European Commission

THE EU FISHING FLEET
TRENDS AND ECONOMIC RESULTS

DG MARE ECONOMIC PAPERS N° 03/2017
A series of short papers on economic analysis and indicators produced by the Directorate-General for Maritime Affairs and Fisheries

Fisheries

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Economic Papers are published by the Directorate-General for Maritime Affairs and Fisheries (DG MARE) and are intended to increase awareness of the economic performance of the EU fisheries, aquaculture and fish processing sectors. DG MARE welcomes comments on the report's utility and content and any suggestions for future enhancements. The findings and interpretations expressed in this document do not necessarily reflect the views of the European Commission.

The Economic Paper n° 03/2017 was produced by experts of the Markets and Impact Assessment Unit of DG MARE and experts of the Water and Marine Resources Unit at the Joint Research Centre (JRC).

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This report is based on latest data and economic reports on the EU fishing fleet, in particular, the '2016 Annual Economic Report on the EU Fishing Fleet' prepared by the EU Scientific, Technical and Economic Committee for Fisheries (STECF) and associated Expert Groups. The authors acknowledge the extensive contributions made by the participants in that process. Other sources include data from the European Market Observatory for Fisheries and Aquaculture (EUMOFA), fleet reports submitted by Member States and recent papers from the scientific literature.

The authors also acknowledge the contributions and support of the following experts:
Frangiscos Nikolian, Miguel Peña, Yasmin Schinasi (Unit A4, DG MARE) and John Casey (Unit D.02, JRC).

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EXECUTIVE SUMMARY

This publication summarises the key findings of the Scientific, Technical and Economic Committee for Fisheries (STECF) '2016 Annual Economic Report on the EU Fishing Fleet'. It provides additional insight on recent trends in economic performance of the EU fleet and the potential drivers behind them, with supplementary analyses by main fishing region and type of fishing activity. It also includes evidence from recent studies and market analysis.

The good news...

- Results show that the overall economic performance of the EU fleet again improved significantly in 2014, in line with recent trends. Over the 2008-to-2014 period, the net profit margin generated by the EU fleet has steadily increased, registering record-high profits in 2014. Forecasts for 2015 and 2016 also point towards positive outcomes.

- The overall improvement in profitability of the EU fleet is coincident with an increase in the number of fish stocks being fished at rates consistent with the objective of achieving MSY and an associated increase in biomass of such stocks.

- This general economic improvement also coincides with overall reductions in fleet capacity and low fuel prices (prices of marine diesel halved in the period from 2014 to 2016).

- Despite low fuel prices, consumption and fuel use intensity decreased by 16 % and 20 % respectively from 2008 to 2014, an indication that many EU fleets have become more efficient.

Challenges ahead...

- The economic performance of certain EU fleets in the Mediterranean and Black seas continues to stagnate, alongside the state of several stocks that are overfished in these regions.

- Although still marginally profitable, the economic situation of many small scale coastal fleets (SSCF) continues to show signs of reduced performance that contrasts with the overall improvement of the EU large scale (LSF) and distant-water (DWF) fleets.

- Employment in the catching sector continues to decline, alongside the decrease in fleet capacity.

What are the main drivers?

- Several drivers may have directly or indirectly contributed to the improved economic performance: increased TACs following the recovery of some important EU fish stocks and progresses made towards achieving MSY through the reduction in exploitation rates; increased landings per unit of effort; fuel price reductions and higher average first sales prices of several commercially important species. Other potential contributing factors include measures funded under the European Fisheries Fund (EFF) (now replaced by the European Maritime Fisheries Fund (EMFF)) and national support in the form of innovation projects, implementation of certification schemes, increased investment, more fuel-efficient fishing techniques and capacity reductions.

- Conversely, other drivers may have contributed to constraining economic performance: deterioration in the status and continued overexploitation of some fish stocks, particularly in the Mediterranean Sea; continuing effects of the global economic crisis and limited access to credit; poor marketing and market saturation; environmental factors; and a shortage of local crews, particularly in some LSFs.

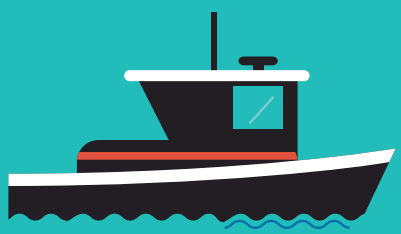
And the future...

How much can the EU fleet continue to improve its performance by sustainably exploiting stocks?

From the above, it follows that there are multiple factors that may drive future trends in the economic performance of EU fleets: a principal factor is the objective to exploit fish stocks at rates that are consistent with achieving the Maximum Sustainable Yield (MSY).

An economic analysis paper ([1]) published in 2016 estimates that the EU fishing fleet could **more than double its annual profitability** if all fish stocks in the North-East Atlantic could be exploited at MSY, as summarised below:

- The estimated economic gains are largely explained by two different outcomes associated with achieving MSY, namely higher incomes and lower operational costs. Profits increase due to higher income from greater yields at MSY and lower costs arising through increased catch per unit of effort because of increased stock biomasses.
- **The faster the transition to MSY, the greater the long-term economic benefits.** Alternatively, the fishing industry will continue to forego fisheries revenues if the move towards MSY is delayed.
- The increase in medium- and long-term fisheries rents compensates for the initial rebuilding costs after just a few years in transition.



[1] Guillen, Jordi, Angel Calvo Santos, Griffin Carpenter, Natacha Carvalho, John Casey, Jordi Lleonart, Francesc Maynou, Gorka Merino, and Anton Paulrud. 'Sustainability now or later? Estimating the benefits of pathways to maximum sustainable yield for EU Northeast Atlantic fisheries' (Marine Policy 72, 2016).

Summary Of Main Findings

- Overall, the economic performance of the EU fleet improved in 2014 and provisional projections for 2015 and 2016 indicate continued improvement.
- Net profit increased from EUR 500 million in 2013 to EUR 770 million in 2014. Projections for 2016 suggest that the EU fleet will be registering record-high profits over the 2008-to-2016 period.
- Improved performance is largely a result of increased income from landings and lower costs, in particular due to low fuel prices. Revenue increased almost 5 % while total costs only increased by 1 %.
- Despite the general improvement in economic performance, a significant number of fleets, particularly SSCFs continue to be unprofitable.
- Performance of LSFs and DWFs has steadily improved while that of SSCFs has gradually declined (despite remaining positive in aggregated terms). However, the overall performance of SSCFs has shown a slight recovery in recent years, perhaps indicating a reversal of the observed declining trend.
- Performance also varies considerably by region, Member State and fishery, with North Sea and North-East Atlantic fleets performing better than those fishing in the Mediterranean.

Factors That May Have Contributed To Improved Economic Performance

- Recovery of some stocks such as plaice, cod and mackerel in the North Sea; herring in the Baltic Sea.
- Increased Total Allowable Catches (TACs) and landings for some stocks, for instance, mackerel, hake and anglerfish in all the main North-East Atlantic fishing regions; herring and cod in the eastern Baltic Sea; cod in the North Sea; herring in the Irish Sea, West and South-east Ireland and English channel.
- Continued fuel price and consumption reductions throughout 2014, 2015 and 2016.
- Higher average first sale prices for several important species, such as, sole and Norway lobster in the North Sea, and anchovy in the Mediterranean Sea.
- A better balance between fishing capacity and fishing opportunities.
- More fuel-efficient fishing techniques and fishing behaviour leading to lower operating costs.

Factors That May Have Contributed To Poor Economic Performance

- Lower average first sale prices for some important species, such as, cod in the Baltic Sea, common sole in the NE Atlantic.
- Reduced TACs and quotas for key stocks such as, sprat in the Baltic Sea, which may act as a limiting factor or 'choke' species in the mixed pelagic fisheries); saithe, *Nephrops*, common sole and herring in the North Sea; haddock in the North Sea, West Scotland and Western Waters.
- The effects of the global economic crisis that continues to impact internal and international markets and access to credit.
- The Russian embargo on EU seafood exports has affected multiple Member States, particularly impacting the pelagic sector.
- Market saturation and poor marketing when placing products on new markets.

Data Sources

The Annual Economic Report (AER) on the EU fishing fleet involves the processing of over 2 000 000 data points submitted by Member States under the Data Collection Framework (DCF) ([2]). This framework specifies the data requirements Member States must collect on their fishing fleet, including socio-economic data. The main aim of the framework is to ensure a standardised, systematic scientific data collection in support of the CFP.

Member States collect data on their commercial fishing fleets from several different sources, including landings surveys, face-to-face interviews with vessel operators, cost and earnings surveys, sales notes and account books, as well as, from other information systems such as the EU Fleet Register and fishing logbooks under the Control regulation ([3]).

The aggregated data submitted and analysed cover the years 2008 to 2015 and include over 40 different parameters, from costs and earnings, to employment and fishing activity, such as, landings by species and fishing effort by fishing area and gear type. The number of fleet segments exceeds 600, encompassing all 23 coastal Member States and fishing regions where EU vessels operate. All these data sets are subject to several stages of quality checks including automated validation tools and are peer-reviewed by independent experts.

The data and analyses are used by the EU Scientific, Technical and Economic Committee for Fisheries (STECF) to generate annual reports on the EU fisheries sector and assess long term trends and identify drivers of profitability. These reports serve to provide fisheries managers, policy makers and industry with reliable information required to make informed decisions.

Other main uses and outputs based on these datasets include: indicators to assess the balance between fleet capacity and fishing opportunities, impact assessments of fisheries polices and socio-economic evaluations of management plans and evaluation of structural policies and EU-funded programmes in fisheries.

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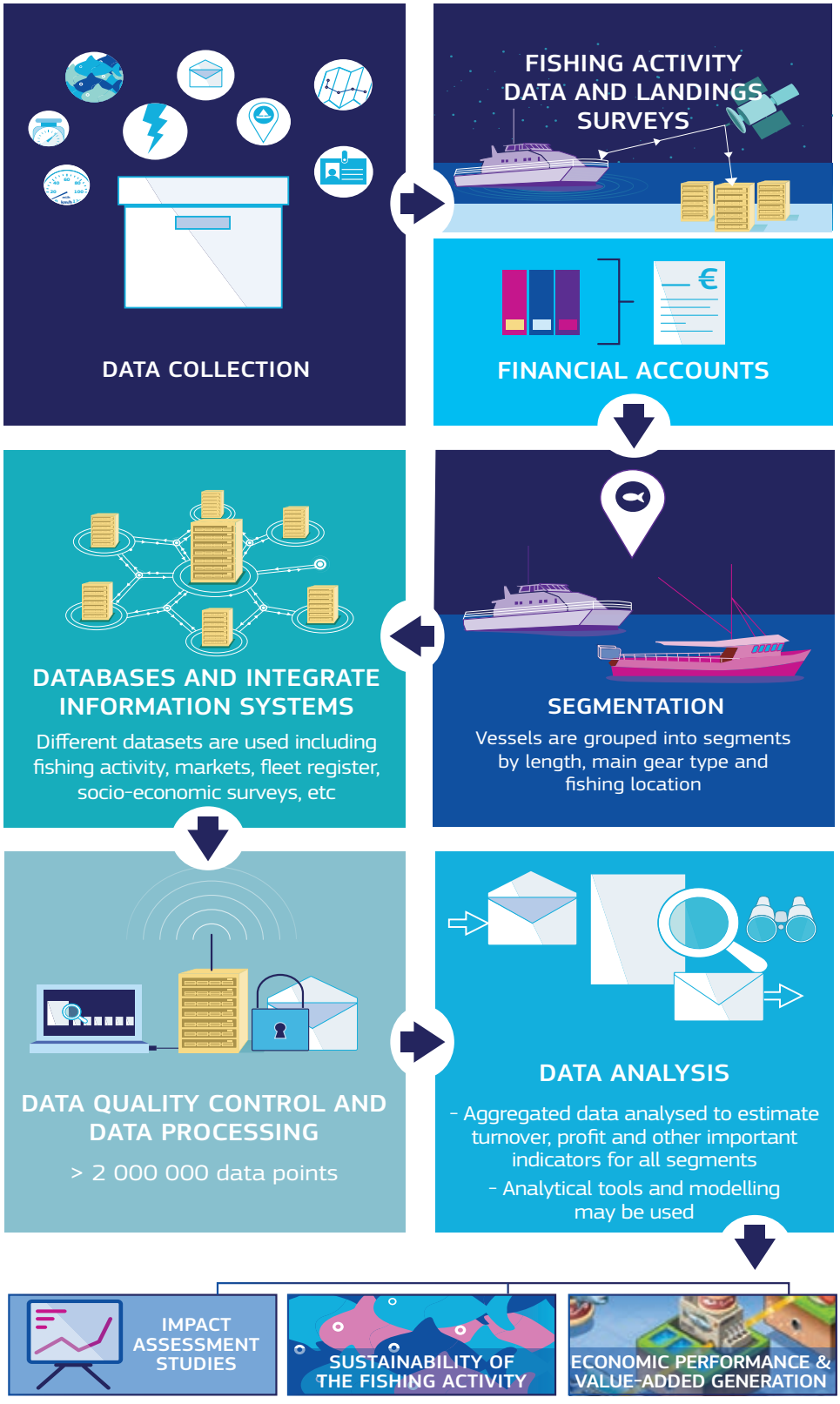
[2] Commission Regulation 665/2008 establishes the Data Collection Framework (DCF), a community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy (CFP)

[3] COUNCIL REGULATION (EC) No 1224/2009 of 20 November 2009 establishing a Community control system for ensuring compliance with the rules of the common fisheries policy

Figure 1 - Data collection, processing and analysis



Economic performance of the EU fishing fleet

THE GOOD NEWS

Key Facts

Number of vessels

Small-scale coastal fleet	Large-scale fleet	Distant water fleet
74 %	25 %	1 %

Gross tonnage

Small-scale coastal fleet	Large-scale fleet	Distant water fleet
8 %	72 %	20 %

The EU fishing fleet's economic performance is improving

and having a positive impact on many EU coastal communities, according to estimates for 2008-2016

In 2014, the EU fleet generated over

€7.2 billion in revenue

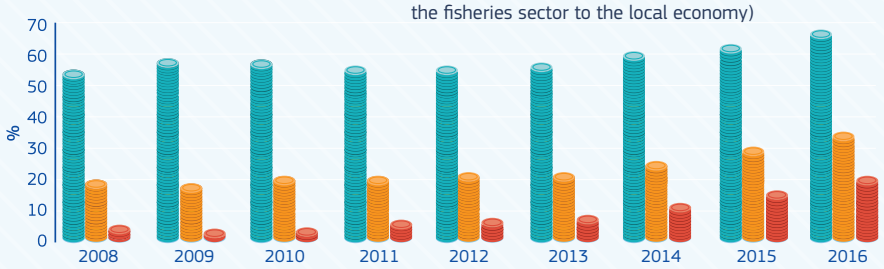
€3.7 billion in gross value added

(which measures the contribution of the fisheries sector to the local economy)

€3.7 billion (GVA)

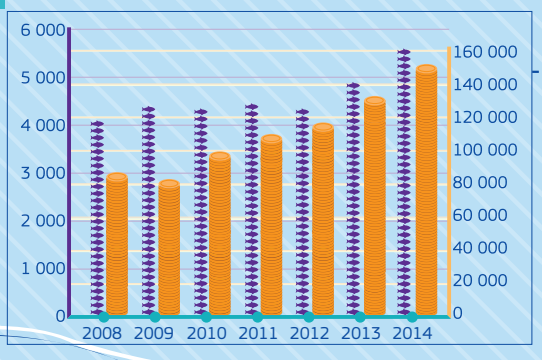
Gross profit €1.6 billion

Wages €2.1 billion



CHALLENGES AHEAD

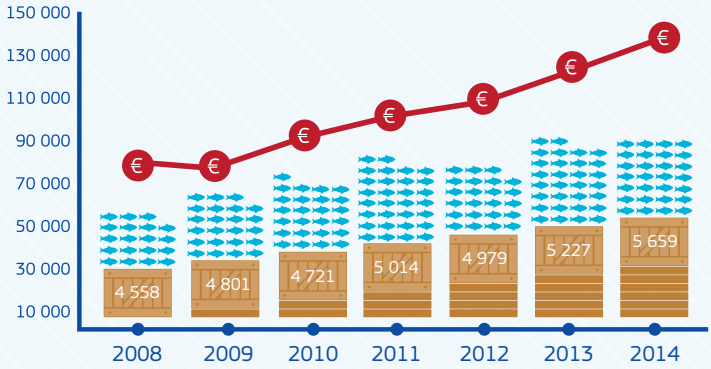
1 The economic performance of EU fleets in the Atlantic and North Sea saw a more intense increase than those in the **Mediterranean** and **Black Sea**



Improvement factors

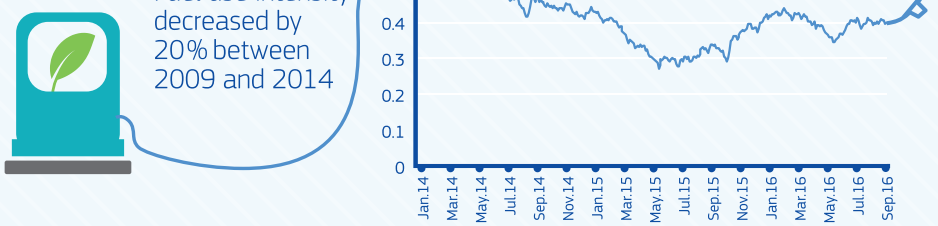
1 Increased number of sustainable fish stocks, leading to increased productivity

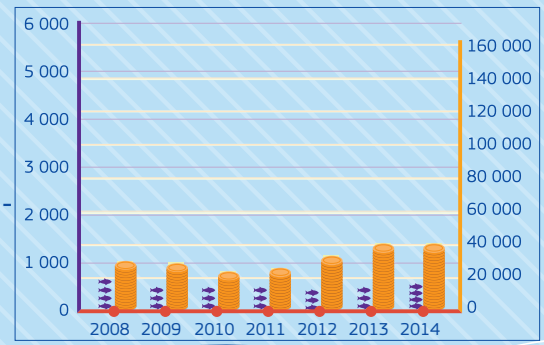
(Northeast Atlantic, North Sea & Baltic Sea)



2 Greater fuel efficiency

Fuel use intensity decreased by 20% between 2009 and 2014





2

The economic performance of some small-scale coastal fleets continues to stagnate, while that for the large-scale fleet is improving.

Main Findings

1. Economic performance results for the EU fishing fleet

Revenue generated by the EU fishing fleet increased as did total costs, albeit to a lesser degree.

In 2014, the EU fleet produced over EUR 7.25 billion in revenue: EUR 7.1 billion in fish sales and EUR 147 million in non-fishing income ([4]). Forecasts suggest that income from fish sales remained stable in 2015, while a rise is expected in 2016 due to increased TACs for some important stocks.

Total costs increased, but revenue more so

- EUR 7.25 billion in revenue: + 4.7 % compared to 2013

The main cost items incurred by the fleet are labour and fuel. Total costs (operating costs plus capital costs) amounted to EUR 6.4 billion in 2014, corresponding to 89 % of revenue. This indicates an improvement on 2013 results, where total costs amounted to 92 % of revenue.

Labour costs, which account for 38 % of total operating costs ([5]), increased by 6 % in 2014. Conversely, fuel costs, which cover 24 % of operating costs, decreased by 9 %. Operating costs are expected to have decreased in 2015 mainly due to continued low fuel prices. In 2016, a small increase in operating costs is expected, alongside the increase in landings (and fishing effort).

Gross Value Added (GVA), which measures the direct contribution of the fish catching sector to the economy through wages and profits, amounted to EUR 3.7 billion in 2014. This equates to an 11 % increase on the previous year's results.

GVA as a proportion of revenue was estimated at 51.5 %. In other words, the EU fishing fleet transformed more than half its total revenue into salaries and profits, thereby having a positive impact on the economies of EU coastal regions and their fishing communities.

After deducting all operating costs, totalling around EUR 5.7 billion, the EU fleet generated EUR 1.6 billion in gross profit, a 20 % increase on 2013 results. This means that almost 22 % of revenue generated by the fleet was converted into profit for vessel owners.

Total costs in 2014 relative to 2013

- Labour costs: EUR 2.16 billion, + 6 %
- Fuel costs: EUR 1.3 billion, - 9%
- Repair costs: EUR 577 million, + 5 %
- Other costs linked to production: EUR 987 million, + 2 %
- Non-variable costs: EUR 600 million: 8 %
- Annual depreciation: EUR 703 million: - 2 %
- Opportunity cost of capital: EUR 111 million: +2%

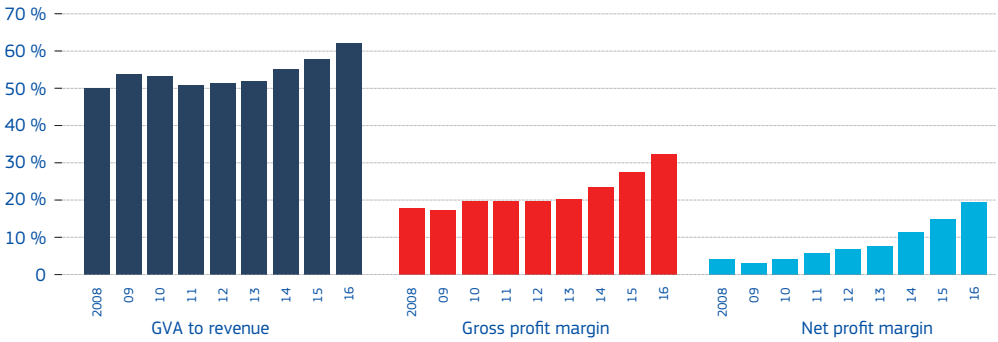
Economic performance indicators 2014 relative to 2013

- Gross value added = EUR 3.7 billion: + 11 %
- Gross profit = revenue – operating costs = EUR 1.6 billion: + 20 %
- Net profit = gross profit – capital costs = EUR 770 million: + 52 %

[4] All monetary values have been adjusted for inflation to 2015 constant prices. Due to confidentiality issues, these figures do not cover all EU fishing vessels. Greece is not included.

[5] Includes wages, unpaid labour, energy, repair and maintenance, other variable costs and fixed costs.

Figure 2 – Trends in the main economic performance indicators for the EU fishing fleet, from 2008 to 2016 (2015 and 2016 results are projections based on modelling and preliminary data



Average net profit margin

2013 → 8 % | 2014 → 11 % | 2015 → 14 % | 2016 → 18 %

When accounting for capital costs (annual depreciation plus the opportunity cost of capital) ([6]), the EU fleet generated a net profit of EUR 770 million. In other words, almost 11 % of the fleet's revenue was retained as net profit in 2014, a significant improvement compared to the estimated 7.8 % in 2013.

This positive trend is expected to continue into 2016, largely as a result of increased landings and continued lower fuel prices, with a net profit margin for the EU fleet projected at 14 % in 2015 and 18 % in 2016 (Figure 2).

Main factors influencing the economic performance of the EU fleet

The EU fleet's improved economic performance in 2014 can be attributed to several factors: (1) **higher LPUE**; (2) coupled with **higher average first sale prices** of several commercially important species; and (3) **lower overall costs**, particularly **fuel costs**, which declined compared to previous years.

For several Member State fleets, increased investment and the introduction of transferable fishing concessions (TFCs) such as individual transferable quotas (ITQs) also seem to have improved efficiency in such fleets. Drivers are analysed further in Chapter 6.

Different results in economic performance across fleets, Member States and fishing regions

Although the EU fleet's overall economic performance improved, there were exceptions: results varied distinctively across Member States and the two main European fishing regions, the North-East Atlantic, North and Baltic seas (Area 27), and the Mediterranean and Black Sea (Area 37).

Contrary to the overall good economic performance in Area 27, where stock status has generally improved, the economic performance of many fleets fishing in Area 37 and the status of certain stocks continue to stagnate or deteriorate.

[6] Opportunity cost of capital, calculated using the real rate of return obtained from investing in long-term, low-risk market instruments such as government bonds, and the current tangible asset value of the fleet. It shows the potential return that owners could obtain if they invested elsewhere instead of in their businesses. There is an economic profit when the returns of the invested capital surpass the opportunity cost.

However, while the EU fishing fleet as a whole was profitable, at the Member State level, ten national fleets' experienced net losses in 2014. This suggests that still there is room for further economic improvement.

The available evidence suggests that profitability varies greatly across fishing vessels and fisheries, and that profits are volatile and affected by fluctuations in catch rates, TACs, input costs and market conditions.

Furthermore, the EU fleet is highly diverse with respect to the size of its vessels, the types of fishing gear used, the stocks targeted and the size and profitability of individual fishing firms. Given such heterogeneity, it is not possible to pinpoint precisely the determining factor(s) behind the improved EU-level performance. However, it is likely that several actions under the Common Fisheries Policy (CFP), particularly the progressive implementation of longer term management plans, decommissioning schemes and EFF/EMFF support, have **contributed to the improved status of many commercially important stocks and to the overall economic development of the EU fleet** [7]. This is explained in more detail in the following sections.

2. Economic performance by Member State fishing fleet

Results viewed by Member State reveal a varied picture: four Member State fleets suffered gross losses in 2014 (Bulgaria, Cyprus, Greece and Malta). These national fleets together with Belgium, Croatia, Lithuania, Poland, Finland, and Sweden, bring the total number of Member State fleets posting net losses to ten. Of these ten national fleets, six experienced significant net losses, five of which operate exclusively in the Mediterranean and Black seas (Table 1). It should be noted that these results do not account for subsidies to the fleets or for income and costs related to intangible assets, i.e. fishing rights.

With the exception of Lithuania and Finland, projected results for North-East Atlantic fleets in 2015 [8] show improvement on 2014 performance, with all Member States analysed [9] generating net profits. In 2016, further improvement is predicted, with all Member State fleets operating in the North-East Atlantic projected to have positive net profits.

In 2016, the highest gross profit margins are forecasted for Denmark (45 %), Sweden (42 %) and Latvia (36 %). The same three Member States should have the highest net profit margins (25 %, 28 % and 31 %, respectively).

Performance results for the Mediterranean and Black Sea fleets are still uncertain, but with fuel prices remaining low throughout 2015 and 2016, some improvements may also be expected for fleets in these regions.

It should be noted that while examining profitability at the level of aggregated national fleets is useful for gaining a sense of the broad picture, a precise understanding of the situation requires examination at the level of the fleet segment, or preferably, the fishing unit.

[7] Also corroborated in the scientific literature, for example in Cardinale et al. (2013) and Fernandes and Cook (2013).

[8] The 2016 call for economic data on the EU fishing fleet requested transversal data (effort, landings and capacity) from Member States for 2015, as well as income from landings, to be used for projecting fleet economic performance indicators in 2015.

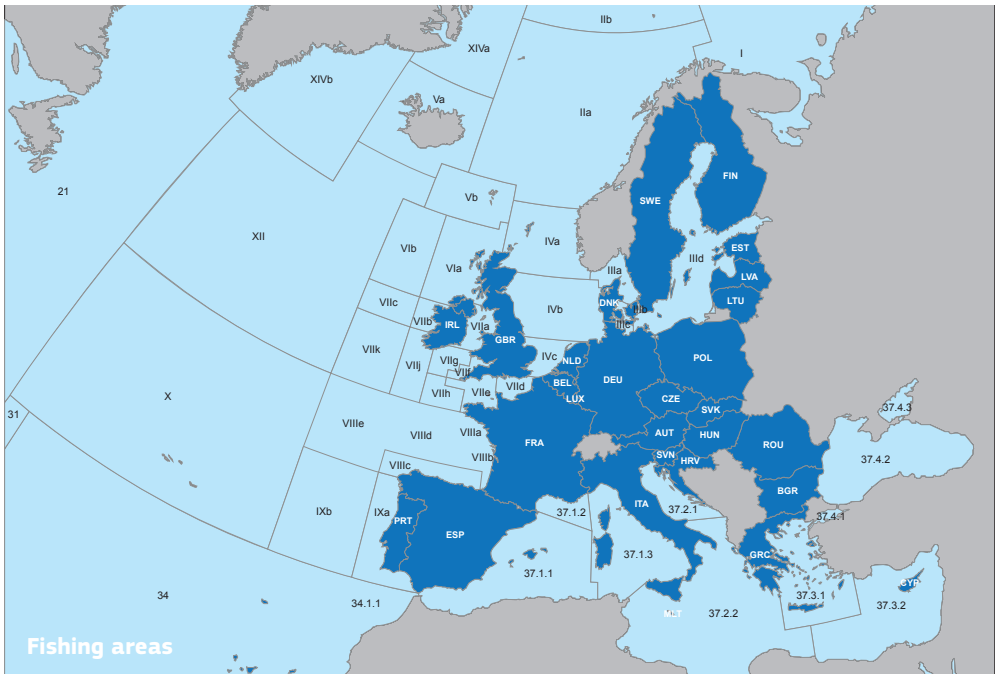
[9] Economic performance projections, were made for 2015 and 2016, which cover the 15 EU Member States with fishing activity in the North-East Atlantic. This selection of Member States was due to greater data on performance drivers. Projections were made based on fleet segment-level data and then aggregated to Member State level. Due to insufficient input data (TACs) projections for the Mediterranean and Black Sea, fleets were not modelled.

Table 1 - Economic performance results by Member State fleet, 2014

	GVA to revenue	Gross profit margin	Net profit margin	GVA per FTE	Average wage per FTE
	(%)	(%)	(%)	(thousand EUR)	(thousand EUR)
BEL	42.8	8.7	-3.4	124.9	99.5
BGR	49.0	-0.9	-28.1	5.0	5.1
CYP	10.7	-1.5	-82.1	1.1	1.3
DEU	52.8	17.6	4.8	56.7	37.7
DNK	61.8	34.0	9.6	147.3	66.2
ESP	52.4	22.0	16.5	37.0	21.5
EST	63.2	26.7	11.2	18.7	10.8
FIN	39.4	18.3	-21.3	43.6	23.4
FRA	49.5	12.8	4.7	76.8	56.9
GBR	47.9	25.2	18.3	67.7	32.1
GRC	24.1	-27.8	-41.2	3.1	6.8
HRV	47.9	17.9	-20.3	17.0	10.6
IRL	52.4	27.0	15.4	70.2	34.1
ITA	55.9	27.4	6.7	22.3	11.4
LTU	14.4	5.2	-1.9	25.2	16.2
LVA	35.5	20.2	11.7	19.9	8.6
MLT	45.0	-7.3	-43.5	4.7	5.5
NLD	46.8	18.5	7.1	106.2	64.1
POL	45.2	12.7	-1.8	8.5	6.1
PRT	64.5	27.3	10.9	27.7	16.0
ROU	60.4	18.1	5.4	39.2	27.5
SVN	82.5	49.0	35.7	28.2	11.4
SWE	48.1	19.1	-0.7	63.8	38.5
EU Fleet	51.5	21.9	10.6	41.3	23.8
% Δ to 2013	5.8%	13.6%	45.6%	11.0%	5.7%

3. Economic performance by main fishing region

As suggested earlier, differences in performance are also seen by main fishing region, with the North Sea, North-East Atlantic and High Seas fleets showing good results, while the performance of a number of fleets in the Mediterranean and Black seas stagnate.



North Sea

The main fishing nations dependent on the North Sea region are The Netherlands, Denmark, Belgium and Germany. The most important species for fleets operating in the region include mackerel, common sole, herring and common shrimp.

The overall performance of fleets operating in the North Sea was good and improved compared to previous years. The most profitable fleets are the large (over 40 m) pelagic trawlers, with average gross profits estimated at around EUR 19 000 per day at sea.

Only the Swedish fleet operating in the region suffered net losses in 2014, possibly due to reduced TACs and quotas for sandeel, herring and Norway lobster.

Factors that may have contributed to the positive situation include:

- recovery of certain stocks, e.g. North Sea cod and plaice are rebuilding steadily; herring, hake and megrim stocks have all reached levels that are capable of delivering MSY.
- increase in TACs and quotas for a number of species such as plaice, hake, cod and mackerel.
- higher average first sale prices for certain species, e.g. sole and Norway lobster.

North-East Atlantic region

The major players in the North-East Atlantic are the Spanish, French, British, Portuguese and Irish fleets, with the last two having the highest dependency on the region for production.

The most important species include Atlantic mackerel, horse mackerel, hake and Norway lobster.

Overall, performance improved, with all Member State fleets generating gross profits and all but two (Belgium and Netherlands), generating net profits in 2014. The most profitable fleets in 2014 were the large (over 40 m) British pelagic trawlers.

Factors that may have contributed to the positive situation include:

- recovery of some stocks, e.g. biomass of most herring stocks have increased and the Northern hake stock continues to follow a positive trend.
- increased TAC for some stocks, such as, mackerel, hake, herring and anglerfish.
- higher average first sale prices for important stocks, e.g. mackerel and hake.

Baltic Sea

Most of the Member States bordering the Baltic Sea are highly dependent on the region, where the main species targeted include Atlantic herring, sprat and cod.

Overall, the situation in the Baltic Sea has deteriorated, with three Member State fleets suffering gross losses — only the Estonian and Latvian fleets generated net profits in 2014.

Factors that may have contributed to the positive situation for some fleets include:

- increased TAC for herring.

Factors that may have negatively influenced performance include:

- × reduced TACs and quotas of some important species such as sprat and western cod, which were reduced further in 2016;
- × the available sprat quota appears to have been a limiting factor (choke species) in the mixed pelagic fishery;
- × cod quotas were not fully utilised, possibly due to the low quality of cod.

Mediterranean and Black seas

Most of the ten Mediterranean and Black sea Member State fleets are wholly dependent on the region, with the exception of Spain and France which also have major parts of their fleets operating in the Atlantic and other fishing regions. The Italian distant water fleet was not active in 2014. The main species for major fleets in the region include anchovy, sardine and hake.

Aided by low fuel prices, the overall situation in the region improved compared to the previous year, leading to an overall net profit for the regional fleet. However, six Member State fleets, when including Greece, suffered net losses in 2014.

Factors that may have contributed to improving the situation include:

- reduced fuel prices;
- higher average first sale prices of certain species such as anchovies and sardines.

Factors that may have negatively influenced performance include:

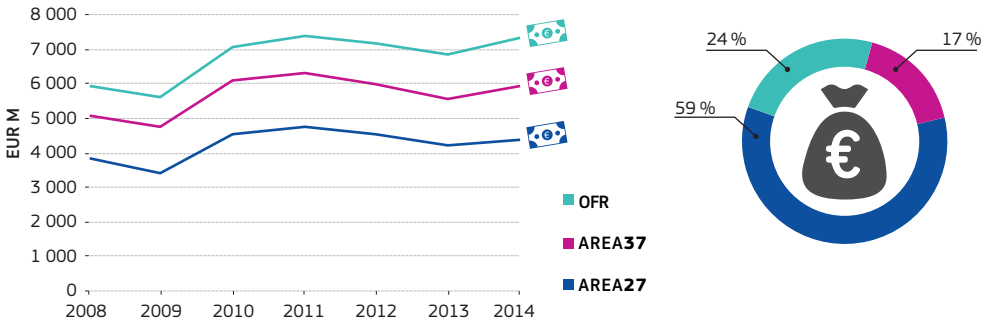
- × continued deterioration in the status of many fish stocks, e.g. for several stocks including hake, red mullet, black-bellied anglerfish and blue whiting, the current fishing mortality rates far exceed FMSY.

Other Fishing Regions: EU fleets in the High Seas, Fisheries Partnership Agreements and Outermost Regions

While the main fishing grounds of the EU fleet are located in the EU waters in the North-East Atlantic and Mediterranean Sea, some fleets operate much further afield. These include the distant-water or high-sea fleets, EU fleets in Fisheries Partnership Agreements (FPA) and Member State fleets in EU outermost regions.

Around 20 % of the total landed value of the EU fleet originates from these regions, where the major players are Spain, and to a lesser degree, France, Lithuania and Portugal.

Figure 3 – Trends (left) and value share (right) of the landed value of the EU fleet by major fishing region



Fishing activity in the Indian, Pacific, south and central Atlantic oceans is by far the most important in terms of the landed value for the EU external fleet, accounting for 81 % of production in these distant fishing regions. The eastern Arctic contributes with 11 %, the North-West Atlantic with 6 %, and the outermost regions with 2 %. By Member State ([10]), Spain produces 74 % of the landed value, followed by France (11 %) and Portugal (5 %) (Figure 3).

The top fleets include the Spanish and French freezing purse seiners targeting mainly tropical tuna species; these were extremely profitable in 2014. Other key fleets include the demersal trawlers operating off the western coast of Africa. The performance of many EU fleets in the high seas and FPAs has substantially increased in recent years, although there are also exceptions to this general trend.

As for the EU fleets with home ports in the outermost regions, these comprise mainly SSCFs with an important socio-economic link to coastal communities in the regions. The data suggest that the economic performance is mixed. Some of the most important fleets operate as follows:

- The Madeira fleet operates mainly in its Exclusive Economic Zone (EEZ) within sub-area 2. The midsize longliner fleet (12 m to 18 m), comprising 18 vessels operating exclusively in Madeiran waters (Division 34.1.2), generate over 50 % of the landed value and around 37 % of the landed weight from the Madeira EEZ. This fleet has remained profitable over the period from 2008 to 2014. The Madeira fleet also consists of vessels operating in Azorean waters and around the Canary Islands in certain seasons of the year, under reciprocity agreements. The majority of these vessels operate with longlines, and the most important species fished are tuna, swordfish and small pelagics (mackerel and horse mackerel), which together account for about 91 % of the total landings.

- The Azorean fleet is mostly made up of small to medium sized vessels operating in the Azores Exclusive Economic Zone (EEZ), licensed mostly for longline, pole and line (with live bait) and nets. The key species from an economic point of view are tuna, swordfish, red sea bream, mackerel and conger, representing about 70 % of total landings.

- The Spanish outermost region fleet in the Canary Islands (FAO 34.1.2) is mainly composed of small sized vessels below 12 meters in length, operating on a part-time basis, using multi-gears and targeting a variety of species in coastal fishing areas. Only 6% of the fleet operates outside Canary waters. These vessels are mainly demersal trawlers or hook and liners targeting tuna in CECAF waters (FAO major fishing zone 34).

[10] Value of landings unavailable for the Lithuanian DWF.

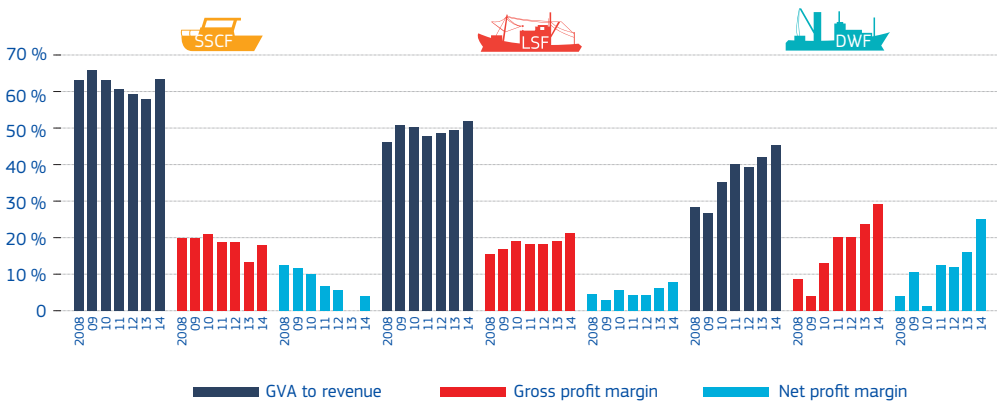
4. Economic performance by fleet category

When considered by type of fishing activity or fleet category, data show that the performance of the EU LSF and DWF has steadily improved. This is especially evident for the DWF, which saw a 12 % increase in revenue in 2014, giving rise to a 69 % increase in net profit on 2013 results. Conversely, the SSCF has gradually declined, albeit showing some recovery in 2014 (Figure 4).

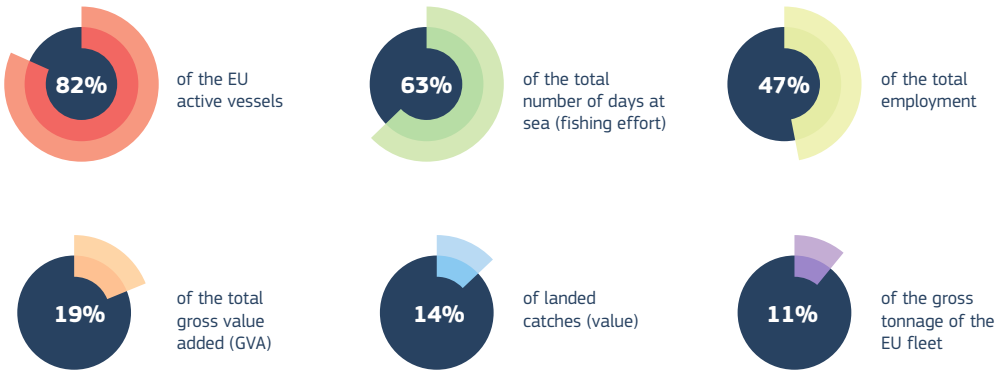
Differences were also observed by fleet operation:

- performance of the LSF and DWF has steadily improved;
- performance of the SSCF gradually declined between 2008 and 2013 (although some signs of recovery were observed in 2014 and 2015).

Figure 4 - Trends in economic performance indicators, by scale of fishing operation: SSCF, LSF and DWF from 2008 to 2016 (2015 and 2016 results are projections)



Representation of the EU small-scale coastal fleet in the context of the EU fleet



The EU LSF generated 71 % of the EU fleet revenue, 68 % of the gross profits and 57 % of net profits. Annual revenue has remained relatively steady while total costs have decreased on average by 1.2 % annually over the period 2008 to 2014. Overall, net profit generated by the LSF amounted to €426 million in 2014, 40 % more than in 2013.

The DWF contributed 17 % to revenue, 22 % to gross profit and 37 % to net profit, generating an overall net profit of around €280 million ([11]).

The SSCF generated the remaining 12 % of the revenue. In relative terms, the SSCF generated the highest GVA to revenue (63 %), while the DWF the highest gross profit margin (28.5 %) (Table 2).

5. Economic performance and recent trends of small-scale coastal fleets

The SSCF employs around half of the total number of fishers of the EU fleet and deploys more than half of the fishing effort in days at sea (56 %) but consumes 6 % of the fuel. The average wage per FTE in 2014 was estimated at EUR 14 500, representing a 10 % decrease compared to 2008. By contrast, the same indicator for fishers operating in the LSF was EUR 28 800. Similarly, labour productivity (GVA/FTE) is lowest in the SSCF and decreased steadily between 2008 and 2013 before rebounding to the 2008 level in 2014.

Table 2 – Main performance indicators estimated by main type of fishing activity (SSCF, LSF, DWF) in 2014, and the variation compared to 2013

		Small Scale Coastal Fleet			Large Scale Fleet			Distant Water Fleet		
	unit_div		Δ 2013			Δ 2013			Δ 2013	
Days at sea	(thousand day)	2.767	-1.6 %	↓	2.102	-0.6 %	↓	73	-2.8 %	↓
Energy consumption	(million litre)	143	-23.1 %	↓	1.661	-1.9 %	↓	375	5.0 %	↑
Live weight of landings	(thousand tonne)	284.0	-2.4 %	↓	3.987.5	7.0 %	↑	695.8	12.1 %	↑
Value of landings	(million EUR)	808.7	4.0 %	↑	4.913.2	2.1 %	↑	1.241.3	9.4 %	↑
GVA to revenue	(%)	63	9.6 %	↑	51	5.4 %	↑	40	7.3 %	↑
Gross Value Added	(million EUR)	573	8.1 %	↑	2.631	9.9 %	↑	439	20.5 %	↑
GVA per FTE (labour productivity)	(thousand EUR)	20	17.8 %	↑	49	6.7 %	↑	69	5.9 %	↑
Gross profit	(million EUR)	161	31.4 %	↑	1.072	13.1 %	↑	252	37.8 %	↑
Gross profit margin	(%)	18	32.9 %	↑	21	8.6 %	↑	23	22.7 %	↑
Net profit	(million EUR)	41	1180.0 %	↑	426	40.0 %	↑	165	69.0 %	↑
Net profit margin	(%)	4.577	1196.5 %	↑	8.503	35.1 %	↑	17.432	48.5 %	↑
Investments	(million EUR)	86	-5.2 %	↓	369	-11.7 %	↓	14	54.7 %	↑

[11] This figure is under-reported due to the exclusion of some vessels for confidentiality reasons.

Table 3 – Main indicators and recent trends for the EU SSCF in 2014

		Small Scale Coastal Fleet				
	unit	2014	Δ 2014 to 2013		Δ 2014 to average 2008-2013	
Average GT	GT	2.8	2.60%	↑	3.90%	↑
Average engine power	kW	44	0.00%	↑	5.80%	↑
Average FTE	number	1.8	-7.30%	↓	-10.10%	↓
Average employed	person	1.7	-3.40%	↓	-6.50%	↓
Average wage	EUR	12 640	1.90%	↑	-5.40%	↓
Average wage per FTE	EUR	14 466	8.90%	↑	2.90%	↑
Average days at sea	day	83	-1.90%	↓	-7.50%	↓
Average fuel consumption	litre	4 399	-22.30%	↓	-21.40%	↓
Energy consumed per day at sea	litre/day	51	-22.40%	↓	-15.00%	↓
Average energy costs	EUR	3 070	-24.70%	↓	-19.00%	↓
Energy consumed per landed value	litre/EUR	0.18	-25.00%	↓	-13.60%	↓
Average fishing days	day	84	-1.60%	↓	-5.70%	↓
Average in-year investments	EUR	2 991	-5.80%	↓	-3.20%	↓
Average landed value	EUR	23 676	2.50%	↑	-6.50%	↓
Average landed weight	tonne	8 316	-3.70%	↓	11.40%	↑
Average income from landings	EUR	27 128	-0.20%	↓	-10.40%	↓
Average wage per employed	EUR	7 513	5.70%	↑	0.70%	↑
Average revenue	EUR	57 103	-1.40%	↓	-10.70%	↓
GVA per FTE (labour productivity)	EUR	19 779	17.80%	↑	2.20%	↑
Average GVA	EUR	17 643	9.20%	↑	-8.30%	↓
Average Gross profit	EUR	4 981	32.20%	↑	-16.40%	↓

In fact, for the EU SSCF, all economic performance indicators have deteriorated over recent years. The revenue generated by the SSCF has followed a negative trend over the period 2008 to 2014, decreasing on average about 2 % annually. In 2014, revenue was 17 % lower than the maximum revenue generated in 2009, while total costs to revenue have ranged from 88 % in 2010 to 98 % in 2013.

Yet, results for 2014 show some improvement: the relative change in indicator values between 2013 and 2014 suggests that GVA increased 8 % and gross profit 31 %. Net profit also increased compared to 2013 but remained below the long-term average (Table 3).

The data indicate that, overall, the SSCF (excluding Greece) generated net profits of around EUR 41 million in 2014, an improvement on 2013. Even so, this fleet component generated net losses in nine Member States.

The continuing deterioration/stagnation of the SSCF's performance may be due to certain biological factors, such as the overexploitation and lack of scientific knowledge of many of the stocks targeted by these fleets, combined with some inherent socio-economic factors, such as, the part-time nature of the activity, small economic size of firms, financial accounting of the remuneration to the owner working on board, alongside decreases in the average first sale price of key species.

Projections for 2015 and 2016 suggest a slight recovery in the performance of most SSCFs. It is too early to speculate whether this is the beginning of a structural improvement in the SSCFs (leading to sustained recovery in their performance), or just a temporary change driven by external factors (e.g. drop in fuel prices).

The performance of the EU SSCF also varies widely across the EU main fishing regions:

- Overall, the **North-East Atlantic SSCF** was profitable in 2014, generating EUR 389 million in revenue, EUR 249 million in GVA and EUR 76 million in gross profit. Only the Spanish

SSCF suffered net losses but to a lesser extent compared to previous years. Among the top seven species for the SSCF in the region, at least three were overexploited in 2014: seabass (IVbc,VIIa,VIId-h), whelk (VIIe) and common sole (VIIIabd). Nevertheless, total revenue for the SSCF increased in 2014 compared to 2013, in part, due to increased first sale prices for common octopus, European lobster and edible crab and increased landings of European sea bass.

- In the North Sea, the SSCF generated circa EUR 132 million in revenue, a 6% decrease on 2013 results. Overall the SSCF was profitable in 2014, with four of the six Member State SSCFs posting profits, totalling EUR 71 million in GVA, EUR 17.5 million in gross profit and EUR 3.9 million in net profit. Only two SSCF (German and Danish) suffered net losses. The UK SSCF, which consists of 1 450 vessels, generated the highest revenue (EUR 62.5 million) while the French SSCF, with 288 vessels in the region and a revenue of EUR 41 million, generated the highest net profit (EUR 3.8 million).

- Revenue generated by the Baltic SSCF was estimated at EUR 56.3 million in 2014. The regional SSCF further generated EUR 26 million in GVA, equating to 46 % of revenue. Yet, in terms of profitability, the situation of the SSCF further deteriorated, to post gross losses of EUR 2.5 million in 2014. The overall poor economic performance can be partly explained by the part-time and seasonal nature of the activity, harsh environmental conditions and the poor state of some fish stocks in the region. Despite the overall poor performance there is a high variation between Member States: the Latvian, Finnish, Estonian, German and Lithuanian SSCF all made reasonable profits while the remaining three (Denmark, Poland and Sweden) suffered gross losses. After accounting for capital costs, the Finnish and Lithuanian SSCF also suffered net losses.

- On the whole, the Mediterranean & Black Sea SSCF was profitable, generating EUR 313 million in revenue, EUR 214 million in GVA and a gross profit of EUR 70 million. In fact, the SSCF in the region outperformed the LSF by generating a net profit margin of 5.5 % compared to 2.5 % for the LSF in 2014 (all excluding Greece). According to the available data, three of the Member State SSCF (Cyprus, Spain and Malta) generated gross losses and four (including Bulgaria) reported net losses in 2014.

6. Main driving factors behind trends in economic performance of the EU fishing fleet

As noted above, the revenue generated by the EU fleet increased more than costs did. This means that the GVA and profit margins have, in fact, further increased. This improvement appears to have been largely driven by increases in fish stock abundance and decreases in fuel consumption, fuel prices and capital costs, as described in detail below.

6.1 Increased TACs and overall progress towards MSY

In areas under TAC management, the relative exploitation rate on all stocks (average of F/FMSY) has decreased considerably. The average fishing mortality rate exceeded FMSY ([12]) by only 4 % in 2014 (down from 47 % above FMSY in 2003 and 20 % in 2008). The largest reductions were observed for the North Sea, where the average fishing mortality rate on all stocks was 8% below FMSY in 2014; a reduction from 48 % above FMSY in 2003; and 23 % above FMSY in 2008. However, despite significant downward trends, other regions and fisheries are still experiencing fishing mortality rates that exceed FMSY ([13, 14, 15]).

[12] Exploitation rate consistent with MSY
[13] European Commission. 'Consultation on the fishing opportunities for 2016 under the Common Fisheries Policy'.
[14] European Commission. 'Consultation on the fishing opportunities for 2017 under the Common Fisheries Policy'.
[15] STECF (16-05) - Monitoring the performance of the Common Fisheries Policy.

Status of stocks

- The observed overall **improvement in the economic performance of the EU fleet coincides with a general improvement in stock status and progress towards achieving biomasses that are capable of delivering MSY** (Figure 5). According to the Communication on fishing opportunities for 2016 (13), and a recent STECF report (15), 31 out of a total of 59 stocks for which MSY reference points were available, were fished at rates consistent with FMSY in 2014. The STECF report indicates that in 2013 and 2014 the historical trend of strong progress towards achieving MSY may have slowed down although the reasons for the observed slow down are not clear.
- Nonetheless, in the Mediterranean and Black seas, the majority of stocks are overfished. In the Mediterranean, this is particularly true for stocks exploited mainly or exclusively by EU operators.

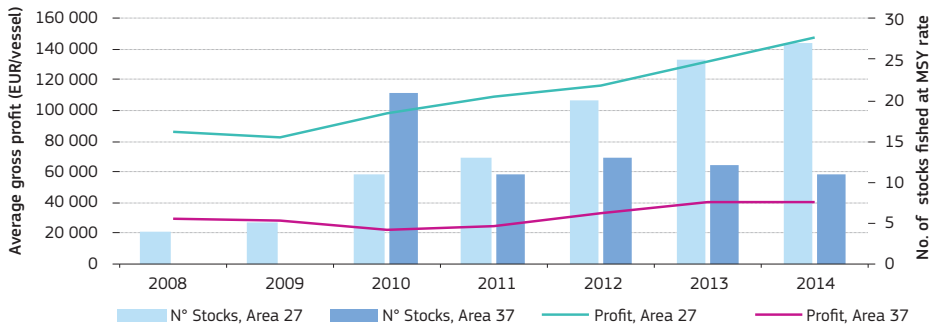
6.2 Increased landings per unit of effort (LPUE)

Calculated as landings in weight per day at sea, average LPUE in 2014 increased by 16 % compared to 2008. Between 2008 and 2014, LPUE increased on average only by 1 % for the SSCF, while for the LSF it increased by 3 % and for the DWF by 25 %.

Landings Per Unit of Effort (LPUE)

The LPUE is a relative measure of stock abundance. An increasing trend in this indicator may be an indication of improved stock status. It also implies that fishers either obtain more landings with the same amount of fishing effort (the number of fishing days, crew, hooks, nets, etc.), or take the same landings with less effort. Less fishing effort generally implies lower operating costs, leading to higher profits for constant first sale market prices.

Figure 5 – Trends in average vessel gross profit and the number of stocks fished at MSY rate (according to (13)), by main fishing region (Area 27 and Area 37), 2008-2014



Trends in landings and value per fishing effort mirror, to a certain extent, trends in the economic performance of EU fleets across the different regions and segments (Figure 6 and 7).

In the North-East Atlantic, North and Baltic seas (Area 27), trends in the LPUE indicator increased by almost 37 % during the 2008-to-2014 period. This coincided with reduced fishing mortality rates and an increase in abundance of a number of stocks.

The overall deteriorating performance observed for the SSCF in the Mediterranean and Black seas (Area 37) is likely to be a consequence of stagnated or decreasing LPUE (as well as other factors such as the decrease in average first sale prices for several high-value species in these regions).

Figure 6 – Trends in LPUE (landings per day at sea) and VPUE (value per unit of effort) for the EU fleet (top) and by main fishing activity SSCF (upper middle), LSF (bottom middle) and DWF (bottom), 2008-2014

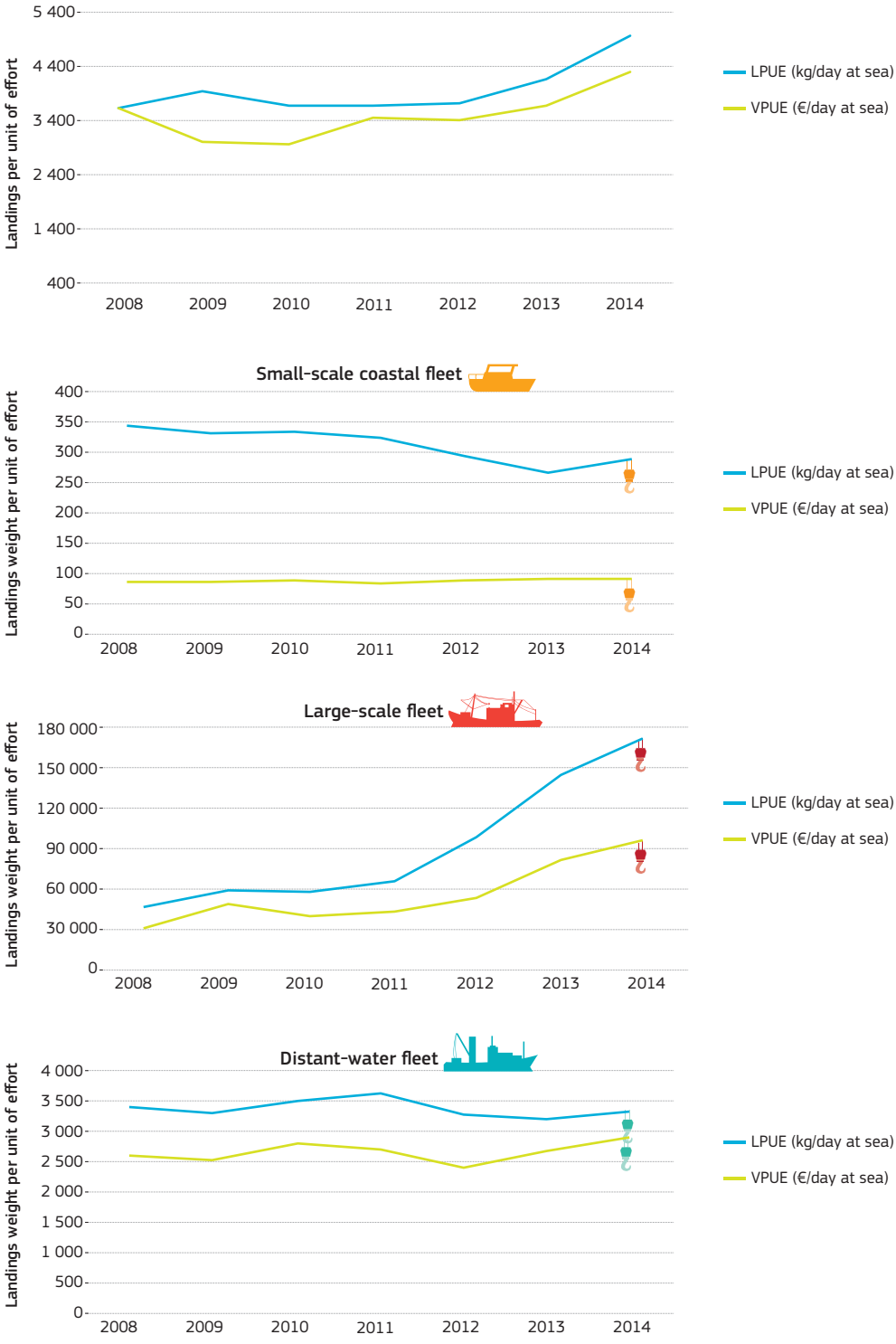


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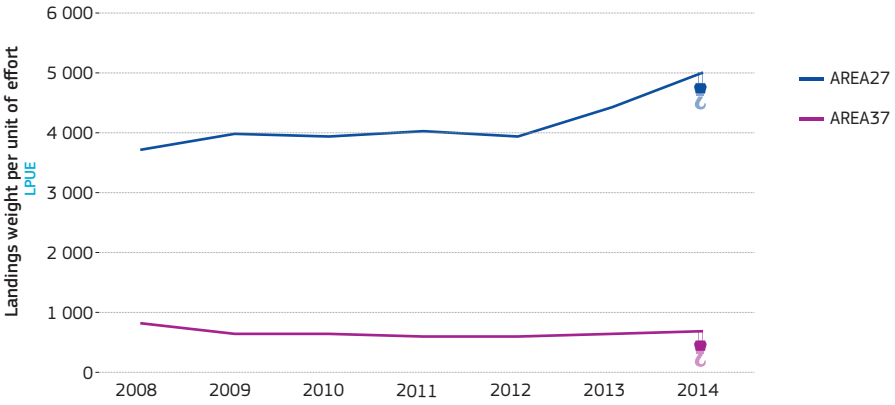
Figure 7 - Trends in LPUE (landings per day at sea), by fishing region, 2008-2014



6.3 Fuel consumption and fuel use intensity

Fuel consumption and fuel use intensity ([16]) decreased by 16 % and 20 %, respectively, from 2008 to 2014. The 2008 fuel crisis made vessel owners more aware of the importance of reducing fuel use, and provided an incentive for developing new strategies to improve fuel efficiency ([17]) and scale down costs.

Furthermore, the decreasing trend in fuel prices without a corresponding increase in consumption, suggests a structural change. This adaptation is expected to continue to help improve the overall performance of the EU fleet in the near future. The reduction in capital costs (mainly depreciation) is due to the exit of vessels from the fleet.

Fluctuations in fuel prices significantly impact the performance of the fleet

- While average fisheries fuel prices remained relatively low during 2009 and early 2010, they increased steadily throughout 2010 and 2011, peaking in 2012. More recently, fuel prices halved in the period from 2014 to 2016, leading to a significant reduction (between 10 % and 20 %) in operating costs (Figure 8 and 9).

[16] Fuel use intensity is measured as litres of fuel consumed per tonne of fish landed (litres/tonne).

[17] Such a decrease is due to a variety of factors including the shift to more fuel-efficient fishing gears, fleet reduction, improved stock abundances, and changes in fishing behaviour and fleet dynamics.

Figure 8 - Variation in fuel consumption and fuel costs for the EU fishing fleet from 2008 to 2016 (2015 and 2016 results are projections, base year = 2008)

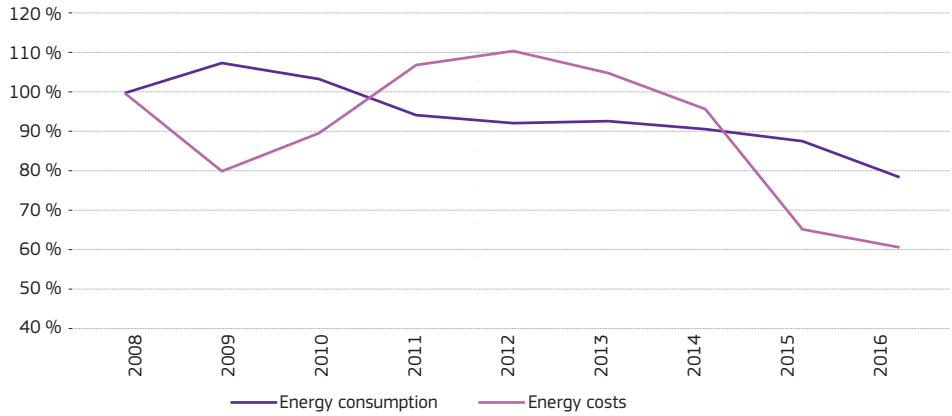


Figure 9 - Trends in fuel prices from 2014 to 2016

6.4 Higher average first sale prices

The first sale price (in real terms) improved for several key species over the period from 2008 to 2015, such as cod, herring, mackerel, sardine, shrimp and sole. When the time series is extended with more recent data from the European Market Observatory for Fisheries and Aquaculture Products (EUMOFA)[2]([18]), the first sales prices in 2016 reveal a somewhat mixed picture.

There is also a large variation in price trends by fishing gear and region. Landings from small-scale coastal fisheries and selective fishing gears (longlines and traps) tend to fetch higher prices than industrial trawlers for the same species, due to differences in the quality of the fish landed.

[18] See http://www.eumofa.eu/ online.

6.5 Other drivers affecting the economic performance of the EU fleet

Other drivers that may have contributed to an improved economic performance include the following:

- recovery of certain stocks such as Baltic herring, North Sea cod and North-Atlantic mackerel, leading to increased TACs and quotas;
- capacity reduction (decommissioning with or without public support);
- training, upgrading professional skills of fishers, and innovation projects (more selective fishing gears), funded by the EFF and national support;
- improvement in first sales prices of key species and exploitation of new market opportunities;
- implementation of certification schemes and a growing demand for certified products have positively impacted a number of fleet segments, although there is not enough evidence to establish a general relation between premium price and certification;
- more fuel-efficient fishing techniques and effective fishing behaviour.

On the other hand, factors that may have inhibited economic performance include the following:

- reduced TACs and quotas for several key stocks such as European sprat and herring, some stocks of whitefish in the West of Scotland and Irish Sea, cod and whiting in the Celtic Sea;
- lower average first sale prices for several commercially important species;
- the effects of the economic crisis: it still has an impact on markets for some species (particularly high-value species) and limits access to credit;
- market saturation (e.g. Baltic cod) and poor marketing when placing products in new markets;
- low abundance and/or quality of some species, severe weather conditions, and for some fleets (e.g. fleets operating in the Baltic and Celtic seas), environmental factors and damage caused by predators;
- shortage of local crews, which causes vessel owners to offer higher wages in some Member State fleets, leading to higher operating costs (e.g. Belgium);
- an increase in areas with prohibited or limited fishing access/activity, due to established restrictions for energy production (e.g. wind farms) or temporary closures of fishing areas.

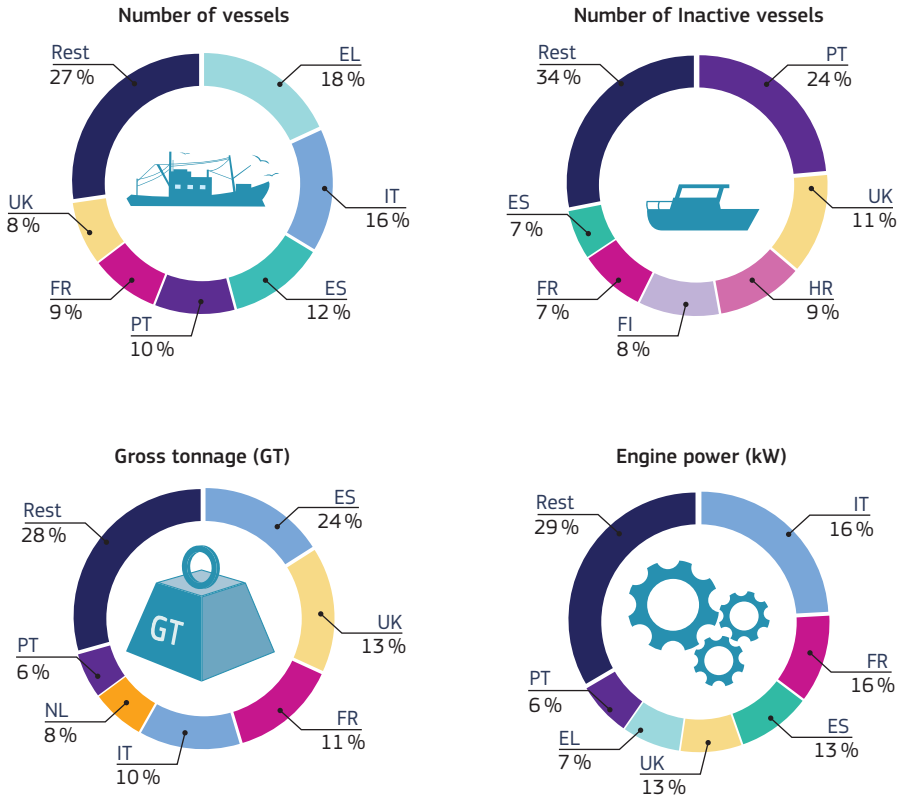
7. The EU fleet in numbers

Europe's fishing fleet numbered more than 84 100 vessels in 2016, with a combined tonnage of 1.6 million GT and engine power of 6.4 million kW. Capacity continues to steadily decrease annually on average by 2 % in vessel number and kW and by 3 % in gross tonnage.

Greece has the largest fleet in number, followed by the Italian and Spanish fleets. While Greece accounts for 18 % of the total number of vessels, its fleet represents only 4 % of the gross tonnage and 7 % of the kilowatts of the EU fleet, indicating a fleet mostly made up of small-scale vessels (Figure 10).

In terms of overall vessel tonnage, the Spanish fleet has the largest capacity by far (24 % of the total). The British, French and Italian fleets, the next biggest fleets in tonnage, each only have around half of Spain's capacity. The Italian fleet is the largest as regards engine power, with 16 % of the total kilowatts, closely followed by the French, Spanish and British fleets.

Figure 10 – Proportion of the main capacity indicators, highlighting the most important Member State fleets in terms of each indicator number of active vessels (top left), number of inactive vessels (top right), gross tonnage (bottom left) and engine power (bottom right), 2014



Of the active vessels, almost three-quarters are small scale (defined as vessels under 12 m in length using non-towed gears), and represent about 29 % of the engine power, but only 8 % in gross tonnage. On the other hand, the DWF (defined as vessels over 24 m, fishing in other fishing regions), covers less than 1 % of the vessels in number but 20 % of the gross tonnage (Figure 11).

The EU fleet directly employed around 150 000 fishers (or 111 000 in full-time equivalents, FTE) in 2014, although employment expressed as FTEs has decreased steadily at around 2 % p.a. Since 2008, the number of FTEs has decreased 10 % and this trend is expected to continue. Five Member State fleets employ 75 % of the EU total (Figure 12).

Estimated at almost EUR 24 000 for the EU fleet as a whole, the average annual wage per FTE has increased in real terms, but differences are evident by scale of fishing activity, with the LSF earning on average almost EUR 29 000, while the SSCF earns on average EUR 14 500. However, it should be noted that this latter figure is an underestimate as there is often no clear distinction between salaries and profit.

Fishing effort has decreased slightly, in line with capacity, but the decrease in fuel consumption since 2009 is more pronounced and has continued in spite of reduced fuel prices in more recent years. This suggests that a structural change has occurred, with fishers adapting to the fuel crises in 2008 by using more fuel-efficient techniques and modifying fishing behaviour.

Landings increased 7 % in weight, reaching over 5 million tonnes and exceeding EUR 7 billion in value in 2014, and the trend is maintained into 2016. Increases in the weight of landings are mainly related to the recovery of some stocks and increased quotas (e.g. mackerel). The average first sale price has generally followed changes in supply: that is, when supply increases, the price tends to decrease, and vice versa. But many other factors might be at play.

The top producing Member State fleets remain the big four, with Spain leading at over EUR 2 billion in landed value, followed by France and the United Kingdom, both with just over EUR 1 billion in fish sales.

Figure 13 also highlights the weight and value of landings by Member State fleets which are influenced by the species composition of their landings. Demark, for example, has one of the largest catches in weight (15 % of the EU total) but a low value (5 % of the total), while Member States such as Italy, France and Spain show the opposite.

The top species landed in weight are mostly small pelagic species, but also some large pelagics such as tuna. In terms of value, several demersal species have become more important.

In terms of gross profit, the British fleet shows the strongest performance. With revenue similar to the Italian fleet and lower than the French and Spanish fleets, the British fleet was able to convert more revenue into profit by reducing its operating costs. Compared to the British fleet, the Spanish fleet generated a lower gross profit margin, mainly due to higher operating costs (Figure 14).

Figure 11 – Proportion of the main capacity indicators by scale of fishing operation, 2014

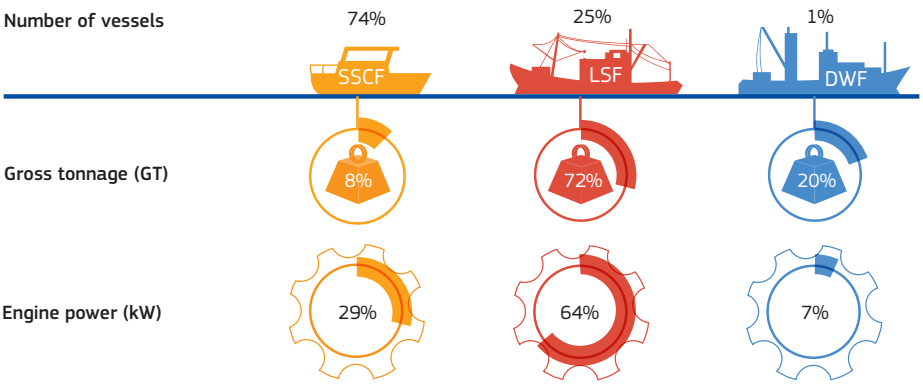


Figure 12 – Proportion of employment (top left), FTE (top right), energy consumption (bottom left) and energy costs (bottom right), highlighting the top Member State producers, 2014

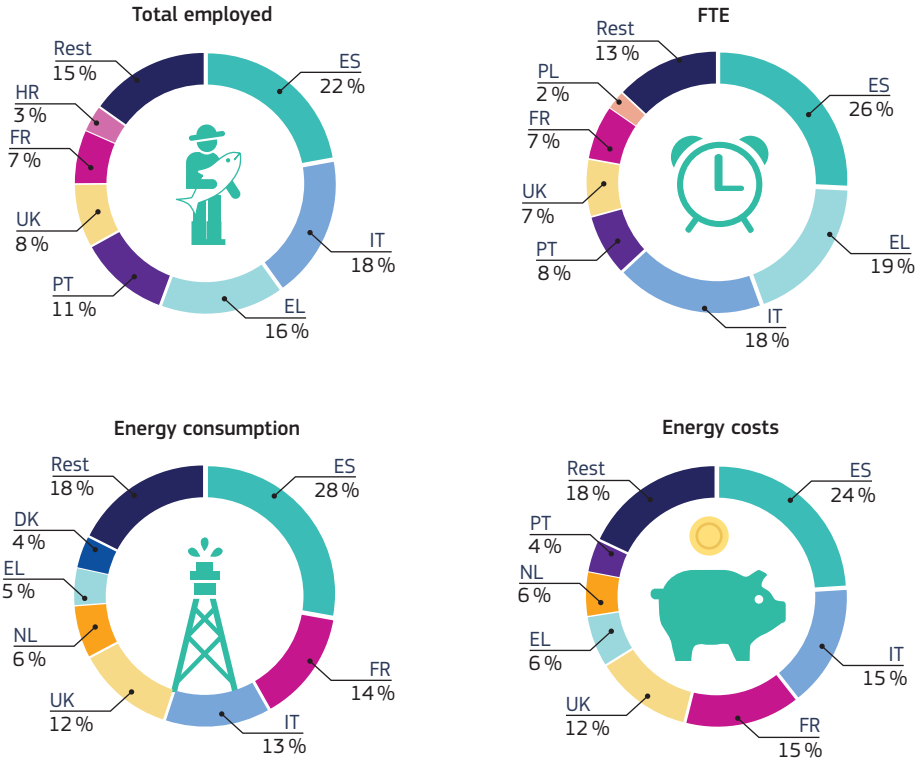


Figure 13 – Proportion of landings in weight (left) and value (right), highlighting the top Member State producers, 2014

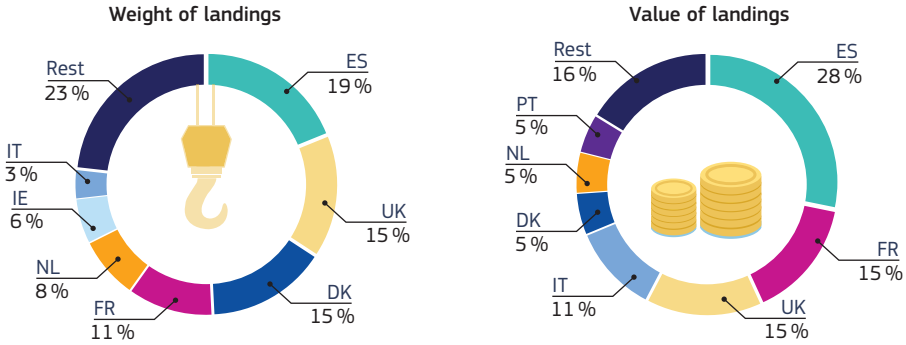
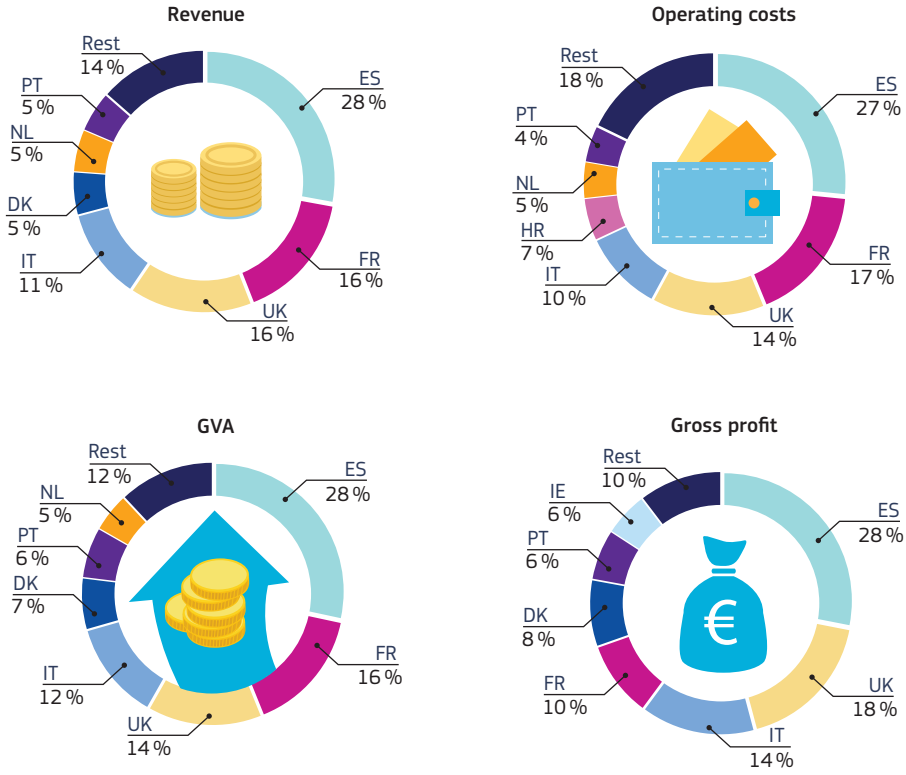


Figure 14 – Proportion of revenue (top left), costs (top right), GVA (bottom left) and gross profit (bottom right), highlighting the top Member State producers, 2014



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ACRONYMS AND UNITS

CFP	Common Fisheries Policy
CECAF	Eastern Central Atlantic (or FAO major fishing zone 34)
DCF	Data Collection Framework
DWF	Distant-water fleet
EFF	European Fisheries Fund
EEZ	Exclusive economic zone
EMFF	European Maritime and Fisheries Fund
EU	European Union
EUMOFA	European Market Observatory for Fisheries and Aquaculture Products
FMSY	Fishing mortality consistent with achieving Maximum Sustainable Yield
FPA	Fisheries partnership agreement
FTE	Full-time equivalent
GFCM	General Fisheries Commission for the Mediterranean
GT	Gross tonnage
GVA	Gross Value Added
ITQ	Individual transferable quota
JRC	Joint Research Centre
kW	Kilowatt
LPUE	Landings per unit of effort
LSF	Large-scale fleet
MSY	Maximum Sustainable Yield
OFR	Other fishing regions
ROFTA	Return on Fixed Tangible Assets
ROI	Return on Investment
SSCF	Small-scale coastal fleet
STECF	Scientific, Technical and Economic Committee for Fisheries
TAC	Total Allowable Catch
TFC	Transferable fishing concession
VPUE	Value per unit of effort

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