet's landings income decreased by 21% between 2008 and 2020, while other income doubled in value during the same period. Due to reduced landings, Slovenian fishers are looking for the opportunity to generate earnings in other sectors, such as tourism, aquaculture etc. In the last few years, especially in 2012 and 2013, Slovenian fisheries sector records an increased value of direct income subsidies. It has been intended primarily to diversify their activities.

## **Markets and Trade**

The Slovenian seafood trade balance is relatively stable over the years and it presents a negative balance. Slovenia is a net importer of fish and fish products. In 2020, imports were approximately five times larger than export and amounted to 10 879 tonnes (EUR 61 million) of fish and other fish product (source; <https://pxweb.stat.si/SiStatData/pxweb/si/Data/-/2490101S.px>). Exports amounted to 2 210 tonnes (EUR 13 million) in the same year. The majority of the imported fish and fish products come mainly from the EU. The largest Slovenian seafood import partners are Italy, Spain and Croatia. Concerning exports, the largest partners are Austria, Croatia and Bosnia and Herzegovina.

The Slovenian volume of landings for 2020 amounted around 156 tonnes. In the same year Slovenian aquaculture sector has produced 1 674 tonnes of fish and shellfish. Slovenian market for marine products is fragmented and disorganized. A large number of producers and dealers are unorganized and acting individually. Most of the catches are sold directly to known customers. Part of landed catches is sold also on the fish market in Trieste, Italy.

Prices obtained for the key species targeted by the fleet generally remained stable between 2008 and 2020. Slight annual variations of the prices are the results of increased or decreased volume of landings in the period

## **Management instruments**

In Slovenia, the field of fisheries, together with the relevant legislation and management, is currently the responsibility of the Fisheries Sector at the Ministry of Agriculture, Forestry and Food (MAFF). The ministry developed a new information system (InfoRib) which collects data on marine species, landings, register of fishing vessels and socio-economic data. The data are linked to each fishing vessel and enable assessment of the socio-economic status in marine fisheries. Those data provide the basis for adopting measures in favour of sustainable development and for the CFP.

Fisheries management is regulated mostly by capacity limitations and spatial restrictions. Capacity limitation is related to increase of vessel power and GT in terms of total national fleet capacity. Spatial restrictions are related with the existence of two sea fishery reserves where all fishing activities are

banned (Portorož and Strunjan fishery reserves). Moreover, there is an important industrial port in the Gulf of Koper. Due to the safety and international rules, a common routing system and traffic separation scheme was established in the northern Adriatic, which also has an important impact on fisheries.

From 2014 GFCM management plan for small pelagic fish in GSA 17 has been in force. By the provisions of this plan maximum number of fishing days for targeting sardine and anchovy has been set, as well as temporal closure period.

## TACs and quotas

Slovenia does not have any TACs and/or quotas.

## Status of Key Stocks

According to the GFCM Working Group on Stock Assessment of Small Pelagic Species (WGSASP) held in January, 2018, anchovy in the Adriatic Sea (GSA17-18 combined) was considered as overfished with relative high biomass, and sardine in the Adriatic Sea (GSA17-18 combined) was considered overexploited with relative intermediate biomass.

According to the GFCM Working Group on Stock Assessment of Demersal Species (WGSAD) held on November 2017, out of the 37 stock assessments validated by the WGSAD, seven were found in a state of sustainable exploitation and 30 were assessed as being overexploited.

According to the preliminary results of GFCM Working Group on Stock Assessment (WGSA) held in January, 2021, three stocks were considered sustainably exploited (anchovy in GSA 20, anchovy and sardine in GSA 09), 11 overexploited or in overexploitation, two remained uncertain and one was deemed ecologically unbalanced (20 stocks of small pelagic species were analysed). In addition, 54 stocks of demersal species, including fish, crustaceans and cephalopods, were analysed. Four stocks (red mullet in GSAs 15, 22 and 24 and Norway lobster in GSA 09) were considered sustainably exploited while 50 indicated some level of overexploitation.

## Operating costs

Between 2008 and 2020, total operating costs decreased 60%, largely due to scrapping of several vessels. In the last few years, especially in 2012 and 2013, Slovenian fisheries sector records an increased value of direct income subsidies. It has been intended primarily to diversify their activities. The results of these investments are also increased depreciation costs and other income. In the period 2013-2016, i.e., after the scrapping, operating costs remained relatively stable, with slight annual variations as a result of increased or decreased number of active vessels in the fleet. One of the drivers which effect on the economic situation of the fleet are repair & maintenance costs which are relatively high and represented 25% of total operating costs in 2020. In the future an increase in the value of repair & maintenance costs is expected because of old fleet. Energy costs are one of the key drivers only for demersal trawlers and demersal seiner's 12-18m segment. Decreased energy costs in 2020, because of lower prices of fuel, were one of the reasons for the empowerment of economic performance of this sector in 2020.

## Innovation and Development

Slovenia has a derogation regards the minimum distance from coast and the minimum sea depth for the "volantina" trawlers; Article 13(1) of Regulation (EC) No 1967/2006 shall not apply in territorial waters of Slovenia, irrespective of the depth, between 1.5 and 3 nautical miles (nm) from the coast, to 'volantina' trawlers which are used by vessels:

- (a) bearing the registration number mentioned in the Slovenian management plan;
- (b) having a track record in the fishery of more than 5 years and not involving any future increase in the fishing effort deployed;
- (c) holding a fishing authorisation and operating under the management plan adopted by Slovenia in accordance with Article 19(2) of Regulation (EC) No 1967/2006.

The derogation shall apply until 27 March 2023.

For this purpose, Slovenia will have to implement a study in order to display the catch composition with "volantina" trawlers in the zone between 1.5 and 3 nm from the coast.

## Nowcasts for 2021-22 and beyond

### Model results

Preliminary results for year 2021 and 2022 forecast a decrease landed weight and value for Slovenian fishing fleet for both years, while a similar to 2020 number of vessels is expected. Projections suggest total job in general will slightly decrease, same as for FTE. Economic performance results in 2020-21: GVA, gross profit and net profit will decrease compared to 2020 although positive gross and net profits are expected for both years, with margins slightly below those in 2020, but higher than in previous years (2008-2019).

### Landing obligation

Slovenia estimates that the LO won't have any effect on fisheries as Slovenia is enforcing specific the *de minimis* exemption.

Slovenian fisheries have been subject to the following scheme in terms of the LO:

- from 2015: LO for small pelagic species in the Mediterranean, namely anchovy, sardine, mackerel and horse mackerel;
- from 2019: LO for all species subject to minimum sizes in the Mediterranean as defined in Annex III to Regulation (EC) No 1967/2006 (now Annex IX of Regulation (EU) 2019/1241 on the conservation of fisheries resources and the protection of marine ecosystems through technical measures) other than small pelagic species.

The *de minimis* exemptions in North Adriatic Sea on the basis of the relevant Commission Delegated Regulations have been crucial for Slovenian fisheries, as Slovenian fishers ceased targeting small pelagic species in 2019, while the catches of all species decreased – in 2019, the catches of Slovenian commercial marine fishers were the lowest in history, amounting to only about 120 tonnes. Due to the extremely low catches, the obligation for Slovenian fishers to separately store and land a few kilograms of discards, which would need to be taken care of (separately, due to hygiene Regulations in the area of food safety), would represent a disproportionate burden.

Safety on board in Slovenian fishing vessels was not an issue due to the *de minimis* exemptions in the Adriatic Sea as provided for in the relevant Commission Delegated Regulations. If there were no exemptions, safety on board fishing vessels might have been compromised, as Slovenian fishing vessels are predominantly old (more than 30 years on average) and most of them are smaller than 15 metres of length (only five active fishing vessels were of more than 15 metres of length) and implementation of the LO would demand additional storage space as well as additional labour

### COVID-19

Slovenia declared the epidemic on 12 March, 2020. In the first 7-10 days after the declaration of the epidemic, fishers remained mostly in ports. Loss of market was mainly due to closure in touristic sector and closure of fish market in Trieste. Later, however, there were more fishing trips than usual at this time of year, when the availability of fishes is low. Part of the reason for this is the fact that quite a few fishers who are otherwise employed elsewhere were at home and used their spare time to fish. At the same time fishers established new sales channels; they informed customers about the daily catch through various means of information (Facebook, SMS, local media...).

Volume of landings in period March – May 2020, increased by 56% compared to the same period in 2019. The largest increase in volume of landings (+111%) was recorded in DTS VL1218 segment. The increase was mainly due to higher catches of whiting (+134% regarding March – May 2019), which is one of targeting species in DTS segments. One of the reasons for the increased landings could be, the reduced fishing effort of Italy and Croatia fishing fleets.

In terms of effort, fishing days increased by 3% in this period, mainly due to increased fishing days in DTS segments (+29%).

Prices of most important species increased in the period March-May 2020 compared to the period March-May 2019. The price of whiting increased by 33%, gilthead seabream by 8%, common sole by 11%, musky octopus by 44%, European squid by 6% and European seabass by 12%. The reason for increased prices was in direct sales to customers where fishers could achieve a higher selling price than by selling to fish markets or restaurants.

Due to the COVID-19 outbreak, Slovenia implemented various measures to help businesses face these challenging times. The public support took the form of direct grants, wage subsidies, exemption from

paying social security contributions, reduction of certain taxes and water fees, bank guarantees, deferred payment of certain credits and compensatory payments.

Performance and profitability of national fishing fleet is expected to severely reduce in 2021, when the COVID-19 restriction will be, to some extent, eliminated or reduced and Italian and Croatian fleet will be fully operational again.

## **National Fleet**

Due to scrapping, the fleet decreased between 2008 and 2021; the number of vessels by 20% and GT and kW by 11% and 6%, respectively. Because of that, and also due to the poor landings volume of the purse seiners segment, the weight of landings decrease in 2020 more than 59% compared to 2008. Landings volume and income, which depends on the status of fish stocks, are the main drivers in Slovenian fishing fleet. They have the effect on all others economic and social indicators. If the fish stocks in the Adriatic Sea will recover in the future, we can expect also an increased trend in economic and social situation of the sector.

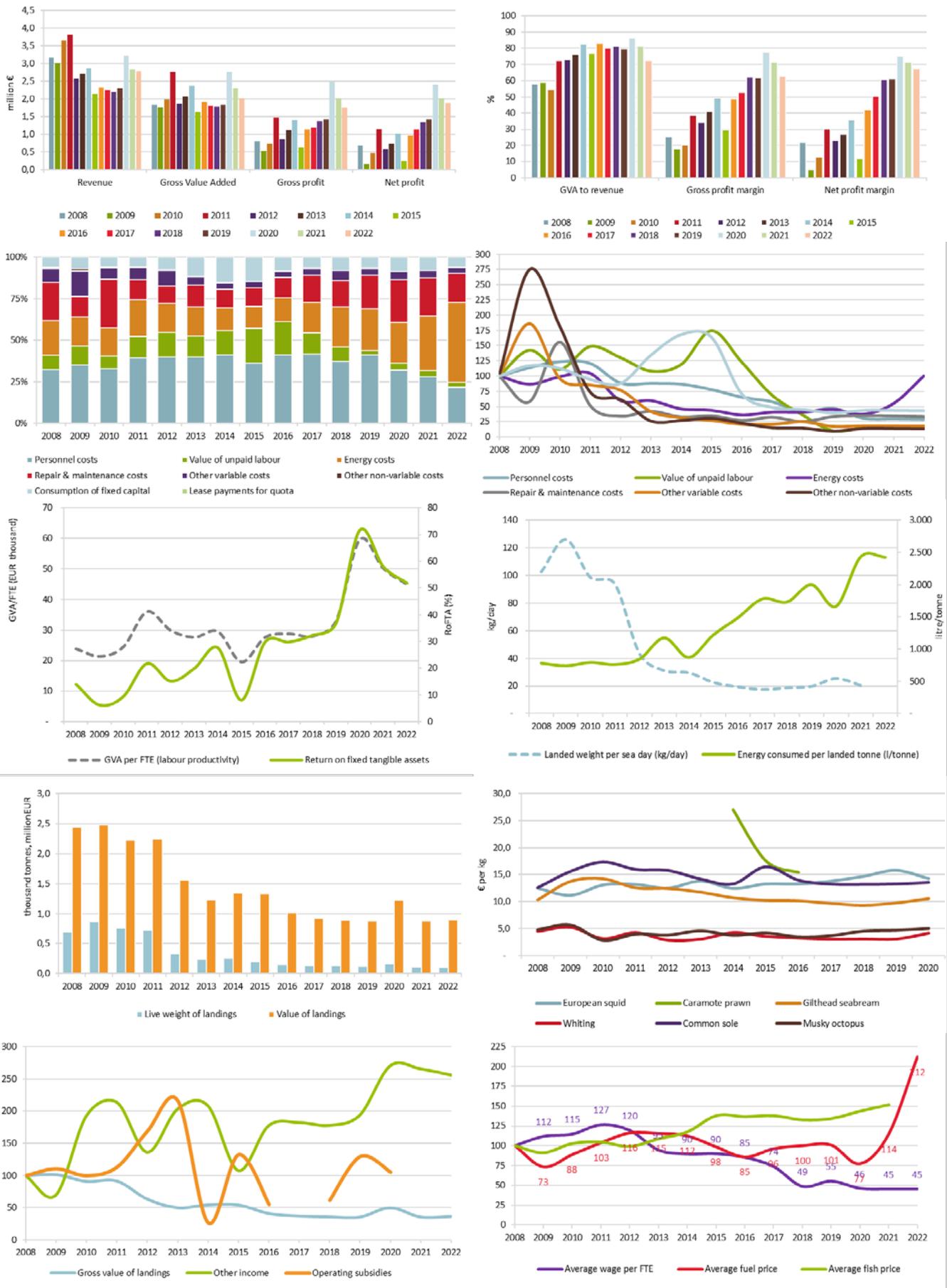
As the fleet is generally old and poorly equipped, it can be expected that repair and maintenance costs will continue to increase in the future. Furthermore, because of old age of the fleet, an increase in inactive vessels can also be expected.

## **Small-scale coastal fleet**

The same issues regarding age and equipment of the fleet apply also to the SSCF. The economic situation of SSCF is largely dependent on the landing volume of species, such as sole, sea bream, turbot or European flounder, so it is very difficult to predict the volume of landings. It depends on a variety of factors, such as sea temperature, other climatic factors, condition of the stock, fishing effort in neighbouring countries etc. Based on current data, the volume of landings decrease in 2021 for 27% regarding 2020, mostly because of decreased landings of sea bream and sole.

## **Methodological considerations and data issues**

No major issues detected. The economic data on the fishing sector were collected mostly from accounting records – AJPES, from data base 'InfoRib', through questionnaires and sales notes. In the monitoring programme all fishing vessels were included. The data collected from all sources were combined in such a way that a complete set of accounting items is compared for each business enterprise. The target population was all the commercial fishing sector of Slovenia. There were approximately 100 fishing companies. In May 2021 the questionnaires for 2020 were sent to all users of fishing vessels in Slovenia. The response rate was 100%. Where the data from annual accounts of business enterprises was used the response rate was also 100%, because there are economic reports for all investigated companies or fishers.



**Figure 4.26 Slovenia: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.**

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.21 Spain

### Short description of the national fleet

#### Fleet capacity

In 2020, the Spanish fishing fleet consisted of 8 937 registered vessels, with a combined GT of 332 871 tonnes and an engine power of 780 075 kW.

The Spanish fishing fleet has decreased by 31.8% the number of vessels, 26.9% the engine power and 29.2% the GT from 2008, in order to bring fishing capacity in balance with fishing opportunities and to remove vessels from those fleet segments that for biological, economical or technical reasons were not in balance.

In 2020, 12.1% of the Spanish fleet was inactive (looking back to 2008, the restructuring of the Spanish fishing fleet sector is evident since 25% of the Spanish fleet was inactive); almost 90% of these inactive vessels are small coastal vessels less than 12 metre LOA.

#### Fleet structure

The Spanish fleet, is one of the largest EU fleet, and the one that carries out fishing activities in more fishing zones.

More than 71% of the active Spanish fleet are vessels under 12 metre LOA with activity always in national waters, of Atlantic, Mediterranean, and Canary Island Waters.

Around 95% of the 7 852 active vessels carried out the fishing activity on Spanish waters (FAO 27.8, 27.9.a, 37.1, and the Canary Island waters 34.1.2), with a combined gross tonnage of 36% of the total of the Spanish GTs, and 62% of the total engine power in kW.

The classification presented in this report, shows a distorted image for the Spanish fleet, as the activity of this fleet is complex, fishing in very different fishing grounds. Also, as the data are aggregated at a supra region level, this report is giving for the North Atlantic area the same profitability for the NAFO drift and/or fix netters as the ICES drift and/or fix netters, or for the drift and/or fix netter vessels that fish in national waters which have different target species, different fuel consumption, and therefore, incomes, costs and profitability. In that sense the economical results do not completely reflect the reality of the Spanish fleet, as the data are aggregated on big boxes and cover very different types of activities, making the analysis of the real economic situation complex.

Also, it has to be taken into account that with the data uploaded to the Fleet Economic Data Call (based on six length sections, main gears, and three supra regions) the fleet is reclassified as:

- Small-scale coastal fleet (SSCF) - includes all vessels under 12 metre using static gears.
- Large-scale fleet (LSF) - segment includes all vessels using towed gears, and vessels over 12 metre using static gears operating in EU fishing regions.
- And distant water fleet (DWF) - includes EU registered vessels over 24 metre operating in 'other fishing regions' including EU outermost regions.

According to this definition, 1 606 Spanish dredges (towed gear which are under 12 metre in length) with coastal activity in Spanish waters should be classified as SSCF and instead of that, they are evaluated at the LSF group, which results as a distortion on the data analysis. These dredges are shellfish catchers who use a small dredger towed by a small vessel for the capture of oyster, prawn, crabs and other species.

The number of fishing enterprises reached 8 168 in 2020. Compared to 2008, small enterprises "oneves" decreased by 32.5%

#### Employment

Total employment in the Spanish fishing fleet for 2020 was estimated at 31 318 jobs, corresponding to 24 522 FTEs, with an average wage per FTE of EUR 26 761, 13% higher than in 2019. However, the value of unpaid labour decreased by 5%.

#### Effort

In 2020, the Spanish fleet spent 856 322 DaS and 849 713 fishing days (-13.1% for both indicators compared to 2019). In this sense, the quantity of fuel consumed decreased by 3%. The value of fuel

consumed decreased by 31.4% compared to 2019, being the fuel price 0.31 euro/litre. Overall, the fuel expenditure represented in 2020 the 11.7% of the total expenditures..

## Production

Production in 2020 in terms of weight of landings decreased by 10% compared to 2019, and also the value of landings (-13%). In terms of live weight and value of landings, the main species for the Spanish fleet were: skipjack, yellowfin tuna, European hake, swordfish, European anchovy and albacore.

## Economic results for 2020 and recent trends

### National fleet performance

In 2020, the economic performance of the Spanish fleet worsened compared to 2019. Income from landings (total value of landings) decreased by 13%. Revenue was estimated at EUR 1 616 billion (-10%).

GVA, gross profit and net profit for the Spanish fleet in 2020 were estimated at EUR 856 million (-4%), EUR 199 million (-14%) and EUR 97 million (-25%), respectively. These figures show a worse profitability of the sector (RoFTA) than in 2019. However, total operational costs decreased also almost a 10%.

In this sense, it is important to highlight that 2020 was really influenced by the COVID-19 outbreak.

### Resource productivity and efficiency indicators

The gross profit margin in 2020 was 12.36%, showing a decrease on profitability of -4% compared to 2019. Similarly, net profit margin was estimated at 7% (-16%).

Labour productivity (GVA/FTE) increased in 2020 and it is estimated at EUR 34 910 (9.16% more than 2019).

Fuel intensity was estimated at 745 litres/tonne in 2020 (+12% compared to 2019). Some causes that can explain the increase of litres/tonne such as the motor's power or the screw's cleanliness, aspects that should be studied in order to make a robust conclusion.

However, fuel efficiency was 11% in 2020, 21% less than 2019. This is due to the decrease of the fuel average price, so it is 0.3 euro/litre (31.8% less than 2019).

It is important to say that in Spain, one of the main characteristic is the variety between maritime districts, so the fuel price varies between 1 euro/litre in Baleares to 0.3 euro/litre in Galicia, affecting the profitability of the segments.

## Performance by fishing activity

The Spanish fleet is highly diversified, not only in terms of the number of species caught, but also in gears used and fishing areas. This diversity can be seen on the high number of segments that make it up, 89 segments clustered in 58 fleet segments in order to keep the statistical secret.

The SSCF represents the 50% of the total fleet. 47.3% of the fleet belong to the LSF and the remaining 2.5% are covered by the DWF.

Despite this fact, the live weight of landings, are higher for the vessels belonging to the DWF segment (52.8%) and LSF (43%), than for the SSCF (3.7%) and the incomes from landings follow a similar structure, LSF segment (40%), DWF (51%) and SSCF (8%).

### Small-scale coastal fleet

In 2020, 3 936 vessels were covered by the fishing activity SSCF in accordance with the definition used in this report. However, this classification differs from the Spanish national one that includes in this fleet also the mobile gears of 12 metre (mainly DRB). However, in this report the general definition of vessels below 12 metre and using passive gears will be used.

Economic data need to be treated with caution, because the 26% of this fleet fish less than 50 days per year and the 31% between 50 and 100 days per year; so this fleet carried out their activity on partial time. In 2020, the decrease in the number of vessels, power and capacity continued by 1% compared to 2019. However, the number of DaS decreased by 9%. In the same way, the value of landing decreased by 12%. However, the weight of landings increased by 1% compared to 2019.

Total jobs increased by 4% generating 8 517 jobs (27% of the total jobs of the Spanish fishing fleet), in the same way personal cost increased by 1%. However, the FTE decreased by 12% compared to 2019. In the SSCF it has to be considered that 31% of the jobs are unpaid labour.

Regarding energy, the energy cost and de consumption decreased by 38% and 26%, respectively compared to 2019.

To sum up, SSCF is an economically profitable segment although GVA, NVA and Gross profit have decreased by 3%, 7% and 14%, respectively compared to 2019.

### Large-scale fleet

In 2020, 3 716 vessels were included on the LSF segment; according to the European definition (1 606 DRB vessels are included in this fleet), 3% less than in 2019.

The number of DaS, the weight of landings, and value of landing decreased by 17%, 5% and 10%, respectively.

Regarding the employment, the number of jobs and the personal costs decreased by 5% and 2%, respectively.

It should be highlighted the drop of the energy costs by 32% due to lower fuel prices.

In spite of this, GVA decreased by 5%, Gross profit by 13% and Net profit by 27%, compared to 2019.

### Distant water fleet

In 2020, 200 vessels were included in the DWF, which has a high participation on the Spanish fleet. The number of vessels is similar to that in 2019 (five vessels less).

Days-at-sea, decreased by 5% compared to 2019, however, the weight and the value of landings decreased by 15% and 16%, respectively.

In terms of costs, value of unpaid labour decreased by 76%, but this variable has been changing over the years, so no comparisons can be made. As in the rest of the Spanish fleet, it is important to highlight the decrease in energy costs (29% less than in 2019).

As a result, GVA and Gross profit have decreased 1% and 14% compared to 2019, respectively. Nevertheless, NVA and Net profit have increased by 5% and 9% compared to 2019.

### Outermost regions (Canarias)

Fishing activity in the Canary Islands OMR takes place in FAO area 34.1.2. In 2020 the number of vessels reached to 727 vessels, 560 of them were active during that year. It is a decrease of 0.89% and 2.44%, respectively compared to 2019.

This fleet is composed mainly by small vessels. 489 of them are under 12 metres LOA (89% of this fleet), which means that fisheries are partial time and can be considered as a complementary activity. These vessels carry out a polyvalent fishing activity (polyvalent gears, targeting more than one species). 23% of the Canary Islands' fleet is inactive.

### Performance results of selected fleet segments

Trawlers and purse seiners in the context of the SFPA and RFMO's are two of the most significant segments in the Spanish fleet. In fact, both of segments represented more than 40% of the total volume of catches in 2020.

#### OFR PS 40XX

This segment is comprised by 27 active vessels (all of them with more than 200 days of activity). This segment represents the 18.9% of the total revenue of the Spanish fleet. It also represents the 26.5% of total weight of landings and the 18.4% of total value of landings in Spanish fleet.

This segment shows better economic performance than in 2019. Therefore, GVA, Gross profit and Net profit increased by 4%, 1% and 146%, respectively.

#### OFR DTS 40XX

This segment includes 31 active vessels (all of them with more than 200 days of activity). It represented the 8.1% of the total revenue, the 15.8% of the total weigh of landings and the 9% of total value of landings of the Spanish fleet.

Despite the decrease in the value of landings by 3.3%, the GVA, Gross profit and Net profit increased by 25%, 13% and 15% compared to 2019.

## Drivers affecting the economic performance trends

### Markets and Trade

During 2020, the Spanish fleet had presence in the followings Sustainable Fisheries Partnerships Agreements (SPFA):

Morocco, Mauritania, Gambia, Guinea Bissau, Ivory Coast, Cabo Verde, Senegal, Cook Islands, Liberia, Sao Tomé y Príncipe, Seychelles, and Mauritius.

The most remarkable SFPAs in social and economic terms were:

- In the Atlantic Ocean, Mauritania, the main SFPA and the major receiver of EU funds. It is a key agreement for shellfish species and the demersal species, especially hake. The main fleet fishing there is the trawl fleet. Morocco, with 92 possible licences, was really important for the artisanal fleet of Canary Islands and the Gulf of Cádiz, otherwise with very few alternative fisheries accesses. It should be underlined the importance of the artisanal fleet.
- In the Indian Ocean, Seychelles, with 15 active licences in 2020, being the main SFPA in tropical tuna fishing (bigeye, skipjack and yellowfin), it is also fundamental not just for the Spanish fleet, but for the industrial development of that area. It is really representative of the purse seiners fleet, which in economic terms is one of the most relevant fleet for Spain. Furthermore, Mauritius was a key agreement in terms of landings, thanks to the important processing plants in the country.
- In the Pacific Ocean, in 2020, there was only one SFPA, Cook Island, with a great role in the landings of the catches for the fleet in the Pacific.

In 2020 there were three active Northern Agreements (Greenland, Norway and Faroe Islands), relevant for the demersal species fishing (cod, hake and other species).

About the Regional Fisheries Management Organizations, Spain participated in 2020 in the following RFMOs:

- Tuna and tuna-like species RFMO's:
  - IOTC, 31 active domestic vessels reported in 2020;
  - WCPFC, 5 vessels were reported to have fished in the area in 2020;
  - IATTC, 37 vessels reported catches during 2020;
  - ICCAT, 645 active vessels in 2020, taking into account the gross number of these vessels are small scale vessels;
  - CCSBT, no Spanish vessel reported catches in this area in 2020.
- Demersal RFMO's:
  - SIOFA, 1 vessel has presence in SIOFA in 2020;
  - SEAFO, 1 vessel fishing in the area in 2020;
  - NAFO over 10 vessels reported to have presence in the NAFO area;
  - NEAFC 3 vessels reported presence in this area in 2020.
  - CCAMLR, 1 vessel operating in the area in 2020.

Furthermore, 24 vessels were operating in international waters not covered by any demersal RFMO in 2020.

In 2021, 1.818 million tonnes of processed, preserved and seaweed fishery products were imported, with a value of EUR 7 530 million, mainly frozen squid, prawns, salmon, and prepared and preserved tuna. 69% of them came from third countries, mainly, Morocco, Ecuador, Argentina, Peru, China and Norway, and among those from the EU, Portugal, France, The Netherlands, Sweden and Greece. Imports from the United Kingdom were also significant.

Around 1.252 million tonnes were exported, with a value of EUR 4 794 million, mainly frozen skipjack and octopus and tuna preparations and preserves. The main destination was the EU market (68%), with the main demand coming from, Italy, Portugal, France and the Netherlands. Regarding third countries, United States of America, Morocco, Japan, Ecuador and China were the most important.

Foreign trade in fishery products ended with a balance deficit of EUR 2.736 million.

## Management instruments, Regulation Policy

The Spanish fleet is managed through several management tools, such as fishing licenses, engine power limitations, time at sea, TACs and quotas related to the area and fishing stock. Under national regulations, there are management plans set down; each plan covers species, gears allowed for the fisheries, technical requirements (such as power, vessel tonnage and length) or even additional technical measures over EU law. In several cases, the management or recovery plans have also a reduction objective that is funded by the EMFF.

### TACs and quotas, Status of Key stocks

As it has defined previously, the Spanish fleet operates in almost all fishing grounds, under agreements with Third Countries (SFPAS), under the umbrella of RFMOS and of course in EU and national waters.

Each of the above-mentioned fishing grounds have a specific importance. On one hand, the fleet operating far distance is a very well-developed fleet, with important technical investment, able to seek for new fishing grounds and able to incorporate new technologies that help to a more sustainable activity. Also, the collaboration with Third Countries offers a payback in terms of employment, training, etc. to the Third Country, aside to the specific contribution to the development that the EU incorporates in each agreement.

In the case of RFMOS, the fishing possibilities (and allowed fishing effort) are negotiated by the EU in the framework of each organization, having had the advice of the relevant scientific advisory body. This is the case of NAFO, NEAFC, ICCAT, GFCM, IOTC, CIAT, CCSBT, CCAMLR and WCPFC. As for the SFPA, the harvest activity is limited to the surplus in the specific area, which is also under scientific revision, according to the provisions of each agreement signed.

The fleet operating in the nearest fishing grounds is the major in terms of number and in terms of direct impact on coastal populations. We may differentiate the fleet that operates in the Atlantic fishing grounds and within the domestic waters which is the biggest in terms of number (accounting the small-scale fisheries, including those vessels of less than 12 metre trawlers and dredges of this length included<sup>38</sup>). The small-scale fleet is less prepared to face a sudden change, depending mainly on the activity performed targeting the species that traditionally meant their most important catches. As social data shows, educational level, paid work and the rest of main indicators lead us to conclude that they are in a weaker position than the LSF, and therefore, efforts should be driven to achieve the goal of social sustainability as it is expressed in the EU Regulation 1380/2013<sup>39</sup>, on the CFP.

Regarding the fishing possibilities, in a wide generalization, we have the Mediterranean with no quotas but, as it was previously expressed, given the delicate situation of most important fishing stocks, with a number of measures driven to recovery the stock status, such as effort limitation, area closures or size limits.

In the case of the Atlantic, the fishing possibilities are set according to the scientific recommendations made by the ICES, and subject to negotiations during the December Council of Ministers that conclude with the adoption of the fishing possibilities for the following year (the "TAC and quota regulation"). Spanish TACs and quotas are distributed among fishing grounds and fishing gears. In several segments of this area, TACs and quotas are also distributed among individual vessels.

The recovery plan for the Iberian sardine that is being implemented for Portugal and Spain jointly, was approved in 2018. In that plan recovery of the Iberian sardine stock is expected by 2023 although the current data shows a bigger recovery of the stock than expected, which can leave to an eventual revision of the strategy in the coming months in the light of the scientific information. According to the stock management measures; fishing activities are limited for a maximum of 6 months.

### Status of Key stocks

As it has already been presented and for the sake of clarity and efficiency, it will be reviewed under this chapter the status of the most important stocks in terms of its impact in the fleet.

Spain, as all Member States, totally shares the need of achieving the MSY for all stocks that aren't currently in this biological situation, making ours the commitment to achieve it. However, it cannot be

<sup>38</sup> For the sake of coherence, it is mentioned that this is not the definition included under the arrangements to build the data call whose data are explained in this report.

<sup>39</sup> Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC.

forgotten that sustainability has also other two pillars; the social and the economic ones, becoming an integral and complete sustainability.

The adequate standard of living for the fisheries sector is therefore, one of the main goals to prosecute. The CFP itself, requests for the collection of data to facilitate the adoption of the best management measures. Although the fisheries sector does not contribute in a significant percentage to the economic macro magnitudes, it is essential in some small-scale economies and the coastal communities, determining the survival of small and medium populations along the coast.

As for the southern stock of hake, one of the most important species in terms of value, social appreciation and impact on specific fleet segments. The stock status relative to candidate reference points is unknown; therefore, the precautionary buffer was applied to the ICES 2020 advice. This situation regarding the assessment led to ICES to put this stock into Category 3 in its 2020 report. It is necessary to recover as soon as possible the uncertainty of the scientific assessment of this emblematic stock for the Spanish fishing industry.

Regarding horse mackerel, it is important for purse seiners and trawlers that fish in the Northwest Coast (mainly vessels that catch in the ICES division 8c). This quota has decreased during the last years as a consequence of its biological status. That is why a rebuilding plan, prepared by PELAC, is under assessment

### Operational costs (external factors)

As in 2019, wages and salaries represented the most important operational costs (41% in 2020). The historical trend is maintained, as this item has been the most important operational cost during the last years.

The second most important issue of the operational cost has been Other Variable Costs which represented a 23.5% of the total costs of the Spanish fleet. Finally, energy costs represented a 12.6%. The costs have decreased by 10% compared to 2019.

### Innovation and Development

In the field of technological development and innovation in the Spanish fishing sector, new projects are being developed with a specific target. Regarding gender equality matters, the Spanish Network of Women in Fisheries (REMSP) of the General Secretariat of Fisheries should be highlighted. It aims to help the society have a better knowledge of the role of women in fisheries, to give them more visibility, and to promote women's entrepreneurship, associations and leadership.

Traditionally, women have played a prominent role in the fishing sector, although their work has not always been acknowledged. Today, they are characterised by their modernizing and entrepreneurial vision to respond to new needs, combining profitability and research, development and innovation in all activities of the value chain, as well as demonstrating their commitment to social and environmental sustainability. All this makes them true engines of growth and competitiveness in the sector. There are many innovative business initiatives led by women in the fishing sector. Outstanding examples can be found in the two books on "Good entrepreneurial practices promoted by women in fisheries and aquaculture" published by the REMSP in recent years. They can be downloaded at:

<https://www.mapa.gob.es/es/pesca/temas/red-mujeres/buenas-practicas.aspx>

As these publications show, in recent years, women in fisheries and aquaculture have been promoters and pioneers of business models that are committed to R+D+I and the development of new products and services, and that take advantage of the opportunities offered to the sector by marine tourism, new technologies or the circular economy. That is the reason that the new *Plan for Gender Equality in the Fishing and Aquaculture Sector 2021-2027*, recently published by the General Secretariat for Fisheries, underlines this female capacity to promote innovation and the development of fishing and aquaculture activity, guaranteeing its sustainability and survival, as evidenced by the testimonies contained in the publication "Women of the sea, inspiring vocations", carried out by REMSP and available at the following link:

[https://www.mapa.gob.es/es/pesca/temas/red-mujeres/mujeres-del-mar-inspirando-vocaciones\\_tcm30-608440.pdf](https://www.mapa.gob.es/es/pesca/temas/red-mujeres/mujeres-del-mar-inspirando-vocaciones_tcm30-608440.pdf)

Spain adopted a Strategic Plan for Innovation and Technological Development in Fisheries and Aquaculture from 2014 to 2020. Its main objective is to increase the competitiveness of the Spanish fisheries and aquaculture sectors through innovation and technological development, optimising resources in the EU context and considering economic, social, environmental and health requirements.

Regarding fishing technologies, priorities and specific strategic objectives were established and prioritised. The following are highlighted:

- Innovation in more selective gear to avoid bycatch, reducing the environmental impact of fishing, reducing the proportion of sensitive species and bycatch, energy audits to promote energy savings, design of energy efficient fishing gear, automation of fishing practices and adaptation of fuel cells for marine use. The use of fuel cells is an energy alternative that should be increased in the medium term.
- Regarding cetacean bycatch, a cetacean excluding device was designed in 2021; the first trials are scheduled in 2022. Also, research projects on the effectivity of “pingers” and other acoustic deterrent devices were designed in 2021, and will be carried out in 2022.
- In 2021 a study on Remote Electronic Monitoring was launched, aimed to gather information of the nature and occurrence of cetacean bycatch. Thirteen commercial fishing vessels volunteered for taking part in this pilot project, which will continue in 2022 almost duplicating the number of fishing vessels involved.
- In the framework of three different agreements signed with scientific institutions and Universities, different research projects were launched on genetic characterisation of fisheries, kinship determination, species differentiation, remote electronic monitoring and catch/bycatch remote identification, among others.

## Socioeconomic impact

The entry into force of several agreements that have the main objective of improve the labour conditions of fishers could be one of the challenges for the following years, better conditions is a must if the Spanish fleet wants to maintain their fishery activities, as a lack of professionals is increasing. However, more space for fishers may led to less room for storage, as the EU regulation establishes limits on capacity, so the improvement on labour conditions could reduce vessels’ income, and so the profitability could be worsened.

## Nowcasts for 2021-22 and beyond

### Model results

Preliminary results for 2021 suggest that the structural policy carried out to reduce the number of vessels will continue, considering the number of vessels but also the tonnage and power. Of the total 8 908 vessels, 7 650 were active during 2021. Most of the inactive vessels (88% of them) belong to vessels below 12 metres LOA.

Projections suggest that the Spanish fleet will continue with the negative trend in terms of fishing effort (Days at Sea) landed weight and value in 2021 due to COVID-19 pandemic, however it seems that the value of landings increase in 2022.

Regarding operating costs, projections suggest a decrease in 2021. However, energy costs started a growing trend in 2021 that has increased in 2022 because of the war in Ukraine. Therefore, it is difficult to know how this will affect other operating costs in 2022.

As a result of all of these factors, the projections suggest that Spanish fleet kept a positive profitability during 2021 but lower than 2020, and it will continue to worsen in 2022.

### Landing Obligation

Despite LO affects all the Spanish fleets, it can be highlighted the impact on mixed fisheries as carried out by bottom trawls in Mediterranean Sea, NWW and SWW, where the use of the *de minimis* is so important to comply with the LO. The return of species of high survivability are also important in bottom trawls in Mediterranean Sea, skates and rays (*Rajiformes*) caught by any fishing gear in the NWW or for bottom trawls and trammel nets in SWW and to red seabream (*Pagellus bogaraveo*) caught with hooks and lines in the SWW. Additionally, the interspecies flexibility is also an essential tool for the stocks where is authorized to be used, as well as the mechanism to obtain through swaps quotas of species with no allocation which could produce the choke effect.

## COVID-19

The COVID-19 outbreak is having growing impacts on the fishing sector. It produced the standstill of fishing activity for many vessels in Spain during 2020, but their effects will continue in 2021. In 2021, 14.12% of the Spanish fleet was inactive, this is an increase of 16% from 2020 and 26% from 2019. The main inactive vessels belong to small scale vessels with engine using passive and active gears in the CNW.

In this evaluation for 2021, it has been estimated a drop of 15.20% of fishing days, 12.53% of weight of landing and 14.35% of value of landing compared to 2019. However, it can be expected that the fleet recovers by 2022.

The main impact in sales has been a consequence of price development. In 2021, it is estimated that sales in total value have decreased by 9% despite a slight increase of the average prices.

Spain published a regulation to support the fishing fleet, pursuant to article 33.1.d) of the European Maritime and Fisheries Fund, to alleviate the extraordinary stoppage days derived from the COVID-19 pandemic.

The support referred on this regulation benefited around 2 204 owners of fishing vessels and approximately 3 419 fishers. The total amount of aids finally granted ascended to EUR 12 280 632, EUR 3 887 050.52 in 2020 and EUR 8 393 582.00 in 2021.

## Brexit

Following the agreement reached with the United Kingdom, the main stocks of interest of Spain affected by 2026 will be the northern hake, for which the current allocation key of Spain will be reduced in 1.02%, megrims for which the current allocation keys will be reduced in 2.51% in the ICES area 7 and 2.15% in the ICES area 6 and for monkfish for which the current allocation key will be reduced in 0.24% in the ICES area 7 and in 0.76% in the ICES area 6.

Regarding southern stocks, with species so important for the activity of the Spanish fleet such as mackerel, horse mackerel, blue whiting or southern hake, they will not suffer any modification in the allocation to Spain and therefore, fishing possibilities for the Spanish fleet will be maintained.

Finally, there are also not any changes in deep-water species, such as Red Sea bream, alfonsinos, black scabbardfish and grenadiers.

## Management

Regarding Mediterranean, the multiannual plan for demersal species regulated by Regulation 2019/1022 is currently in force. This plan foresees the recovery of some of the main demersal stocks, hake, red mullet, Norway lobster, blue and red shrimp, deep-water rose shrimp and giant red shrimp. Their goal is that in 2025 they can be exploited according to the MSY criteria.

In order to achieve this goal, the reduction of effort (fishing days) could reach a maximum of 40% by the end of 2025 respect reference period 2015-2017, being a first applied reduction of 10% in 2020. In addition to this, for 2020 there is the obligation to fix closed areas for the protection of juveniles of hake.

At the internal level, the Order APA/423/2020 has been approved, which regulates the criteria for the allocation of the days available to Spanish fleet for each year. Also this Order, with its complement through the Order APA/753/2020, has established the closed areas in the different GSAs.

## Methodological considerations and data issues

### Identify changes in respect to previous years

The COVID-19 related supporting measures have not been included neither in the variable "Other incomes" nor in the variable "subsidies". According to ESA-2010 (European System of Accounts) this aid must be reported as "other capital transfer" because it is referring to an exceptional issue. COVID-19 related supporting measures have not been included in the variable "subsidies" because they are not related to operating subsidies, other production subsidies neither subsidies on investment.

### Improvements achieved within 2020 data collection

In 2020 the PIM method has been used in order to calculate the variable "consumption of fixed capital" so improvements in the quality of the data is expected.

## Remaining issues

The economic data collection on the Spanish fleet is carried out by statistical sampling. The main problem is that sampling does not differentiate the fleet according to the days of activity, so the sampling can include vessels with few days of activity. When these results are raised for the total of the fleet segment, the profitability of the segment can be influenced, obtaining worse results than the reality and vice versa. That's why, important differences between the value of landings and gross value of landings in some segments can be observed. The gross value of landed is obtained from statistical sampling, so the result of not many vessels are raised for the total of the fleet segment. However, the value of landings is obtained by the sales notes which have been declared from the vessel's owner.

Finally, boat dredges under 12 metres are considered LSF, however, they should be considered as a SSCF because they develop a traditional work that has nothing to do with mechanised dredges such as suction dredge.

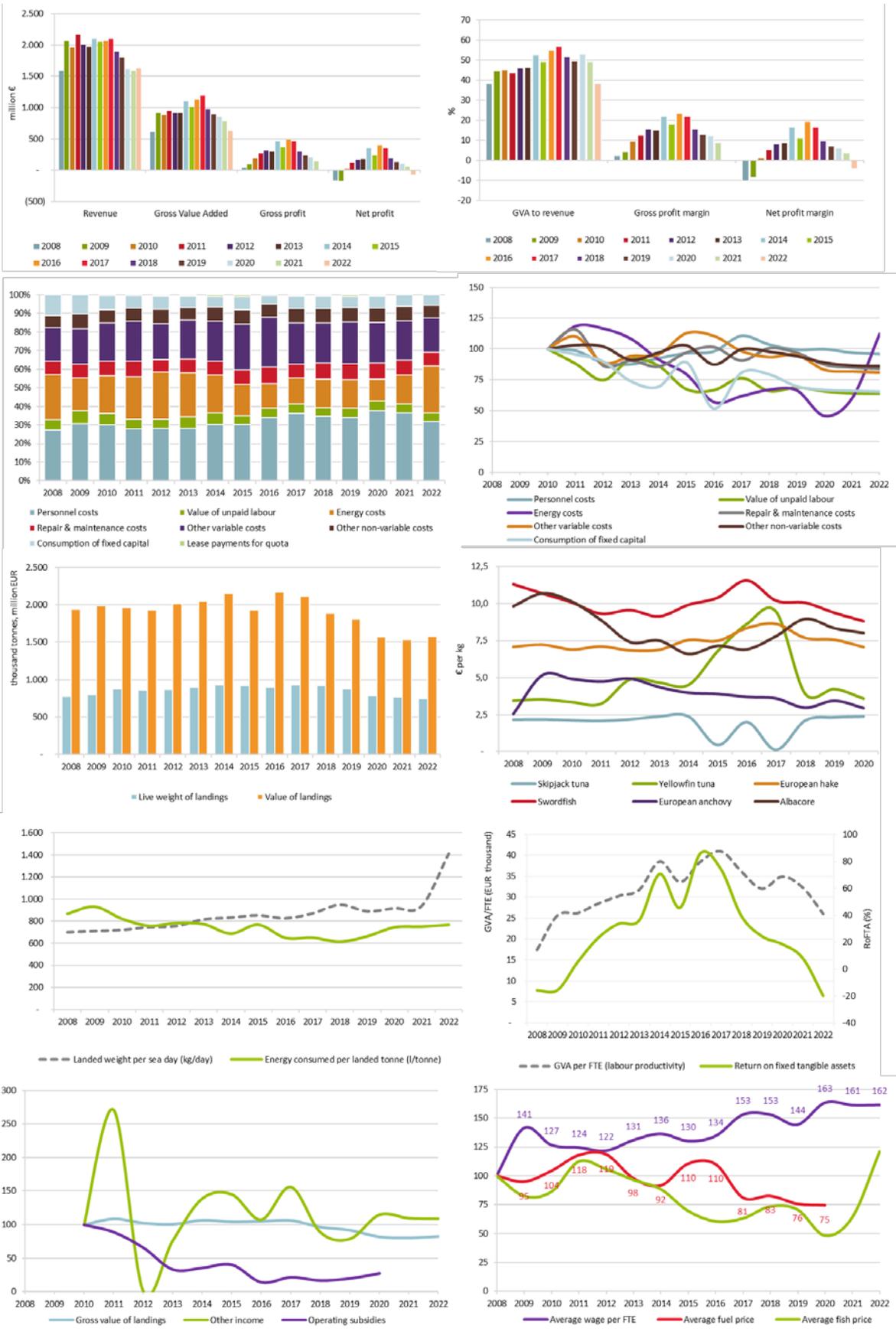


Figure 4.27 Spain: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 4.22 Sweden

### Short description of the national fleet

#### Fleet capacity

In 2020, there were 1 041 vessels, 225 of these were inactive whereas in 2019 were 1 136 vessels, 279 were inactive. The capacity decreased by 95 vessels compared to 2019 and the general trend of the Swedish fleet is still that the number of vessels is decreasing. In 2021, the number of vessels were 1 019. The fleet in 2020 had a combined GT of 27 252 tonnes and engine power of 144 094 kW.

#### Fleet structure

The Swedish fleet is highly diversified with a broad range of vessel types targeting different species predominantly in the Baltic Sea, Skagerrak, and Kattegat regions. The national fleet consisted of 9 fleet segments in 2008-2020 including six clustered active length classes and three un-clustered inactive length classes.

#### Employment

In 2020 the fleet employed a total of 1 344 workers, including owners, which corresponds to approximately 701 FTE or an average of 0.86 FTE per active vessel. The level of employment follows the same decreasing trend as the overall capacity. Total number of employees has decreased by 19% since 2008 and is projected to continue this negative trend in 2020. FTE follows the same trend but has decreased by 4% compared to 3% decrease in total jobs between 2019 and 2020. The higher decrease in FTE compared to the decrease in total jobs indicate that the share of part-time fishers is increasing in Sweden.

In 2020 there were on average 0.52 FTE per employed. The average wage per employed and per FTE has increased over the period 2008 to 2020, 29% and 34%, respectively. Compared to 2019, the average wage per employed and per FTE increased by 2% and 3%, respectively.

#### Effort

An estimated 55 907 days were spent at sea during 2020, a decrease by 7% compared to 2019. The amount of energy consumed increased in 2020. The LSF have an increasing trend in fuel consumption, and it has increased by 47% since 2008. Whereas the SSCF has a decreasing trend decreasing its consumption by 6% since 2008.

#### Production

The total weight landed in 2020 was 170 800 tonnes of seafood (153 000 tonnes in 2021), with a landed value of EUR 115 million (EUR 114 million in 2021). The total weight and the value of landings vary over the period analysed due to quotas, prices and exchange rate, especially for the pelagic fleet. In 2012 for example, the catch was exceptionally low due to low quotas. The exchange rate between SEK and EUR has continued to be weak even during 2020, as in 2019.

The Swedish fishing fleet targets both pelagic and demersal species, with herring remaining the dominant species, generating the highest landed value with EUR 38.3 million, which represented approximately 33% of the total landings value in 2020. Other important species in value in 2020 were Norway lobster (EUR 18.6 million), Northern prawn (EUR 13.5 million), European sprat (EUR 11.9 million) and Atlantic mackerel (EUR 7.4 million).

### Economic results for 2020 and recent trends

#### National fleet performance

The revenue of the Swedish national fleet decreased in 2020 by 4% compared to 2019. This was the lowest revenue both in the LSF and in the SSCF, however the decrease is larger for SSCF. In 2020 the LSF revenue decreased compared to 2019 by 2% which also can be a result of weak national currency and decreased landings.

Revenue in 2020, estimated at EUR 121 million due to a 4% decrease in landings income and a decrease in other income (EUR 6 260 million) by 20%. Total operating costs decreased between 2019

and 2020. Personnel costs decreased by 1% and unpaid labour decreased by 2% since 2019. Energy cost decreased by 36 % since 2019 and repair & maintenance costs increased by 7%. Other variable costs increased by 3% since 2019 which also other non-variable costs did by 28%. Total operational costs amounted to approximately EUR 82.5 million. When including capital costs, total costs amounted to EUR 107.5 million, and when deducted from total revenue it generated a net profit of almost EUR 15 million.

GVA, gross profit and net profit in 2020 were estimated to EUR 65.0 million, EUR 38.9 million and EUR 14.9 million, respectively. Compared to 2019 GVA increased with 3% and gross profit increased by 6%.

The (depreciated) replacement value of the Swedish fleet was estimated at EUR 127 million, an increase by 29% compared to 2019. Investments amounted to almost EUR 3.4 million in 2020, which is lower than in 2019.

## Resource productivity and efficiency indicators

The gross profit margin in 2020 was 32%, increasing since 2019. Net profit margin was estimated at 12%, a decrease since 2019.

An overall improved development trend can be seen in some indicators for 2020. Labour productivity (GVA/FTE) increased in 2020 an 7%; GVA increased by 3% while the number of FTE decreased by 4%.

The energy consumption of the Swedish fleet has increased a 43% since 2008. 2020 had the highest consumption since 2008, around 71 million-litre fuel. Which can be an effect from the main part of the landed weight and value of the total fleet coming from vessels using active gears. The energy consumption also increased with 21% from 2019 to 2020. Concerning the efficiency, the fuel consumption per landed tonne has increased since 2008 and in 2020 it was at 417 litres per tonne landed. Landings in weight per unit of effort (in days-at-sea) has been stable since 2008 at around 2.5 tonnes per day. In recent years it increased due to less demersal species landings in relation to pelagic fishing and in 2019 it ended at 2.9 tonnes per day and in 2020 it stayed at similar level at 2.0 tonnes per day.

## Performance by fishing activity

### Small-scale coastal fleet

The number of SSCF vessels decreased from 852 in 2008 to 614 in 2020 (616 in 2021), a decrease of 20%, following the general trend of the Swedish fishing fleet.

The numbers employed and FTE in the SSCF followed the same decreasing trend as overall national fleet, 6% and 9%, respectively. Vessel tonnage as well as engine power has decreased during 2020, 12% and 5%, respectively.

Overall, the SSCF is not profitable, generating a net loss of EUR 3.2 million in 2020. GVA is positive but relatively low per FTE at EUR 26 700. As tangible assets are, in most cases, probably paid off, these vessels can afford to continue fishing. Low GVA is a signal that there are other reasons for fishing than just profit, such as part-time employment or a way of life. Fishers who do not have profit as the main reason for fishing, raise the competition on the market, which makes it harder for new firms/individuals to enter the market.

Additionally, increased seal populations along the Swedish coastline are still affecting both income, by taking and eating fish directly from the gears, and costs, by destroying gears as well as creating extra work.

Due to the landing obligation a new management system was introduced in 2017 for demersal fisheries. The individual quotas have now some transferability during the year (not permanent), yet the system for demersal fisheries is still missing transferability like a proper ITQ system

### Large-scale fleet

For the LSF, the number of vessels decreased from 344 in 2008 to 202 in 2020 (202 in 2021), a decrease of 19%. Large part of this decrease come for vessels fishing for cod as main source of income. The Swedish authorities have promoted fishing Norway lobster with passive gears as cod populations are in bad conditions, mixed fisheries with cod and lobster are no longer a profitable option.

The number of fishers employed in the LSF increased by 1% in 2020 and does not follow the decreasing trend as the overall Swedish fleet. FTE decreased by 1%. In 2020 vessel tonnage decreased by 3% and power decreased by 5% resulting in 81 900 kW.

The weight and value of landings for the LSF vessels from 2008 to 2020 were more dependent on quotas than the SSCF. The landings weight decreased substantially in the first half of the period. Although, with recent increase in quotas over the later period the landings weight is higher and almost back at the same level as in 2008. The landing values follow the same trend but with more variation due to changes in fish prices and the exchange rate EUR/SEK. Despite, the LSF seems to perform fairly well the variation of this performance is large. Vessels fishing pelagic species and those that fish in the north Baltic for vendace rom are performing well while those fishing for cod are performing poorly.

The LSF decreased their operational costs (8%), repair & maintenance costs increased by 11% since 2019. Increasing total incomes is the main reason for the LSF to maintain its overall high net profit. Overall, the LSF is profitable however in 2020 it faced a decrease of 6% in net profit compared to 2019. It generated a net profit of EUR 18.6 million in 2020. GVA per FTE is at EUR 128 000, 7% higher than in 2019.

## Performance results of selected fleet segments

None of the four fleet segments using active gears made losses in 2020 in comparison to the passive gear segments who had low profits. It can further be observed that the vessels with active gears accounted for the main part of the landed value and weight. During the 2008-2020 period, vessels with active gears annually accounted for 96-98% of the total catch measured in weight, and 85 to 90% of the total catch value. Thus, the vessels with passive gears only accounts for 2-4% of the total catch measured in weight, and 10-15% in value.

### Demersal trawl seine 18-24 metres

In 2020, 39 vessels made up this clustered segment that uses different types of active fishing gears. It operates predominantly in the Baltic Sea, Skagerrak and Kattegat. The fleet segment targets a variety of species but in particular demersal species such as cod, Norway lobster and Northern prawn and pelagic species such as herring and sprat. In 2020, the total value of landings was EUR 15 million and around 102 FTEs in this fleet segment, contributing 13% of the total income from landings and 15% of the FTEs in the Swedish fishing fleet. This fleet segment was profitable, with a reported net profit of around EUR 1.3 million in 2020. There are some differences in performance within the segment. The vessels in the segment fishing Northern prawn and vessels fishing pelagic species have the highest profit of all the national fleet.

### Demersal trawl seine 24-40 metres

Composed by 29 vessels in 2020, the segment also contains 17 vessels using pelagic trawlers (nine of the pelagic trawlers are over 40 metres). This segment is operating in the Baltic Sea, Kattegat, Skagerrak, and the North Sea. The fleet targets a variety of species, in particular pelagic species such as herring and sprat but also demersal species such as cod and Northern prawn to a small extent. In 2020, the total value of landings was EUR 68 million and around 210 FTEs in this fleet segment, contributing to 59% and 30% of the total income from landings and FTEs in the Swedish fishing fleet, respectively. This segment dominates the Swedish fishing fleet with 89% of the total landings in weight.

This fleet segment was profitable, with a reported gross profit of around EUR 28.8 million and a net profit of EUR 13.3 million in 2020. There is a distinction in performance within the segment. The profit is generated by vessels fishing mainly pelagic species followed by vessels aiming for Northern prawn.

## Drivers affecting the economic performance trends

Higher quotas for pelagic species than demersal species were still the main driving force behind profitability and the continued trend in 2020, it was the same as in 2019. The Swedish fleet's income is dominated by trawlers, both pelagic and demersal. As trawling is typically fuel intensive, fluctuations in fuel prices are a key driver of this fleet's profitability.

## Markets and Trade

Good economic performance for the Swedish fishing fleet is highly dependent on fish prices for pelagic species as well as a strong national currency. High prices but more importantly, stable prices are key

to good economic performance. Furthermore, changes in seasonal fishing, e.g. shorter fishing period for certain species, can have an effect on the fish price. The regulation of shortening fishing periods can produce a sudden supply shock on the market. One example of this is the vendace fishing in northern Baltic Sea. The access to the resource is limited to a few vessels but the price elasticity is quite high. Therefore, in recent years the landed weight has been approximately half of what it once was, but the price has double, yielding approximately the same total value.

## Management instruments

A major challenge regarding fleet management is the adjustment to the LO. It requires a system to allocate fishing opportunities that as far as possible facilitates this requirement and creates the conditions for the Swedish fleet to comply with it. A system that is compatible with the LO must for example consider the challenge of choke species and allow some flexibility so that it is possible to match catches and fishing opportunities.

With the background of the needs created by the LO, the Swedish Agency for Marine and Water Management (SwAM) introduced a system in 2017 with individual annual fishing opportunities that can be temporarily transferred between fishers with license during the year. The individual allocations are, with some exceptions, based on reported catches during the reference period 2011 to 2014. The design of the system paid particular attention to SSCF for which unallocated quotas are reserved. This system increases the flexibility and improves the possibilities for individual fishers to adjust their fishing opportunities during the year, which probably gives them better possibilities to comply with the LO. The first year with the new system has recently been evaluated by the SwAM. From the evaluation it can be highlighted that the number of quota transfers was high already the first year. At the same time trade frictions existed (e.g. difficulties to find someone who could transfer fishing opportunities). There are also other challenges connected to the system. Even though the system allows for increased flexibility, quotas may still be limiting at the individual level. Given economic incentives to maximise the value of the own fishing opportunities, this may affect compliance as it creates incentives for high-grading and discarding by-catches. Another concern is that since the fishing opportunities are only annual, fishers face uncertainty about what fishing opportunities and income they will have the coming years. A further challenge is that various "lock-in" effects can be observed in the present system. In case the system would be adjusted to allow for longer-term fishing rights, the design of such a system is of critical importance to avoid unwanted effects. The system was further evaluated during 2020 resulting in a suggestion of the implementation of a full ITQ-system also in the demersal fisheries has been suggested but it has not yet been implemented.

## Status of Key Stocks, TACs and quotas

Most of the important stocks fished by the Swedish fleet are fished at levels compatibles with producing the MSY. In 2020, Sweden had a total quota of 167 000 tonnes, which is a decrease of 16% since 2019.

Herring and sprat is especially important for the Swedish fleet. The quota for herring decreased by 13.8% in 2020 compared to 2019 in Skagerrak, Kattegat, and the North Sea, while the quota for sprat decreased by 24% between 2019 and 2020.

In 2020, the quota for cod in the Baltic continued to decrease, and the total quota decreased by 92% in the western stock and increased by 60% in the eastern stock. Total available cod quota for the Swedish Baltic fleet in 2020 in eastern and western stocks was 1 057 tonnes. Since mid-2019, it was decided to close the commercial fishing for cod in parts of the Baltic Sea which affected approximately 160 vessels who had to stop fishing. The ban on commercial fishing for cod has continued in 2020 resulting in a decrease of the utilisation of the cod quota.

## Innovation and Development

Towards the end of 2009, Sweden introduced a tradable fishing right system for pelagic quotas running for a 10-year period. The system made the pelagic fishing more efficient and increased the overall profit for the fleet. During 2019, it was decided to renew the transferable fishing rights for pelagic fishing for another 10 years. The pelagic quotas have been allocated since 2009 between fishing rights, annual pelagic fishing opportunities, regional fishing opportunities and coastal quotas in accordance with a Transferable Fishing Rights Law (2009: 866). In July 2019 it was decided to implement some changes in the pelagic system mainly concerning the size of the coastal quotas, transferable fishing rights for herring and sharp herring in ICES sub-areas 30-31 (the Bothnian Sea and the Gulf of Bothnia) and the introduction of regional allocation in ICES sub-areas 30-31.

In the beginning of 2017, Sweden introduced a tradable fishing right system for non-pelagic fishers, in order for fishers to comply with the landing declaration. Fishers could temporarily trade quotas, which will allow them to be more flexible and efficient, which in turn can have an impact on the profitability in the SSCF. During 2019 and 2020 the system was evaluated and some suggestions for improvements were made, for example to implement a full ITQ-system. Yet, there are no decisions of implement such system.

The increasing seal population around the Swedish coastline has caused a growing conflict for inshore fisheries. Seals damage the fisher's catch and fishing gear, which causes significant economic losses to the fishing industry. In some areas, it is even impossible to conduct a profitable fishery because of that. Currently, the development of seal-safe fishing gear is the only long lasting and sustainable solution to this conflict. This development mainly focuses on improving traditional fixed gears, such as push-up traps for salmon and developing new alternatives to the net fisheries, such as cod pots.

In the Northern prawn and Norway lobster fisheries, research for new and more sustainable fishing techniques is on-going. In general, transition towards the implementation of these new techniques in the sector is slow as fishers are hesitant due to high investments, the uncertainty of the impact of the techniques and the possible market effects

## Nowcasts for 2021-22 and beyond

### Model results

Preliminary results for 2022 suggest an annual decrease of 15.3% in landed weight and an increase in value by 38%. Projections for 2022 suggest an increase in personnel costs, energy costs, repair and maintenance costs, variable costs and non-variable costs. Some of these increases of costs suggests to be associated with the general prices increase in Sweden and increase in fuel prices, which can partly be counter acted by increase in sales prices. However, a larger decrease in income than in costs will make performance in 2021 and 2022 worse than in 2020; with GVA decreasing 19.8% and NVA 25.5%, respectively. The prospects of gross and net profits also decrease for 2021 and for 2022. These projections are also reflected in the performance indicators GVA to revenue, GVA per FTE and gross and net profit margins, that are predicted to decrease in 2021 and 2022.

### Outlook

In mid-2019, it was decided to close the commercial fishing for cod in parts of the Baltic Sea which affected approximately 160 vessels. They were offered financial support from the government or encouraged to focus their landing on other species. The ban will have an economic impact on the small-scale fisheries in Baltic Sea where the ban was introduced. During 2020, 2021 and 2022 the ban continued and the economic satiation for these fishers worsened. Due to the bad economic situation for fishers aiming for cod in the south and west Baltic Sea and some overcapacity of the Swedish fleet the government offered some fishers terminate cessation subsidy, resulting in a decrease of vessels in the Baltic Sea aiming for cod.

The general trend since the beginning of the 2000s is a decrease in Swedish fleet capacity, i.e. in the number of vessels that also reflects reduction of total engine power and gross tonnage. This is partly due to management efforts directed at decreasing fleet size in order to bring it in balance with the fishing possibilities. The analysis of economic performance shows that all Swedish segments with vessels using active gear are making positive net profits while one passive segment is showing positive net profits, vessels 10-12m.

There is also a crew recruitment problem as working on board fishing vessels is not a particularly attractive job for young people; this is due to low wages and relatively poor working conditions compared to other land-based jobs. Furthermore, there are other reasons than profit to keep a fishery going in small-scale fisheries, e.g. a way of life or a part-time employment. The fact that profit is not the sole driver can have a huge impact on the market in terms of higher competition, due to that fishers don't have to make a profit from their business, thus making it harder for new firms/individuals to enter the market.

### COVID-19

Due to the COVID-19 pandemic in 2020 the demand for specific species decreased drastically. In Sweden it was mainly prices of the Norway lobster and freshwater species that dropped due to decrease in demand from restaurants. This caused a loss of income for vessels aiming for these species. The government introduced in June 2020 a possibility to get financial support for pausing the

fishing activity, to help cover for non-variable costs and salary for the license owner over a chosen period. The conditions for receiving this financial support were mainly based on fishing activity and vessel length. Agents eligible for this support were fisheries with license, vessels smaller than 24 metres, not included in the pelagic ITQ-system and being actively fishing for at least 120 days over the years 2018-2019 or at least 60 days in 2019. However, there were some price adjustments, and the offered support was not fully utilised. Further some of the fishers were eligible for additional subsidies directed to businesses that the government announced due to the economic effects of COVID-19.

### Landing obligation

The LO affected some part of the fleet and its activity. The use of the *de minimis* has been relatively low and mainly for Northern prawn, Norway lobster and some demersal species. When it comes to high survival exemption, the use of this exemption has been high, mostly for northern lobster. The loss of income due to the LO is expected to be low. Changes in enforcement have been low since there has been no surveillance using flights or camera.

### Brexit

The Brexit can affect the Swedish fleet to some extent. There has been one vessel who changed in the time of fishing mackerel in the North Sea. Otherwise, it has not changed so much. The outcome for Sweden as results of Brexit indicates a lower key for species such as cod, herring, mackerel, sandeel, blue whiting etc. These lower keys will result in lower quotas for these species and depending on the substitution to other fisheries and utilisation of the quotas, Brexit could have an impact on the Swedish fisheries. As a result of Brexit, Sweden is granting aids from Brexit Adjustment Reserve which will be eligible to fishers who have been affected by TCA-induced quota, share reductions or lack of access to United Kingdom waters or other third country waters due to Brexit. These aids are planned to be open for application during 2022.

### Methodological considerations and data issues

There are no major data issues in the Swedish EU-MAP data. Swedish data come from logbooks, journals, surveys with a census sample with high response rate (87%) and tax declarations. Previously, Sweden used probability sampling when sending out the questionnaires. Since 2012, the survey had a census approach. With the census approach, the number of data points has increased by the double and the response rate has been stable around 85% since 2012. Information on economic of the fleet were previously assessed at segments level but since 2018 it is assessed on micro level, firm level, by ordering registered from Statistics Sweden. This has improved the quality of the data since it is register data from the Swedish Tax Agency. Further, in 2019 Swedish Agency for Marine and Water Agency made it possible to fill out the survey on economic cost online instead of by hand. This has and will increase the quality of the survey responses due to missing data and miss writing or miss readings.

An important issue is clustering. With a small and diminishing fleet, Sweden is forced to cluster all of the economic data and also report cluster definitions. For this year report the clustering has changes since previous reports due to confidentiality of economics information. The cluster DFNVL1218 are now included in the cluster DFNVL1012 as a consequence of this cluster only containing four vessels.

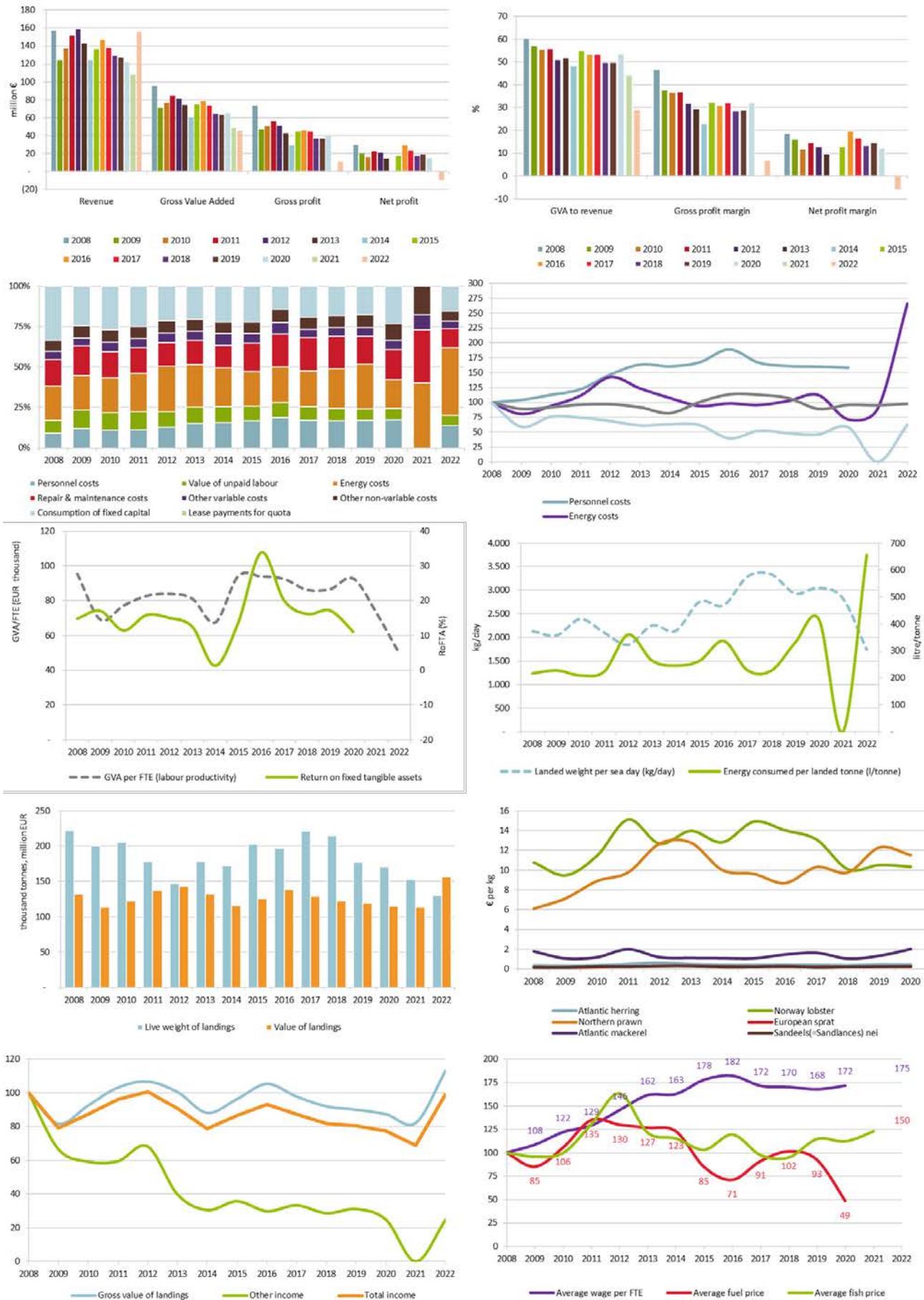


Figure 4.28 Sweden: Main trends in (from top to bottom, left to right): economic performance indicators (absolute value and relative values); cost structure and variation in main cost items; productivity and efficiency indicators; landings (in weight and value) and average price (euro/kg) of top species; variation in income variables and average prices of key input/outputs (2008=100). Nowcast figures for 2021 and 2022.

Data source: MS data submissions under the DCF 2022 Fleet Economic (MARE/A3/ASC(2022)); All monetary values have been adjusted for inflation; constant prices (2020).

## 5 DATA COVERAGE AND QUALITY

### Data validation – AER Exercise

#### Quality and Coverage checking procedures on the data submitted under the 2022 fleet economic data call

Although the quality and coverage of the fleet economic data reported under the Data Collection Framework are a responsibility of the EU Member States, JRC undertakes systematic quality and coverage checking procedures on the data submitted, some carried out during the data uploading phase and some afterwards. The quality and coverage of the data has also been checked by national experts during the STECF EWG 22-02 virtual meeting on the 2022 Annual Economic Report of the EU fishing fleet, which took place during the week 4-8 April 2022.

#### Data issues on the economic variables

In terms of the completeness of the Member States data submissions, most countries submitted the majority of the parameters requested under the call. Overall, the quality and coverage of this data has been similar in the last 2 years. In many cases missing data relates to fleet segments with low vessel numbers for which data are hard to obtain (detailed account of data coverage issues are provided in the DTMT). For confidentiality reasons, Member States may aggregate fleet segments into clusters to provide sensitive economic data. In several cases, clustering may not be enough to guarantee confidentiality, and hence, parts of Member States fleets are not completely covered. These generally relate to distant-water fleet segments and include Estonia, Germany, Italy, Latvia and Poland.

In terms of data quality, inevitably some unreliable estimates for various parameters were detected by the JRC or the EWG 22-02 and in most cases rectified by the Member States. However, some quality issues remain outstanding. The difficulties the industry is experiencing with COVID-19 and Brexit impacted in some cases on the regular implementation of the economic survey and this led to lower response rates. More specificities to this issue can be found in the National chapters.

Incomplete time series data due to either the non-submission of data, questionable data and/or changes in the methodologies in the data collection and data processing, make trend analysis at the EU level impossible without excluding the Member State fleets that are incomplete. These discrepancies make an evaluation of the overall economic performance of the EU fishing fleet for the period 2008-2017 impossible. The data submitted for the Greek fishing fleet for the period 2018-2020 was deemed fit for purpose; Greece is therefore included in all EU level analyses for the period 2018-2020.

Submissions from France and Spain continue to be somewhat incomplete, especially for the period 2008-2010 that impacts on time-series analysis mainly. Some Member States continue to have problems in collecting comprehensive data sets for the under 10 metres segments. Transversal data sets for some effort and landing variables continue to not be provided at the correct aggregation levels (for e.g. days at sea at FAO fishing areas 3 or 4 or live weight and value of landings by FAO species 3-alpha code).

Finally, some Member States did not report the COVID-19 related supporting measures in the variable “operating subsidies” while some other Member States reported them as “Other incomes”. These differences in the approach followed by MSs made it difficult to analyse the impact of these subsidies in the European and regional overviews.

#### Member State specific data issues and developments

Although the coverage and quality of the data submitted by Member States has remained stable in the last 2 years, some data transmission issues remain. These include, relative mainly to data for 2017-2019 (EU-MAP), the following:

**Belgium:** No major data transmission issues to report. However, anomalous trends of some variables (i.e. operating subsidies, investments) are identified due to changes in the questionnaires in 2017 and 2018. Low response rates for some variables (number of unpaid labour, total hours worked, capital value and capital cost variables for inactive vessels) led to unrepresentative estimates.

**Bulgaria:** No major data transmission issues to report.

**Croatia:** No major data transmission issues to report. As a new Member State, Croatia submits data from 2012 onwards.

**Cyprus:** No major data transmission issues to report. Only partial data reported for PS VL2440 due to confidentiality (one vessel).

**Denmark:** Data was not available within the deadline. No other major data transmission issues to report.

**Estonia:** No data transmission issues to report. However, time series are not consistent over time because of a change in the data collection which occurred in 2018. Moreover, for confidentiality reasons, Estonia only provides data for its Baltic Sea fleet, i.e., only Capacity data are provided for the distant water fleet; this impacts on the AER as a complete coverage of the EU fleet is not possible.

**Finland:** No major data transmission issues to report. However, there is a break in the time series of the number of active vessels in small-scale fishing in 2012 when the recording of active vessels was re-specified and then again in 2014 and 2015 due to methodological changes.

**France:** No major data transmission issues to report. However, some data issues are identified as follows: i) direct subsidies and other income are not available for few segments, in particular, segments of over 40 metres, and segments in outermost region, less than 12 metres. ii) COVID related subsidies are partially reported as "other income" and not as "operating subsidies"; ii) "unpaid labour" and "value of unpaid labour" are not reported; iii) economic data for a fleet segment in French Guiana are not reported.

**Germany:** No major data transmission issues to report. For confidentiality reasons, Germany provides only partial data on its pelagic fleet. This impacts on the AER as a complete coverage of the EU fleet is not possible. In addition, there is a break in the time series of employment data because from 2020 employment and demographic data are no more estimated but they are exhaustively available from the totals from the Employer's Liability Insurance Association.

**Greece:** Major data transmission issues continue for previous years. , Complete data sets were provided for 2020.

**Ireland:** No major data transmission issues to report. A minor issue is related to non-complete effort data for some segments less than 10m. In addition, it has to be reported that the 2020 survey returns have been low in particular for some small segments and this may have impacted on the reliability of final estimates.

**Italy:** No major data transmission issues to report.

**Latvia:** No major data transmission issues to report. Due to methodological improvements in 2010 and 2018, a break in time series is detected for capital value and capital costs. For confidentiality reasons, Latvia does not provide economic data on its distant water fleet; this impacts on the AER as a complete coverage of the EU fleet is not possible.

**Lithuania:** No major data transmission issues to report.

**Malta:** No major data transmission issues to report.

**The Netherlands:** Data was not available within the deadline. No other major data transmission issues to report.

**Poland:** No major data transmission issues to report. Due to confidentiality reasons, Poland only provides partial data on its distant water fleets (NAO DTS 40XX, NAO TM VL40XX and OFR TM40XX). This impacts on the AER as a complete coverage of the EU fleet is not possible. Due to a change in methodology of reporting capacity, 2017 onwards figures are not fully comparable with the earlier years

**Portugal:** No major data transmission issues to report. Since the weight of landings was reported in live weight in 2020 and in landed weight in the years before, this variable, and some species prices and indicators, are not comparable with the time series.

**Romania:** No major data transmission issues to report.

**Slovenia:** No major data transmission issues to report.

**Spain:** No major data transmission issues to report.

**Sweden:** No major data transmission issues to report. COVID-19 related subsidies have been reported as "other income" and not as "operating subsidies" but it has to be considered that they were not very relevant.

## Data issues on the social variables

### Data available in the social dataset

In previous data call for social data (in 2019 for 2017 referent year), all Member States provided data. However, according to 2022 Fleet Economic data call, out of 22 Member States, only 10 Member States resubmitted social data for 2017 referent year.

Table 5.1 – AER Data call 2022: Annual social data availability by MS

Data available	2017	2018	2019	2020
BEL				YES
BGR				YES
CYP	YES			YES
DEU				YES
DNK				YES
ESP		YES	YES	YES
EST				YES
FIN		YES	YES	YES
FRA	YES	YES	YES	YES
GRC				YES
HRV				YES
IRL	YES	YES	YES	YES
ITA				YES
LTU				YES
LVA	YES			YES
MLT	YES			YES
NLD	YES			YES
POL	YES	YES	YES	YES
PRT				YES
ROU	YES	YES	YES	YES
SVN	YES			YES
SWE	YES			YES

### Fishing activity

Table 5.2 – AER Data call 2022: MS response for Fishing activity in social template by MS for 2020

2020	fishing activity	fishing_tech & vessel_length
BEL	N	N
BGR	Y	Y
CYP	Y	Y
DEU	Y	N
DNK	Y	N
ESP	N	Y
EST	Y	N
FIN	N	N
FRA	Y	Y
GRC	Y	Y
HRV	Y	Y
IRL	Y	N
ITA	Y	Y
LTU	Y	N
LVA	N	N
MLT	Y	Y
NLD	Y	N
POL	Y	Y
PRT	Y	Y
ROU	Y	Y
SVN	Y	Y
SWE	N	Y

17 Member States uploaded the social variables distributed by fishing activity (SSCF, LSF or DWF). Two Member States do not provide the data by fishing activity, but only by fishing technique and vessel length, so the EWG elaborated the data in order to make it comparable with the rest of the countries. Three Member States did not report the social data by fishing activity or by segment, so they were excluded from the analysis by fishing activity.

## Employment status

Even though the data on employment status is defined in the guidance for the social variables available in the JRC webpage and the reports from PGECON as: Employment status: Employee (which can be disaggregated into Employee full, Employee part), Owner, unknown; the Member States have different interpretation of the variables. As it is shown in the following table: 11 Member States reported the data as "Owner" and "Employee"; six Member States reported the data as "Owner", "Employee full" and "Employee part"; two Member States reported total employees as "Employee full" and "Employee part"; one Member State reported the data as "Owner", "Employee", "Employee full" and "Employee part"; one Member State reported all engaged people on the vessels as "Employee".

**Table 5.3 – AER Data call 2022: MS response for employment status by MS for 2020**

	EMPLOYEE	EMPLOYEE FULL	EMPLOYEE PART	OWNER	UNKNOWN
BEL	514				
BGR		264	1497		
CYP		156	341	770	
DEU	625			584	
DNK		890	279	947	
ESP	24937			6381	
EST	616			862	
FIN	393			864	
FRA		9325	323	2847	
GRC	5996			12697	
HRV		2083	866	5034	3
ITA	10782.386			10585.3	
LTU		410	35	29	
LVA	474	389	152	67	
MLT		288	81		
NLD	1474.25			396.47	21.84
POL	1080			1230	
PRT	10321			1899	97
ROU	380			59	
SVN		16	7	61	
SWE	543.1274			801.115	

## Class Ages issues

Two Member States (Malta and Cyprus) provided the age class  $\geq 65$  slightly different, but for the current analysis the data was homogenized. Member States are encouraged to revise the data and to follow the agreed age classes in the future data calls.

## Data availability by gender-age-education-nationality-employment status in 2020

Table 5.4 – AER Data call 2022: MS response by gender-age-education-nationality-employment by MS for 2020

EMPLOYMENT	GENDER	AGE	EDUCATION	NATIONALITY	EMPLOYMENT STATUS
BEL	YES	YES	YES	YES	YES
BGR	YES	YES	YES	YES	YES
CYP	YES	YES	YES	YES	YES
DEU	YES	YES	YES	YES	YES
DNK	YES	YES	YES	YES	YES
ESP	YES	YES	YES	YES	YES
EST	YES	YES	YES	YES	YES
FIN	YES	YES	YES	YES	YES
FRA	YES	YES	YES	YES	YES
GRC	YES	YES	YES	YES	YES
HRV	YES	YES	YES	YES	YES
IRL	YES	YES	YES	YES	NO
ITA	YES	YES	YES	YES	YES
LTU	YES	YES	YES	YES	YES
LVA	YES	YES	YES	YES	YES
MLT	YES	YES	YES	YES	YES
NLD	YES	YES	YES	YES	YES
POL	YES	YES	YES	YES	YES
PRT	YES	YES	YES	YES	YES
ROU	YES	YES	YES	YES	YES
SVN	YES	YES	YES	YES	YES
SWE	YES	YES	NO	YES	YES

From 22 Member States which provided data in the social template, 21 Member States reported the data for all variables describing the total employment (with exception of Sweden which did not provide data on Employment by education levels) and one Member States (Ireland) was not able to report the data on employment status.

## FTE by gender-age-education-nationality-employment status in 2020

Table 5.5 – AER Data call 2022: MS response by gender-age-education-nationality-employment by MS for 2020

FTE 2020	GENDER	AGE	EDUCATION	NATIONALITY	EMPLOYMENT STATUS
BEL	YES				
BGR	YES				
CYP	YES			YES	YES
DEU	YES				
DNK	YES	YES	YES	YES	YES
ESP	YES				
EST	YES				
FIN	YES				
FRA	YES				
GRC	YES				
HRV	YES	YES	YES	YES	YES
IRL	YES				
ITA	YES				
LTU	YES				
LVA	NO				
MLT	YES				
NLD	YES				
POL	YES	YES	YES	YES	YES
PRT	YES	YES	YES	YES	YES
ROU	YES	YES	YES	YES	YES
SVN	YES				
SWE	YES				

Out of 22 MS, one Member State does not provide social data for FTE (Latvia). In total, 20 Member States provided data on FTE by gender; FTE by age and FTE by education was provided by five Member States, and six Member States provided data on FTE by nationality and employment status.

## Unpaid labour by gender-age-education-nationality-employment status in 2020

Table 5.6 – AER Data call 2022: Unpaid labour by gender-age-education-nationality-employment status in 2020 by MS for 2020

UNPAID LABOUR	GENDER	AGE	EDUCATION	NATIONALITY	EMPLOYMENT STATUS
BEL	NO				
BGR	YES	YES	YES	YES	YES
CYP	YES	YES	YES	YES	
DEU	YES				
DNK	YES	YES	YES	YES	YES
ESP	YES				
EST	YES				
FIN	YES				
FRA	YES				
GRC	YES				
HRV	YES	YES	YES	YES	YES
IRL	YES				
ITA	YES				
LTU	YES				
LVA	NO				
MLT	YES				
NLD	YES				
POL	NO				
PRT	YES	YES	YES	YES	YES
ROU	YES	YES	YES	YES	YES
SVN	YES				
SWE	YES				

Out of 22 Member States, three of them do not provide the unpaid labour by gender (Belgium, Latvia, Poland), 19 Member States provided Employment by gender and six Member States provided also data on Employment by age, education and nationality while Employment by employment status was provided by four Member States.

### AER and social templates

Comparison was performed by the EWG between the two datasets submitted according to the AER data call (social and economic data set) for following variables: Employment, FTEs and Unpaid labour, which are reported in both templates.

EWG observed discrepancies between both datasets and contacted Member States exerts available during the EWG to explain identified issues, after which some Member States resubmitted the social template and resolved discrepancies (Portugal, Croatia, Italy, Ireland).

However, there are explanations provided by the Member State for certain discrepancies between social and economic datasets at Member State level:

- confidentiality issues at social data reporting level (e.g., Italy for DWF)
- two different sources to collect data social data (e.g., France as Belgium)
- difficulties in gathering detailed information for vessels in DWF.

During preliminary analysis of social dataset performed during EWG meeting, it was observed that not all Member States followed reporting levels defined in the 2022 Fleet Economic data call specifications and RCG ECON Guidelines on social data as listed in the table below.

## Data call specification for social template:

Table 5.7 – Data call specification for social template:

Variable group	Variable	Variable code (=acronym)	Segmentation	Unit	Years	Reporting level	Template	Other requested fields
Social	Employment	socemploy	by gender	Number	2020	Male / Female / Unknown	map_social	Sampling strategy Total population Sample population (by vessels or fishers)
			by age	Number	2020	<15 / 15-24 / 25-39 / 40-64 / >64 / unknown		
			by education level	Number	2020	Low (Level 0-2) / Medium (Level 3-4) / High (Level 5-8) / Unknown		
			by nationality	Number	2020	National / EU / EEA / Non-EU-EEA		
			by employment status	Number	2020	Owner / Employee (includes unpaid labour): *full-time / * part-time		
	FTE	socfte	by gender	Number	2020	Male / Female / Unknown		
Unpaid labour	socunlab	by gender	Number	2020	Male / Female / Unknown			

For 13 out of 22 Member States, there were discrepancies between the two data sets. EWG considered treatment of discrepancies according to following rules:

- difference less than 5%: low severity quality issues
- difference more than 5%: medium severity quality data transmission issues (in total 11 issues for 7 Member States)
- no data submitted (for mandatory data): high severity coverage data transmission issues (in total 5 issues for 4 Member States).

Differences on Employment, Unpaid labour and FTE at Member States level remaining after resubmission of social templates by 15 June 2022 are listed in the tables below.

Table 5.8 – Differences on employment data between economic and social templates by MS for 2020:

EMPLOYMENT 2020	social template					economic template (totjob)	difference	%difference (>5% highlighted in red)
	GENDER	AGE	EDUCATION	NATIONALITY	EMPLOYMENT STATUS			
BEL	514	514	514	514	514	322,16	-191,84	-37%
BGR	1.761	1.761	1.761	1.761	1.761	1.761	0	0%
CYP	1.267	1.267	1.267	1.267	1.267	1.267	0	0%
DEU	1.209	1.209	1.209	1.209	1.209	1.209	0	0%
DNK	2.116	2.116	2.116	2.116	2.116	1.238	-877,8756	-41%
ESP	31.318	31.318	31.318	31.318	31.318	31.318	0	0%
EST	1.478	1.478	1.478	1.478	1.478	1.318	-160	-11%
FIN	1.256	1.257	1.256	1.256	1.257	1.256	0	0%
FRA	12.495	12.495	12.495	12.495	12.495	12.417	-77,75	-1%
GRC	18.693	18.693	18.693	18.693	18.693	18.693	0	0%
HRV	7.986	7.986	7.986	7.986	7.986	7.986	0	0%
IRL	2.928	2.928	2.928	2.928		2.928	0	0%
ITA	21.368	21.308	21.308	21.308	21.368	21.368	0	0%
LTU	474	474	474	474	474	449	-25	-5,3%
LVA	541	541	541	541	541	541	0	0%
MLT	984	984	984	984	984	984	0	0%
NLD	1.893	1.893	1.893	1.893	1.893	1.893	0	0%
POL	2.312	2.312	2.312	2.310	2.310	2.406	94	4%
PRT	12.317	12.317	12.317	11.880	12.317	13.415	1098,4048	9%
ROU	439	439	439	439	439	439	0	0%
SVN	84	84	84	84	84	84	0	0%
SWE	1.344	1.344	1.344	752	1.344	1.344	1E-04	0%

Table 5.9 – Differences on unpaid labour data between economic and social templates by MS for 2020:

UNPAID LABOUR 2020	social template					economic template (unpaidemp)	difference	%difference (>5% highlighted in red)
	GENDER	AGE	EDUCATION	NATIONALITY	EMPLOYMENT STATUS			
BEL						7,57	n/a	n/a
BGR	1.422	1.422	1.422	1.422		1422,00	0	0%
CYP	1.102	1.102	1.102	1.102	1.102	1104,00	2	0%
DEU	584					584,00	0	0%
DNK	429	429	429	429	429	429,71	0,711	0%
ESP	6.568					6568,00	0	0%
EST	1.061					1061,00	0	0%
FIN	858					829,00	-29	-3%
FRA	0					-	0	0
GRC	12.832					12832,00	0	0%
HRV	5.215	5.215	5.215	5.215	5.215	5215,00	0	0%
IRL	158					158,00	0	0%
ITA	2.322					2322,39	-0,0004	0%
LTU	9					9,00	0	0%
LVA						144,00	n/a	n/a
MLT	694					984,00	290	42%
NLD	500					500,44	0	0%
POL						1111,66	n/a	n/a
PRT	1.092	1.092	1.092	1.092	1.092	1092,42	0,0004	0%
ROU	15	15	15	15	15	15,00	0	0%
SVN	16					16,00	0	0%
SWE	228					227,85	0,0007	0%

Table 5.10 – Differences on FTE data between economic and social templates by MS for 2020:

FTE 2020	social template					economic template (totnatfte)	difference	%difference (>5% highlighted in red)
	GENDER	AGE	EDUCATION	NATIONALITY	EMPLOYMENT STATUS			
BEL	215					224,96	10,11	4,7%
BGR	619					619,45	0	0%
CYP	798			798	298	798,00	0	0%
DEU	740					740,00	0	0%
DNK	990	990	990	990	990	990,06	0,0647	0%
ESP	24.522					24522,21	0,12	0%
EST	406					321,00	-85	-21%
FIN	402					402,00	0	0%
FRA	7.632					7293,06	-338,9756	-4%
GRC	14.528					14528,11	1E-04	0%
HRV	3.146	3.146	3.146	3.146	3.146	3146,00	0	0%
IRL	2.684					2684,00	0	0%
ITA	13.198					13193,24	-1E-04	0%
LTU	407					408,44	1,57	0%
LVA						247,00	n/a	n/a
MLT	530					524,00	-6	-1%
NLD	1.504					1504,09	0,0186	0%
POL	2.030	2.080	2.034	2.035	2.086	2129,00	99	4,9%
PRT	6.839	6.839	6.839	6.839	6.839	7200,41	361,495	5,3%
ROU	54	54	54	54	54	54,04	0	0%
SVN	47					46,99	0	0%
SWE	701					701,40	1E-04	0%

Member States are advised to consider these issues, even if low severity, and to resubmit corrected data, if necessary.

## 6 LIST OF PARTICIPANTS EWG 22-02 AND 22-06

The 2022 AER has been produced by two working groups of economic experts convened under the Scientific, Technical and Economic Committee for Fisheries (STECF), which took place virtually from the 4 to 8 of April (EWG 22-02) and 13 to 17 June (EWG 22-06). The groups consisted of independent experts from within the EU and experts from the European Commission's Research Centre (JRC).

1 - Information on EWG participant's affiliations is displayed for information only. In any case, Members of the STECF, invited experts, and JRC experts shall act independently. In the context of the STECF work, the committee members and other experts do not represent the institutions/bodies they are affiliated to in their daily jobs. STECF members and experts also declare at each meeting of the STECF and of its Expert Working Groups any specific interest, which might be considered prejudicial to their independence in relation to specific items on the agenda. These declarations are displayed on the public meeting's website if experts explicitly authorized the JRC to do so in accordance with EU legislation on the protection of personnel data. For more information: <http://stecf.jrc.ec.europa.eu/adm-declarations>

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## 7 LIST OF BACKGROUND DOCUMENTS

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Background documents are published on the EWG-22-02 meeting's web site on:

<http://stecf.jrc.ec.europa.eu/web/stecf/ewg2003>

Background documents are published on the EWG-22-06 meeting's web site on:

<http://stecf.jrc.ec.europa.eu/web/stecf/ewg2006>

List of background documents on the meeting's web site:

EWG-22-02 – Declarations of invited and JRC experts (see also section 6 of this report – List of participants)

EWG-22-06 – Declarations of invited and JRC experts (see also section 6 of this report – List of participants)

Member States Annual Report on the National Data Collection Programmes

<http://datacollection.jrc.ec.europa.eu/ars>

Data-handling procedure for STECF Expert Working Groups

<http://datacollection.jrc.ec.europa.eu>

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## ABBREVIATIONS

### *European Member States*

BEL	BE	Belgium	IRL	IR	Ireland
BGR	BG	Bulgaria	ITA	IT	Italy
CYP	CY	Cyprus	LTU	LT	Lithuania
DEU	DE	Germany	LVA	LV	Latvia
DNK	DK	Denmark	MLT	MT	Malta
ESP	ES	Spain	NLD	NL	Netherlands
EST	EE	Estonia	POL	PL	Poland
EU	EU	European Union	PRT	PT	Portugal
FIN	FI	Finland	ROU	RO	Romania
FRA	FR	France	SVN	SV	Slovenia
GRC	EL	Greece	SWE	SE	Sweden
HRV	HR	Croatia			

### *Fishing Technologies – DCF categories*

DFN	Drift and/or fixed netters
DRB	Dredgers
DTS	Demersal trawlers and/or demersal seiners
FPO	Vessels using pots and/or traps
HOK	Vessels using hooks
MGO	Vessel using other active gears
MGP	Vessels using polyvalent active gears only
PG	Vessels using passive gears only for vessels < 12m
PGO	Vessels using other passive gears
PGP	Vessels using polyvalent passive gears only
PMP	Vessels using active and passive gears
PS	Purse seiners
TM	Pelagic trawlers
TBB	Beam trawlers

### *Fishing activity – scale of fishing operation*

SSCF	Small-scale
LSF	Large-scale fleet
DWF	Distant water fleet

### *Fishing regions*

BS	Baltic Sea
BKS	Black Sea
MED	Mediterranean Sea
NSEA	North Sea & Eastern Arctic
NWW	North Western Waters
OFR	Other fishing regions
SWW	South Western Waters

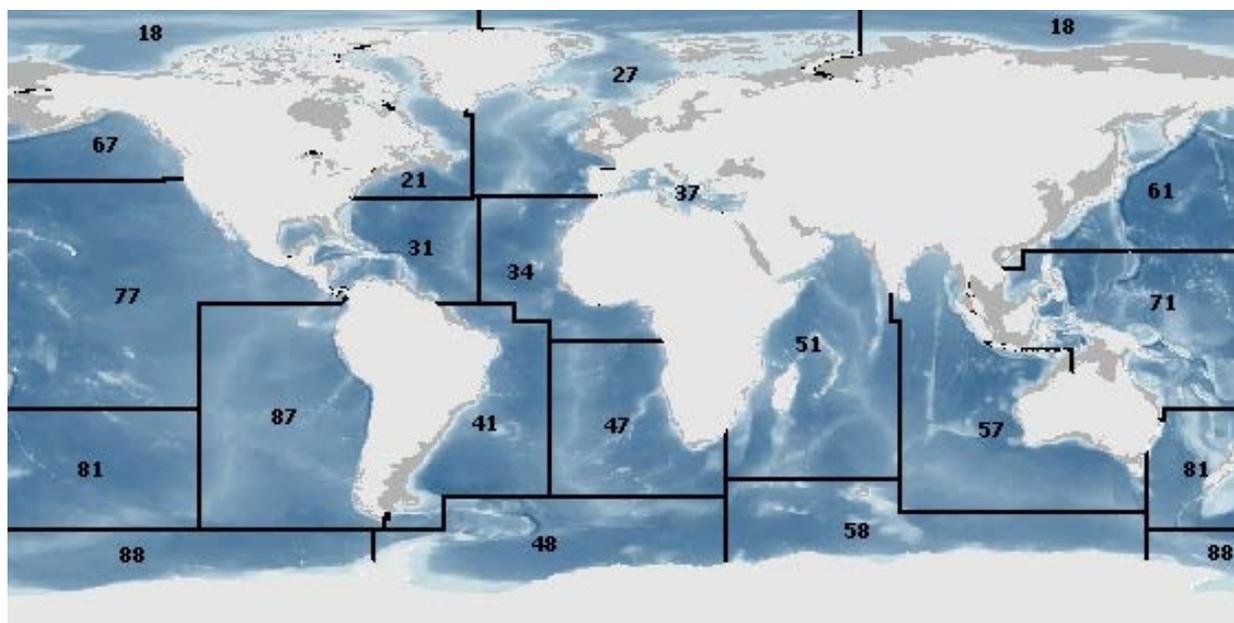
### *Regional fisheries*

ABNJ	Areas Beyond National Jurisdiction
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CECAF	Fishery Committee for the Eastern Central Atlantic
GFCM	General Fisheries Commission for the Mediterranean
ICCAT	International Commission for the Conservation of Atlantic
IOTC	Indian Ocean Tuna Commission
LDF	Long Distant Fisheries
NAFO	Northwest Atlantic Fisheries Organization
NEAFC	North-East Atlantic Fisheries Commission
OMR	EU Outermost Regions
RFB	Regional Fisheries Bodies
RFMO	Regional Fisheries Management Organisations
SFPAs	EU Sustainable Fisheries Partnership Agreements

**Food and Agriculture Organization of the United Nations (FAO) Major Fishing Areas**

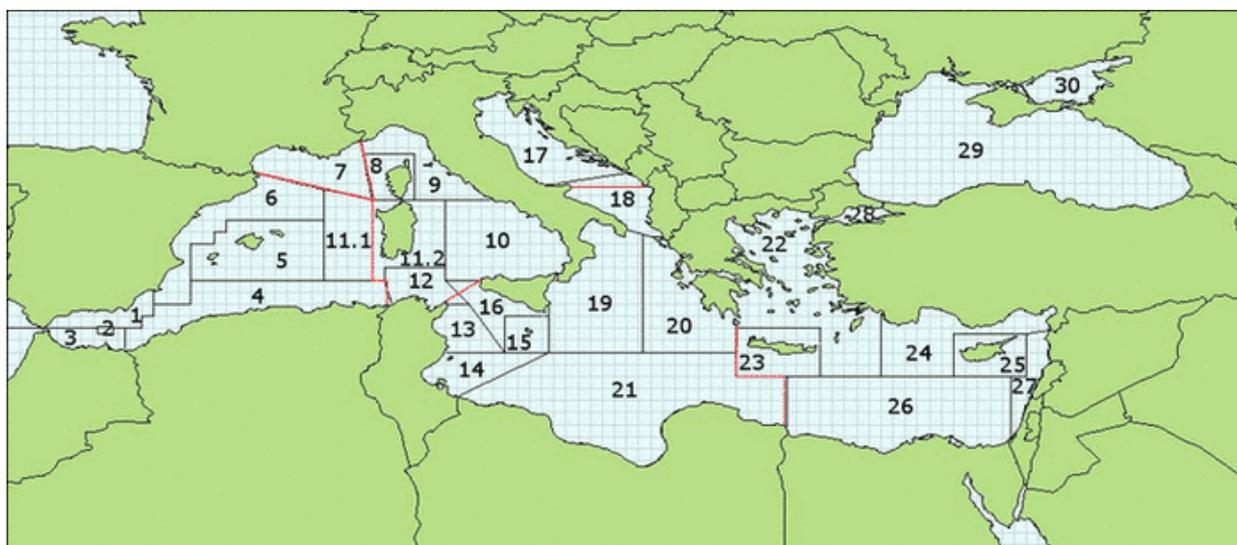
FAO area 18	Arctic Sea	FAO area 57	Indian Ocean,
FAO area 21	Atlantic, Northwest	FAO area 58	Indian Ocean,
FAO area 27	Atlantic, Northeast	FAO area 61	Pacific, Northwest
FAO area 31	Atlantic, Western Central	FAO area 67	Pacific, Northeast
FAO area 34	Atlantic, Eastern Central	FAO area 71	Pacific, Western
FAO area 37	Mediterranean and Black Sea	FAO area 77	Pacific, Eastern
FAO area 41	Atlantic, Southwest	FAO area 81	Pacific, Southwest
FAO area 47	Atlantic, Southeast	FAO area 87	Pacific, Southeast
FAO area 48	Atlantic, Antarctic	FAO area 88	Pacific, Antarctic
FAO area 51	Indian Ocean, Western		



Source: <http://www.fao.org/fishery/area/>

*General Fisheries Commission for the Mediterranean (GFCM) Geographical subareas (GSAs)*

GSA 1	Northern Alboran Sea	GSA 16	Southern Sicily
GSA 2	Alboran Island	GSA 17	Northern Adriatic
GSA 3	Southern Alboran Sea	GSA 18	Southern Adriatic Sea
GSA 4	Algeria	GSA 19	Western Ionian Sea
GSA 5	Balearic Island	GSA 20	Eastern Ionian Sea
GSA 6	Northern Spain	GSA 21	Southern Ionian Sea
GSA 7	Gulf of Lion	GSA 22	Aegean Sea
GSA 8	Corsica	GSA 23	Crete
GSA 9	Ligurian Sea and North Tyrrhenian Sea	GSA 24	Northern Levant Sea
GSA 10	Southern and Central Tyrrhenian Sea	GSA 25	Cyprus
GSA 11.1	Western Sardinia	GSA 26	Southern Levant Sea
GSA 11.2	Eastern Sardinia	GSA 27	Eastern Levant Sea
GSA 12	Northern Tunisia	GSA 28	Marmara Sea
GSA 13	Gulf of Hammamet	GSA 29	Black Sea
GSA 14	Gulf of Gabes	GSA 30	Azov Sea
GSA 15	Malta		



Source: <http://www.fao.org/gfcm/data/maps/gsas>

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## STECF

The Scientific, Technical and Economic Committee for Fisheries (STECF) has been established by the European Commission. The STECF is being consulted at regular intervals on matters pertaining to the conservation and management of living aquatic resources, including biological, economic, environmental, social and technical considerations.

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