

Impacts of the COVID-19 pandemic on EU fisheries and aquaculture



Fisheries



Impacts of the COVID-19 pandemic on EU fisheries and aquaculture

Abstract

This study analyses the effects of COVID-19 on the EU fisheries and aquaculture sectors from March to December 2020. It gives an overview of the main effects experienced at EU level and develops eight case studies (Spain, Denmark, France, Italy, Sweden, Greece, Portugal and Bulgaria). The research also provides conclusions and policy recommendations to strengthen the sector's resilience to shocks, and to address current vulnerabilities in view of potential similar events.

The study was commissioned by the European Parliament's Policy Department for Structural and Cohesion Policies, at the request of the PECH Committee.

This document was requested by the European Parliament's Committee on Fisheries.

AUTHOR(S)

Cogea: Alessandro PITITTO, Diletta RAINONE, Valentina SANNINO
AND International: Tanguy CHEVER, Lucas HERRY, Sibylle PARANT, Safa SOUIDI
CETMAR: Marta BALLESTEROS, Rosa CHAPELA, José L. SANTIAGO

Research administrator: Marcus BREUER
Project, communication and publication assistance: Jana BERGMAN, Kinga OSTAŃSKA, Thaya Mirinda DINKEL (trainee)
Policy Department for Structural and Cohesion Policies, European Parliament

LINGUISTIC VERSIONS

Original: EN

ABOUT THE PUBLISHER

To contact the Policy Department or to subscribe to updates on our work for the PECH Committee please write to: Poldep-cohesion@ep.europa.eu

Manuscript completed in July 2021
© European Union, 2021

This document is available on the internet in summary with option to download the full text at: <https://bit.ly/3dBZCnQ>

This document is available on the internet at:
[http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_STU\(2021\)690880](http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_STU(2021)690880)

Further information on research for PECH by the Policy Department is available at:
<https://research4committees.blog/pech/>
Follow us on Twitter: @PolicyPECH

Please use the following reference to cite this study:

Pititto A, Rainone D, Sannino V, Chever T, Herry L, Parant S, Souidi S, Ballesteros M, Chapela R, Santiago J L, 2021, Research for PECH Committee – Impacts of the COVID-19 pandemic on EU fisheries and aquaculture, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels

Please use the following reference for in-text citations:

Pititto A *et al.* (2021)

DISCLAIMER

The opinions expressed in this document are the sole responsibility of the authors and do not necessarily represent the official position of the European Parliament.

Reproduction and translation for non-commercial purposes are authorised, provided the source is acknowledged and the publisher is given prior notice and sent a copy.

© Cover image used under the licence from Adobe Stock

CONTENTS

LIST OF ABBREVIATIONS	5
LIST OF FIGURES	7
LIST OF TABLES	9
LIST OF MAPS	10
EXECUTIVE SUMMARY	11
INTRODUCTION	15
1 OVERVIEW AT EU LEVEL	17
1.1 Socio-economic impacts of the COVID-19 outbreak: A general assessment	17
1.2 The impact of COVID-19 pandemic on the fisheries and aquaculture sector	21
1.3 Legislative measures taken at EU level	33
2 CASE STUDIES	37
2.1 Spain	37
2.2 Denmark	53
2.3 France	65
2.4 Italy	79
2.5 Sweden	97
2.6 Greece	107
2.7 Portugal	119
2.8 Bulgaria	133
3 CONCLUSIONS	143
3.1 The impact of the COVID-19 pandemic on fisheries	144
3.2 The impact of the COVID-19 pandemic on aquaculture	145
3.3 The impact of the COVID-19 pandemic on wholesale	146
3.4 The impact of the COVID-19 pandemic on trade	146
3.5 The impact of the COVID-19 pandemic on processing	146
3.6 The impact of the COVID-19 pandemic on consumption	147
3.7 The impact of the COVID-19 pandemic on fisheries and aquaculture sector: final conclusions	147
4 POLICY RECOMMENDATIONS	151
4.1 Short-term action	151
4.2 Long-term action	152
REFERENCES	155

LIST OF ABBREVIATIONS

AIS	Automatic Identification System
APA	Associação Portuguesa de Aquicultores <i>Portuguese Aquaculture Producers Association</i>
API	Associazione Piscicoltori Italiani <i>Italian Aquaculture Producers Association</i>
EC	European Commission
EEZ	Exclusive Economic Zone
EMFAF	European Maritime Fisheries and Aquaculture Fund
EMFF	European Maritime and Fisheries Fund
EMODnet	European Marine Observation and Data network
EMSA	European Maritime Safety Agency
ESF	European Social Fund
ESIF	European Structural and Investment Funds
EU	European Union
EUMOFA	European Market Observatory for Fisheries and Aquaculture products
FAO	Food and Agriculture Organisation of the United Nations
FGM	Federation of Greek Maricultures
FLAG	Fisheries Local Action Group
FTE	Full Time Equivalent
GDP	Gross Domestic Product
GVA	Gross Value Added
GT	Gross Tonnage
HoReCa	Hotels, Restaurants and Catering
IFREMER	Institut Français de Recherche pour l'Exploitation de la Mer <i>French Institute for Ocean Science</i>
JRC	Joint Research Centre
kW	Kilowatt
LSF	Large-Scale Fleet
MS	Member State
MAPA	Ministerio de Agricultura, Pesca y Alimentación <i>Spanish Ministry of Agriculture, Fisheries and Food</i>

OECD	Organisation for Economic Co-operation and Development
OxCGRT	Oxford COVID-19 Government Response Tracker
PMP	Production and Marketing Plan
PO	Producer Organisation
PPE	Personal Protective Equipment
SME	Small-Medium Enterprise
SSCF	Small-Scale Coastal Fleet
STECF	Scientific, Technical and Economic Committee for Fisheries
TAC	Total Allowable Catch
UK	United Kingdom
VAT	Value-Added Tax
WB	World Bank

LIST OF FIGURES

Figure 1:	First sales of fish, shellfish and crustaceans in the EU, 2019-2020	26
Figure 2:	Extra-EU imports of fisheries and aquaculture products, 2017-2019 average-2020	27
Figure 3:	Extra-EU imports of fisheries and aquaculture products by product category, 2020	27
Figure 4:	Extra-EU imports of fisheries and aquaculture products by product category, 2017-2019 average	28
Figure 5:	Sales of unprocessed fisheries and aquaculture products in France, Germany, Italy and Spain by channel, 2017-2020	32
Figure 6:	Timeline of Spanish restrictive measures and policy responses adopted in 2020	39
Figure 7:	Monthly average fuel prices in Spain, 2017-2020	40
Figure 8:	First sales of fish, shellfish and crustaceans in Spain, 2017-2019 average-2020	43
Figure 9:	Wholesale of fisheries and aquaculture products at Mercamadrid, 2017-2019 average-2020	44
Figure 10:	Imports of fisheries and aquaculture products in Spain, 2017-2019 average-2020	45
Figure 11:	Imports of fisheries and aquaculture products in Spain, 2017-2019 average-2020	46
Figure 12:	Household consumption of fresh fisheries and aquaculture products in Spain, 2017-2019 average-2020	47
Figure 13:	Timeline of Danish restrictive measures and policy responses adopted in 2020	55
Figure 14:	Monthly average fuel prices in Denmark, 2017-2020	56
Figure 15:	Danish total landings of industrial and non-industrial fish, 2017-2020	58
Figure 16:	Danish total landings of non-industrial fish by species, 2017-2020	58
Figure 17:	First sales of fish, shellfish and crustaceans in Denmark by species, 2020	59
Figure 18:	Household consumption of fresh fisheries and aquaculture products in Denmark, 2017-2020	61
Figure 19:	Timeline of French restrictive measures and policy responses adopted in 2020	67
Figure 20:	Monthly average fuel prices in France, 2017-2020	69
Figure 21:	First sale of fish, shellfish and crustaceans in France, 2017-2020	70
Figure 22:	French exports of fisheries and aquaculture products to Spain and Italy, 2017-2020	73
Figure 23:	Household consumption of fresh fisheries and aquaculture products in France, 2017-2020	74
Figure 24:	Timeline of Italian restrictive measures and policy responses adopted in 2020	81
Figure 25:	Monthly average fuel prices in Italy, 2017-2020	84
Figure 26:	First sales of fish, shellfish and crustaceans in Italy, 2017-2020	86
Figure 27:	Italian imports of fisheries and aquaculture products, 2017-2020	88
Figure 28:	Italian imports of fisheries and aquaculture products by product category, 2020	89

Figure 29:	Italian imports of fisheries and aquaculture products by product category, 2017-2019 average	89
Figure 30:	Household consumption of fresh fisheries and aquaculture products in Italy, 2017-2020	91
Figure 31:	Timeline of Swedish restrictive measures and policy responses adopted in 2020	99
Figure 32:	Monthly average of fuel prices in Sweden, 2017-2020	100
Figure 33:	First sales of fish, shellfish and crustaceans in Sweden, 2017-2020	102
Figure 34:	Imports of fresh salmon in Sweden, 2017-2020	103
Figure 35:	Household consumption of fresh fisheries and aquaculture products in Sweden, 2017-2020	104
Figure 36:	Timeline of Greek restrictive measures and policy responses adopted in 2020	109
Figure 37:	Monthly average fuel prices in Greece, 2017-2020	110
Figure 38:	First sales of fish, shellfish and crustaceans in Greece, 2018-2019 average-2020	112
Figure 39:	Wholesales of fisheries and aquaculture products in Greece, 2018-2019 average-2020	113
Figure 40:	Imports of fisheries and aquaculture products in Greece, 2018-2019 average-2020	114
Figure 41:	Timeline of Portuguese restrictive measures and policy responses adopted in 2020	121
Figure 42:	Monthly average fuel prices in Portugal, 2017-2020	124
Figure 43:	First sale of fish, shellfish and crustaceans in Portugal, 2017-2019 average-2020	126
Figure 44:	Imports of fisheries and aquaculture products in Portugal, 2017-2019 average-2020	127
Figure 45:	Household consumption of fresh fisheries and aquaculture products in Portugal, 2017-2019 average-2020	128
Figure 46:	Timeline of Bulgarian restrictive measures and policy responses adopted in 2020	135
Figure 47:	Total first sales of fish and shellfish in Bulgaria, 2018-2020	136
Figure 48:	Monthly Bulgarian exports of prepared/preserved sea snails, 2017-2020	138
Figure 49:	Monthly Bulgarian exports of frozen sprat, 2017-2020	139

LIST OF TABLES

Table 1:	Variation in density of fishing boats in the EEZs of EU Member States	25
Table 2:	World, EU-28 and Spanish catches and aquaculture production in 2018, in 1 000 tonnes	38
Table 3:	Socio-economic indicators on the Spanish fleet, 2018-2020	40
Table 4:	Qualitative assessment of restrictions by supply chain stage	49
Table 5:	Qualitative assessment of countermeasures adopted by supply chain stage	50
Table 6:	World, EU-28 and Danish catches and aquaculture production in 2018, in 1 000 tonnes	54
Table 7:	Socio-economic indicators on the Danish fleet, 2018-2020	56
Table 8:	Volume and price trends at first sale level of selected fish species in Denmark, 2017-2019 average-2020	60
Table 9:	Qualitative assessment of COVID-19 impact on sales outlets of aquaculture products	62
Table 10:	Qualitative assessment of restrictions by supply chain stage	63
Table 11:	Qualitative assessment of countermeasures adopted by supply chain stage	64
Table 12:	World, EU-28 and French catches and aquaculture production in 2018, in 1 000 tonnes	65
Table 13:	Socio-economic indicators on the French fleet, in 2018-2020	68
Table 14:	Monthly first sales of fish, shellfish and crustaceans in France by seaboard, % variation 2020/2017-2019 average	71
Table 15:	Qualitative assessment of restrictions by supply chain stage	78
Table 16:	Qualitative assessment of countermeasures adopted by supply chain stage	78
Table 17:	World, EU-28 and Italian catches and aquaculture production in 2018, in 1 000 tonnes	80
Table 18:	Policy responses adopted in Italy for the fisheries and aquaculture sector along 2020	82
Table 19:	Socio-economic indicators on the Italian fleet, 2018-2020	85
Table 20:	Volume and price trends at import level of selected fisheries and aquaculture products in Italy, second quarter 2020 vs. second quarter 2017-2019 average	90
Table 21:	Impact of COVID-19 on sales outlets of Italian aquaculture products	92
Table 22:	Qualitative assessment of restrictions by supply chain stage	93
Table 23:	Qualitative assessment of countermeasures adopted by supply chain stage	95
Table 24:	World, EU-28 and Swedish catches and aquaculture production in 2018, in 1 000 tonnes	97
Table 25:	Socio-economic indicators on the Swedish fleet, 2018-2020	99
Table 26:	Qualitative assessment of restrictions by supply chain stage	104
Table 27:	Impact of countermeasures adopted by supply chain stage	106
Table 28:	World, EU-28 and Greek catches and aquaculture production in 2018, 1 000 tonnes	107
Table 29:	Socio-economic indicators on the Greek fleet, 2018-2020	110

Table 30:	Volume and price trends at import level of selected fisheries and aquaculture products in Greece, 2020/2017-2019 average	114
Table 31:	Qualitative assessment of restrictions by supply chain stage	116
Table 32:	Qualitative assessment of countermeasures adopted by supply chain stage	117
Table 33:	World, EU-28 and Portuguese catches and aquaculture production in 2018, in 1 000 tonnes	120
Table 34:	Socio-economic indicators on the Portuguese fleet, 2018-2020	123
Table 35:	Qualitative assessment of restrictions by supply chain stage	130
Table 36:	Qualitative assessment of countermeasures adopted by supply chain stage	131
Table 37:	World, EU-28 and Bulgarian catches and aquaculture production in 2018, in 1 000 tonnes	134
Table 38:	Socio-economic indicators on the Bulgarian fleet, 2018-2020	136
Table 39:	Qualitative assessment of restrictions by supply chain stage	140
Table 40:	Qualitative assessment of countermeasures adopted by supply chain stage	142

LIST OF MAPS

Map 1:	Fishing vessel route density in Spain (north-west coast), April 2019 and April 2020	41
Map 2:	Fishing vessel route density in Spain (south coast), April 2019 and April 2020	41
Map 3:	Fishing vessel route density in Spain (Mediterranean coast), April 2019 and April 2020	42
Map 4:	Fishing vessel route density in Denmark, April 2019 and April 2020	57
Map 5:	Fishing vessel route density in France, April 2019 and April 2020	69
Map 6:	Fishing vessel route density in Italy, April 2019 and April 2020	85
Map 7:	Fishing vessel route density in Sweden (south-western coast), April 2019 and April 2020	101
Map 8:	Fishing vessel route density in Greece, April 2019 and April 2020	111
Map 9:	Fishing vessel route density in Portugal (continental), April 2019 and April 2020	125
Map 10:	Fishing vessel route density in Portugal (Azores and Madeira), April 2019 and April 2020	125

EXECUTIVE SUMMARY

KEY FINDINGS

- Initially, all operators were caught unaware by the sudden **closures** of hotels, restaurants and catering (**HoReCa**) channels. **Small operators** were among the **first victims** of the **economic shocks**.
- More than lockdowns, social distancing and travel restrictions, it was the **contraction of demand** that had the **stronger impact on labour**.
- Estimates for **aquaculture** point to a **17 %** reduction in **sales volume** and an **18 %** reduction in **total income**, with a harsh impact on the **shellfish segment**.
- Extra-EU imports decreased by 1 % in volume and 7 % in value.
- There was an **increase** in **household consumption**, but it did not offset the decrease in out-of-home consumption.
- **Direct** sales, **online** sales and **home** deliveries have gained **fresh impetus**.

Background

Fisheries and **aquaculture** were among the food sectors most **immediately impacted** by COVID-19. Initially, most countries tried to ensure **health** and **safety**, by closing **ports**, quarantining **foreign vessels**, closing open-air fish **markets**, disinfecting **ports** and fishing **boats**, providing **masks for workers** and raising awareness about **sanitary measures**. At the same time, several measures were taken to ensure **social protection** and guarantee decent **working conditions** for fishers and fish farmers. Other measures were taken to ensure the continuity of **food supply**, such as expanding **home deliveries** and **direct sales**, and supporting national and local production through **consumer awareness campaigns**.

Lockdown measures **disrupted employment** in several ways, including:

- reducing fishing activities strongly impacted by **sanitary measures**;
- limiting access to labour for **seafood businesses** strictly dependent on migrant workers, due to **temporary border closure**;
- **squeezing demand**, as a consequence of the closure of restaurants, cafés and hotels, which **put a halt** on the activity of many **fishing fleets** and **production plants**;
- increasing job **instability**, due to job cuts from **companies** suffering from **higher operational costs**.

Many of these impacts were **short-lived**, as rules were changed and guidelines put in place to allow fishers and fish farmers to return to work. The **longer-lasting** effects to workers were a result of **changes in demand** and **price volatility** for fisheries and aquaculture products. Hence, while lockdowns, social distancing and travel restrictions created some labour disruptions, it is the **contraction of demand** that seems to have had the **stronger impact on labour**.

The impact of COVID-19 on fisheries and aquaculture

All operators were caught unaware by the **sudden closures** of **HoReCa** channels. **Small operators** were among the first victims of the economic shocks. Initially, **small-scale fisheries** that predominantly

sell fresh fish **were particularly affected**, due to limited stock capacity, lack of freezing capacity, and liquidity constraints.

Fisheries targeting high-value species or selling to the HoReCa sector **suffered the most**; on the other hand, fisheries mostly targeting the **retail segment** barely reported **any variation**. After just a **few weeks** from the first outbreak(s), the EU fishing activity showed a **slight recovery**, though with **mixed effects on prices**. Fisheries previously selling to HoReCa turned to **selling to retail**.

Unlike fisheries, **aquaculture** is an **industrial activity**, which means that a farmer can exert some **control on supply** (and on prices). Initially many farmers who had previously sold to HoReCa decided to **keep growing** their produce or to **stock** it, in order to **avoid a plunge in prices**. When they realised that demand would not recover any time soon, they had to find **alternative market channels**. Some initial estimates point to a **17 % reduction in sales** volume and an **18 % reduction in total income**, with a **particularly harsh** impact on the **shellfish** segment¹.

The impact of COVID-19 on imports

In 2020, **extra-EU-27 imports** amounted to **6.15 billion tonnes** and **EUR 24.21 billion**; only a minute **decrease** of **1 %** in volume and **7 %** in value compared with the 2017-2019 average. However, there was a **sharp drop** in **April 2020**, which was the peak of the **first wave**, when volumes and values **decreased** by **15 %** and **22 %**, respectively, from the same period in the last three years.

The impact of COVID-19 on consumption

Even though food **retail shops** remained **operational** everywhere, **panic hoarding** of foodstuffs, mainly observed in the **early phases** of national lockdowns, accompanied by a temporary **reduced supply** of **fresh products**, led consumers to stock up on **non-perishable foods**, thus increasing sales of prepacked, frozen or canned fish.

Compared with 2019 the sales of **unprocessed** fisheries and aquaculture products **decreased** in 2020 by **12 %** in France, **9 %** in Spain, **5 %** in Italy and **3 %** in Germany. However **retail sales** actually **increased**, while sales through **foodservice and institutional** channels **decreased**. As for **processed** fish products, anecdotal evidence from retailers suggests a **stable and strong demand** for processed products, especially for canned, frozen and smoked fish.

The **increase in household** consumption did not offset the **decrease in out-of-home** consumption, possibly because some products are inherently **difficult to cook** at home, so consumers preferred **easier alternatives** to fish.

Conclusions

The vast **majority of disruptions** of COVID-19 on the sector took place at the **onset of the pandemic**. The entire **supply chain** experienced a **marked recovery** through the **second half** of 2020, at least in **terms of volumes** produced or traded. However, with lower prices and higher transaction costs, the **profitability** of the entire value chain **decreased**, with the notable **exception of retail**.

¹ See: Nielsen R. et al., 2021, *The EU Aquaculture Sector – Economic report 2020 (STECF-20-12)*, Publications Office of the European Union, Luxembourg, pp. 306-307, <https://op.europa.eu/en/publication-detail/-/publication/1939335e-a893-11eb-9585-01aa75ed71a1/language-en>.

The “**better-than-expected**” response of the sector was the product of **operators’ resilience**, as well as of **EU and national** governments enacting **mitigation measures**. Preliminary data indicate that in 2020, the EU Member States spent **more than EUR 78 million** from their **EMFF budget** for a total of **5 811 COVID-19-related operations**².

Finally, COVID-19 has posed **many a challenge** to the sector, but it has also opened **new opportunities**. **Direct** sales, **online** sales and **home** deliveries have gained **fresh impetus**, and, even though old habits might creep in again at the end of the pandemic, the **business professionals** interviewed for this study **believe** that COVID-19 brought in a **structural change**.

Policy Recommendations

To strengthen the resilience of the sector in view of future shocks, we recommend to:

- Designate fishers, farmers, processors and distribution **workers as essential**.
- Establish **exceptions to travel restrictions** for temporary migrant workers and the enterprises that support the sector.
- Explore the possibility of **banking fishing quotas** from one year to the next. To make up for lower catches in a given year, quotas could be exchanged from one year to another. The exact quota that can be “banked” should be defined based on sound scientific advice.
- **Increase transparency** with a system that gives auctions and buyers a picture of the catch in terms of its **volume and species** in advance of its landing in a port.
- Optimise the **cash flow of transfers** of support measures so to account for natural variations in production cycles due to, for example, seasonality.
- Introduce a **storage mechanisms** when exceptional shocks hit the sector.
- Implement **promotional campaigns** to support **local** fisheries and aquaculture products.
- Strengthen databases and **market intelligence** tools.

² To be noted that that figures do not include data from Denmark, Finland, Malta, Italy, Slovenia and Romania. Austria, Czechia, Hungary and Slovakia are not included either, but they are landlocked. Luxembourg is not a recipient of EMFF funds.

INTRODUCTION

At the time of writing, Europe is more than a year into the COVID-19 crisis, with Italy having reported Europe's first clusters of cases in its Lombardy region back in February 2020³. Since then, the evolution of the pandemic has had an unprecedented effect on the global economy, including the fisheries and aquaculture sector.

The overall purpose of this research study is to assess the availability and consumption of seafood products across the European Union⁴ (EU) during the ongoing COVID-19 pandemic. In doing so, it provides an overview of the EU seafood supply chains – from producers to processors, marketers, transporters, retailers to the Hotel-Restaurant-Catering (HoReCa)⁵ sector and consumers – by taking stock of their stability in terms of their resilience and vulnerability to shocks. In addition, this research study makes a preliminary assessment of the effectiveness of the emergency measures put in place by the EU and its Member States (MSs), with a view to developing policy recommendations and improving policy response to future shocks.

This report is made up of four chapters.

Chapter 1 focuses on what has happened so far, by summarising the general effects that COVID-19 has had on the fisheries and aquaculture sector in the EU as a whole.

Chapter 2 presents eight case studies that scrutinise the current effects and responses set in place in Bulgaria, Denmark, France, Greece, Italy, Portugal, Spain and Sweden. These case studies were selected to offer a balance across the geographic regions and sea basins of the EU, both small and large MSs with varying approaches to fighting COVID-19 and supporting the fisheries and aquaculture sector. The aim is to explore how the pandemic has hit the seafood value chain in these countries, and to gain an understanding of how the sector adapted to the initial shock.

Chapters 3 and 4 draw on the best practices identified in the first two chapters. Chapter 3 summarising the main outcomes of the study to focus on the future and Chapter 4 putting forward a set of policy recommendations addressing the remaining areas of vulnerability that need to be reinforced in order to increase the resilience of the sector in preparation for future shocks⁶.

The study has made extensive use of qualitative and quantitative data sources. In particular, the conclusions in the first two chapters are based on quantitative databases, especially those of EUMOFA⁷ and EMODnet⁸, and peer-reviewed and grey literature, as well as on a survey of more than 60 stakeholders across the EU.

At the time of writing, most European countries have made progress in stopping disease spread through lockdown measures and travel bans, and are now having success with their vaccination campaigns. There is widespread hope that the rate of infection will continue to fall, and with it the losses in terms of human lives, economic output and social tensions. However, even with this progress, as of today the pandemic is still causing tremendous threats to European and global societies. This present-day reality makes any research exercise more difficult, because analysing an evolving situation requires real-time data – which are not available – and the possibility of reporting events as they unfold.

³ See: <https://www.ecdc.europa.eu/sites/default/files/documents/novel-coronavirus-threat-assessment-brief-23-feb-2020.pdf>.

⁴ Unless otherwise specified, European Union (EU) refers to the EU-27 Member States, without the United Kingdom. Although the withdrawal of the United Kingdom from the EU took effect on 31 January 2020, all UK data were removed from historical series at EU level for the sake of consistency.

⁵ HoReCa – Hotel-Restaurant-Catering – is a sector of the foodservice industry comprising establishments that prepare and serve food.

⁶ In general terms, an economic shock is any unpredictable or unexpected event that has a large-scale impact on the broader economy.

⁷ European Market Observatory of Fisheries and Aquaculture Products, www.eumofa.eu.

⁸ European Marine Observation and Data Network, www.emodnet.eu.

For this reason, this study analyses a temporal scope that spans from March 2020 to December 2020. Qualitative insights on the present situation, as well as on future developments, are occasionally offered throughout the study, as they were gathered from stakeholders. Quantitative research does not stretch into the first months of 2021. It is worth noting, however, that while the health situation is still alarming in several EU MSs, the most severe disruptions to fisheries and aquaculture supply chains took place in the first months after the pandemic's outbreak and that over time, the sector has gradually adjusted to the new reality, albeit not entirely.

The study team acknowledges and is grateful for the input, feedback and expertise provided by the wide range of representatives from the fisheries and aquaculture sector who kindly cooperated in the compilation of this study.

1 OVERVIEW AT EU LEVEL

KEY FINDINGS

- **Supply, hospitality industry and jobs.** Restrictive measures adopted by EU Member States, including social distancing, transport and border restrictions, put constraints on supply. Although short-lived, the supply limitation contributed to an unprecedented collapse of the hospitality industry and increased job instability.
- **Fishing fleet.** The economic performance of the EU fishing fleet decreased 17 % from 2019, with those fisheries targeting high-value species or selling to the HoReCa suffering the most. EU first sales saw an 8 % decline in volume, mainly due to the prices of high-value species dropping rapidly to sustain volumes.
- **Aquaculture.** Aquaculture had to bear higher costs than fisheries due to the pandemic. Farmers who could not sell their harvests had to grow their stocks for an undetermined period or freeze them.
- **Extra-EU imports.** Extra-EU imports did not vary significantly, dropping only 1 % in volume and 7 % in value compared with the previous three years' average. The exception was the month of April 2020 which saw a sharp drop of 15 % in volume and 22 % in value.
- **Unprocessed fish products.** Across the EU, sales of unprocessed fish products decreased from 2019, dropping 12 % in France, 9 % in Spain, 5 % in Italy and 3 % in Germany. At the same time, retail sales increased while sales through foodservice and institutional channels decreased. As consumers changed from out-of-home to in-home dining with increased interest in online food sales platforms and options for in-home delivery, sales entities were unable to compensate the demand of the foodservice.
- **Pandemic-focused EU measures.** In an effort to mitigate the effects of the pandemic and support the fisheries and aquaculture sector, the EU Regulation 2020/560 introduced three important measures through: i) the Coronavirus Response Investment Initiative; ii) the EU Temporary State Aid Framework and iii) measures immediately available under the current EMFF rules, for both Member States and producers' organisations. MSs and regional governments have combined EU and national resources to tailor the measures to the features of their sectors. Producers coupled public support with private initiatives in order to introduce unsold quantities to new markets or to sell directly to consumers.

1.1 Socio-economic impacts of the COVID-19 outbreak: A general assessment

The COVID-19 pandemic has had an unprecedented impact on societies around the world. At its outbreak, it had immediate direct and indirect effects: direct, through the dramatic loss of human lives worldwide and the monumental challenge to public health; and indirect, through necessary measures that had to be taken by governments to contain the spread of the disease.

The degree of severity and duration of these measures has varied considerably across countries. According to the *"Government Stringency Index"*, developed by the *"Oxford COVID-19 Government*

Response Tracker" (OxCGRT)⁹, with the exception of general closures in China and Italy (the two countries most affected by the contagion at that time), the highest number of closures worldwide was reached in May 2020, during the peak of the first wave. By September 2020, restrictions had been softened on a global scale, only to be hardened again in 2021.

The impact of governments' restrictions, from home confinement and social distancing to stricter border controls and reduced air traffic, have significantly affected the global economy. According to the World Bank (WB)¹⁰, the crisis caused a global recession of a depth only surpassed by the two World Wars and the Great Depression over the past century and a half. Following the collapse registered in 2020, the global economic output is expected to grow by 4 % in 2021, which still remains more than 5 % below the pre-pandemic forecasts. Further, it is projected to increase by only 3.8 % in 2022, weighed down by the pandemic's lasting damage to potential growth.

At EU level¹¹, the WB estimates economic activity contracted by 2.9 % in 2020, with nearly all MSs in recession. Roughly two-thirds are expected to experience deeper contractions than during the 2008 global financial crisis, but to grow again by 3.3 % in 2021 and by 3.9 % in 2022. Despite the improvement in 2022, GDP is projected to remain more than 3 % below the pre-pandemic forecasts. The recovery, which has been dampened by a resurgence – "*new waves*" – of COVID-19 cases, is expected to strengthen in the coming months as markets' resilience to future shocks, confidence, consumption and trade gradually improve, supported by ongoing vaccination efforts. Nevertheless, as governments continue to mandate social distancing practices and instruct non-essential businesses to close to slow the spread of the new waves, there is significant uncertainty about the real extent of all anti-pandemic restrictive measures and relative socio-economic effects, both in the short and long terms.

Amid the grim outlook, however, it should be noted that COVID-19 has had a wide range of contrasting economic effects. While demand in specific sectors, such as healthcare, has skyrocketed, other industries such as air transport, tourism and entertainment have seen demand for their services plummet, with some slowly recovering and others not. At the same time, other market sectors, such as manufacturing, have experienced supply-side issues, due to the curtailing of non-essential activities, border restrictions and labour supply shocks resulting from workers locked down to their homes or residence areas. In these cases, it has become inevitably more difficult to match supply and demand, with uncertain impacts on price level and market equilibrium.

Although all economic sectors have proven particularly vulnerable to the drastic decline in economic activity resulting from the crisis, each has shown a different degree of persistence from socio-economic disruptions, depending on what activities governments have deemed as essential. For example, the impact of COVID-19 on the food industry was somehow contradictory. On the one hand, the sector was less impacted than others, because every effort was made to keep it open; on the other hand, the closures of entire economic sectors inevitably reverberated on the food industry in a domino effect.

⁹ The OxCGRT collects publicly available information on indicators of government responses, and measures their variation using the "*COVID-19 Government Response Stringency Index*". This index is a composite measure built as simple additive score of nine indicators measured on an ordinal scale and then rescaled to vary from 0 to 100. It also includes a measure of "*COVID-19 Containment and Health Response*" index, which is based on the metrics used in the "*Stringency Index*" plus testing policy, contact tracing, face coverings and vaccine policy. For all policies and response categories used to build the "*COVID-19 Government Response Stringency Index*" (or Government Stringency Index), please see: <https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker#data>.

¹⁰ See: WB, 2021, *Global Economic Prospects*, World Bank Group, Washington, pp. 1-198, <https://www.worldbank.org/en/publication/global-economic-prospects>.

¹¹ In WB, 2021, *Global Economic Prospects*, analyses and forecasts are provided for Europe and Central Asia.

In some cases, disruptions occurred simultaneously to multiple stages of a food supply chain: lockdowns immediately affected food products' outlets through the temporary closure of restaurants, hotels, schools and canteens while also affecting their production and distribution to markets due to border closures for people and goods. In other cases, the impacts spread out as a pressure wave ahead of COVID-19 cases, causing second order effects following shifts in trade. For instance, cancelled international shipments left producers and distributors without a market for perishable products or with a shortage of freezer space. When possible, distributors shifted trade to other markets¹². Now, looking ahead from mid-2021, lagged impacts are still to be expected, due to the high uncertainty about future demand and disruptions to production inputs that have yet to be identified or quantified.

It has become evident that the food system is vulnerable to shocks. In an analysis published in April 2020¹³, the Organisation for Economic Co-operation and Development (OECD) identified a number of disruptions impacting the sector:

- **Labour shortages**, due to border restrictions and travel bans, significantly reduced the available workforce (especially seasonal) for the fruit and vegetable sectors in a number of EU countries;
- **income losses**, due to the combination of demand reduction with production surplus, in turn put a strain on storage facilities and increased food losses, especially of highly perishables;
- **food production decreases**, due to lower availability of intermediate inputs;
- **consumer demand shifts**, due to the drastic decrease in consumption of food away from home and lower demand for higher value products, led to adjustments in production and distribution.

The timely identification of all these disruptions enabled sector operators to recognise the right opportunities to respond, adapt and build resilience to future shocks, as reported in the extensive and constantly updated reports produced by FAO and OECD on international, national and regional policy responses.

Fisheries and aquaculture were among the food sectors most immediately impacted by the crisis. From the beginning, it was clear that the COVID-19 outbreak had an effect on its overall production as well as on market dynamics, and numerous and heterogeneous measures have been taken across the sector since then.

Initially, most countries tried to ensure health and safety, by closing ports, quarantining foreign vessels, closing open-air fresh fish markets, disinfecting ports and fishing boats, providing masks for workers and raising awareness among fisheries and aquaculture farmers about sanitary measures, such as washing hands and ensuring social distancing during all production, harvesting, processing and retail activities. At the same time, several measures were taken to ensure social protection and guarantee decent working conditions for fishers and fish farmers. For example, Spain made testing for COVID-19 mandatory and a priority for crews of boats at sea for more than 10 days¹⁴.

Other measures were taken to ensure the continuity of food supply, such as expanding home deliveries and direct sales, and supporting national and local production through consumer awareness

¹² See: Love D.C et al., 2020, *Emerging COVID-19 impacts, responses, and lessons from building resilience in the seafood system*, <https://digitalarchive.worldfishcenter.org/bitstream/handle/20.500.12348/4258/e052c852757059d00bc73a2dc432b1e9.pdf>.

¹³ See: OECD, 2020a, *COVID-19 and the Food and Agriculture Sector: Issues and Policy Responses*, Paris, pp. 1-12, <https://www.oecd.org/coronavirus/policy-responses/covid-19-and-the-food-and-agriculture-sector-issues-and-policy-responses-a23f764b/>.

¹⁴ See: D'Oronzio et al., 2021, *L'emergenza COVID-19 e il settore ittico italiano: impatto e risposte*, pp. 1-90, https://www.crea.gov.it/documents/68457/0/L%E2%80%99Emergenza+COVID-19+e+il+settore+ittico+italiano_Impatti_e_risposte_Gen_2021.pdf/8da26719-4390-808d-f403-fd7f1d710942?t=1611327296230.

campaigns. As reported by OECD¹⁵, the closure of fish markets, the decline in demand from HoReCa and consumer preferences for contactless deliveries accelerated the development of more direct fish marketing and home deliveries services. In addition, in Spain¹⁶, Croatia, France and Italy¹⁷, both Producers' Organisations (POs) and individual fishers activated home sales through phone calls and messages, or through use of dedicated apps and websites. Italy, Spain and France supported campaigns promoting the consumption of fish by inviting people to purchase sustainable fish caught by their national fleets¹⁸.

Finally, several governments worldwide enacted social protection measures to minimise the impact of COVID-19 on the fisheries and aquaculture sector. As reported by FAO¹⁹, many of the aid packages implemented in developing countries targeted small-scale and artisanal fisheries, and, in some cases, they offered financial support in return for increased compliance with the existing legislative framework. As regards the EU, in April 2020, the European Council introduced some flexibility rules for the European Maritime and Fisheries Fund (EMFF)²⁰ that allowed MSs to use unspent funds and amend operational programmes more easily. This allowed fishers, fish farmers, POs and PO associations to cope with the impacts of COVID-19 by, for example, devising new measures for the storage of fisheries and aquaculture products. It also allowed MSs to take advantage of the flexibility of the EMFF measures.

For instance, further to the new flexibility rules, Cyprus announced a compensation of EUR 1.6 million in April for professional fishers using unspent 2014-2020 EMFF funds. In September 2020, the government spent EUR 445 000 benefitting 251 applicants, mostly from the small-scale fisheries sector²¹. Further, approximately EUR 1.2 million were earmarked for Cyprus' aquaculture farmers to compensate fixed costs for the period March to December 2020. Additional EMFF support was also made available in Bulgaria to compensate for economic losses from cessation of fishing activities. More than 100 fishers, both small and large operators, benefitted from this support, which kept family businesses running and saved jobs. Support was also made available for the purchase of goods, raw materials and supplies related to the company's activities, along with storage and personnel costs²². Additionally, the government allocated funds for the fisheries and aquaculture sector amounting to EUR 6.6 million. Italy set up an emergency fund to protect agricultural supply chains in crisis, with a budget of EUR 585 million for the year 2020, aimed at helping the agricultural, fishing and aquaculture sector businesses. Temporary unemployment compensation was also announced for an additional nine weeks for fish workers and workers in the agriculture sector²³. In Spain, some general measures were combined with others tailored to address specific barriers, such as reducing the administrative burden for crew mobility²⁴.

¹⁵ See: OECD, 2020c, *Fisheries, aquaculture and COVID-19: Issues and Policy Responses*, Paris, pp. 1-10, <https://www.oecd.org/coronavirus/policy-responses/fisheries-aquaculture-and-covid-19-issues-and-policy-responses-a2aa15de/>.

¹⁶ See: https://www.lavozdegalicia.es/noticia/somosmar/2020/04/19/venta-whatsapp-reparto-domicilio-imponen-pescaderias/0003_202004G19P38991.htm.

¹⁷ See: D'Oronzio et al., 2021, *L'emergenza COVID-19 e il settore ittico italiano: impatto e risposte*, pp. 1-90, <https://www.crea.gov.it/documents/68457/0/L%E2%80%99Emergenza+COVID-19+e+il+settore+ittico+italiano+Impatti+e+risposte+Gen+2021.pdf/8da26719-4390-808d-f403-fd7f1d710942?t=1611327296230>.

¹⁸ *Ibidem*.

¹⁹ See: FAO, 2021, *The role of social protection in the recovery from COVID-19 impacts in fisheries and aquaculture*, Rome, pp. 1-13, <http://www.fao.org/3/cb3385en/cb3385en.pdf>.

²⁰ See: <https://www.consilium.europa.eu/en/press/press-releases/2020/04/22/covid-19-council-adopts-rules-to-help-eu-fishermen/>.

²¹ See: https://ec.europa.eu/fisheries/press/coronavirus-response-cyriot-aquaculture-and-fisheries-sectors-benefit-additional-emff-support_en.

²² See: https://ec.europa.eu/fisheries/press/coronavirus-response-additional-emff-support-available-bulgarian-fisheries-and-aquaculture_en.

²³ See: https://www.camera.it/temi/documentazione/temi/pdf/1211145.pdf?_1589873174604.

²⁴ See: MAPA, 2020a, *Guía práctica de medidas de apoyo y de interés para el sector agroalimentario y pesquero relacionadas con la pandemia de COVID-19*, Madrid, pp. 1-19, https://www.asav.es/wp-content/uploads/2020/05/guiapRACTICAMEDIDASsectoragrarioypesqueroCOVID-19v6-may-2020_tcm30-537516.pdf.

In light of all these issues, a strong interest has arisen in both monitoring the evolution of the crisis in the fisheries and aquaculture sector and the steps to support its recovery. The next sections focus on the different types of impacts that have been reported.

1.2 The impact of COVID-19 pandemic on the fisheries and aquaculture sector

1.2.1 Overview of the EU fisheries and aquaculture sector

To fully understand the effects of the pandemic on the EU fisheries and aquaculture sector, it is fundamental to comprehend its recent market trends, as well as the role played by international trade.

According to EUMOFA²⁵, the EU is by far one of the world's major importers of fish products. In 2019, EU trade flows with third countries amounted to 8.6 million tonnes with a value of EUR 33.4 billion. Of this, 80 % was covered by imports, which made the EU the second largest trader of fisheries and aquaculture products in the world after China.

Before COVID-19 hit Europe and the rest of the world, the EU fisheries and aquaculture had been on an upward trend for quite a few years, as shown here in sector data from 2018.

- **Production of EU fisheries and aquaculture** (including the UK) reached 6.7 million tonnes in 2018, a 6 %-growth compared with 10 years before. Of this production, 80 % was destined for human consumption and the remaining part was for non-food use (mainly fishmeal and fish oil).
- **Wild catches** totalled 5.3 million tonnes, or more than 80 % of the EU production, whereas aquaculture contributed 1.3 million tonnes or slightly less than 20 %.
- **Aquaculture** has been the main driver of the increase in fish production for the last three decades, but wild production has remained dominant for a number of species and vital for domestic and global food security.
- **Apparent per capita fish food consumption** grew significantly in the EU during the last few decades, reaching 24 kg in 2018. Of this, 18 kg originated from wild catches and 6 kg from aquaculture²⁶.

In addition, one should also consider that the EU fisheries and aquaculture sector exists in an increasingly globalised context. Fish can be produced in one country, processed in a second one and then consumed in a third one, or perhaps return to the origin country. This means that the sector has a high degree of openness, as it is fully integrated into international trade. Import and export flows play an especially important role in directing fish consumption, by expanding supply and offering more choices to consumers.

Moreover, fisheries and aquaculture represent an important source of employment. According to the European Commission (EC)²⁷, in 2018 nearly 600 000 people were directly and indirectly employed along the entire EU value chain, from harvesting to distribution. Of these, 200 000 people were involved in the primary activities of the fisheries and aquaculture sector, with more than two thirds engaged in fisheries, and the rest in aquaculture. It is estimated that about half of the people directly employed in

²⁵ See: EUMOFA, 2020b, *The EU Fish Market*, Publications Office of the European Union, Luxembourg, pp. 56-75, https://www.eumofa.eu/documents/20178/415635/EN_The+EU+fish+market_2020.pdf/fe6285bb-5446-ac1a-e213-6fd6f64d0d85?t=1604671147068.

²⁶ See: <https://www.eumofa.eu/supply-balance>.

²⁷ See: https://blueindicators.ec.europa.eu/access-online-dashboard_en.

fisheries – on a full-time, part-time or occasional basis – ²⁸ and the vast majority of those employed in aquaculture²⁹ are artisanal and small-scale producers.

The above considerations suggest that the fisheries and aquaculture food system was especially vulnerable to the COVID-19 shock. Assessing its impact implies having a full understanding of the complex range of activities involved in the sector, from production to final consumption, as well as the global nature of its value chain and the link that any stage of the supply chain has with the others.

To further complicate the picture, COVID-19's impacts on fisheries and aquaculture affected both supply and demand. For instance, on the supply side, both transport and border restrictions contributed to reducing supply as, for example, some measures taken to contain the outbreak – such as social distancing – made it impossible for fishers to set sail together on the same boat. On the demand side, while supermarkets and fish outlets mostly remained open, the hospitality industry suffered from an unprecedented collapse and, in some cases, it either stopped its purchases altogether or it reduced them considerably. Therefore, market access and the factors shaping consumers' preferences and behaviour changed accordingly.

Further, as evident from the next sections, it is certainly possible to describe several COVID-19 impacts at this stage, but their quantification is not yet possible, as their long-term effects still have to materialise fully.

In order to assess the impact of the COVID-19 pandemic on the seafood market and understand the full range of disruptions that occurred, all these effects should be analysed one by one throughout the supply chain, as each individual effect reverberated differently on the sector.

1.2.2 Labour disruptions

Lockdown measures taken by governments to contain the infection rate of the COVID-19 disease disrupted employment in the EU seafood supply chain in several ways, including:

- **Reducing fishing activities** strongly impacted by sanitary measures (e.g. social distancing proved impossible on ships, especially small ones) and made the labour demand decline³⁰;
- **limiting access to labour** for seafood businesses strictly dependent on migrant workers, due to temporary border closure, which caused labour shortages;
- **squeezing demand “artificially”**, as a consequence of the closure of the hotel, restaurant and catering sector, which in turn put a halt on the activity of many fishing fleets and – to an even larger extent – production plants, as their work became unprofitable;
- **increasing job instability**, due to job cuts from companies suffering from higher operational costs.

It should be noted that many of the direct impacts under a) and b) above were short-lived, as rules (including health measures) were changed and guidelines put in place to allow fishers and fish farmers to return to work. For instance, a survey with several stakeholders confirmed that measures such as lockdown restrictions and social distancing had a direct impact on labour only in the first few weeks of

²⁸ See: https://ec.europa.eu/oceans-and-fisheries/fisheries/rules/small-scale-fisheries_en.

²⁹ See: <https://stecf.jrc.ec.europa.eu/documents/43805/2783239/STECF+20-12+-+EU+Aquaculture+economics.pdf/ef242822-3343-43f4-b0a3-dfad889dd52c?version=1.1&download=true>.

³⁰ For EU fleets operating in third countries or international waters, travel restrictions implied barriers to crew rotation; hence, crews extended their working period longer than 6 months or fishing boats had to leave the fishing grounds. See: Stakeholders survey and news: <https://www.lavozdegallicia.es/noticia/somosmar/2020/03/17/flota-altura-problemas-renovar-tripulaciones-dificultades-enviar-mercancia/00031584465484108618104.htm>; https://www.lavozdegallicia.es/noticia/somosmar/2020/04/29/miles-marineros-siguen-atrapados-barcos-opciones-relevo/0003_202004G29P35991.htm.

the pandemic, because over time the sector responded to the new challenges and put counter-measures in place to go back to work. According to the General Fisheries Commission for the Mediterranean (GFCM), surveyed for this study, the longer-lasting effects to workers are a result of changes in demand – and thus price volatility – for fisheries and aquaculture products. This has affected how often fishers go to sea and the possibility to plan for future aquaculture farm production. Hence, while virtually all stakeholders surveyed agreed that lockdowns, social distancing and travel restrictions created some labour disruptions, at least in the early phase of the pandemic, it is the contraction of demand that seems to be having the stronger impact on labour.

Of course, these labour disruptions were not just an issue for the EU. To give some examples, as reported by FAO³¹, in the tuna industry, travel restrictions imposed by governments around the world created significant hurdles to crew changes and repatriation of professional seafarers, since they were not allowed to disembark in ports and transit through national territory (e.g., to an airport) to return home. This inevitably affected the level of fishing effort and reduced the fishing activities connected in the EU. Further, fleets relying on export markets, such as the United Kingdom (UK) and Ireland, and on high-value species, such as lobster, were strongly impacted by closures and became less profitable than before the pandemic.

1.2.3 Production disruptions

Decreases in seafood production sometimes occurred in parallel with upsurges of COVID-19 infection while in other cases, they simply followed demand contractions. According to EUMOFA³², the sector's initial reaction to the pandemic outbreak was chaotic, as all operators were caught unaware by the sudden closures of HoReCa channels and, in some cases, of open markets, as well as by reduced airfreight capacity for exports. As often happens, small operators were among the first victims of the economic shocks. Initially, small-scale fisheries that predominantly sell fresh fish suffered the most, due to limited stock capacity from fishers, lack of freezing capacity from associated retailers and transformers, and liquidity constraints.

In terms of species, it is difficult to single out those that were more impacted. In a survey carried out for this study, stakeholders mentioned several species as particularly affected, but these vary a lot depending on the local context, and there does not seem to be a clear pattern. However, what emerged quite clearly is that the effect on production has been more market dependent than species dependent. Those fisheries targeting high-value species or selling to the HoReCa sector – two segments that often coincide – suffered the most, as their usual market channel was suddenly shut down³³. On the other hand, fisheries mostly targeting the retail segment barely reported any variation. In fact, some of them actually reported an increase in activity, which was later confirmed by retailers, because during lockdowns, consumers eat more at home and thus buy more fish from supermarkets or fishmongers.

In actuality, after just a few weeks, the EU fishing activity showed a slight recovery, though with mixed effects on prices. The recovery was driven by direct sales to consumers and the shift of some products'

³¹ See: FAO, 2020b, *How is Covid-19 outbreak impacting the fisheries and aquaculture food systems and what FAO can do*, Rome, pp. 1-5, <http://www.fao.org/documents/card/en/c/ca8637en/>.

³² See: EUMOFA, 2020a, *Coronavirus response – EUMOFA's weekly data and trend analysis: bulletin collection*, Luxembourg, pp. 1-54, <https://www.eumofa.eu/documents/20178/376827/Covid+Bulletin+Collection.pdf/38ec248d-28fe-af93-a408-89a72add0fcc?t=1599127648577>.

³³ The main aquaculture species illustrate the relevance of the target market: seabass and seabream sales declines affected mainly the larger sizes (>800g) destined to the HoReCa. Source: stakeholders' survey.

routes from usual export markets (e.g., the increase in sales of Irish and Scottish fish in Spain, which used to be exported to France before). This pattern was consistent with what usually happens in the face of a sudden shock: the initial surprise causes significant economic losses but after a while, more and more operators explore ways to change their traditional operations and adapt to the new market conditions.

By using preliminary data collected during 2020, the European Commission's Joint Research Centre (JRC)³⁴ showed that the economic performance of the EU fishing fleet was driven significantly by the combined effects of demand and supply disruptions resulting from the COVID-19 health crisis. Preliminary results indicate that in 2020, landed value decreased 17 % from 2019 and 15 % from 2018. The results also identified ways in which lockdowns and other social distancing measures had directly impacted the sector, such as:

- **Decreased fishing effort**, partly due to declining demand but also because sanitary measures (such as social distancing of crew members at sea) could not be guaranteed for some fisheries, which led to the cessation of activities or, when possible, to the postponing of fishing seasons;
- **reduced fuel costs**, due to low fuel prices but also to less activity;
- **increased operational costs**, due to the need to purchase Personal Protective Equipment (PPE) and additional sanitary controls at vessel and company levels but also at services level which includes harbours.
- **weakened demand**, due to lower purchasing power and the closure of HoReCa channels, with the subsequent drop in first sale prices.

According to the JRC's estimates, the countries that were impacted more by COVID-19 in terms of value of landings and had a higher decrease than the EU average included Bulgaria, Sweden, Greece, Romania, Lithuania, Portugal, Latvia, Cyprus and Poland. This suggests that in all these MSs, a decrease in fishing activities either regarded high value species or it was accompanied by a higher decrease in the average price of species landed. Lithuania, Bulgaria, Greece, Romania, France, Portugal, Cyprus and Spain were affected more in terms of profits. In addition, the small-scale coastal fleet (SSCF) has been impacted more than the large-scale fleet (LSF). In 2020, gross value added (GVA) and gross profits fell by about 20 % for the SSCF and by around 10 % for the LSF, compared with 2019.

The above estimates are consistent with our calculation based on data provided by the European Maritime Observation and Data Network (EMODnet) Human Activities portal and the European Maritime Safety Agency (EMSA). Using Automatic Identification System (AIS) data and route density maps, it is possible to estimate the difference in fishing boat density in the Exclusive Economic Zones (EEZs) of EU Member States between the first six months of 2020 and the first six month of 2019.

³⁴ See: Carvalho N. *et al.*, 2020, *The impact of COVID-19 on the EU-27 fishing fleet*, Publications Office of the European Union, Luxembourg, pp. 1-34, <https://publications.jrc.ec.europa.eu/repository/handle/JRC122999>.

Table 1: Variation in density of fishing boats in the EEZs of EU Member States

Member State	% variation Jan-Jun 2020/ Jan-Jun 2019	Member State	% variation Jan-Jun 2020/ Jan-Jun 2019
Malta	37.17	Greece	-12.13
Slovenia	22.20	Italy	-12.20
Lithuania	19.24	Latvia	-15.58
Ireland	6.12	Cyprus	-16.17
Netherlands	3.17	Finland	-16.17
Estonia	1.20	Belgium	-20.77
Denmark	-3.45	Sweden	-22.19
Portugal	-6.96	Poland	-32.33
France	-8.84	Bulgaria*	N/A
Spain	-9.13	Germany*	N/A
Croatia	-11.45	Romania*	N/A

Source: own calculation based on data from EMODnet Human Activities and EMSA

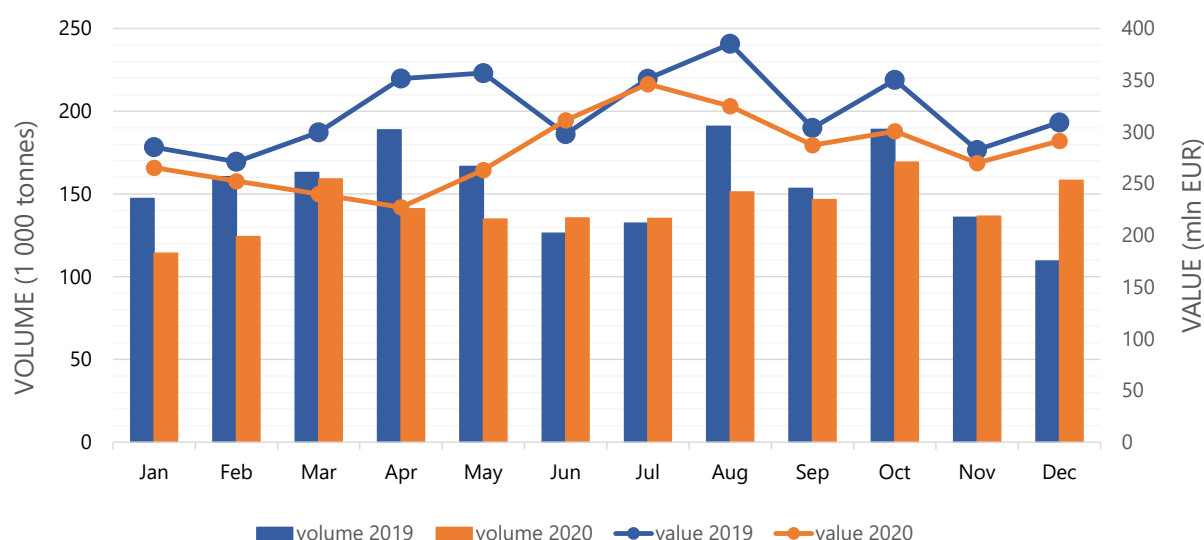
Note: *An increase in data coverage from 2019 to 2020 makes the year-to-year comparison impossible. The data do not include vessels shorter than 15 m

Table 1 compares the cumulated variation in fishing density from January to June 2019 and 2020. However, there are stark differences from month to month. In particular, fishing boat density plummeted in March and April 2020, gradually recovered in May and June, and picked up from July to the present date where virtually no differences are observed when compared with 2019.

Based on EUMOFA's data on first sales and extra-EU imports, it is possible to quantify the impact of these disruptions on the availability of fresh seafood products in EU Member States.

Total first sales recorded in the EU³⁵ in 2020 amounted to 1.71 million tonnes with a value of EUR 3.38 billion. This represented an 8 % volume decrease of 157 705 tonnes and a 12 % value decrease of EUR 465 million. April saw the highest drop in sales, with decreases of 25 % in volume and 35 % in value from April 2019. The MSs with the highest value decreases were Bulgaria, Denmark and France which dropped by 77 %, 45 %, 40 %, respectively, compared with April 2019. This is consistent with the view that the impact was particularly harsh in the first days of the outbreak, and then the sector gradually picked up.

³⁵ Landlocked countries (Austria, Czechia, Hungary, Luxembourg and Slovakia) are not included in first sale data. Cyprus, Croatia, Germany, Ireland, Finland and Romania are not included either, because first sale data are not available. Data for Bulgaria and Greece are included but available since 2018.

Figure 1: First sales of fish, shellfish and crustaceans in the EU, 2019-2020

Source: EUMOFA³⁶

Generally speaking, both volumes and prices decreased from 2019, although the decline in volume was sharper. The disaggregated data indicate a situation consistent with stakeholder reports: in the early days of the pandemic – in this case using the month of April 2020 as a reference at EU level, because it was the first full month that all EU countries suffered from the effects of the pandemic – sales of high-value species (e.g., lobster, shrimps, eel) fell on average by 25 %, whereas sales of low-value species (e.g., sprat, herring, mackerel) fell on average by 22 %. The difference may not seem remarkable, but it should be noted that in the same period, the price of high-value species fell on average by 20 %, while the price of low-valued species fell on average by only 3.6 %. This suggests a harsher impact on high-valued species, whose prices had to decrease rapidly to sustain volumes. As time went by, adaptation and re-openings improved the situation, sales picked up starting from the third quarter of 2020, and by the end of the year, overall, volumes were down by only 8 % compared with 2019. Over the full year, prices of low-value species decreased on average by 2 %, while prices of high-valued species declined on average by 10 %.

Figure 1 offers a visual overview of the above-mentioned trend. As can be noted, in March 2020, after Italy was hit by the first COVID-19 outbreak in the EU, the volume of first sales was by and large at the same level as in 2019. As the pandemic set in across other MSs, there was a collapse in volume. In June and July, nearly all EU Member States were past the first wave, and first sales reached the same level as in 2019. In August, first sales were lower again, but anecdotal evidence suggests that this was due to lower demand from tourists³⁷ and to the cancellation of cultural, religious and gastronomic events where fish products are traditionally consumed in southern Europe. From September to November, the trend was not particularly different from 2019, with December 2020 actually marking an increase in the volume of first sale compared with December 2019.

Even though Figure 1 clearly points to a reduction in the total availability of fisheries products in the EU, not all fleet segments were equally impacted. For example, as reported by the secretary of the North-East Atlantic Fisheries Commission (NEAFC), surveyed for this study, pelagic fisheries of mackerel, herring and blue whiting as well as haddock and deep-sea fisheries stocks in the North-East

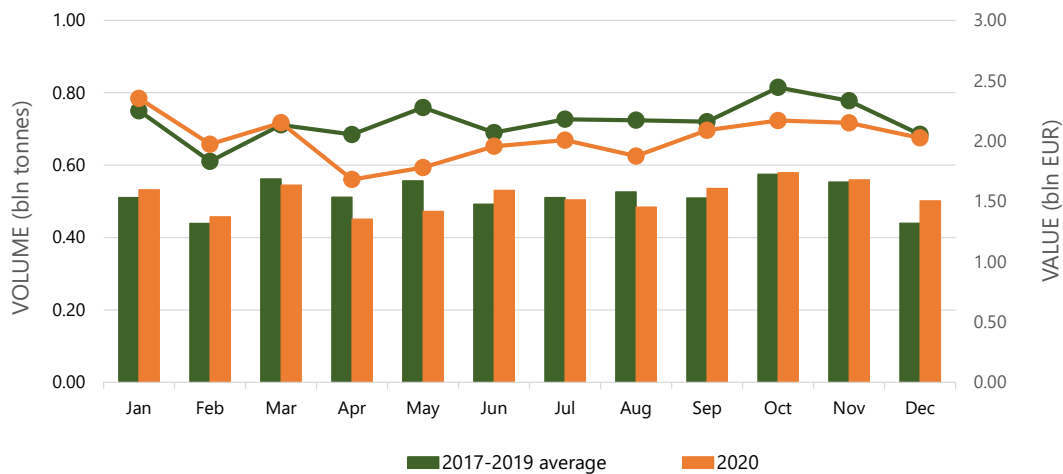
³⁶ *Ibidem*.

³⁷ While this does not necessarily show up in the data, stakeholders have reported that the SSCF is particularly reliant on tourism as an essential market for their products, and so the lack of foreign tourists has given way to longer-term impacts to the sector.

Atlantic did not appear significantly affected by the response measures to COVID-19, as they did not show any relevant variation compared with previous years. This may have been the result of longer voyages for long distance vessels, which made them less exposed and susceptible to infections once at sea, but it could also be due to the fact that fish species such as mackerel, herring and blue whiting are often sold to processors and thus would be less vulnerable than fresh fish heading for trade, restaurants or home consumption.

As for total extra-EU imports, in 2020 these amounted to 6.15 billion tonnes and EUR 24.21 billion. This represented only a minute decrease of 1 % in volume and 7 % in value compared with the 2017-2019 average. However, the month-by-month look at the data presented in Figure 2 shows a sharp drop in extra-EU imports in April 2020, which was the peak of the first wave, when volumes and values decreased by 15 % and 22 %, respectively, from the same period in the last three years. From then, they gradually recovered throughout the rest of the year.

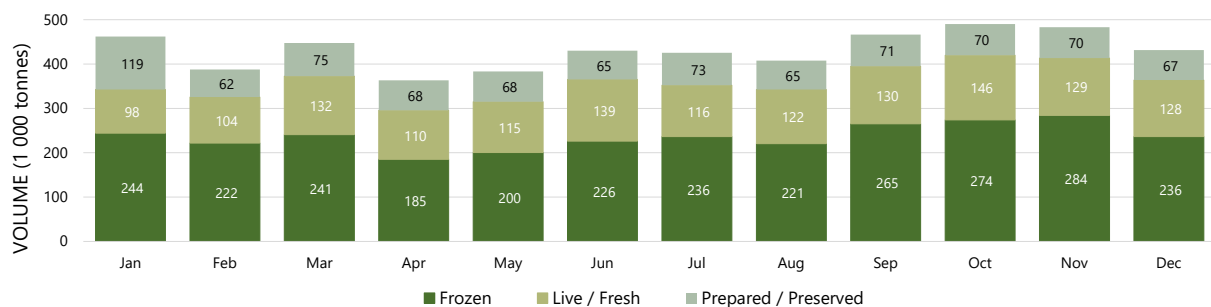
Figure 2: Extra-EU imports of fisheries and aquaculture products, 2017-2019 average-2020



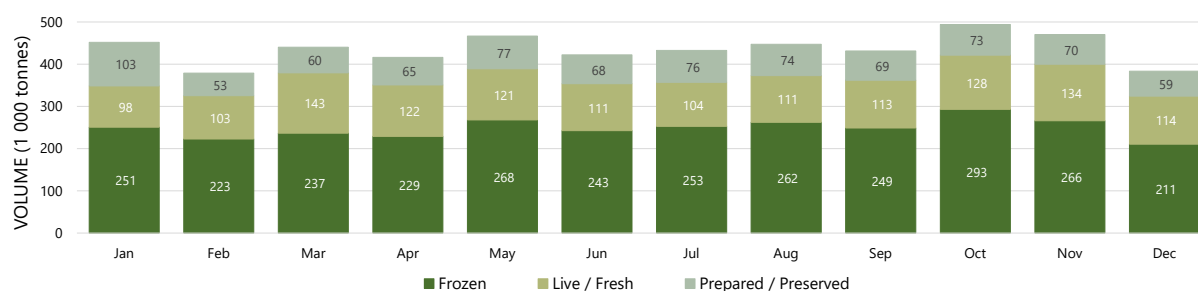
Source: EUMOFA elaboration of Eurostat-Comext data

In terms of product category, while 2020 extra-EU imports of fresh and prepared and preserved products increased 5 % and 3 %, respectively, compared with 2017-2019, those of frozen fish, which cover almost half of the total, declined 5 % from the 2017-2019 average. This decline was due to a 33 % reduction in the supply of frozen cod from both Russia and China, and 16 % decrease in frozen squid from the Falkland Islands. In the big picture, although all types of products decreased between March and August 2020 when the most restrictive measures were in place, the downward trend of extra-EU imports of frozen fish lasted more and was more intense than that of fresh, prepared and preserved products.

Figure 3: Extra-EU imports of fisheries and aquaculture products by product category, 2020



Source: EUMOFA elaboration of Eurostat-Comext data

Figure 4: Extra-EU imports of fisheries and aquaculture products by product category, 2017-2019 average

Source: EUMOFA elaboration of Eurostat-Comext data

Among the origin countries, while volume of imports from Norway increased 10 % in 2020 compared with 2017-2019, those from China and the US dropped by 9 % and 10 %, respectively.

Aquaculture production is extremely diverse from fisheries, but it is nevertheless an essential activity in many EU countries, as it contributes to total income, household resilience and food security. Aquaculture also relies heavily on labour, inputs, financing and markets, in a highly volatile and uncertain economic environment which has been impacted considerably by the pandemic. Thus, the effects of the COVID-19 outbreak on this sector depended on a combination of increased costs and risks.

Unfortunately, there is little quantitative information available on aquaculture production. Statistics by country are provided only yearly by Eurostat and are published at least 18 months after the year of reference. As a consequence, at the time of writing, the impact of COVID-19 on aquaculture can only be described through qualitative methods, either based on expert knowledge of sector operators or by extracting this information from the evolution of sales of products that mainly originate from aquaculture. This, together with the analysis of intra- and extra-EU imports of total fisheries and aquaculture products allows identification of relevant trends or shifts in the availability and sales of main commercial species or type of products (fresh vs farmed fish).

Low market demand was the main concern for most operators in the aquaculture sector. Due to a collapse in demand from the HoReCa sector, fish farmers could not sell their harvest and, at their own expense, had to grow their live fish stocks for an undetermined period or freeze fish that reached their commercial size. A distinctive feature of aquaculture production is that the growth of farmed fish and shellfish can be slowed, but not halted, which means that some feed must be provided to keep fish alive. Stakeholders' insights gathered through the survey reported that some companies in Spain opted to reduce their sale price instead of freezing products. Reducing the production was considered a high risk in an uncertain scenario. Cash flow and access to credit could quickly become another challenge because of the additional costs incurred in the absence of revenue, especially when clients were also affected by the crisis and had to delay the payment for past deliveries³⁸. In addition, aquaculture production was affected by the difficulty in sourcing inputs due to trade restrictions regarding seed and feed, as well as by the difficulty of managing labour forces due to lockdowns.

The same scenario applied to fisheries has a fundamental difference. A collapse of demand implies a reduction in revenue for a fisher as well as for an aquaculture farmer. However, while fishers can decide to adjust to the new conditions by fishing less or by not fishing at all, fish farmers need to keep their

³⁸ See: <https://www.aecoc.es/articulos/c84-javier-ojeda-tenemos-que-dar-salida-a-la-acumulacion-de-stock-de-peces-y-asegurar-la-liquidez-de-las-empresas/>.

fish alive. In other words, the COVID-19 crisis meant less revenue for fishers, but also less costs; aquaculture, on the other hand, had to deal with reduced revenue, but with the same or even higher costs than before. Moreover – apart from family-run enterprises – unlike fisheries, an aquaculture workforce relies mainly on long-term employment contracts.

That said, the aquaculture situation also can be highly heterogeneous, depending on the market segment looked at. The closure of international markets, catering and commercial restaurant foodservices impacted farmed species destined for export – such as salmon and seabass – as well as those mainly sold to wholesalers or to hotels and restaurants. At the opposite end of the spectrum, producers mostly selling to the retail sector did not experience dramatic changes in revenue, and in some cases, they reported sales higher than production, because consumers ate more frequently at home, and thus bought more fish at retail. In this regard, the stakeholders interviewed confirmed that young people eating at home prefer farmed rather than wild fish products and are keener to try pre-packed formats³⁹. As a result, in a struggle to remain in business, marketers globally have adapted, changed their market strategies and started selling to consumers directly – developing direct retail sales through internet ordering and home delivery or aquaculture drive-in⁴⁰. This is especially true for those aquaculture farmers – but also those fishers – who traditionally targeted the hospitality sector. According to the Global Aquaculture Alliance (GAA)⁴¹, consumers' budgets are expected to be tight with the increase of unemployment, which might mean constraints, especially in the purchase of high-value species. However, the growth in retail and e-commerce are promising for recovery of the sector.

There are also some other impacts that are specific to aquaculture production. For instance, some stakeholders surveyed for this study noted that oysters are now facing a second year in their production cycle with difficulties in finding and accessing a market, given that hotels, restaurants and cafés are still closed or partially closed in many countries. This will have a profound impact on the sector, as numerous farms already have devalued the products that never reached the market in 2020. Fresh products, such as oysters, which cannot be processed or frozen, were disproportionately affected by the impact of the pandemic. For example, the same stakeholders reported that sales of oysters in Ireland decreased by 60 % on average.

In addition, as mentioned above, aquaculture produce needs to be kept alive even if it cannot be sold, but increased stocking density impacts the health of fish and shellfish. Freezing part of the production could be a solution to limit losses, although it might require additional investments, and it might not be applicable to certain markets which require fresh products. Moreover, it builds up a potential price collapse risk, once the markets are fully open again.

Further, stakeholders also reported that feed prices had increased by 50 % to 60 % as a result of logistics disruption. The impact of the price increase is expected to linger on into the coming months or years, as the production cycles continue, thus affecting fish farming economic results even after the pandemic. Generally speaking, because aquaculture is an industrial activity with well-defined production cycles, many disruptions that occurred over the past year will fully materialise over a longer time span. Hence, even though the full impact on the industry can be described, it remains quite difficult to quantify.

³⁹ See: EUMOFA, 2017, *EU consumer habits regarding fisheries and aquaculture products*, Directorate-General for Maritime Affairs and Fisheries of the European Commission, Brussels, pp. 1-67, https://www.eumofa.eu/documents/20178/84590/EU+consumer+habits_final+report+.pdf.

⁴⁰ See: FAO, 2020d, *The impact of COVID-19 on fisheries and aquaculture food systems, possible responses: Information paper*, Rome, pp. 1-38, <http://www.fao.org/documents/card/en/c/cb2537en>.

⁴¹ See: <https://ussoy.org/impact-of-covid-19-on-aquaculture/>.

1.2.4 Distribution disruptions

Declining trade has largely been a reflection, not a cause, of the economic contraction that followed the COVID-19 crisis. However, rising trade costs – due to transport, logistics and supply chain disruptions, as well as additional border controls and documentation requirements – have acted as additional brakes on both trade flows and the global economy. According to the latest estimates made by the World Trade Organisation (WTO), the world merchandise trade volume fell by 5.3 % in 2020 compared with 2019, at a time when global GDP declined by 3.8 %. This is estimated to be followed by an 8 % increase in 2021. The rise in trade costs is estimated to account for up to a third of this decline. However, these forecasts are subject to an unusually high degree of uncertainty, since they depend on the development of the pandemic and government responses to it⁴².

Seafood trade was also disrupted by the limits on the movement of goods and people due to the COVID-19 containment measures. As countries closed their borders, international exchanges of goods were immediately impacted. Restrictions on market access and functionality, and delays due to health inspections, accompanied by a drop in fish demand, meant products (both finished and semi-finished) had to be held in storage for longer-than-usual periods, which implied food loss and waste due to quality changes. At the same time, processors, importers, exporters and traders faced additional costs which generated uncertainty about the profitability of their business.

In addition, cancellation of flights has directly affected trade in some high-value seafood products that are transported by air, such as farmed Atlantic salmon. In spite of the decreasing global demand for air transport, the cost of air shipment has risen significantly. Border closures have also impacted the activities at ports. Some have been closed for quarantine, which forced cargo ships to reroute and increased congestion at other ports, while some shipments were cancelled entirely⁴³.

1.2.5 Demand disruptions

The fisheries and aquaculture sector, along with the majority of industries, has suffered from disruption caused by the uncertain demand outlook. As lockdown measures brought restaurants, hotels, schools and canteens to temporary closures, they caused a drop in the activity for many fish wholesalers and the disappearance of outlets for many fish species. In particular, demand sharply reduced and prices fell for species destined for the foodservice industry, such as caviar and lobster. In addition, many seafood trade events around the world have been cancelled, leading to lost transactions between major buyers and sellers who depend on these events⁴⁴. Retail sales have been marked by extreme volatility as well.

Most of all, the factors shaping consumers' preferences and behaviour changed. The exploration of all possible changes in consumption trends and composition is one of the main challenges of this study. Consumption of fish and seafood products is particularly reliant on the foodservice sector, so it was highly affected by closures. Even though food retail shops, such as groceries, supermarkets and take-away restaurants remained operational everywhere, the measures taken to manage the COVID-19 outbreak created an environment in which food seemed more difficult to obtain. Panic hoarding of foodstuffs, was mainly observed during the early phases of national lockdowns. Hoardings were accompanied by a temporary reduced supply of fresh products that led consumers to stock up on non-

⁴² See: https://www.wto.org/english/news_e/pres21_e/pr876_e.htm.

⁴³ See: Love D.C et al., 2020, *Emerging COVID-19 impacts, responses, and lessons from building resilience in the seafood system*, <https://digitalarchive.worldfishcenter.org/bitstream/handle/20.500.12348/4258/e052c852757059d00bc73a2dc432b1e9.pdf>.

⁴⁴ See: FAO, 2020d, *The impact of COVID-19 on fisheries and aquaculture food systems, possible responses: Information paper*, Rome, pp. 1-38, <http://www.fao.org/documents/card/en/c/cb2537en>.

perishable foods. Sales of prepacked, frozen or canned fish, such as tuna, sardine and mackerel increased as a consequence. Such changes in demand also affected storage of fish and seafood, with some regions showing evidence that consumers tended to shop smarter and to freeze products rather than throw them away⁴⁵, resulting in decreased food loss and waste.

Based on data from Euromonitor International⁴⁶, the sales of unprocessed fisheries and aquaculture products⁴⁷ decreased in 2020. Compared with 2019, 2020 sales showed drops of 12 % in France, 9 % in Spain, 5 % in Italy and 3 % in Germany.

However, when breaking this data down by retail channel, it emerges that retail sales actually increased, while sales through foodservice and institutional channels⁴⁸ decreased. The highest relative growth in retail sales of fisheries and aquaculture products was observed in Italy and Germany, where 2020 sales grew 4 % over 2019, increasing by almost 21 000 tonnes and 17 000 tonnes, respectively. This trend is not particularly surprising. With the set of lockdowns and restrictive measures, consumers were either forced or persuaded to eat at home. Although this meant they bought more fish at retail stores compared than before COVID-19, this increase was not enough to offset the decrease in the foodservice and institutional channels. For this reason, Euromonitor estimates that total sales, as well as their distribution by channel, should come back to 2019 levels over the course of 2021. Whether and when this happens will be contingent on a series of factors, not least the success of vaccine campaigns and the gradual return to pre-COVID-19 life.

In general, finfish are the highest selling species regardless of sale channel, followed by cephalopods and other molluscs and crustaceans. COVID-19 did not change consumer preferences in this respect.

When it comes to sales of processed fisheries and aquaculture products⁴⁹, unfortunately data are only available for out-of-home consumption through foodservices. In 2020, this totalled over 464 000 tonnes, the lowest level of the last 15 years. All EU MSs recorded significant drops compared with 2019, the most remarkable being France, Spain and Portugal. It is not possible to know whether retail sales in particular went up, as happened with unprocessed food products, because detailed data by sale channel are not available. However, anecdotal evidence⁵⁰ from retailers in France, Italy, Spain, Poland and Ireland during the lockdown period suggests a stable and strong demand for processed products, especially for canned, frozen and smoked fish. Further, all the large-scale retailers surveyed for this study confirmed that their sales increased due to more people eating at home. When asked specifically about fish products, they reported that sales of fresh, frozen and processed products all went up. Anecdotal evidence suggests that consumers bought more fresh fish because, while working from home, they found themselves with more time to cook it. They also bought frozen and processed products, because they can be stored for a longer time than fresh fish, which reduced the frequency of shopping trips.

⁴⁵ See: <https://www.freedoniagroup.com/Content/COVID-19-Economic-Impact-Tracker>.

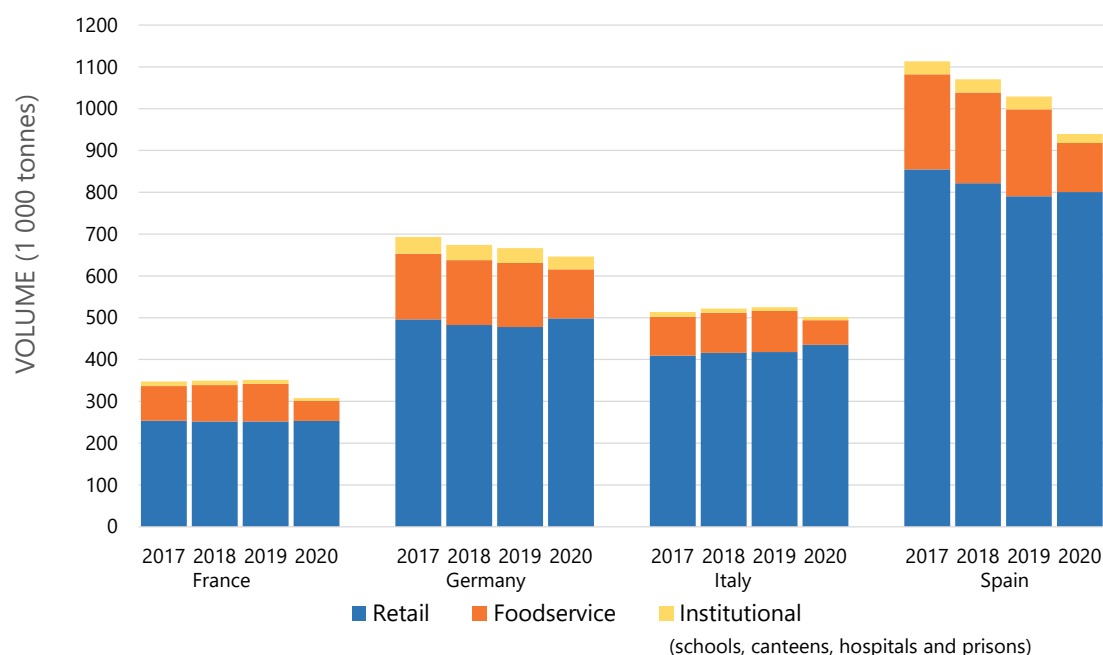
⁴⁶ The source of out-of-home consumption data is Euromonitor International, Fresh food and Packaged food, 2021. Although Euromonitor International makes every effort to ensure that it corrects faults in the Intelligence of which it is aware, it does not warrant that the Intelligence will be accurate, up-to-date or complete as the accuracy and completeness of the data and other content available in respect of different parts of the Intelligence will vary depending on the availability and quality of sources on which each part is based. Euromonitor International does not take any responsibility nor is liable for any damage caused through the use of our data and holds no accountability of how it is interpreted or used by any third-party.

⁴⁷ Unprocessed products are defined as the aggregation of fresh, chilled and frozen finfish, crustaceans, molluscs and cephalopods, packaged and unpackaged.

⁴⁸ The institutional sale channel includes schools, canteens, hospitals and prisons.

⁴⁹ Processed products are defined as the aggregation of shelf-stable, chilled processed and frozen finfish, crustaceans, molluscs and cephalopods.

⁵⁰ See: EUMOFA, 2020a, *Coronavirus response – EUMOFA's weekly data and trend analysis: bulletin collection*, Luxembourg, pp. 1-54, <https://www.eumofa.eu/documents/20178/376827/Covid+Bulletin+Collection.pdf/38ec248d-28fe-af93-a408-89a72add0fcc?t=1599127648577>.

Figure 5: Sales of unprocessed fisheries and aquaculture products in France, Germany, Italy and Spain by channel, 2017-2020

Source: Euromonitor International, Fresh Food, 2021

Over the course of 2020, consumers showed increased interest in online food sales platforms, thus highlighting a complementarity between online and offline sales channels⁵¹. Retailers quickly saw an opportunity, and enhanced and promoted home delivery and e-commerce services. The necessity of home cooking became a new focus for marketing campaigns and online distributors, while product innovations centred on convenience proliferated. Should new waves of the pandemic spread again in many countries, these changes might be incentives for firms to capitalise on investments in new sales channels. Such a novelty in the supply chain is also likely to benefit the entire seafood industry. This is to say that, amid so many negative impacts, the COVID-19 outbreak might also end up becoming a catalyst for the digital transformation of the food retail sector. This is particularly relevant in light of supply chain disruptions, as it might accommodate new business functions and logistics solutions, to help ensure economic survival of food-based firms.

The open question is how many of these changes are likely to remain in the future. Consumers experimenting with cooking fresh fish at home might lead to longer term behavioural changes and continued home cooking, even though it is expected that consumers will mostly return to pre-pandemic consumption preferences once restaurants are allowed to operate again at normal capacity and tourism resumes. On the other hand, specific formats, such as fresh and packed fish products, might take off in conventional markets now that consumers have tried them. Nevertheless, the retailers surveyed for this study seem to believe that innovations in online sales are likely to remain to some extent, as consumers have grown accustomed to purchasing online.

⁵¹ See: OECD, 2020b, *E-commerce in the times of COVID-19*, Paris, pp.1-10, <https://www.oecd.org/coronavirus/policy-responses/e-commerce-in-the-time-of-covid-19-3a2b78e8/>.

1.3 Legislative measures taken at EU level

In March 2020, the EU announced a series of measures to support the EU fisheries and aquaculture sector and mitigate the impact of the COVID-19 pandemic⁵². These measures, officially adopted through EU Regulation 2020/560 of 23 April 2020, were under three strands of action, all immediately available and usable by Member States without delay:

1. **Coronavirus Response Investment Initiative** – enables the use of the EU's structural funds, including the EMFF, to strengthen healthcare systems and support economic activities;
2. the **new EU temporary State Aid Framework** – enables MSs to provide economic support to sector operators from their national budgets;
3. **immediate specific EMFF measures** – remained valid until the end of 2020.

1.3.1 The Coronavirus Response Investment Initiative

This initiative, which included general instruments for an immediate response to the crisis, was available for the fisheries, aquaculture and processing sector. The main instruments are described below.

1.3.1.1 Mobilising cash reserves from the EU budget

To provide financial support to MSs for fighting the crisis and its long-term impact, the EU legislator proposed quick mobilisation of cash reserves from the EU's structural funds. For the EMFF (2014-2020), which has a budget of EUR 5.7 billion in shared management with MSs, this allowed redirecting countries' unspent budget to existing and new EMFF measures in their programmes. Specifically, MSs were strongly encouraged to speed up payments to beneficiaries by making maximum use of simplified cost options for EMFF support, which in turn would substantially reduce handling times for payment claims. They were also allowed to use their unspent EMFF Technical Assistance Budget in order to employ staff and speed up the handling of applications for support and payment claims from beneficiaries as a result of the COVID-19 crisis.

1.3.1.2 Alleviating the impact of COVID-19 outbreak on employment

The EU strongly encouraged MSs to mobilise available funds from the European Social Fund (ESF) as to protect workers in the fisheries and aquaculture sector from unemployment and loss of income. The ESF could be used to provide support to healthcare, for example, funding protecting equipment, medical devices and disease preventive measures, or to finance the upskilling and reskilling of workers.

1.3.1.3 Providing liquidity to SMEs

The EU made available EUR 1 billion from the EU budget to act as a guarantee to the European Investment Fund (EIF), and thus incentivise banks to provide small and medium-sized enterprises (SMEs) with liquidity. This allowed mobilisation of around EUR 8 billion of working capital financing, supporting at least 100 000 EU SMEs, including those in the seafood sector and services such as restaurants, thus in turn sustaining the demand for seafood.

1.3.1.4 Compensating economic losses of fisheries and aquaculture producers through the EMFF

The EU legislator proposed extending the scope of insurance mechanisms in the EMFF to pay financial compensation for economic losses caused by a public health crisis. If MSs activate these measures, the

⁵² See: https://ec.europa.eu/fisheries/coronavirus-response-fisheries-and-aquaculture_en.

EMFF could contribute to mutual funds or stock insurance contracts to compensate fisheries and aquaculture farmers whose economic losses amount to more than 30 % of their annual turnover.

1.3.2 The new EU temporary State Aid Framework

In line with EU rules on state aid, limited amounts of aid were authorised in the form of direct grants or tax advantages to be granted by MSs to undertakings in the fisheries and aquaculture sector that face a sudden shortage or lack of liquidity. Aid can be up to EUR 120 000 per entity and granted until 31 December 2020. However, it does not apply to cases explicitly excluded from the de minimis aid in the fisheries and aquaculture sector⁵³. MSs can also give public guarantees on loans and enable public and private loans with subsidised interest rates, subject to specific conditions.

1.3.3 Measures immediately available under current EMFF rules

The EU also specified that a series of measures under the EMFF was immediately available under current EMFF rules for both MSs and POs. These include the following.

- **Production and Marketing Plans (PMPs)** can be adapted as needed and also receive financial support in advance.
 - POs can, on short notice, adapt their PMPs to the evolving situation. This includes adapting their fishing and marketing strategies in order to continue a certain level of activity and therefore ensure some stability to the market supply.
 - MSs can receive an advance of at least 50 % of the financial support provided to the PMPs. For all valid PMPs, such advances may be paid without delay.

Both of the above can be pursued in parallel. Once a new PMP is approved, new advances must be paid, which serves to inject liquidity rapidly and legally. As payments related to the preparation and implementation of PMPs are conditioned on the approval of the annual report, payments related to past PMPs were asked to be accelerated and annual reports on the implementation of the 2019 PMPs – or the 2019 phase of multiannual PMPs – have been submitted, in order to treat the related payment requests promptly.

- **The EU Commission encouraged MSs to ensure swift payments** to beneficiaries, and, where possible, through advances or through an accelerated selection of beneficiaries. This was meant to maintain cash flows in support to the sector.
- **The EMFF supports community-led local development** by providing financial support to Fisheries Local Action Groups (FLAGs) to implement their strategies. These strategies can be updated or modified relatively easily and quickly to take into account needs arising from the impact of the COVID-19 pandemic. MSs were encouraged to communicate this possibility to their respective FLAGs.

1.3.4 Further support to the fisheries and aquaculture sector under the EMFF

In April 2020, a new set of specific temporary measures was introduced by the EU to mitigate the socio-economic impact of COVID-19 in the fisheries and aquaculture sector and provide additional flexibility to the rules governing expenditure under the EMFF⁵⁴. This new package, eligible retroactively as of 1 February 2020 and available until 31 December 2020, included:

⁵³ See: Commission Regulation (EU) No 717/2014 of 27 June 2014 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to de minimis aid in the fisheries and aquaculture sector, <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32014R0717>.

⁵⁴ See: EU Regulation 2020/560, <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32020R0560>.

- **Support to fishers** for the temporary cessation of fishing activities, through a compensation paid by both the EU (up to 75 %) and the MSs;
- **support to aquaculture** farmers for the suspension or reduction of production, through a compensation paid by both the EU (up to 75 %) and the MSs, to be calculated based on income foregone;
- **support to POs** for the temporary storage of fisheries and aquaculture products for human consumption, with the EU ceiling for production and marketing plans increased from 3 % up to 12 % of the average annual values of the output placed on the market, and with the possibility for MSs to grant advances of up to 100 %;
- **establish a more flexible reallocation of financial resources** within the operational programme of each MS and a simplified procedure for amending operational programmes with respect to the introduction of the new measures.

In addition, in order to quickly direct the available European public funds to address the consequences of the coronavirus crisis, under Article 139 of the European Structural and Investment Funds (ESIF) Regulation, the EU legislator waived the obligation to request the refunds of unspent pre-financing from the fund until programme closure. It also launched the 2020 annual pre-financing process for the EMFF in well in advance and paid a sum of up to EUR 160.3 million. This allowed MSs to use the funds to accelerate investments in response to the coronavirus outbreak and ease the socio-economic burden caused by the crisis on the fisheries and aquaculture sector.

2 CASE STUDIES

2.1 Spain

KEY FINDINGS

- **The COVID crisis negatively affected international trade.** Compared with the 2017-2019 average, Spain saw volume decreases of 4 % for imports and 3 % for exports.
- **Molluscs' first sale dropped 22 % in volume and 30 % in value from 2019.** The negative impact is directly linked to market outlets, with species sold through HoReCa being the most affected.
- **Household consumption and online sales soared during the national lockdown.** Household consumption increased 25 % in volume March-May 2020 compared 2019 and online sales grew from 1.6 % in 2019 to 2.4 % in 2020. Fresh household consumption grew 9% compared to the previous three years.
- **The drop in tourism had a dramatic impact on Spain's economy and food system.** It mainly impacted those products intended for out-of-home consumption, especially the high-value species that have difficulties finding alternative markets.
- **Disruptions along the supply chain do not seem to have affected processing companies.**
- **EMFF ad hoc national and regional measures were effective.** Some measures, such as the storage mechanism, were particularly well received as they supported the producers' ability to adapt to the demand shifts.

2.1.1 Introduction and characteristics of the market

In 2018, Spain was the EU's largest producer of aquaculture products and ranked second for wild caught. Its fishing fleet was composed of 8 976 vessels, with a total capacity of 331 778 gross tonnage (GT) and 778 914 kilowatt (kW). Of these, 73.2 % were between 0 and 11m, 19 % were between 12 m and 23 m, and 7.8 % exceeded 23 m. In addition, 10 % of the vessels used trawls, 71 % used gill nets and entangling nets, 12 % used hooks and lines, and 7 % used other gear. In 2017, employment in the fishing fleet reached 29 203 full time equivalent (FTE)⁵⁵.

Spain formally recognises 33 producer organisations (POs) and 1 PO association⁵⁶. Of the POs, 27 operate in the fisheries sector and 6 in aquaculture; the PO association operates in fisheries.

The main species landed in Spain in 2018 in terms of value were hake which accounted for 18 % of total landing value, skipjack tuna for 10 % and shrimps for 9 %. The top species for volume were skipjack tuna with 23 % of total, hake with 12 % and mackerel with 9 %⁵⁷. As for farmed species, European seabass, bluefin tuna and Mussel *Mytilus* spp were the main species in value, with European seabass

⁵⁵ See: EU Fleet Register, https://webgate.ec.europa.eu/fleet-europa/search_en, and Carvalho N. *et al.*, 2019, *The 2019 Annual Economic Report on the EU Fishing Fleet (STECF 19-06)*, Publications Office of the European Union, Luxembourg, pp. 1-496, <https://stecf.jrc.ec.europa.eu/documents/43805/2483556/STECF%2019-06%20-%20AER%20-%202019.pdf>.

⁵⁶ See: <https://ec.europa.eu/oceans-and-fisheries/system/files/2021-05/list-of-recognised-producer-organisations-and-associations-of-producer-organisations.pdf>.

⁵⁷ See: EUMOFA, <https://www.eumofa.eu/data>.

accounting for 23 %, and bluefin tuna and Mussel *Mytilus* each accounting for 21 %. Mussel *Mytilus* spp had by far the highest volume of landings, accounting for 76 % of total, while European seabass and trout accounted for 7 % and 5 %, respectively⁵⁸.

Table 2: World, EU-28 and Spanish catches and aquaculture production in 2018, in 1 000 tonnes

Production	World	EU-28	Spain	% of world	% of EU-28
Catches	97 232	5 337	879	0.90	16.47
Aquaculture	114 462	1 319	318	0.28	24.18
Total	211 694	6 656	1 197	0.57	17.98

Source: Eurostat and FAO

In 2019, total first sales in Spain amounted to 737 412 tonnes and EUR 1.67 billion. The top-three places of sale – Vigo, A Coruña and Burela) – together covered 22 % of volume and 23 % of value.

In 2018, the Spanish fish processing industry employed 20 086 persons in 607 companies⁵⁹. Total sales reached EUR 6.05 billion, which amounted to 5 % of the value added of the total manufacture of food products in Spain.

In value, the main species imported in Spain in 2019 were squid with 9 % of the total, and salmon and shrimps, each covering 7 %. In the same year, the main species exported were skipjack tuna with 11 % of total value, and octopus and tuna with 8 % each. The main countries of origin in value in 2019 were Morocco with 9 %, Ecuador with 7 %, and Portugal and China, each with 6 %, while the main countries of destination in value were Italy, Portugal France and the United States which accounted for 28 %, 17 %, 14 % and 4 %, respectively⁶⁰.

In 2018, apparent consumption in Spain was estimated at 46.01 kg per capita. Hake is the main species for at-home consumption, followed by sardine, salmon, gilthead seabream and sole⁶¹.

⁵⁸ *Ibidem*.

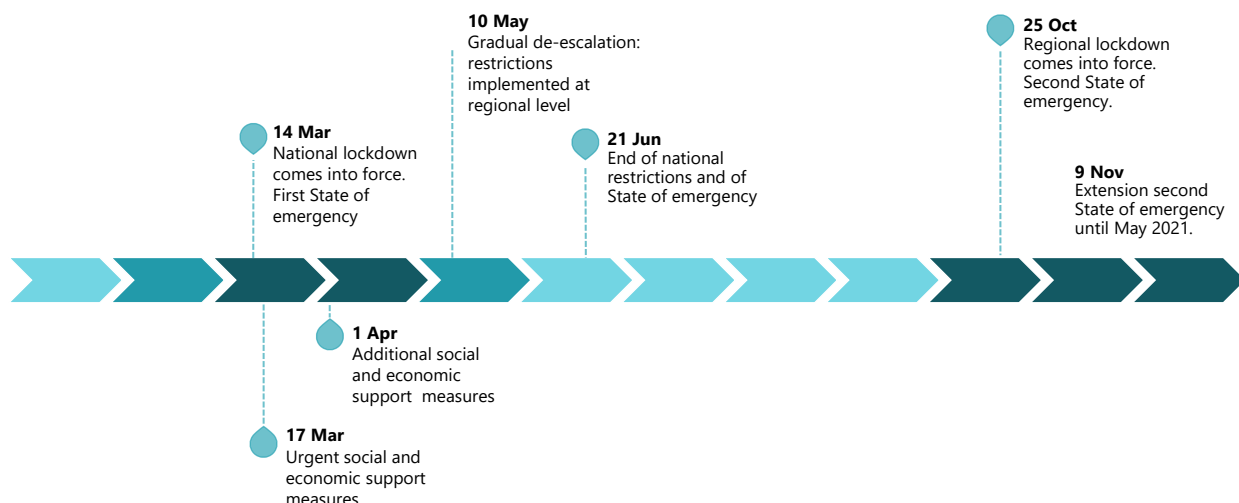
⁵⁹ See: Eurostat-Structural Business Statistics, <https://ec.europa.eu/eurostat/web/structural-business-statistics>.

⁶⁰ See: EUMOFA, <https://www.eumofa.eu/data>.

⁶¹ See: EUMOFA, 2020b, *The EU Fish Market*, Publications Office of the European Union, Luxembourg, pp. 33-55, https://www.eumofa.eu/documents/20178/415635/EN_The+EU+fish+market_2020.pdf/fe6285bb-5446-ac1a-e213-6fd6f64d0d85?t=1604671147068.

2.1.2 Timeline of legislative measures

Figure 6: Timeline of Spanish restrictive measures and policy responses adopted in 2020



Source: own elaboration

Spain has approved more than 300 legislative measures to regulate the health emergency generated by COVID-19⁶². The measures were issued by both the national government and the 17 regional governments, as well as by the co-governance system implemented for the management of the response to the pandemic crisis.

The adoption of extraordinary measures in March 2020 included a national lockdown. Fisheries and aquaculture were defined as essential activities, hence able to continue their operations. This status was also granted to the companies that provide inputs and services to the sector.

The legal framework set for supporting the sector aimed at enabling operators to: i) address the barriers arising from restrictions to day-to-day operations; ii) contend with the social and economic impact of the crisis; and iii) streamline resource management measures to facilitate the activities.

The distribution of competences in Spain allows regional governments to adopt specific measures supporting the fisheries and aquaculture sector. Most of them combined the EMFF measures with their own resources for: i) assisting with immediate needs through, for example, non-repayable aid to buy Personal Protection Equipment (PPE); and ii) responding to the specificities of the different subsectors by, for example, including net repair workers. In those regions with a higher fisheries dependency, ambitious programmes, such as Avantemar in Galicia⁶³, included close monitoring of the impacts of the COVID-19 outbreak and resources allocation according to identified needs.

⁶² The official compilation is available at https://www.boe.es/biblioteca_juridica/codigos/abrir_pdf.php?fich=355_COVID-19_Derecho_Europeo_y_Estatal_.pdf.

⁶³ See: <https://www.lavozdeg Galicia.es/noticia/barbanza/ribeira/2020/06/17/mar-paliara-perdidas-flota-siguio-faenando-pandemia/00031592412164004572983.htm>.

2.1.3 Assessment of the seafood availability and consumption

2.1.3.1 Socio-economic impact on the fleet and evolution of marine gasoil prices

According to the JRC⁶⁴, the socio-economic situation in 2020 was estimated to be worse for the Spanish fleet than in 2018 and 2019.

Table 3: Socio-economic indicators on the Spanish fleet, 2018-2020

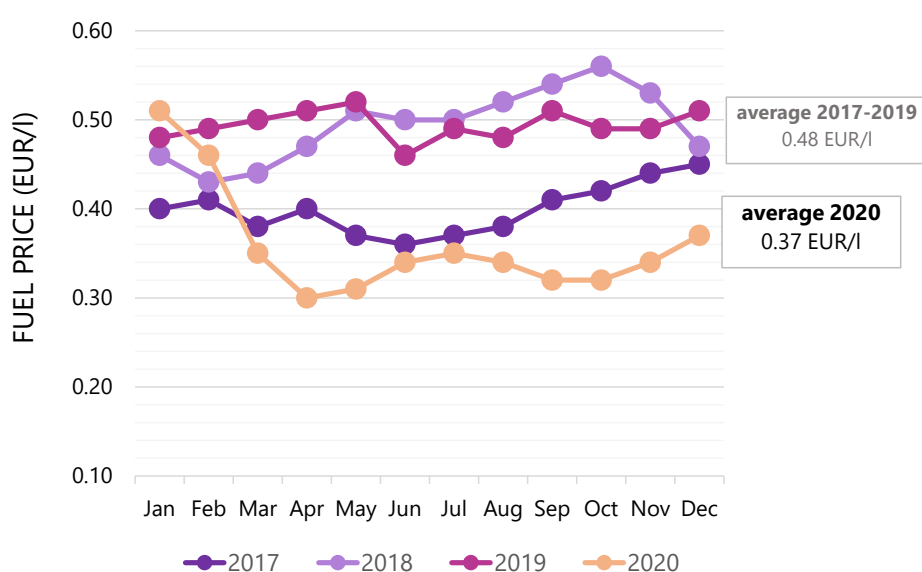
Socio-economic indicators	2018	2019*	2020*	% variation 2019/2020
Employment (FTE)	27 061	27 112	23 759	-12.40
Live weight of landings (1 000 tonnes)	918.80	878.80	746.90	-15.00
Value of landings (EUR million)	1 170.50	2 292.70	1 967.70	-14.20
Gross Value Added (GVA) (EUR million)	940.54	1 494.39	1 284.18	-14.10
Gross profit (EUR million)	287.50	732.40	602.90	-17.70
Net profit (EUR million)	176.60	619.60	484.30	-21.80
GVA to revenue (%)	51.60	62.30	61.70	-0.90
Gross profit margin (%)	15.80	30.50	29.00	-5.10
Net profit margin (%)	9.70	25.80	23.30	-9.90

Source: Carvalho N. *et al.*, 2020, *The impact of COVID-19 on the EU-27 fishing fleet*

Note: * Figures for 2019 and 2020 are estimates

The adverse situation was tempered somewhat by a drop in fuel price. From March to December 2020, the fuel price was between 0.30 EUR/litre and 0.37 EUR/litre while it had mostly been between 0.42 and 0.52 EUR/litre from October 2017 to February 2020.

Figure 7: Monthly average fuel prices in Spain, 2017-2020



Source: EUMOFA elaboration of MABUX data

⁶⁴ See: Carvalho N. *et al.*, 2020, *The impact of COVID-19 on the EU-27 fishing fleet*, Publications Office of the European Union, Luxembourg, pp. 1-34, <https://publications.jrc.ec.europa.eu/repository/handle/JRC122999>.

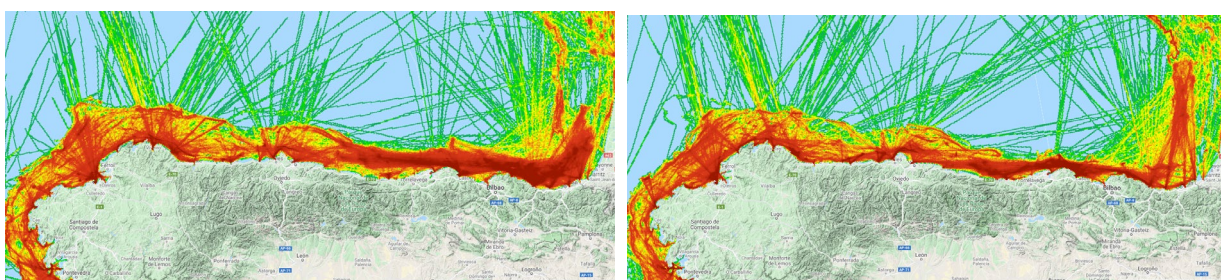
The fuel price fell in March 2020, at the beginning of the national lockdown, followed by an upward trend that began with the increase in mobility from May to August 2020.

2.1.3.2 Fishery activity

The activity of the fleet was abruptly affected when the national lockdown came into force in March 2020. The effect continued through the year, following the market fluctuations associated with changes in market channels and consumption patterns. Estimates indicate a 34 % decrease in days at sea in Spanish waters in 2020 compared with 2018⁶⁵. The Mediterranean⁶⁶ and north-west coasts were the most affected areas. For the north-west coast, the national lockdown also coincided with the seasonal fisheries for mackerel and anchovy.

The figures calculated using EMODnet Human Activities and EMSA data estimates that the fishing boat density in the Spanish EEZ decreased by around 9.13 % between January and June 2020 compared with the same period in 2019. These changes may be observed by the fishing vessel route density maps, particularly for the north-west coast and the Basque Country coastline.

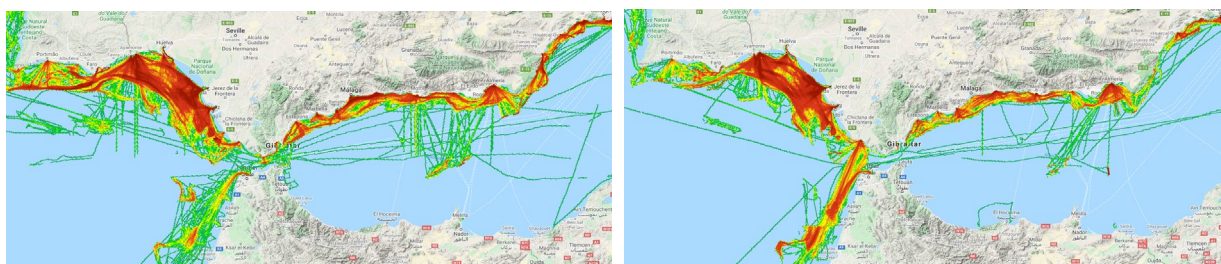
Map 1: Fishing vessel route density in Spain (north-west coast), April 2019 and April 2020



Source: EMODnet Human Activities

Note: April 2019 (left) and April 2020 (right)

Map 2: Fishing vessel route density in Spain (south coast), April 2019 and April 2020

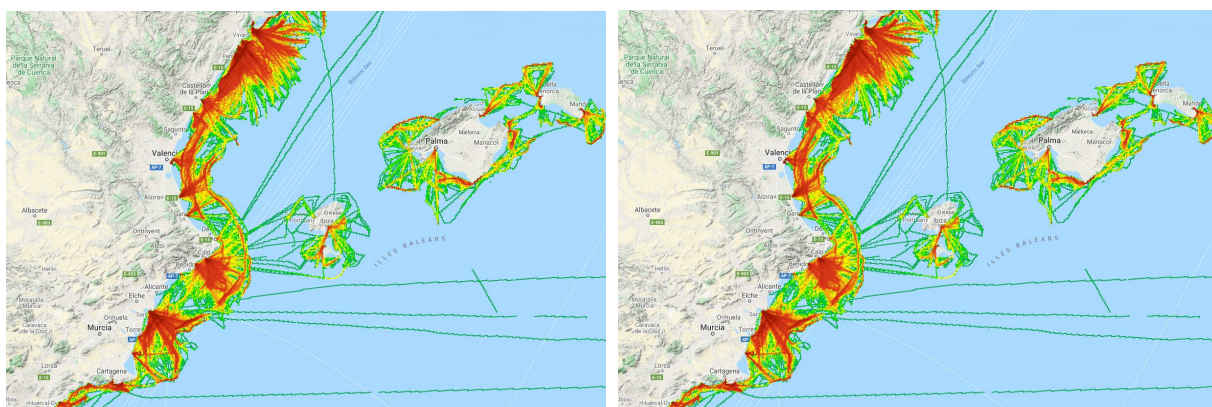


Source: EMODnet Human Activities

Note: April 2019 (left) and April 2020 (right)

⁶⁵ *Ibidem*.

⁶⁶ For regional analysis see: Ortega et al., 2020, *Monitoring of the COVID crisis in the Spanish Mediterranean fisheries. Weathering the storm of COVID-19 crisis*, pp. 1-10, https://ent.cat/wp-content/uploads/2020/12/2020_Seguimiento-crisis-COVID-y-sector-pesquero_EN.pdf.

Map 3: Fishing vessel route density in Spain (Mediterranean coast), April 2019 and April 2020

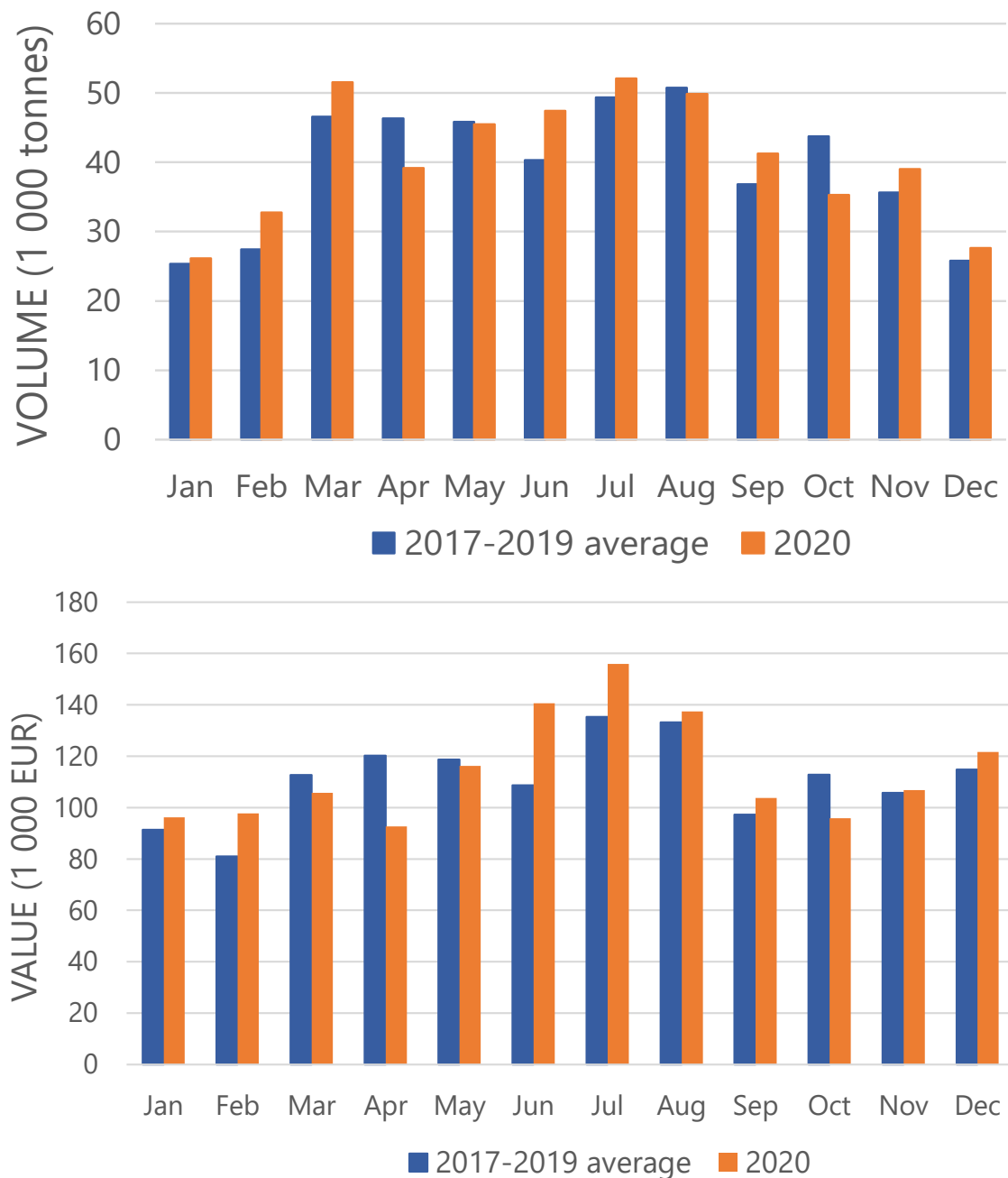
Source: EMODnet Human Activities

Note: April 2019 (left) and April 2020 (right)

2.1.3.3 First sale, wholesale, imports and household consumption

In 2020, first sales in Spain reached 487 627 tonnes and EUR 1.38 million, which represented a 2 % increase in volume and 3 % decrease in value from 2019. In spite of the initial shocks, the overall figures for 2020 did not show significant changes in total volume and value compared to the 2017-2019 average⁶⁷.

⁶⁷ See: EUMOFA, <https://www.eumofa.eu/data>.

Figure 8: First sales of fish, shellfish and crustaceans in Spain, 2017-2019 average-2020

Source: EUMOFA

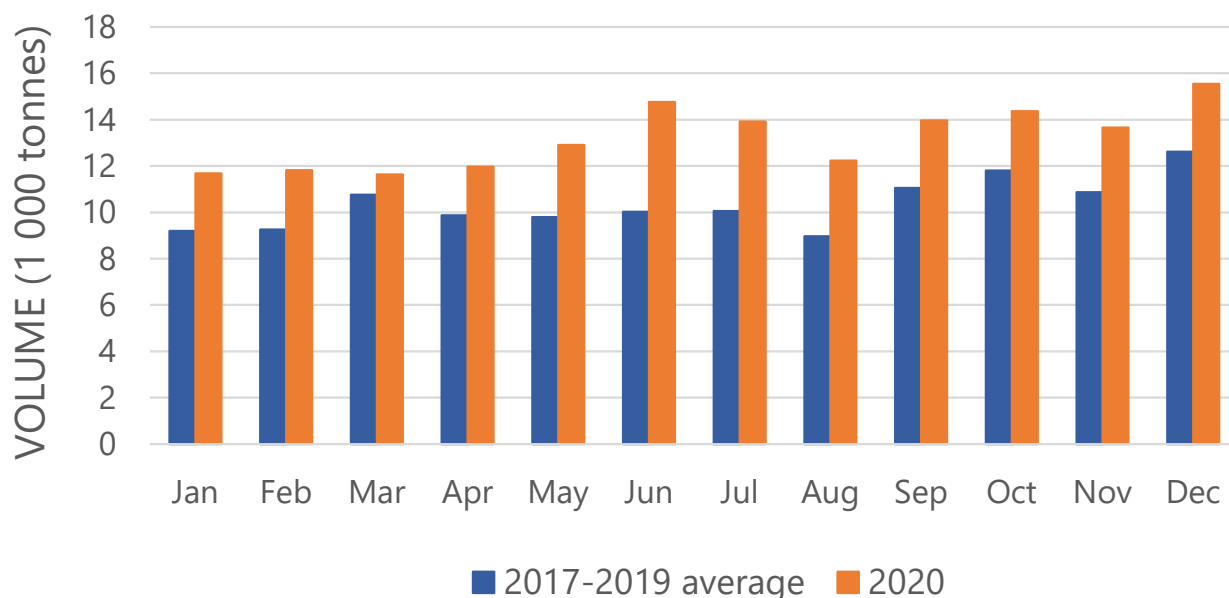
Among the most important species at first sale level in Spain, those whose share of total volume changed the most included hake, clams, squid, swordfish, shrimp and tuna, while anchovy, shrimps, mackerel and hake drove the overall trend in value terms. In addition, although they accounted for 2 % of the total first sale volume and 5 % of total first sale value in 2020, molluscs recorded significant drops of 22 % in volume and 30 % in value compared with 2019, thus suggesting that they had been severely hit by the pandemic.

As for the wholesale stage⁶⁸, the figures show a 2 % increase in both volume and value from 2019. A breakdown by species points to 9 % increases in the volume for hake and salmon, 5 % for squid, and

⁶⁸ See: <https://www.mercamadrid.es/mercado-central-de-pescados/>.

4 % for gilthead seabream and tuna. In addition, the beginning of the lockdown in March saw an 8 % increase in the sale of frozen products, due to a 3 % increase for processed frozen squid, 2 % for shrimps and 2 % for hake. In the same month, fresh crustacean sales were severely hit, leading to decreases of 33 % for fresh shrimps, 19 % for prawns and 15 % for squid. A negative impact was also suffered by fresh hake which dropped 8 % and fresh ling which dropped 7 %.

Figure 9: Wholesale of fisheries and aquaculture products at Mercamadrid, 2017-2019, average- 2020



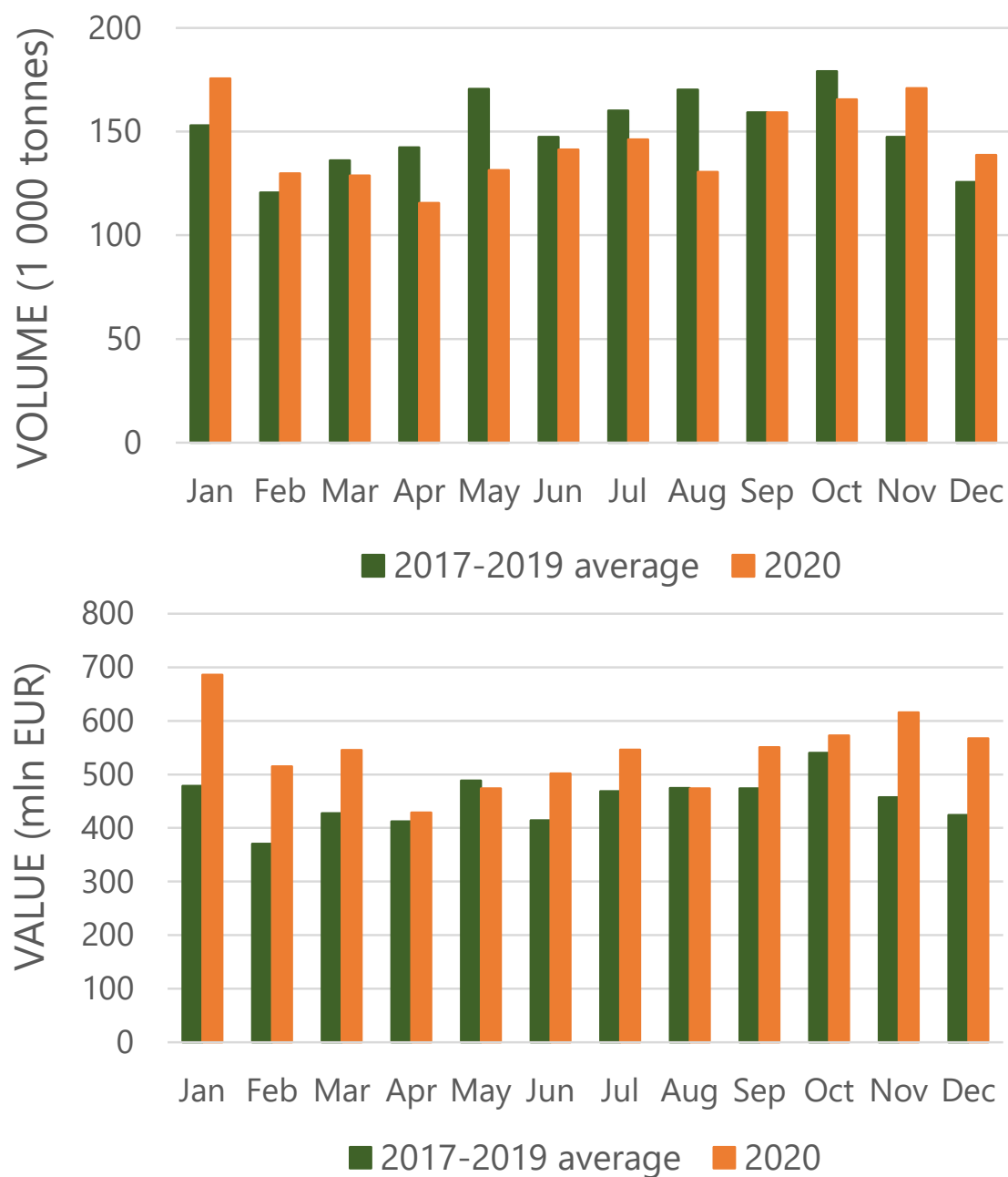
Source: [Mercamadrid](#)

Spain is a major EU player for fisheries and aquaculture import and export flows. Therefore, the global effects of international trade issues related to the COVID-19 were remarkable in this country.

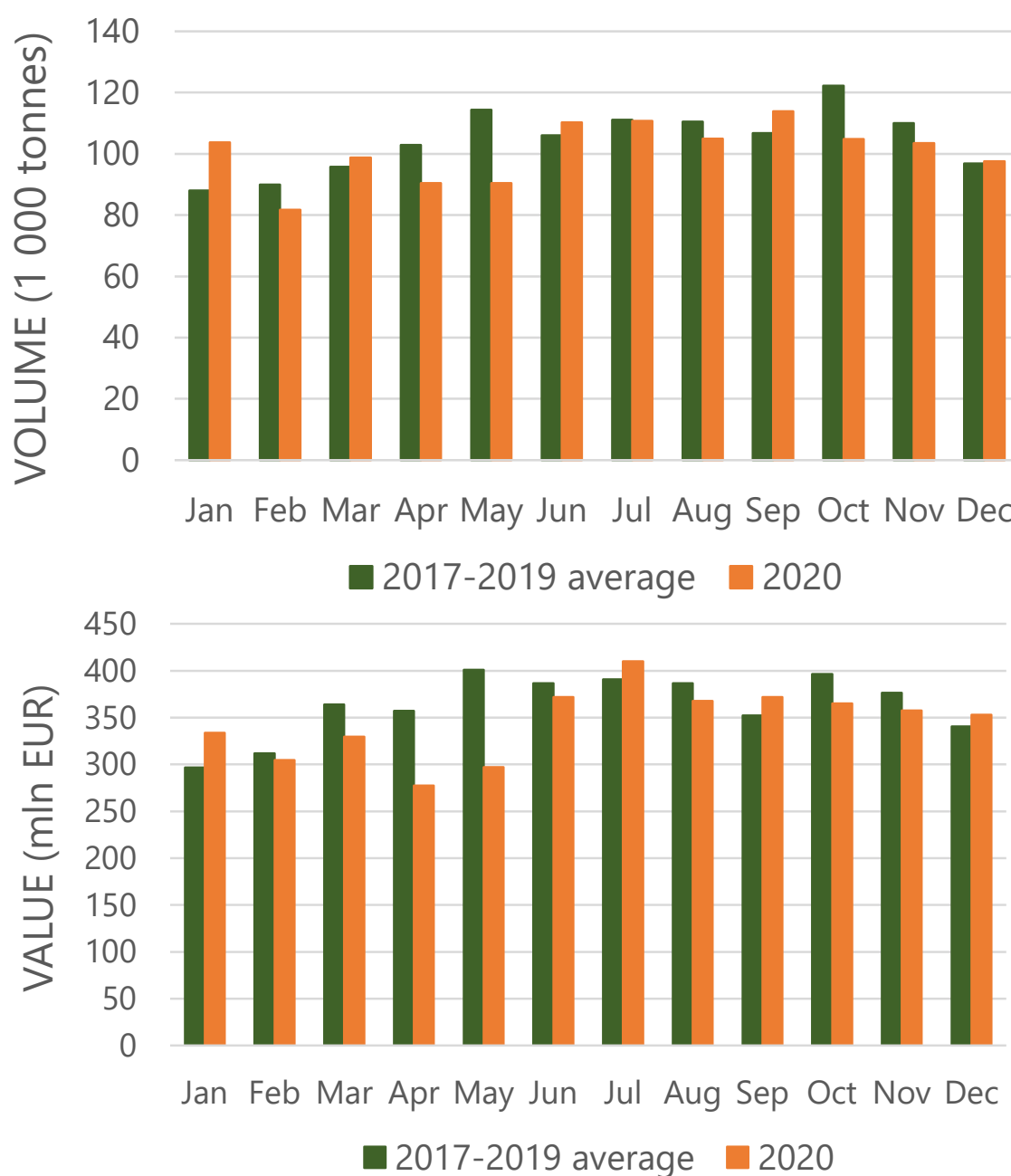
During 2020, imports in Spain reached 1.73 million tonnes and EUR 6.47 billion, which corresponded to a 4 % decrease in volume but a 19 % increase in value compared to the 2017-2019 average. Exports totalled 1.21 million tonnes and EUR 4.14 billion which corresponded to decreases of 3 % in volume and 5 % in value from the 2017-2019 average⁶⁹.

The main imported products in 2020, valued at least at EUR 2.77 billion, were squid, salmon, hake, shrimp species and skipjack tuna. The main exported products, valued at least at EUR 1.91 billion, were tuna (skipjack, miscellaneous and yellowfin), squid and octopus.

⁶⁹ See: EUMOFA, <https://www.eumofa.eu/data>.

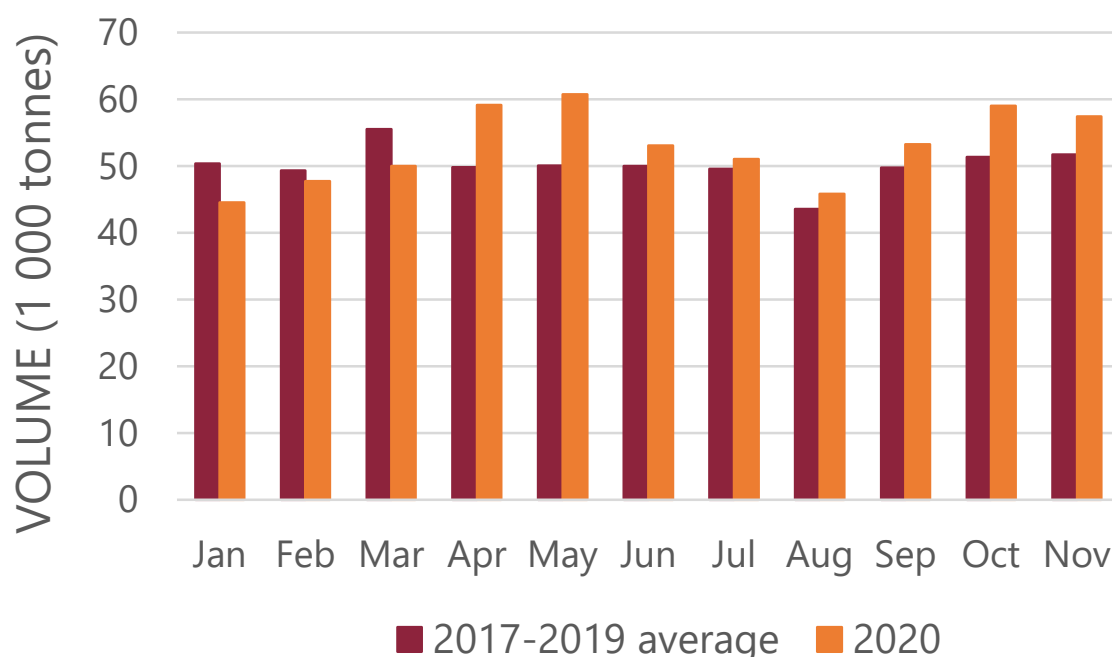
Figure 10: Imports of fisheries and aquaculture products in Spain, 2017-2019 average-2020

Source: EUMOFA elaboration of Eurostat-Comext data

Figure 11: Imports of fisheries and aquaculture products in Spain, 2017-2019 average-2020

Source: EUMOFA elaboration of Eurostat-Comext data

The household consumption of fresh and chilled products in Spain in 2020 increased by 9 % in volume from 2019. This trend was opposite that observed in previous years which had logged a 4 % decrease from 2017 to 2018 and a 2 % decrease from 2018 to 2019. The highest increases were recorded in May 2020, which saw a 21 % increase compared with the same month in 2017-2019, and in the second quarter of 2020 in general, when more restrictive measures were reintroduced. This indicates that, when social interactions are limited and people spend more time at home, household consumption of fresh products grows.

Figure 12: Household consumption of fresh fisheries and aquaculture products in Spain, 2017- 2019 average-2020

Source: EUMOFA elaboration of EUROPANEL data

The main species consumed were hake with 11 % of total volume and 12 % of total value, and sardine with 11 % of total volume and 7 % of total value, followed by salmon which had 10 % of total volume and 13 % of total value. However, in 2020, the household consumption of fresh hake decreased 16 % in volume from the previous three year's average, mainly at the beginning of the crisis in March and in July-August. On the contrary, salmon consumption experienced a 15 % increase in volume from 2019 through the whole year but notably during the lockdown when, for example, it increased 89 % in April 2020 compared with April 2019. Data also show an increase in the household consumption of other aquaculture products, such as seabass and seabream. Conversely, the fresh household consumption of traditional species such as hake and mackerel decreased.

2.1.3.4 Aquaculture production and out-of-home consumption

During the COVID-19 crisis, aquaculture companies had to cope with uncertainty, increased costs and adjustments in production in a highly unfavourable context. Especially for the Spanish seabass and seabream producers, the pandemic added to the heavy losses caused by Storm Gloria in January 2020 resulting in the harvest falling by around 40 % during the year⁷⁰.

All mollusc production, with the exception of mussels, was severely affected during the first months, with small producers experiencing a drop of nearly 90 %⁷¹. However, the final 2020 figures available from the main producer areas seem to indicate a significant recovery through the year. They showed a 20 % decrease in volume for clams at the end of the year, but at the beginning of the crisis, they had shown drops of 48 % in March and 61 % in April, compared with 2019⁷². Although data on mussels'

⁷⁰ See: <http://www.fao.org/in-action/globefish/marketreports/resource-detail/es/c/1268640/>.

⁷¹ See: Acuiplus, 2020, *Informe de Impacto Generado por COVID-19 en el sector acuícola a lo largo de la cadena de valor*, pp. 1-27, <https://www.acuiplus.org/wp-content/uploads/2020/05/Informe-Impacto-COVID19-Acuicultura.pdf>.

⁷² See: <https://www.pescadegalicia.gal/Publicaciones/AnuarioPesca2020/Informes/1.2.2.html>.

production are not available, main producers reported negative impacts on production performance and across the value chain due to the drop in out-of-home consumption.

The manager of the Spanish Professional Aquaculture Association (*"Asociación Empresarial de Acuicultura de España"* - APROMAR) has emphasised the overall resilience of the sector. Despite an initial decrease of 30 % in sales⁷³, companies managed to adapt to operational challenges and market volatility. In addition, the minimum HoReCa activity contrasted with the dynamism of retail, and allowed producers to divert part of the sales from the former to the latter. For some species, such as gilthead seabream, sales doubled in volume, increasing 109 % from 2019, while value increased 54 %.

Anecdotal evidence from stakeholders and from press releases also indicate a growing tendency for sales of processed products – mainly filleted fish.

Financial support, with grants of working capital and compensation, was released to farmers during the last months of 2020, through art. 55 of the EMFF. The sector considered the eligibility conditions acceptable, whereas the individual aid was perceived as insufficient due to the limited quantity of funds available⁷⁴.

The overlapping of lockdowns, restrictions to mobility and curfews remarkably affected out-of-home consumption. During the March to May 2020 lockdown, home consumption of food products increased 25 % from the same period in 2019, while out-of-home consumption decreased⁷⁵. Nevertheless, by July, out-of-home consumption had begun to recover, reaching nearly 70 % of its level before the crisis⁷⁶.

It is worth noting that out-of-home consumption (excluding tourism) represented 34 % of the total food consumption expenditure in Spain in 2019⁷⁷. The changes in the Spanish consumption patterns in 2020 were notable. For instance, regarding out-of-home eating habits, Spain is the second European country after the UK where most citizens (6 out of 10) declared they were eating less at restaurants than before the pandemic⁷⁸. On the other hand, online shopping significantly increased and the market share of online shopping for food products increased from 1.6 % in 2019 to 2.4 % between 9 March and 6 June 2020⁷⁹. Furthermore, the HoReCa sector in Spain is highly dependent on tourism, which has a direct effect on the food system, as each EUR 1 in HoReCa services demands EUR 0.30 from the food system⁸⁰. Estimates pointed out a 45 % drop in tourism in 2020, which would have implied nearly a 5 % loss of the total GDP⁸¹.

As for unprocessed fisheries and aquaculture products, Euromonitor reported a 12 % decline in Spanish sales in 2020 compared with the average of the previous three years. The drop in the food service industry of 46 % in volume and 31 % in institutional channels did not transfer into retail, which reported

⁷³ See: http://www.ipacuicultura.com/noticias/en_portada/76318/la-acuicultura-espanola-ha-mostrado-un-importante-grado-de-resiliencia-ante-la-situacion-provocada-por-la-covid-19.html.

⁷⁴ See: <https://www.agrodigital.com/2021/01/08/balance-de-la-acuicultura-espanola-en-2020-y-perspectivas-para-2021/>.

⁷⁵ See: MAPA, 2020b, *Informe del consumo alimentario en España 2019. Efecto del estado de alarma Datos preliminares 2020*, Madrid, pp. 1-32, https://www.mapa.gob.es/es/alimentacion/temas/consumo-tendencias/presentaciondatosconsumo_vf_ok_tcm30-540247.pdf.

⁷⁶ See: https://www.abc.es/economia/abci-consumo-fuera-hogar-alcanza-niveles-casi-70-por-ciento-antes-coronavirus-202007030226_noticia.html.

⁷⁷ See: MAPA, 2020c, *Informe del Consumo Alimentario en España 2019*, Ministerio de Agricultura, Pesca y Alimentación Secretaría General Técnica Centro de Publicaciones, Madrid, pp. 1-674, https://www.mapa.gob.es/eu/alimentacion/temas/consumo-tendencias/informe2019_v2_tcm35-540250.pdf.

⁷⁸ See: <https://www.ipsos.com/es-es/un-60-de-los-espanoles-afirma-ir-menos-los-restaurantes-que-antes-de-la-pandemia>.

⁷⁹ See: MAPA, 2020b, *Informe del consumo alimentario en España 2019. Efecto del estado de alarma Datos preliminares 2020*, Madrid, pp. 1-32, https://www.mapa.gob.es/es/alimentacion/temas/consumo-tendencias/presentaciondatosconsumo_vf_ok_tcm30-540247.pdf.

⁸⁰ See: Banco de España, 2020, *Evolución reciente y perspectivas para el sector turístico español e implicaciones para el conjunto de la economía*, Informe Anual 2019, Recuadro IV.I, Banco de España, Madrid, pp. 159-163, https://repositorio.bde.es/bitstream/123456789/13053/1/InfAnual_2019-Rec4.1.pdf.

⁸¹ See: <https://www.caixabankresearch.com/es/analisis-sectorial/turismo/sector-turistico-frente-covid-19-impacto-sin-precedentes>.

only a 3 % drop. Sales of finfish fell a dramatic 51 % in volume in the foodservice compared with the 2017-2019 average, and 37 % in the institutional channel. Molluscs had a similar pattern, with sales dropping 42 % in the foodservice and 25 % in the institutional, while crustaceans performed slightly better in terms of sales losses, dropping 35 % in the foodservice and 17 % in institutional.

Regarding the out-of-home consumption of processed fisheries and aquaculture products, available data only cover the foodservice channel where, in 2020, sales totalled more than 70 000 tonnes, the lowest since 2006. Compared with the 2017-2019 average, this was a 43 % drop, with similar patterns for all product categories analysed (shelf stable, chilled and frozen processed products).

Table 4: Qualitative assessment of restrictions by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
First sale	High. Impact on high-value species and small-scale fisheries.
Aquaculture	High. COVID-19 pandemic added up to drop in production caused by the extreme weather conditions had in February 2020.
Import - Export	High. Decrease in imports volume but increase in value (+19 % compared to the 2017-2019 average). Slight decrease in exports.
Retail	High. Increased sales of processed products in the short term; increased sales of farmed products through the entire year.
Wholesale	High. Increase in sales' volume.

Source: own elaboration

2.1.4 Analysis of COVID-19 effects

Overall, of the stakeholders surveyed for this study, 45 % perceived a worse and 55 % perceived a stable situation after the initial shock, in terms of sales, production and transactions costs, and commercial margins.

Stakeholders' capacity to implement countermeasures was hindered by the income decrease and the cost increase, and constrained by the COVID-19 restrictions. For certain actors, such as the fishing fleet or mussels farmers, many of the measures were also considered far from being feasible.

In this sense, of all available solutions to cope with the crisis, 75 % of respondents viewed technological solutions and diversification of species as having a low impact – hence they were not broadly applied. The reasons were related to the need to respond quickly to the initial shock and the large resources needed to implement technological solutions, as well as to the constraints associated with species diversification in fisheries such as licences, TACs and resource availability. Instead, they initiated diversification in their product presentations or marketing channels, such as filleted vs. whole fish, or promoting retail sales instead of HoReCa.

On the other hand, stocking strategies based on freezing or salting fish were used to bumper price declines. Producer organisations combined private and EMFF storage resources to implement them. The aquaculture companies surveyed reported they had increased their storage in order to stock products and cope with the demand decline due to HoReCa closure.

Finding innovative ways to meet demand was by far the solution considered with a higher impact by all stakeholders. On-line sales and home deliveries were boosted by the initial lockdown, spreading the use of existing services to more consumers who could, for example, place orders through instant

message apps. Fish products sales through online channels doubled in both volume and value⁸², and included new target groups such as seniors.

In spite of the border closure, logistical difficulties and delays in controls, quantitative and qualitative data do not suggest any disruption in the supply of raw material for the processing companies.

Promotional campaigns were developed, combining the conventional approach – with messages focused on local products – with a tailored effort to acknowledge the role of the fish workers and create empathy with their struggles while encouraging consumption (*"Buy fresh fish products. We are on the same boat"*)⁸³.

The shifting of consumer behaviour affected shopping (less frequency and online channels) and consumption (household vs. out-of-home consumption).

The measures adopted to support the fisheries and aquaculture sector provided financial aid using both EMFF and national and regional resources. Certain stakeholders found it difficult to navigate the aid package available at national and regional levels. Other details, such as the specific criteria that set the threshold of losses suffered in order to receive financial support, or the allocation of resources that had individual ceilings for companies might also have limited the effectiveness of the measures. From the set of available measures, producers highlighted the utility of the storage mechanism, for both fresh and frozen products. Although this mechanism had been phased out of the EMFF since 2018, its resurrection allowed producers to cope with demand shortages, price variability and logistical difficulties.

Beyond the financial support, some administrations implemented a monitoring programme to closely follow how and within which sectors, subsectors and activities the crisis was hitting the most, in order to tailor their responses to the actual impacts.

Table 5: Qualitative assessment of countermeasures adopted by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
First sale	High. Flexibility measures (e.g., storage mechanism) helped adjusting the supply to the constrained demand.
Retail	High. Online sales and home deliveries boosted. Important role also played by promotional campaigns.
Aquaculture	Medium. Compensation schemes for farmers largely used.

Source: own elaboration

The following list of measures, proposed by Spanish stakeholders surveyed, has the aim of coping with the impacts of the crisis as well as addressing structural issues.

- **Financial support.** Direct financial support proposed for dealing with temporary cessation of activities and increased costs associated with, for example, health protocols, and with other financial measures, such as credit and guarantee lines. In any case, criteria and thresholds should go beyond covering short-term impacts, as the sector foresaw that several impacts will become visible in the medium-term.

⁸² Comparison between first semester of 2020 and first semester of 2019. See: ANFACO-CECOPECA, 2020, *Clúster Mar-Alimentario. Datos 2020*, pp. 1-106, <http://www.anfaco.es/fotos/biblioteca/docs/sector/Datos%20sector%202020.pdf>.

⁸³ See: https://www.lavozdegalicia.es/noticia/somosmar/2020/04/09/span-langgl-mesmo-barcospan/0003_202004G9P35991.htm.

- **Storage mechanism.** The storage mechanism has proven critical, as it allows production flexibility and adaptation for producers' organisations. According to the stakeholders, it should also remain available in 2021.
- **VAT reduction.** Reducing the VAT of fish products from 10 % to 4 % could boost the demand⁸⁴.
- **Intra- and extra-EU playing field.** Intra- and extra-EU operators would benefit from a level playing field. Stakeholders perceived that the lack of a level playing field between operators acting in intra-EU markets and those acting in extra-EU markets was aggravated by the COVID containment measures. Some also perceived this affected operational costs, thus making them less competitive. They request determined actions to tackle this issue.
- **Promotional campaigns.** Promotional campaigns based on healthy claims and proximity products should be implemented.

⁸⁴ See: https://www.abc.es/economia/abci-sector-pesquero-pide-productos-mar-tengan-4-por-ciento-para-aliviar-impacto-covid-202010151453_noticia.html.

2.2 Denmark

KEY FINDINGS

- **Restriction on workers due to COVID 19 had a main impact in Denmark.** It not only led to more homeworking and increased closures in the HoReCa sector, it also shifted the consumption patterns. Also, because Denmark is a major exporter, it dealt with its own national restrictions, as well as restrictions set by other countries.
- **Household consumption grew considerably in 2020, while out-of-home consumption strongly decreased.** In addition, Denmark saw a decrease in consumption of fresh products and an increase in consumption of frozen and processed products.
- **First sale price and volume drops were particularly evident upstream in the supply chain.** This was seen for several high-end species, namely those largely exported and consumed fresh, such as Norway lobster, plaice, hake, haddock, sole and turbot, while other species had opposite response. For example, cod, recorded higher prices at first sale level and lower prices at the export stage, while coldwater shrimp saw its exports increase in volume but at a lower price.
- **Disruptions at first sale level were limited to the two main species landed in Denmark: herring and mackerel.** This was due to the seasonality of their catches (March-May is low season) and the fact that they are largely used for processing and household consumption.
- **Farmed species were positively impacted, with trout production increasing in 2020.** However, fish farmers also suffered from an increase of production costs, including costs of feed, oxygen and salaries.
- **Measures implemented in response to COVID-19 were not effective for the Danish fisheries and aquaculture sectors, according to stakeholders interviewed.** They recommend adopting additional measures such as support for storage and promotion campaigns, and recognising workers in the fisheries and aquaculture sector as “priority workers”.

2.2.1 Introduction and characteristics of the market

In 2018, Denmark was the second EU’s largest producer of fisheries products and ninth largest EU producer of aquaculture products. Also in 2018, the Danish fish processing industry comprised 92 companies and employed 3 669 persons and achieved total sales of EUR 1.03 billion⁸⁵. In addition, the Danish fishing fleet was made up of 2 122 vessels, with a total capacity of 74 426 GT and 214 197 kW. Of these, 84 % were less than 12 m, 13 % were between 12 m and 23 m, and 3 % exceeded 23 m; 16 % used trawls as main gear, 78 % used gill nets and entangling nets, and 6 % used other gear. In 2017, fishing fleet employment reached 1 644 FTE⁸⁶.

According to DG MARE⁸⁷, three Danish producer organisations (POs) are formally recognised, all operating in the fisheries sector.

⁸⁵ See: Eurostat - Structural Business Statistics, <https://ec.europa.eu/eurostat/web/structural-business-statistics>

⁸⁶ See: EU fishing fleet register, https://webgate.ec.europa.eu/fleet-europa/search_en, and Carvalho N. et al., 2019, *The 2019 Annual Economic Report on the EU Fishing Fleet (STECF 19-06)*, Publications Office of the European Union, Luxembourg, pp. 1-496, <https://stecf.jrc.ec.europa.eu/documents/43805/2483556/STECF%2019-06%20-%20AER%20-%202019.pdf>.

⁸⁷ See: <https://ec.europa.eu/oceans-and-fisheries/system/files/2021-05/list-of-recognised-producer-organisations-and-associations-of-producer-organisations.pdf>.

Table 6: World, EU-28 and Danish catches and aquaculture production in 2018, in 1 000 tonnes

Production	World	EU-28	Denmark	% of world	% of EU-28
Catches	97 232	5 337	789 ⁸⁸	0.81	14.78
Aquaculture	114 462	1 319	33	0.03	2.50
Total	211 694	6 656	823	0.39	12.36

Source: Eurostat and FAO

The main species landed in 2018 were sprat, accounting for 25 % of volume and 11 % of value, blue whiting with 21 % of volume and 9 % of value, and herring with 20 % of volume and 15 % of value. Trout was by far the main species farmed in 2018, providing 85 % of volume and 86 % of value. It was followed by salmon with 3 % of volume and 4 % of value, and eel with 1 % of volume and 5 % of value⁸⁹.

In 2019, total first sales in Denmark reached 250 510 tonnes, accounting for 39 % of landing volume and EUR 344 million. The top three places of sale – Skagen, Hanstholm and Hirtshals – covered 71 % of volume and 67 % of value⁹⁰.

In 2019, salmon, with 36 % of the total value, was by far the main species imported, followed shrimps with 14 % and cod with 12 %. Also in 2019, the main products exported were salmon with 30 % of total value, cod with 11 % and fishmeal with 7 %. In terms of imports, Norway, the most important country of origin, accounted for 39 % of Denmark's import value, followed by Greenland with 17 %. Norway was also the main country of destination, with 19 % of total export value. Other important destination countries included Germany, which accounted for 15 %, and the Netherlands and United Kingdom, which each received 7 % of Denmark's exports⁹¹. Denmark is also an EU hub for cod and salmon, with large imports from Norway.

In 2018, apparent consumption was estimated at 40 kg per capita⁹². The most consumed species were herring, salmon and mussel⁹³.

2.2.2 Timeline of legislative measures

In Denmark, a first lockdown took place from 16 March 2020 to 15 April 2020. Restrictions were then eased, with the gradual reopening of schools, small businesses and out-of-home catering. A second lockdown came into force in December, with measures such as remote and online classes for students, a ban on on-site consumption of food and drinks at restaurants, and closure of indoor cultural and sports facilities. Teleworking increased considerably from March 2020, as it was compulsory during both the first and second lockdowns, except for jobs that cannot be performed remotely.

⁸⁸ 732 731 tonnes in 2020, based on Danmarks Statistik, <https://www.dst.dk/en>.

⁸⁹ See: EUMOFA, <https://www.eumofa.eu/data>.

⁹⁰ *Ibidem*.

⁹¹ *Ibidem*.

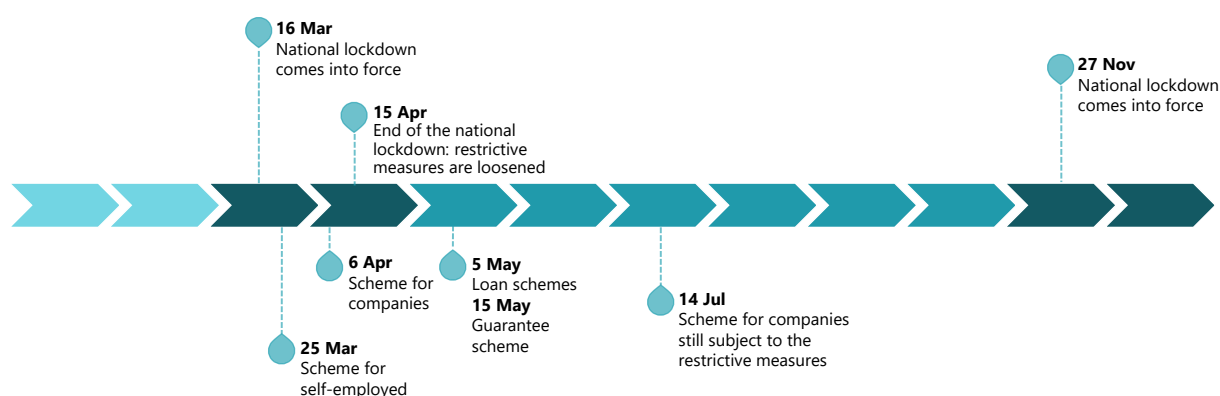
⁹² See: EUMOFA, 2020b, *The EU Fish Market*, Publications Office of the European Union, Luxembourg, pp. 33-55, https://www.eumofa.eu/documents/20178/415635/EN_The+EU+fish+market_2020.pdf/fe6285bb-5446-ac1a-e213-6fd6f64d0d85?t=1604671147068.

⁹³ See: EUMOFA, <https://www.eumofa.eu/en/denmark>.

The fisheries and aquaculture sectors benefited from a wide range of targeted measures implemented by the Danish government⁹⁴:

- **Compensation for decrease in turnover.** The government provided compensation to self-employed and small businesses – those with less than 10 employees and more than DKK 10 000 of turnover per month⁹⁵ – for declines in revenue of over 30 % from the 9 March until 8 June. Loss was compensated by up to 75 % of the revenue decline over a three-month period from March to June.
- **Compensation for fixed expenses:** Large, medium-sized, and small companies were eligible to receive compensation for fixed expenses such as rent and interest expenses for three months.
- **Wage compensation for commercial fishers.** Companies which were considering firing at least 50 employees or 30 % of the staff could receive a wage compensation if, instead of firing, they would send their employees home with full pay.

Figure 13: Timeline of Danish restrictive measures and policy responses adopted in 2020



Source: own elaboration

2.2.3 Assessment of the seafood availability and consumption

2.2.3.1 Socio-economic impact on the fleet and evolution of marine gasoil prices

The JRC⁹⁶ estimated that the socio-economic situation of the fleet in 2020 was comparable to the situation in 2019 according to several indicators, including employment, weight and value of landings, GVA and gross profit. However, both net profit and net profit margin in 2020 are estimated to have declined from 2019.

⁹⁴ See: <https://fiskeriforening.dk/for-fiskere/corona-nyttig-viden-til-dig-som-fisker/%C3%B8konomisk-stoette/>, <https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic/state-aid-cases>.

⁹⁵ DKK is the Danish krone. In 2020, 10 000 DKK = EUR 1.341. See: https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/eurofxref-graph-dkk.en.html.

⁹⁶ See: Carvalho N. et al., 2019, *The 2019 Annual Economic Report on the EU Fishing Fleet (STECF 19-06)*, Publications Office of the European Union, Luxembourg, pp. 1-496, <https://stecf.jrc.ec.europa.eu/documents/43805/2483556/STECF%2019-06%20-%20AER%20-%202019.pdf>.

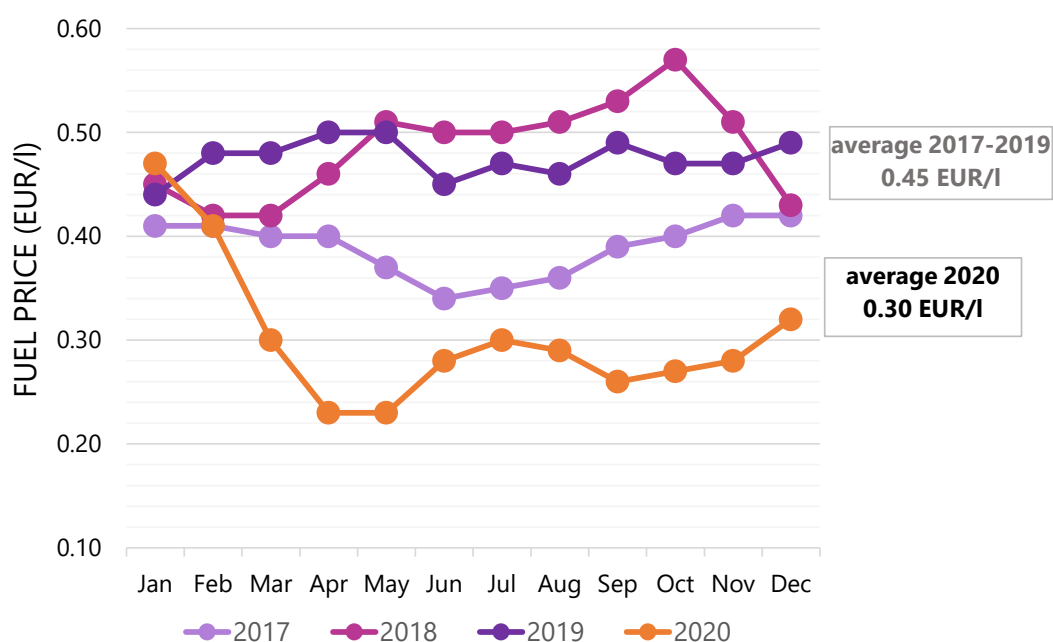
Table 7: Socio-economic indicators on the Danish fleet, 2018-2020

Socio-economic indicators	2018	2019*	2020*	% variation 2019/2020
Employment (FTE)	1 642	1 488	1 488	0.00
Live weight of landings (1 000 tonnes)	787.80	719.20	719.20	0.00
Value of landings (EUR million)	449.20	375.30	376.40	0.30
Gross Value Added (GVA) (EUR million)	304.90	245.91	246.67	0.30
Gross profit (EUR million)	180.30	136.80	137.30	0.30
Net profit (EUR million)	93.50	48.80	47.00	-3.70
GVA to revenue (%)	66.00	62.90	62.90	0.00
Gross profit margin (%)	39.00	35.00	35.00	0.00
Net profit margin (%)	20.20	12.50	12.00	-4.00

Source: Carvalho N. *et al.*, 2020, *The impact of COVID-19 on the EU-27 fishing fleet*

Note: * Figures for 2019 and 2020 are estimates

The COVID-19 pandemic had an impact on the fuel price in 2020. Indeed, while the price ranged between 0.40 and 0.50 EUR/litre most of the time from October 2017 to February 2020, it dropped to between 0.23 EUR/litre and 0.32 EUR/litre from March to December 2020⁹⁷. Such a trend had a positive effect on production costs of the fishing companies which were active in that period.

Figure 14: Monthly average fuel prices in Denmark, 2017-2020

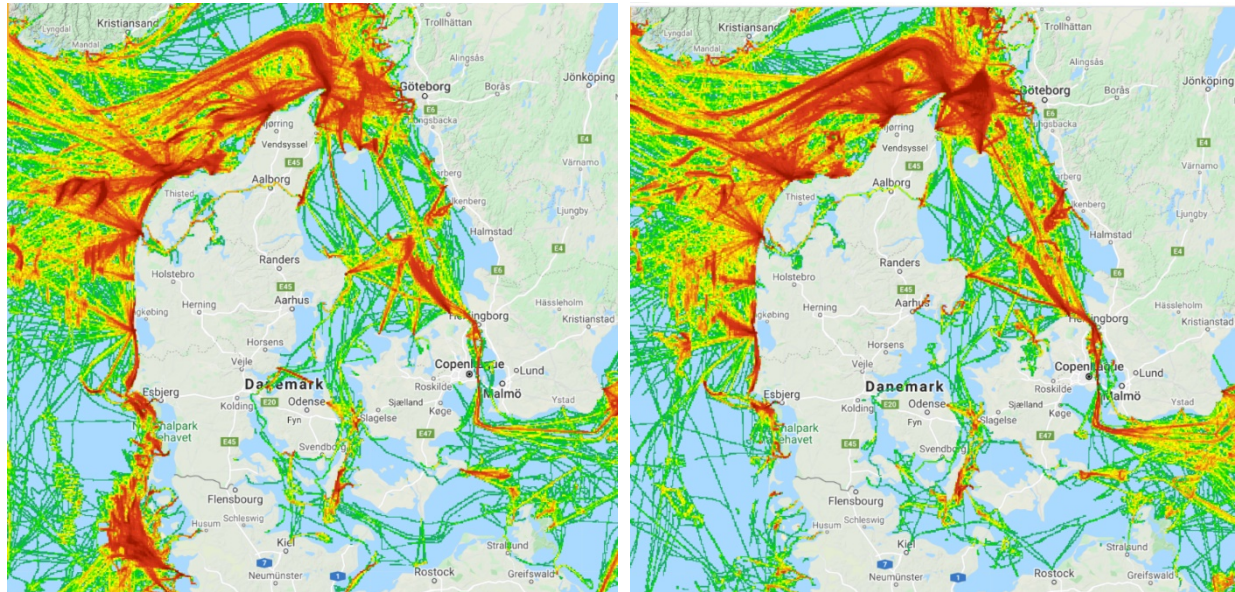
Source: EUMOFA elaboration of MABUX data

⁹⁷ See: EUMOFA, <https://www.eumofa.eu/data>.

2.2.3.2 Fishery activity

According to EMODnet Human Activities data, the density of fishing vessels decreased by 3.5 % in January-June 2020 compared with January-June 2019, which indicated a limited decrease in fishing activity. This is consistent with the limited decline in landings reported in the following sections.

Map 4: Fishing vessel route density in Denmark, April 2019 and April 2020



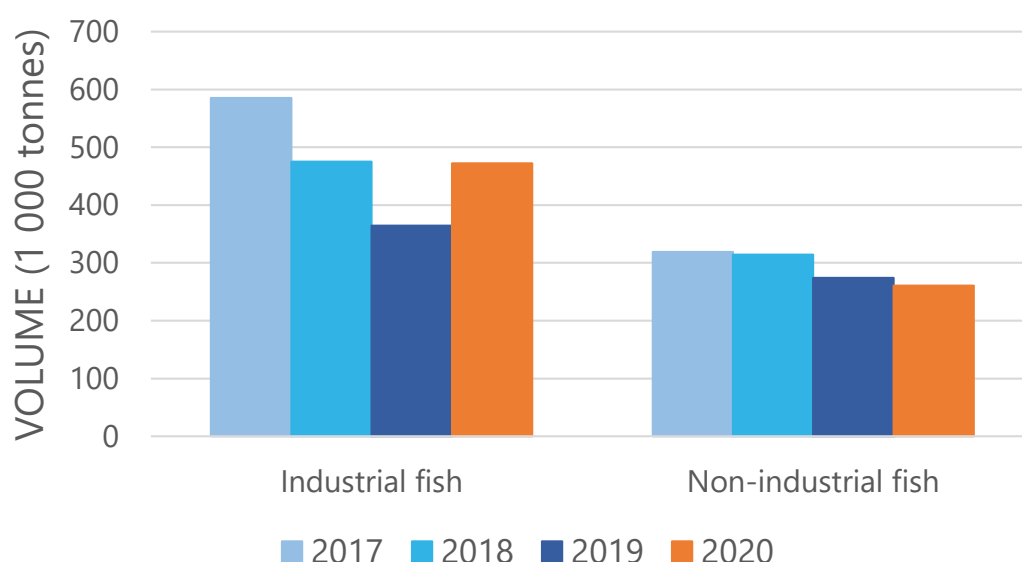
Source: EMODnet Human Activities

Note: April 2019 (left) and April 2020 (right)

2.2.3.3 Landings, first sales, imports, exports and household consumption

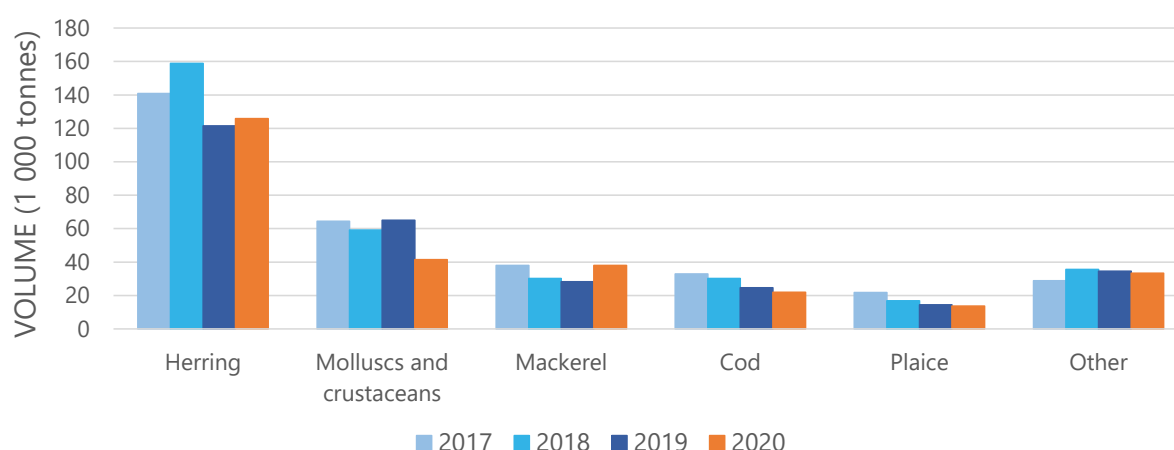
The landings from the Danish fleet amounted to 777 334 tonnes in 2020, a slight 6 % decrease from the 2017-2019 average. More than half of the landings – 472 387 tonnes – were made up of industrial fish, a substantially stable landing that was only 1 % less than the 2017-2019 average. However, landings of other species decreased by 14 %⁹⁸.

⁹⁸ See: Danmarks Statistik, <https://www.statistikbanken.dk/fisk2>.

Figure 15: Danish total landings of industrial and non-industrial fish, 2017-2020

Source: [Danmarks Statistik](#)

When it comes to non-industrial fish, the decrease in landed volumes from the 2017-2019 average mainly regarded herring which dropped 10 %, molluscs and crustaceans which dropped 34 % and were followed by cod and plaice which dropped 25 % and 22 %, respectively. On the positive side, landed volumes of mackerel increased 18 % in 2020, compared with the previous three years' average.

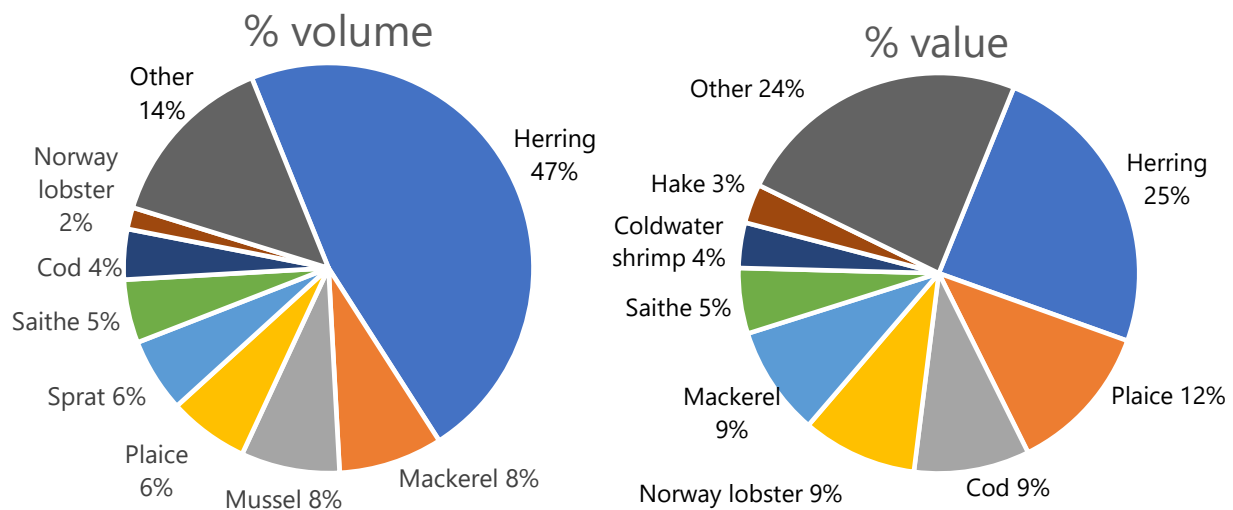
Figure 16: Danish total landings of non-industrial fish by species, 2017-2020

Source: [Danmarks Statistik](#)

First sales in Denmark reached 243 161 tonnes and EUR 281 million in 2020⁹⁹. This represented a 7 % decrease in volume and 21 % decrease in value compared with the 2017-2019 average and thus accounted for about 30 % of landings.

Herring covered almost half of these sales, accounting for 47 % of total volumes. However, its 25 % share of total value was much lower, due to the fact that other species are sold at much higher prices. These species include plaice with 6 % of volume, 12 % of value; cod with 4 % of volume, 9 % of value; and Norway lobster with 2 % of volume, 9 % of value.

⁹⁹ See: EUMOFA, <https://www.eumofa.eu/data>.

Figure 17: First sales of fish, shellfish and crustaceans in Denmark by species, 2020

Source: EUMOFA

Herring, mackerel, plaice, cod and Norway lobster were the top five species in value, accounting for 64 % of total value and 65 % of total volume in 2020.

Total first sales of herring recorded a 9 % volume decrease but a 6 % value increase in 2020 compared with the 2017-2019 average. Conversely, first sales of mackerel decreased 3 % in volume and 6 % in value terms, with almost no data in November 2020. According to EUMOFA¹⁰⁰, the low level of catches of mackerel at the end of 2020 was related to fishers adapting their strategies in view of a potential Brexit in June 2020, with only limited quotas left for the autumn period. It is worth noting that both herring and mackerel are highly seasonal fisheries, with limited catches in March, April and May. This explains why they were not impacted by the COVID-19 restrictions in Denmark. In addition, they both are largely used for processed products and intended for in-home consumption.

First sales of cod plummeted to 6 665 tonnes in 2020, with a 53 % fall compared with the 2017-2019 average. Actually, the decrease began before the COVID-19 outbreak, as it was to some extent linked with a reduction of Total Allowable Catches (TACs) and quotas. The 2020 average price was above the 2017-2019 level for almost the entire year.

The volume at first sale of plaice in 2020 – 15 280 tonnes – was in line with 2018 and 2019 data but was 14 % lower than the 2017-2019 average. The average price showed a substantially flat trend, with a peak in February 2020 when volumes sold reached the lowest monthly amount. However, the 2020 price level dropped below the price level of the past three years. This may be explained by the fact that plaice is a high-end product, mainly exported to the Netherlands and then re-exported to southern EU countries, such as Italy. Therefore, its market was highly impacted by the COVID-19 crisis.

The first sale volume of Norway lobster in 2020 was lower than in 2018 and 2019, but comparable to 2017, reporting 4 130 tonnes compared with 5 749 tonnes in 2019, 4 964 tonnes in 2018 and 4 100 tonnes in 2017. The average price was lower as well, with 6.36 EUR/kg in 2020 compared with 6.98 EUR/kg to 8.19 EUR/kg from 2017 to 2019. Prices were particularly low from March 2020 to June 2020, with the lowest level – 4.86 EUR/kg – recorded in March. Just as with plaice, Norway lobster is a high-

¹⁰⁰ See: EUMOFA, 2021a, *Monthly Highlights n°2/2021*, Publications Office of the European Union, Luxembourg, pp. 1-49, <https://www.eumofa.eu/documents/20178/438560/MH+2+2021+ENpdf.pdf/43b9dda9-82c7-872a-e1f5-c3315c4514ed?t=1614789197169>.

end product, largely exported from Denmark to southern EU countries, which were hit hard by COVID-19. According to EUMOFA¹⁰¹, the Norway lobster EU market was strongly impacted by the pandemic, due to a significant decrease in demand. Because of this, the Danish Fishermen's Association (DFPO) recommended to limit catches of this species in April 2020.

Disruptions were also observed in the first sales of several other species (see table below) which are largely exported and traditionally sold, for a significant share, on the fresh market.

Table 8: Volume and price trends at first sale level of selected fish species in Denmark, 2017-2019, average-2020

Species	2020		% variation 2020/2017-2019 average	
	Volume (tonnes)	Price (EUR/kg)	Volume	Price
Hake	3 176	2.82	-37	-7
Turbot	460	8.84	-19	-9
Haddock	1 416	1.69	-39	-20
Common sole	457	10.71	-32	-8
Saithe	9 566	1.57	-39	8

Source: EUMOFA

Over the course of 2020, imports of fisheries and aquaculture products reached 1.3 million tonnes and EUR 3.37 billion, which represented decreases of 7 % in volume and 2 % in value from the 2017-2019 average¹⁰². With exports totalling 1.2 million tonnes and EUR 4.21 billion, this meant volumes increased by 2 % while values declined by 3 %¹⁰³ compared with the previous three years' average. It is worth noting that no decrease in exported volumes was observed at monthly level in 2020, even during the most severe restrictions from March through May when logistic chains faced significant difficulties. However, export prices dropped in March and April 2020 compared with past years, and remained relatively low during the following months, especially in November and December.

The main imported products in 2020 were salmon, cod and shrimp, which together accounted for 62 % of Denmark's total imported value, while the main exported species were salmon, cod and coldwater shrimp, which accounted for 55 % of total exported value.

In 2020, Denmark imported 209 536 tonnes of salmon at an average price of 5.82 EUR/kg. This was a 7 % growth compared with the previous three years' average, albeit at a 14 % lower price. Exports of this species totalled 198 134 tonnes, with an average price of 6.61 EUR/kg which represented a 13 % increase in volume but a 3 % decrease in price when compared with the 2017-2019 average. To be noted, the export price of salmon was lower than in the period 2017-2019 every month in 2020, except January and February.

Imported volumes of cod amounted to 83 962 tonnes in 2020. Compared with the previous three years' average, they were 9 % lower in volume while their average price of 4.91 EUR/kg was 6 % higher than in 2017-2019. At the same time, exports totalled 83 998 tonnes in 2020, which represented an 11 %

¹⁰¹ See: EUMOFA, 2020a, *Coronavirus response – EUMOFA's weekly data and trend analysis: bulletin collection*, Luxembourg, pp. 1-54, <https://www.eumofa.eu/documents/20178/376827/Covid+Bulletin+Collection.pdf/38ec248d-28fe-af93-a408-89a72add0fcc?t=1599127648577>.

¹⁰² See: EUMOFA, <https://www.eumofa.eu/data>.

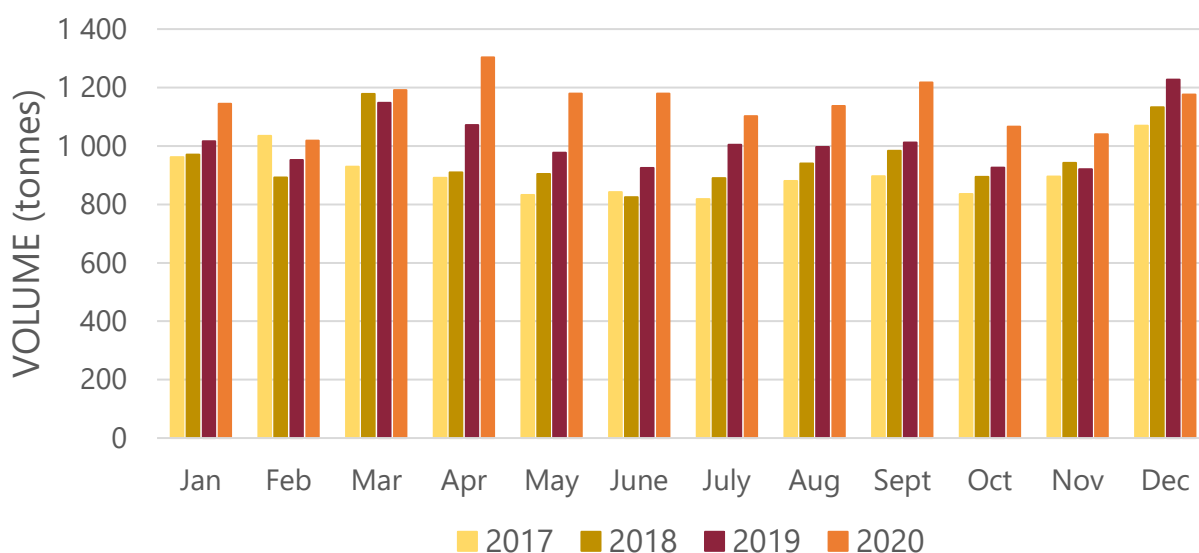
¹⁰³ *Ibidem*.

decrease from past years. The largest monthly drops in volume were recorded at 33 % in March and 31 % in April, compared with the same periods in 2017-2019. The average 2020 export price of 5.69 EUR/kg was instead 5 % higher than the 2017-2019 average, even if it was particularly low in May and also after August 2020.

Denmark is a European hub for coldwater shrimp, with high extra-EU imports and exports. In 2020, imports reached 60 590 tonnes which was a 30 % increase from the 2017-2019 average, while the average price remained stable at 3.60 EUR/kg. Exports of coldwater shrimp totalled 63 394 tonnes, for a 22 % increase from the average of the previous three years. The average price of 4.2 EUR/kg was 14 % lower than in the past.

In 2020, household consumption of fresh and chilled fisheries and aquaculture products increased by 13 % in volume compared with 2019¹⁰⁴. This was much higher than the 9 % annual growth observed during the previous two years. The increase was remarkable in April, May and September 2020, which showed increases of 22 %, 21 % and 20 %, respectively, from the same months in 2019. This was a clear impact of the national lockdown measures, which led to the development of teleworking and the closure of HoReCa.

Figure 18: Household consumption of fresh fisheries and aquaculture products in Denmark, 2017-2020



Source: EUMOFA elaboration of EUROPANEL data

Salmon, the main species consumed in Denmark, accounted for 35 % of total volume and 49 % of total value of Danish household consumption of fresh fish in 2020. Salmon consumption grew a considerable 13 % in 2020, compared with 2019, mainly in April, July and September when the volume increases from the same months in 2019 were 23 %, 23 % and 28 %, respectively,

After salmon, the second highest consumed species in Denmark is flounder, which accounted for 9 % of total consumption volume and 8 % of total value in 2020. Even if the household consumption of this species declined 2 % from 2019, marked peaks were observed in May, July, August and October 2020 which showed increases of 12 %, 46 %, 15 % and 27 %, respectively, compared with the same months in 2019.

¹⁰⁴ *Ibidem*.

2.2.3.4 Aquaculture production and out-of-home consumption

There is no available data on 2019 and 2020 aquaculture production in Denmark. Thus, the impact of COVID-19 cannot be assessed quantitatively on the level of production.

However, by looking at the household consumption of fresh trout¹⁰⁵ – the main farmed species in Denmark – it emerges that in 2020 consumption increased in volume by 13 % from 2019, and by 5 % from the last three years' average and, further, it suggests an increase in retail sales. In addition, trout exports increased 10 % in volume in 2020 compared with 2019. Volumes dropped in March and April and grew considerably in June and July 2020. However, prices decreased by 6 % in 2020 compared to 2019.

Stakeholders interviewed highlighted that aquaculture producers continued to bear costs (feed, oxygen, electricity, salaries etc.) during the crisis in order to maintain their livestock, even when the HoReCa market stopped. Based on their feedback, Table 9 provides an overview of the impact of the restrictions on aquaculture.

Table 9: Qualitative assessment of COVID-19 impact on sales outlets of aquaculture products

Sales outlet	COVID-19 impact
Export	High. Prices for trout and salmon decreased. Difficulties in selling on foreign markets.
HoReCa	High. The sector was closed by the restrictive measures in March, April and December 2020.
Large-scale retail	High. Household consumption increased in 2020.

Source: own elaboration

Limited data are available on Denmark's out-of-home seafood consumption in 2020 but some things are known.

- **Restaurant sales fell** by 29 % between March and October 2020, with the decrease especially evident in March, April and May¹⁰⁶.
- **Consumption of processed products in foodservice decreased** by 14 % in 2020 compared with the 2017-2019 average, thus falling below 18 000 tonnes¹⁰⁷.

¹⁰⁵ *Ibidem.*

¹⁰⁶ See: Danmarks Statistik - <https://www.dst.dk/da/Statistik/nyt/NytHtml?cid=31183>.

¹⁰⁷ The source of out-of-home consumption data is Euromonitor International, Fresh food and Packaged food, 2021. Although Euromonitor International makes every effort to ensure that it corrects faults in the Intelligence of which it is aware, it does not warrant that the Intelligence will be accurate, up-to-date or complete as the accuracy and completeness of the data and other content available in respect of different parts of the Intelligence will vary depending on the availability and quality of sources on which each part is based. Euromonitor International does not take any responsibility nor is liable for any damage caused through the use of our data and holds no accountability of how it is interpreted or used by any third-party.

Table 10: Qualitative assessment of restrictions by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
Retail	High. Strong increase in retail sales, due to the HoReCa closure. Prepared/preserved products were preferred to unprocessed ones.
First sale	Medium/high. There was a marked impact on first sales of several species (e.g., Norway lobster, plaice, hake, turbot, haddock, sole and saithe). At the same time, other relatively important species (such as herring and mackerel) were not impacted.
Aquaculture	Medium/high. In a context of difficult sales, fish farmers faced costs required to keep the livestock alive. However, the main farmed species, trout, saw both household consumption and exports increase.
Import-Export	Medium/high. Exports showed negative trends in price in March and April 2020. From a general perspective, international trade flows showed mixed trends across periods and species.

Source: own elaboration

2.2.4 Analysis of COVID-19 effects

The stakeholders interviewed for this study reported that Danish consumers' behaviour was considerably modified by the COVID-19 crisis, both in terms of types of products consumed and place of consumption. Indeed, consumption was impacted by the closure of HoReCa both at national level and on export markets. In general, the consumption of processed and frozen products increased, while the consumption of fresh products decreased. However, available data ¹⁰⁸ also show that the household consumption of fresh products increased.

First sale prices and volumes of herring and mackerel – currently the main species in Denmark – were not significantly impacted. However, high-end species such as Norway lobster, hake, plaice, turbot, haddock, sole and saithe, which are intended for fresh markets, export markets and the HoReCa sector, were impacted. As there were fewer sales for these species, their prices decreased at first sale and export level. Disruptions mainly occurred at the beginning of the crisis, in the spring of 2020, with some of them remaining until the end of the year.

The demersal fleet was particularly impacted. Workers had to endure difficult working conditions, fewer working days and reduced income which, in turn, impacted productivity.

In Denmark's aquaculture production, rainbow trout accounts for almost 90 % of volume and value; other farmed species are salmon and mussel. No specific data on production and ex-farm prices are available for 2019 and 2020. However, export data on these species show that the volume of trout exported by Denmark in 2020 increased from 2019, while that of mussel fell. In addition, according to stakeholders' feedback, the COVID-19 crisis had a high impact on working conditions and workers' productivity in the aquaculture sector.

As for the support measures adopted to mitigate the disruptions, the stakeholders interviewed shared their suggestions:

¹⁰⁸ See: EUMOFA, <https://www.eumofa.eu/data>.

- **Storage of products** is a possible tool to limit the impact of the crisis on production, but it cannot be considered a fully satisfactory measure for products initially intended for the fresh market.
- **Measures targeted for aquaculture** should cover costs linked to the **maintenance of livestock** (feed, oxygen, salaries).
- **Communication campaigns** should be implemented to promote consumption of fresh species and allow price recovery.
- **A special status** should be recognised for the fisheries and aquaculture sector.
 - Mobility of workers is a key issue in the sector. The recognition of crew members as “priority workers” would allow them to cross borders in order to maintain the fishing activity of the fleet.
 - Logistical flow is important for fresh and perishable products. Therefore, the need to ensure timely border crossings for trucks is fundamental.
- **The resilience of the sector should be promoted** in several ways, including:
 - promoting the adaptation of production strategies to the new market conditions, including strategies for selling, such as online and home deliveries adopted at local level;
 - promoting the use of market intelligence tools;
 - increasing the possibilities of banking fishing quotas from one year to the next.
- **To improve food security**, the way could be paved for the sustainable growth of EU aquaculture, focusing on governance, licence granting and levelling the playing field with EU imports. The level playing field could be strengthened through communication campaigns highlighting the high level of EU standards and the content of trade agreement with third countries.

Table 11: Qualitative assessment of countermeasures adopted by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
First sale	Low. Stocking might not be a satisfactory tool to reduce the supply of fresh products.
Aquaculture	No available evidence.
Import-Export	No available evidence.
Retail	No available evidence.

Source: own elaboration

2.3 France

KEY FINDINGS

- **Restrictive measures impacted trade flows.** The French fisheries and aquaculture sector saw trade flows severely impacted by the restrictive measures set by both the national government and partner countries which hit HoReCa and export markets.
- **Fishing industry impact varied according to vessel size, target species and region of activity.** In general, large-scale vessels were the most impacted because their catches targeted high-value species intended for HoReCa and export markets.
- **Farmed products endured negative impact on sales and prices due to demand decrease.** Impacts varied according to the species and the farmers' marketing strategies, such as whether they sold through direct sales or through wholesalers.
- **Trade was significantly disrupted, especially exports to Spain and Italy,** the main market outlets of French products.
- **Consumption was highly impacted.** After an immediate shift of consumer habits towards long shelf-life products, the consumption of local products increased as did consumer interest in pre-packaged fish and fish meals.

2.3.1 Introduction and characteristics of the market

In 2018, France was the EU's fourth largest producer of fisheries products and its second largest producer of aquaculture products. The French fishing fleet was made up of 6 379 vessels, with a total capacity of 177 126 GT and 967 643 kW. Of these vessels, 86 % were less than 12 m, 11 % were between 12 m and 23 m, and 3 % exceeded 23 m. Further, 15 % of vessels used trawls as their main gear, 27 % used traps, 32 % used gill nets and entangling nets, and 18 % used hooks and lines. In 2017, employment in the French fishing fleet had reached 6 623 FTE¹⁰⁹.

According to DG MARE¹¹⁰, there are 16 POs and two associations of POs formally recognised in France. Of the 16 POs, 14 operate in the fisheries sector and two in aquaculture. Both PO associations operate in the fisheries sector.

Table 12: World, EU-28 and French catches and aquaculture production in 2018, in 1 000 tonnes

Production	World	EU-28	France	% of world	% of EU-28
Catches	97 232	5 337	588	0.60	11.02
Aquaculture	114 462	1 319	187	0.16	14.18
Total	211 694	6 656	775	0.37	11.64

Source: Eurostat and FAO

¹⁰⁹ See: EU Fleet Register, https://webgate.ec.europa.eu/fleet-europa/search_en, and Carvalho N. et al., 2019, *The 2019 Annual Economic Report on the EU Fishing Fleet (STECF 19-06)*, Publications Office of the European Union, Luxembourg, pp. 1-496, <https://stecf.jrc.ec.europa.eu/documents/43805/2483556/STECF%2019-06%20-%20AER%20-%202019.pdf>.

¹¹⁰ See: <https://ec.europa.eu/oceans-and-fisheries/system/files/2021-05/list-of-recognised-producer-organisations-and-associations-of-producer-organisations.pdf>.

The main species landed in 2018 in France¹¹¹ were scallop¹¹² which accounted for 19 % of landings value and 20 % of volume, common sole with 7 % of value and 1 % of volume, monkfish with 7 % of value and 4 % of volume, and hake with 5 % of value and 4 % of volume. In the same year, oyster was by far the main farmed species, accounting for 55 % of production value and 45 % of volume. It was followed by trout with 18 % of total value and 19 % of total volume, and mussels which had 18 % of value and 28 % of volume¹¹³.

In 2019, first sales in France amounted to 178 488 tonnes with a value of EUR 614 million¹¹⁴. The top three auctions – Lorient, Guilvinec and Boulogne-sur-Mer – covered 30 % of first sale volume and 28 % of value.

About 100 fish wholesale companies operate in 11 wholesale market places. Of these, 42 are based in Paris-Rungis. In 2018, Rungis sold 92 786 tonnes of fisheries and aquaculture products for a value of EUR 978 million¹¹⁵.

In 2017, total sales of the French fish processing industry, which comprised 311 companies and 12 003 employees, reached EUR 4.46 billion¹¹⁶.

Salmon, the main species imported in France, accounted for 21 % of import value in 2019, followed by warmwater shrimps, which accounted for 9 %, and cod for 8 %. Salmon was also the main species exported with 11 % of export value, followed by oyster and yellowfin tuna which each accounted for 6 %. In the same year, the main countries of origin were the United Kingdom with 13 % of total import value, and Sweden with 11 %. The main countries of destination were Spain and Italy, each accounting for 5 % of export value¹¹⁷.

In 2018, apparent consumption in France was estimated at 35.52 kg per capita¹¹⁸. The most consumed fresh species by households were salmon, cod, saithe, trout and gilthead seabream¹¹⁹.

2.3.2 Timeline of legislative measures

In an effort to limit the spread of COVID-19, France imposed strict containment measures in 2020, including one lockdown from 17 March to 11 May, and a second from 28 October to 15 December. These resulted in the cessation of fishing activity for many fleet segments. To be noted that the French fleet was also impacted by the restrictive measures taken by neighbouring countries, mainly Spain and Italy, which are the main export destination countries of French fisheries and aquaculture products.

Other measures – related to the usual marketing and distribution channels for fisheries and aquaculture products – also had significant impacts on the sector.

- **Closure of out-of-home catering.** Bars and restaurants were authorised to open only during the summer period – from 28 May until 28 October, which was the beginning of the second lockdown).

¹¹¹ See: EUMOFA, <https://www.eumofa.eu/data>.

¹¹² Scallops include 90 % of great Atlantic scallop and 10 % of other scallop species. It should be noted that 2018 was a particularly exceptional year for great Atlantic scallop fisheries, with landed volumes having doubled from 2017 to 2018 (27 000 tonnes in 2017, 60 000 tonnes in 2018, 33 000 tonnes in 2019 – see: Eurostat, <https://ec.europa.eu/eurostat/data/database>).

¹¹³ See: EUMOFA, <https://www.eumofa.eu/data>.

¹¹⁴ *Ibidem*.

¹¹⁵ See: <https://www.rungisinternational.com>.

¹¹⁶ See: Eurostat – Structural Business Statistics, <https://ec.europa.eu/eurostat/web/structural-business-statistics>.

¹¹⁷ See: EUMOFA, <https://www.eumofa.eu/data>.

¹¹⁸ See: EUMOFA, 2020b, *The EU Fish Market*, Publications Office of the European Union, Luxembourg, pp. 33-55, https://www.eumofa.eu/documents/20178/415635/EN_The+EU+fish+market_2020.pdf/fe6285bb-5446-ac1a-e213-6fd6f64d0d85?t=1604671147068.

¹¹⁹ *Ibidem*.

- **Closure of schools and teleworking.** Schools were closed during the first lockdown, and teleworking was compulsory during the first lockdown and has been highly recommended since then. The combination of the closings and teleworking resulted in a drop in the activity of school canteens and public and private enterprises.

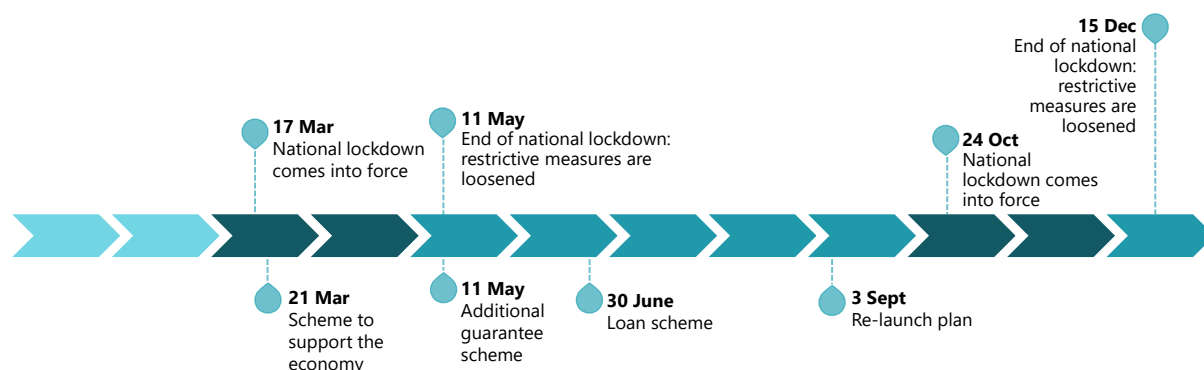
In addition to the support instruments made available at EU level, the French government introduced measures common to all sectors in order to limit the impacts of the crisis. These included compensation for partial unemployment, deferred payments for taxes, direct tax rebate, rent payment assistance, and government guaranteed cash loans. It also introduced the following measures that are specific for the fisheries and aquaculture sector.

- **National solidarity fund** for the fisheries and aquaculture sector.
- **Short-time working.** From 1 June 2020 to 30 September 2020, companies involved in maritime transport, sea fishing and marine aquaculture came under a specific regime of short-time working, which maintained an allocation of 70 % of the gross salary paid. The allocation decreased to 60 % for other economic activities.
- **Regional solidarity funds.** Compensation measure were put in place in some regions, such as Occitania's implementation of a regional fund that supports SMEs. Due to the absence of annual accounting statements, SMEs had not been eligible to receive compensation under the national solidarity fund.

In addition, a recovery plan of EUR 100 billion was launched on 3 September 2020 for 2021-2022, of which EUR 50 million was devoted to the fisheries and aquaculture sector, through the following actions.

- **Environmental fund.** Set up for the fishing and aquaculture sectors, it is meant to support activities such as innovation and energy saving.
- **Recruitment campaign.** Campaign launched to promote professions linked to the fishing and aquaculture sector, with the aim of facilitating the recruitment of seafarers and qualified personnel.
- **Payment delays.** Action allows postponement of payments to employees and employer contributions.

Figure 19: Timeline of French restrictive measures and policy responses adopted in 2020



Source: own elaboration

2.3.3 Assessment of the seafood availability and consumption

2.3.3.1 Socio-economic impact on the fleet and evolution of marine gasoil prices

The year 2020 saw a strong decrease in landings in France¹²⁰. The French Institute for Ocean Science (IFREMER) indicated that there was an overall drop in fishing industry production, especially during the first three weeks of restrictions. The decrease varied from 60 % to 75 %, depending on fleet segments and regions. According to its estimates, the production drop equalled a loss of 40 000 tonnes, which was a 14 % decline in volume from previous years, and EUR 93.5 million, a 13 %-decline in value¹²¹.

Table 13: Socio-economic indicators on the French fleet, in 2018-2020

Socio-economic indicators	2018	2019*	2020*	% variation 2019/2020
Employment (FTE)	7 817	7 419	6 316	-14.90
Live weight of landings (1 000 tonnes)	570.80	549.10	404.20	-26.00
Value of landings (EUR million)	1 339.20	1 231.40	965.40	-220.00
Gross Value Added (GVA) (EUR million)	707.30	622.00	476.00	-23.50
Gross profit (EUR million)	214.60	166.20	107.70	-35.20
Net profit (EUR million)	122.00	72.00	9.70	-86.50
GVA to revenue (%)	54.00	52.00	50.20	-3.30
Gross profit margin (%)	16.40	13.90	11.40	-18.20
Net profit margin (%)	9.30	6.00	1.00	-83.00

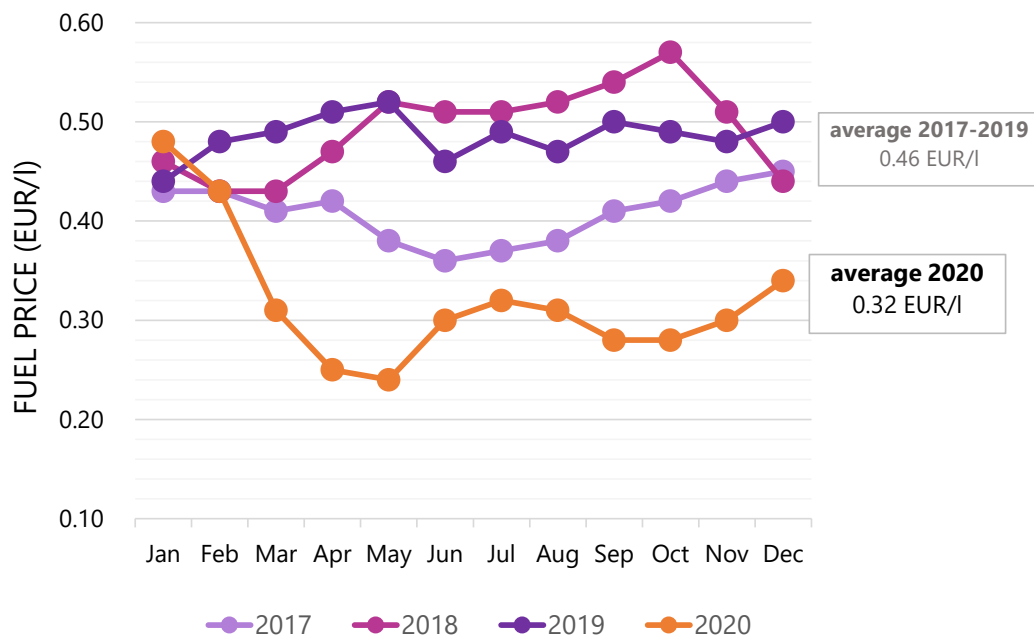
Source: Carvalho N. et al., 2020, *The impact of COVID-19 on the EU-27 fishing fleet*

Note: * Figures for 2019 and 2020 are estimates

The fuel price in France was between 0.24 EUR/litre and 0.34 EUR/litre from March to December 2020. This was a drop from the period October 2017 to February 2020, when the price had mainly been between 0.36 and 0.57 EUR/litre.

¹²⁰ See: Carvalho N. et al., 2020, *The impact of COVID-19 on the EU-27 fishing fleet*, Publications Office of the European Union, Luxembourg, pp. 1-34, <https://publications.jrc.ec.europa.eu/repository/handle/JRC122999>.

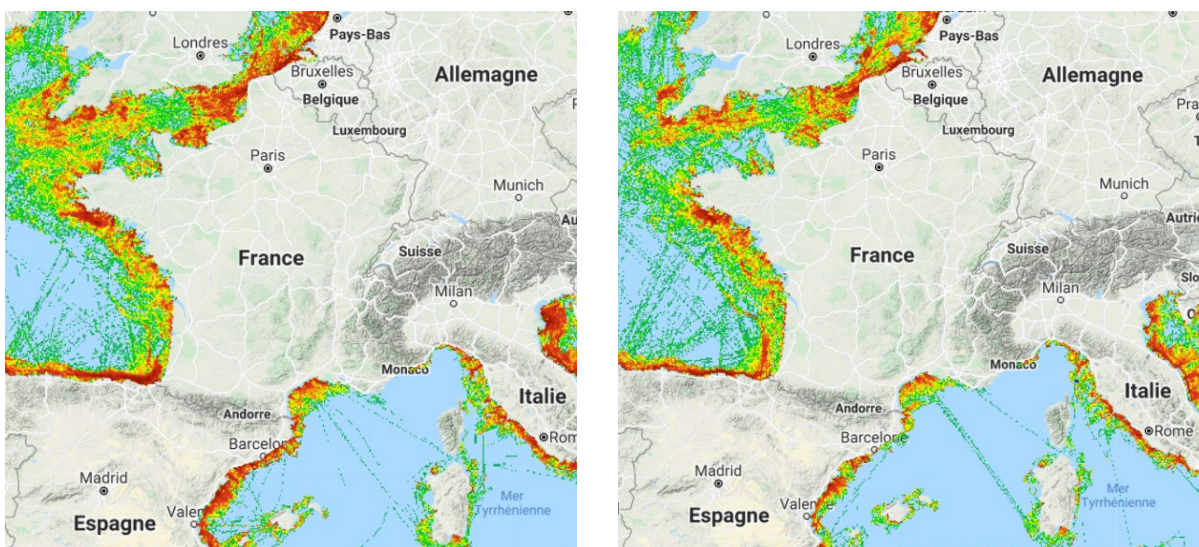
¹²¹ See: <https://www.ifremer.fr/Expertise/Peches-maritimes/Bilan-de-l-etat-des-populations-de-poissons-pechees-en-France/Bilan-2020-de-l-etat-des-populations-de-poissons-pechees-en-France/Peche-et-Covid-19#:~:text=Comment%20la%20fili%C3%A8re%20p%C3%Aache%20traverse%2Dt%2Delle%20la%20temp%C3%AAt%20COVID%20%3F&text=Face%20%C3%A0%20la%20crise%20du,sortis%20que%20ceux%20qui%20exportent.>

Figure 20: Monthly average fuel prices in France, 2017-2020

Source: EUMOFA elaboration of MABUX data

2.3.3.2 Fishery activity

Map 5 illustrates the fishing vessel route density along the French coasts¹²² and clearly shows the variation between April 2019 and April 2020.

Map 5: Fishing vessel route density in France, April 2019 and April 2020

Source: EMODnet Human Activities

Note: April 2019 (left) and April 2020 (right)

According to EMODnet Human Activities data, there was an 8.84 % decrease in fishing vessel density between January and June 2020 and January and June 2019. This is consistent with what was reported by the stakeholders interviewed about the cessation of a great number of fishing vessels during the

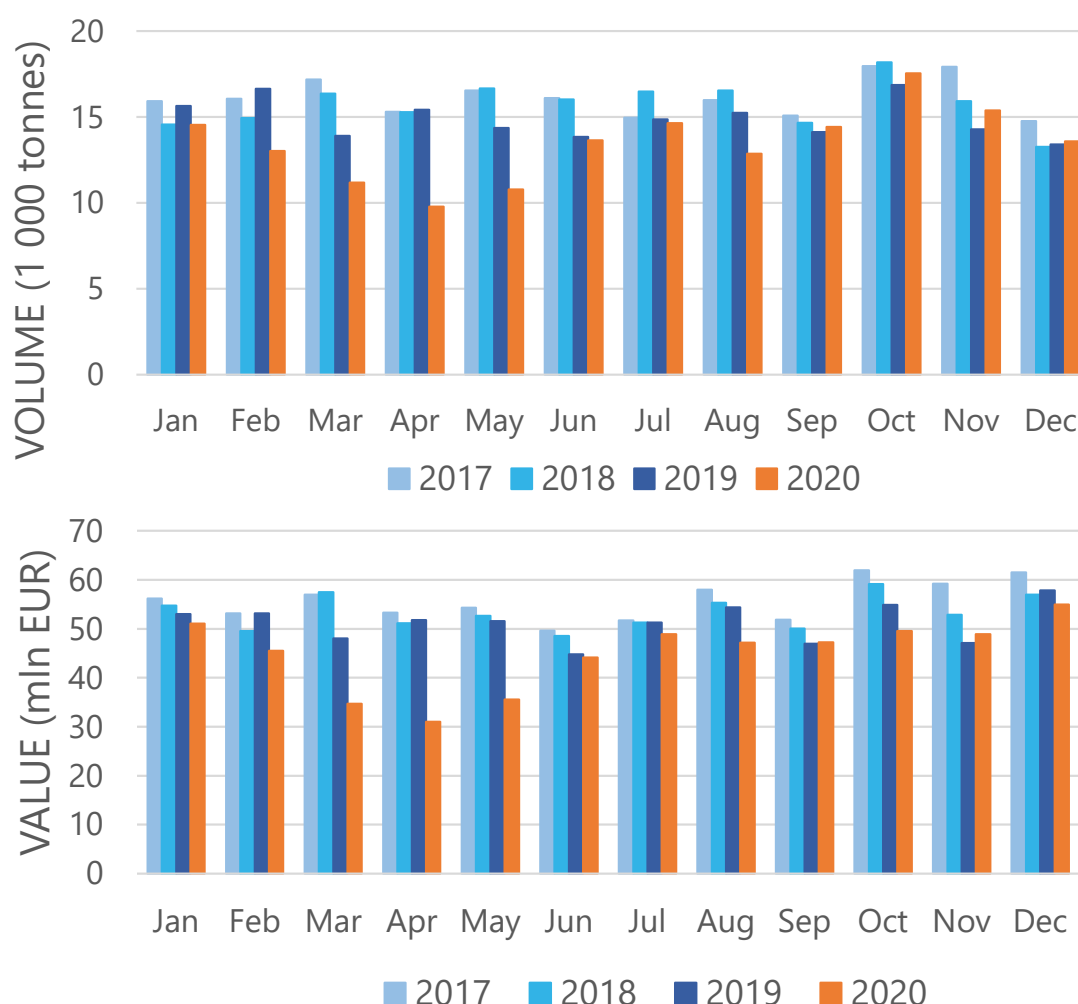
¹²² Vessels routes density are based on the Automatic Identification System (AIS), which is not required for fishing vessels under 12 m. Thus, their activities are not included in these maps.

first lockdown. IFREMER also estimated there had been a 10 % decrease in fishing activity by vessels longer than 12 m and equipped with a vessel monitoring system between 2019 and 2020. According to this, vessels spent 13 150 fewer days at sea in 2020 than in 2019¹²³.

2.3.3.3 First sale, imports, exports and household consumption

In 2020, first sales in France decreased by 14 % in volume and 16 % in value compared with the average of the previous three years¹²⁴. First sale volume reached its lowest level between April and May, with drops of 36 % and 32 %, respectively, from the average of the same months in 2017-2019. During the summer, it increased to levels comparable with 2019, most likely due to the end of the first wave of COVID-19 and of the most restrictive measures.

Figure 21: First sale of fish, shellfish and crustaceans in France, 2017-2020



Source: EUMOFA

In volume terms, the Bay of Biscay was the most impacted in 2020, with first sale dropping 21 % from the 2017-2019 average, while the Celtic Sea recorded a lower 13 % decrease. In value terms, the North Sea suffered the highest drop, reaching 25 %, while the less-impacted Mediterranean dropped 6 %. According to stakeholders interviewed, trends vary between regions and sea basins in relation to the type of vessels (small or large), the marketing strategies (direct sales or auction sales) and the catch

¹²³ See: IFREMER.

¹²⁴ See: EUMOFA, <https://www.eumofa.eu/data>.

composition. One might assume that these variations are mainly linked to the COVID-19 outbreak. However, it should be noted that, in the Mediterranean, 2020 was the first year of the implementation of a multi-annual plan for demersal stocks, while the North Sea and Celtic Sea were also impacted by Brexit.

Table 14: Monthly first sales of fish, shellfish and crustaceans in France by seaboard, % variation 2020/2017-2019 average

Month	Bay of Biscay		Celtic Sea		Mediterranean Sea		North Sea		National Total	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Jan	-14	-8	7	0	-9	-4	-12	-19	-5	-7
Feb	-28	-13	-7	-6	2	0	-17	-38	-18	-12
Mar	-36	-33	-20	-32	-43	-41	-28	-58	-29	-36
Apr	-40	-39	-39	-52	-13	-22	-20	-25	-36	-40
May	-28	-30	-42	-43	-25	-23	-21	-25	-32	-33
Jun	-12	-8	-13	-4	3	-1	-6	-16	-11	-7
Jul	-9	-4	5	-3	-10	-7	-18	-21	-5	-5
Aug	-27	-17	-10	-17	-5	0	-13	-16	-19	-16
Sep	-15	-8	25	2	3	7	0	-14	-1	-5
Oct	-28	-27	28	-6	17	19	5	-10	-1	-16
Nov	-7	-7	3	-4	-17	-9	-11	-23	-4	-8
Dec	-4	-9	7	1	-8	2	-16	-18	-1	-6
Total	-21	-17	-4	-13	-8	-6	-13	-25	-14	-16

Source: EUMOFA

The top-five species in terms of volume landed in France are scallop, sardine, hake, monkfish and mackerel. Together, they accounted for more than 40 % of the French first sales in 2020.

Scallop was the top species sold at first sale level in France in 2020, accounting for 12 % of first sale volume and 10 % of value. In France, fishers are not allowed to fish scallop between May and October each year, as to give the resource time to reproduce. The impacts of COVID-19 on this species seem limited, as the first lockdown coincided with the closure of fishing season: compared with the previous three years' average, first sales remained stable in volume and increased a slight 6 % in value. To be noted that in 2020, POs launched a campaign to promote the consumption of this species (*coquilles St-Jacques de la Baie de St Brieuc*).

Sardine was second highest species sold at first sale level in 2020, with 12 % and 10 % of volume and value, respectively. Mackerel was fifth, with 4 % of volume and 2 % of value. Neither of these species seem to have been impacted by COVID-19. Compared with the previous three years' average, first sales volume and value of sardine increased by 15 % and 2 %, respectively; those of mackerel increased by 11 % and 8 %, respectively.

In 2020, hake was the third highest species sold at first sale level in France, with 7 % of volume and 9 % of value. Its first sales decreased a significant 31 % in volume and 25 % in value in 2020 compared with the previous three years' average. This drop mainly occurred in the period between March and July.

Monkfish, the fourth highest species sold at first sale in France in 2020, accounted for 6 % of total volume and 9 % of total value. However, this represented a 26 % drop in volume and 27 % drop in value from 2017-2019, mainly due to sales in April and May. This is likely due to the fact that, during those months, large vessels targeting this species stopped their activity, as a result of the closure of HoReCa and export restrictions, mainly to the Italian and Spanish markets. On the other hand, the impact on its average price was limited. This could be explained by the intervention of POs that stocked unsold volumes to keep the price level stable. To be noted that monkfish's first sale price recorded its lowest level since 2017 at the end of 2020, which is likely related to the second wave of the disease, the second lockdown and the renewal of sanitary measures in neighbouring countries. Indeed, during the second lockdown, vessels targeting this species continued to fish and to land large volumes but with limited possibilities to sell them, which inevitably had an impact on the average price.

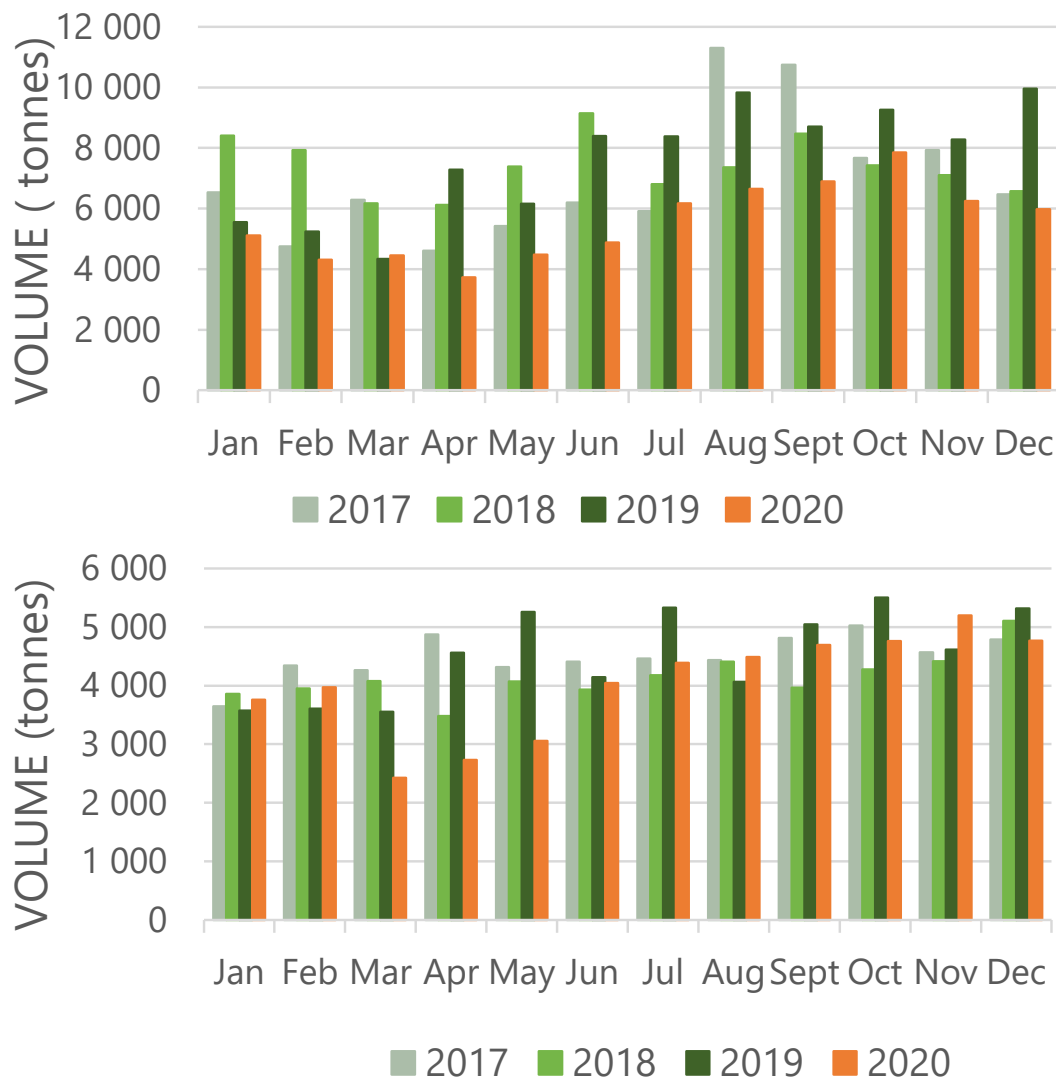
At the sector level, stakeholders interviewed reported that the impact of COVID-19 was particularly harsh for the fish species targeted by the large-scale fleet, as they are landed large volumes but then had difficulties finding market outlets or export opportunities. These species include monkfish, ray, megrim and turbot. First sales data show decreases of first sale volumes ranging from 8 % for ray to 17 % for megrim and 28 % for turbot from the 2017-2019 average. First sale prices decreased a slight for 4 % for ray and 3 % for turbot but increased for megrim.

In addition, POs and PO associations reported particular impacts on the largest sizes of the most valuable species, such as monkfish, seabass and turbot, which under normal conditions are sold to restaurants. According to these stakeholders, such products were sold at lower prices during the pandemic.

Overall, national level data do not show a significant impact of COVID-19 on French trade in 2020. The total volume of imports remained at the same level as the average of the three previous years, and the total volume of exports decreased by only 3 % from the 2017-2019 average¹²⁵. However, more significant disturbances are seen in both imports and exports' total values, which recorded decreases of 6 % and 9 %, respectively, from the previous three years' average.

Trade flows with Italy and Spain were particularly impacted by the restrictions they had set and those set by France, such as closing borders and closing restaurants. Compared with the 2017-2019 average, in 2020 French exports to Italy decreased by 8 % in volume and 14 % in value, while those to Spain dropped by 24 % in volume and 21 % in value.

¹²⁵ *Ibidem*.

Figure 22: French exports of fisheries and aquaculture products to Spain and Italy, 2017-2020

Source: EUMOFA elaboration of Eurostat-Comext data
 Note: exports to Spain (above) and exports to Italy (below)

Trade data also show an overall decrease in export and import prices of the main traded species in 2020 compared with past years. To this regard, in 2020 French imports of monkfish recorded a 21 % price drop from the 2017-2019 average, making the import price of monkfish lower than its first sale price for most of 2020. As a consequence, monkfish imports recorded in 2020 were considered “unnecessary” by stakeholders, as there were already difficulties in finding markets for the locally caught species, and what was unsold had to be stored by POs¹²⁶.

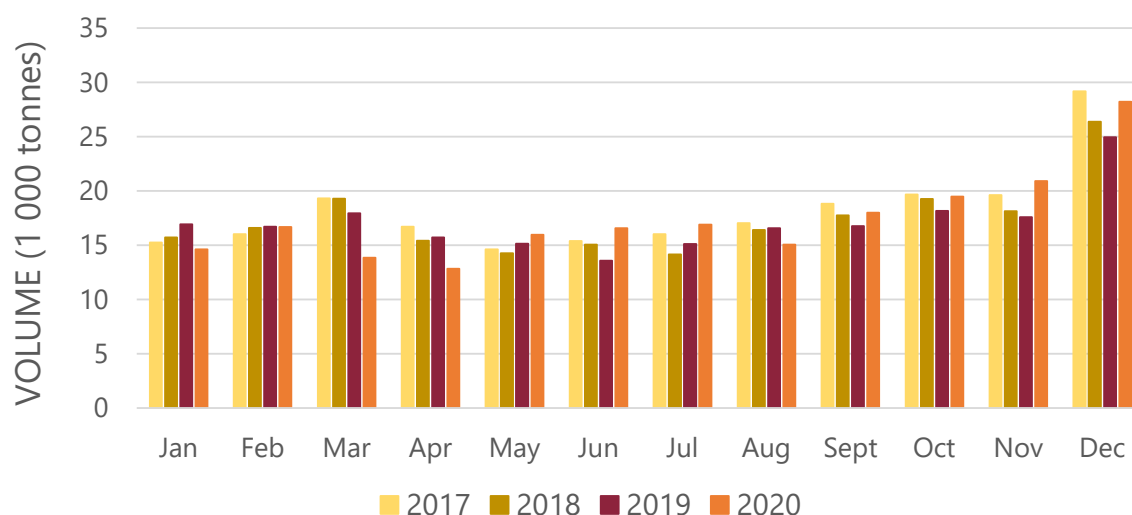
The volume of household consumption of fresh fisheries and aquaculture products in 2020 in France was overall at the same level as the previous years, with consumption of fresh fisheries products increasing 2 % and aquaculture products decreasing 1 % from the previous three years’ average¹²⁷. However, in March and April, it recorded significant decreases of 23 % and 18 %, respectively, compared with the same months in 2019. These months were indeed characterised by panic buying,

¹²⁶ See: <https://lemarin.ouest-france.fr/secteurs-activites/peche/38491-les-pecheurs-de-bretagne-cessent-de-soutenir-le-marche-de-la-lotte>.

¹²⁷ See: EUMOFA, <https://www.eumofa.eu/data>.

with consumers stockpiling long shelf-life products, such as rice, pasta, flour and canned products, and making fewer purchases of fresh products. Household consumption of fresh fish products then increased by 22 % in June and 12 % in July, after the end of the first lockdown. It also increased at the end of the year, even in the context of the second lockdown, with December 2020 marking a 13 % increase from December 2019 as well as the highest household consumption of fresh products in 2020.

Figure 23: Household consumption of fresh fisheries and aquaculture products in France, 2017-2020



Source: EUMOFA elaboration of EUROPANEL data

The main species consumed fresh and chilled in France are salmon, cod and saithe. While the consumption of cod decreased 6 % in volume and saithe decreased 12 % between 2019 and 2020, salmon consumption increased 27 %.

2.3.3.4 Aquaculture production and out-of-home consumption

Aquaculture production in France is dominated by shellfish production, mainly oysters and mussel. Of note, COVID-19's impact on aquaculture was analysed for this report based only on qualitative information gathered from stakeholders.

Out-of-home consumption in France fell by 43 % between January and August 2020¹²⁸. After the first lockdown, teleworking limited the recovery of the out-of-home sector. In addition, 78 % of French people changed their food consumption habits by, for example, increasing the number of meals taken at home and at-home cooking, and consuming more local products¹²⁹. To be noted that the French government also kept bars and restaurants closed during the second lockdown, which had a significant negative effect on out-of-home consumption.

2.3.4 Analysis of COVID-19 effects

While the French fishing industry was undeniably impacted by the COVID-19 crisis, the exact extent of this impact and relative consequences were not equally spread across fleet segments, target species or regions. For instance, in the Mediterranean small- and large-scale fishing vessels were impacted in the

¹²⁸ See: Kantar, 2020, *Out-of-home food and drinks landscape. COVID-19 impact and the road to recovery, Issue 3 – November 2021*, pp. 1-29, <https://www.escripfnews.com/wp-content/uploads/2020/11/turtl-story-covid-19-impact-in-out-of-home-food-and-drinks-c.pdf>.

¹²⁹ See: <http://lemondedusurgele.fr/Actualites/Marches-et-reglementation/Fiche/8352238/La-crise-sanitaire-impacte-toute-la-filiere-de-la-consommation-hors-domicile#.YHF86-gzZPY>.

same manner, as they target the same species. However, other sea basins, such as the North or Celtic Seas, fleet segments were impacted differently:

- **Small-scale fishing vessels, which continued to go out to sea** for shorter fishing trips (lasting fewer hours), had the possibility of finding direct or local outlets for their catches. The movement of people to coastal areas during the lockdown had positive impacts, as consumers preferred local and fresh products.
- **Most large-scale, offshore vessels stopped their activities**, especially during the first lockdown, with a subsequent fall in volumes sold.

This is also related to the different catch composition of the two fleet segments. Large vessels target demersal species, such as monkfish or ray, which are usually sold with important volumes to restaurants and canteens, or exported to other EU Member States, particularly Italy and Spain. Small-scale vessels offer a daily catch of several species, such as lobster or spider crabs, sold live. As a consequence, species targeted by large-scale fishing vessels recorded high price reductions at the first sale stage.

The impact of the crisis on the different fish species also depended on their seasonality, as no effects were observed on catches with seasons that did not coincide with lockdowns. For example, scallop was not impacted, as its fishing season mostly took place before the first lockdown.

The auctions also curtailed or limited their activities. According to the auction association, one auction was stopped during the first lockdown while the others limited their activities but remained operational. This was due to the fact that the closure of the HoReCa reduced the available outlets for the fisheries and aquaculture sector. The Mediterranean fisheries were significantly impacted during the first lockdown, due to the closure of open-air markets.

COVID-19 had only limited impacts on employment, mostly related to the foreign crews working on the largest vessels and on the tropical tuna fleet, whose crews left the national territory during the first lockdown.

Overall, the fisheries sector succeeded in overcoming the very first shock of the COVID-19 outbreak through the following strategies and mitigating actions:

- **Dialogue between auctions, fisheries enterprises and their representative organisations.** Participants discussed ways to limit the number of vessels at sea in order to adapt the volumes landed to the decreased demand and to keep prices at reasonable low levels.
- **Development of direct sales.** Promoting direct sales and shorter marketing channels was initiated to support small-scale fisheries.
- **Implementation of forecasting system with a 48-hour horizon.** After the first lockdown, the region of Brittany set up an IT system that gives auctions and buyers an accurate picture of the volumes and the species that will be landed 48 hours in advance, based on information communicated by fishers at sea.
- **Promotion of local products.** National campaigns promoted the consumption of French products, known by the collective trade mark of French fisheries products: Pavillon France. This initiative was implemented by "*France Filière Pêche*", an inter-branch organisation of fisheries products.
- **Participation of retailers.** Retailers were called upon to help local producers and promote French products, including by establishing direct contract with vessels.
- **Adoption of storage strategies.** Processors initiated storage opportunities in order to dampen the collapse of seafood sales.

- **Adoption of measures implemented at EU, national and regional levels.** The majority of French vessels asked for compensation for temporary cessation of activities, under the EMFF. Some POs implemented storage aid and supported the fisheries enterprises by stocking those landings which could not be sold, such as monkfish and anchovy. According to the stakeholders, however, the storage mechanism was inadequate – not offering enough aid per kg and obligating them to resell the stock before the end of the year. Due to the continuation of restrictive measures, some POs decided to stop storage from the beginning of 2021.

According to interviews, the decreased demand for shellfish due to the lockdown had a negative impact on sales and prices of farmed products. The extent of the impact varied according to the species and the marketing strategies adopted by companies, such as direct sales or sales through wholesalers. Thus, those selling their products to the HoReCa or to foreign markets faced higher negative impacts; mussel producers were able to compensate the losses linked to the demand drop during the first lockdown by increasing their sales in the summer when restaurants opened again and demand recovered, and those specialised in direct sales were even able to improve their results in 2020 compared with past years.

Farms involved in finfish production recorded losses in 2020, mainly due to the closure of HoReCa. Some companies, however, succeeded in shifting their sales by, for example, selling their production to smokers and processors¹³⁰.

At the wholesale stage, the wholesaler fishmongers' association estimated a loss of turnover of 15-20 % during the first lockdown and 10-15 % during the second lockdown¹³¹. This was due to both the COVID-19 crisis and Brexit. As a result, the wholesale companies had an estimated net margin of 1.2 % in 2020 – a very low level. Public aid mechanisms were considered very useful for mitigating the impacts of the crisis. However, the wholesaler fishmongers' association complained that the sector-specific support was limited to the fisheries stage, even though the whole chain was impacted. For the future, the challenge for this stage will be to adapt the supply to the growing demand for pre-packed products and portion fish.

According to the feedback received from the Association of Food Processing Companies (*Association des Entreprises de Produits Elaborées* – ADEPALE), the impact of the COVID-19 crisis on the fisheries and aquaculture products' processing industry strictly depended on the specific segments targeted by companies. Overall, the segments targeting large retailers did not experience a major impact.

- **The canning sector** operated at 100 % of its capacity. This sector did not experience any major shortage in supply, despite some crew issues that affected the tropical tuna fleet.
- **The smoking sector** (salmon and trout) also operated at 100 % of its capacity. Demand was volatile during the first lockdown but it then increased in the summer, and the year ended with very good sales over the holiday season. Consumer panel data¹³² report a growth of 5.1 % in volume for smoked fish in 2020 compared with 2019, including a 6.8 % increase for smoked salmon.
- **Surimi consumer panel data**¹³³ report a 9.3 %-increase in volume in 2020 over 2019.

¹³⁰ See: EUMOFA, 2020a, *Coronavirus response – EUMOFA's weekly data and trend analysis: bulletin collection*, Luxembourg, pp. 1-54, <https://www.eumofa.eu/documents/20178/376827/Covid+Bulletin+Collection.pdf/38ec248d-28fe-af93-a408-89a72add0fcc?t=1599127648577>.

¹³¹ This is a specificity in the supply chain of fisheries and aquaculture products in France. Wholesale fishmongers are important players as they provide a link between production and distribution. They prepare products in relation to market demand and expectations and ensure their quality and traceability.

¹³² See: Kantar, 2020, *Out-of-home food and drinks landscape. COVID-19 impact and the road to recovery, Issue 3 – November 2021*, pp. 1-29, <https://www.escripfnews.com/wp-content/uploads/2020/11/turtl-story-covid-19-impact-in-out-of-home-food-and-drinks-c.pdf>.

¹³³ *Ibidem*.

- **Cooked shrimp and shellfish** started 2020 with an increasing trend in sales – growing 7 % in January and 8 % in February from the same periods in 2019. However, this ended with the first lockdown, which saw April 2020 26 % lower than April 2019. After the end of the first lockdown, the market recovered and the year finished with an increase in sales.

Conversely, processors targeting the HoReCa sector experienced sharp decreases in sales during the first weeks of lockdown in March and April, when they suffered an estimated 60 % drop from the same periods in 2019, then in October and until the end of the year. The gradual reopening of restaurants and hotels, and the good figures for the summer tourist season partially compensated the losses.

Processing companies were able to benefit from general and cross-cutting national support measures that allowed partial unemployment and postponement of tax payments. However, there were no specific measures implemented for the processing sector at EU or national levels.

The first lockdown was characterised by a general decrease in the consumption of fresh and chilled products, with drops of 23 % in March and 18 % in April 2020 compared with March and April 2019, plus an increase in the consumption of long shelf-life products such as canned products. In addition, stakeholders indicated the development of short marketing channels, motivated by an increasing trend in local products consumption, which in turn had a positive impact on small-scale fisheries. However, this impact was negligible when looking at the entire sector, due to the small volume concerned. Stakeholders were not able to assess the extent to which this constituted a shift in consumption habits, as consumers adapted their behaviours to the circumstances – their teleworking meant more time for at-home cooking. Also, from the end of 2020 to the beginning of 2021, there was increasing consumer interest in fish portions and prepacked fish. It is likely that consumers prefer prepacked portions of imported salmon or cod, rather than fresh French products. This might constitute a challenge for the wholesale sector which should invest in new equipment to meet this demand.

Both small retailers (fishmongers) and large retailers (supermarkets) took advantage of the closure of some marketing channels – such as restaurants and open-air markets – during the first lockdown, as this allowed the development of e-selling. At the same time, however, online sales were limited by transport and logistic issues for fresh or live products, such as oysters.

Table 15: Qualitative assessment of restrictions by supply chain stage

Supply chain stage	Type of impacts (high/medium/low)
Import-Export	High. Trade flows to Italy and Spain were strongly disrupted. Prices of most traded species decreased.
First sale	Medium/high. Large-scale fisheries and their targeted species, such as monkfish, turbot, sole, were more impacted than small-scale. Large sized most valuable species were also highly impacted.
Retail	Medium/high. Increase of consumption of long shelf-life products only during the first lockdown saw consumer preference for French and local products; also saw increased consumption of fish portions and prepacked products.
Wholesale	Medium. Turnover dropped by 15-20 % during the first lockdown and by 10-15 % during the second.
Aquaculture	Medium/low. Companies specialised in sales to restaurants and exports were the most affected.
Processing	Medium/low. Positive impact seen in most processing sectors, especially those (producing smoked products, surimi and cooked shrimp. Processors specialised in products intended for HoReCa suffered negative impact.

Source: own elaboration

Table 16: Qualitative assessment of countermeasures adopted by supply chain stage

Supply chain stage	Type of impacts (high/medium/low)
First sale	Medium/high. Through public support and several ad hoc mitigating actions, the fisheries sector succeeded in overcoming the very first impacts of the crisis.
Retail	Medium/high. National campaign initiated to promote consumption of French products. Developed direct and online sales.
Processing	Medium. Increased supply of smoked and pre-packaged products.
Aquaculture	Medium/low. Developed direct and online sales and increased sales to smokers and processors.
Wholesale	Medium/low. Adapted products and marketing channels to the new consumer habits.
Import-Export	No available evidence.

Source: own elaboration

2.4 Italy

KEY FINDINGS

- **The Italian fisheries and aquaculture sector was significantly impacted by the restrictive measures** adopted to contain COVID-19. The HoReCa closure created disruptions in the sector's supply and demand.
- **Fishers and fish farmers were both faced with a sharp reduction in sales in March and April 2020.** While fisheries activities resumed soon after, farmers had begun freezing and storing their fish, thus increasing management costs. Both fishers and farmers opted for direct sales, online sales, door-to-door sales and home deliveries to meet demand.
- **Italian imports were highly impacted by border closure, logistical and transport issues, and a change in demand.** The high reduction in imports of fresh and frozen fish recorded in the second quarter of 2020 was partially compensated by an increase in imports of prepared/preserved products. The lower supply of farmed products from abroad also stimulated national aquaculture production.
- **Consumption was impacted by changes in availability and preferences.** Because of the HoReCa closure, retail sales increased considerably and consumer preference increased for prepared/preserved products over unprocessed ones. Direct sales, online sales and home deliveries set new purchasing habits.

2.4.1 Introduction and characteristics of the market

In 2018, Italy ranked ninth in terms of fisheries production among EU MSs, and had the fourth highest aquaculture production. Its fishing fleet was made up of 12 059 vessels, with a total capacity of 146 260 GT and engine power of 930 406 kW. Of these, 72 % were less than 12 m, 25 % were between 12 m and 23 m, and 3 % exceeded 23 m. Further, 40 % of the vessels used hooks and lines as their main gear, followed by 20 % using trawls, 19 % using gill nets and entangling nets, 15 % with surrounding nets and 6 % used dredges¹³⁴. The SSCF accounted for 66 % of total vessels and for 48 % of the engaged crew (43 % in FTE). Of the 20 268 people employed (FTE), 47 % were on 12-23 m vessels and 44 % on vessels 11 m or less¹³⁵.

At national level, Italy recognises 39 producer organisations (POs) and two PO associations. Of the 39 POs, 31 operate in the fisheries sector, seven in aquaculture and one is involved in both sectors. The two PO associations operate in the fisheries sector¹³⁶.

In 2018, total landings in Italy amounted to 201 668 tonnes worth EUR 967 million. Shrimps, anchovy and cuttlefish were the top three species in value, together accounting for 31 % of the total, while anchovy, sardine and clam were the top three species in volume, together accounting for 40 % of the total¹³⁷.

¹³⁴ See: EU Fleet Register, https://webgate.ec.europa.eu/fleet-europa/search_en.

¹³⁵ See: Carvalho N. et al., 2019, *The 2019 Annual Economic Report on the EU Fishing Fleet (STECF 19-06)*, Publications Office of the European Union, Luxembourg, pp. 1-496, <https://stecf.jrc.ec.europa.eu/documents/43805/2483556/STECF%2019-06%20-%20AER%20-%202019.pdf>.

¹³⁶ See: <https://ec.europa.eu/fisheries/sites/fisheries/files/list-of-recognised-producer-organisations-and-associations-of-producer-organisations.pdf>.

¹³⁷ See: EUMOFA, <https://www.eumofa.eu/data>.

In 2018, the aquaculture production in Italy totalled 142 726 tonnes worth EUR 439 million. Four species accounted for almost 85 % of total value: clam with 37 %, trout with 23 %, gilthead seabream with 13 % and mussel *Mytilus* spp with 12 %. Mussel *Mytilus* spp, trout and clam were also the main farmed species in volume terms, together covering 89 % of production and accounting for 43 %, 24 % and 22 %, respectively¹³⁸.

Table 17: World, EU-28 and Italian catches and aquaculture production in 2018, in 1 000 tonnes

Production	World	EU-28	Italy	% of world	% of EU-28
Catches	97 232	5 337	206	0.21	3.86
Aquaculture	114 462	1 319	143	0.12	10.84
Total	211 694	6 656	349	0.16	5.24

Source: Eurostat and FAO

In 2018 the Italian fish processing industries included 408 companies and employed 5 520 persons¹³⁹. Sales totalled EUR 2.67 million, with a value added of EUR 411 million, covering 2 % of the value added of total manufacture of food products. The main products sold were “Prepared or preserved tuna, skipjack and Atlantic bonito, whole or in pieces (minced products and prepared meals and dishes excluded)”¹⁴⁰.

Italy imported 1.16 million tonnes of fisheries and aquaculture products in 2019, with a value of EUR 6.06 billion. The most imported species – salmon, squid and yellowfin tuna – together accounted for 28 % in value and 22 % in volume of total imports. Spain is by far the main origin country: in 2019, it covered over 20 % of total imports in value and volume. Other important origin countries, the Netherlands and Sweden, each accounted for 6 % of total imports in value¹⁴¹.

As for exports, in 2019 they reached 216 061 tonnes worth EUR 877 million. Skipjack tuna, anchovy and clam were the most valued exported products, accounting for 16 %, 6 % and 5 % of the total, respectively, while the top three exported species in volume – skipjack tuna, sardine and trout – together accounted for around 21 % of total exports. Germany, the main destination country, covered 13 % of total export value in 2019, followed by Spain with 12 % and France with 9 %¹⁴².

In 2018, Italy’s apparent consumption was estimated at 31.02 kg per capita – a 1 % increase from the previous year¹⁴³. In 2017, the most consumed species were yellowfin tuna, squid, salmon, mussel, skipjack tuna and cod¹⁴⁴.

¹³⁸ *Ibidem*.

¹³⁹ See: Eurostat – Structural Business Statistics, <https://ec.europa.eu/eurostat/web/structural-business-statistics>.

¹⁴⁰ See: Eurostat, <https://ec.europa.eu/eurostat/data/database>.

¹⁴¹ See: EUMOFA, <https://www.eumofa.eu/data>.

¹⁴² *Ibidem*.

¹⁴³ See: EUMOFA, 2020b, *The EU Fish Market*, Publications Office of the European Union, Luxembourg, pp. 33-55, https://www.eumofa.eu/documents/20178/415635/EN_The+EU+fish+market_2020.pdf/fe6285bb-5446-ac1a-e213-6fd6f64d0d85?t=1604671147068.

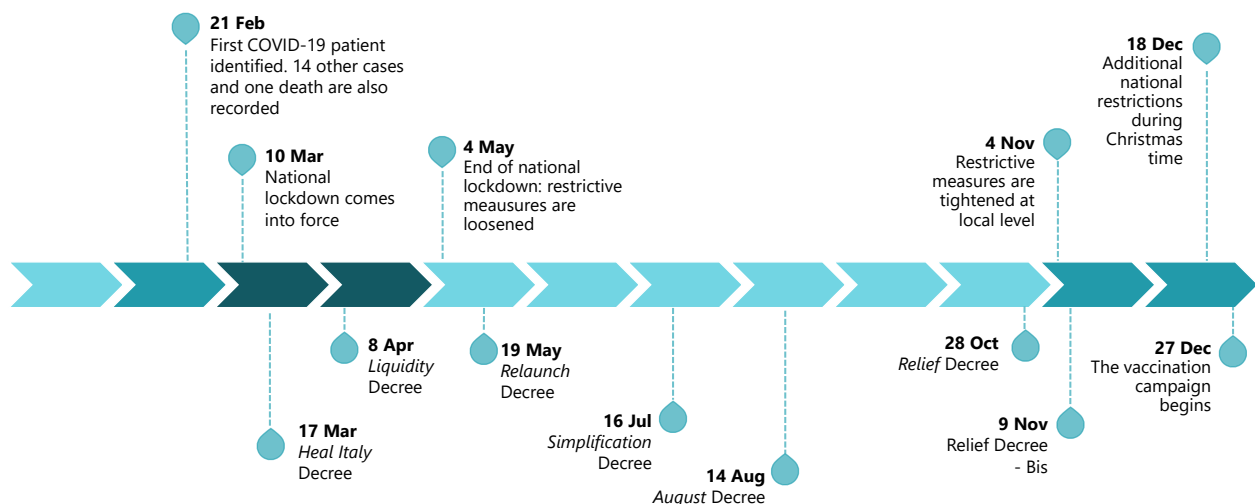
¹⁴⁴ See: <https://www.eumofa.eu/en/italy>.

2.4.2 Timeline of legislative measures

Italy was the first EU country to be heavily impacted by the COVID-19 outbreak and to adopt severe measures to contain its infection rate. On 10 March 2020, a national lockdown was imposed, banning all non-essential movements within the country and closing all non-essential economic activities. Even though Italy deemed the first wave of the pandemic controlled after around two months and the lockdown ended 4 May, the country continued to loosen and tighten restrictions at local level based on the infection rate, in order to counter any new waves.

Several measures were undertaken by the Italian government¹⁴⁵ in order to limit the socio-economic disruptions resulting from the pandemic outbreak. It introduced a large number of instruments, such as payment deferrals and tax rate reductions, state compensation schemes and social security contributions to support the employment, and instruments to facilitate access to financing of both individuals and enterprises. It also took measures to stimulate the whole economy, such as a large-scale moratorium on debt repayment, and others aimed at stimulating specific industries and sectors, including a co-insurance system to support export-oriented companies.

Figure 24: Timeline of Italian restrictive measures and policy responses adopted in 2020



Source: own elaboration

Regarding the fisheries and aquaculture sector, in addition to the aids derived from the flexibility mechanism adopted for the EMFF, the "Heal Italy" Decree¹⁴⁶ (art. 78) established a EUR 100 million COVID-19 emergency fund for agriculture and for fisheries and aquaculture enterprises. The Decree also extended the redundancy fund to the fisheries sector and provided self-employers with indemnities.

The **COVID-19 emergency fund** is in turn divided into **three parts**:

- **EUR 20 million to cover interest charges on bank loans** for working capital and debt restructuring in the agricultural and fisheries enterprises. In this case, the maximum contribution per enterprise is EUR 20 000.
- **EUR 60 million to cover the costs incurred for interest** accrued and paid in 2018 and 2019 on loans. Contributions ranged from EUR 500 to EUR 6 000 per agricultural or fisheries enterprise. It is estimated that a minimum of 10 000 farms will have access to the aid.

¹⁴⁵ See: <https://home.kpmg/xx/en/home/insights/2020/04/italy-government-and-institution-measures-in-response-to-covid.html>.

¹⁴⁶ See: <https://www.gazzettaufficiale.it/eli/id/2020/03/17/20G00034/sg>.

- **EUR 20 million as a support for the temporary cessation of fishing activity**, including EUR 1.5 million for inland fishing and EUR 3.5 million aquaculture, if related to the COVID-19 emergency. The funds earmarked for aquaculture were allocated according to the firms' dimensions, with 85 % going to micro- and small-sized firms; 10 % to medium-sized; and 5 % to large-sized.

Table 18: Policy responses adopted in Italy for the fisheries and aquaculture sector along 2020

Decree	Measure adopted
<i>Heal Italy</i> Decree (17 March)	Art.22: New rules for the redundancy fund Art. 78: Establishment the COVID-19 Emergency Fund, new rules for the advance payments of Common Agriculture Policy (CAP) subsidies to farmers, new rules for the fund to contrast poverty, new rules for the management of EMFF resources Art. 103-bis: Extension of the deadline for the certification and testing of motor vessels
<i>Liquidity</i> Decree (8 April)	Art.1-ter: New simplified rules for funds to fisheries Art. 13: Extension of transitional measures for the security fund destined to SMEs and for the Italian Institute of Agricultural Food Market Services (ISMEA) security fund destined to agricultural and fisheries enterprises (EUR 100 million in 2020) Art. 14-bis: Extension of the 2017-2019 national fisheries and aquaculture programme till 31 December 2021
<i>Relaunch</i> Decree (19 May)	Art. 222: New measures to support agricultural, fisheries and aquaculture enterprises
<i>August</i> Decree (14 August)	Art. 10: Allowances for seafarers Art. 10-bis: Social security and assistance scheme for members of fishing cooperatives Art. 42-bis: Financial interventions in favour of tourism, agricultural and fishing enterprises, for Lampedusa and Linosa (Sicily)
<i>Relief</i> Decree (28 October)	Art. 16: Social security contribution exemption for agriculture, fisheries and aquaculture sectors
<i>Relief</i> Decree Bis (9 November)	Art. 21: Social security contribution exemption for agriculture, fisheries and aquaculture sectors

Source: own elaboration

To be noted that while contributions to fishing enterprises were granted based on the gross tonnage of owned vessels, those to aquaculture firms were based on the average turnover of applicant firms with a cap at EUR 5 000 for micro-sized firms, EUR 6 000 for small-sized, EUR 10 000 for medium-sized, and EUR 20 000 for large-sized¹⁴⁷.

Further, in December 2020, the Italian budget law for 2021¹⁴⁸ introduced another form of income support for workers employed in the fisheries sector, in particular employees of small-scale fisheries cooperatives, ship owners employed on their own vessels, and self-employed fishers who suspended or reduced their work activity or who suffered a reduction in income due to events linked to COVID-19. The support can last for a maximum of 90 days, to be used in the period between 1 January 2021 and 30 June 2021. For employees, the income support was set to equal the wage subsidy scheme, while it was set at EUR 40 per day for the self-employed.

2.4.3 Assessment of the seafood availability and consumption

2.4.3.1 Socio-economic impact on the fleet and evolution of marine gasoil prices

Although the national closure imposed on 10 March spared fishing, virtually no activity took place in Italian fishing ports until at least 15 March. In some cases, this was due to the need to safeguard the health of fishers and to comply with the new safety regulations that called for social distancing and required self-protection devices for vessels with crews of seven or more. However, the main reason behind the sudden stop in fishing activity relates to the equally sudden drop in demand, due to both the closure of food services (in particular, hotels and restaurants services), and the reduction in the number of wholesalers operating at larger fish markets and harbours¹⁴⁹.

The sharp fall in fuel prices partly compensated for the drop in production. The average monthly price of fuel fell 24 %, from 0.51 EUR/litre in the last quarter of 2019 to 0.39 EUR/litre in the first quarter of 2020. While the highest monthly decrease was recorded in April, which was 33 % less than March 2020 and 55 % less than April 2019, the minimum level was reached in May. At the end of the year, the average 2020 fuel price was 31 % lower than in the previous three years.

The low fuel price reduced operating costs, especially in the trawling segment. By the end of March, fishing activities slowly resumed in almost all fishing ports, albeit with many differences related to fleet segment and geographical area¹⁵⁰. Trawlers limited their activities to two-three days a week, with a few exceptions in the southern Adriatic and the central Tyrrhenian, where activity was higher. In many fishing ports, especially on the Adriatic coast, operators self-regulated their activities by setting restrictions, such as rotation of vessels and, in some cases, by establishing quotas. This was confirmed by the Sea Workers Association (*Cooperativa Lavoratori del Mare*, Rimini), for which the rotation of vessels represented a key strategy to limit the impact of the COVID-19 pandemic on the sector.

Larger trawlers were the most affected by the national lockdown. The Demersal Trawlers Seiners (DTS) 24-40 metres segment remained inactive until mid-April, while the trawlers in the Strait of Sicily that mainly target high-value species sold to HoReCa – such as red shrimp – saw their market disappear. For this reason, large quantities of frozen products went unsold and many companies struggled with serious liquidity issues¹⁵¹.

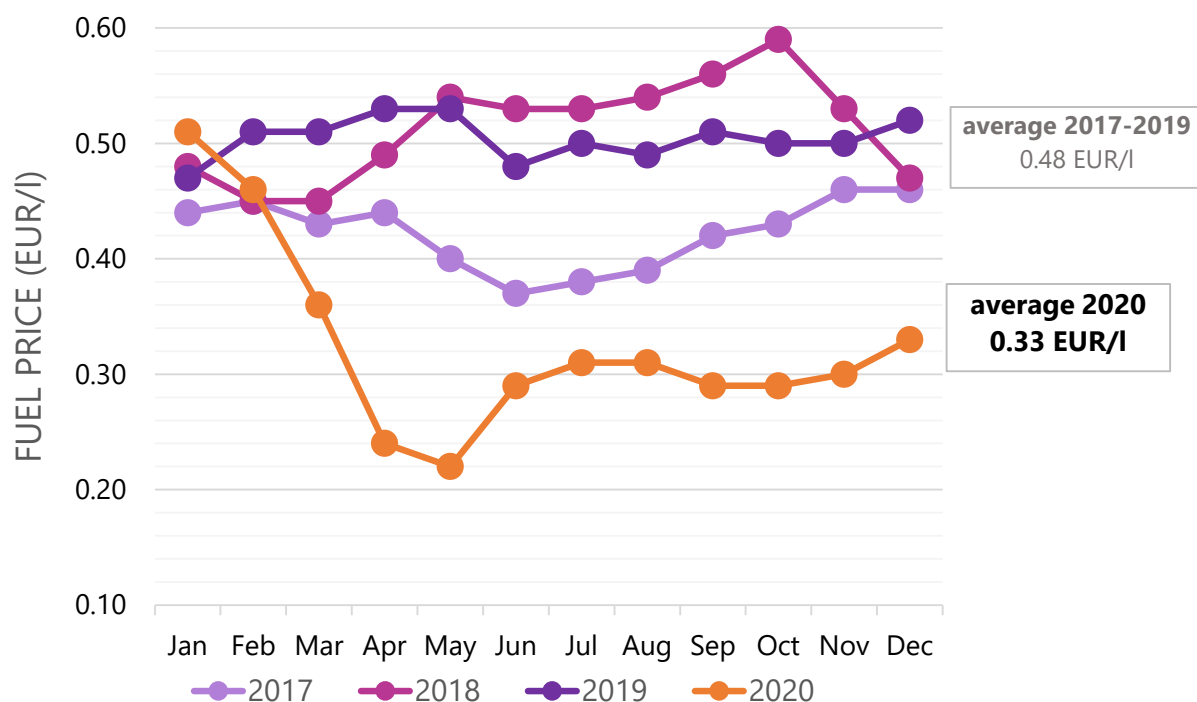
¹⁴⁷ See: <https://www.fasi.biz/it/notizie/novita/22423-fondo-emergenza-covid-20-milioni-per-contributi-alle-imprese-della-pesca.html>.

¹⁴⁸ See: <https://www.gazzettaufficiale.it/eli/id/2020/12/30/20G00202/sq>.

¹⁴⁹ See: Carvalho N. et al., 2020, *The impact of COVID-19 on the EU-27 fishing fleet*, Publications Office of the European Union, Luxembourg, pp. 1-34, <https://publications.jrc.ec.europa.eu/repository/handle/JRC122999> and interviews of sectoral stakeholders.

¹⁵⁰ *Ibidem*.

¹⁵¹ *Ibidem*.

Figure 25: Monthly average fuel prices in Italy, 2017-2020

Source: EUMOFA elaboration of MABUX data

Midwater pair trawls and purse seiners initially suffered from the closure of both fish markets and borders. This affected exports, especially in the North Adriatic where the sale of small pelagic species to Spain had to cease. From April, the activities gradually picked up in some fishing ports of the North Adriatic and consumer demand for anchovies and sardines increased thanks to low prices¹⁵².

The impact of COVID-19 on SSCF was softer, since its production, which averages 15-20 kg of landing per sea day, is usually sold directly to end consumers, local fish retailers or small supermarkets. Some ports with a strong tourist identity were heavily impacted by the lack of demand from restaurants, while in other ports, SSCF intensified direct sales to consumers¹⁵³.

¹⁵² *Ibidem.*

¹⁵³ *Ibidem.*

Table 19: Socio-economic indicators on the Italian fleet, 2018-2020

Socio-economic indicators	2018	2019*	2020*	% variation 2019/2020
Employment (FTE)	19 841	19 555	16 402	-16.10
Live weight of landings (1 000 tonnes)	199.90	194.20	160.80	-17.20
Value of landings (EUR million)	936.50	874.00	732.80	-16.20
Gross Value Added (GVA) (EUR million)	569.24	575.24	509.58	-11.40
Gross profit (EUR million)	299.00	322.10	300.40	-6.70
Net profit (EUR million)	139.10	166.40	145.50	-12.60
GVA to revenue (%)	59.90	61.40	64.30	4.80
Gross profit margin (%)	31.50	34.40	37.90	10.30
Net profit margin (%)	14.60	17.80	18.40	3.40

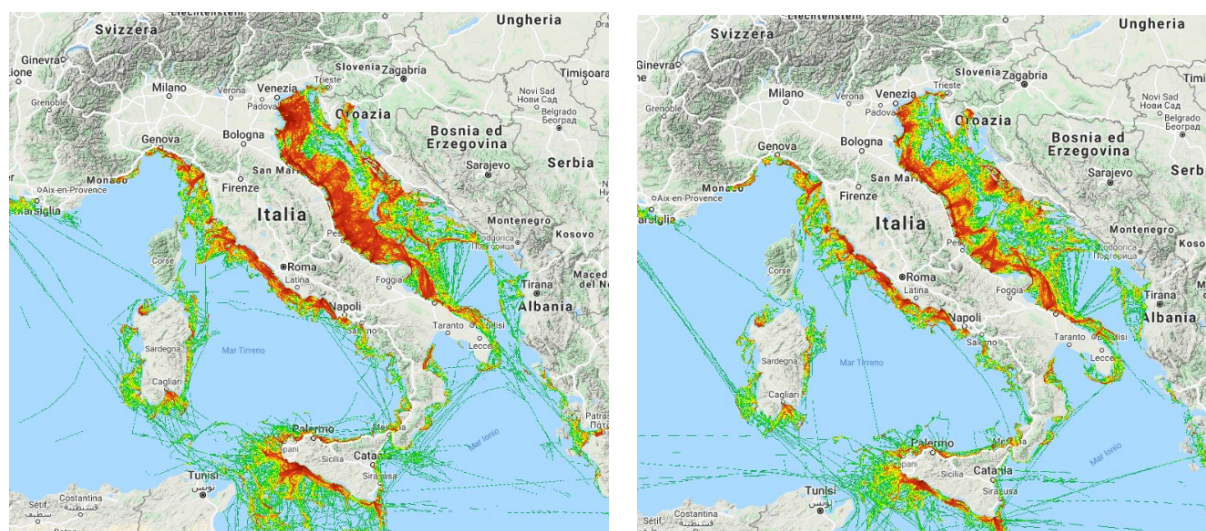
Source: Carvalho N. *et al.*, 2020, *The impact of COVID-19 on the EU-27 fishing fleet*

Note: * Figures for 2019 and 2020 are estimates

2.4.3.2 Fishery activity

Fishing activity decreased abruptly after the entry into force of the first lockdown on 10 March, mostly due to the difficulties of ensuring social distancing on board ships and to the reduced demand from the hospitality sector. The decrease became even more evident in April 2020, which was the first full month of lockdown.

In particular, as shown in the map below, the reduction was sharper in the Adriatic Sea and Sea of Sicily areas where activities are usually more intensive, while it was less pronounced in the Tyrrhenian Sea. Starting from May, fishing activity started to pick up, and by June it had reached the level of the past few years. Overall from January to June 2020, fishing activity decreased by 12.20 % compared with 2019 but no noticeable variation was observed in the rest of the year.

Map 6: Fishing vessel route density in Italy, April 2019 and April 2020

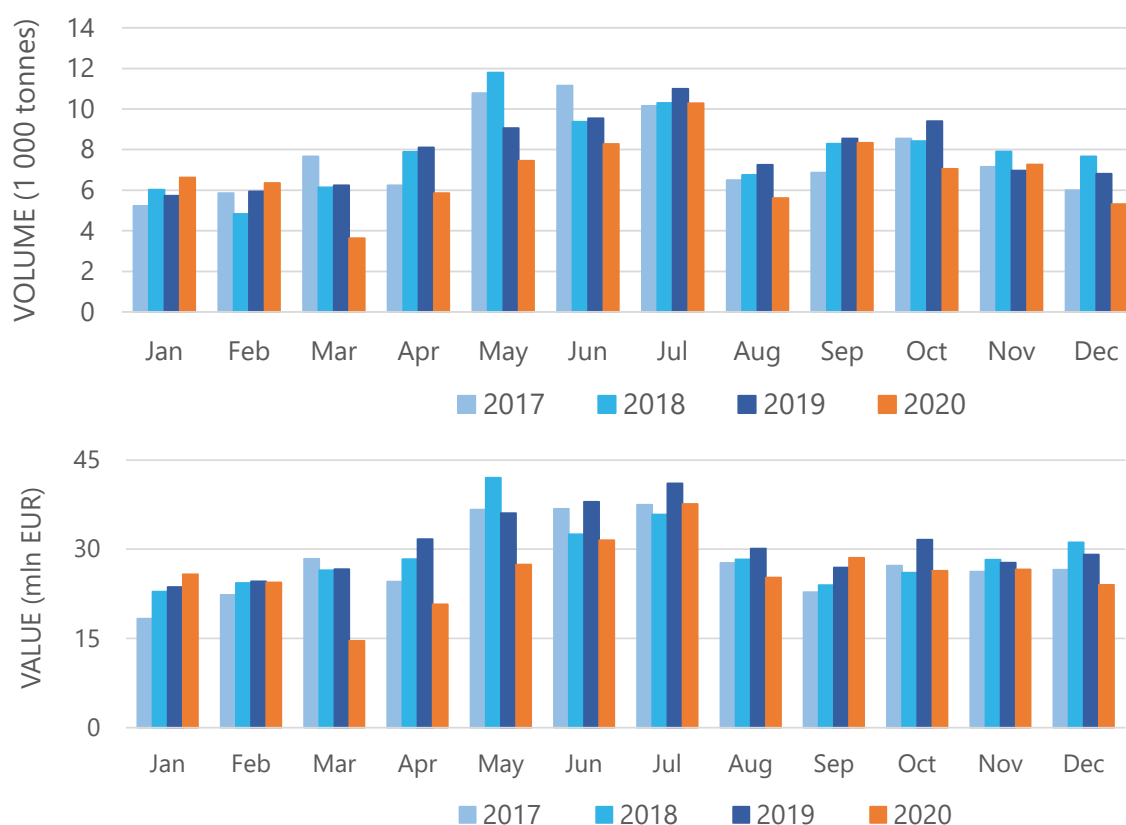
Source: EMODnet Human Activities

Note: April 2019 (left) and April 2020 (right)

2.4.3.3 First sale, wholesale, imports and household consumption

In 2020, first sales amounted to 82 072 tonnes and EUR 313 million¹⁵⁴. By comparison, the volume was 12 522 tonnes or 13 % less than first sales in 2019, and 11 981 tonnes or 13 % less than the 2017-2019 average. As for value, this was EUR 54 million or 15 % less than 2019, and EUR 38 million or 11 % less than the 2017-2019 average. Looking at the monthly trend, the lowest level of sales occurred in March, suggesting that the impact of the COVID-19 outbreak was particularly severe in the first days of the lockdown. Compared with the same month in 2019, first sales dropped by 2 616 tonnes or 42 % in volume, and by EUR 12 million or 45 % in value. However, already from April, the sector had begun gradually picking up, and by the second semester of 2020, both volume and value were in line with the previous three years' average.

Figure 26: First sales of fish, shellfish and crustaceans in Italy, 2017-2020



Source: EUMOFA

The sudden shock in the early days after the lockdown of March 2020 affected volumes more than prices, especially those of high-value species. Indeed, in March 2020, first sales of high-value species, such as seabass, lobster and shrimps, fell on average by 35 % compared with March 2019, while those of low-value species, such as sardine, clam, anchovy, mackerel, declined by 11 %. In the same period, the average price of high-value species remained stable, but that of low-value species increased by 6 %. To be noted that in Italy low-value species cover a larger share of first sales than high-value species, accounting for 85 % of the total in 2019.

Among the main species, clam and sardine were particularly impacted.

¹⁵⁴ See: EUMOFA, <https://www.eumofa.eu/>.

In March 2020, first sales of clams dropped by 31 % compared with March 2019, mainly in Fano, Ancona and Chioggia, on the Adriatic coast. Afterwards, volumes continued to fluctuate from month to month on a trend that was very similar to the previous years, but it stabilised at a much lower level than usual. This contained its effect on the 2020 average price of EUR 2.49, which was 3 % higher than 2019 but 6 % less than the 2017-2019 average. At the end of the year, total first sales of clam were 22 % lower than 2019.

Sardine also saw 2020 first sales drop 24 % in volume compared with 2019. March 2020 was its worst period of the last four years, with its sales registering a 57 % drop compared with March 2019 and a 61 % fall from the 2017-2019 monthly average period. The main locations involved were Porto Tolle and Cesenatico on the Adriatic coast. Its average price increased 15 %, from EUR 0.96 in 2019 to EUR 1.11 in 2020, after reaching its second all-time peak of 1.44 EUR/kg in April.

At wholesale stage¹⁵⁵, all products were impacted in some way by the COVID-19 outbreak and the subsequent restrictions set on economic activities. This was largely due to reduced demand after the closure of restaurants at national level in March and April and at a local level from May 2020 on. However, wild-caught and farmed species showed different responses in the short and long run.

Throughout 2020, restrictions were imposed at short notice by the Italian government, making it difficult for operators to adapt their supply to the sudden demand fall. In other words, the HoReCa closure affected short-term expectations on the allocation of production on the wholesale market. During the first COVID-19 wave, when the national lockdown unexpectedly entered into force, both wild-caught and farmed products suffered from price instability, with prices dropping to absorb the supply and match the lower demand.

As time went by, fishers learned to factor the possibility of future local closures into their expectations. They self-regulated the level of their activities and offered lower quantities at the same price as before the pandemic.

However, farmers adapted their market strategies and responded to the demand shocks better than fishers. Farmed products were stored rather than offered on the market, meaning it was only the wild-caught products that were caught up in the remarkable price fluctuations.

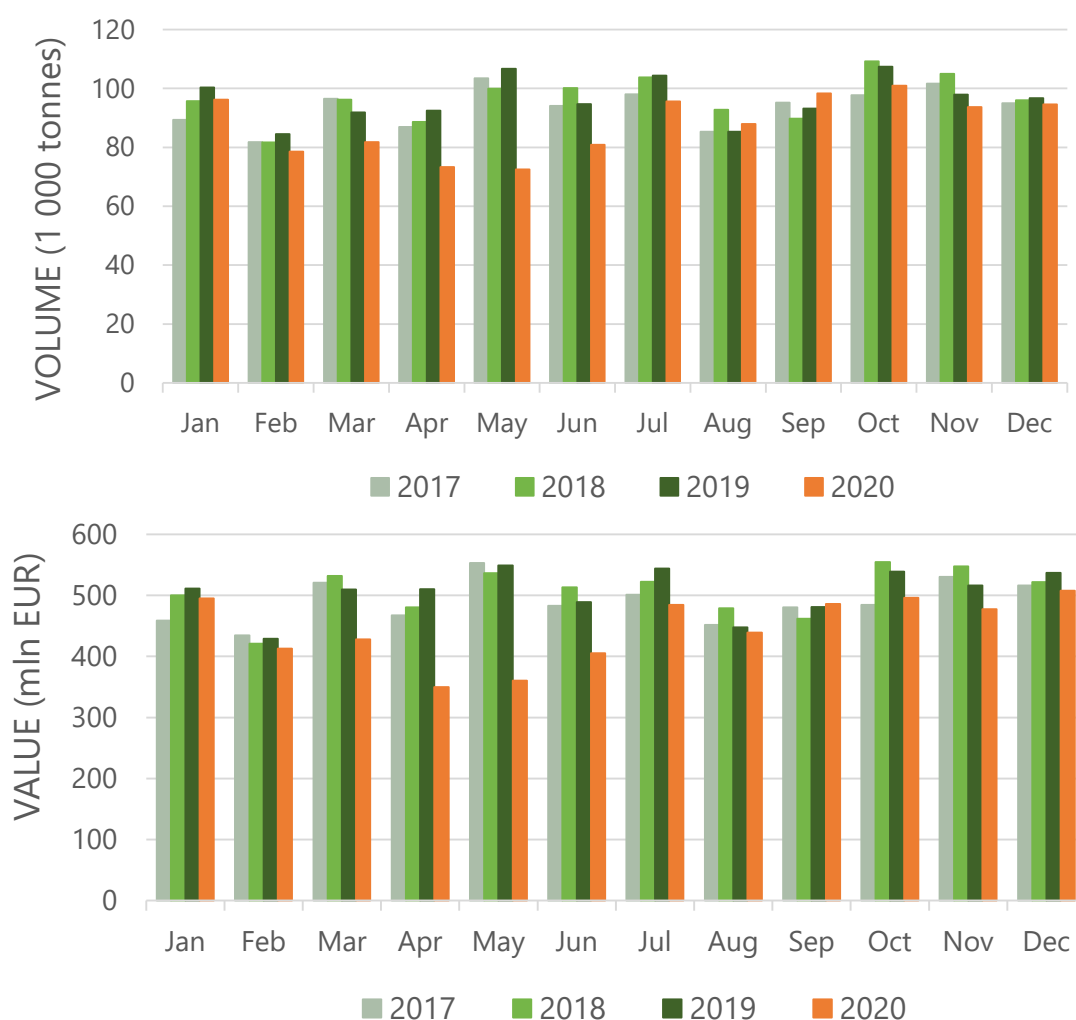
In addition, sales of farmed products were also impacted by border closure. Salmon and trout, for example, were affected by reduced supply from abroad, mainly Norway. This did not affect wholesale prices very much, as it more than compensated for the demand reduction due to the closure of restaurants. In fact in some cases, it even stimulated the growth of national aquaculture production in order to integrate catches and satisfy the internal demand¹⁵⁶.

The COVID-19 pandemic also affected imports in Italy which, in 2020, totalled 1.05 million tonnes and EUR 5.34 billion – representing a reduction of 9 % in volume and 12 % in value compared with 2019, and of 8 % in volume and 11 % in value compared with the previous three years' average¹⁵⁷. Unlike what happened at the first sale stage, the main impact of the crisis was evident in the general trend observed during the second quarter of 2020, linked with the combination of border restrictions and variations in both the internal demand and the foreign supply. Compared with 2019, imports recorded in this quarter – 226 693 tonnes worth EUR 1.12 billion – were lower by 23 % in volume and by 28 % in value; compared with the average of the previous three years, the drop was 17 % in volume and 22 % in value.

¹⁵⁵ See: Borsa Merci Telematica Italiana, <https://www.bmti.it/>.

¹⁵⁶ *Ibidem*.

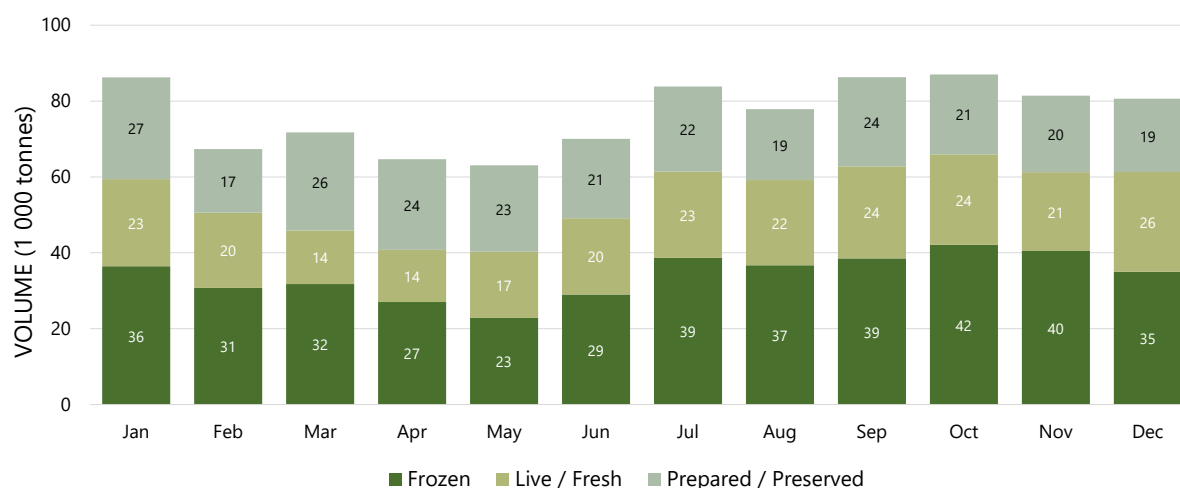
¹⁵⁷ See: EUMOFA, <https://www.eumofa.eu/data>.

Figure 27: Italian imports of fisheries and aquaculture products, 2017-2020

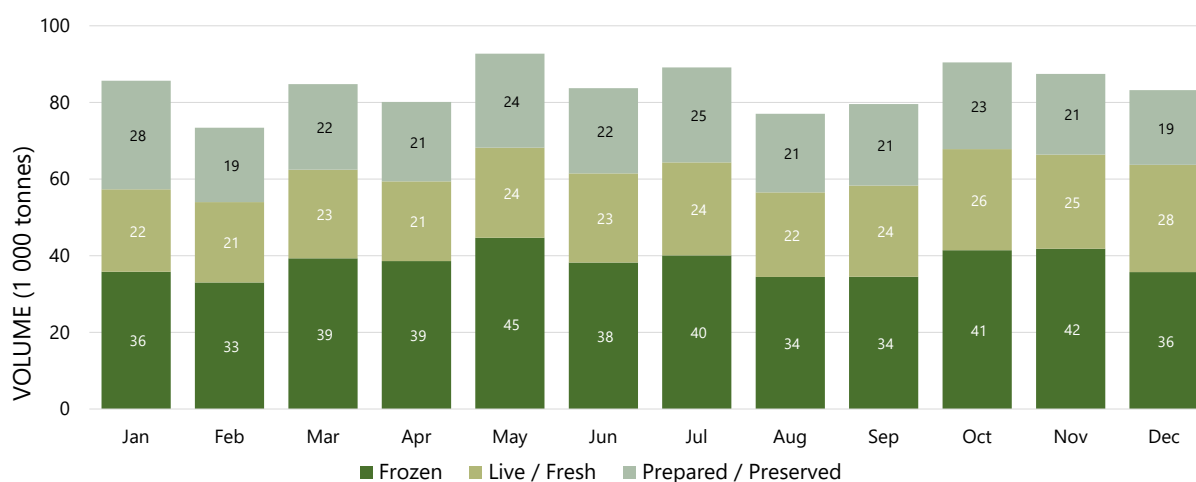
Source: EUMOFA elaboration of Eurostat-Comext data

Imports from top origin countries, namely Spain, Sweden and Netherlands, decreased in 2020. Compared with the 2017-2019 yearly average, the decreases in volume were by 10 %, 5 % and 13 %, respectively. The downward trend lasted the entire year, with the highest decreases registered in March 2020 when the arrivals from Sweden were 36 % lower than the monthly average in 2017-2019, and in April 2020, when the imports from Spain and the Netherlands were, respectively, 27 % and 33 % lower than the same period in 2017-2019.

Frozen and fresh products were the most affected. During the second quarter of 2020, frozen imports fell by 35 % and fresh imports by 24 %, compared with the 2017-2019 average. On the other hand, imports of prepared/preserved products remained stable and, in April-June 2020, increased a mere 0.2 % over the 2017-2019 average. To be noted, however, these had increased a considerable 15 % in March 2020 compared with the same month in 2017-2019 – which was probably due to the hoarding effect in the early days after the lockdown entered into force.

Figure 28: Italian imports of fisheries and aquaculture products by product category, 2020

Source: EUMOFA elaboration of Eurostat-Comext data

Figure 29: Italian imports of fisheries and aquaculture products by product category, 2017-2019 average

Source: EUMOFA elaboration of Eurostat-Comext data

All the main imported species were particularly affected by the COVID-19 emergency during the second quarter of 2020, although as shown in Table 20 the extent of the impact varies a lot across species.

Imports of salmon (mainly fresh, from Sweden although originally from Norway) amounted to 85 516 tonnes worth EUR 700 million in 2020. Compared with the 2017-2019 average, they were 3 % higher in volume and 6 % lower in value, due to an 8 % reduction in the average price which dropped to 8.18 EUR/kg in 2020 from 8.91 EUR/kg in 2017-2019. The drop registered during the second quarter of 2020 was followed by a strong recovery in the third quarter, when volumes of imports were 15 % higher than the 2017-2019 average. The monthly price, higher than the previous three years' average during the first quarter of 2020, maintained an average of 11 % lower for the rest of the year. The highest decrease was registered in April, when it dropped from 9.19 EUR/kg in 2017-2019 to 7.63 EUR/kg.

Table 20: Volume and price trends at import level of selected fisheries and aquaculture products in Italy, second quarter 2020 vs. second quarter 2017-2019 average

Main commercial species	Second quarter 2020		% variation second quarter 2020/second quarter 2017-2019 average	
	Volume (1 000 tonnes)	Price (EUR/kg)	Volume	Price
Salmon	17 866	8.14	-9	-11
Squid	12 928	5.38	-51	6
Yellowfin tuna	27 140	5.01	24	0

Source: EUMOFA elaboration of Eurostat-Comext data

In 2020, squid imports in Italy (mainly frozen, from Spain) fell by 20 % in volume and 15 % in value compared with previous three years' average, dropping from 88 145 tonnes to 70 180 tonnes, and from EUR 455 million to EUR 389 million. That said, the downward trend had already started in January, but the most significant drop was registered in the second quarter of 2020, due to a fall of almost 70 % in May, when it dropped from 9 595 tonnes on average in 2017-2019 to 2 942 tonnes in 2020. At the same time, the average price increased 7 %, from 5.16 EUR/kg in 2017-2019 to 5.54 EUR/kg in 2020, after having reached its peak of 6.10 EUR/kg in March. To be noted that in 2020, Italian imports of frozen squid from Morocco grew by an astounding 289 % compared with the 2017-2019 yearly average, due to a remarkable increase in the third quarter, when it grew from a quarterly average of 191 tonnes to 3 378 tonnes. This is linked with an equal reduction of imports from India and China observed in the same period.

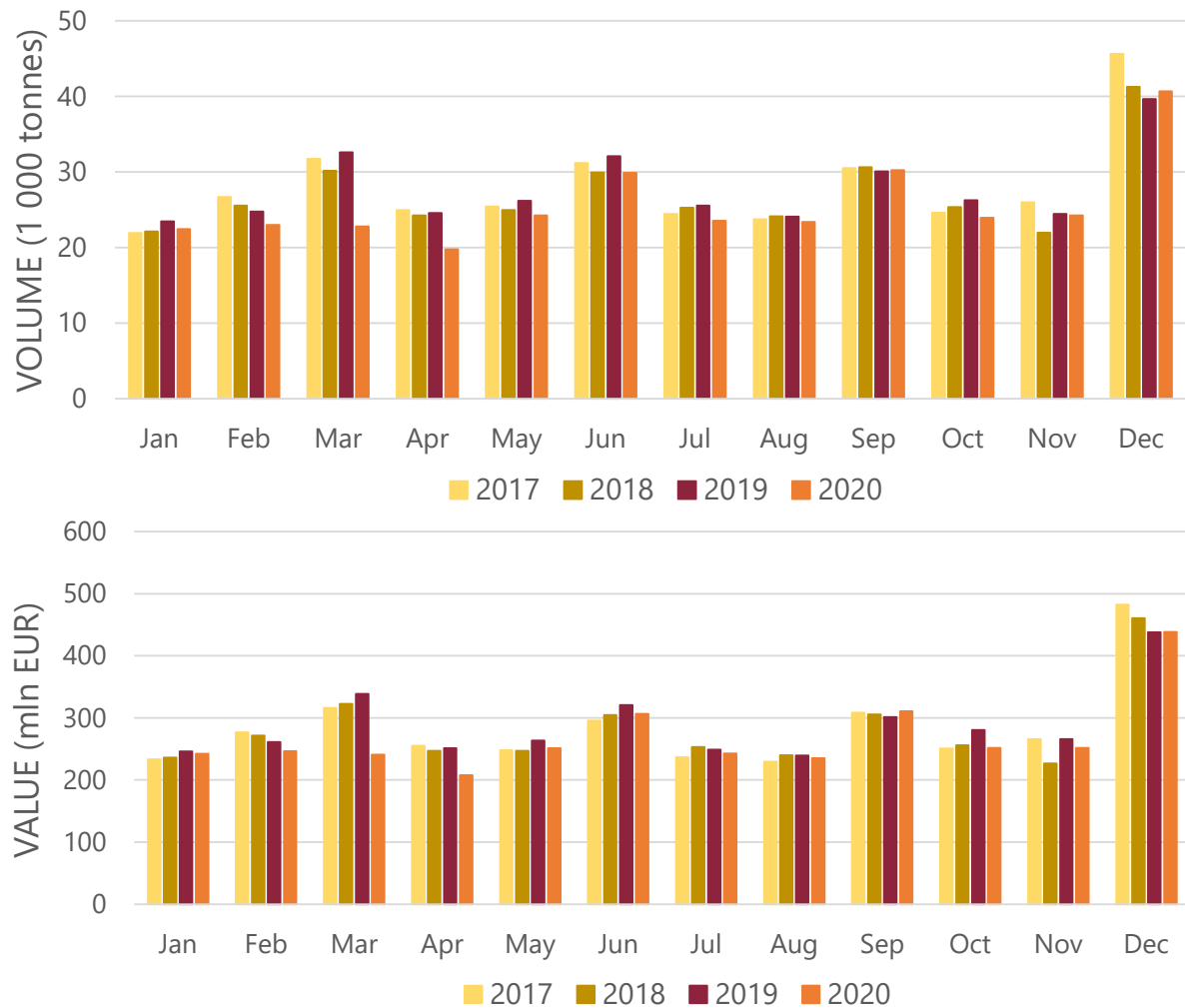
Imports of yellowfin tuna (mainly prepared/preserved) increased in 2020, totalling 53 894 tonnes worth EUR 439 million. Compared with the 2017-2019 yearly average, this represented an 8 % growth in volume of 6 635 tonnes and a 6 % growth in value of EUR 26 million. The upward trend started in February, but the real boost was registered in the second quarter. As for the average import price, a 2 % decline was observed in 2020 compared with the average price recorded during 2017-2019. There were, however, several monthly fluctuations: the lowest price of 4.53 EUR/kg in August was 16 % lower than the average price reached in August during 2017-2019. To be noted that in 2020, the main origin country of Italian imports of prepared/preserved yellowfin tuna changed from Ecuador to Spain. Imports from Spain increasing from the beginning of the national lockdown in March 2020 and totalling 4 715 tonnes in the second quarter, when they more than doubled compared with the 2017-2019 quarterly average.

Household consumption of fresh fish was also affected by the pandemic. In 2020, it totalled 308 035 tonnes worth EUR 3.22 billion, which represented a 7 % decrease in volume and a 5 % decline in value compared with the previous three years' average¹⁵⁸. In April, it reached the lowest level of the last four years. The evolution of consumption during the year was in line with the past, except when volume decreased by 28 % in March and 20 % in April, compared with the 2017-2019 monthly averages. In this regard, the opinion of retailers surveyed for this study is that the decrease in household consumption of fresh fish might be linked to lower product availability: when the most restrictive measures were in place at the beginning of the national lockdown, logistical and transport issues had a significant impact

¹⁵⁸ *Ibidem*.

on products with a shorter shelf life, since they are highly perishable and cannot tolerate long supply chain disruptions. According to the Italian Fisheries and Aquaculture Economic Research (NISEA) cooperative surveyed for this study, the panic buying of foodstuffs which occurred in March and April 2020 also redirected household consumption from fresh products to prepared/preserved ones, which tend to have a longer shelf life but also are easier to cook at home than fresh fish.

Figure 30: Household consumption of fresh fisheries and aquaculture products in Italy, 2017-2020



Source: EUMOFA elaboration of EUROPANEL data

The drop in the household consumption of fresh anchovy accounted for 14 % of the total decline, its 2020 monthly average being far lower than the 2017-2019 level in the first semester. To be noted that March 2020 recorded a fall of about 50 % compared with the 2017-2019 average of the period – dropping from 2 000 tonnes to 1 025 tonnes – while the average price for April 2020 increased and was 30 % higher than that recorded in the previous three years, growing from 5.99 EUR/kg to 7.76 EUR/kg.

Conversely, the upward trend of salmon limited the decrease in total household consumption. Salmon consumption also went down in March 2020, when it dropped 19 % compared with the 2017-2019 monthly average, but its sales more than recovered later on in the year. In the last quarter of 2020, salmon consumption was more than 40 % higher than the previous three years' average – 2 851 tonnes vs 2 100 tonnes. To be noted that the volume trend was accompanied by a 5 % reduction in price,

dropping from 14.94 EUR/kg in 2017-2019 to 14.12 EUR/kg in 2020. Further, December 2020 recorded a price of 13.12 EUR/kg, which was the lowest level of the last four years.

2.4.3.4 Aquaculture production and out-of-home consumption

The Italian aquaculture production seems to have been affected by the COVID-19 outbreak more than fisheries, due to its high reliance on the HoReCa sector.

All aquaculture facilities remained operational throughout the health crisis and reported no reduction in the number of employees or working days. However, as reported by the Italian Aquaculture Producers Association (API)¹⁵⁹, all aquaculture enterprises suffered a sharp reduction in sales, especially between March and April. This affected all sales outlets – except large-scale retail which had sale contracts in force before the COVID-19 outbreak – and particularly all finfish products intended for the HoReCa sector, such as rainbow trout, sturgeons, eel, meagre, carps, seabass and seabream, as well as high-end niche products such as caviar.

Table 21: Impact of COVID-19 on sales outlets of Italian aquaculture products

Sales outlet	Market share	COVID-19 impact
Export	20 %	Exports virtually disappeared in March and April 2020, due to border closure and logistical disruptions.
Recreational fishing/Public water re-stocking	20 %	All activities stopped in March and April 2020 and slowly resumed starting from May 2020.
HoReCa	30 %	Closed by the restrictive measures in March, April and May 2020
Large scale retail	30 %	The only channel that remained fully operational, despite a decline in sales.

Source: D'Oronzio et al., 2021, *The COVID-19 emergency and the Italian fisheries and aquaculture sector: impact and responses*¹⁶⁰

During the first weeks of the lockdown, the main difficulties were to package fresh products and to guarantee transport and deliveries. In particular, it took longer to package due to the need to ensure sanitary procedures and the obligation to keep social distancing, which meant reducing the number of people on the production line. On the other hand, online sales and home deliveries were the most important solutions adopted by the aquaculture sector to react to the initial demand shock and to find a market for the products usually sold to the HoReCa.

The aquaculture sector also had to bear increased management costs to keep unsold production in tanks or cages or to freeze it, which also increased the financial risk of companies, which had to maintain an adequate health state of the biomass. In doing so, companies also used more energy, feed and oxygen, which increased operating costs. As for transaction costs – namely transport, and distribution costs related to sanitary measures, API linked their gradual recovery in 2020 to the substantial stability of yearly production costs and commercial margins.

¹⁵⁹ See: Associazione Piscicoltori Italiani, surveyed for this study.

¹⁶⁰ See: D'Oronzio et al., 2021, *L'emergenza COVID-19 e il settore ittico italiano: impatto e risposte*, pp. 1-90, https://www.crea.gov.it/documents/68457/0/L%E2%80%99Emergenza+COVID-19+e+il+settore+ittico+italiano_Impatti_e_risposte_Gen_2021.pdf/8da26719-4390-808d-f403-fd7f1d710942?t=1611327296230.

As far as out-of-home consumption is concerned, Euromonitor¹⁶¹ reported a 4 % decline in sales of unprocessed fisheries and aquaculture products in Italy in 2020, compared with the average 2017-2019. This was due to a strong decrease in sales through the foodservice and institutional channels which dropped from an average of almost 106 000 tonnes in 2017-2019 to over 66 000 tonnes in 2020. However, this decrease was accompanied by an increase in retail sales, which grew from an average of over 414 000 tonnes in 2017-2019 to over 435 000 tonnes in 2020. Both trends can be considered direct effects of lockdowns and restrictive measures, which translated into an increased number of people eating at home, and therefore buying more fish at retail outlets.

In general, finfish are the most sold species in all sale channels, followed by cephalopods and other molluscs and crustaceans. COVID-19 did not change consumer preferences in this respect.

When it comes to sales of processed fisheries and aquaculture products, data are available only for out-of-home consumption through foodservice. In Italy, this totalled almost 19 000 tonnes in 2020 – the lowest level touched in 15 years – which was more than 30 % lower than the 2017-2019 yearly average. Shelf-stable products were the most impacted by this drop, followed by chilled and frozen processed seafood.

Table 22: Qualitative assessment of restrictions by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
First sale	High. March 2020 was the most affected month. High-value species both reduced in volume and price.
Aquaculture	High. Sharp reduction in sales in March and April 2020, especially for niche products and fish destined for the HoReCa sector. Increased producing costs and financial risk of companies.
Import-Export	High. The sharp reduction in imports of fresh and frozen fish (second quarter 2020) was partially compensated by the increase in imports of prepared/preserved products.
Retail	High. Strong increase in retail sales, due to the closure of HoReCa. Prepared/preserved products preferred to unprocessed ones.
Wholesale	Medium. Price fluctuations observed for caught products only.

Source: own elaboration

2.4.4 Analysis of COVID-19 effects

In Italy, the COVID-19 outbreak led to an abrupt closure of many fishing activities in the weeks following the entry into force of the national lockdown in early March. Operators were faced with the closure of all HoReCa activities and a sharp drop in demand of fresh products. In addition, there were issues related to liquidity and operating costs, particularly in areas such as Calabria, Apulia and Sicily, where

¹⁶¹ The source of out-of-home consumption data is Euromonitor International, Fresh food and Packaged food, 2021. Although Euromonitor International makes every effort to ensure that it corrects faults in the Intelligence of which it is aware, it does not warrant that the Intelligence will be accurate, up-to-date or complete as the accuracy and completeness of the data and other content available in respect of different parts of the Intelligence will vary depending on the availability and quality of sources on which each part is based. Euromonitor International does not take any responsibility nor is liable for any damage caused through the use of our data and holds no accountability of how it is interpreted or used by any third-party.

there are no well-developed fish markets¹⁶², and fishers tend to be more dependent on intermediaries and restaurants, whose activities were either reduced or disappeared. It is reported that several wholesalers stopped operating and restaurants closed permanently.

Nevertheless, fisheries started to resume slowly after only 15 days. The resumption of activities was possible thanks to a number of mitigation measures which can be summarised as follows.

- **Combined reduction of fishing days with vessels rotation and fishing quotas.** In particular, trawlers were operational two to three days per week, with some exceptions in the southern Adriatic and central Tyrrhenian, where higher levels of activity were recorded. In addition, operators self-regulated the maximum quantities that could be fished per vessel. This adjusted the supply to the reduced demand which kept the market from becoming saturated and avoided unsold products. The lower supply also kept prices in line with the pre-crisis levels and, more in general, with the seasonal average. As a result, already from April 2020, the sector began to pick up.
- **Changes in the composition of catches.** Fish species demanded for domestic consumption had a lower commercial value than those destined for restaurants.
- **Exploration of new sales channels.** Small-scale fishers increased direct sales to final consumers, either to local fishmongers or small supermarkets. In this context, small-scale fisheries showed a higher resilience than the larger trawl fleet.

International trade was greatly impacted by the measures adopted to contain the infection rate. The data analysis highlighted a 20 % drop, mostly of fresh and frozen products in the second quarter of 2020 compared with the 2017-2019 average of the same period, which was then followed by a gradual recovery. Imports from Spain, Sweden and the Netherlands in 2020 were far below the 2017-2019 yearly average, and the same was observed for prepared/preserved yellowfin tuna imports from Ecuador. That said, no significant variations were observed for exports.

All figures reported above show the impact of the COVID-19 outbreak on the availability of fisheries and aquaculture products in Italy. The national and local lockdowns, together with the HoReCa closure, also might have triggered a change in behaviour of consumers who tended to prefer frozen and prepared/preserved over fresh products. This, combined with border closure and logistical issues, prompted fisheries and aquaculture operators to search for adaptation measures or innovative solutions, such as direct sales, door-to-door sales, online sales and home deliveries. Direct sales at wharfs increased in many locations, especially in southern Italy, where the lack of tourists and the closure of restaurants had quite an impact on the local sector. More in general, door-to-door sales, online sales and home deliveries of both fresh and non-fresh products were useful for reaching consumers who were subject to movement restrictions and increased all over the country. These measures made it possible to cope with the drop in demand and partly mitigated the decrease in imports. Even though it might be too early to predict whether the new purchasing habits will endure after the pandemic, they surely yielded benefits to fishers and boosted the overall resilience of the sector to economic shocks. The new solutions experimented with during the pandemic might turn out to be quite useful in the event of future similar shocks.

Among the countermeasures adopted against the pandemic was a series of initiatives aimed at stimulating collaboration among stakeholders. In Italy, the activity carried out by the national network of Fisheries Local Action Groups (FLAGs) was particularly important, as it supported those operators

¹⁶² https://www.crea.gov.it/documents/68457/0/L%E2%80%99Emergenza+COVID-19+e+il+settore+ittico+italiano_Impatti_e_risposte_Gen_2021.pdf/8da26719-4390-808d-f403-fd7f1d710942?t=1611327296230. See: D'Oronzio et al., 2021, *L'emergenza COVID-19 e il settore ittico italiano: impatto e risposte*, pp. 1-90,

most affected by the pandemic. According to the different local needs, the following Italian FLAGs worked on several projects:

- **supporting local street vendors**, by advertising their sale points and selling hours (FLAG Friuli Venezia Giulia¹⁶³);
- **introducing home sales of fisheries products** (FLAG Pescando Sardegna sud occidentale¹⁶⁴ and GAL Ponte Lama¹⁶⁵);
- **distributing vouchers for households to purchase local seafood** (FLAG Basilicata Coast to Coast¹⁶⁶);
- **creating a business incubator for fishing enterprises** to help them navigate through bureaucratic regulations (FLAG Approdo di Ulisse¹⁶⁷);
- **introducing innovation along the supply chain** with the aim of achieving a “No COVID-19” label in line with safety regulations (FLAG Veneziano¹⁶⁸);
- **setting up an online platform aimed at training fishers** (FLAG Levante Ligure¹⁶⁹, Savonese¹⁷⁰ e Mare delle Alpi¹⁷¹);
- **providing PPE to fishing enterprises** (FLAG I Borghi Marinari dello Ionio¹⁷²).

Table 23: Qualitative assessment of countermeasures adopted by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
First sale	High. Vessel rotation, quotas to catches and changes in the catches composition allowed fishers to adapt supply to demand. National network of FLAGs promoted local fish outlets and new sale channels for fisheries products
Aquaculture	High. Online sales and home deliveries gave an outlet to products usually intended for HoReCa and avoided exceeding stocking or freezing capacity.
Retail	High. New market channels, previously not very popular, were opened and or strengthened (direct and online sales, home deliveries etc.).
Import-Export	Low. Shifts in main origin and destination countries did not reduce the difficulties linked to border closure and logistic problems.
Wholesale	No available evidence.

Source: own elaboration

¹⁶³ See: <http://www.gacfvig.it/>.

¹⁶⁴ See: <https://www.flagsardegnaudoccidentale.it/chi-siamo/flag>.

¹⁶⁵ See: <http://www.galpontelama.com/>.

¹⁶⁶ See: <https://www.flagcoasttocoast.it/>.

¹⁶⁷ See: <http://www.flagapprododiulisse.it/>.

¹⁶⁸ See: <https://www.vegal.net/>.

¹⁶⁹ See: <https://www.ge.camcom.gov.it/it/elementi-homepage/banner-progetti-europei/flag-levante-ligure-1>.

¹⁷⁰ See: <http://flagsavonese.it/>.

¹⁷¹ See: <https://www.gacilmaredellealpi.it/>.

¹⁷² See: <http://www.flagborghidelloionio.it/>.

2.5 Sweden

KEY FINDINGS

- **The Swedish fisheries and aquaculture sector experienced a moderate impact**, due to the relatively light restriction measures Sweden implemented to deal with the pandemic outbreak.
- **Restaurant demand decreased drastically for some species and products**, such as Norway lobster and some freshwater species. This caused a loss of income for vessels targeting these species, mostly SSCF, but they were compensated by financial measures.
- **Large-scale vessels targeting small pelagics and landing directly to the processing industry experienced only moderate impacts**. To adapt the supply to the lower demand, and avoid effects on prices, some fleets spread their fishing effort over time.
- **Swedish aquaculture saw a broad reduction in demand for its main species, rainbow trout, due to its significant reliance on HoReCa**. Blue mussel producers were also affected by the pandemic, due to lower sales to HoReCa and their reliance on EU export markets.
- **Impacts on trade flows and on retail were low**, with increasing imports and purchases of fresh salmon supported by lower prices.

2.5.1 Introduction and characteristics of the market

In 2018, Sweden was the EU's seventh largest producer of fisheries products in volume and ranked 18 in the EU in terms of aquaculture production. Its fishing fleet was made up of 1 215 vessels, with a total capacity of 25 859 GT and 148 984 kW. Of these, 87 % were less than 12 m, 10 % were between 12 and 23 m, and 3 % exceeded 23 m. Further, 18 % of vessels used trawls as their main gear, 41 % used traps, 37 % used gill nets and entangling nets, and 4 % used other gear. In 2017, employment in the fishing fleet reached 793 FTE¹⁷³.

Sweden formally recognises seven POs. Five operate in the fisheries sector and two in aquaculture¹⁷⁴.

Table 24: World, EU-28 and Swedish catches and aquaculture production in 2018, in 1 000 tonnes

Production	World	EU-28	Sweden	% of world	% of EU-28
Catches	97 232	5 337	222	0.23	4.15
Aquaculture	114 462	1 319	12	0.01	0.91
Total	211 694	6 656	234	0.11	3.52

Source: Eurostat and FAO

¹⁷³ See: EU Fleet Register, https://webgate.ec.europa.eu/fleet-europa/search_en, and Carvalho N. et al., 2019, *The 2019 Annual Economic Report on the EU Fishing Fleet (STECF 19-06)*, Publications Office of the European Union, Luxembourg, pp. 1-496, <https://stecf.jrc.ec.europa.eu/documents/43805/2483556/STECF%2019-06%20-%20AER%20-%202019.pdf>.

¹⁷⁴ See <https://ec.europa.eu/oceans-and-fisheries/system/files/2021-05/list-of-recognised-producer-organisations-and-associations-of-producer-organisations.pdf>.

The main species landed in 2018 were herring with 31 % of total value and 72 % of total volume, coldwater shrimps, with 22 % of total value and 2 % of total volume, Norway lobster with 22 % of value and 1 % of volume, sprat with 7 % of value and 20 % of volume, and cod with 7 % of value and 3 % of volume. Trout was by far the main farmed species in 2018, accounting for 97 % of total value and 82 % of total volume, followed by mussel with 1 % of value and 17 % of volume, and eel with 2 % of value and 1 % of volume¹⁷⁵.

In 2019, total first sales in Sweden amounted to 175 380 tonnes and EUR 91 million¹⁷⁶. The two auctions for which EUMOFA collects detailed data (Smögen and Göteborg) together covered 10 % of total volume and 33 % of total value.

In 2017, the Swedish fish processing industry counted 209 companies and employed 1 756 persons. Total sales reached EUR 590 million¹⁷⁷.

The main species imported in 2019 were salmon which accounted for 73 % of total value, cod for 9 %, and shrimps for 5 %. In the same year, the main species exported were salmon accounting for 81 % of total value, cod for 9 % and trout for 2 %. Norway and Denmark were the main countries of origin, accounting for 86 % and 5 %, respectively of import value, while Poland, France, Spain and Italy were the main countries of destination. Poland and France each accounted for 16 % of total value, Spain for 11 % and Italy for 10 %. To be noted that Swedish trade flows are dominated by salmon, as Sweden is a hub for Norwegian salmon entering the EU, which is then re-exported to other MSs such as France, Italy or Spain for direct consumption, or Poland for further processing¹⁷⁸.

In 2018, apparent consumption was estimated at 26.61 kg per capita. Swedish people mainly consume fresh and frozen products¹⁷⁹.

2.5.2 Timeline of legislative measures

Sweden is one of the few countries in the EU where no stay-at-home measures were implemented in 2020. However, starting from 16 March 2020, teleworking was recommended, especially in the Stockholm region.

On 19 March 2020, temporary entry bans and travel advisories were initiated, based on the number of infections and the evolution of the pandemic in the countries of origin.¹⁸⁰ Then, on 28 March, physical distancing measures were implemented, with audiences limited to 300 people for cultural and sporting events, and to 50 for dance events.

In April 2020, companies of the fisheries and aquaculture sector benefitted from the range of measures implemented by the Swedish government to reduce costs, reinforce liquidity and improve financing opportunities for businesses throughout the country¹⁸¹. Furthermore, as of 16 June 2020, fishers particularly affected by the COVID-19 pandemic were able to suspend their fishing activities temporarily and receive compensation. This tie-up support, intended to cover fixed costs and labour costs, was provided as a standard amount. The support period was divided into 11 sub-periods from 16 June until 31 December 2020¹⁸², with the conditions for receiving mainly based on fishing activity

¹⁷⁵ See: EUMOFA, <https://www.eumofa.eu/data>.

¹⁷⁶ *Ibidem*.

¹⁷⁷ See: Eurostat-Structural Business Statistics, <https://ec.europa.eu/eurostat/web/structural-business-statistics>.

¹⁷⁸ See: EUMOFA, <https://www.eumofa.eu/data>.

¹⁷⁹ See: EUMOFA, <https://www.eumofa.eu/sweden>.

¹⁸⁰ See: <https://covid-statistics.jrc.ec.europa.eu/RMeasures>.

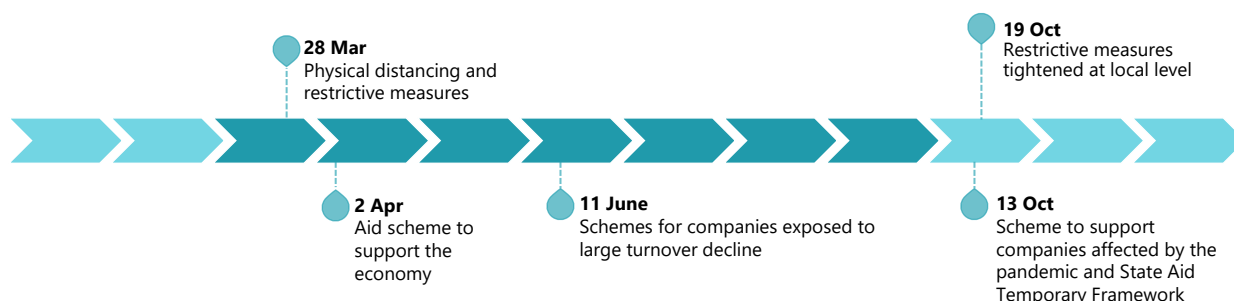
¹⁸¹ See: <https://www.government.se/government-of-sweden/ministry-of-finance/central-government-budget/economic-measures-in-2020-in-response-to-covid-19/>.

¹⁸² See: <https://www.government.se/press-releases/2020/09/support-to-commercial-fishing-for-temporary-suspension-of-fishing-activities-to-be-extended/>.

and vessel length. Eligible agents were fishers with licenses and vessels smaller than 24 m, not included in the pelagic Individual Transferable Quota (ITQ) system who had been actively fishing for at least 120 days over the years 2018-2019 or at least 60 days in 2019. As a result, a decrease in activity of small-scale fisheries during 2020 occurred.

On 19 October 2020, Sweden tightened some local restrictions, such as traveling by public transport and visiting restaurants. In November, other restrictions were added on food service, such as a ban on crowding in restaurants, cafés, and bars, and a ban on serving alcohol after 10 pm.

Figure 31: Timeline of Swedish restrictive measures and policy responses adopted in 2020



Source: own elaboration

2.5.3 Assessment of the seafood availability and consumption

2.5.3.1 Socio-economic impact on the fleet and evolution of marine gasoil prices

According to the JRC¹⁸³, preliminary results for 2020 suggest an annual fall in both volume and value of landings, accompanied by a drop in employment and gross value added. Nevertheless, net profits and net profit margin are estimated to have increased.

Table 25: Socio-economic indicators on the Swedish fleet, 2018-2020

Socio-economic indicators	2018	2019*	2020*	% variation 2019/2020
Employment (FTE)	747	710	551	-22.40
Live weight of landings (1 000 tonnes)	214.70	178.00	139.60	-21.60
Value of landings (EUR million)	111.30	97.00	54.80	-43.50
Gross Value Added (GVA) (EUR million)	53.58	46.55	41.48	-10.90
Gross profit (EUR million)	28.10	23.40	23.50	0.40
Net profit (EUR million)	10.20	5.70	6.60	15.60
GVA to revenue (%)	47.30	45.70	50.80	11.10
Gross profit margin (%)	24.80	23.00	28.80	25.20
Net profit margin (%)	9.00	5.60	8.00	44.10

Source: Carvalho N. et al., 2020, *The impact of COVID-19 on the EU-27 fishing fleet*

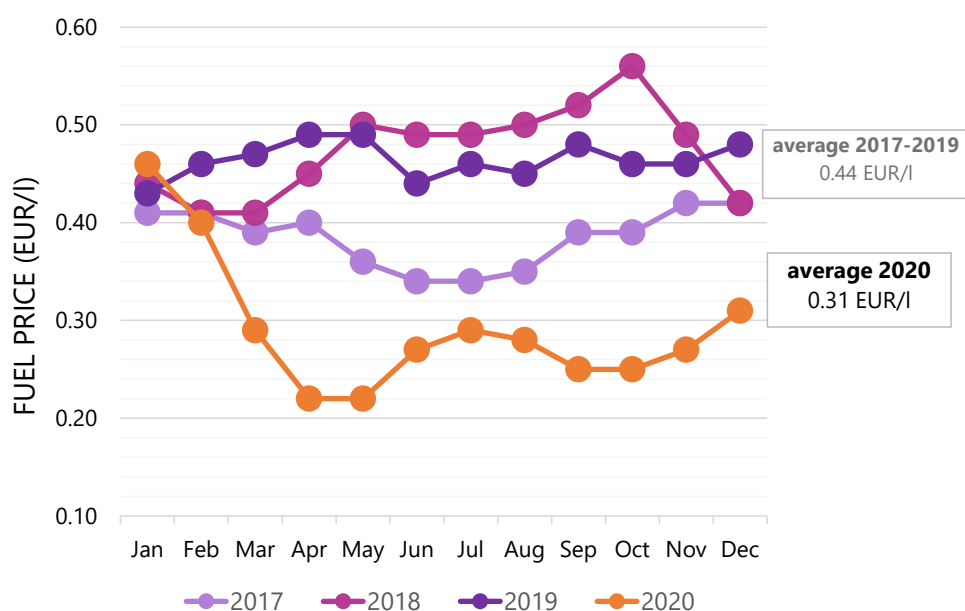
Note: * Figures for 2019 and 2020 are estimates

¹⁸³ See: Carvalho N. et al., 2020, *The impact of COVID-19 on the EU-27 fishing fleet*, Publications Office of the European Union, Luxembourg, pp. 1-34, <https://publications.jrc.ec.europa.eu/repository/handle/JRC122999>.

To be noted that, due to the 2020 decrease in demand from restaurants, which was in turn caused by the COVID-19 pandemic, the demand for specific species, such as Norway lobster and freshwater species, decreased drastically. This made the price of these species drop, which meant a loss of income for vessels targeting them.

In 2020, the average fuel price in Sweden dropped from 0.46 EUR/litre in January to 0.29 EUR/litre in March and 0.22 EUR/litre in April. Prices then increased slightly, reaching 0.28 EUR/litre in July, decreased again to 0.25 EUR/litre in September and October, and finally rose slightly during the last two months of 2020.

Figure 32: Monthly average of fuel prices in Sweden, 2017-2020

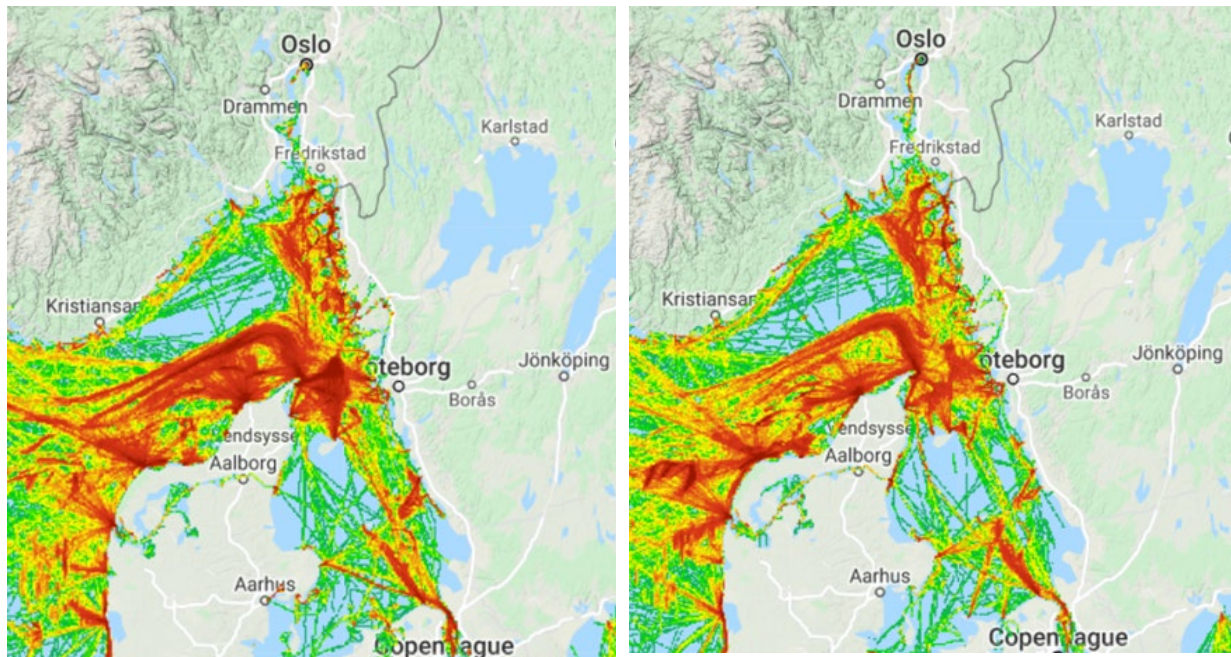


Source: EUMOFA elaboration of MABUX data

2.5.3.2 Fishery activity

Sweden saw an estimated 22.19 % decrease in fishing vessel activity in the first semester of 2020, compared with the same period in 2019, according to data on route density provided by EMODnet Human Activities.

Map 7: Fishing vessel route density in Sweden (south-western coast), April 2019 and April 2020



Source: EMODnet Human Activities

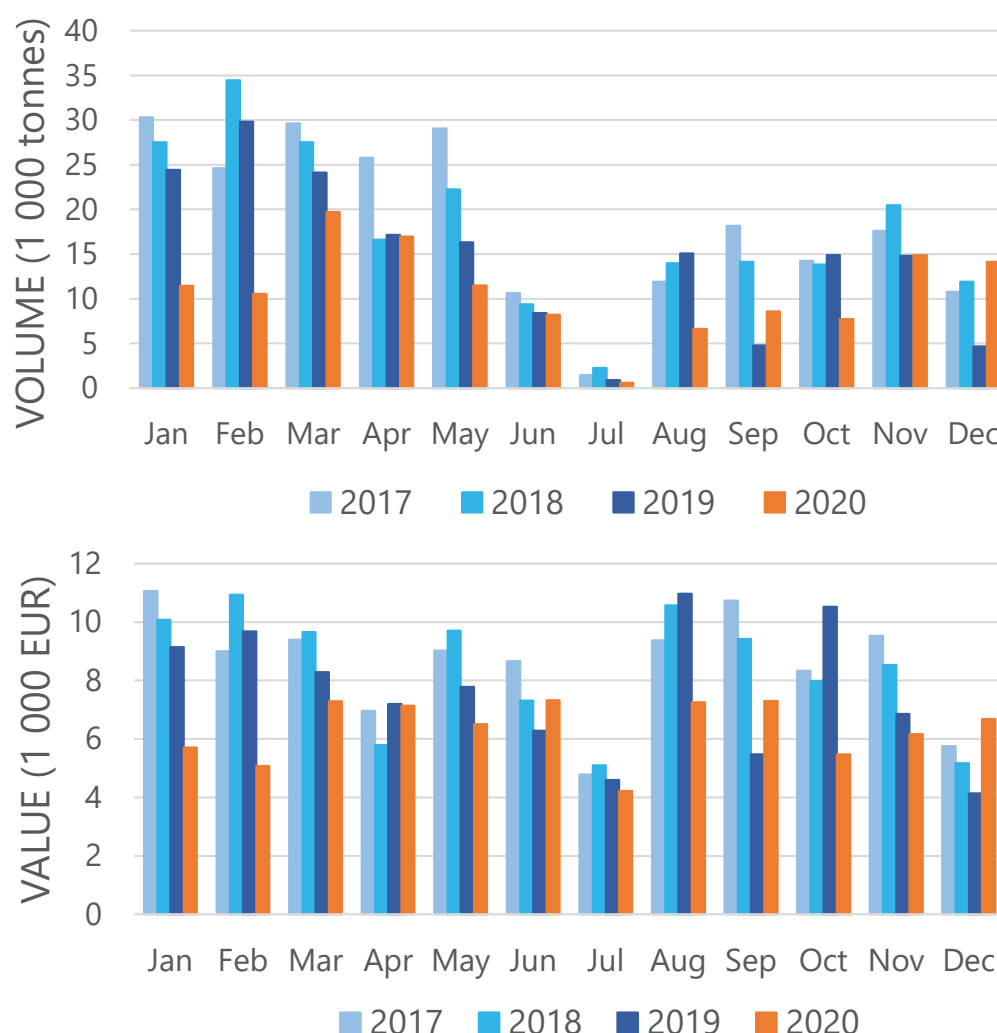
Note: April 2019 (left) and April 2020 (right)

2.5.3.3 First sale, imports and household consumption

First sales registered in Sweden in 2020 amounted to 130 979 tonnes and EUR 76 million¹⁸⁴. This represented a 25 % volume decrease of 44 402 tonnes and a 16 % value decrease of EUR 15 million from 2019. Compared with the 2017-2019 average, this was a 36 % volume decrease of 76 671 tonnes and a 22 % value decrease of EUR 21 million. Looking at the monthly trend, the main decreases against 2019 did not regard March and April, but rather January and February, mostly due to a reduced supply of sprat and herring¹⁸⁵, but also from August to October, which signalled that the impacts of COVID-19 outbreak had grown more widespread in Sweden during the year than in other countries where strong lockdown measures had been implemented. Compared with the same month in 2019, March 2020 first sales declined by 18 % in volume and 12 % in value, while in April, the first sale volume and value were stable.

¹⁸⁴ See: EUMOFA, <https://www.eumofa.eu/>.

¹⁸⁵ Two main reasons are behind this drop: decreased quotas in the Baltic and small pelagics suppliers' activities partly shifted from the first half to the second half of the year. See: EUMOFA, 2021b, *Monthly Highlights n°3/2021*, Publications Office of the European Union, Luxembourg, pp. 1-47, <https://www.eumofa.eu/documents/20178/443745/MH3+2021+EN+final.pdf/640ea400-e672-3190-5302-77aa94c825e5?t=1617712044941>.

Figure 33: First sales of fish, shellfish and crustaceans in Sweden, 2017-2020

Source: EUMOFA

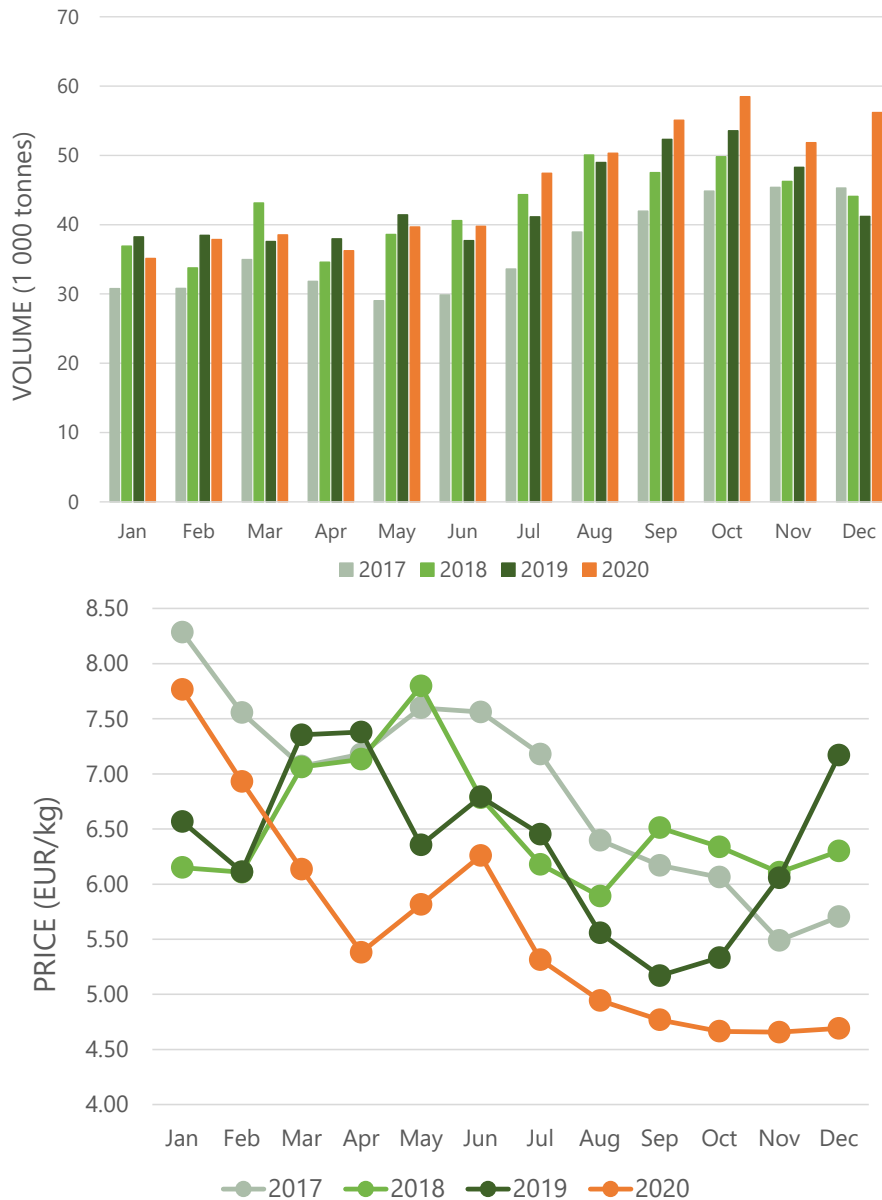
The trends in 2020 differed among major species sold. Compared with the 2017-2019 average, herring and sprat experienced significant decreases in volume of 43 % and 26 %, respectively, which caused slight average price increases of 6 % and 7 %, respectively. As for coldwater shrimps, sales volume was a slight 3 % higher, while the average price was 10 % higher. Norway lobster sales experienced a 6 % volume increase, with the average price decreasing by the same amount. A significant 82 %, drop of sales volumes was reported for cod, which was mostly due to management measures in the Baltic, while saithe dropped 51 % and mackerel dropped 22 %.

Overall, the COVID outbreak does not seem to have had significant impacts on Swedish trade flows of fisheries and aquaculture products. Most of them corresponded to imports and re-exports of fresh and frozen fish from Norway (mostly salmon) entering the EU market.

In 2020, Swedish imports of fisheries and aquaculture products totalled 847 415 tonnes and EUR 4.78 billion, which represented an increase of 4 % in volume and a reduction of 6 % in value from 2019 and an increase of 8 % in volume and decrease of 4 % in value compared with the previous three years' average. The growth in imported volume was mostly due to the 6 % increase in fresh salmon while the decrease in value was mostly driven by the fresh salmon price which dropped 13 %, from 6.28 EUR/kg in 2019 to 5.47 EUR/kg in 2020.

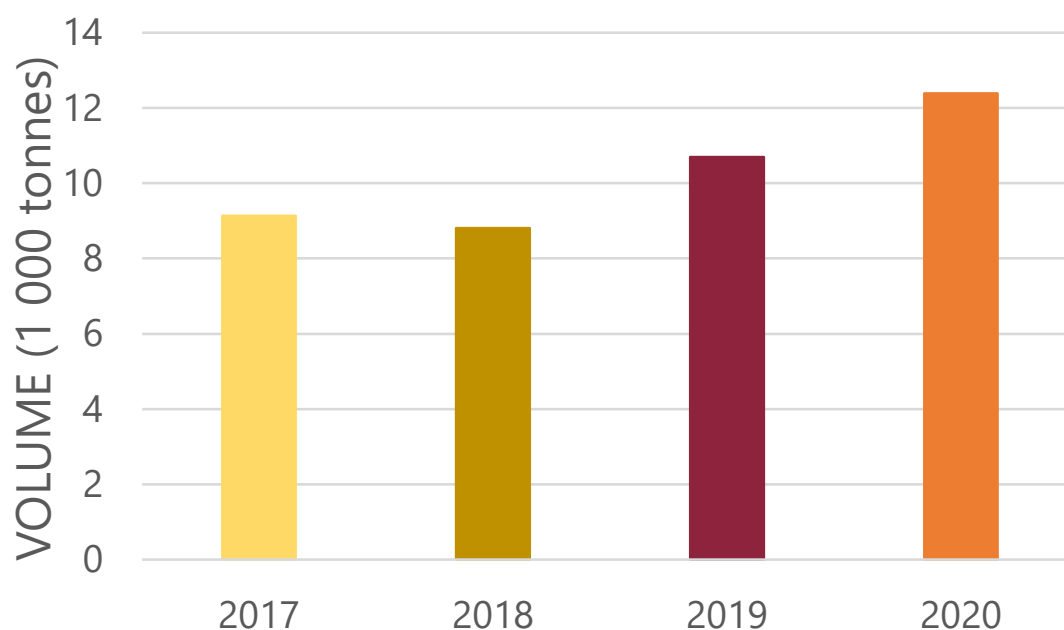
Looking at monthly data, imports of fresh salmon do not seem to have been affected by the COVID-19 outbreak in volume. However, prices significantly dropped to 5.38 EUR/kg in April, marking a 27 % decrease from April 2019.

Figure 34: Imports of fresh salmon in Sweden, 2017-2020



Source: EUMOFA elaboration of Eurostat-Comext data

The household consumption of fresh fish was positively affected by the pandemic. Indeed, in 2020, it totalled 40 105 tonnes worth EUR 459 million, which represented an increase of 44 % in volume and 29 % in value compared with previous three years' average. Fresh salmon drove the trend, with volume increasing 66 % and the average price decreasing 12 %.

Figure 35: Household consumption of fresh fisheries and aquaculture products in Sweden, 2017-2020

Source: EUMOFA elaboration of EUROPANEL data

2.5.3.4 Aquaculture production and out-of-home consumption

According to the stakeholders interviewed, Swedish aquaculture saw a broad reduction in demand for rainbow trout, its main species, due to its large reliance on HoReCa outlets. The blue mussel producers were also affected by the pandemic, due to both lower sales to HoReCa and the reliance on EU export markets.

According to the Swedish national authorities consulted, although no strict stay-at-home measure had been implemented, out-of-home consumption inevitably reduced due to social distancing measures, which caused a drop in demand from restaurants, hotels and catering companies.

Table 26: Qualitative assessment of restrictions by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
Retail	High. Decrease of out-of-home consumption, due to a lower demand for unprocessed fish products.
First sale	Medium. Reduction of demand from the HoReCa sector. Lower prices for coldwater shrimp and Norway lobster.
Aquaculture	Medium. Reduction of demand from the HoReCa sector. Trout, and to a lesser extent mussel, were the main species affected.
Import - Export	Low. Decrease of import prices for fresh salmon.

Source: own elaboration

2.5.4 Analysis of COVID-19 effects

All fisheries industry segments that have HoReCa as a main market outlet were impacted by the COVID-19 crisis. According to fisheries POs that were consulted, the species that were affected the most – in terms of decreasing prices – were northern prawn, Norway lobster and pikeperch. However, they managed to recover the price drops by adjusting their supply. Demersal fisheries, small-scale coastal fisheries and inland fisheries were the most impacted segments. Among the ones using passive gear, vessels under 12 m were highly affected, especially those landing for local markets. The impact was mainly in terms of revenue decreases and changes in working patterns, such as the number of working days and amount of wages. Some of the pelagic trawlers fishing for herring and sprat were also affected, but not to the same extent, as most of them directly land close to the processing industry.

According to the national authorities and POs consulted, fish and shellfish farmers experienced difficulties in facing the demand drop coming from the HoReCa sector, especially for trout, and from export markets, especially for mussel. Some companies, mainly those selling unprocessed fish and shellfish to the HoReCa, tried shifting production to frozen or other types of processed products, in order to cater to other channels. No significant development of online sales and home deliveries was reported.

On the other hand, trade flows with other countries do not seem to have been particularly affected by the restriction measures, and the supply of the Swedish market (mostly salmon from Norway, re-exported to other EU countries) did not show any particular disruption on a yearly basis, other than the logistical issues experienced in March 2020.

Although out-of-home consumption may have suffered from the implementation of social distancing measures, household consumption data show that fresh fish consumption followed the increasing trend observed in recent years, mostly driven by a strong increase in fresh salmon consumption.

Finally, the financial and non-financial measures adopted had the following results¹⁸⁶.

Financial measures:

- **The turnover-based financial support** aimed to provide liquidity to companies that saw a sharp decline in turnover during set time periods. This resulted in helping some companies, but the chosen periods sometimes were mismatched with production cycles and did not have the full intended effect.
- **Financial support for temporary cessation** of fishing activities had success, and the industry requested that the measure be re-introduced in 2021.

Non-financial measures¹⁸⁷:

- **Some fisheries voluntarily collaborated with fish auctions** to temporarily limit catches of Norway lobster, in an attempt to balance supply and demand, and avoid crashing prices.
- **Aquaculture companies were allowed to temporarily surpass their environmental permits**, with some holding fish in their facilities longer than they normally would have. This was done in order to allow the sector to balance supply and demand by not having all the product reach the market at the same time. Holding the fish in the facilities longer than normal meant that feed usage increased, and as a result there was a risk of infringing the limits set by the environmental legislation.

¹⁸⁶ Source: stakeholder survey.

¹⁸⁷ *Ibidem*.

According to stakeholders, future measures should be implemented that give better consideration to the production cycles of the industries in need of support. Indeed, in some cases, the periods set for the support measures were a poor match with the production cycles, especially for financial support to compensate for lost income.

Table 27: Impact of countermeasures adopted by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
First sale	Medium. Shifting of fishery season to the second semester for small pelagics. Shifting production to frozen or other types of processed products to adapt to demands in other markets.
Aquaculture	Medium. Stocking of live fish longer than usual. Shifting production to frozen or other types of processed products to adapt to demands in other markets.
Retail	No evidence available.
Import - Export	No evidence available.

2.6 Greece

KEY FINDINGS

- **First sales in 2020 did not show a significant impact from COVID-19.** The increase of small pelagic sales – anchovy and sardine – seems to have compensated for the reduction in the fishing activity.
- **The aquaculture sector recovered after a bad first quarter.** The sector responded to the international crisis by increasing production, which led to a decrease in price of exports.
- **Exports of seabass and seabream remarkably increased during the second half of the year,** thus driving up total Greek exports. At the same time, increasing imports of fishmeal and fish oil sustained the aquaculture production.
- **Mobility restrictions limited consumers' access to landing locations where the SSCF sells fresh products.** In addition, online purchases of seafood products were relatively limited compared with traditional ones.
- **Tourism drop heavily affected seafood demand.**

2.6.1 Introduction and characteristics of the market

In 2018, Greece was the fifth largest EU country in terms of aquaculture production, while it ranked fifteenth in terms of fishery production. The country has the largest fleet in vessel number in Europe, which in 2018, was composed of 14 934 vessels with a total capacity of 71 104 GT and an engine power of 426 431 kW. Of these, 93 % were under 12 m, 6 % were between 12 and 23 m and 1 % exceeded 23 m. Further, 67 % of the vessels used gill nets and entangling nets, 25 % used hooks and lines, 3 % used traps, and 6 % used others methods. Also in 2018, 93 % of the fleet's vessels belonged to the SSCF and employed crews totalling 16 042 people which represented 81 % of the sector's employment¹⁸⁸.

Greece formally recognises two POs¹⁸⁹: the "*Hellenic Aquaculture Producers Organization*" (HAPO) and the Agricultural Fisheries Cooperative Association of Keramoti. Both operate in the aquaculture sector. To be noted, the Greek aquaculture industry is especially oriented to exports.

Table 28: World, EU-28 and Greek catches and aquaculture production in 2018, 1 000 tonnes

Production	World	EU-28	Greece	% of world	% of EU-28
Catches	97 232	5 337	68	0.07	1.27
Aquaculture	114 462	1 319	132	0.12	10.04
Total	211 694	6 656	200	0.09	3.01

Source: Eurostat and FAO

¹⁸⁸ See: EU fishing fleet register, https://webgate.ec.europa.eu/fleet-europa/search_en, and Carvalho N. et al., 2019, *The 2019 Annual Economic Report on the EU Fishing Fleet (STECF 19-06)*, Publications Office of the European Union, Luxembourg, pp. 1-496, <https://stecf.jrc.ec.europa.eu/documents/43805/2483556/STECF%2019-06%20-%20AER%20-%202019.pdf>.

¹⁸⁹ See: <https://ec.europa.eu/oceans-and-fisheries/system/files/2021-05/list-of-recognised-producer-organisations-and-associations-of-producer-organisations.pdf>.

In 2019, total landings in Greece amounted to 76 772 tonnes worth EUR 270 million¹⁹⁰. Sardine, anchovy and shrimp, the main species in value terms in the first sale markets, together accounted for 57 % of the total, while anchovy, sardine and hake were the top three species in terms of volume and accounted for 40 % of the total¹⁹¹.

In 2018, the aquaculture production in Greece totalled 132 375 tonnes with a value of EUR 536 million. The three species that accounted for 95 % of total value included gilthead seabream with 47 %, European seabass with 45 %, and common seabream with 3 %. In volume terms, gilthead seabream, European seabass and Mussel *Mytilus* spp, were the main farmed species, covering 42 %, 35 % and 17 %, respectively, and accounting for 92 % of production¹⁹².

In 2018, the Greek fish processing industries included 100 companies and employed 1 370 persons, FTE. Total sector sales amounted to EUR 160 million, with a value added of EUR 32 million¹⁹³.

In 2019, Greek imports of fisheries and aquaculture products amounted to 248 million tonnes worth EUR 707 billion. Fishmeal, salmon and squid were the most imported fish species, together representing 38 % of the total import value. The main origin countries were Spain, Turkey and Denmark which accounted for 28 %, 27 % and 25 %, respectively, of total value¹⁹⁴.

Exports¹⁹⁵ in 2019 reached 152 000 tonnes and EUR 694 million. The most valued exported products were gilthead seabream with 34 % of total export value and European seabass with 29 %. Italy, the main destination country, received 35 % of total exports' value in 2019, followed by Spain with 17 % and the Netherlands with 11 %.

In 2017, Greek apparent consumption was estimated at 18.2 kg per capita, a 6 % decrease from the previous year¹⁹⁶. The most consumed species were squid, sardine, cod and anchovy¹⁹⁷.

2.6.2 Timeline of legislative measures

Greece approved a comprehensive legal framework to address the health, economic and social crises due to COVID-19. The initial preventive measures were followed by a national lockdown from 23 March to 4 May 2020, and accompanied by support measures for business and economic activities. Due to the development of the pandemic, a second national lockdown was enacted between early November and mid-December, in addition to other measures implemented as necessary through the year at regional levels.

As early as 11 March 2020, emergency measures were adopted to cope with the economic impact of the COVID-19 outbreak. A general guarantee scheme, launched in April, included: loan guarantees to businesses through the creation of a Guarantee Fund for working capital loans; interest subsidies for existing and new working capital loans for SMEs; and a repayable advance scheme in the form of grants to SMEs. The initial focus on SMEs was later expanded¹⁹⁸ to include measures for the self-employed and companies in the aquaculture and agriculture sectors.

¹⁹⁰ See: EUMOFA, <https://www.eumofa.eu/data>.

¹⁹¹ *Ibidem*.

¹⁹² *Ibidem*.

¹⁹³ See: Eurostat – Structural and Business Statistics, <https://ec.europa.eu/eurostat/web/structural-business-statistics>.

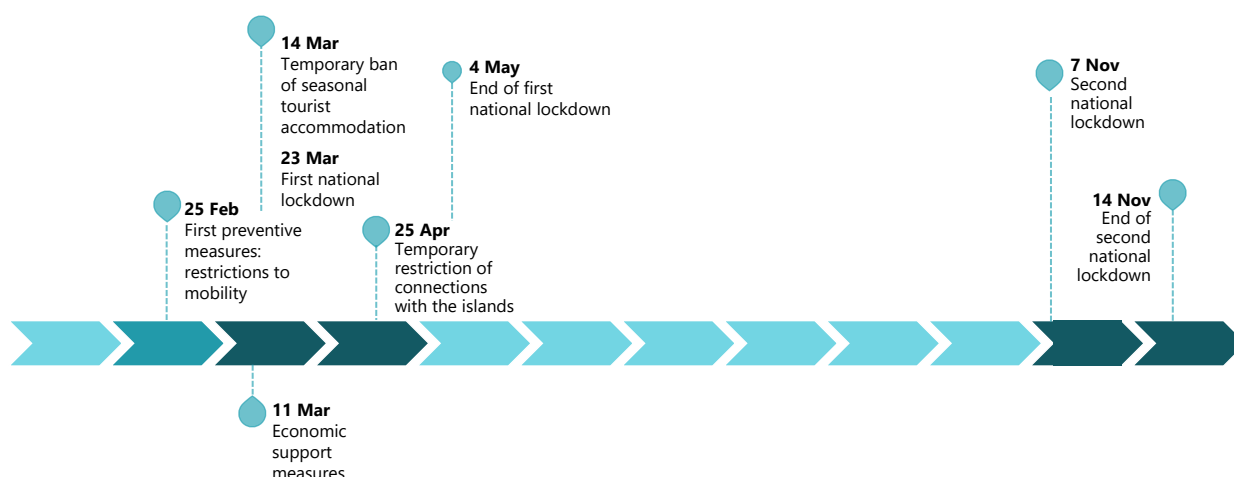
¹⁹⁴ See: EUMOFA, <https://www.eumofa.eu/data>.

¹⁹⁵ *Ibidem*.

¹⁹⁶ See: EUMOFA, 2020b, *The EU Fish Market*, Publications Office of the European Union, Luxembourg, pp. 33-55, https://www.eumofa.eu/documents/20178/415635/EN_The+EU+fish+market_2020.pdf/fe6285bb-5446-ac1a-e213-6fd6f64d0d85?t=1604671147068.

¹⁹⁷ See: EUMOFA, <https://www.eumofa.eu/en/greece>.

¹⁹⁸ Four consecutive schemes were implemented: in March, June, October and November.

Figure 36: Timeline of Greek restrictive measures and policy responses adopted in 2020

Source: own elaboration

Aquaculture and fisheries have both benefitted from the general scheme through: selected tax advantages to address urgent liquidity needs; grants to SMEs on condition they suffered a turnover drop and they committed to maintaining employment deferral of tax/VAT payments based on the turnover drop; suspension of social security contributions; wage subsidies; State guarantees for loans; and a 75-day suspension of check payments granted to business entities which could prove to have suffered at least a 50 % turnover drop.

In addition, the EMFF measure, initiated in reaction to the temporary cessation of fishing activity, was made available for all fleet segments, including trawlers, purse seiners and vessels fishing large pelagic species¹⁹⁹. For those beneficiaries not eligible for EMFF support, a similar measure was integrated into a State aid measure that provides the *de minimis* support for coastal fishing.

It should be highlighted that, at the time of writing, the compensation scheme for aquaculture farmers (art. 55 of the EMFF) has not yet been implemented.

2.6.3 Assessment of the seafood availability and consumption

2.6.3.1 Socio-economic impact on the fleet and evolution of marine gasoil prices

The socio-economic conditions of the Greek fleet in 2020, according to JRC estimates²⁰⁰, appear much worse than in 2019, due to the cessation of fishing activity during the lockdowns as well as to the drop in fish demand due to closure of the main points of purchase, such as hotels, restaurants and other activities linked with tourism.

¹⁹⁹ Trawlers: the minimum monthly compensation amounts to EUR 10 000 while the maximum to EUR 24 000; purse seiners: from EUR 8 000 to EUR 24 000; vessels fishing large pelagic species: from EUR 2 000 to EUR 10 000; coastal fishing vessels: from EUR 900 to EUR 4 500.

²⁰⁰ See: Carvalho N. et al., 2020, *The impact of COVID-19 on the EU-27 fishing fleet*, Publications Office of the European Union, Luxembourg, pp. 1-34, <https://publications.jrc.ec.europa.eu/repository/handle/JRC122999>.

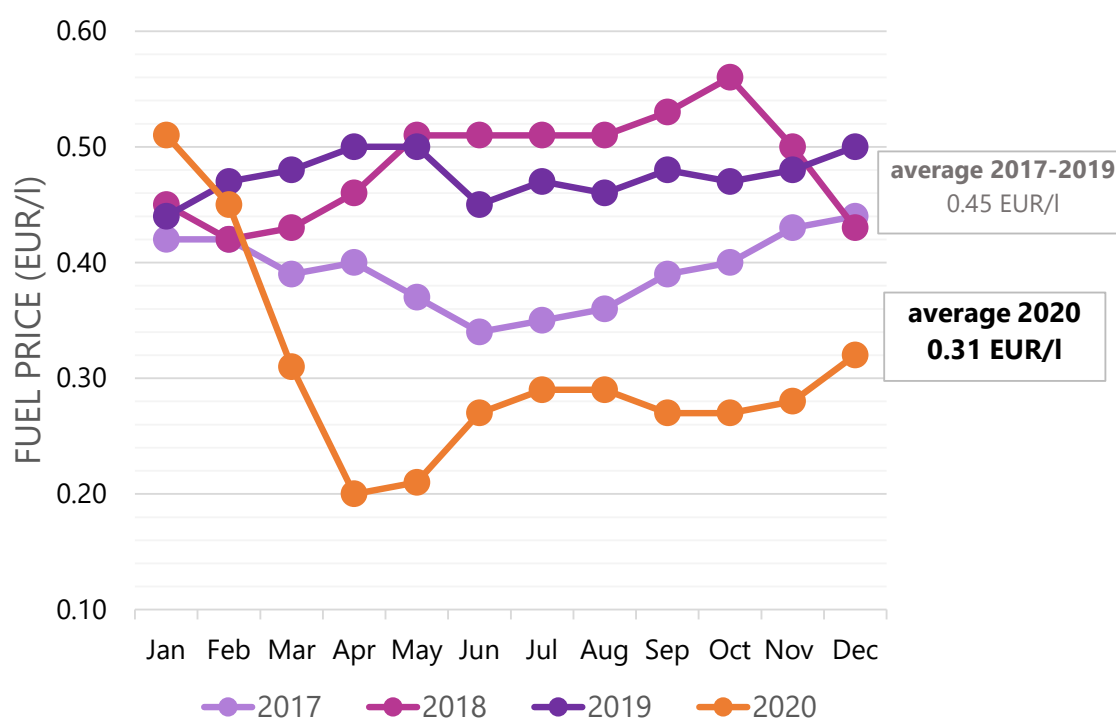
Table 29: Socio-economic indicators on the Greek fleet, 2018-2020

Socio-economic indicators	2018	2019*	2020*	% variation 2019/2020
Employment (FTE)	18 342	20 031	13 106	-34.6
Live weight of landings (1 000 tonnes)	68.20	71.20	46.60	-34.70
Value of landings (EUR million)	426.60	452.60	291.80	-35.50
Gross Value Added (GVA) (EUR million)	276.75	291.86	176.27	-39.60
Gross profit (EUR million)	115.20	116.10	61.30	-47.20
Net profit (EUR million)	70.90	71.10	16.50	-76.80
GVA to revenue (%)	62.80	62.80	58.80	-6.30
Gross profit margin (%)	26.10	25.00	20.50	-18.10
Net profit margin (%)	16.10	15.30	5.50	-64.00

Source: Carvalho N. *et al.*, 2020, *The impact of COVID-19 on the EU-27 fishing fleet*

Note: * Figures for 2019 and 2020 are estimates

As with most of the MSs, the sharp fall in fuel prices reduced the operational costs, which partly compensated the production drop. The average monthly price of fuel decreased 14 %, from 0.48 EUR/litre in the final quarter of 2019 to 0.42 EUR/litre in the first quarter of 2020. The most significant decrease was in April, which had a 35 % decrease from March 2020 and 60 % decrease from April 2019, and also presented the minimum level of the year. In summary, the average monthly fuel price in 2020 was 32 % lower than in the previous three years.

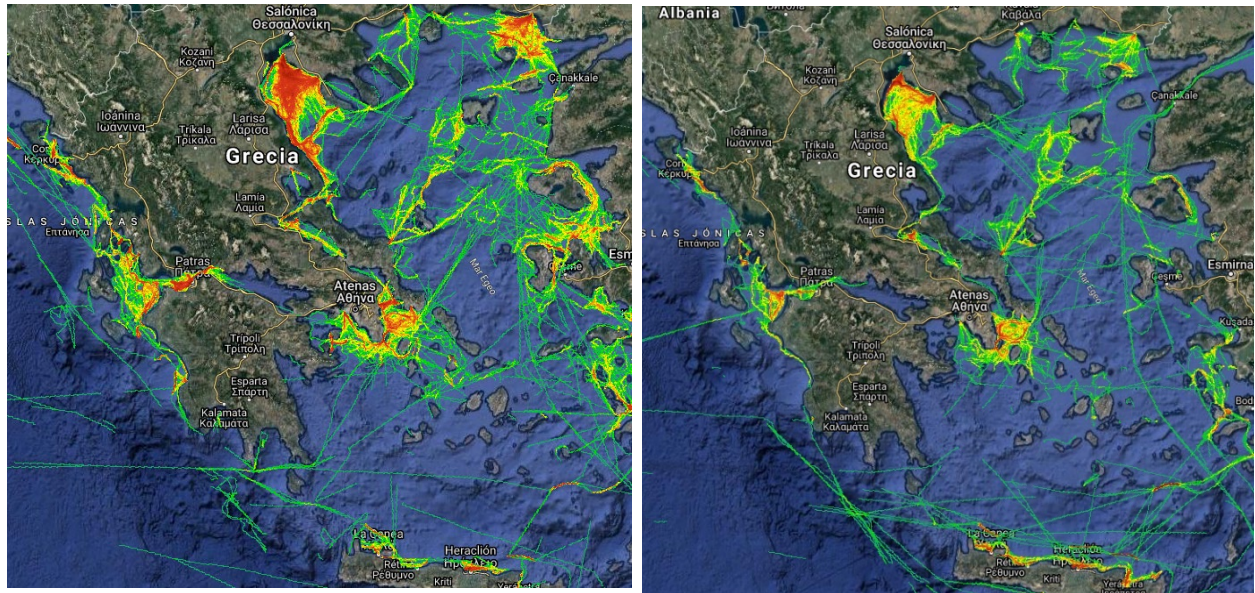
Figure 37: Monthly average fuel prices in Greece, 2017-2020

Source: EUMOFA elaboration of MABUX data

2.6.3.2 Fishery activity

In Greece, the regulatory measures adopted did not include any mandatory ceasing of fishing activity. However, the density maps of fishing vessels' routes show significant variations. This is visible when comparing April 2020 with April 2019, especially in those areas that usually have intensive fishing activity, such as Thessaloniki, Komotini (Kavala area) and, to a lesser degree, Athens. The decrease in fishing vessels density was estimated at 12 % in the first six months of 2020 by EMODnet Human Activities.

Map 8: Fishing vessel route density in Greece, April 2019 and April 2020



Source: EMODNET Human Activities

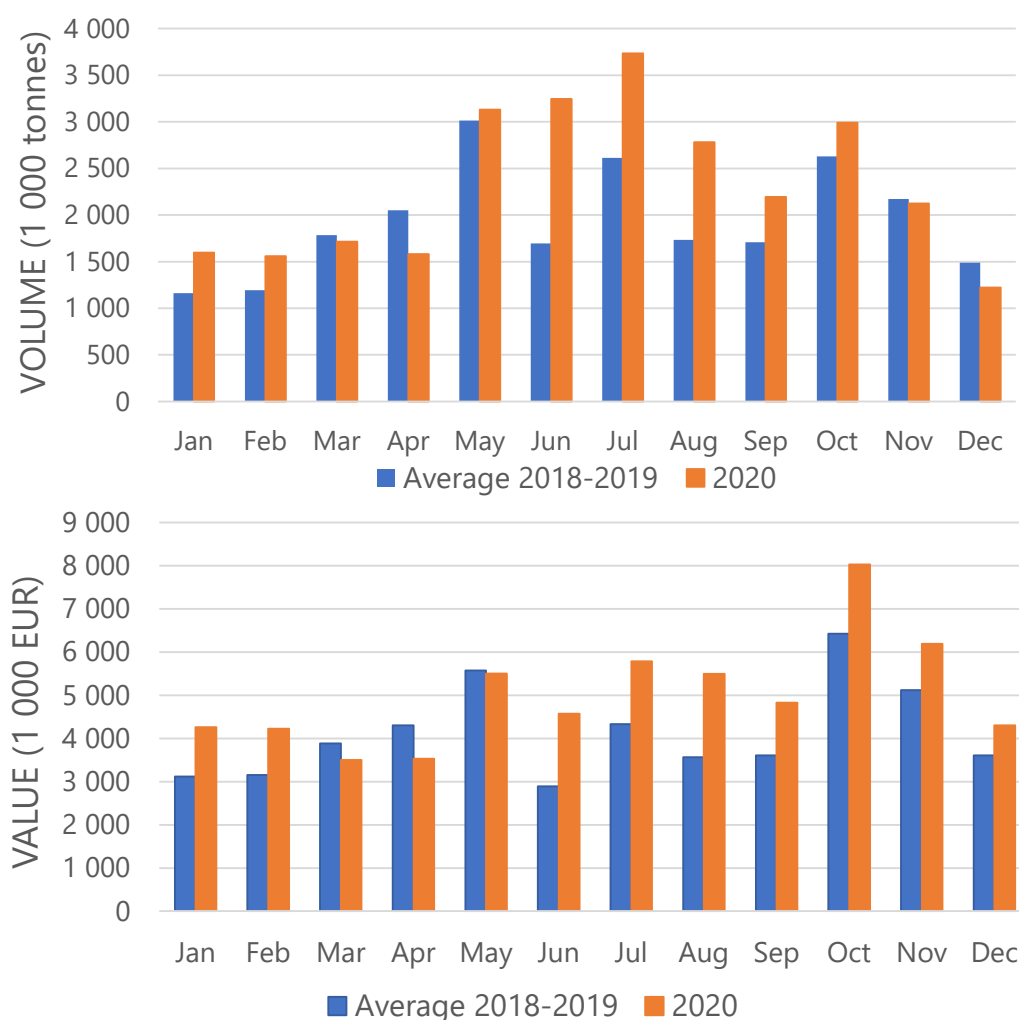
Note: April 2019 (left) and April 2020 (right)

2.6.3.3 First sale, wholesale, imports and household consumption

First sales registered in Greece in 2020 totalled EUR 60.2 million and 27 tonnes²⁰¹, which represented an EUR 10.6 million or 21 % increase in value, and a volume increase of 4.6 tonnes or 20 % from the 2018-2019 average. Looking at the monthly trend, December 2020 recorded the lowest amounts, followed closely by April 2020, signalling that the impact of the COVID-19 outbreak was particularly severe in the first days of lockdown and at the beginning of the pandemic waves. Compared with the 2018-2019 average, March and April 2020 first sales had decreased, respectively, by 10 % and 18 % in value and by 4 % and 23 % in volume. However, the sector gradually picked up from May to October, with volume and value both being higher than the previous three years' average.

To be noted that the small pelagics – sardine, anchovy and mackerel – were the main drivers of the first sales' positive trend observed from spring to autumn of 2020. These species usually experience boom and bust of abundance due to their biological characteristics and the environmental conditions. Since 2020 was an abundant year, their catches contributed to attenuate the impact of the crisis in the fishing sector.

²⁰¹ See: EUMOFA, <https://www.eumofa.eu/data>.

Figure 38: First sales of fish, shellfish and crustaceans in Greece, 2018-2019 average-2020

Source: EUMOFA

Among the main species, sardine, anchovy and hake varied the most. Compared with the previous two years, their first sales were significantly higher in 2020. This trend continued most of 2020, with the exception of April, when the sales of both anchovy and sardine fell. On the other hand, high-value species such shrimp, tuna and red mullet recorded a drop in value, as they are typically intended for the HoReCa.

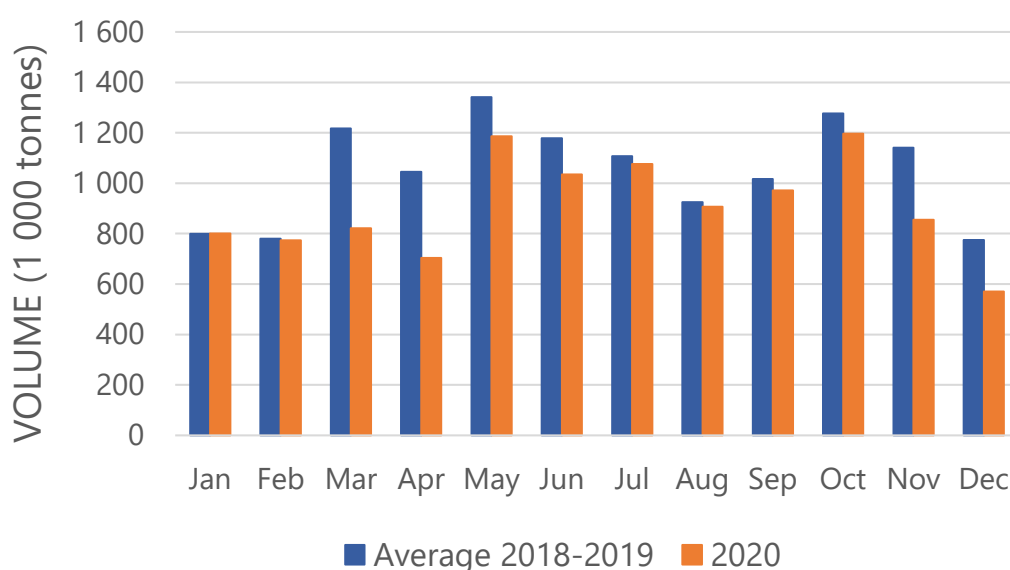
At wholesale stage, all products have been impacted somehow by the pandemic. The wholesale activity in 2020 was also lower than the 2018-2019 average²⁰².

This disruption was mainly driven by anchovy, which saw wholesale sales drop by 35 % from the previous two years' average. March, April, November and December showed the highest decreases, dropping by 33 %, 33 %, 25 % and 26 %, respectively. Conversely, hake was the only species that saw wholesale sales increase in 2020 from the 2018-2019 average, growing 2 % in volume and 5 % in value.

The trends related to COVID-19 affecting international trade were also notable in Greece.

With import flows, it clearly emerged that in 2020, the COVID-19 pandemic had a high impact on both frozen and prepared/preserved products, which, respectively, dropped in volume by 28 % and by 24 % compared with the previous three years' average. In value terms, the drop was even higher, reaching more than 50 % for both product categories. However, at species level, the decrease was only present for fisheries products, such as squid, which ranks third in value in total imports. This is related to the production increase, which required increasing imports of some inputs such as fishmeal and fish oil for the aquaculture sector²⁰³.

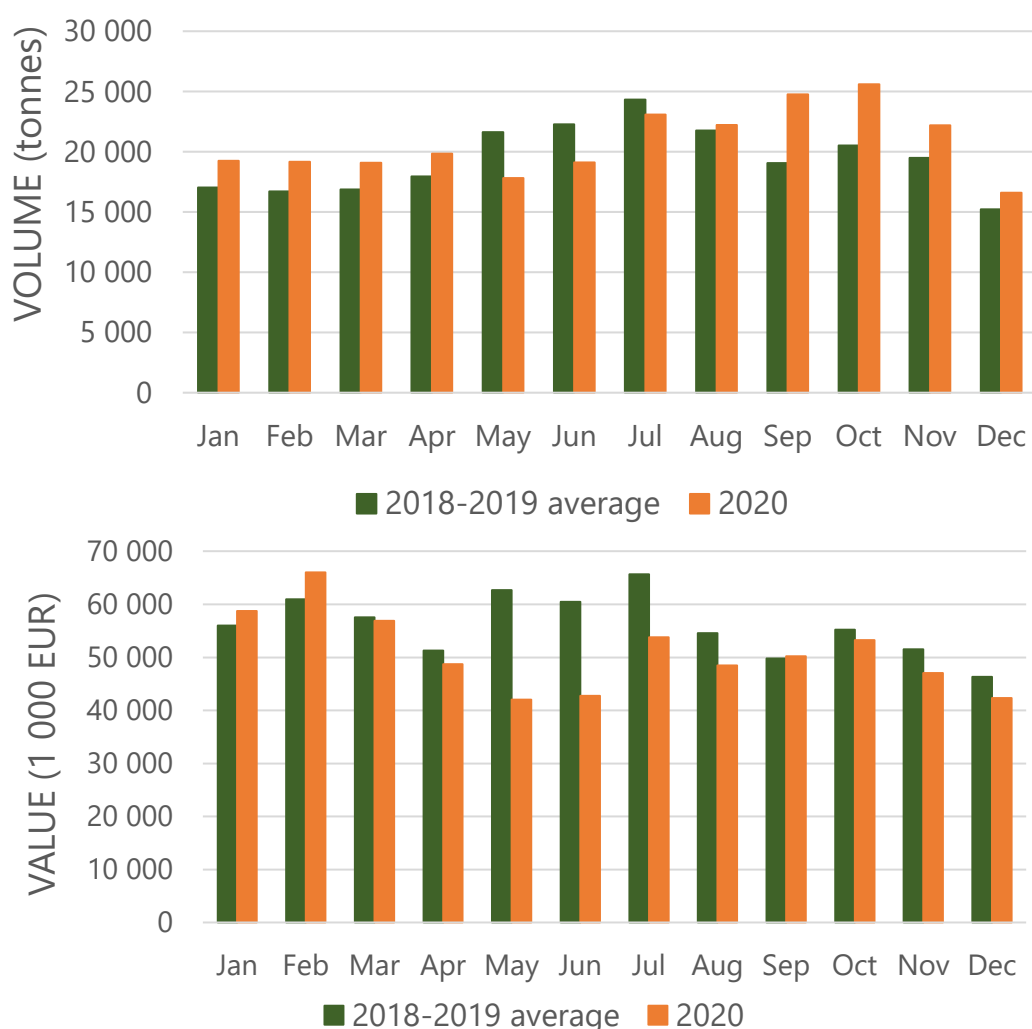
Figure 39: Wholesales of fisheries and aquaculture products in Greece, 2018-2019 average-2020



Source: EUMOFA

²⁰² *Ibidem.*

²⁰³ *Ibidem.*

Figure 40: Imports of fisheries and aquaculture products in Greece, 2018-2019 average-2020

Source: EUMOFA elaboration of Eurostat-Comext data

Table 30: Volume and price trends at import level of selected fisheries and aquaculture products in Greece, 2020/2017-2019 average

Products	2020		% variation 2020/2017-2019 average	
	Volume (1 000 tonnes)	Value (EUR million)	Volume	Value
Fishmeal	104 453	94.2	25	30
Fish oil	40 794	33.7	32	30
Squid	15 296	56.7	-33	-27

Source: EUMOFA elaboration of Eurostat-Comext data

Exports in 2020 increased 4 % in volume and 6 % in value compared with the previous three years' average²⁰⁴. The positive trend took place during the second semester, with a 16 % increase from the same period in 2018-2019. The main target markets for Greek products followed different trends, with exports to Italy decreasing 13 % in volume compared with the 2017-2019 average and exports to Spain growing a significant 74 %.

At species level, the increase recorded in 2020 was driven by seabass and seabream. In general, the weight of aquaculture products in Greek exports is usually very high and earns around EUR 700 million per year. The exports of these species mainly increased in the second half of the year, with volume increasing 21 % from July to December 2020 compared with the same period in 2017-2019, due to an upward trend of dispatches to Spain. To be noted that in 2020, this was accompanied by a 25 % increase in volume of fishmeal imports above the 2017-2019 average.

The Greek household consumption of fish seems to be affected by the pandemic. Qualitative insights from the stakeholders' survey suggest that restrictions to mobility limited consumers' access to locations where small-scale fisheries sell fresh products. In addition, online purchases of seafood products were very low compared with traditional ones. Anecdotal evidence also suggests that changes in consumption patterns, if any, remain limited and are subject to changes in production.

2.6.3.4 Aquaculture production and out-of-home consumption

According to the Federation of Greek Maricultures (FGM), which recently released estimates on Greek aquaculture production for 2020²⁰⁵, the production of main species – seabream and seabass – totalled 117 000 tonnes, with a 2.9 % growth from that recorded in 2019. Other species, representing approximately 3 % of the total production of marine fish, exceeded 5 000 tonnes, an increase of 18 % from 2019.

The evolution of the feed market is critical for the aquaculture sector, since fish feed accounts for 57 % to 59 % of the production costs. According to the FGM report, feed sales grew by 2 % between 2018 and 2019, reaching 258 000 tonnes of which 95 % is manufactured in Greece. The estimate for 2020 is that sales increased less, following a trend set since 2017. The average prices, however, remained at around 1.04 EUR/tonne.

The predictions concerning juvenile production for 2020 confirm a decreasing trend with production of seabass juveniles dropping 4 % in volume from 2019 and seabream juveniles decreasing by 10.9 %. The predicted drop in seabream is more than double the 4.8 % drop it experienced between 2018 and 2019.

Overall, yearly figures do not reveal a great disruption in aquaculture production. However, Greece had been facing economic difficulties since well before the pandemic crisis. Now, the COVID-19 crisis has set back the country's export and consumption-driven recovery²⁰⁶ and might be forcing small-scale aquaculture into cash flow problems and even bankruptcy^{207,208}. In fact, disruptions in sales have already been noted by producers, with revenue from shellfish, seabass and seabream particularly affected by the closure of HoReCa. In particular, the negative impact on seabream sales – directly linked

²⁰⁴ *Ibidem*.

²⁰⁵ See: FGM, 2020, *Aquaculture in Greece 2020*, Athens, pp. 1-16, https://www.fgm.com.gr/uploads/file/FGM_20_ENG_PRINT.pdf.

²⁰⁶ See: OECD, 2020d, *OECD Economic Surveys: Greece 2020*, OECD Publishing, Paris, pp. 1-135, <https://www.oecd-ilibrary.org/sites/b04b25de-en/index.html?itemId=/content/publication/b04b25de-en>.

²⁰⁷ See: FAO, 2020a, *Globefish Highlights, July 2020 Issue*, Rome, pp. 1-68, <http://www.fao.org/documents/card/en/c/cb1125en/>.

²⁰⁸ See: <https://www.forin.gr/articles/article/31294/elopu-sobara-problhmata-logw-covid-19-antimetwpizei-o-klados-ths-ixthuokalliergeias>; <https://www.alltech.com/podcast-blog/nick-lykiardopulo-adversity-aquaculture-fish-farming-during-crisis>.

to the closure of restaurants – has been estimated at EUR 1.8 million per week²⁰⁹. The farmed fish in sizes usually supplied to HoReCa establishments – between 600 gr and 1 kg – were the most affected. To be noted that the export-driven orientation of aquaculture production combined with the restrictive measures impacting out-of-home consumption might have reduced internal demand in Italy, France and Spain – Greece's main export markets. On the other side, compensating for the demand drop by shifting sales from HoReCa to retail proved easier for farmed fish than wild. Seeking potential opportunities, some fish farmers have changed their product format from whole products to filleted²¹⁰, so that seabass and seabream might be sold in supermarkets in the winter.

Out-of-home consumption is critical to the demand for fish products from fisheries and aquaculture. Three elements – closure of HoReCa entities, cancellation of major social events and the dramatic drop in tourism – contributed to the disruption in demand. Of note is that tourism's contribution to national GDP dropped 61 % in 2020 compared with 2019 and resulted in more than 65 000 job losses²¹¹. Although there are no quantitative data to evaluate such impact, interviews with stakeholders suggest that the SSF might have suffered a lot, since it usually sells directly to the restaurants and lacks the flexibility and resources needed to search for alternative market channels.

Table 31: Qualitative assessment of restrictions by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
First sale	High. Impact on high-value species compensated by boom of main small pelagics (anchovy and sardine).
Import - Export	High. Positive effect on aquaculture products exports. Negative effects on frozen and prepared/preserved product imports.
Wholesale	High. Products sales disrupted, with an average 30 % decrease for each species from 2018-2019.
Aquaculture	Medium. Aquaculture production decreased due to the drop in domestic and foreign demand.
Retail	No available evidence.

Source: own elaboration

2.6.4 Analysis of COVID-19 effects

Greece has three features that must be factored into an assessment of COVID-19's effects. First, the country has suffered an economic recession for more than ten years, from which it was starting to back bounce when the pandemic erupted. Second, Greece's unique geography affects markets accessibility and distribution. Third, the fact that both fisheries, made up of almost 14 000 vessels belonging to the SSCF, and aquaculture, with 63 companies and 12 000 direct and indirect employees were recently involved in a restructuring process. Therefore, capturing the complexity of the picture calls for combining both quantitative and qualitative information.

Map 8 of fishing density illustrates the general drop in fishing activity, which is estimated to have decreased by 12 % in the first six months of 2020 compared with the same period in 2019. Qualitative

²⁰⁹ See: <http://www.fao.org/in-action/globefish/covid-19/news/gfcm/es/>.

²¹⁰ See: <https://thefishsite.com/articles/women-in-aquaculture-lara-barazi>.

²¹¹ See: <https://wtcc.org/Research/Economic-Impact>.

insights from the stakeholders' survey suggest different impacts on the different fleet segments. For instance, purse seiners' catches of small pelagic fish should be sold immediately after being caught. However, because fish distribution channels were highly disrupted due to the limited activity of wholesale markets and restaurant closures, these fisheries were likely highly impacted. SSF was also likely to have been greatly impacted, as its products are traded at landing ports, often directly to end consumers or restaurants by the coast. Thus, they experienced a general demand drop when mobility restrictions limited consumer access to ports and also led to closure of restaurants.

On the production side, while first sale of fisheries products increased in 2020, the aquaculture sector dealt with a different reality. Since the farmed products in Greece are mostly exported, they suffered from the border closure, especially during the first months of the pandemic. Fish farmers explored some measures to handle unsold quantities of fish, by freezing or using new formats, such as filleting the fish, in order to be more amenable to the retail channel.

Table 32: Qualitative assessment of countermeasures adopted by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
Aquaculture	High. Shift of sales from HoReCa to retail.
First sale	No available evidence.
Wholesale	No available evidence.
Import-Export	No available evidence.
Retail	No available evidence.

Source: own elaboration

As for governmental and institutional support, the stakeholders acknowledged and appreciated the flexibility provided by the EU temporary framework, particularly in terms of State aids rules to support the overall economy²¹². Beyond the direct measures, such as loans and tax exemptions²¹³, the incentives adopted for specific sectors, such as providing a stimulus to national tourism²¹⁴, are also expected to have an impact on the fisheries and aquaculture sector, by stimulating the demand for seafood.

From the pool of EMFF measures, Greece has applied only those related to the temporary cessation of the fishing activity. However, in spite of the relevance of the aquaculture sector and the POs' requests, the compensation scheme for aquaculture farmers has not been implemented yet²¹⁵.

Below the list of proposed measures suggested by the stakeholders to cope with the effects of the crisis:

²¹² See: <https://www.lawspot.gr/nomika-nea/pandimia-kai-epitoseis-stin-elliniki-oikonomia-kratiki-stirixi-yposoy-500-ekat-eyro-stis>.

²¹³ See: <https://www.protothema.gr/economy/article/1007923/prosteta-metra-gia-tin-anakoufisi-tou-alieutikou-kladou/>.

²¹⁴ Tourism programme (EUR 30 million) for low-income groups and corporate or business travel vouchers programme. Source: UNWTO, 2020, *Understanding Domestic Tourism and Seizing its Opportunities*. UNWTO Briefing Note – *Tourism and COVID-19, Issue 3*, Madrid, pp. 1-40, <https://www.e-unwto.org/doi/epdf/10.18111/9789284422111>.

²¹⁵ Concerns over payments of compensation measures were reported on the media.

See: <https://www.mononews.gr/business/ichthiokalliergies-sta-50-ekat-evro-i-zimia-apo-tin-pandimia-agonia-gia-tin-katavoli-ton-apozimioseon>.

- **Cash-flow difficulties** could be addressed by providing more flexible support from credit and financial institutions, such as reduced interest rates, flexible loan repayment schemes, expanding options for loan restructuring and rescheduling payments, low-interest loans that allow for refinancing existing debt, support to maintain payroll, and flexible solutions to relieve payments by suspending certain financial obligations. The financial support should allow for upgrading the fleet for meeting the new sanitary and hygiene requirements, as well as sufficient supplies of equipment needed for the health and safety of the crew.
- **Vulnerability of the sector to COVID-19** or similar crisis could be tackled with a safety fund for commercial fisheries that receives regular contributions from all actors through the value chain or governments. Such a fund could help by covering production and income losses, sustaining the domestic seafood supply chains and ensuring continued operations.
- **Demand drops** might be dealt with by expanding government purchases of seafood for institutional uses, such as at migration camps, prisons or hospitals. This would also benefit from establishing links with groups that can absorb any excess supply of seafood, including community kitchens, community-based food sharing initiatives or other food assistance programs.
- **Surpluses of seafood production** can be dealt with by exploring options for systematically processing through freezing, canning, salting, converting to feed for aquaculture or human nutrition supplements. In addition, alternative market strategies should be promoted, possibly in collaboration with wholesalers, by launching online platforms to help fishers sell their catches.
- **Long-term weaknesses of each fleet segment** need to be better understood across regions. Examining effects of the pandemic on them would allow the fisheries and aquaculture sector to tailor responses and increase their effectiveness.
- **A level playing field is necessary** in efforts to create a long-lasting healthy competitive environment. This could call for establishing tariffs or quotas on those species produced in the EU that are subject to unfair competition from non-EU countries.

2.7 Portugal

KEY FINDINGS

- **Fishing effort decreased throughout 2020.** Decreases were due in part to low prices at first sale level and fishing restrictions on the weekends during the lockdown. Even if catches increased in some areas of the Azores, overall the national fleet performance worsened.
- **First sales dropped.** Compared with the 2017-2019 average, 2020 sales decreased 14% in volume and 11 % in value. From March to May, decreases mainly seen with bivalves and high-value species.
- **Huge turnover losses.** Farmers estimated huge turnover losses from 2019, especially for bivalves and algae.
- **Exports fell in value more than imports.** Compared with the average of the previous three years, exports dropped 10 % in volume and 13 % in value, while imports decreased by 8 % in volume and 11 % in value. Of note, exports to the UK recorded a 43 % increase.
- **Disruptions in tourism and cultural, religious and gastronomic events affected fisheries demand.** While the decrease was partially offset in 2020 by an increase in household consumption which grew 27% in volume and 33 % in value compared to the previous three years' average, it did not completely make up for the losses from out-of-home consumption.
- **Comprehensive countermeasures were adopted throughout the value chain.** Measures ranged from the exemption of services tariffs for producers and buyers to campaigns supporting national products.

2.7.1 Introduction and characteristics of the market

In 2018, Portugal ranked 12 among EU MSs for fisheries production and 16 for aquaculture. Its fishing fleet was made up of 7 887 vessels with a total capacity of 86 586 GT and an engine power of 345 642 kW. Of these, 90 % were less than 12 m, 8 % were between 12 and 23 m, and 2 % exceeded 23 m. Further, 57 % used gill nets and entangling nets, 26 % used hooks and lines, 10 % used traps and 7 % used other gears²¹⁶. The SSCF accounted for 79 % of total vessels. Of the 7 911 people (FTE) employed with the fleet, 39 % worked on 12-23 m vessels and 38 % worked on vessels 11 m or less²¹⁷.

At national level, 15 POs are formally recognised²¹⁸, all of them operating in the fisheries sector.

²¹⁶ See: EU Fleet Register, https://webgate.ec.europa.eu/fleet-europa/search_en.

²¹⁷ See: Carvalho N. et al., 2019, *The 2019 Annual Economic Report on the EU Fishing Fleet (STECF 19-06)*, Publications Office of the European Union, Luxembourg, pp. 1-496, <https://stecf.jrc.ec.europa.eu/documents/43805/2483556/STECF%2019-06%20-%20AER%20-%202019.pdf>.

²¹⁸ See: <https://ec.europa.eu/fisheries/sites/fisheries/files/list-of-recognised-producer-organisations-and-associations-of-producer-organisations.pdf>.

Table 33: World, EU-28 and Portuguese catches and aquaculture production in 2018, in 1 000 tonnes

Production	World	EU-28	Portugal	% of world	% of EU-28
Catches	97 232	5 337	174	0.18	3.30
Aquaculture	114 462	1 319	13	0.01	0.99
Total	211 694	6 656	187	0.08	2.81

Source: Eurostat and FAO

In 2018, total landings in Portugal amounted to 128 302 tonnes worth EUR 290 million²¹⁹. Mackerel, horse mackerel and sardine represented 45 % of total volume, while octopus ranked first in value with 12 % of the total, followed by sardine with 8 %.

In the same year, aquaculture production reached 11 766 tonnes worth EUR 96.82 million. Four species accounted for 92 % of the total value: clams, turbot, oyster and gilthead seabream which individually accounted for 53 %, 22 %, 10 % and 7 %, respectively. This same pool of species represented 84 % of the total volume, and individually accounted for 33 %, 23 %, 19 % and 9 % respectively²²⁰.

The Portuguese fish processing industries employed 7 439 persons in 2017. The value added reached EUR 195.3 million, which was 8 % of the value added of total manufacture of food products in Portugal²²¹. In 2018, the main products sold were “frozen whole salt water fish”, which accounted for 35 % sales, and dried fish, which accounted for 15 %²²². Total sales reached EUR 2.37 billion²²³.

In 2019, Portugal’s imports of fisheries and aquaculture products amounted to 0.51 million tonnes worth EUR 2.19 billion²²⁴. Cod, hake and squid, the top imported species in volume, together accounted for 31 % of total imports. In terms of value, cod, octopus and shrimps made up 42 % of the total. Cod alone (salted and dried) covers around 38 % of the national seafood demand²²⁵.

Spain, by far the main origin country, provided 51 % of total imports in value and 57 % in volume terms in 2019. Other important suppliers for the Portuguese market are Sweden, which provides 15 % of total imports in value - mainly consisting of cod of Norwegian origin -, and the Netherlands which provides 10 % of total imports.

As for exports²²⁶, in 2019 they reached 0.29 million tonnes worth EUR 1.1 billion. Cod, mackerel and octopus, the most valued exported species, accounted for 14 %, 7 % and 6 % of the total value, respectively, while the top three exported species in volume were mackerel, cod and swordfish, accounting together for around 30 % of total exports. Spain is by far the main destination country, covering over half of total export value in 2019. Italy, France and Brazil are also important markets, with Italy importing 11 % of Portugal’s exported products, and France and Brazil each importing 10 %.

²¹⁹ See: EUMOFA, <https://www.eumofa.eu/data>.

²²⁰ *Ibidem*.

²²¹ See: Eurostat-Structural and Business Statistics, <https://ec.europa.eu/eurostat/web/structural-business-statistics>.

²²² See: Eurostat, <https://ec.europa.eu/eurostat/data/database>.

²²³ *Ibidem*.

²²⁴ See: EUMOFA, <https://www.eumofa.eu/data>.

²²⁵ See: Almeida et al., 2015, *The seafood market in Portugal: Driving forces and consequences*, Elsevier, Lisbon, pp. 1-9, https://knowledge4policy.ec.europa.eu/publication/seafood-market-portugal-driving-forces-consequences_en.

²²⁶ See: EUMOFA, <https://www.eumofa.eu/data>.

The Portuguese apparent consumption in 2018 was estimated at 60.92 kg per capita, which was a 1 % increase from the previous year²²⁷. Cod is by far the most consumed species. In addition, Portugal's per capita expenditure of EUR 371 for buying fisheries and aquaculture products in 2019 was the highest of all EU MSs and more than three times higher than the EU average of EUR 110²²⁸. Portuguese consumers also were quite balanced with their expenditures on meat and fish products. Their spending of 53 % on meat and 47 % on fish was more balanced than other MSs in 2019²²⁹.

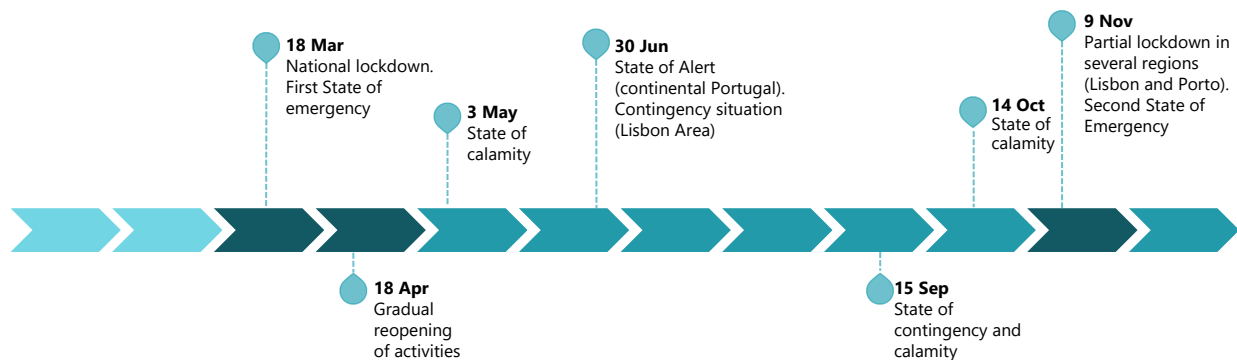
2.7.2 Timeline of legislative measures

In 2020, Portugal adopted more than 600 legislative measures to regulate the health emergency generated by COVID-19²³⁰. Restrictive measures included a national lockdown, temporary ban of movements, limitations on business and production, and border controls. Comparative analyses show that Portugal was quite early in adopting strict measures²³¹ to fight the pandemic.

This analysis identified four stages undertaken in Portugal for dealing with the pandemic in 2020: i) the initial state of emergency from March to early May, when the most severe economic and social restrictions were put in place; ii) the de-escalation stage from May to September when initial measures were eased, allowing the re-opening of HoReCa, stores and specific school levels; iii) the state of contingency and calamity from mid-September to mid-November, which addressed re-entering full activity for schools and workers; and iv) the state of calamity and emergency from mid-November until the end of the year, when tighter measures were adopted to cope with the second wave of COVID-19.

Overall, curfews were implemented during the emergency stages, mainly on weekends and before and after the Easter and Christmas holidays. More restrictive measures were applied at local level, according to the evolution of the pandemic.

Figure 41: Timeline of Portuguese restrictive measures and policy responses adopted in 2020



Source: own elaboration

In early March, the Portuguese government launched a digital platform to provide companies and citizens with relevant information in areas ranging from health to economic and social support

²²⁷ See: EUMOFA, 2020b, *The EU Fish Market*, Publications Office of the European Union, Luxembourg, pp. 56-75, https://www.eumofa.eu/documents/20178/415635/EN_The+EU+fish+market_2020.pdf/fe6285bb-5446-ac1a-e213-6fd6f64d0d85?t=1604671147068.

²²⁸ *Ibidem*.

²²⁹ *Ibidem*.

²³⁰ Official compilation available at <https://dre.pt/legislacao-covid-19-upo#RA2020>.

²³¹ See: Correia P. et al., 2020, *The Combat against COVID-19 in Portugal: How State Measures and Data Availability Reinforce Some Organizational Values and Contribute to the Sustainability of the National Health System*, Sustainability 12, no. 18, pp. 1-13, <https://www.mdpi.com/2071-1050/12/18/7513>.

measures. Other measures included tools for implementing teleworking²³², which was mandatory for all activities (whenever feasible) during the state of emergency. In general, the battery of measures to support the economy and employment included fiscal measures, such as postponement of tax payment; complementary measures, such as grace periods for payments; target actions for the sectors most severely affected, such as tourism, culture or the social sectors, and simplified layoff procedures²³³.

For the fisheries sector, Portugal combined EMFF and national resources to cope with the crisis. The restrictions to mobility during the emergency state did not apply to workers in the industry, although fishing during the weekends was forbidden in continental Portugal. Early actions were adopted to finance purchase of Personal Protection Equipment (PPE) and COVID-19 testing for all workers across the entire value chain. A contingency plan was quickly implemented to ensure that first sale markets remained operational with implementation of health protocols, suspension of external visits, reduction in the number of audits, and a 90-day suspension of berthing rates²³⁴. The exemption of service tariffs was comprehensive, covering first-sales, ice, freezing and conservation taxes for both producers and buyers. In addition, companies had available credit lines and potential debt renegotiation at zero interest rate, as well as salary compensations.

All EMFF measures regarding temporary cessation of fishing activities, support to aquaculture and additional support to POs were activated. In addition, exceptional measures were adopted to support companies and operators within the EMFF Operational Programmes by providing advance payments, budget flexibility, and extension of projects and payment claims²³⁵. Support and mitigation measures, adopted by the first sale markets and the public harbour company (Docapesca), called for monthly payments for the use of market and port areas to be submitted in instalments, audit schedules were changed²³⁶ and free access was granted to the online sales system during the pandemic crisis.

In addition to the national measures, the autonomous regions of Madeira and the Azores implemented local measures: financial support to ship owners and fishers²³⁷, interruption of tax payments at first sale and cold stores until June 2021²³⁸, and backing of air transport to ensure the provision of raw material for the canning industry²³⁹. The Azores also implemented obligatory landing at given ports²⁴⁰.

2.7.3 Assessment of the seafood availability and consumption

2.7.3.1 Socio-economic impact on the fleet and evolution of marine gasoil prices

The socio-economic condition of the Portuguese fleet in 2020 was estimated to be worse than 2019 by the JRC²⁴¹, which identified negative trends in almost all the indicators.

²³² See: <https://covid19estamoson.gov.pt/>.

²³³ A detailed list of the measures adopted is available at <https://covid19estamoson.gov.pt/apoios-ao-emprego-e-economia/>.

²³⁴ See: <https://www.portugal.gov.pt/pt/gc22/comunicacao/comunicado?i=covid-19-apoio-ao-setor-da-pesca-e-aquicultura>.

²³⁵ See: https://www.dgrm.mm.gov.pt/documents/20143/46478/Comunicado_MinMar_Covid19_17.03.2020.pdf/3575dc5e-4707-1b40-2dca-7dbeafb46d1a.

²³⁶ See: <http://www.docapesca.pt/pt/comunicacao/noticias/item/alteracoes-leiloes.html>.

²³⁷ FUNDOPESCA in Açores supported fishers with half the minimum wage in the region; an additional fund was available for fisheries professionals not eligible for FUNDOPESCA. For more details, please see: Pita et al., 2020, *Impacto da pandemia de COVID-19 nos sectores da pesca e aquicultura em Portugal*, pp. 1-11, http://www.cesam.ua.pt/files/Briefing_COVIDPESCA_Portugal.pdf.

²³⁸ See: <https://www.madeira.gov.pt/Covid19/PrincipaisMedidasdeApoioRegional>.

²³⁹ See: https://covid19.azores.gov.pt/?page_id=2554.

²⁴⁰ See: <https://jo.azores.gov.pt/#/ato/cb627ce8-3cbc-4d24-abe3-463f896c82d5>.

²⁴¹ See: Carvalho N. et al., 2020, *The impact of COVID-19 on the EU-27 fishing fleet*, Publications Office of the European Union, Luxembourg, pp. 1-34, <https://publications.jrc.ec.europa.eu/repository/handle/JRC122999>.

Table 34: Socio-economic indicators on the Portuguese fleet, 2018-2020

Socio-economic indicators	2018	2019*	2020*	% variation 2019/2020
Employment (FTE)	7 911	7 747	5 798	-25.10
Live weight of landings (1 000 tonnes)	162.40	168.10	128.60	-23.50
Value of landings (EUR million)	379.70	384.30	289.70	-24.60
Gross Value Added (GVA) (EUR million)	245.13	253.93	192.39	-24.20
Gross profit (EUR million)	104.60	110.90	84.60	-23.80
Net profit (EUR million)	46.70	53.30	23.70	-55.60
GVA to revenue (%)	64.20	65.50	65.70	0.30
Gross profit margin (%)	27.40	28.60	28.90	0.90
Net profit margin (%)	12.20	13.70	8.10	-41.20

Source: Carvalho N. *et al.*, 2020, *The impact of COVID-19 on the EU-27 fishing fleet*

Note: * Figures for 2019 and 2020 are estimates

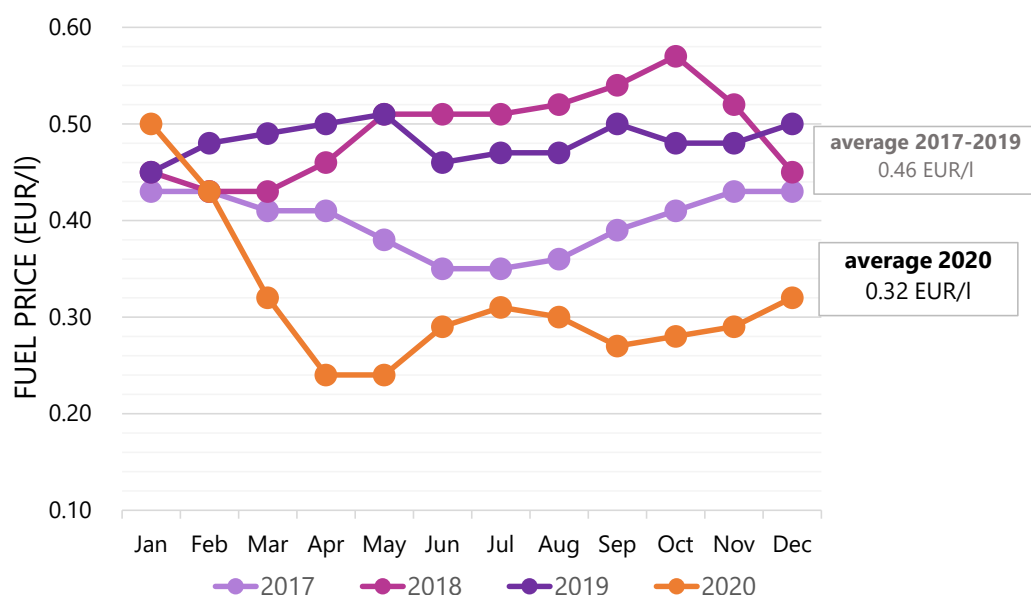
These figures are consistent with the results of the qualitative study developed by Pita *et al.* (2020)²⁴². Income losses varied between the 100 % reported by coastal crustacean trawlers and longliners, the substantive losses declared by the vessels targeting tuna and other high-value species in the Azores, and the more balanced situation of small-scale fishing vessels targeting species for the national market.

The main factors explaining such a drop in socio-economic conditions of the Portuguese fleet were the fall – and slow return – of tourism, disruptions in the main international markets, and the closure of the HoReCa sector and decrease of first sale prices²⁴³.

At the same time, however, the fall in the fuel prices reduced the operating costs. The average monthly price of fuel in Portugal fell 24 %, from 0.49 EUR/litre in the last quarter of 2019 to 0.37 EUR/litre in the first quarter of 2020. The most significant drop was recorded in April, when the fuel price fell 25 % from the previous month and 52 % from April 2019. By May, the average monthly price started to recover but the 2020 yearly average was still 31 % lower than in the previous three years.

²⁴² Results from interviews conducted between 6 April and 5 June 2020 with 48 representatives of Portuguese fisheries organizations. See: Pita *et al.*, 2020, *Impacto da pandemia de COVID-19 nos sectores da pesca e aquicultura em Portugal*, pp. 1-11, http://www.cesam.ua.pt/files/Briefing_COVIDPESCA_Portugal.pdf.

²⁴³ *Ibidem*.

Figure 42: Monthly average fuel prices in Portugal, 2017-2020

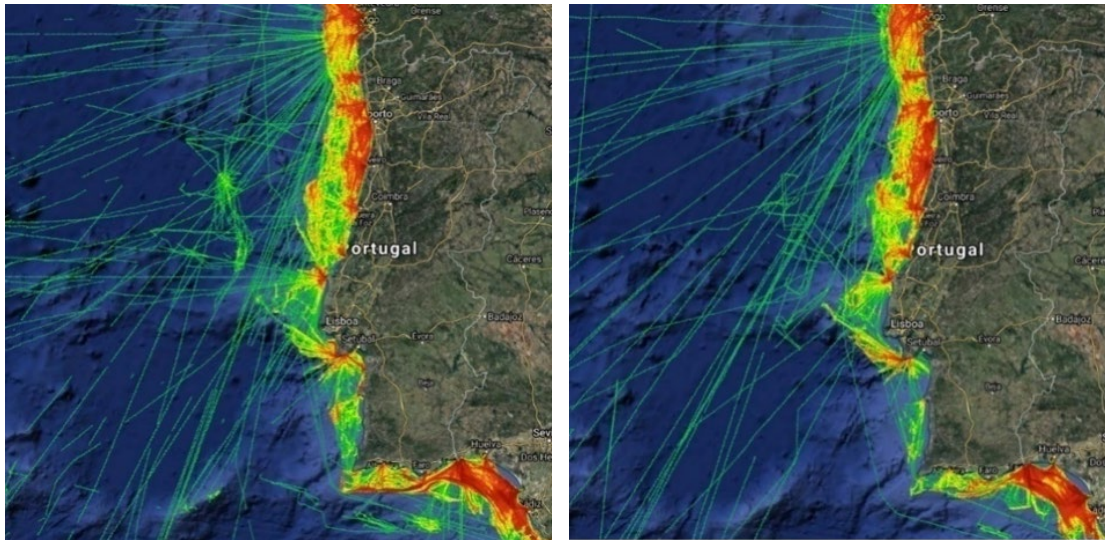
Source: EUMOFA elaboration of MABUX data

2.7.3.2 Fishery activity

Fishing and aquaculture were listed as essential activities with Portugal's launching a state of emergency in mid-March. However, fishing operators pointed out the disruption of their regular activity, since the fishing effort did not pay-off due to some market limits, the HoReCa closure, the difficulties of exporting to certain markets, and the dramatic drop in high-value species prices²⁴⁴.

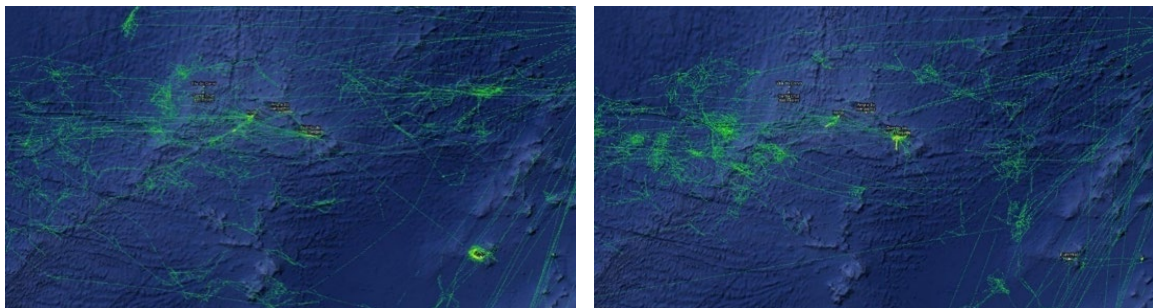
The changes in the fishing vessels' activity recorded for continental Portugal are visible in the fishing grounds located farther from the coast. The reduction of fishing effort was also affected by the restrictive measures implemented on all weekends during the state of emergency. To be noted that remarkable variations were also observed in the Azores and Madeira, where the decrease of fishing vessel activity in certain areas (e.g. around Madeira) was accompanied by the increase of fishing vessel activity in other areas (e.g. around San Miguel). In all cases, first sales were lower than the previous years because of the COVID-19 circumstances.

²⁴⁴ By the end of March, drops of 80 % of exports from Açores to Spain and Portugal were reported, as well as decreases of 70-80 % of sales from Madeira. See <https://www.publico.pt/2020/03/25/economia/noticia/coronavirus-pescadores-beira-ataque-nervos-1909189>.

Map 9: Fishing vessel route density in Portugal (continental), April 2019 and April 2020

Source: EMODnet Human Activities

Note: April 2019 (left) and April 2020 (right)

Map 10: Fishing vessel route density in Portugal (Azores and Madeira), April 2019 and April 2020

Source: EMODNET Human Activities

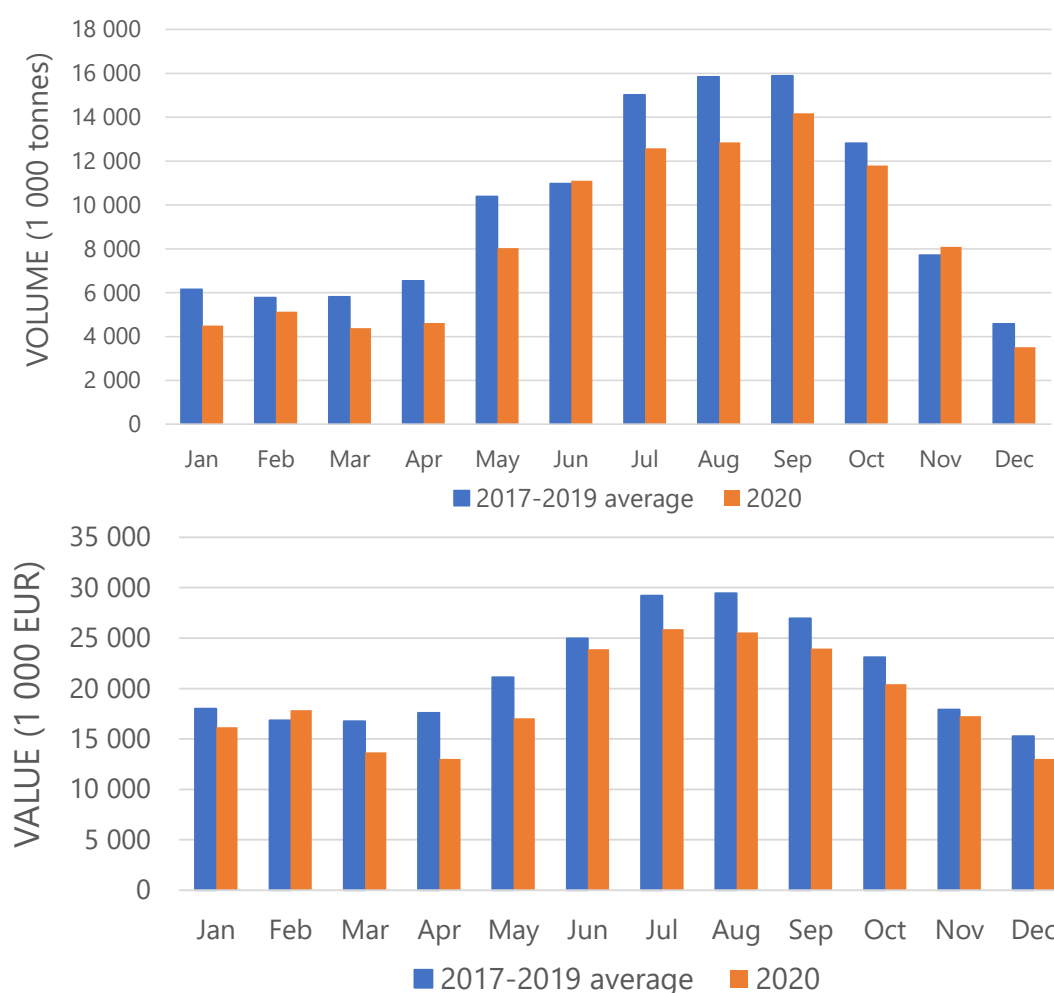
Note: April 2019 (above) and April 2020 (below)

2.7.3.3 First sale, wholesale, imports and household consumption

First sales registered in Portugal in 2020 amounted to 100 778 tonnes worth EUR 228 million²⁴⁵. This represented a 21% volume decrease of 26 981 tonnes and 13% value decrease of EUR 35 million from 2019, and a 14% volume decrease and 11% value decrease from the average of the previous three years. As for the monthly trend, the lowest first sales were recorded in March 2020, which was consistent with the anecdotal and qualitative evidence on the fishing fleet's activity. Compared with the same month in 2017-2019, first sales in March 2020 had a 25% volume drop of 1 434 tonnes and 21% value decrease of EUR 3.6 million. A similar trend continued in April, with volume and value at 30% and 29%, respectively, below the previous three years' average for the same month. The recovery of first sales began in May, with the ease of restrictive measures.

It should be noted that the low December figures reflect the typical features of the Portuguese fishery market. Indeed, the top first sale species in this country are small-pelagics – mackerel, Atlantic horse mackerel and sardine – and their catches are very low in December every year.

²⁴⁵ See: EUMOFA, <https://www.eumofa.eu/data>.

Figure 43: First sale of fish, shellfish and crustaceans in Portugal, 2017-2019 average-2020

Source: EUMOFA

The impact of the COVID-19 crisis on first sales in March 2020 was similar in volume and value. However, although volume recovered very fast from April onwards, the decrease in value lasted longer. The main species driving the value drop were tuna, anchovy, seabream and mackerel. Mackerel, sardine and tuna were the drivers of the volume decrease.

The national lockdown in March brought a sudden halt to normal life and, hence, a limited demand for fisheries products. While the distribution channels for the internal market were protected, the HoReCa closure, the loss of the main international markets (mainly Spain, France and Italy) and the drop in the number of buyers at first auction impacted the wholesale stage, which include more than 1 600 companies²⁴⁶. The big retailers became the main sellers of the national fish products, but the decrease of sales in local markets was significant²⁴⁷.

According to the Freezing Industry Association (ALIF, *Associação da Indústria Alimentar pelo Frio*), the internal sales of frozen products declined by 20 % and exports by 40 %²⁴⁸. The drops are linked to the

²⁴⁶ Data for 2018. See: Fresco Vilches C., 2020, *Estudio de mercado. El Mercado de pescado en Portugal 2020*, ICES España Exportación e Inversiones, pp. 1-56, <https://www.icex.es/icex/es/navegacion-principal/todos-nuestros-servicios/informacion-de-mercados/estudios-de-mercados-y-otros-documentos-de-comercio-exterior/DOC2020855471.html>.

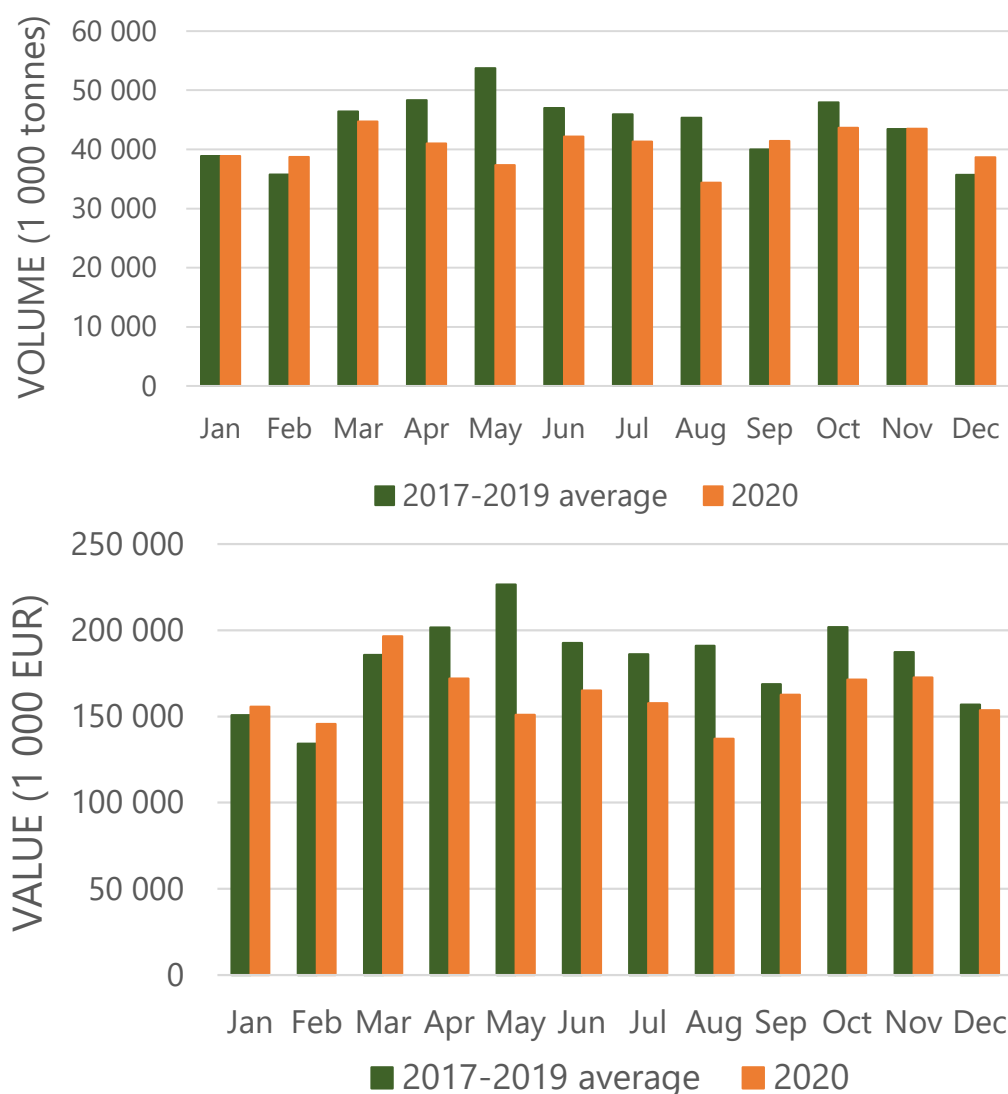
²⁴⁷ See: Pita et al., 2020, *Impacto da pandemia de COVID-19 nos sectores da pesca e aquicultura em Portugal*, pp. 1-11, http://www.cesam.ua.pt/files/Briefing_COVIDPESCA_Portugal.pdf.

²⁴⁸ See <https://www.dnnoticias.pt/2020/12/19/243514-pescado-congelado-com-quebras-de-40-na-exportacao-e-20-nas-vendas-internas/>.

lack of demand from the HoReCa channel. Qualitative evidence also reported difficulties in the supply of raw material related to the cessation of fishing activities in other countries as well as to logistical difficulties²⁴⁹. Similar difficulties were experienced by the canning industry, as it dealt with increases in transport costs and lack of staff at major ports, such as Leixões²⁵⁰.

The analysis of the import-export flows reflects all those impacts. In 2020, the imports of fisheries and aquaculture products in Portugal totalled 0.49 million tonnes worth EUR 1.94 billion, with a reduction of 12 % in value and 5 % in volume from 2019. The drop in value was similar when compared with the previous three years' average, while the drop in volume increased to 8 %. The main differences can be seen in May 2020, which had a 31 % drop in volume and 33 % drop in value compared with the 2017-2019 average²⁵¹.

Figure 44: Imports of fisheries and aquaculture products in Portugal, 2017-2019 average-2020



Source: EUMOFA elaboration of Eurostat-Comext data

²⁴⁹ See: Pita et al., 2020, *Impacto da pandemia de COVID-19 nos sectores da pesca e aquicultura em Portugal*, pp. 1-11, http://www.cesam.ua.pt/files/Briefing_COVIDPESCA_Portugal.pdf.

²⁵⁰ Ibidem.

²⁵¹ See: EUMOFA, <https://www.eumofa.eu/data>.

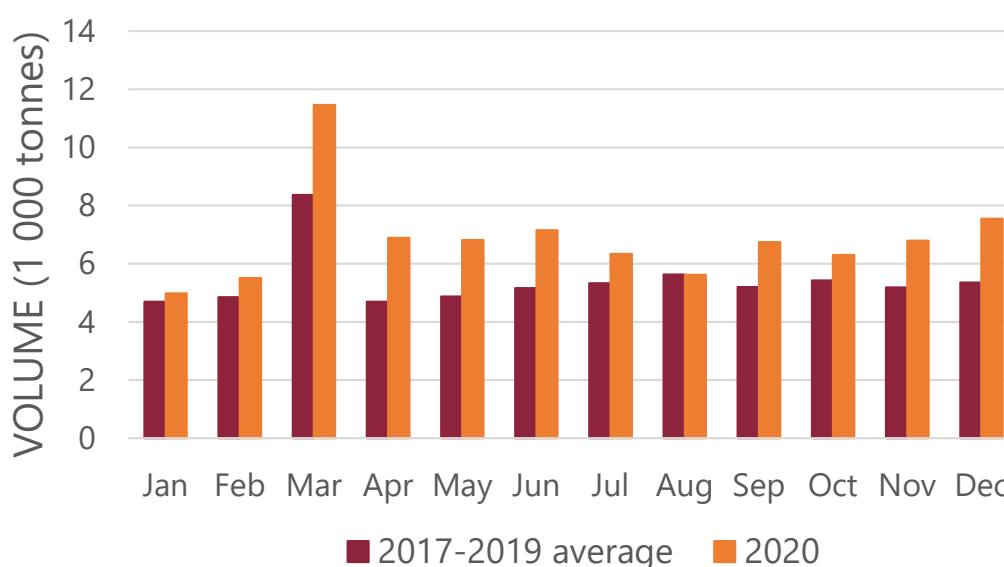
Cod and squid, together with octopus, were the main drivers of the import drop in both volume and value in May 2020 but also throughout the whole year.

Spain is by far the main supplier of fisheries and aquaculture products to the Portuguese market. Despite the decreases during the early months of the pandemic, on a yearly basis the 2020 imports from Spain declined in volume by only 3 % compared with the 2017-2019 average. On the other hand, other suppliers experienced significant impacts, with imports from the Netherlands decreasing 16 % and from China dropping 22 %²⁵².

As for the export flows, volumes were reduced in all target markets in 2020 with the exception of France – exports to Spain dropped 15 % and to Italy dropped 18 %, while exports to France increased 22 %, compared with the previous three years' average. Other notable trends included decreases in flows to traditional and recent partners, such as Angola and China, respectively, and increasing exports to the UK, with Angola decreasing 56 %, China decreasing 35 % and UK increasing 43 %²⁵³.

Portugal ranks third in the world in seafood per capita consumption²⁵⁴. Consequently, the limits to out-of-home consumption brought by the COVID-19 crisis translated into an increase of household consumption. The figures for 2020 show a growth of 27 % in volume and 33 % in value compared with the previous three years' average²⁵⁵. From March to June, the rise was around 40 % in volume, dropping with the easing of restrictive measures and scaling up again with the reintroduction of the restrictions to HoReCa and outdoor activities.

Figure 45: Household consumption of fresh fisheries and aquaculture products in Portugal, 2017-2019 average-2020



Source: EUMOFA elaboration of EUROPANEL data

The main species driving the changes through the year were shrimps, European seabass, scabbard fish, gilthead seabream, octopus and salmon. Also, to be noted, the household consumption of clams in April 2020 was double the 2017-2019 average.

²⁵² *Ibidem*.

²⁵³ *Ibidem*.

²⁵⁴ See: Almeida et al., 2015, *The seafood market in Portugal: Driving forces and consequences*, Elsevier, Lisbon, pp. 1-9, https://knowledge4policy.ec.europa.eu/publication/seafood-market-portugal-driving-forces-consequences_en.

²⁵⁵ See: EUMOFA, <https://www.eumofa.eu/data>.

2.7.3.4 Aquaculture production and out-of-home consumption

The study drafted by Pita *et al.* (2020)²⁵⁶ pointed out that the COVID-19 crisis had a minimum impact on farmed species such as seabass, trout and seabream. Conversely, other species, such as bivalves and algae that mainly target European markets, recorded a 90 % decrease in sales volume, while turbot seemed to have recovered from its 40 % drop in turnover during the summer²⁵⁷. This was confirmed by the Portuguese Association of Aquaculture Producers (APA, *Associação Portuguesa de Aquacultores*).

Out-of-home consumption was severely impacted by the restrictive measures and the HoReCa closure. The data compiled through national consumers' panels indicate that nearly half of the out-of-home consumption events that were cancelled were related to leisure²⁵⁸. The displacement of social events from out-of-home to in-home consumption is clear in the figures for June 2020 which found a more than 30 % increase in in-home lunch and dinner compared with the same period in 2019. However, comparative analysis shows that the switching of spending to in-home consumption did not make up for the losses of out-of-home consumption²⁵⁹.

For out-of-home consumption of processed seafood, Euromonitor reported a 44 % decrease in volume in 2020 compared with the previous three years' average²⁶⁰.

The drop in tourism activity also affected out-of-home consumption, with tourism income decreasing by more than EUR 10 000 million from 2019²⁶¹. Qualitative evidence also points to concerns about the cancellation of cultural, religious and gastronomic events where fish products are traditionally consumed²⁶².

Finally, a study developed through a consumers' panel during the mid-March to mid-May 2020 de-escalation phase²⁶³ concluded that the increase in online consumption is not at odds with consuming local products, and that 58 % of the consumers valued buying local products more than before the crisis. In terms of long-lasting habits, 57 % declared their intention to buy online more frequently. Other studies pointed out that even before the crisis²⁶⁴, Portuguese consumers' shopping patterns had started to shift towards stocking up in the food and beverage categories, and continued with a 10 % increase in January and February 2020 compared with the same months in 2019.

²⁵⁶ See: Pita *et al.*, 2020, *Impacto da pandemia de COVID-19 nos sectores da pesca e aquicultura em Portugal*, pp. 1-11, http://www.cesam.ua.pt/files/Briefing_COVIDPESCA_Portugal.pdf.

²⁵⁷ See: <https://visao.sapo.pt/atualidade/politica/2021-01-24-covid-19-vendas-de-algas-e-bivalves-com-quebras-ate-90-desde-marco-associacao/>.

²⁵⁸ See: https://grandeconsumo.com/portugueses-estao-a-realizar-em-media-mais-tres-ocasioes-de-consumo-em-casa/#.YH7KqD_ta9I.

²⁵⁹ See: <https://kantar.turtl.co/story/covid-19-impact-in-out-of-home-food-and-drinks-p/page/3/2>.

²⁶⁰ The source of out-of-home consumption data is Euromonitor International, Fresh food and Packaged food, 2021. Although Euromonitor International makes every effort to ensure that it corrects faults in the Intelligence of which it is aware, it does not warrant that the Intelligence will be accurate, up-to-date or complete as the accuracy and completeness of the data and other content available in respect of different parts of the Intelligence will vary depending on the availability and quality of sources on which each part is based. Euromonitor International does not take any responsibility nor is liable for any damage caused through the use of our data and holds no accountability of how it is interpreted or used by any third-party.

²⁶¹ See: <https://www.publico.pt/2021/02/27/infografia/ascensao-queda-turismo-dez-graficos-586>.

²⁶² See: Pita *et al.*, 2020, *Impacto da pandemia de COVID-19 nos sectores da pesca e aquicultura em Portugal*, pp. 1-11, http://www.cesam.ua.pt/files/Briefing_COVIDPESCA_Portugal.pdf.

²⁶³ See: <https://www.icex.es/icex/es/navegacion-principal/todos-nuestros-servicios/informacion-de-mercados/paises/navegacion-principal/noticias/portugal-grandeconsumo-com-portugueses-com-preferencia-por-productos-de-origem-nacional-new2020853909.html?idPais=PT>. For details on the panel see: <https://www.netsonda.pt/wp-content/uploads/2020/04/PanelBook2020.pdf>.

²⁶⁴ See: <https://www.kantar.com/inspiration/coronavirus/covid-19-the-initial-impact-on-consumption-in-portugal>.

Table 35: Qualitative assessment of restrictions by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
First sale	High. April 2020 was the most affected month. First sales of high-value species decreased in both volume and price.
Aquaculture	High. Sharp reduction of sales from March to May 2020. Bivalves were the most impacted species. Producing costs increased, as well as market uncertainty for exports.
Import - Export	High. Trade flows heavily affected in March to May 2020. The value of exports decreased more than volume, with a 12 %-drop (compared with 2017-2019 average) in the last quarter.
Retail	High. Strong increase in retail sales, due to the closure of HoReCa.

Source: own elaboration

2.7.4 Analysis of COVID-19 effects

Stakeholders surveyed perceived the situation as stable or recovering in terms of sales, while production, transaction costs and commercial margins seem to have been worsened with the COVID-19 crisis.

Overall, fishing activity decreased, driven by the reduction of first sale prices and weekend restrictions on fishing during the state of emergency in continental Portugal. On the other hand, increases in fishing effort were observed in some areas, particularly in the Azores.

The data analysed showed a bigger impact on wild than on farmed species. The initial restrictions limited the availability of fresh wild fish in the markets. Also, a lower shopping frequency had a negative impact on perishable products. The aquaculture production was more flexible and, apparently, sales of most farmed species were shifted from HoReCa to retailers.

The Portuguese government released the following figures for its different support measures²⁶⁵.

- **Financial support to buy personal protection equipment as well as for running tests.** EUR 1.5 million was allocated to 58 operators, mostly processing companies (55 %) and ship owners (31 %).
- **Compensation for temporary cessation of activities.** Nearly 1 000 applications were processed and EUR 7.6 million allocated.
- **Compensation scheme for aquaculture companies.** More than EUR 2.5 million was allocated to 102 applicants.
- **Production and marketing plans of the POs.** Review of the maximum ceiling to include PPE and testing for COVID-19.

Qualitative evidence from the stakeholders surveyed for this and other studies²⁶⁶ provided insights on the impact of the measures adopted. For instance, credit lines were considered restrictive and perceived as contracting a debt by some actors. On the other hand, financial support associated with

²⁶⁵ See: <https://www.mar2020.pt/noticias/mar-2020-atribuiu-148-milhoes-de-euros-para-mitigar-os-efeitos-da-pandemia-no-sector/>.

²⁶⁶ See: Pita et al., 2020, *Impacto da pandemia de COVID-19 nos sectores da pesca e aquicultura em Portugal*, pp. 1-11, http://www.cesam.ua.pt/files/Briefing_COVIDPESCA_Portugal.pdf.

the temporary cessation of fishing activities was considered smoothly implemented and well-accepted.

The Portuguese Aquaculture Producers Association (APA) stated that “lay-off measures” were not effective for aquaculture companies, which had to continue their daily operations to keep the animals alive. On the other hand, measures for compensation of losses within the EMFF were considered to have had a high impact.

Stakeholders’ demand for support of national products was addressed by Docapesca, which in December launched the website “Auction at home” (“*A lota em casa*”²⁶⁷). The site allows end consumers to identify the point of sale for fresh fish products from auctions, including fish markets, fishmongers and large retail companies. Similarly, some big retailers launched campaigns supporting fresh fish products²⁶⁸.

The producers reacted by increasing direct sales to consumers through using online platforms. However, they pointed out that the legal restrictions on the first sale markets hampered their capability to maximise this option. Beyond allowing sales out of the first sale markets, stakeholders demand complementary measures related to raising awareness in the use of online tools, and developing a model of “fishing on demand”. Such a model would be based on addressing orders paid in advance by online buyers using automatic aggregations.

Table 36: Qualitative assessment of countermeasures adopted by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
First sale	Medium. Financial measures reduced operational costs. New sale channels for fisheries products used.
Aquaculture	No available evidence.
Retail	No available evidence.

Source: own elaboration

²⁶⁷ See: <https://www.lotaemcasa.pt/>.

²⁶⁸ See: for instance <https://youtu.be/pY17hKgGVdg> from Continente.

2.8 Bulgaria

KEY FINDINGS

- **Disruption of larger-scale fisheries.** Larger-scale fisheries were the most affected by the pandemic, due to disrupted supply chains, closure of export markets and the drop in demand caused by the shutdowns of restaurants and of the travel industry that devastated Bulgaria's 2020 tourist season.
- **Decrease in first sale volume.** First sales saw a significant 47 % decrease in volumes from 2019 to 2020. Sea snails and sprat were among the most severely affected major species.
- **Volatility of demand impacts fisheries and aquaculture, especially high-value species.** The main impact of the pandemic on aquaculture was the disruption of deliveries, due to the volatility of demand. This caused difficulties in planning production activities and facilities management. In addition, fish farms saw a decrease of sales and productivity, especially those producing higher value species such as sturgeon and trout.
- **Restrictions affect fresh exports more than frozen or prepared/preserved.** Fresh products intended for export were more affected by the restrictions than frozen or prepared/preserved products. Compared with the 2017-2019 average, export volume of prepared/preserved sea snails was 50 % lower than the 2017-2019 average.
- **Decline in consumption across all fisheries products.** Stakeholders reported the consumption of all types of products (fresh, frozen, processed) declined from 2019 to 2020.
- **Implemented measures – aid, taxes, promotions – useful across the sector.** Stakeholders reported that measures such as direct aid, tax exemptions or reductions, and promotional campaign for local fish, had been useful across the fisheries and aquaculture sector, even if with room for improvement.

2.8.1 Introduction and characteristics of the market

Bulgaria is a minor producer of fisheries products. In 2018, it ranked nineteenth in the EU in terms of aquaculture production. At that time, its fishing fleet had 1 857 vessels with total capacity of 6 086 GT and 54 491 kW. Of these, 94.9 % were less than 12 m, 4.5 % were between 12 m and 23 m, and 0.6 % were greater than 23 m. In addition, 91 % used gill nets and entangling nets as main gear, while 9 % used other gear. In 2017, fishing fleet employment had reached 716 FTE²⁶⁹.

According to DG MARE²⁷⁰, one producer organisation (PO) is formally recognised in Bulgaria. This operates in the fisheries sector.

²⁶⁹ See: EU Fleet Register, https://webgate.ec.europa.eu/fleet-europa/index_en.jsessionid=4nzQ8eNNLTQ8-IUoTdX-gcnnN_Tp79IFMMWHGkaLwh22tXRnHCDO!1657191812, and Carvalho N. et al., 2019, *The 2019 Annual Economic Report on the EU Fishing Fleet (STECF 19-06)*, Publications Office of the European Union, Luxembourg, pp. 1-496, <https://stecf.jrc.ec.europa.eu/documents/43805/2483556/STECF%2019-06%20-%20AER%20-%202019.pdf>.

²⁷⁰ See: <https://ec.europa.eu/oceans-and-fisheries/system/files/2021-05/list-of-recognised-producer-organisations-and-associations-of-producer-organisations.pdf>.

Table 37: World, EU-28 and Bulgarian catches and aquaculture production in 2018, in 1 000 tonnes

Production	World	EU-28	Bulgaria	% of world	% of EU-28
Catches	97 232	5 337	0.009	0.01	0.16
Aquaculture	114 462	1 319	0.010	0.01	0.82
Total	211 694	6 656	0.019	0.01	0.29

Source: Eurostat and FAO

In 2018, the main landed species²⁷¹ were molluscs and aquatic invertebrates. Of these, sea snails²⁷² accounted for 26 % of the value and 41 % of the volume, followed by sprat with 24 % of the value and 37 % of volume, and clam, with 22 % of value and 7 % of volume. Lesser landed species included red mullet with 8 % of value and 7 % of volume, and horse mackerel with 6 % of value and 2 % of value.

In the same year, trout was the main farmed species, with 64 % of value and 45 % of volume. It was followed by carp, with 22 % of value and 33 % of volume, mussel with 4 % of value and 14 % of volume, and freshwater catfish with 3 % of value and of volume.

Bulgaria has no officially registered auction markets. Its main landing places are the ports of Burgas, Sozopol, Varna, and Pomorie²⁷³. As of 2018, its fish processing industry included 44 companies that employed 1 663 people, and had total sales of EUR 73 million²⁷⁴.

The main species imported in 2019 were mackerel, coldwater shrimps and salmon, accounting for 15 %, 13 % and 11 % of value, respectively. Conversely, the main species exported were preserved coldwater shrimps, sea snails and salmon, accounting for 29 %, 15 % and 7 %, respectively. In the same year, the main countries of origin (in value) were Greece, Denmark, Spain and Canada, accounting for 11 %, 10 %, 8 % and 6 % of import value, while the main countries of destination were Sweden, Romania and Japan, accounting for 31 %, 22 % and 7 % of total value, followed by Serbia, Republic of Korea and Greece, each with 5 % of total export value²⁷⁵.

In 2018, Bulgaria's apparent consumption was estimated at 7 kg per capita²⁷⁶, and its most-consumed species were mackerel, coldwater shrimps, carp, sprat and trout²⁷⁷.

2.8.2 Timeline of legislative measures

The state of emergency in Bulgaria lasted from 13 March to 14 May 2020. Restrictions were then eased with the gradual reopening of schools, small businesses and out-of-home catering. A second lockdown spanned 27 November 2020 to 30 April 2021, with the closure of nurseries, schools and universities, as well as restaurants, cafés, shopping centres and sports halls. However, non-essential stores remained open and foodstuff sales continued, with teleworking widely enacted from March 2020.

²⁷¹ See: EUMOFA, <https://www.eumofa.eu/data>.

²⁷² Veined rapa whelk (*Rapana venosa*).

²⁷³ See: Bulgarian Executive Agency of Fisheries and Aquaculture (EAF), http://iara.government.bg/?page_id=16053&lang=en.

²⁷⁴ See: Eurostat - Structural Business Statistics, <https://ec.europa.eu/eurostat/web/structural-business-statistics>.

²⁷⁵ See: EUMOFA, <https://www.eumofa.eu/data>.

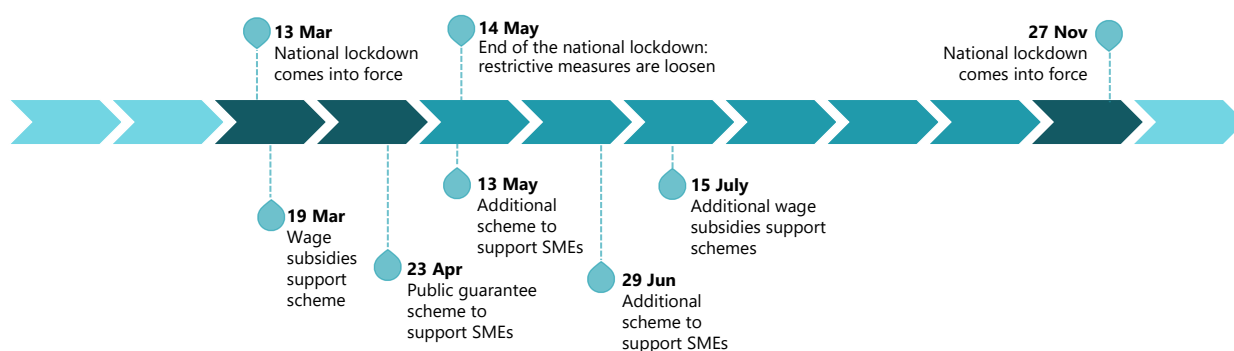
²⁷⁶ See: EUMOFA, 2020b, *The EU Fish Market*, Publications Office of the European Union, Luxembourg, pp. 56-75, https://www.eumofa.eu/documents/20178/415635/EN_The+EU+fish+market_2020.pdf/fe6285bb-5446-ac1a-e213-6fd6f64d0d85?t=1604671147068.

²⁷⁷ See: EUMOFA, <https://www.eumofa.eu/en/bulgaria>.

Bulgaria took advantage of the EU's supportive measure that allowed redirecting of the 2017-2020 EMFF budget. Implementing this measure enabled Bulgaria to overcome economic consequences of the pandemic across the fisheries and aquaculture sector²⁷⁸.

- **Producers and processors.** A budget of BGN279 9 million re-directed from the EMFF budget has provided Bulgaria with working capital and compensation to support aquaculture producers and processing companies.
- **Fishing vessel owners and fishers.** A budget of BGN 2 million has provided compensation to fishing vessel owners and fishers who have temporarily ceased fishing activities and incurred economic losses.

Figure 46: Timeline of Bulgarian restrictive measures and policy responses adopted in 2020



Source: own elaboration

2.8.3 Assessment of the seafood availability and consumption

2.8.3.1 Socio-economic impact on the fleet

In Bulgaria, there was no ban of fishing activities linked to the COVID-19 outbreak. However, both commercial and recreational fisheries had to be carried out in strict compliance with the safety rules adopted by the government, including avoiding close contact between crew members²⁸⁰. This led to a decrease in fishing activity was observed in 2020 compared with previous years, with the fleet's economic performance estimated to have decreased by more than 60% in gross and net profits compared with 2019²⁸¹. Among the sector's most important challenges were a drop in demand, due to closure of restaurants and hotels, and the loss of market shares in some third countries, due to border closure and logistical issues. For example, sea snails from Bulgaria lost access to Asian markets such as Japan, Korea and China and to neighbouring countries such as Serbia.

²⁷⁸ See: <https://www.eufunds.bg/bg/pmdr/term/555>.

²⁷⁹ BGN is the Bulgarian lev. In 2020, 1 000 000 BGN = EUR 511 300. See: https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/eurofxref-graph-bgn.en.html.

²⁸⁰ See: <https://covid-statistics.jrc.ec.europa.eu/RMeasures>.

²⁸¹ See: Carvalho N. et al., 2020, *The impact of COVID-19 on the EU-27 fishing fleet*, Publications Office of the European Union, Luxembourg, pp. 1-34, <https://publications.jrc.ec.europa.eu/repository/handle/JRC122999>.

Table 38: Socio-economic indicators on the Bulgarian fleet, 2018-2020

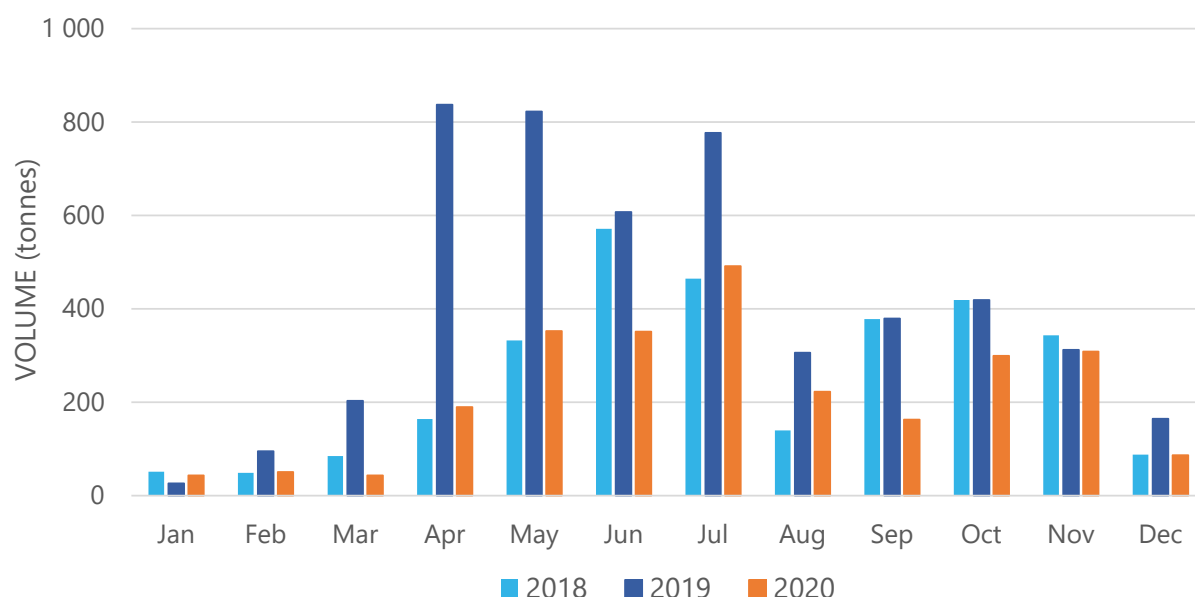
Socio-economic indicators	2018	2019*	2020*	% variation 2019/2020
Employment (FTE)	622	566	300	-47.1
Live weight of landings (1 000 tonnes)	8.50	10.30	5.10	-50.1
Value of landings (EUR million)	7.80	6.20	3.10	-49.5
Gross Value Added (GVA) (EUR million)	5.62	4.31	1.75	-59.3
Gross profit (EUR million)	4.50	3.30	1.20	-62.9
Net profit (EUR million)	4.30	3.20	1.00	-68.1
GVA to revenue (%)	71.10	68.50	54.20	-20.9
Gross profit margin (%)	56.50	52.10	37.60	-27.9
Net profit margin (%)	54.50	50.70	31.40	-38.0

Source: Carvalho N. *et al.* (2020), *The impact of COVID-19 on the EU-27 fishing fleet*, JRC Technical Report

Note: * Figures for 2019 and 2020 are estimates

2.8.3.2 First sales, imports and exports

Bulgarian first sales, which amounted to 2 600 tonnes²⁸² in 2020, represented a 47 % decrease from 2019 and a 15 % decrease from 2018. At the monthly level, the major volume decreases from 2019 were 79 % in March and 77 % in April.

Figure 47: Total first sales of fish and shellfish in Bulgaria, 2018-2020

Source: EUMOFA

²⁸² See: EUMOFA, <https://www.eumofa.eu/>. To be noted that Bulgarian first sale data available on EUMOFA start from 2018 and include only six main species landed in Bulgaria (sea snails, sprat, clam, red mullet, bluefish and surmullet). For this reason, these data are useful for analysing trends but figures in absolute terms must be taken with caution.

The main species sold in Bulgaria in 2020 were sea snails, accounting for 49 % of first sale volume, European sprat, with 24 %, and sand gaper (a clam species) with 16 %.

Both sea snail and sprat recorded lower first sales in 2020 compared with past years. Sea snail volume dropped by almost 40 % from 2018-2019 while its average price dropped 21 %, reaching its lowest point of 0.22 EUR/kg in April 2020. Sea sprat first sales decreased 50 % in volume from the 2018-2019 yearly average, with its price dropping to 0.17 EUR/kg in April 2020 – 49 % lower than in April 2019 and 56 % lower than in April 2018.

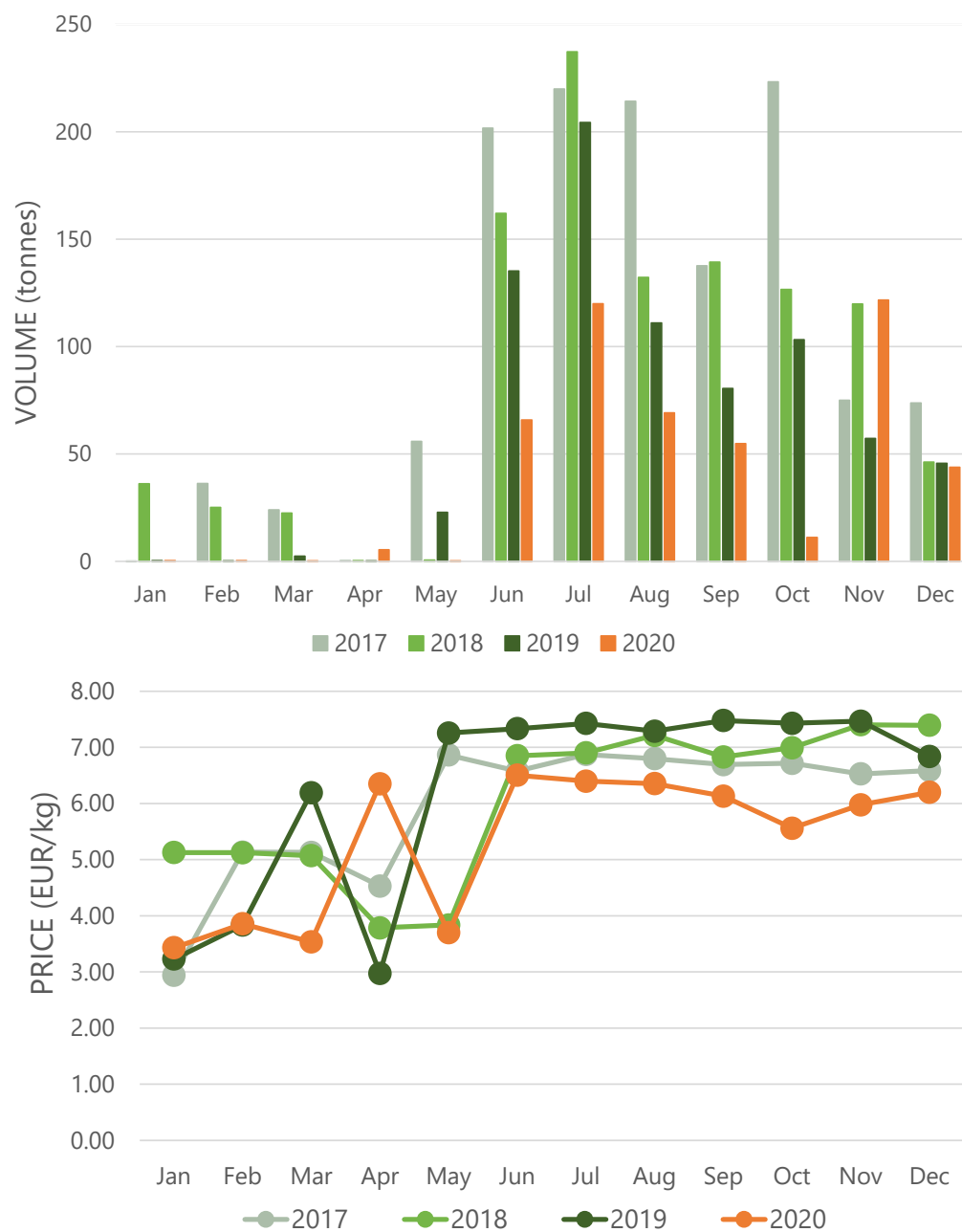
Conversely, sand gaper's total first sale volumes in 2020 were only 4 % lower than the 2018-2019 average, and its price evolution synced with volume trend. This meant that when monthly volumes were lower than 2018-2019, as in spring 2020, prices went up; when monthly volumes were higher than in the previous periods, as in autumn 2020, prices went down. By the end of 2020, the average price of sand gaper was 10 % lower than the 2018-2019 average. To be noted, this species is not for Bulgaria's national market. It is usually exported, mostly frozen, to Spain and this flow does not seem to have been affected by the pandemic

Imports. In 2020, Bulgarian imports of fisheries and aquaculture products amounted to 42 957 tonnes with a value of EUR 108 million²⁸³. This was a decrease by 12 % and 6 %, respectively in volume and value, from the previous three years' average. The most imported products were frozen coldwater shrimp (for processing and re-export purposes), frozen mackerel and fresh salmon. Overall, in 2020 imports of frozen coldwater shrimp and fresh salmon were stable compared with past years. However, imports of frozen mackerel decreased by 22 % in volume and by 17 % in value compared with the 2017-2019 average.

Exports. In 2020, exports reached 15 214 tonnes worth EUR 71 million, which represented a 13 % drop in volume and a 9 % drop in value from the previous three years' average²⁸⁴. Prepared/preserved coldwater shrimp, Bulgaria's most exported product in value terms, was followed at a distance by prepared/preserved and frozen sea snails. Of note, the prepared/preserved coldwater shrimp did not seem to have been affected by the crisis, with its export volumes stable in 2020 compared with the past. However, exports of preserved sea snails decreased by over 50 % in volume from the 2017-2019 average, while its average export price dropped by 10 %.

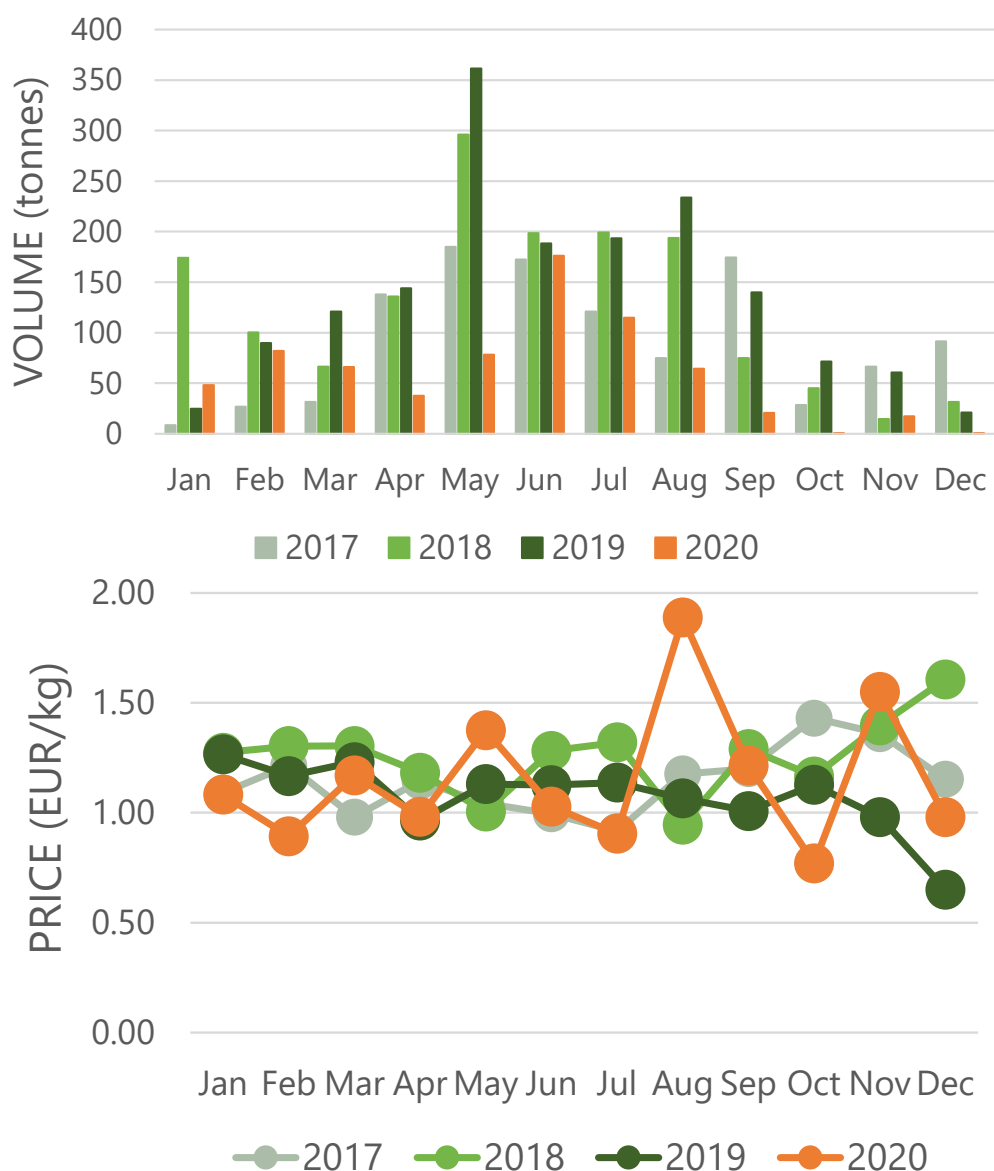
²⁸³ *Ibidem.*

²⁸⁴ *Ibidem.*

Figure 48: Monthly Bulgarian exports of prepared/preserved sea snails, 2017-2020

Source: EUMOFA elaboration of Eurostat-Comext data

Among the important exported products, frozen sprat was particularly affected by the pandemic in 2020. In volume terms, its export volume decreased by over 50 % while its value decreased by 16 % compared with the previous three years' average.

Figure 49: Monthly Bulgarian exports of frozen sprat, 2017-2020

Source: EUMOFA elaboration of Eurostat-Comext data

2.8.3.3 Aquaculture production and out-of-home consumption

According to the Bulgarian national authorities consulted, the pandemic's main impact on aquaculture was the disruption of deliveries due to the volatility of demand. This caused difficulties in planning production activities and facilities management, and led to a general decrease in productivity of fish farms.

Higher value products, such as caviar and fillets of sturgeon and catfish, were the most affected. In addition, the main segments impacted were those offering products year-round or for as long as possible during the year, such as sturgeon farms and farms that breed and sell fish for further growing. Finally, export markets, such as Serbia, were affected by the closure of borders. Overall, despite stable sales, the production costs, transaction costs and commercial margins worsened with the pandemic.

As regards out-of-home consumption, according to interviews with stakeholders, the restrictions implemented in Bulgaria, combined with a low summer tourist season, severely affected the seafood consumption in the HoReCa sector.

Few data are available on out-of-home seafood consumption in Bulgaria. However, in 2020, the consumption of processed products in the HoReCa decreased by 17 % from the 2017-2019 average, thus remaining below 2 000 tonnes²⁸⁵.

Table 39: Qualitative assessment of restrictions by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
First sale	High. The reduction of demand from exports markets led to a strong drop in landings for many important species.
Aquaculture	High. The reduction of demand from the HoReCa caused a drop in sales and prices of high-value products and species usually sold fresh, including trout, sturgeon and freshwater species.
Import-Export	Medium. Export of prepared/preserved coldwater shrimp remained stable, but export of sea snails (veined rapa whelk) decreased.
Retail	Medium. Purchases of all retail fish products dropped, and retail also dealt with unsuccessful online sales and home deliveries.

Source: own elaboration

2.8.4 Analysis of COVID-19 effects

The analysis provided in this section is mostly based on feedback received from Bulgarian national authorities and operators in the fisheries and aquaculture sector as well as in the processing and retail sectors.

Fisheries. There was no ban of fisheries activities, even though the restrictive measures adopted to contain the pandemic made working conditions more difficult, especially on large vessels. The main problem for the sector was the lack of market outlets, due to the closure of restaurants as well as a very weak tourist season in 2020. The most affected fleet segments were those vessels with larger crews. This caused a decrease in landings and worsened the economic performance of the national fleet. The most affected products were those intended for export, including fresh and frozen turbot and sprat, and frozen cleaned sea snails.

Aquaculture. Producers of high-value species, especially trout and sturgeon, were the most affected. Intensive farms that supply fresh and chilled fish to retail stores, and mussel farms were particularly impacted, due to difficulties in accessing export markets due to border closure, logistical issues, a drop in foreign demand, and the closure of restaurants combined with the weak tourist season.

Processing. All types of processing enterprises were affected, except producers of sustainable canned fish²⁸⁶. Large enterprises were highly affected, due to the inability to fulfil contracts with chain stores, restaurants and resorts. The restrictive measures also impacted the fish processing sector, because working crews had to be reduced which lowered their economic performance.

Consumption. After the initial stockpiling of food and raw materials, trade stalled due to border closure, lack of green corridors, cessation of fresh fish purchases, and closing of resorts and restaurants

²⁸⁵ The source of out-of-home consumption data is Euromonitor International, Fresh food and Packaged food, 2021. Although Euromonitor International makes every effort to ensure that it corrects faults in the Intelligence of which it is aware, it does not warrant that the Intelligence will be accurate, up-to-date or complete as the accuracy and completeness of the data and other content available in respect of different parts of the Intelligence will vary depending on the availability and quality of sources on which each part is based. Euromonitor International does not take any responsibility nor is liable for any damage caused through the use of our data and holds no accountability of how it is interpreted or used by any third-party.

²⁸⁶ Source: BG Fish - Association of Fish Products Producers, surveyed for this study.

in Bulgaria and neighbouring countries. According to the stakeholders consulted, the consumption of all types of fish products – fresh, frozen and processed – declined in 2020.

Trade. According to stakeholders, fresh products destined for export were the most affected by the restrictions, whereas frozen and preserved products did not change noticeably.

Adaptation and financial measures. Technological solutions, online sales and home deliveries had a low impact because, with the exception of big retailers, operators found it difficult to guarantee online sales and home deliveries of fresh products. In addition, product diversification was considered difficult to implement in the sector, due to the small number of important commercial species in the Black Sea. Storage strategies adopted by processing companies have not seemed to have a noticeable effect, as consumers have demanded fresh products.

As part of its steps taken to adapt to the crisis, Bulgaria implemented an array of **financial measures**:

- **Direct aid from the EU**, which made EMFF funds available, supported the fisheries, aquaculture and fish processing sectors and, overall, the stakeholders interviewed considered these measures appropriate and useful support for the sector;
- **value-added tax** for food and restaurants reduced by government;
- **promotional campaign** called “*I love Bulgarian fish*” promoted several key products such as mullet, black grouse and turbot, thus increasing the interest from inland consumers; however, some stakeholders questioned its effectiveness commenting that national authorities urged it to be carried out during periods that are not traditional for fish consumption, in order to increase the interest of the population;
- **fish farmers exempted from water use charges**, which was considered a positive step in supporting aquaculture producers.

In addition to financial measures, through a Decree of the Council of Ministers, the Bulgarian government introduced the obligation for large scale retailers to sell products from local production. According to stakeholders, this stabilised wholesale fish prices, thus removing the dominant position of buyers in negotiations with producers for prices and supplies. A constant supply of fresh products in supermarkets by domestic producers has been achieved, and the increase in demand from large-scale buyers partially compensated for the lack of demand from the HoReCa sector.

According to national authorities, the support from the new European Maritime Fisheries and Aquaculture Fund (EMFAF) should contribute to stabilising the sector by compensating for income lost due to unexpected events. This compensation is expected to be calculated based on the number of days at sea (days at sea were almost not affected by COVID-19) but also on production indicators, such as catches and landings, which should improve targeting of the specific fleet segments that need support.

Table 40: Qualitative assessment of countermeasures adopted by supply chain stage

Supply chain stage	Type of impact (high/medium/low)
First sale	Medium. Financial support. Partial shifting of production from HoReCa to retail.
Aquaculture	Medium. Financial support and exemption on water use charges for fish farmers. Partial shifting of production from HoReCa to retail.
Retail	Medium. Thanks to the Decree of the Council of Ministers combined with a promotional campaign on local fish, the constant supply of fresh products in supermarkets has been achieved, allowing to partially compensate the drop of demand from HoReCa and export markets.
Import-Export	No available evidence.

Source: own elaboration

3 CONCLUSIONS

KEY FINDINGS

- **HoReCa collapse reduces demand.** The most disruptive impact on the fisheries and aquaculture sector was due to the closures in the HoReCa sector, which triggered an unprecedented reduction in demand.
- **Border closure constraints prove short term.** In the early days of the pandemic, there were logistical and transport issues due to border closures, which put constraints on imports of food products, feed and equipment. The impact was short lived, as a few weeks later, international trade picked up.
- **Sales to HoReCa drop more than sales to retailers.** There is no clear evidence that some individual species and fleet segments were more affected than others. Generally speaking, operators selling to the HoReCa were hit hard, whereas those selling to retail were less impacted.
- **Disruptions mainly at onset of pandemic's first wave, but soaring prices and costs impact profits.** For all of the supply chain stages monitored, quantitative and qualitative information indicates a marked recovery through the rest of the year, at least in terms of volumes produced or traded. However, in many cases, prices and costs soared, with a negative impact on profitability.
- In 2020 **the Member States spent more than EUR 78 million from their EMFF budget** for a total of 5 811 COVID-19-related operations.
- **New sales strategies developed to avoid price collapse.** After the initial shock, operators throughout Europe spontaneously devised new strategies to cope with the challenges posed by COVID-19, such as shifting to new sale channels, developing online and direct sales, and stocking production to avoid a collapse in prices.

The collection of data from the analysis of literature, stakeholder consultations and development of case studies used for this report has made it possible to draw conclusions on how COVID-19 has impacted the fisheries and aquaculture sector in the EU.

The corpus of evidence gathered for this study clearly points to the closure of HoReCa as the most disruptive impact on the sector. By March and April 2020, nearly all EU MSs had implemented some sort of lockdown measures, which forced the vast majority of the population to stay home. Hotels, restaurants, cafés and canteens stopped operating or operated at reduced capacity. As a consequence, the demand for seafood collapsed abruptly, and both producers and sellers were challenged with a sudden excess of supply and unable to find any available outlets other than retail shops and supermarkets.

In a sense, it can be argued that fisheries and aquaculture were not among the most affected sectors within the economy, because governments quickly designated food production and distribution as essential activities and took measures to guarantee that EU citizens could access a stable food supply. Indeed, the HoReCa sector ceased operating in an effort to contain the contagion, but food retail shops remained open throughout and across the various lockdowns. With the shutdown of office buildings

forcing an enormous number of people to work from home for many months, retail sales of food, including seafood, actually increased, as consumers had no alternative other than eating at home.

Nonetheless, the impact on the fishery and aquaculture sector was harsh, as any sudden change in consumption patterns requires time for the market to reach a new equilibrium. Furthermore, the frictions generated during supply and demand adjustments always create what economists call a “deadweight loss”²⁸⁷.

In addition to the sudden excess of supply caused by the collapse of the HoReCa sector, fisheries and aquaculture also had to deal with disruptions related to the pandemic’s health emergency. In the early days of the pandemic, several sources reported logistical and transport issues when border closures put constraints on imports of food products, feed and equipment. Although this led to a reduction in international trade in fish products, the contraction was short lived. Within just a few weeks, international trade picked up.

By the end of 2020, overall EU imports and exports of fisheries and aquaculture products did not show any major variations in volume, compared with the average of the previous three years. There was a slight contraction in the value of these trade flows, which suggests that high-value products were traded less or at a lower price.

Of course, all of these supply, demand and trade impacts are common across all food sectors, as well as across many other economic activities. However, COVID-19 also produced impacts that are specific to fisheries and aquaculture.

3.1 The impact of the COVID-19 pandemic on fisheries

As this study has shown, the closure of HoReCa led to a demand reduction for fishers, although the exact extent of the impact varies considerably across countries, fleet segments and species targeted. When looking at the results of the case studies (Chapter 2), no common pattern can be identified, with some species or fleet segments identified as particularly affected in some countries but not affected at all in others. The variance is so high that it is not particularly useful to single out the most impacted species or fleet segments. In fact, what clearly emerges is that rather than being species- or fleet-specific, the impact of COVID-19 on fishers seems related to market channels.

Fishers targeting high-value species intended for HoReCa were hit hard, while fishers targeting low-value species or species intended for industrial purposes and retail consumption were not particularly affected. The fact that in each country, different fleet segments and species were impacted by the pandemic is explained by the differences in consumers’ habits: not all high-value species are predominantly for out-of-home consumption, and these habits might differ across countries. However, regardless of the exact species targeted, fishers throughout Europe responded in similar ways: i) they reduced the number of fishing days to limit low prices and to contain costs, and ii) they tried to diversify their sale channels by switching from HoReCa to retail, signing new contracts with retailers and also developing direct sales and home deliveries.

The impact of COVID-19 on fishers targeting high-value species intended for HoReCa is clearly reflected in EU first sales, which in 2020 decreased by 8 % in volume and 12 % in value compared with the previous year²⁸⁸. Prices also went down in 2020, although the decline in volume was sharper. Sales fell

²⁸⁷A deadweight loss is a cost to society created by market inefficiency when the socially optimal quantity of a good or a service is not produced.

²⁸⁸ See <https://www.eumofa.eu/data>. To be noted that the data available on EUMOFA do not cover the whole EU, but only Belgium, Denmark, Estonia, France, Greece, Ireland, Italy, Latvia, Lithuania, the Netherlands, Portugal, Spain and Sweden. These Member States, however,

dramatically in the early weeks of the pandemic (April 2020) but gradually recovered starting from the third quarter of the year. On average, prices fell by only 4 % from 2019 to 2020, although, more specifically, those of high-value species dropped 10 % while those of low-value species decreased by only 2 %. This is consistent with the view that high-value species are mainly consumed out-of-home, which is why they experienced a harsh price reduction in the face of low demand.

The JRC and the Scientific, Technical and Economic Committee for Fisheries (STECF) also identified the collapse of the HoReCa as one of the main drivers of the poorer economic performance of the EU fishing fleet in 2020. Even though the EU fleet as a whole remained profitable, the net profit – estimated at EUR 803 million in 2020 – is thought to have decreased by 13 % compared with the average of the previous three years. In the same period, full-time equivalent (FTE) employment is estimated to have dropped by almost 20 %²⁸⁹. France, the Netherlands, Portugal and Denmark are among the EU Member States whose profits have been most affected by the COVID-19 crisis.

In addition, the JRC and the STECF both found that the decline in volume and value of landings was more marked for the small-scale coastal fleet in 2020 than for the large-scale fleet. Compared with 2019, the landings of the SSCF fell by 14 % in volume and by 19 % in value, whereas those of the LSF dropped by 8 % in volume and 11 % in value. This might be explained by the fact that the SSCF tends to supply products of higher value, and often sells directly to restaurants.

At the same time, the stakeholders interviewed for this study pointed out that the SSCF might have found it slightly easier to divert sales from HoReCa to retail or to direct sales to consumers, due to the fact that the volumes sold by a small fishing vessel tend to be lower than those sold by a large vessel. Although this might seem at odds with the poorer performance of the SSCF, it suggests that without its “flexibility premium”, the impact on the SSCF might have been even more marked. In other words, exploring new market channels and developing direct sales contributed to reducing losses, but it did not compensate for the reduction in demand. In addition, in some areas of southern Europe, the SSCF is traditionally dependent on tourism, especially during the summer. Thus, as domestic and international tourist flows decreased considerably in 2020, an important source of revenue for the small-scale fleet vanished. The small-scale fleet also suffered from reduced technological capacity for freezing fish, both on board and on shore.

3.2 The impact of the COVID-19 pandemic on aquaculture

Generally speaking, the pattern observed in the aquaculture sector is very similar to that of fisheries: farmers selling to retail did not experience particularly negative impacts, while farmers selling to HoReCa saw a dramatic fall in sales and profits. What is completely different, though, is how fisheries and aquaculture reacted to the initial shock.

Unlike fisheries, aquaculture is an industrial activity, which means that a farmer can exert some control on supply and ultimately on prices. As emerged from the stakeholder survey, initially many farmers who had previously sold to HoReCa decided to keep growing their produce or to stock it, mainly by freezing it, in order to avoid a plunge in prices, hoping to sell it shortly afterwards. When they realised that demand would not recover any time soon, they had to find alternative market channels as well. Thus the farmers who had sold to HoReCa turned to selling to retail, when possible, or developed direct sales to consumers. However, with both fisheries and aquaculture trying to divert sales from HoReCa

cover more than 90 % of the EU market. To be also noted that, unlike other comparisons provided in the study, in this case it is not possible to assess the reduction against the average of the previous three years, due to changes in data and geographical coverage.

²⁸⁹ Own elaboration based on the STECF’s Annual Economic Report on the EU Fishing Fleet 2019 and 2020. To be noted that net profits of each EU Member State’s fleet may vary considerably from one year to another for reasons related to natural production cycles, and thus not necessarily linked with COVID-19.

to retail, the market simply could not absorb all the excess production, which meant several aquaculture farmers had to bear even higher losses than fishers. Indeed, while a fisher can decide to fish less when the demand is low, aquaculture farmers have to keep their produce alive. Hence, it is believed that those farmers who could not find an alternative market for their product ended up bearing even higher losses.

At the time of writing, there are not yet sufficient data to estimate the impact of COVID-19 on aquaculture, although some initial estimates point to a 17 % reduction in sales volume and an 18 % reduction in total income, with a particularly harsh impact on the shellfish segment²⁹⁰.

3.3 The impact of the COVID-19 pandemic on wholesale

Wholesaling of fish is not a clearly identifiable supply chain stage in most European countries, with the notable exceptions of France, Greece, Italy and Spain. There are no data available to quantify the exact impact of COVID-19 on wholesale, but stakeholders reported that, as wholesalers are essentially intermediaries, the sector suffered from spillover from the other supply chain stages. This could be seen in Greece, where a large part of aquaculture production is for exports, and its wholesalers suffered especially from reduced foreign-market demand. Generally speaking, the reduction in supply and demand meant there was also less space left for intermediaries. The study also found that Spain was the only country among those analysed that showed increases in 2020 – with volume and value of product sold at wholesale both increasing by 22 % compared with the average of the three years before.

3.4 The impact of the COVID-19 pandemic on trade

Trade flows between EU Member States and third countries were disrupted as the pandemic set in. There was a clear plunge in extra-EU imports in April and May, but they picked up, and by the end of 2020, there was only a minimal 1 % decrease in volume compared with the years before, whereas the 7 % decrease in value was more significant. Once again, it seems that after initial difficulty due to abrupt changes, the sector quickly readjusted, although the fall in value signals that prices had to go down in order to sustain the volume of imports.

This can be regarded as a net benefit to EU consumers, although cheaper imports put pressure on the domestic production, which was already facing challenges due to reduced demand. Indeed, many of the stakeholders consulted – mainly from the primary sector – lamented the increased competition from imports.

Several countries such as Bulgaria, France, Italy, Portugal and Spain, responded by launching promotional campaigns to increase awareness of the importance and benefits of consuming local production. While these campaigns were received favourably by producers, it remains to be understood to what extent they effected change.

3.5 The impact of the COVID-19 pandemic on processing

Processed food boomed during 2020, especially in the early days of the pandemic, when consumers entered into panic mode and hoarded non-perishable foodstuffs. Nevertheless, the sector was affected by the consequences of the outbreak as well. For instance, during the first months of the pandemic, Portugal and Spain had a shortage of raw material which originated in third countries. In addition, as

²⁹⁰ See: Nielsen R. et al., 2021, *The EU Aquaculture Sector – Economic report 2020 (STECF-20-12)*, Publications Office of the European Union, Luxembourg, pp. 306-307, <https://op.europa.eu/en/publication-detail/-/publication/1939335e-a893-11eb-9585-01aa75ed71a1/language-en>

food processing plants are among the higher-risk workplaces, several measures enacted to ensure workers' safety led to an increase in costs and, in some cases, lower profitability.

3.6 The impact of the COVID-19 pandemic on consumption

With restaurants closed and lockdowns in force, people had no other alternative than eating at home. This meant out-of-home consumption fell, but household consumption of fish products increased, according to the retailers interviewed for the study. However, there were important changes.

Some high-value products, such as oysters, lobster and caviar, are typically eaten in restaurants, so their consumption decreased, as did their prices. Generally speaking, the household consumption of fresh products also decreased, in part because they are more difficult to cook at home but also because consumers tend to prefer frozen and processed products, which are less perishable than fresh ones and fit better with a lower shopping frequency. This was especially evident in the early days of the pandemic, when consumers began hoarding foodstuffs.

Online sales and home deliveries increased considerably, and it remains to be understood what will happen when the pandemic is over. Retailers seem to believe that online sales will decrease, although the level will remain higher than it was before the pandemic, thus indicating a structural change in consumer habits.

It is not possible to determine whether total consumption (household plus out-of-home) increased or decreased, as no panel data were available for the study. Anecdotal evidence from the stakeholder survey suggests that the increase in household consumption did not offset the decrease in out-of-home consumption, possibly because some products are inherently difficult to cook at home, so consumers preferred easier (and often cheaper) alternatives to fish²⁹¹. If this holds true, assuming that in 2020 consumers had the same caloric intake as before the pandemic, this suggests that consumers might have eaten less fish and more of other foodstuffs.

3.7 The impact of the COVID-19 pandemic on fisheries and aquaculture sector: final conclusions

Overall, apart from local exceptions, it can be argued that the vast majority of disruptions and negative impacts of COVID-19 on the fisheries and aquaculture sector took place at the onset of the first wave of the pandemic. For all of the supply chain stages monitored, both quantitative and qualitative data indicate a marked recovery through the second half of the year, at least in terms of volumes produced or traded. This signalled a rebound effect following the relaxation of the harsh restrictive measures taken in the spring of 2020.

The same cannot be said of value, which generally speaking was lower than the years before, as prices went down at all levels of the supply chain. With lower prices and higher costs related to, for example, need to comply with safety measures and higher transaction costs, it can be argued that the profitability of the entire value chain decreased, with the notable exception of retail – which saw an increase in sales. However, at the time of writing, it is not possible to gauge the exact extent to which profitability went down, as consolidated statistical data on industry performance will be published over the next couple of years.

In addition, it should be noted that while aggregated figures give a useful snapshot of the performance of a sector as a whole, they also conceal the inevitable differences that persist within its segments. In

²⁹¹ To be noted that in some EU Member States fish is charged a higher VAT than other foodstuffs.

looking at the total volume of first sales or at trade flows both at EU and national level, it might seem that the impact of COVID-19 on fisheries and aquaculture ended up being “*less catastrophic*” than what could have been envisaged in the spring of 2020. Nevertheless, the case studies from the previous chapter report a variety of impacts that are specific to each market segment. The “*not-so-negative*” aggregated results were possible because some market segments had quite a good performance in 2020, namely those with direct links to the retail sector. At the same time, the impact on those fishers and farmers that used to sell high-value species to HoReCa was extremely harsh. It has been written that many of them tried to cope with the crisis by switching to other market channels, but it would be implausible to argue that all of them managed to do so. In Bulgaria, for instance, it emerged that online sales and home deliveries did not help fishers and farmers recover from income losses. Therefore, as shown in the replies received in the stakeholder survey, it is important to bear in mind that at the individual level several families and companies had to endure exceptionally difficult working conditions, with little to no possibility of conducting business as they would have before the pandemic.

Finally, the relatively good response of the sector in the face of one of the most disruptive events of the last century was the product of two different forces.

Market operators show inherent resilience. From fishers down to retailers, all actors in the supply chain had to reinvent their way of conducting business and adapt to the new circumstances. After the initial shock in the spring of 2020, operators spontaneously devised new strategies to cope with the challenges posed by COVID-19. Shifting to new sale channels, developing online and direct sales, and stocking production to avoid a collapse in prices were options explored by producers throughout Europe. It might be argued that there was no other choice if they were to remain in business, but this should not diminish the significance of the collective effort made by the entire sector to remain profitable and, above all, to ensure a continuous food supply.

EU and national governments enact mitigating measures. Apart from the “*bottom-up*” reaction from market operators, the other factor that made it possible for the sector to navigate the crisis is to be found in the measures taken at EU and national levels. Immediately after the outbreak of the pandemic, the EU made available several instruments to mitigate the impact of COVID-19 and support the sector. Among them are:

- **The possibility to redirect MSs unspent EMFF budget** to protect workers in fisheries and aquaculture from unemployment and loss of income;
- **the EU guarantee for banks** providing SMEs with liquidity;
- **the EMFF insurance mechanism** to pay financial compensation for economic losses caused by the crisis;
- **the possibility for EU Member States to provide** companies in the fisheries and aquaculture sector with **direct grants or tax advantages** enabling them to face a sudden shortage or lack of liquidity;
- **the possibility to adapt Production and Marketing Plans (PMPs)** – and related advances – to the new fishing and marketing strategies designed for facing the changing market conditions;
- **additional flexibility rules governing expenditures under the EMFF** – including both compensations to fishers and farmers for the temporary cessation or reduction of their activities, and financial support to POs for the temporary storage of fisheries and aquaculture products intended for human consumption.

Preliminary data from the Fisheries and Aquaculture Monitoring and Evaluation (FAME) unit set up by the EU Commission indicate that in 2020, the EU MSs spent more than EUR 78 million from their EMFF budget for a total of 5 811 COVID-19-related operations²⁹².

What emerged from both the analysis of literature and the case studies is that most EU Member States benefitted from the entire range of the above-mentioned instruments. In addition, several countries, such as France, Italy and Spain, also implemented their own national support measures that were common across all sectors, including compensations for total or partial unemployment, tax deferrals and government guaranteed cash loans. But some were also specific to the fisheries and aquaculture sector, including measures for national and regional solidarity funds, short-time working, postponement of payments to employees and contributions to employers, and temporary flexibility in environmental permits for aquaculture companies and in resource management measures for fishing activities. Apart from some exceptions, these measures have been received favourably by market operators and stakeholders.

More in general, the pandemic has highlighted that fisheries and aquaculture are vulnerable to a broad range of potential shocks. Hence, reinforcing their natural resilience has to become a priority for future action. Initiatives from the sector to address contingent situations, such as safety funds for commercial fisheries, can be supported by currently available measures that include mutual funds under the EMFF. However, as noted by several stakeholders, the criteria need to be flexible enough to allow effective implementation.

²⁹² To be noted that the figures do not include data from Denmark, Finland, Malta, Italy, Slovenia and Romania. Austria, Czechia, Hungary and Slovakia are not included either, but they are landlocked. Luxembourg is not a recipient of EMFF funds.

4 POLICY RECOMMENDATIONS

It has been argued repeatedly that COVID-19 produced an impact on the EU fisheries and aquaculture sector especially at the onset of the pandemic. It has also been demonstrated that many of these disruptions petered out in after a few weeks or months. For this reason, and with a view to ameliorate policy response in view of potential future shocks, the following recommendations distinguish between short- and long-term action.

In this case, short-term action means any policy aiming to minimise the inevitable disruptions that take place when a shock such as the COVID-19 outbreak hits the sector. Long-term action, on the other hand, should have a forward-looking perspective and aim to address the current vulnerabilities of the sector, with a view to strengthening its resilience in the face of potential future shocks.

4.1 Short-term action

It has to be clear that when a shock such as COVID-19 hits the economy, a somewhat negative impact needs to be accepted. Mitigation measures can be set in place to avoid losing capacity, as would happen if all companies in a sector go bankrupt, but it cannot be avoided altogether. Therefore, the best policy should aim at limiting damages and subsidise the sector to avoid loss of production capacity. But it is also important to accept the principle that no policy can effectively make up for the plunge in supply and demand.

Based on the feedback received during the stakeholder survey, as well as on the analysis of relevant literature, the following recommendations are proposed²⁹³:

- **Designate fishers, processors and distribution workers, and aquaculture workers as essential.** This is an essential precondition to a stable food supply. Luckily, all EU Member States designated food production in general as an essential sector, which made it possible to avoid having a health emergency turn into a food crisis. However, evidence from literature and from the stakeholder survey suggests that, despite food production being an essential sector, there were some disruptions nonetheless. For example, in the early days of the pandemic, the lack of PPE made it impossible for workers to be together aboard a fishing vessel or in a fish processing plant. For this reason, it is recommended to accompany the designation of workers in the fishing industry as essential workers with the provision of the necessary equipment to allow them to carry out their activities seamlessly and with no health risks.
- **Establish exceptions to travel restrictions for temporary migrant workers and the enterprises that support the sector.** This is especially important for the fishing industry, where some fleet segments – notably the long-distance fleet – are highly dependent on migrant workers. Border controls and the impossibility of moving across countries put many constraints on the sector and created a de facto labour shortage.
- **Extend the validation expiry date for licenses, authorisations and permits that lapse before, during or soon after the emergency period.** As a corollary to food production being an essential sector, it would be important to introduce a moratorium or at least to extend deadlines for licences, authorisations and permits, as this would contribute to minimising disruptions in the supply chain and ensuring a stable food supply.

²⁹³ To be noted that some of these recommendations recall what was proposed in 2020 by the FAO in their report *Legal considerations in responses to COVID-19 to mitigate the risk of disruption to fisheries and aquaculture food system*, Rome, pp. 1-9, available online at: <http://www.fao.org/3/ca9421en/CA9421EN.pdf>. However, the rationale for the recommendations is derived from the research work carried out for this study. The bulk of these recommendations was also confirmed in the workshop *COVID-19 and seafood: impact and way forward*, organised by EUMOFA at the European Maritime Day on 21 May 2021.

- **Ensure movement of fish and fish products, of inputs needed in the subsectors and of the people involved while continuing operations that protect the health and safety of the workers.** Both the case studies and the stakeholder survey undertaken for this report indicated that the disruption of global supply chains caused several problems for domestic production. As food production is an essential sector, it is paramount to ensure that all the inputs needed can freely circulate among countries. Among other things, this would also avoid the price spikes observed in the early days of the pandemic.
- **Provide support for the temporary cessation of activities, reduction of production and additional costs, and provide financial compensation for employers and workers maintaining their activities but affected by the general fall in prices:** generally speaking, such measures were taken by all EU Member States, also thanks to the new flexibility rules introduced in the EMFF. It was especially important to provide support to entrepreneurs and workers, because without it many companies would have run out of business, with catastrophic consequences on future capacity for seafood production. Letting businesses go bankrupt would not only create social and economic tensions in the short term, but it would also reduce EU self-sufficiency in seafood production, thus increasing dependency on imports, which however are often not subject to the same environmental legislation as in the EU. However, it is also important to ensure that financial support is provided in a timely manner and with as little red tape as possible. Some stakeholders interviewed for the study lamented the application procedures to receive financial support were especially burdensome, to the point that some of them did not receive any form of support at all. In addition, wholesalers complained that the support earmarked for the fisheries and aquaculture sector was absorbed mostly by the primary sector. To this end, it might be useful to avoid providing support by category, and instead provide support to any business entity or worker that can prove to have born losses. This would reduce the costs of compliance, streamline eligibility criteria and avoid having some stakeholders feel “neglected” in favour of others.
- **Enact exceptional measures to sustain cash flows.** This includes suspending certain financial obligations or extending deadlines of, for example, fees, taxes and mortgages. This is strictly linked to the previous recommendation: when revenue goes down, financial and fiscal obligations risk putting additional constraints on companies that are already struggling to remain in business. A moratorium on payments will sustain cash flows and ease the pressure on companies. It should be noted that many EU MSs introduced similar national measures and deferred, for example, tax and VAT payments.

Implementing these measures at the onset of a shock similar to that generated by COVID-19 would avoid, or at least minimise, the disruptions that took place from March to May 2020. They would also have a beneficial effect on food supply, prices, working conditions and jobs.

4.2 Long-term action

Long-term action is needed to effect a structural change in the fisheries and aquaculture sector and strengthen its resilience in the face of potential future shocks. Once again, the subsequent recommendations stem from the views expressed by stakeholders during the survey and from the analysis of literature:

- **Explore the possibility of banking fishing quotas from one year to the next.** The reduced fishing effort in 2020 had by definition a positive effect on some fish stocks – though not necessarily all of them. Thus, in order to make up for lower catches in a given year, it is suggested to allow a quota exchange from one year to another. Of course, it cannot be legislated that the

quantity of fish not caught in one year should automatically be added to the quotas for the following year, as that might have a catastrophic effect on a stock. The exact quota that can be “banked” should be defined based on sound scientific advice. At the same time, special attention should be paid to the potential impact that the extra supply on the market would have on prices.

- **Increase transparency with a system that gives auctions and buyers a picture of the catch in terms of its volume and species in advance of its landing in a port.** The French region of Brittany implemented such a system to provide information 48 hours before the catch reaches port, based on information communicated by fishers and POs. This might be an excellent tool to increase transparency and help supply meet demand, which is of the utmost importance during economic shocks. Such a system is believed to benefit fishers, wholesalers and traders.
- **Optimise the cash flow of transfers of support measures.** Participants in this study’s stakeholder survey pointed out that, in some cases, the periods set for the support measures did not sync with the production cycles, especially for financial support to compensate for lost income. This means that, in addition to subsidising those who bear losses, it is important to optimise the cash flow of transfers in order to account for natural variations in production cycles due to, for example, seasonality.
- **Ease the restrictions on first sale markets.** Many producers reacted to the change in demand by increasing direct sales to consumers, using online platforms. However, in some countries, producers pointed out that legal restrictions on first sale markets might hamper the capability of maximising this option. Thus, in order to encourage direct sales in the future, restrictions on first sale markets should be eased to some extent.
- **Consider introducing a storage aid mechanism when exceptional shocks hit the sector, although with simplified rules.** The storage aid mechanism envisaged in EMFF 2014-2020 was found to be quite useful, especially by Spanish stakeholders. However, many stakeholders complained that the administrative burden was high, to the point that it discouraged many from applying. This is also true for compensation linked to temporary cessation of fishing activities or other forms of support. To be noted, the storage aid was a phasing out measure of the EMFF 2014-2020, established before COVID-19. It might be wise to re-introduce a similar mechanism with simplified rules, in order to improve the resilience of the fisheries and aquaculture sector to similar shocks.
- **Implement promotional campaigns to support local fisheries and aquaculture products.** This was done at national level in several countries and many stakeholders declared they would like their government to do something similar. Generally speaking, such a measure would undoubtedly benefit EU producers, although it remains to be understood the exact extent of its efficacy. At the same time, it should be noted that promoting local fish products over imports may have supported some producers during the pandemic, but it might not be a good way to increase the resilience of the sector. While imports put additional constraints on EU producers, the main issue for the sector was that people lost opportunities to eat fish because restaurants were closed, and so the demand for fish and fish products collapsed. In addition, the EU is not self-sufficient, which means that imports are absolutely necessary to meet the demand for fish. The EU self-sufficiency in fisheries and aquaculture products is at 42.5 %; the rest is from imports. Plus, there seems to be limited scope for increasing local production: fishing more cannot be an option, if stocks are to be kept in good health. Also, 75 % of EU fish production is from wild catches, and 25 % is from aquaculture, which indicates that aquaculture cannot scale up to a level that would substantially reduce dependency on imports – non in the short run at least.
- **Strengthen databases and market intelligence tools.** Information management has proven to be a critical asset for assessing impacts and informing resilience strategies. In the short term,

it can provide immediate and tailored relief, in the mid-term it serves to calculate and allocate funding and, in the long-term, it contributes to the design of policy response. The data sets and services provided by the European Commission, including the Data Collection Framework, EUMOFA, EMODnet, have been supporting the delivery of baselines, as well as the measurement and assessment of impacts of an array of research work, not least the present one. Strengthening databases and market intelligence tools would enable the sector to rely on better and more timely information to respond to a crisis.

Finally, it is worth mentioning that COVID-19 has posed many a challenge to the fisheries and aquaculture sector, but it has also opened new opportunities. Direct sales, online sales and home deliveries have gained fresh impetus, and, even though old habits and customs might creep in again at the end of the pandemic, the business professionals interviewed for this study believe that COVID-19 brought in a structural change. For instance, online sales are projected to decrease when the pandemic is over, but stakeholders believe that they will level off at a higher level than before the pandemic.

While trying to strengthen the resilience of the fisheries and aquaculture sector, it might make sense to capitalise on the few positive changes that COVID-19 brought. Innovations such as direct sales, online sales and home deliveries should be sustained and further promoted in the future, as they are likely to generate a positive impact for operators and consumers alike in terms of shorter supply chains and increased transparency.

REFERENCES

- Acuiplus, 2020, *Informe de Impacto Generado por COVID-19 en el sector acuícola a lo largo de la cadena de valor*, pp.1-27
- Almeida et al., 2015, *The seafood market in Portugal: Driving forces and consequences*, Elsevier, Lisbon, pp.1-9
- ANFACO-CECOPECA, 2020, *Clúster Mar-Alimentario. Datos 2020*, pp. 1-106
- Banco de España, 2020, *Evolución reciente y perspectivas para el sector turístico español e implicaciones para el conjunto de la economía*, Informe Anual 2019, Recuadro IV.I, Banco de España, Madrid, pp. 159-163
- Carvalho N. et al., 2019, *The 2019 Annual Economic Report on the EU Fishing Fleet (STECF 19-06)*, Publications Office of the European Union, Luxembourg, pp. 1-496
- Carvalho N. et al., 2020, *The impact of COVID-19 on the EU-27 fishing fleet*, Publications Office of the European Union, Luxembourg, pp. 1-34
- Correia P. et al., 2020, *The Combat against COVID-19 in Portugal: How State Measures and Data Availability Reinforce Some Organizational Values and Contribute to the Sustainability of the National Health System*, Sustainability 12, no. 18, pp. 1-13
- D'Oronzio et al., 2021, *L'emergenza COVID-19 e il settore ittico italiano: impatto e risposte*, pp. 1-90
- EUMOFA, 2017, *EU consumer habits regarding fisheries and aquaculture products*, Directorate-General for Maritime Affairs and Fisheries of the European Commission, Brussels, pp. 1-67
- EUMOFA, 2020a, *Coronavirus response – EUMOFA's weekly data and trend analysis: bulletin collection*, Luxembourg, pp. 1-54
- EUMOFA, 2020b, *The EU Fish Market*, Publications Office of the European Union, Luxembourg, pp. 56-75
- EUMOFA, 2021a, *Monthly Highlights n°2/2021*, Publications Office of the European Union, Luxembourg, pp. 1-49
- EUMOFA, 2021b, *Monthly Highlights n°3/2021*, Publications Office of the European Union, Luxembourg, pp. 1-47
- FAO, 2020a, *Globefish Highlights, July 2020 Issue*, Rome, pp. 1-68
- FAO, 2020b, *How is Covid-19 outbreak impacting the fisheries and aquaculture food systems and what FAO can do*, Rome, pp. 1-5
- FAO, 2020c, *Legal considerations in responses to COVID-19 to mitigate the risk of disruption to fisheries and aquaculture food system*, Rome, pp. 1-5
- FAO, 2020d, *The impact of COVID-19 on fisheries and aquaculture food systems, possible responses: Information paper*, Rome, pp. 1-38
- FAO, 2021, *The role of social protection in the recovery from COVID-19 impacts in fisheries and aquaculture*, Rome, pp. 1-13
- FGM, 2020, *Aquaculture in Greece 2020*, Athens, pp. 1-16

- Fresco Vilches C., 2020, *Estudio de mercado. El Mercado de pescado en Portugal 2020*, ICES España Exportación e Inversiones, pp. 1-56
- Kantar, 2020, *Out-of-home food and drinks landscape. COVID-19 impact and the road to recovery, Issue 3 – November 2021*, pp. 1-29
- Love D.C et al., 2020, *Emerging COVID-19 impacts, responses, and lessons from building resilience in the seafood system*
- MAPA, 2020a, *Guía práctica de medidas de apoyo y de interés para el sector agroalimentario y pesquero relacionadas con la pandemia de COVID-19*, Madrid, pp.1-19
- MAPA, 2020b, *Informe del consume alimentario en España 2019. Efecto del estado de alarma Datos preliminares 2020*, Madrid, pp. 1-32
- MAPA, 2020c, *Informe del Consumo Alimentario en España 2019*, Ministerio de Agricultura, Pesca y Alimentación Secretaría General Técnica Centro de Publicaciones, Madrid, pp. 1-674
- Nielsen R. et al., 2021, *The EU Aquaculture Sector – Economic report 2020 (STECF-20-12)*, Publications Office of the European Union, Luxembourg, pp. 306-307
- OECD, 2020a, *COVID-19 and the Food and Agriculture Sector: Issues and Policy Responses*, Paris, pp. 1-12
- OECD, 2020b, *E-commerce in the times of COVID-19*, Paris, pp. 1-10
- OECD, 2020c, *Fisheries, aquaculture and COVID-19: Issues and Policy Responses*, Paris, pp. 1-10
- OECD, 2020d, *OECD Economic Surveys: Greece 2020*, OECD Publishing, Paris, pp. 1-135
- Ortega et al., 2020, *Monitoring of the COVID crisis in the Spanish Mediterranean fisheries. Weathering the storm of COVID-19 crisis*, pp. 1-10
- Pita et al., 2020, *Impacto da pandemia de COVID-19 nos sectores da pesca e aquicultura em Portugal*, pp. 1-11
- UNWTO, 2020, *Understanding Domestic Tourism and Seizing its Opportunities. UNWTO Briefing Note – Tourism and COVID-19, Issue 3*, Madrid, pp. 1-40
- WB, 2021, *Global Economic Prospects*, World Bank Group, Washington, pp. 1-198

ANNEX – METHODOLOGICAL NOTE

The research project consists of an assessment of the impact of COVID-19 on the EU fisheries and aquaculture sector, with a special focus on stability, vulnerability and resilience. The assessment culminates in a series of recommendations, with an aim to “*strengthen*” the sector in view of potential waves or new pandemics. For making this general assessment under an **EU-wide perspective**, the analysis draws on a more in-depth examination at country level **through specific case studies focusing on a selection of EU Member States**. For this reason, the overall methodology proposed to carry out the study is made up of the following main steps:

- i. Selection of EU Member States to focus on in the case studies
- ii. Data collection
- iii. Literature review
- iv. Stakeholder consultation
- v. Analysis of COVID-19 effects, formulation of conclusions and elaboration of recommendations

To be noted that data collection, stakeholder consultation and analysis will be carried out for the 8 case-study countries, whereas a general overview of the effects of COVID-19 at EU level will be carried out based on available data complemented by literature review. Unless otherwise specified, in this study EU stands for EU-27, without the United Kingdom. Although the withdrawal of the United Kingdom from the EU took effect on 31 January 2020, all UK data were removed from historical series at EU level for the sake of consistency.

I. Selection of EU Member States to focus on in the case studies

Two countries were selected from the Baltic Sea and Black Sea (one for each sea basin), while six countries were selected from the North Sea, Atlantic and Mediterranean Sea (choosing one smaller and one larger country for each sea basin). Besides these criteria, it was also important to pick a selection of countries that were meaningful to work with, because they cover a variety of impacts and approaches. Since the COVID-19 pandemic hit all countries, it was impossible to create a control group of unaffected countries to carry out a counterfactual analysis. Therefore, it was decided to work with countries that have been hit by the pandemic at different extents and implemented different types of measures entailing different degrees of restrictions, in order to carry out comparative analyses over time.

The following countries were selected: Sweden for the Baltic Sea; Bulgaria for the Black Sea; France and Denmark for the North Sea; Spain and Portugal for the Atlantic Ocean; Italy and Greece for the Mediterranean Sea. To be noted that in 2019, they covered 70 % of EU total household expenditure for fish, and their combined production from both fisheries and aquaculture covers more than half than the EU total (2018).

II. Data collection

The analysis was based on different types of information and inputs from different sources. This entailed the collection of quantitative data along the supply chain of fishery and aquaculture products, as well as the review of available literature and the collection of feedback from stakeholders.

Data on first sale

First sale data based on sales notes are available for each of the countries proposed as case studies, all having national administrations as primary source and EUMOFA as secondary source. Some remarks need to be made:

- We analysed monthly data, because weekly data collected by EUMOFA only cover a selection of very specific products and markets, thus not providing a comprehensive picture of total first sales in one country. Furthermore, weekly data are affected by high volatility, large variations of volumes and prices and seasonality of certain phenomena. Monthly data, instead, have complete coverage of all main commercial species and places of sale in a country, and consolidated data for longer time periods are preferred to obtain reliable outcomes.
- Some countries transmit data on first sale only for fresh products (of the proposed MS to analyse, it is the case of Bulgaria, Greece, France, and Portugal). Moreover, prepared-preserved products (e.g., canned tuna) are not monitored at first sale stage. Volumes and ex-farm prices of processed products are only available on a yearly basis and with a two-year delay on Eurostat, broken down by PRODCOM item. In any case, a good proxy for these products is represented by imports trend (whose data are available for all species and all preservation states, including prepared/preserved products).
- The official first sale data available by national statistics only cover wild caught products, so information on aquaculture was collected through literature review and interviews with stakeholders.

The table below details the first sale data available for each case study:

Country	Source	Further specifics
Sweden	Primary source: Swedish Board of Agriculture Secondary source: EUMOFA	Data cover sales in the two main auctions, i.e. Smögen and Göteborg, plus a total amount for other places of sale. They cover fresh, frozen, smoked, boiled/cooked and salted products.
Bulgaria	Primary source: Executive Agency for Fisheries and Aquaculture Secondary source: EUMOFA	Data available for all places of sale, but only for fresh products.
France	Primary source: FranceAgriMer Secondary source: EUMOFA	Data available for all auctions, but only for fresh products.
Denmark	Primary source: Danish Fisheries Agency Secondary source: EUMOFA	Data available for all places of sale. They cover fresh, frozen, smoked, boiled/cooked, salted and dried products.
Spain	Primary source: Ministerio de Agricultura, Pesca y Alimentación (MAPA) Secondary source: EUMOFA	Data available for all places of sale. They cover fresh, frozen, smoked, boiled/cooked, salted and dried products.
Portugal	Primary source: Direcção Geral de Recursos Naturais, Segurança e Serviços Marítimos (DGRM) Secondary source: EUMOFA	Data available for all places of sale, but only for fresh products.
Italy	Primary source: Ministero delle politiche agricole alimentari e forestali (MIPAAF) Secondary source: EUMOFA	Data available for all places of sale. They cover fresh, frozen, smoked, boiled/cooked, salted and dried products.
Greece	Primary source: Ministry of Rural Development & Food of Greece Secondary source: EUMOFA	Data available for all places of sale. They cover fresh, frozen, smoked, boiled/cooked, salted and dried products.

Data on imports

Import data based on national customs' recordings are available for all EU MSs, and are sourced from Eurostat-Comext (primary source) and EUMOFA (secondary source). All main commercial species are covered, as well as all preservation and presentation states.

We analysed monthly data because:

- **Weekly data** are only available for extra-EU imports and do not cover exchanges between Member States;
- based on what emerged from the COVID-19 bulletins provided by EUMOFA, **data are highly volatile** from one week to another, thus making it difficult to conduct trend analysis;
- **first-sale data** used for this study are at monthly level, and consumption data are only available at **monthly level** too. Therefore, for the sake of consistency, monthly data on imports were also analysed.

Data on household consumption

Household consumption data are available on EUMOFA, based on GfK/Europanel²⁹⁴ household panels, which are designed so to be representative of the population of each country and to appropriately estimate its characteristics. These data refer to households' purchases of selected fresh species, and are available for all countries proposed as case studies, except Bulgaria and Greece. For these two countries, input for the assessment of household consumption was collected through literature review and stakeholder consultation.

We analysed monthly data for fresh products. Consumption data on processed products are not available on EUMOFA. They are available from commercial providers, but, upon initial research, their cost exceeds the budget of this research project. In any case, consumption of manufactured products is proposed to be surveyed through literature review and stakeholder consultation.

Data for retail sales and out-of-home consumption were sourced from Euromonitor International. Data are available for unprocessed products (defined as the aggregation of fresh, chilled and frozen finfish, crustaceans, molluscs and cephalopods, packaged and unpackaged) and for process products (defined as the aggregation of shelf-stable, chilled processed and frozen finfish, crustaceans, molluscs and cephalopods). Data for unprocessed products are broken down by market channel: retail, food service, institutional (schools, canteens, hospitals and prisons), and are available only for France, Germany, Italy and Spain. Data for processed products are available for all Member States, but only at the level of foodservice.

Other data

- Measures implemented to support the sector (source: National authorities / EU and international institutions).
- Marine gasoil prices (source: MABUX). These data are available on EUMOFA for all countries proposed for case studies (except Bulgaria), as monthly averages at country level
- Exchange rates (source: ECB)
- Fishing route density maps (source: EMODnet, based on raw data collected from EMSA which were also used by the STECF in its Annual Economic Report): Monthly data on fishing routes per square km are a good proxy to estimate the fishing activity in the exclusive economic zone of each EU country. To be underlined that calculations are based on data tracked by Automatic Identification Systems, which in the EU are only compulsory for fishing vessels > 12 metres, thus the small-scale fleet is not monitored.

²⁹⁴ <https://www.europanel.com/>

- Wholesale prices (source: FranceAgriMer- Réseau des Nouvelles des Marchés, Mercamadrid, Borsa Merci Telematica Italiana). They could be collected for France, Spain and Italy, providing a useful input for prices of farmed products, which are not covered by first sale data.

III. Literature review

In addition to the collection of quantitative data, a literature review was carried out to gather a wide range of viewpoints and updates on the impact of COVID-19 on the stability, resilience and vulnerability of the fishery and aquaculture sector.

The list of documents, papers and reports reviewed for this study is available in the References section.

IV. Stakeholder consultation

A wide list of operators, producers, producer organisations, consumer associations, RFMOs, national administrations, and international organisations were consulted for the study, through questionnaires sent by e-mail. The questionnaires had open-ended questions oriented to assess the impact of the pandemic along the supply chain and possible best practices put in place. The questionnaires were submitted in English and in the original language of the respondents when necessary. The exact list of questions varied according to the type of respondents; however, overall, the following questions were asked:

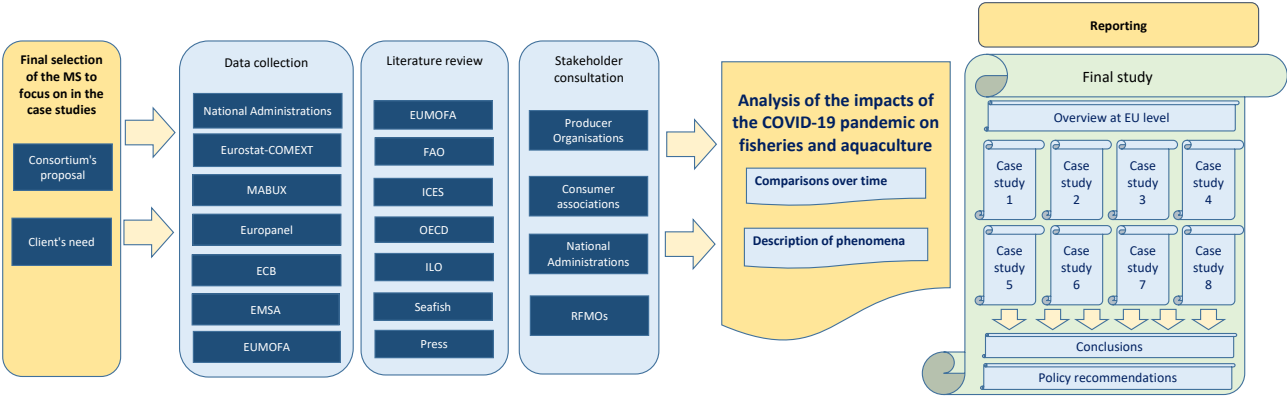
1. What are the main effects and challenges of the pandemic on workers in the fisheries and aquaculture industry?
2. Based on your knowledge, what species / products / fleet segments have been significantly impacted?
3. How did closures impact fishery and aquaculture supply chains?
4. What are the key impacts of the pandemic on consumption patterns?
5. Do you expect these impacts to affect consumers' behaviour in the long run and how?
6. Did the pandemic impact on the availability of wild caught products more than of farmed products?
7. Did the pandemic impact on the availability of fresh products more than processed products?
8. Is the consumption of fishery and aquaculture more impacted than the consumption of other food (e.g. meat)?
9. What are the most effective measures put in place so far to support the sector at EU and/or national level and why?
10. Do you think the fishery and aquaculture sector adapted to initial shock?
11. Can you provide an example of one or more solutions employed within the fisheries and aquaculture sector during the pandemic? Please quantify their impacts
12. In your opinion, what type of initiative could strengthen seafood security in the EU?

Overall, ninety organisations replied to the questionnaire.

V. Analysis of COVID-19 effects, formulation of conclusions and elaboration of recommendations

All data and information collected through quantitative data collection, literature review and stakeholder consultation fed into an analysis process that culminated in the development of the case studies and of the final conclusions and recommendations

The figure below outlines the process by which the methodology steps will built onto each other and eventually achieve the objectives of the research project. The approach proposed provided a critical, evidence-based assessment, which also drew on data from an array of robust and reliable sources for ensuring objectivity.



This study analyses the effects of COVID-19 on the EU fisheries and aquaculture sectors from March to December 2020. It gives an overview of the main effects experienced at EU level and develops eight case studies (Spain, Denmark, France, Italy, Sweden, Greece, Portugal and Bulgaria). The research also provides conclusions and policy recommendations to strengthen the sector's resilience to shocks, and to address current vulnerabilities in view of potential similar events.

The study was commissioned by the European Parliament's Policy Department for Structural and Cohesion Policies, at the request of the PECH Committee.

PE 690.880

IP/B/PECH/2020-101

Print ISBN 978-92-846-8304-8 | doi: 10.2861/954 | QA-05-21-205-EN-C

PDF ISBN 978-92-846-8303-1 | doi: 10.2861/292305 | QA-05-21-205-EN-N