



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Principles of Fisheries Economics and Politics

**PhD in: Innovative Technologies and Sustainable Use of Mediterranean
Sea Fishery and Biological Resources (FishMed-PhD)**

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TREATY OF ROME: THE STARTING POINT

The Common Fisheries Policy was created by the Treaty of Rome in 1957 and is provided for in Article 38 of the Treaty establishing the European Communities.

«The common market includes agriculture and trade in agricultural products. Agricultural products are understood to be the products of the soil, of agriculture and **fisheries**, as well as products of primary processing directly related to these products.»

Fisheries was initially included in the Common Agricultural Policy.

When we talk about "agricultural" or "farming" in Articles 39-46, we also mean fishery products.



Art. 39

The aims of the common agricultural policy are:

- (a) to **increase agricultural productivity** by developing technical progress, ensuring the rational development of agricultural production and the better use of the factors of production, in particular labour,
- (b) thus to **ensure a fair standard of living for the agricultural community**, in particular by increasing the individual earnings of persons engaged in agriculture,
- (c) **to stabilise markets**
- (d) **to ensure security of supply**,
- (e) **to ensure reasonable prices** in deliveries **to consumers**.



HOW TO IMPLEMENT THE CAP?

However, the formulation of the objectives in Article 39 did not clarify the instruments and lines of action through which they could be achieved;

The lines of action of the CAP were identified in 1960 and referred to two main concepts:

- Regulating agricultural prices and markets, bearing in mind the price differentials between member countries and the resulting income disparities
- Improving agricultural production structures in order to facilitate the modernisation of enterprises, especially family enterprises, which are considered to be "backward" and unfit to participate in achieving the objectives set out in the Treaty of Rome.



GOALS: STRESA CONFERENCE AND THE FIRST DECISION

The operational tools to achieve the identified objectives were essentially two:

- Establishment of guaranteed common prices valid for the entire Community market
- Establishment of Common Market Organisations (CMOs)

FOR FISHERIES?



1970: THE FIRST BUILDING STONE FOR A REVISED FISHERIES POLICY

Start

It was only in 1970 that the Council adopted the acts to establish a **common market organisation for fishery products** and put in place a Community structural policy for fisheries.

Early developments

Fisheries played an important role in the negotiations that led to the accession of the United Kingdom, Ireland and Denmark to the EEC in 1972. This led to a departure from the fundamental principle of freedom of access to the sea, with the extension of national exclusive coastal fishing rights in territorial waters, defined as those within 12 nautical miles of the coast, to include EEZs up to 200 nautical miles from the coast. Member States accepted that the management of fisheries resources fell within the competence of the European Community.



THE COMMON FISHERIES POLICY: THE EVOLUTION

The 1983 Regulation

After several years of negotiations, the Council adopted Regulation (EEC) No 170/83 **in 1983**, **establishing the new generation CFP**, which enshrined:

- the commitment to respect the EEZ and
- formulated the concept of relative stability, providing for conservation management measures based on total allowable catches (TACs) and quotas.

After 1983, the CFP had to be adjusted following Greenland's withdrawal from the Community in 1985, the accession of Spain and Portugal in 1986 and the reunification of Germany in 1990. These three events affected the size and structure of the Community fleet and its catch potential.



WHILE SIGNING THE MAASTRICHT TREATY...

The 1992 Regulation

In 1992, Regulation (EEC) No 3760/92, the provisions that governed fisheries policy until 2002, sought to redress the serious imbalance between fleet capacity and catch potential. The remedy advocated was the reduction of the Community fleet, accompanied by structural measures to mitigate the social consequences.

The regulation introduced the notion of 'fishing effort'¹ to restore and maintain the balance between available resources and fishing activities.

Access to resources was provided for through an effective licensing system.

¹ Fishing effort is defined as the product of fishing capacity and fishing activity, the latter calculated on the basis of time spent in a given area.



THE 2002 REFORM

The measures introduced by Regulation (EEC) No 3760/92 did not prove sufficiently effective in halting overfishing, and the deterioration of many fish stocks even accelerated. This critical situation led to a reform that included three regulations adopted by the Council in December 2002 and entered into force on 1 January 2003:

- *framework Regulation (EC) No 2371/2002 on the conservation and sustainable exploitation of fisheries resources [repealing Regulations (EEC) No 3760/92 and (EEC) No 101/76];*
- *Regulation (EC) No 2369/2002 laying down the detailed rules and arrangements regarding Community structural assistance in the fisheries sector [amending Regulation (EC) No 2792/1999];*
- *Regulation (EC) No 2370/2002 establishing an emergency Community measure for scrapping fishing vessels.*

The main objective of the 2002 reform was to ensure a sustainable future for the fisheries sector by guaranteeing stable incomes and employment for fishermen and supply for consumers, while preserving the delicate balance of marine ecosystems. **The reform envisaged a long-term approach** to fisheries management, including the preparation of emergency measures, with multi-annual recovery plans for stocks outside safe biological limits and multi-annual management plans for others.

To ensure more effective, transparent and fair controls, the European Fisheries Control Agency (EFCA) was set up in Vigo, Spain.

The 2002 reform gave fishermen a greater say in decisions affecting them, through the creation of Regional Advisory Councils (RACs) made up of fishermen, scientific experts, representatives of other fisheries and aquaculture sectors, as well as regional and national authorities and environmental and consumer groups.



THE 2013 CFP REFORM

The 2002 reform did not meet expectations in the short term, as the deterioration of some stocks continued to increase. At the same time, it highlighted some problems that had gone unnoticed until then, such as discards.

In 2009, the Commission launched a public consultation on the reform of the CFP, with the aim of integrating new principles to govern EU fisheries in the 21st century. **After a long discussion in the Council and, for the first time, in the Parliament, an agreement was reached on 1 May 2013 on a new fisheries regime based on three main pillars:**

- 1) the new CFP (Regulation (EU) No 1380/2013);
- 2) the common organisation of the markets in fishery and aquaculture products (Regulation (EU) No 1379/2013);
- 3) the new European Maritime and Fisheries Fund (EMFF) (Regulation (EU) No 508/2014).



THE NEW REFORM

The new CFP aims to ensure that the activities of the fisheries and aquaculture sectors are environmentally sustainable in the long term and are managed in a manner consistent with the objectives relating to the economic, social and employment benefits to be achieved. The most significant points are:

- **Multi-annual ecosystem-based management** to reinforce the role that the previous reform had given to multi-annual plans, but also adopting a more ecosystem-based approach, with plans for multiple species and fisheries, within the regional framework of European geographical areas.
- **Maximum Sustainable Yield (MSY):** taking into account international commitments, such as those made at the 2002 Johannesburg Summit on Sustainable Development, the new CFP sets MSY as the headline target for all fisheries. Where possible by 2015, and by 2020 at the latest, the mortality of fish species will be set at FMSY (the level of catches of a given stock that produces MSY).
- **Ban on discards:** the new reform will put an end to one of the most unacceptable practices in EU fisheries. Discarding of regulated species is to be phased out and, in parallel, accompanying measures will be introduced to implement the ban. By 2019, the new discard policy will be implemented in all EU fisheries.



THE NEW REFORM (2)

- With regard to fleet capacity, **under the new CFP Member States are required to adapt their fishing capacities through national plans so that they are balanced with their fishing opportunities. Small-scale fisheries have a special role to play in the new CFP.** The 12-nautical mile exclusive zone for traditional fleets is to be extended until 2022.
- The rules governing the activities of the EU fishing fleet in international and third country waters will have to be defined in the context of the EU's external relations, ensuring that they are in line with the principles of EU policy. Provisions for fishing in these waters are linked to the Sustainable Fisheries Partnership Agreements (FPAs) and EU participation in Regional Fisheries Management Organisations (RFMOs).
- **Sustainable aquaculture increases yields to supply the EU seafood market and promotes growth in coastal and rural areas through national plans.**
- **New obligations on Member States to strengthen the role of science, intensifying data collection and sharing of information on stocks, fleets and the impact of fishing activities.**
- **Decentralised governance**, bringing decision-making closer to the level of the fishing grounds. EU legislators define the general framework while Member States develop the implementing measures, cooperating with each other at regional level.
- The current set of technical measures defined in Council Regulation (EC) No 850/98 constitutes a complex and heterogeneous system of provisions that is currently being revised to provide the new CFP with a new set of technical measures.



HOW TO FINANCE THIS NEW REFORM?

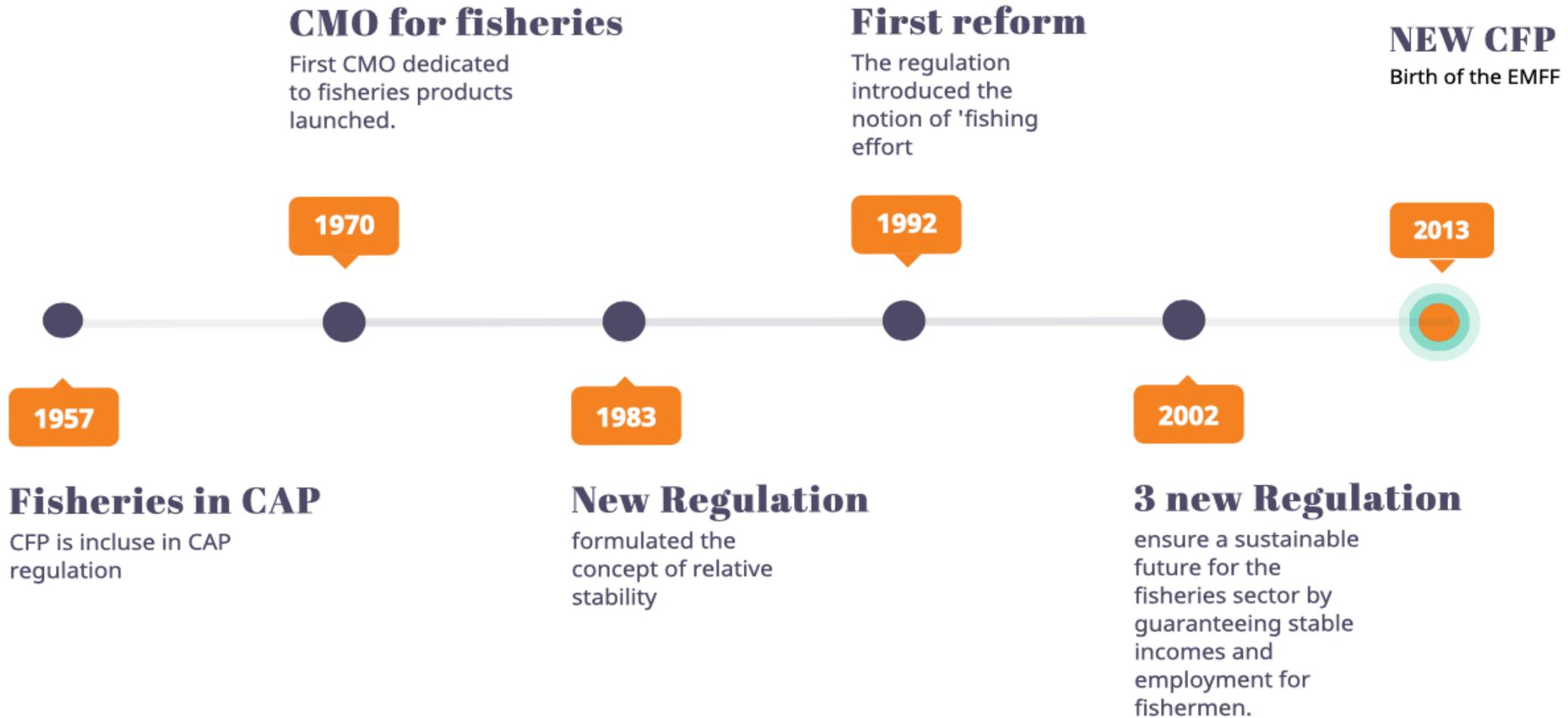
The new European Maritime and Fisheries Fund (EMFF) will serve as a financial instrument to contribute to the implementation of the CFP and the Common Market Organisation for fisheries and aquaculture products.



European Maritime and Fisheries Fund (EMFF)



TO SUMMARIZE: THE EVOLUTION OF CFP



FOCUS: THE EMFF

The European Maritime and Fisheries Fund (EMFF) is one of the five European Structural and Investment Funds (EIS funds) for the 2014-2020 period. The new EMFF will serve as a financial instrument to contribute to the implementation of the CFP and the Common Market Organization for Fisheries and Aquaculture Products.

The Fund is the main financial instrument supporting the EU's CFP in the framework on an Integrated Maritime Policy (IMP).

The EMFF also supports EU-wide objectives in maritime and coastal affairs, such as international governance, marine knowledge and marine spatial planning.

The fund supports fishermen in the transition to sustainable fishing and helps coastal communities diversify their economies. It also funds projects that create new jobs and improve the quality of life in Europe's coastal regions, and facilitates access to finance.

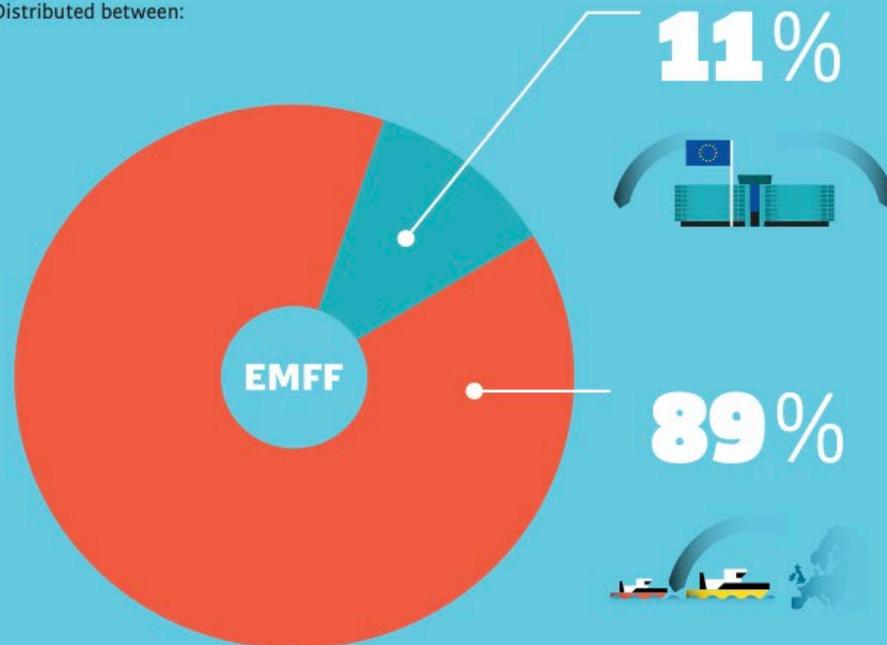


THE EMFF: THE FINANCIAL ALLOCATION

The total amount allocated to the EMFF

for the period 2014-2020 it amounts to approximately 6.4 billion.

Distributed between:



Managed by the European Commission

To support EU-wide objectives in maritime and coastal affairs:

- International governance
- Cooperation through exchange of information and best practices
- Public information and support to networking platforms
- Marine Knowledge
- Maritime Spatial Planning

Managed by the member states

Divided amongst EU countries, the funds are used for:

- Reducing impact of fishing on the marine environment
- More market tools for professionals and consumers
- Joint stewardship of protected areas and Natura 2000 sites
- Special support to small-scale fishermen

Among which:



€4340_M

Sustainable Fisheries

Making fisheries and aquaculture more sustainable and profitable

- Ensuring and creating sustainable jobs
- Local development and support to fisheries areas
- Marketing and processing

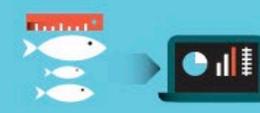


€580_M

Control and Enforcement

To monitor compliance with the European Common Fisheries Policy and protect a fair access to healthy stocks:

- Access to fishing grounds
- Controlling fishing effort, TACs and quotas
- Other technical measures to improve selectivity and sustainability



€520_M

Data Collection

To collect the data the scientists need to improve our knowledge of the seas and the long term management of our fisheries:

- Understanding and monitoring of commercial species
- Dynamics of single stocks and mixed fisheries
- Ecological modelling of regional basins



€71_M

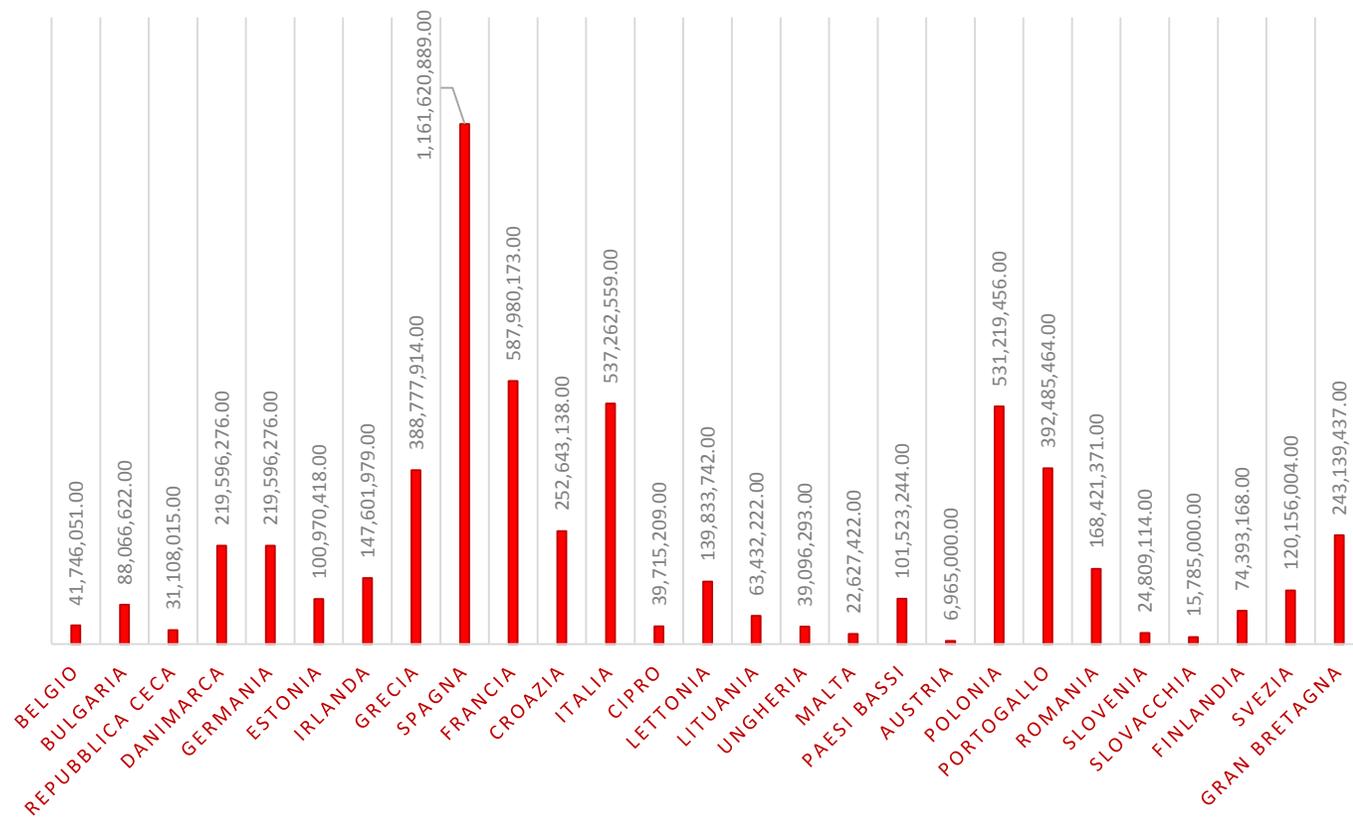
Blue Economy

To unlock sustainable growth and job creation from our seas and oceans, in areas such as:

- Maritime surveillance (CISE)
- Improved knowledge of the seas and ecosystems
- Enabling rational exploitation of new marine resources (e.g. energy, biotech)

THE ALLOCATION AROUND THE EUROPE

TOTAL EU ALLOCATIONS OF EUROPEAN MARITIME AND FISHERIES FUND 2014-2020
(UNIT €, CURRENT PRICES)



Spain is the most resourceful nation.

Italy is third

The top 4 countries (Spain, Italy, France and Poland) intercept 45% of the resources.

Fact: Luxembourg is excluded from the EMFF.



THE 5 CHAPTERS

The EMFF program is divided into **5 Chapters** that report the measures of the individual domain:

Chapter I. Sustainable development of fisheries: Conditional regime; Diversification and businesses.

Chapter II. Measures for the sustainable development of aquaculture.

Chapter III. Sustainable development of fishing and aquaculture areas.

Chapter IV. Measures for marketing and processing

Chapter V. Integrated Maritime Policy



THE NEW PROGRAMMATION

For the next long-term EU budget 2021-2027, the Commission is proposing €6.14 billion under a simpler, more flexible fund for European fisheries and the maritime economy.

The EMFF co-finances projects in conjunction with national resources: in fact, each Member State is assigned a share of the total Fund allocation, depending on the importance of the fishing sector (level of employment and production, size of the fishing fleet, etc.).

Each Member State then draws up an operational program (OP) describing the allocation of funding resources, which must be approved by the Commission. The national authorities are responsible for choosing which projects to finance, and are responsible with the Commission for implementing the operational program.

The European Maritime and Fisheries Fund will co-finance projects alongside national funding streams, with each Member State receiving a share of the total budget. Member States draw up their national operational programmes, specifying how they intend to spend the money. Once approved by the Commission, national authorities decide which projects they wish to support.



THE NEW PROGRAMME (2)

The new European Maritime and Fisheries Fund (2021-2027) will continue to support the European fisheries sector towards sustainable fishing practices, with a particular focus on supporting small-scale fishermen and coastal communities.

Small-scale coastal fishermen (with vessels under 12 meters) represent half of European employment in the fishing sector.

The environmental impact of the Fund is reinforced with a focus on protecting marine ecosystems and an expected contribution of 30% of its budget to climate change mitigation and adaptation (in line with the commitments agreed under the Paris Agreement).

Since the reform of the Common Fisheries Policy in 2014, progress has been made in bringing fish stocks back to healthy levels, in increasing the profitability of the EU's fishing industry, and in conserving marine ecosystems.

The new Fund will continue to support these socio-economic and environmental objectives.



European Maritime, Fisheries and Aquaculture Fund (EMFAF)

The Council has concluded an informal agreement with the European Parliament on the modalities for allocating the EUR 6 108 billion budget of the European Maritime, Fisheries and Aquaculture Fund (EMFAF) 2021-2027 to support and modernise the sector. The new EMFAF will in particular support small-scale coastal fishing activities and vessels up to 24 metres, as well as promoting aquaculture. The negotiated text also aims to simplify the processes for releasing funds while improving outcomes.

The negotiated text contains provisions to finance investments, which will improve safety, energy efficiency and catch quality on EU fishing vessels. For example, the fund can be used to finance the replacement or modernisation of fishing vessel engines, so as to increase their energy efficiency and reduce CO2 emissions. It will also help promote generational change in the profession by supporting the first purchase of vessels by young fishermen.

In order to contribute to EU food security and reduce dependence on third countries for fisheries products, negotiators also confirmed the need to continue supporting European aquaculture by encouraging investment in the sector and promoting the quality and added value of these products.



European Maritime, Fisheries and Aquaculture Fund (EMFAF) (2)

The new Fund also contains provisions to help respond to exceptional crises causing market disruption, such as temporary storage measures or compensation for additional costs. For the first time, the new EFF also includes provisions on strengthening international ocean governance.

The new EMFF is part of the 2021-2027 multiannual financial framework and, together with national funds, will co-finance 70% of projects.

The negotiated text still has to undergo legal and technical scrutiny before being approved by the Committee of Permanent Representatives (Coreper); it will then be submitted to the Council and the European Parliament for final adoption as soon as possible.



TO SUMMARIZE

1. The EMFF is the fund to finance the fishery sector
2. It's value is about 6 billion euros
3. The 4 area of EMFF are: Sustainable fisheries, Control and Enforcement, Data Collection, Blue Economy
4. The EMFF is divided in 5 chapters



POLICY CHOICES IN THE LIGHT OF THE ECONOMIC SCENARIO



THE MALTHUSIAN NIGHTMARE

According to the theory of Malthus (1798), the population, if not controlled, increases with geometric progression (2,4,8,16,...) while food production increases with arithmetic progression (2,3,4,5...), which lays the basis for a high risk of famine and epidemics.

Emerson, in 1870, integrates the above-illustrated theory with a deeper analysis: "Malthus, in asserting that mouths multiply geometrically and food only arithmetically, forgets to say that human ingenuity is also a factor in political economy, so that the growing needs of society will be satisfied by the increasing power of human inventiveness".



SO...

Even at the beginning of the 20th century, when the world population was already actively growing, unit yields of wheat were similar to those of Roman times.

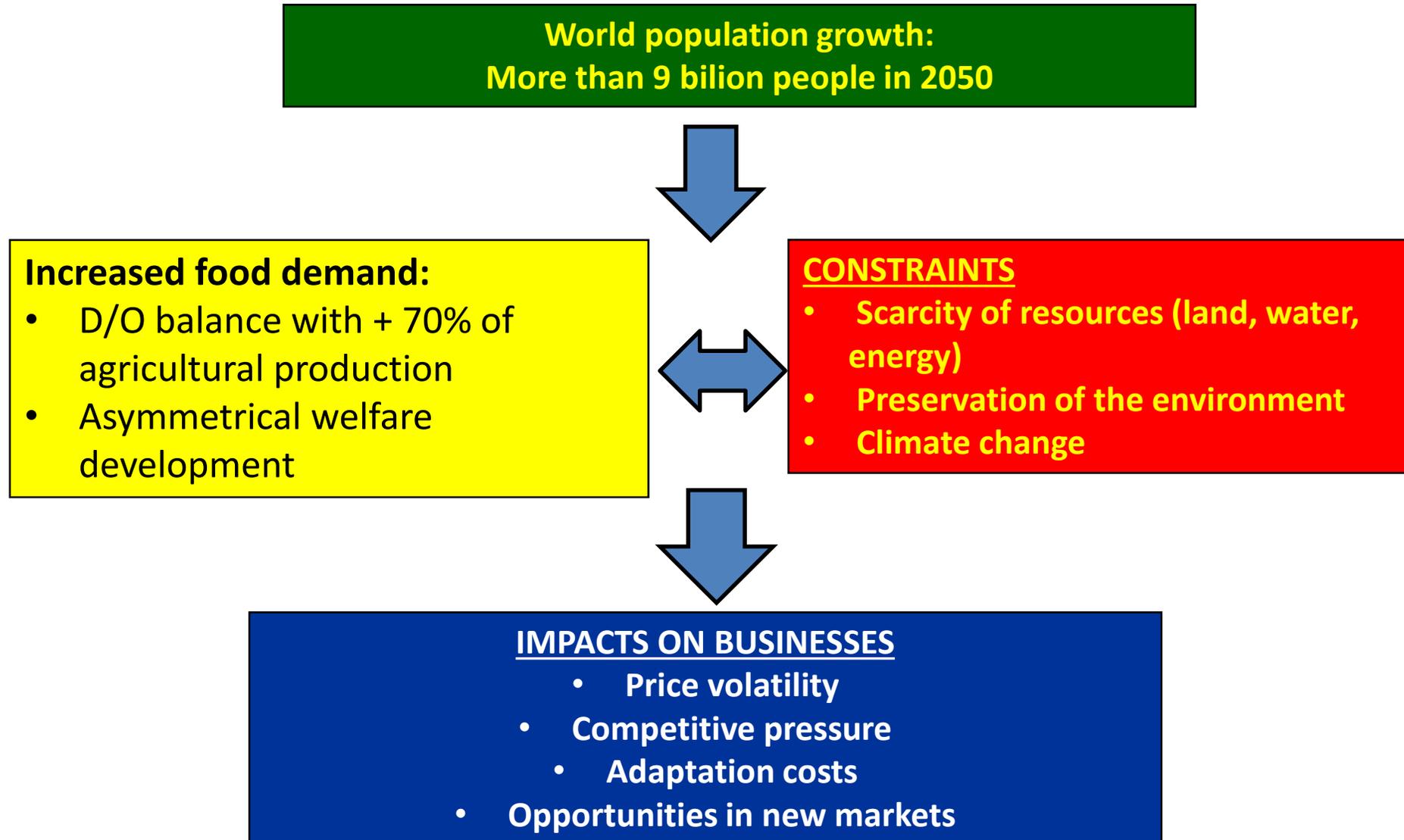
There was therefore a high risk of famine and food insecurity.

The response to this state of affairs was the phenomenon of the 'green revolution', a term that stands for an innovative approach to agricultural production with the introduction of genetically improved plant varieties and the use of new chemical means (pesticides and fertilisers) and technical tools (Mariani, 2015).

This phenomenon has led much of the world to an increase in the production of staple cereals for the human diet, reducing the fraction of humanity with undernourishment problems from 50% in 1947 to 37% in 1970, down to 12% in 2013 (FAO, 2013).



TO SUMMARIZE: a context dominated by 'scarcity'.

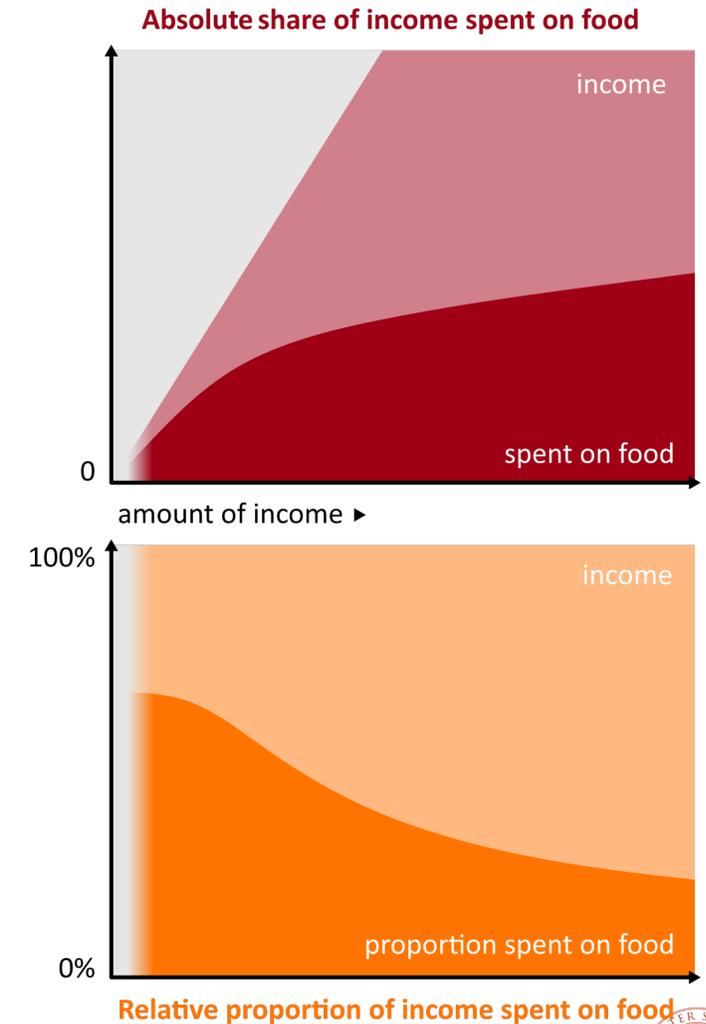


ENGEL'S LAW: A way to understand the behaviour of consumers

Engel's law is an observation in economics stating that, as income rises, the proportion of income spent on food falls—even if absolute expenditure on food rises. In other words, the income elasticity of demand of food is between 0 and 1.

The law was named after the statistician Ernst Engel (1821–1896).

Engel's law does not imply that food spending remains unchanged as income increases; instead, it suggests that consumers increase their expenditures for food products in percentage terms less than their increases in income.



EFFECTS

Price as a determinant of consumer choice has lost importance in favour of other variables:

- Health aspects (e.g. Mediterranean diet)
- Quality-health ratio (food safety)
- Homologation of consumption and purchasing behaviour (e.g. one stop shop)
- Customisation of eating styles (within similar behaviours there are subjective choices - niche products)
- Services embedded in food (e.g. precooked food)



In this scenario of complexity what to do?

Resource scarcity, population growth and new environmental challenges are leading politicians to rethink development trajectories.

Hence the need for a European New Green Deal.



THE NEW GREEN DEAL

Climate change and environmental degradation are an existential threat to Europe and the world. To overcome these challenges, Europe needs a new growth strategy that will transform the Union into a modern, resource-efficient and competitive economy, where

- there are no net emissions of greenhouse gases by 2050
- economic growth is decoupled from resource use
- no person and no place is left behind

The European Green Deal is our plan to **make the EU's economy sustainable**. We can do this by turning climate and environmental challenges into opportunities, and making the transition just and inclusive for all.



THE AIMS

The European Green Deal provides an action plan to

- boost the efficient use of resources by moving to a clean, circular economy
- restore biodiversity and cut pollution.

The plan outlines investments needed and financing tools available. It explains how to ensure a just and inclusive transition. The EU aims to be climate neutral in 2050. We proposed a European Climate Law to turn this political commitment into a legal obligation.

Reaching this target will require action by all sectors of our economy, including:

- investing in environmentally-friendly technologies
- supporting industry to innovate
- rolling out cleaner, cheaper and healthier forms of private and public transport
- decarbonising the energy sector
- ensuring buildings are more energy efficient
- working with international partners to improve global environmental standards

The EU will also provide financial support and technical assistance to help those that are most affected by the move towards the green economy. This is called the Just Transition Mechanism. It will help mobilise at least €100 billion over the period 2021-2027 in the most affected regions.



NEW WAY FOR SUSTAINABLE FISHERIES

Commissioner Virginijus **Sinkevičius**, responsible for the Environment, Oceans and Fisheries, said:

*“The first months of this year have been extremely challenging for the fisheries sector, but we have supported them across the EU. **Sustainable fisheries, delivered through the Common Fisheries Policy, are necessary for increasing resilience and delivering the European Green Deal, in particular the recent Farm-to-Fork and EU Biodiversity Strategies.** Fisheries management in the EU has brought us good news –we now have 50% more fish in the North East Atlantic seas than in 2003. Figures also show that the large fleet segments have become very profitable over the last years and bring increases in salaries. Challenges, however, remain, for example, we need to intensify our efforts to eliminate discards. I am counting on everyone to make an effort – Members States, industry and stakeholders. We must deliver what we have set out to achieve.”*



FROM FARM TO FORK

2030 targets



Pesticides in agriculture contributes to pollution of soil, water and air. The Commission will take action to **reduce the use and risk of chemical and more hazardous pesticides by 50%**



The **excess of nutrients** in the environment is a major source of air, soil and water pollution, negatively impacting biodiversity and climate. The Commission will act to

- **reduce nutrient losses by at least 50%**, while ensuring no deterioration on soil fertility
- **reduce fertilizer use by at least 20%**



Antimicrobial resistance linked to the use of antimicrobials in animal and human health leads to an estimated 33,000 human deaths in the EU each year. The Commission will **reduce the sale of antimicrobials for farmed animals and in aquaculture by 50%**.



Organic farming is an environmentally-friendly practice that needs to be further developed. The Commission will help the EU's organic farming sector to grow, with the goal of **25 % of total farmland being used for organic farming by 2030**.



EU BIODIVERSITY STRATEGY

Key elements of the biodiversity strategy

- Establishing protected areas for at least



30% of land in Europe



30% of sea in Europe



with legally binding nature-restoration targets in 2021 providing stricter protection of EU forests.

CIRCULAR ECONOMY: THE STRATEGY OF THE EU

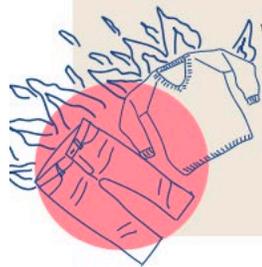
The new **Circular Economy Action Plan** presents new initiatives along the entire life cycle of products in order to modernise and transform our economy while protecting the environment. It is driven by the ambition to make sustainable products that last and to enable our citizens to take full part in the circular economy and benefit from the positive change that it brings about. According to a recent Eurobarometer survey the growing amount of waste is among the 3 top environmental concerns to citizens. The interviewed considered that the most effective ways of tackling environmental problems are by **changing the way we consume and the way we produce.**



CIRCULAR ECONOMY

FAVOUR CIRCULAR ECONOMY MEANS SAVES FISH

TEXTILES



Worldwide, a full truck of **textiles** is sent to incineration or landfilled every second.

It is estimated that less than 1% of all textiles worldwide are recycled into new textiles.



Driving new business models will boost sorting, reuse and recycling of textiles, and allow consumers to choose sustainable textiles. Ecodesign will apply to a broader range of products: clothes will be made to last longer.



PLASTICS



Consumption of plastics is expected to double in the coming 20 years.

By 2050, plastics could account for 20% of oil consumption, 15% of greenhouse gas emissions, and there could be more plastics than fish in the ocean.



Single-use products will be **phased out** wherever possible and replaced by durable products for multiple use.

Acting on microplastics - restricting intentionally added microplastics, increasing the capture of microplastics at all relevant stages of the product lifecycle.



FOOD and PACKAGING



In 2017 packaging waste reached in Europe a record of **173 kg per inhabitant**.



New legislative initiatives on reuse to **substitute single-use packaging**, tableware and cutlery by reusable products in food services, as well as targets for reducing packaging waste will be proposed.

WASTE



Each citizen produces nearly **half a tonne of municipal waste per year**.



Measures will be introduced for **waste prevention and reduction**, increasing recycled content, minimising waste exports outside EU. An EU model for separate collection and labelling of products will be launched.



FOCUS: IN ITALY THE LAW «SALVA MARE»

According to the "Save the Sea" bill, laying down "Provisions for the recovery of waste at sea and in inland waters and for the promotion of the circular economy" - currently at a standstill in the Senate Environment Committee - fishermen will finally be able to take ashore the plastic that accidentally ends up in their nets.

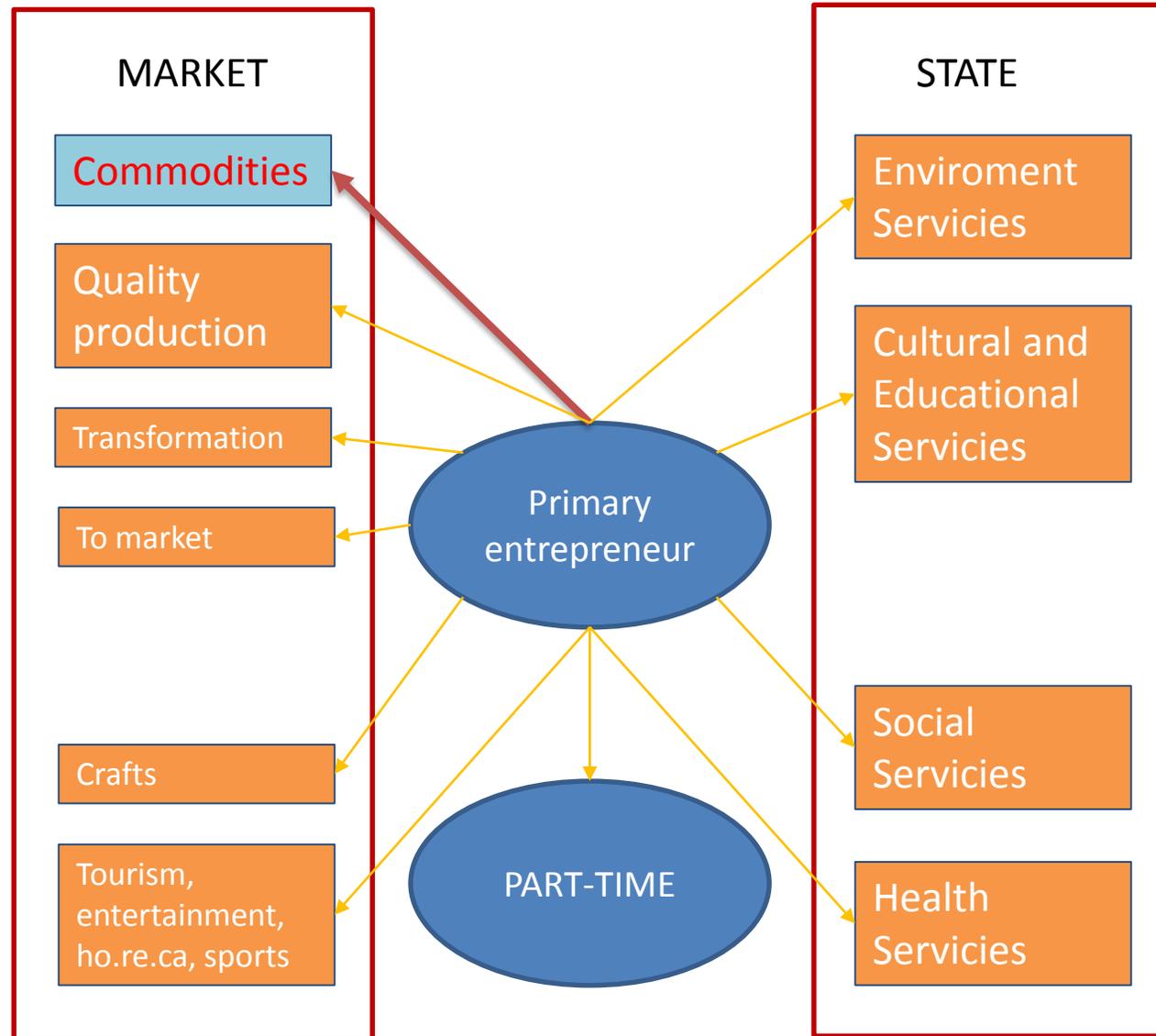
Until now, they were forced to throw it back into the sea because otherwise they would have committed the offence of illegal transport of waste, would have been considered waste producers and would also have had to pay for its disposal.

Instead, the measure equates accidentally caught waste with waste produced by ships. It will be the master of the ship calling at a port who will deliver "free of charge" the waste accidentally caught at sea to the port collection facility.

FACT: yesterday Tuesday, 2 March: parliamentary hearings on Bill 1571 - Provisions for the recovery of waste at sea and in inland waters and for the promotion of the circular economy ("Save the Sea Act"), approved by the Chamber of Deputies. Passage in the Senate.



WHO CAN ANSWER TO THESE NEW CHALLENGES?





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Next time

Economics: Overview of the sector

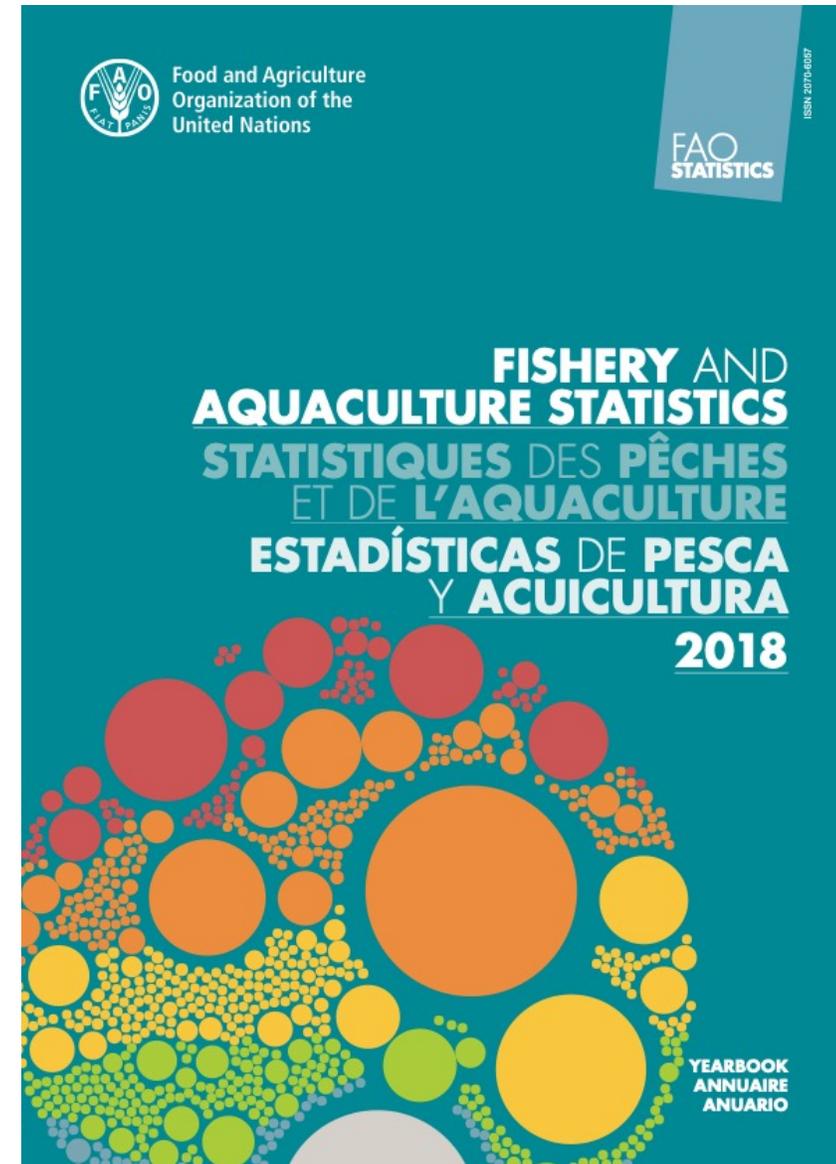
World and Europe; some data to know the sector



WORLD

The data shown are further elaborated in the following FAO paper presented in Rome in 2020

Other data are extracted from Economic Report of the EU Aquaculture sector (STECF-18-19)



FISH PRODUCTION: Capture and aquaculture production

Excluding aquatic plants, **global production of fish**, crustaceans, molluscs and other aquatic animals continued to grow and reached an all-time record of **178.5 million tonnes in 2018**, with an increase of **3.4 percent compared with 2017**.

Of this total, **capture production was 96.4 million tonnes**, representing an all-time high and an increase of 3.6 percent from 2017.

Aquaculture production peaked at 82.1 million tonnes in 2018, up by 3.2 percent from 2017.

In 2018, the total first sale value of total production was estimated at USD 401 billion, of which USD 250 billion was from aquaculture production.



Main fishing countries

In 2018 **China** accounted for around 15 percent of total global captures, more than the total captures of the second- and third-ranked countries combined.

The top seven capture producers (**China, Indonesia, Peru, India, the Russian Federation, the United States of America and Viet Nam**) accounted for almost 50 percent of total global capture production; while the top 20 producers accounted for almost 74 percent of total global capture production.



Main aquaculture producer

In 2018, the top ten aquaculture producers (excluding aquatic plants and non-food products) were **China** (47.6 million tonnes), **India** (7.1 million tonnes), **Indonesia** (5.4 million tonnes), **Viet Nam** (4.3 million tonnes), **Bangladesh** (2.4 million tonnes), **Egypt** (1.6 million tonnes), **Norway** (1.4 million tonnes), **Chile** (1.3 million tonnes), **Myanmar** (1.1 million tonnes) and **Thailand** (0.9 million tonnes).

The top ten producers collectively produced 72.8 million tonnes, contributing 88.7 percent to the world total aquaculture production by quantity in 2018

World aquaculture production of aquatic animals in 2018 consisted of 54.3 million tonnes of **finfish** (66.1 percent), 17.5 million tonnes of **molluscs** (21.3 percent), 9.4 million tonnes of **crustaceans** (11.4 percent) and 0.9 million tonnes of other **aquatic animal** species (1.1 percent).

Inland aquaculture of finfish species was the most important sector in the world aquaculture of aquatic animals. The production of 47 million tonnes of finfish from inland aquaculture represented 57.2 percent of world total aquaculture production of aquatic animals in 2018.



Fishery fleet and employment

The world fishing fleet consisted of about 4.56 million vessels in 2018, a decrease since the peak of about 4.8 million vessels in 2014.

Globally, about 37 percent of the fishing fleet is composed by non-motorized vessels.

68 percent of all fishing vessels were reported to be in Asia, followed by Africa (20 percent), the Americas, Europe and finally Oceania.



FOCUS: VESSELS IN EUROPE

STATO	NUMERO DI BATTELLI PER CLASSE DI LUNGHEZZA					TOTALE	% <10mt.
	VL0010	VL1012	VL1224	VL2440	VL≥40		
BEL		1	35	36		72	0,00%
BGR	1.739	65	83	11		1.898	91,62%
CYP	720	47	31	7		805	89,44%
DEU	1.029	85	232	35	17	1.398	73,61%
DNK	1.774	107	288	37	35	2.241	79,16%
ESP	6.155	657	1.772	614	104	9.302	66,17%
EST	1.468	74	20	20	5	1.587	92,50%
FIN	2.925	154	45	18	3	3.145	93,00%
FRA	4.767	929	705	146	43	6.590	72,34%
GBR	4.872	409	700	181	47	6.209	78,47%
GRC	13.747	491	691	177	1	15.107	91,00%
HRV	6.556	367	478	121		7.522	87,16%
IRL	1.553	241	179	84	23	2.080	74,66%
ITA	7.703	968	3.267	328	21	12.287	62,69%
LVA	601	9	13	43	13	679	88,51%
MLT	804	52	55	9		920	87,39%
NLD	325	40	241	143	98	847	38,37%
POL	539	134	118	46	4	841	64,09%
PRT	6.892	311	564	170	22	7.959	86,59%
ROM	97	23	15	3		138	70,29%
SVN	156	12	17			185	84,32%
SWE	919	201	125	25	8	1.278	71,91%
Totale	65.341	5.377	9.674	2.254	444	83.090	78,64%

Fonte: Common Fleet Register, <http://ec.europa.eu/fisheries/fleet/>; giugno 2017

Il simbolo VLyyzz indica i vascelli (Vessels=VL) con classe di lunghezza tra yy metri e zz metri (estremo di destra escluso).

- Italy has the second largest fleet in Europe
- In particular, it ranks first in Europe for medium-sized boats (12-24 metres)



EMPLOYEMENT

Many millions of people around the world find a source of income and livelihood in the fisheries and aquaculture sector.

In 2018, women made up 14 percent of the total of 59.51 million people engaged in the primary sector of capture fisheries and aquaculture.

Of this total, **38.98 million people were engaged in fisheries and 20.53 million in aquaculture.**

The highest numbers of primary sector workers were found in Asia (85 percent), followed by Africa (9 percent), the Americas (4 percent), and Europe and Oceania (1 percent each).



FISH UTILIZATION

In 2018, **88 percent, or over 156 million tonnes, of total fishery and aquaculture production was used for direct human consumption.**

The remaining 12 percent (22 million tonnes) was destined for non-food products, mainly for the manufacture of fishmeal and fish oil.

44 percent of the fish destined for human consumption was in live and fresh form.



CONSUMPTION

In 2017, **global per capita consumption of fish was estimated at 20.3 kg**, with fish accounting for about 17.3 percent of the global population's intake of animal proteins and 6.8 percent of all proteins consumed.

Globally, fish provides about 3.3 billion people with almost 20 percent of their average per capita intake of animal protein, and 5.6 billion people with 10 percent of such protein.

Preliminary estimates for 2018 indicate a further growth in per capita consumption to about 20.5 kg, with the share of aquaculture production in total available food fish supply overtaking that of capture fisheries (10.8 kg vs 9.7 kg).



TRADE

A large share of all fish production enters international marketing channels – about 37 percent (live weight equivalent) was exported in 2018.

In the same year, world exports of fish and fish products reached USD165 billion, a new record high.

This represents, an increase of 6 percent on 2017. In the period 1976–2018, trade has increased at an annual growth rate of 6.7 percent in nominal terms and 4.1 percent in real terms.



IMPORT and EXPORT

In 2018, 69 percent of total fisheries imports in value were in developed countries, with the **United States of America** and **Japan** together accounting for 24 percent of the total.

Imports by the **European Union** (Member Organization) represented a share of 37 percent of total world imports. If intraregional trade among its member countries is excluded, the share declines to 19 percent of world imports. However, the **European Union** still remains the largest market in the world.

China is by far the main exporting country, followed by **Norway**, **Viet Nam** and **India**. The top ten exporters, of which half are developing countries, accounted for 51 percent of total exports by value in 2018.

The share of developing countries in total fishery exports was about 54 percent by value and 60 percent by quantity (live weight equivalent) in 2018.

Salmon and **trout** became the most important commodity traded in value terms since 2013 and accounted for about 18 percent of the total value of internationally traded fish products in 2018.

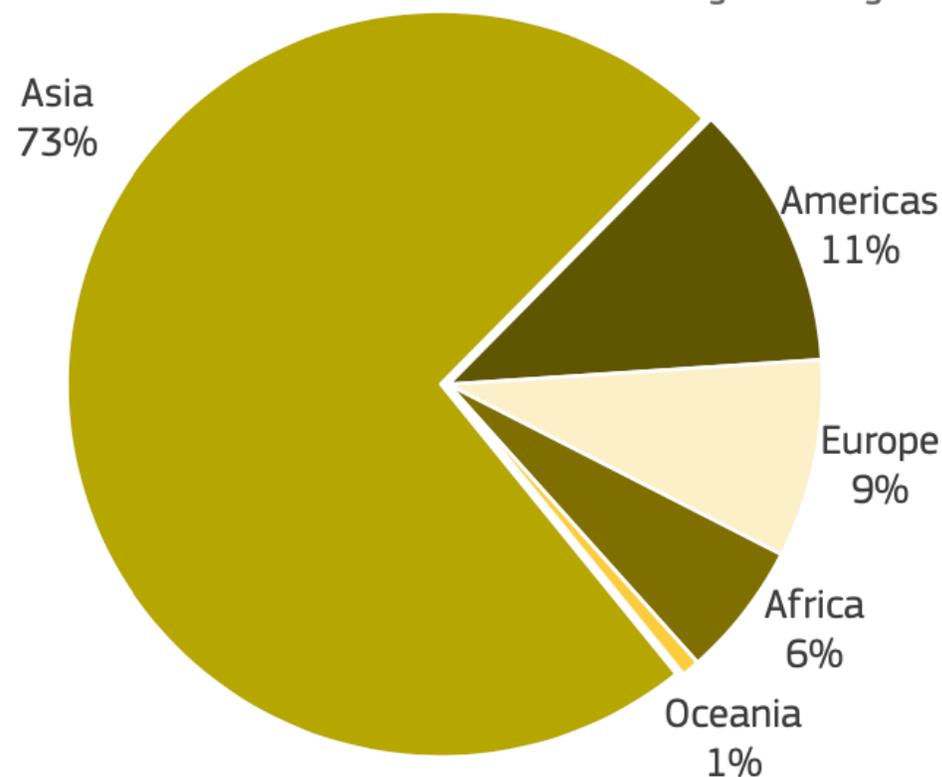


WORLD PRODUCTION BY CONTINENT: EUROPE LESS THAN 10%

WORLD PRODUCTION BY CONTINENT IN 2018

Source: Eurostat (online data codes: [fish_ca_main](#) and [fish_aq2a](#)) and FAO. More details can be found in the Methodological background.

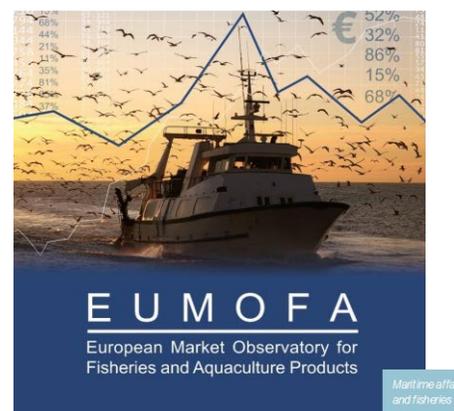
Continent	Volume (1.000 tonnes)	% catches	% aquaculture
Asia	155.005	32%	68%
Americas	24.462	84%	16%
Europe	18.183	83%	17%
Africa	12.408	81%	19%
Oceania	1.634	87%	13%
Total	211.692	46%	54%



EUROPE

The data shown are further elaborated in the following report produced by EUMOFA in 2020

Other data are extracted from Economic Report of the EU Aquaculture sector (STECF-18-19)



PRODUCTION

In 2018, total world catches and aquaculture production achieved a 10-year high. With a 3% increase from 2017, their combined totals moved from 206 million tonnes to 212 million tonnes. In that time, catches continued to increase, rising from 94 million tonnes to 97 million tonnes, and farmed production grew from 112 million tonnes to 115 million tonnes.

Peru was the main contributor to the growth, thanks to the boost registered by its catches of “anchoveta” (*Engraulis ringens*) designated for fishmeal production.

TOP-15 PRODUCING COUNTRIES IN 2018 (1.000 TONNES)

Source: Eurostat (online data codes: [fish_ca_main](#) and [fish_aq2a](#)) and FAO. More details can be found in the Methodological background.

Country	Catches	Aquaculture	Total production	% of total	% evolution of total production 2018/2017
China	14.831	66.135	80.966	38%	+1%
Indonesia	7.261	14.772	22.033	10%	-4%
India	5.343	7.071	12.414	6%	+6%
Vietnam	3.347	4.153	7.500	4%	+5%
Peru	7.208	104	7.312	3%	+71%
EU-28	5.337	1.319	6.656	3%	-2%
Russia	5.117	204	5.321	3%	+5%
United States	4.757	468	5.225	2%	-5%
Philippines	2.053	2.304	4.357	2%	+6%
Bangladesh	1.871	2.405	4.276	2%	+3%
Japan	3.207	1.033	4.240	2%	-1%
Norway	2.658	1.355	4.013	2%	+4%
Chile	2.369	1.287	3.656	2%	+3%
Republic of Korea	1.345	2.279	3.624	2%	-2%
Myanmar	2.033	1.132	3.165	1%	-1%
Others	28.494	8.440	36.934	18%	+3%
Total	97.231	114.461	211.692	100%	+3%

EUROPE: WHAT HAPPENS?

Three non-EU countries accounted for almost 60% of total European production in 2018: Russia with 5,32 million tonnes, Norway with 4,01 million tonnes, and Iceland with 1,30 million tonnes.

Looking more specifically at the EU level, the combined production of EU countries totalled 6,65 million tonnes.



FOCUS: THE AQUACULTURE SECTOR

Aquaculture production in the 28 EU Member States reached 1.42 million tonnes and accounted for €4.89 billion in 2016 (DCF and EWG estimates). The EU represents 1.2% of the world aquaculture production in volume and 1.9% in value¹. EU aquaculture production is very concentrated. Spain is the largest aquaculture producer in the EU covering 21% of the production volume, followed by France (15%), the United Kingdom and Italy (both with 14%), and Greece (with 10%). These five countries account for 74% of the total EU aquaculture production volume (Figure 2.2).

In terms of value, United Kingdom is the largest contributor in EU with 21% of the total, followed by France (16%), Spain (13%), Greece (12%) and Italy (11%). These five countries combine 73% of the total EU aquaculture value (Figure 2.2).

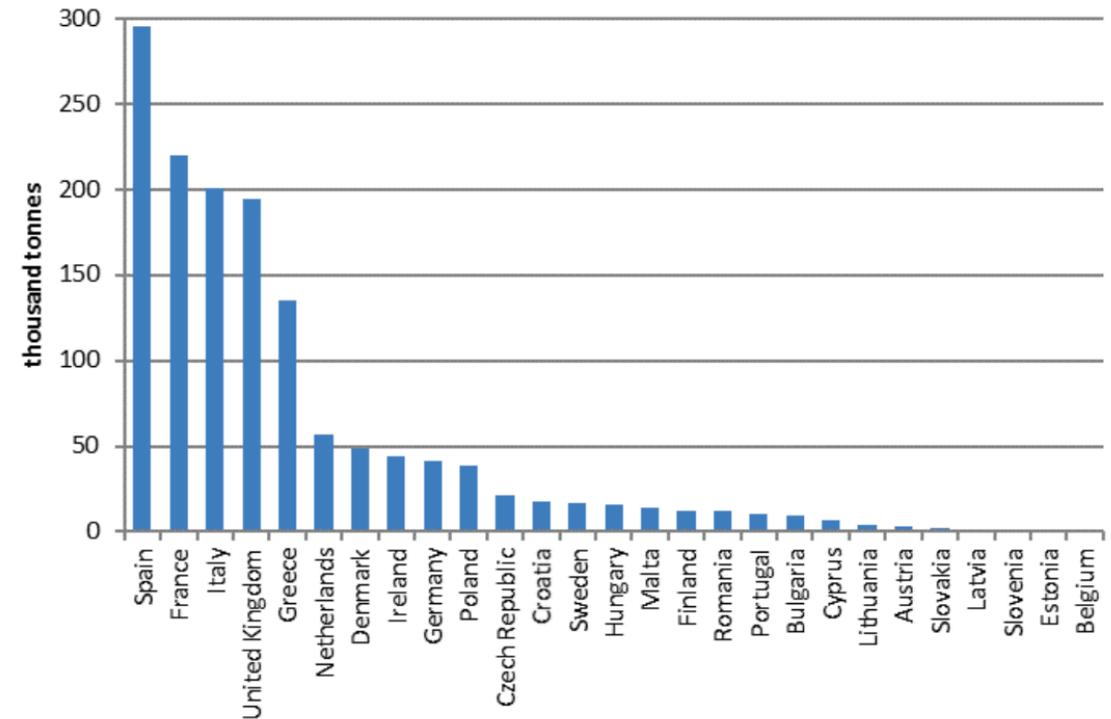


Figure 2.2: Aquaculture production in EU MS in terms of weight: 2016.
Source: EU MS data submission and EWG estimations, 2018.



It should be noted that even though Spain has the largest aquaculture production volume (21%) it is only third in value (13%). This is due to the relative low market value of mussels, which represented 74% of the Spanish aquaculture production volume, but only 13% of the sales value.

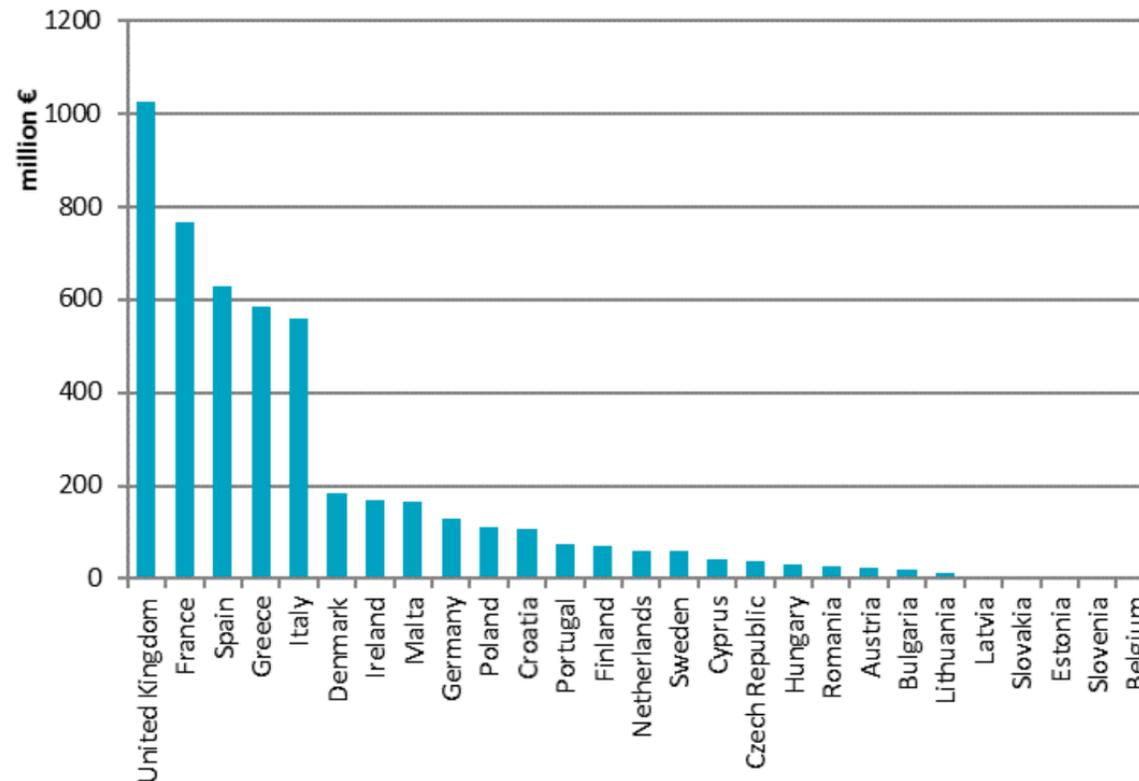


Figure 2.3: Aquaculture production in EU MS in terms of value: 2016.

Source: EU MS data submission and EWG estimations, 2018.



EMPLOYMENT IN AQUACULTURE SECTOR

Table 2.1 provides an overview of the size of the EU aquaculture sector across Member States in terms of number of firms, sales (volume and value) and employment. The table shows in more detail the concentration in a few countries but also their different composition of production. For instance, as mentioned above, with over €1 000 million of production, the UK is the largest producer, with a volume of 195 tonnes. On the other hand, although Spain had a much larger production (295 tonnes), this only reached a value of €627 million. A more detailed analysis of these indicators is presented in this Section.

Table 2.1: Economic and employment indicators for the EU aquaculture sector: 2016.

Country	Number of enterprises	Total sales volume	Turnover	Employment	FTE
	<i>number</i>	<i>thousand tonnes</i>	<i>million €</i>	<i>number</i>	<i>number</i>
Austria	51	3	22	286	171
Belgium	1	0	0	6	3
Bulgaria	588	9	21	1,046	923
Croatia	187	17	109	2,192	1,625
Cyprus	16	7	42	522	459
Czech Republic	90	21	39	1,506	904
Denmark	107	48	185	549	366
Estonia	10	0	2	41	34
Finland	173	13	70	495	341
France	2,700	220	765	15,074	8,837
Germany	293	41	129	1,638	983
Greece	328	135	584	3,986	3,482
Hungary	72	16	32	2,124	1,274
Ireland	289	44	168	1,948	1,027
Italy	711	201	557	5,460	3,289
Latvia	85	1	6	250	169
Lithuania	28	4	12	501	301
Malta	6	14	164	301	256
Netherlands	70	56	60	189	206
Poland	1,242	38	110	8,759	5,256
Portugal	1,402	10	74	2,650	829
Romania	430	12	28	3,699	2,912
Slovakia	11	2	5	641	385
Slovenia	7	1	1	20	20
Spain	2,990	295	627	17,811	6,534
Sweden	136	17	60	489	295
United Kingdom	473	195	1,023	3,285	2,802
Total EU	12,496	1,422	4,893	75,466	43,680

Source: EU MS data submission (DCF, EU-MAP), Eurostat, FAO and EWG estimations, 2018.

TRADE: IMPORT and EXPORT

The EU trade of fisheries and aquaculture products, which comprises both imports and exports with third countries, totalled EUR 33,37 billion and 8,55 million tonnes in 2019, making **the EU the second largest trader of these products in the world after China**. Imports, which accounted for around 80% of the total, amounted to EUR 27,21 billion and 6,34 million tonnes.



IMPORTS OF FISHERIES AND AQUACULTURE PRODUCTS OF MAIN WORLD TRADERS (VOLUME IN MILLION TONNES AND NOMINAL VALUE IN EUR BILLION)

AND % OF IMPORTS ORIGINATING FROM THE EU ON TOTAL IN 2019

Source: EUMOFA elaboration of data from EUROSTAT (for EU trade flows, online data code [DS-016890](#)), StatBank Norway and Global Trade Atlas - IHS Markit (for other non-EU countries)

Country	2015		2016		2017		2018		2019		2019/2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
EU-28	5,94	22,80	6,10	24,85	6,07	25,98	6,32	26,55	6,34	27,21	+0,3%	+2%
US	2,64	17,03	2,72	17,77	2,80	19,22	2,88	19,26	2,81 (3% from the EU)	19,84 (3% from the EU)	-2%	+3%
China	4,04	7,84	3,98	8,15	4,84	9,70	5,16	12,45	6,20 (2% from the EU)	16,36 (2% from the EU)	+20%	+31%
Japan	2,47	12,28	2,36	12,73	2,46	13,52	2,36	13,12	2,44 (2% from the EU)	13,60 (4% from the EU)	+3%	+4%
Thailand	1,60	2,33	1,85	2,85	1,92	3,24	2,13	3,39	1,98 (1% from the EU)	3,35 (1% from the EU)	-7%	-1%
Norway	0,63	1,12	0,63	1,15	0,66	1,08	0,61	1,08	0,61 (43% from the EU)	1,19 (39% from the EU)	=	+10%

EXPORTS OF FISHERIES AND AQUACULTURE PRODUCTS OF MAIN WORLD TRADERS (VOLUME IN MILLION TONNES AND NOMINAL VALUE IN EUR BILLION)

AND % OF EXPORTS DESTINED FOR THE EU ON TOTAL IN 2019

Source: EUMOFA elaboration of data from EUROSTAT (for EU trade flows, online data code [DS-016890](#)), StatBank Norway and Global Trade Atlas - IHS Markit (for other non-EU countries)

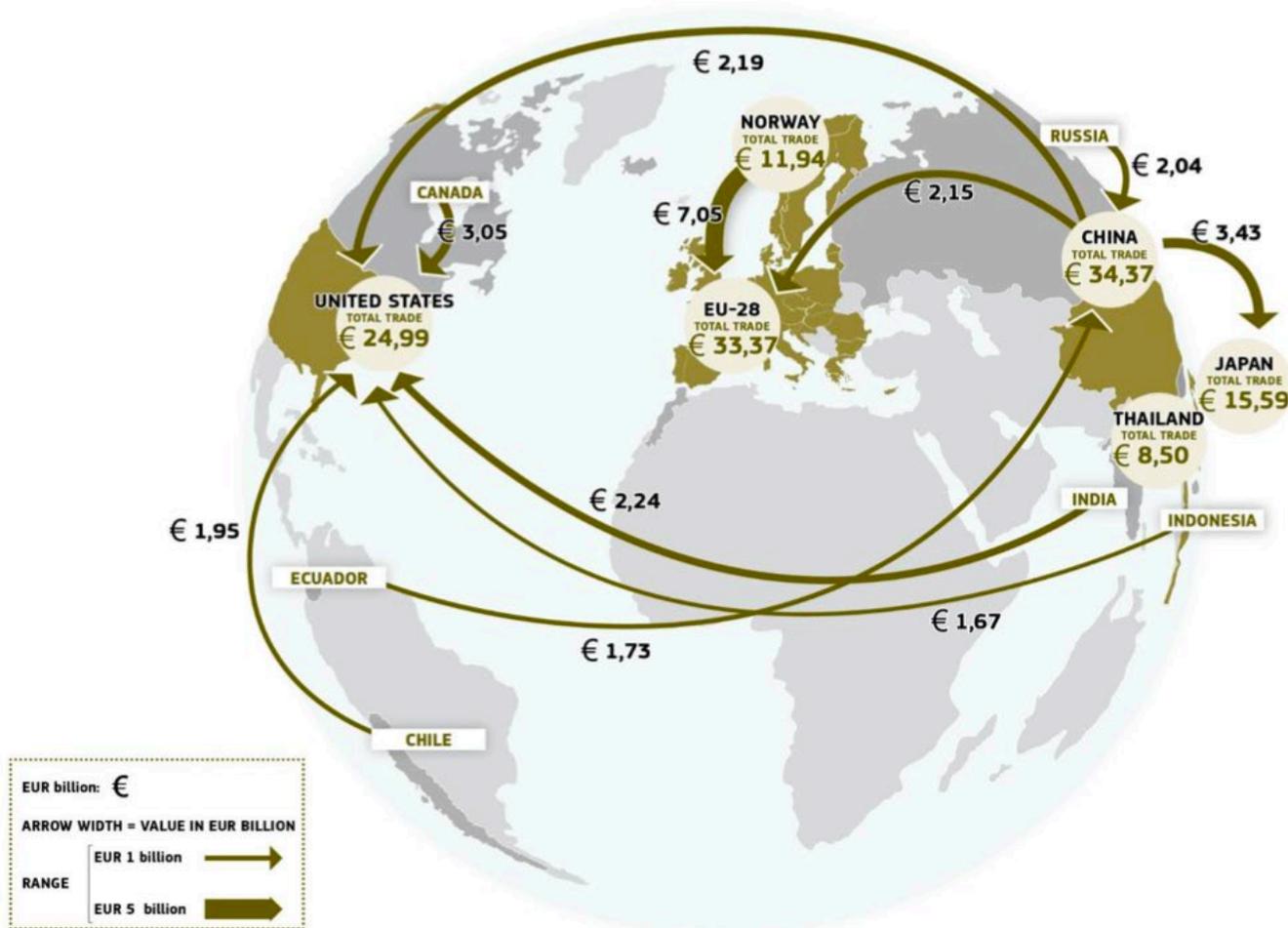
Country	2015		2016		2017		2018		2019		2019/2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
China	3,98	17,86	4,16	18,31	4,26	18,21	4,23	18,48	4,18 (12% to the EU)	18,02 (11% to the EU)	-1%	-2%
Norway	2,57	8,21	2,45	9,77	2,61	10,06	2,76	10,29	2,64 (60% to the EU)	10,74 (60% to the EU)	-4%	+4%
EU-28	2,06	5,01	1,99	5,24	2,13	5,67	2,20	5,73	2,21	6,17	+0,5%	+8%
US	1,65	5,45	1,59	5,35	1,70	5,46	1,57	5,20	1,55 (21% to the EU)	5,15 (19% to the EU)	-1%	-1%
Thailand	1,48	5,07	1,44	5,25	1,28	5,26	1,31	5,08	1,30 (4% to the EU)	5,15 (5% to the EU)	-1%	+1%
Japan	0,53	1,73	0,51	1,85	0,57	1,82	0,71	1,98	0,60 (1% to the EU)	1,99 (2% to the EU)	-15%	+1%



THE FLOW CHART OF THE TRADE

MAIN TRADE FLOWS OF FISHERY AND AQUACULTURE PRODUCTS IN THE WORLD (2019, NOMINAL VALUES)

Source: EUMOFA, based on elaboration of data from EUROSTAT (for EU trade flows, online data code [DS-016890](#)), StatBank Norway, and Global Trade Atlas - IHS Markit (for trade flows of other non-EU countries)



The graph shows the values traded by the major players.

While Europe sources mainly from China and Norway, the US prefers India, Indonesia and China.

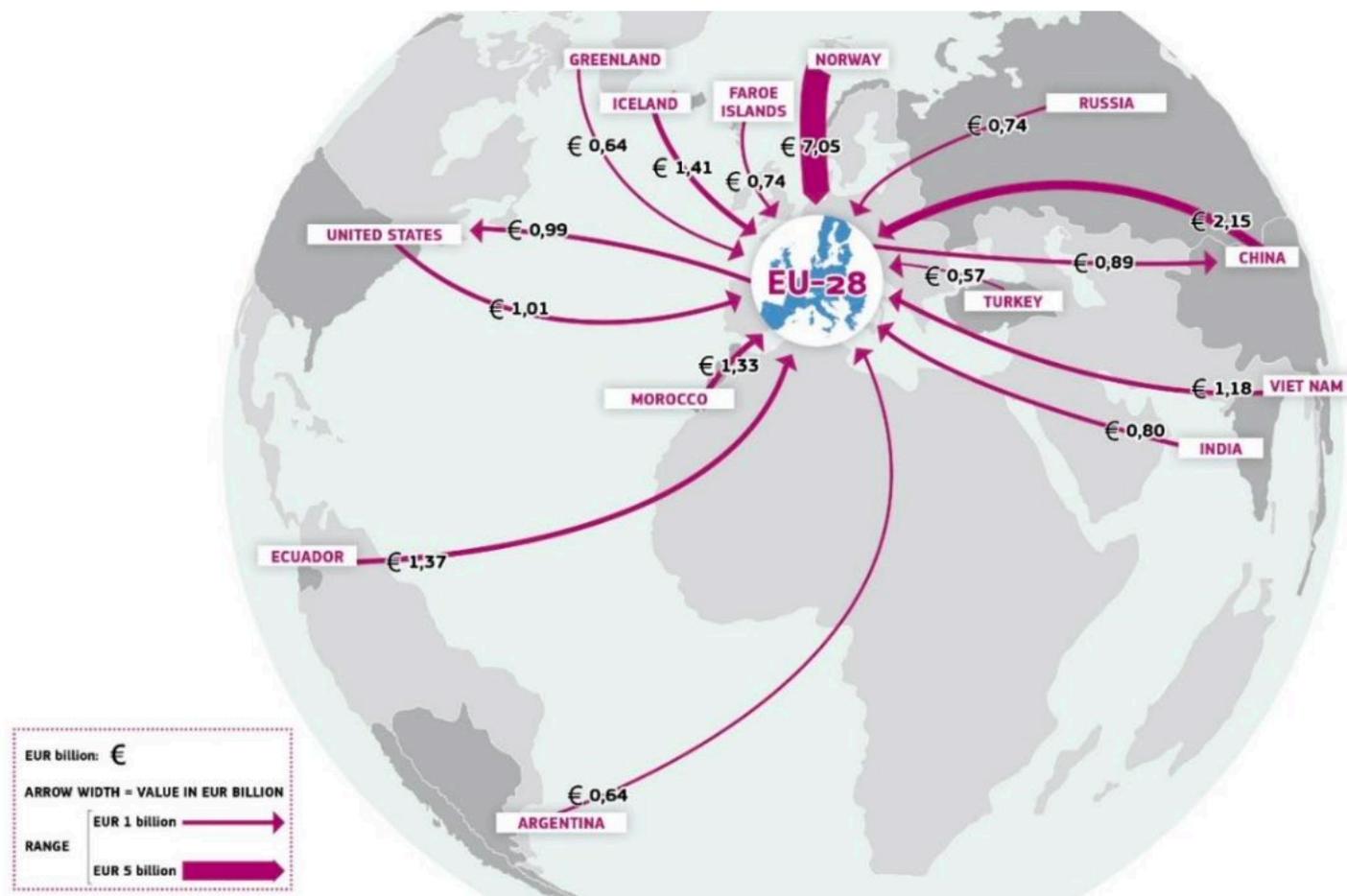
China has trade relations with Russia and Ecuador inbound.



MORE IN-DEPTH

MOST RELEVANT EXTRA-EU TRADE FLOWS IN 2019, IN NOMINAL VALUE (EUR BILLION)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: [DS-016890](#)).

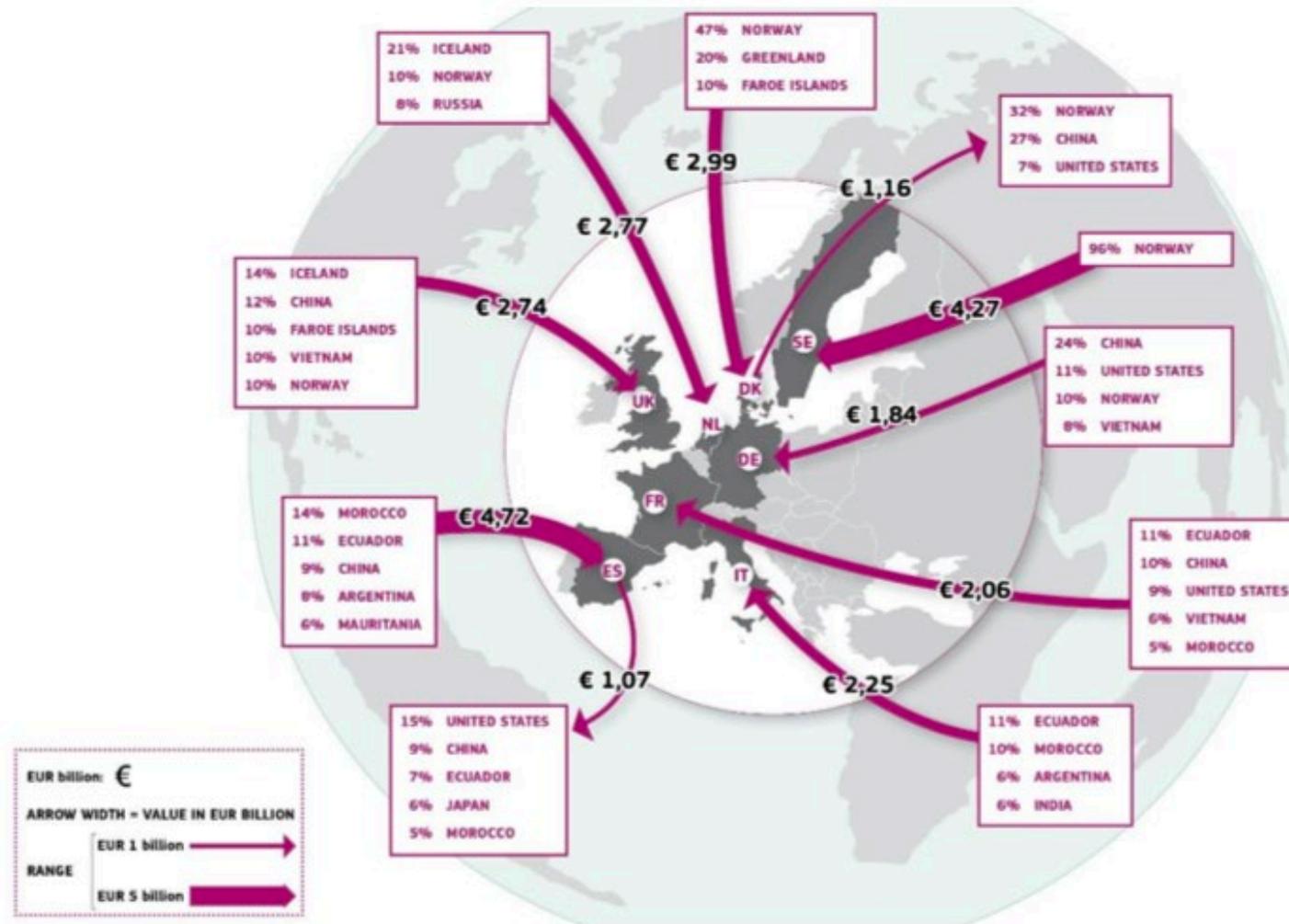


1. Norway and China are the most important partner for EU.
2. the relationship with the USA, which has an almost neutral balance of trade between imports and exports

MORE IN-DEPTH

MOST RELEVANT EXTRA-EU TRADE FLOWS BY MEMBER STATE IN 2019, IN NOMINAL VALUE (EUR BILLION)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: [DS-016890](#)).



1. This graphic shows the reports of the individual countries.
2. As far as **Italy** is concerned, it can be seen that the most important trade relations are **Ecuador, Morocco, Argentina and India**



CONSUMPTION: AN OVERVIEW

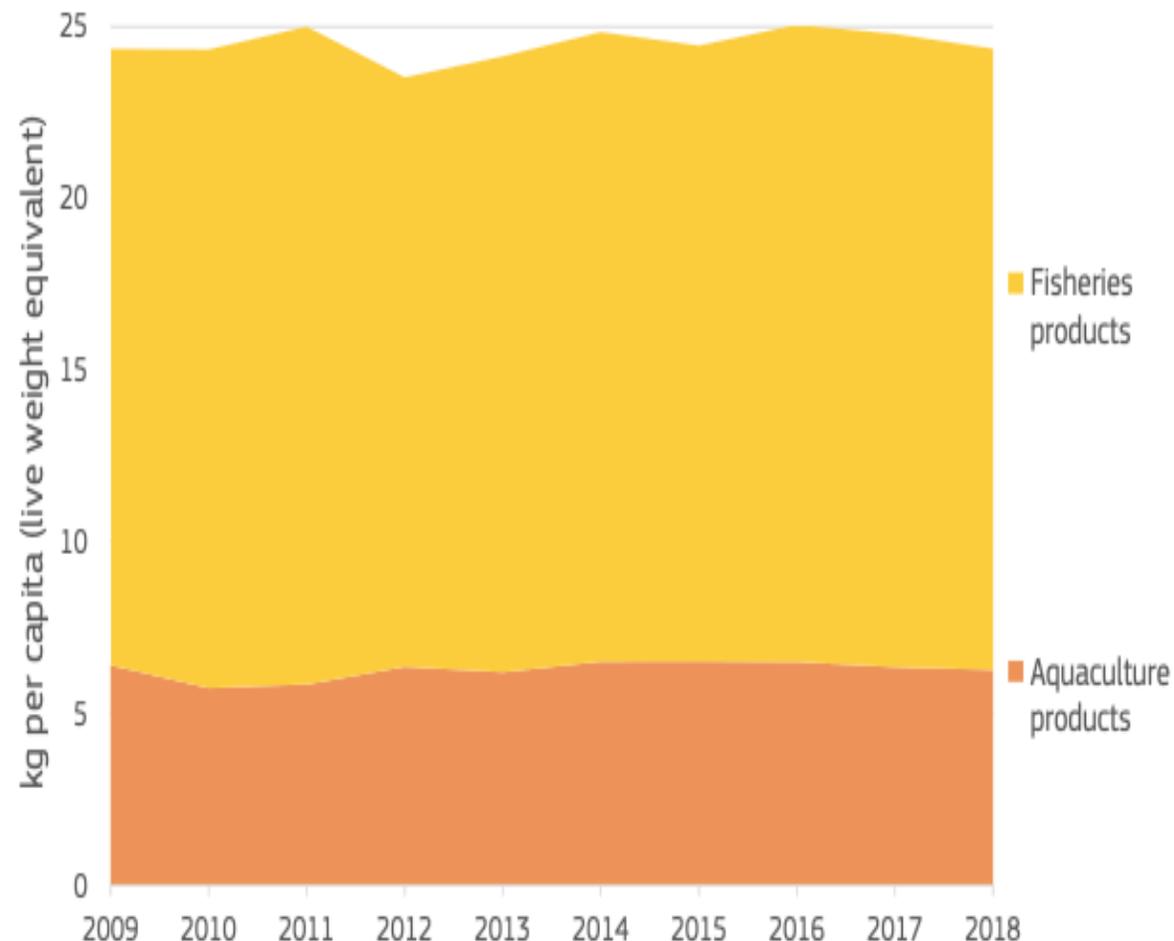
In 2018, consumption of fishery and aquaculture products in the EU amounted to 12,48 million tonnes.

From 2017 to 2018, per capita consumption decreased from 24,79 kg to 24,36 kg,

Wild-caught products accounted for three-quarters of total apparent consumption.

PER CAPITA APPARENT CONSUMPTION OF FISHERY AND AQUACULTURE PRODUCTS

Source: EUMOFA, based on EUROSTAT (online data codes: [fish_aq2a](#), [fish_ca_main](#) and [DS-016890](#)), FAO, national administrations and FEAP data. Details on the sources and on the methodological approach used for assessing the production method of imports and exports can be found in the Methodological background.

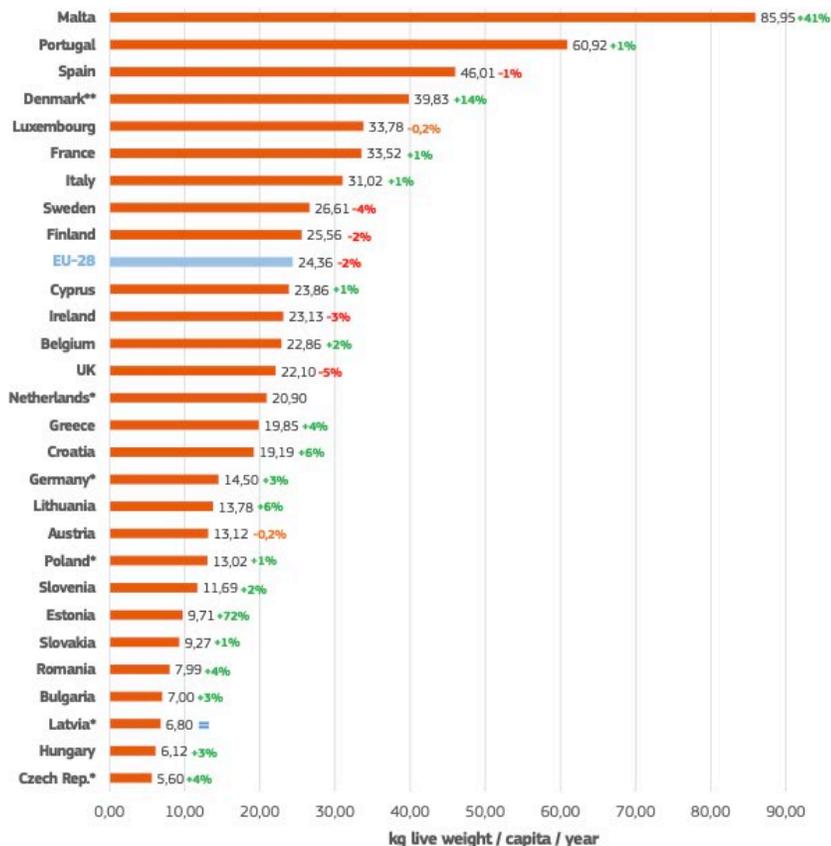


SOME DATA ON CONSUMPTION

PER CAPITA APPARENT CONSUMPTION OF FISHERY AND AQUACULTURE PRODUCTS BY MEMBER STATE IN 2018 AND % VARIATION 2018/2017

Source: EUMOFA estimates.

*Data are provided by the following National sources: BMEL-Statistik (Germany), CZSO Czech Statistical Office (Czech Republic), Centrālā statistikas pārvalde (Latvia), Dutch Fish Marketing Board (Netherlands) and Statistics Poland (Poland). For the Netherlands, the National source has not developed estimates for 2017; however, based on dead weight figures, there was a decrease by 1-3%. **Estimates for Denmark were not confirmed by the National contact point.



APPARENT CONSUMPTION OF MOST CONSUMED PRODUCTS (2018)

Source: EUMOFA, based on EUROSTAT (online data codes: [fish_aq2a](#), [fish_ca_main](#) and [DS-016890](#)) and FAO data. Details on the sources and on the methodological approach used for assessing the production method of imports and exports can be found in the Methodological background.

Products	Per capita consumption (kg, live weight equivalent)	Consumption evolution 2018/2017	% wild	% farmed
Tuna	3,05	-1%	98,63%	1,37%
Salmon	2,24	-0,2%	0,16%	99,84%
Cod	2,14	-17%	99,97%	0,03%
Alaska pollock	1,68	+9%	100%	0%
Shrimps	1,58	+7%	52,34%	47,66%
Mussel	1,21	-7%	6,29%	93,71%
Herring	1,18	-0,2%	100%	0%
Hake	1,00	+6%	100%	0%
Squid	0,66	-1%	100%	0%
Mackerel	0,60	-8%	100%	0%
Surimi ²⁹	0,59	+6%	100%	0%
Sardine	0,57	-2%	100%	0%
Trout	0,42	-1%	2,05%	97,95%
Sprat (=Brisling)	0,40	+3%	100%	0%
Saithe (=Coalfish)	0,34	+3%	100%	0%
Total	24,36	-2%	74,27%	25,73%

Italy has a higher average consumption than Europe and the trend is also growing with +1%. The most consumed species in Europe are Tuna (WILD) and Salmon (FARMED).



ITALY: SOME DATA FOR AQUACULTURE SECTOR (STECF 2018-2019)



Production volume and value

The Italian aquaculture sector has 711 companies, and represents 4 920 employees, equal to approximately 3 000 FTE. In 2015, the sector produced 190 thousand tonnes and €490 million, which corresponded to an increase of 2% in volume and a decrease of 12% in value.

In 2015, the total volume, compared to the performance of 2008-2014, decreased by 5%, whereas the total value decreased by 2%.

The best performing segment was that of shellfish, increased by 15% in volumes sold and over 40% in sales value.

Italian consumers appreciate the salmon trout, which is mostly sold fresh.

The dependence of Italy from abroad continues both in 2015 and in 2016 and the trade balance continues to show a negative growth value (3.5% the variation 2015 vs 2016). Specifically, there was a further increase in imports (+2.5%) and a decrease in exports of fish products of around 4% (ISMEA).



OUTLOOK

The Italian sector expects a growth that, based on forecast analyses, should be about 5% per annum (estimates based on FAO data and on the values reported in the Strategic Plan for Aquaculture (PSA-Italy 2014-2020)).



ECONOMICS: FINANCIAL ASPECTS

A focus on Italian Market. The data shown are our elaboration from Istat, AIDA, Banca di Italia

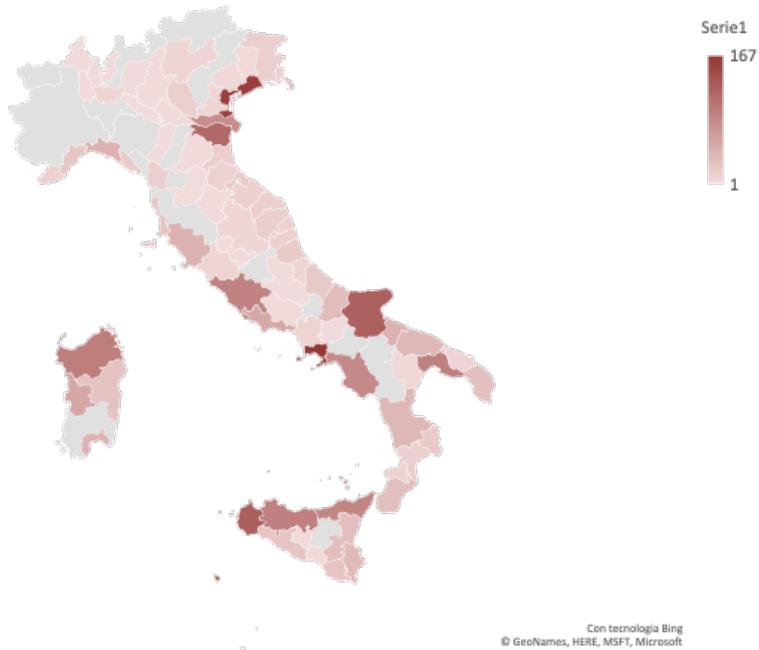


Incidence of added value produced by the maritime economy per province (data: UnionCamere)

The map drawn on the basis of the role played by the blue economy in the provinces in terms of added value (the one relating to employment is very similar) highlights the special nature of this composite sector, which is obviously conditioned by the presence of outlets on the sea in the provincial territories.



Number of companies and descriptive statistics of the AIDA dataset



	N	Minimum	Maximum	Mean
TURNOVER	1305	0	57825525	645283
EMPLOYEE	1271	0	248	8,91
PROFIT	1305	-3349257	1253957	-6975,47
ASSETS	1305	1	34706313	729431,6
NET ASSETS	1305	-5900905	20132807	209375,6
NFP	684	-3009929	14523859	100435,2

The number of farms surveyed is 1305, about 40% of the total. They are distributed mainly in the south.

It is worth noting that the average profit is negative. In addition, the average size of the companies is less than 10 employees.



ANALYSIS OF THE FINANCIAL SUSTAINABILITY OF THE SECTOR

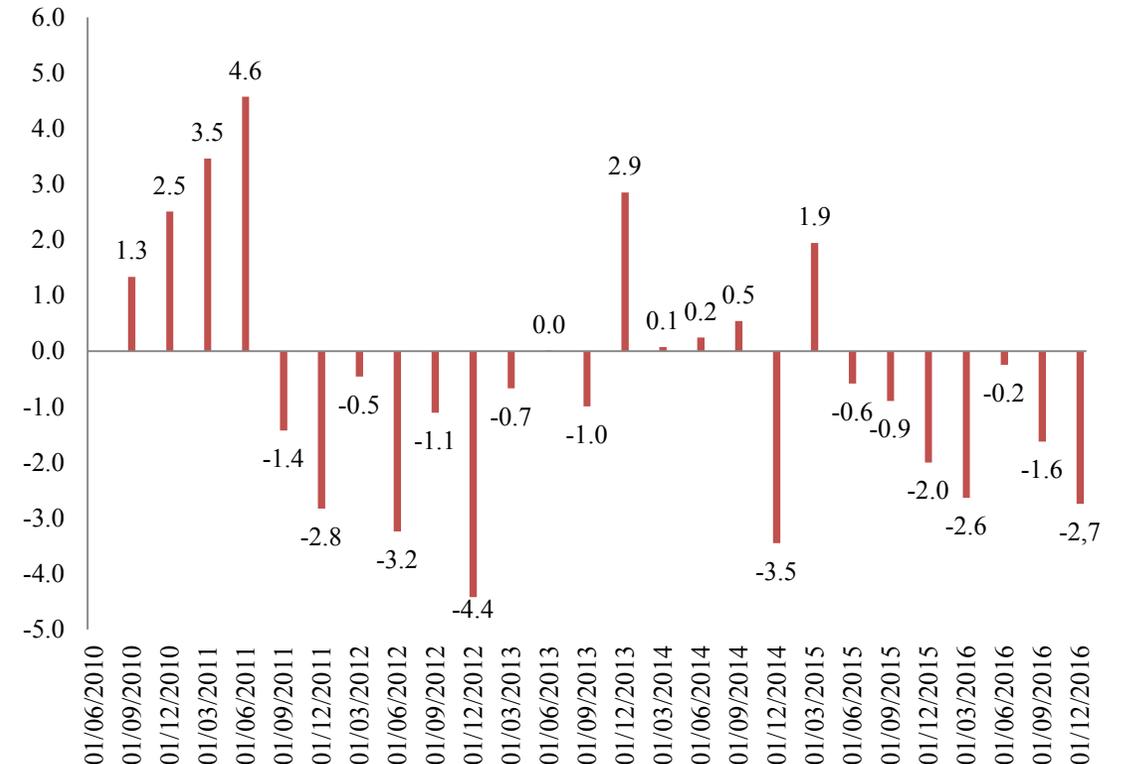


Percentage variation of the use in the fishery and aquaculture sector. Italy, 2012-2016.

The first variable to be considered is the *use* of financing in the fishery sector, measured through the value of loans supplied by the banking sector to the actors of the fishery chain.

From the second half of 2011 to 2016, the value of loans given to the fishery branch has been continuously decreasing (-21%).

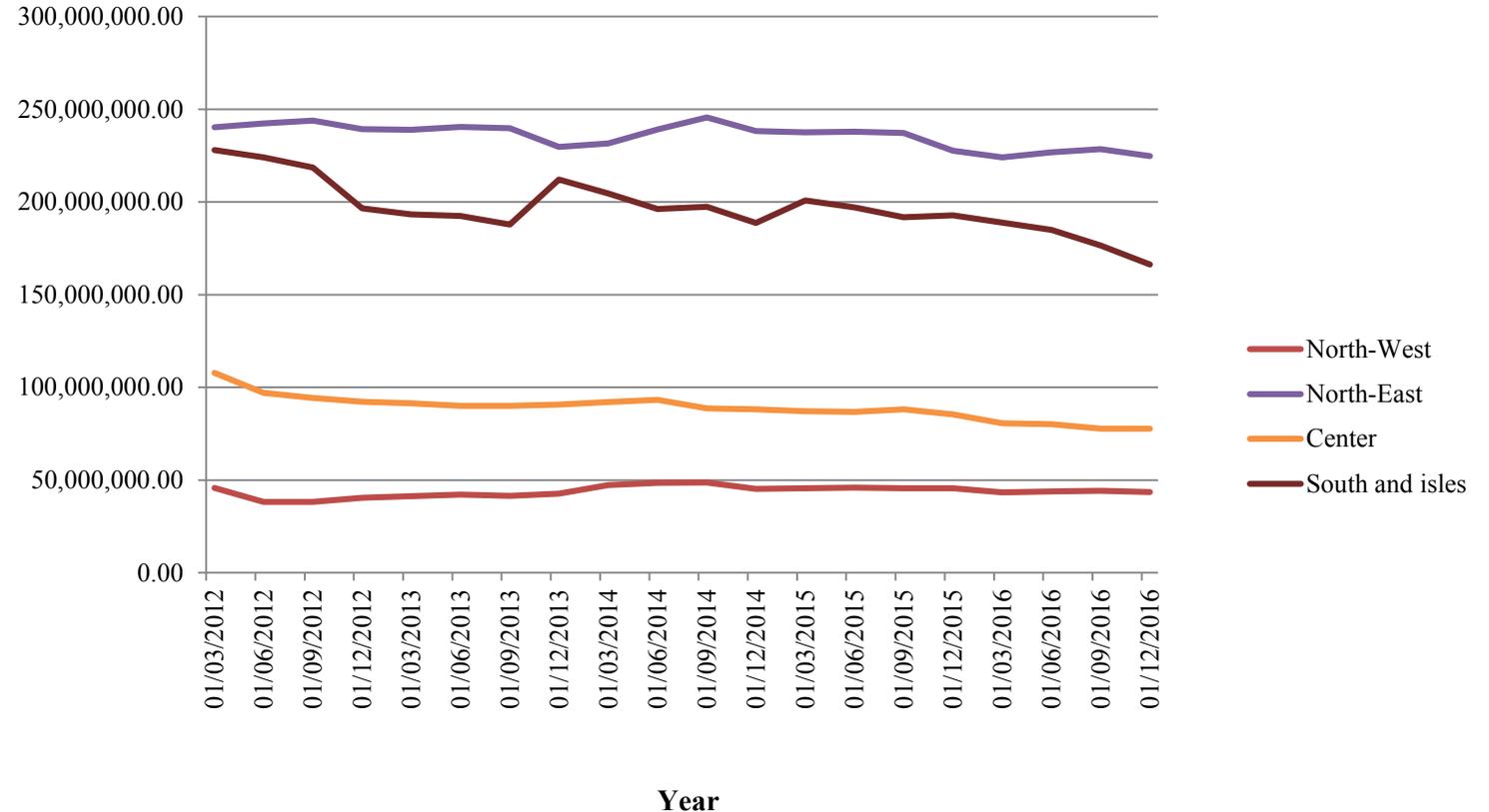
THIS INDICATOR SHOW DIFFICULTY IN ACCESSING CREDIT



Trend of the use in the fishery and aquaculture sector in value (M€) on a geographical distinction. Italy, 2012-2016 (banca d'italia)

A further analysis of the use of financial loans in the fishery and aquaculture sector in Italy can be made on the basis of a geographical distinction

Northern regions have the greatest capacity to attract financing with respect to all the Italian regions.



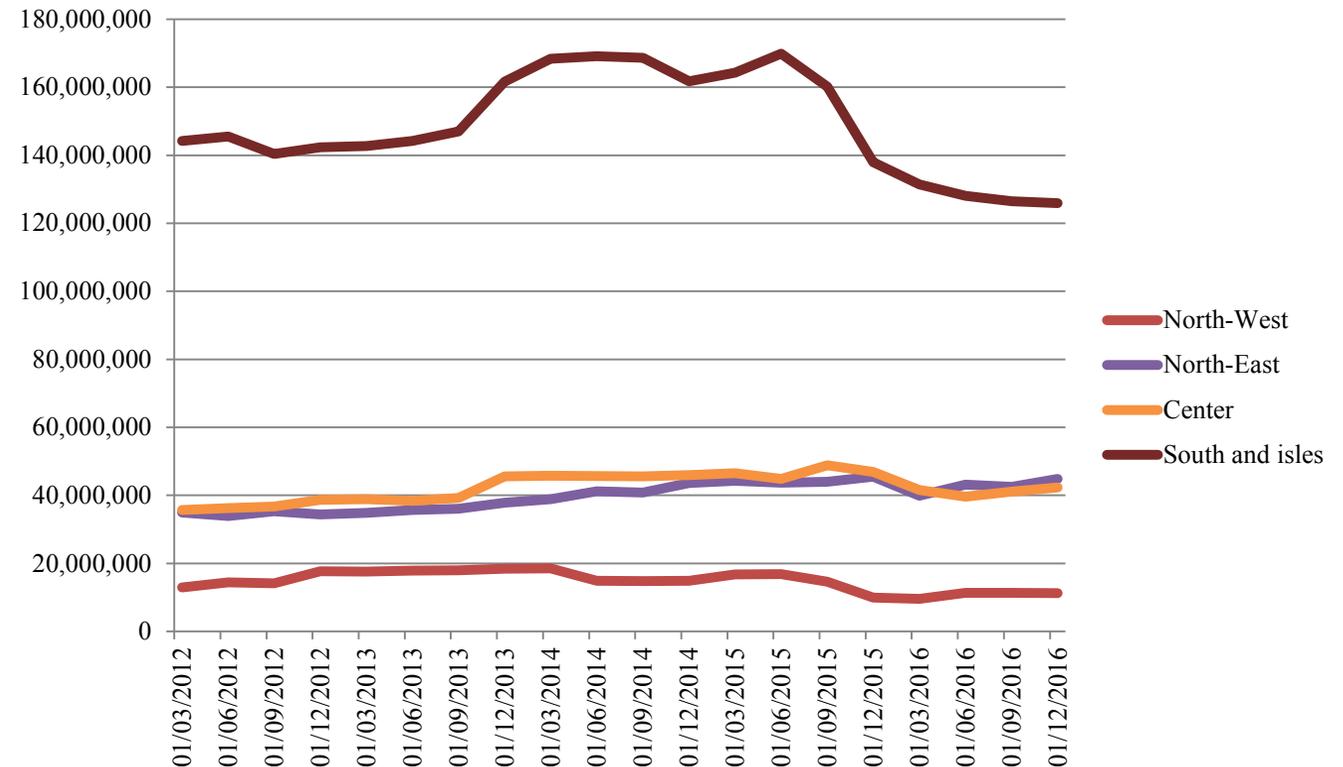
Trend of the sufferings of the fishery and aquaculture sector in value (M€) on a geographical distinction. Italy, 2012-2016.

Banca d'Italia has measured, as an indicator of *suffering*, the amount of those credits whose collectability is not certain

the uncollectability of credits is due to a condition of insolvency of debtors.

Between 2012 and 2016, the sufferings were reduced by 1.6%

A geographically-based distinction, more than a half of the total Italian sufferings is absorbed by the Southern regions (56%) in 2016, even though this percentage is smaller than that of 2012 (63%).

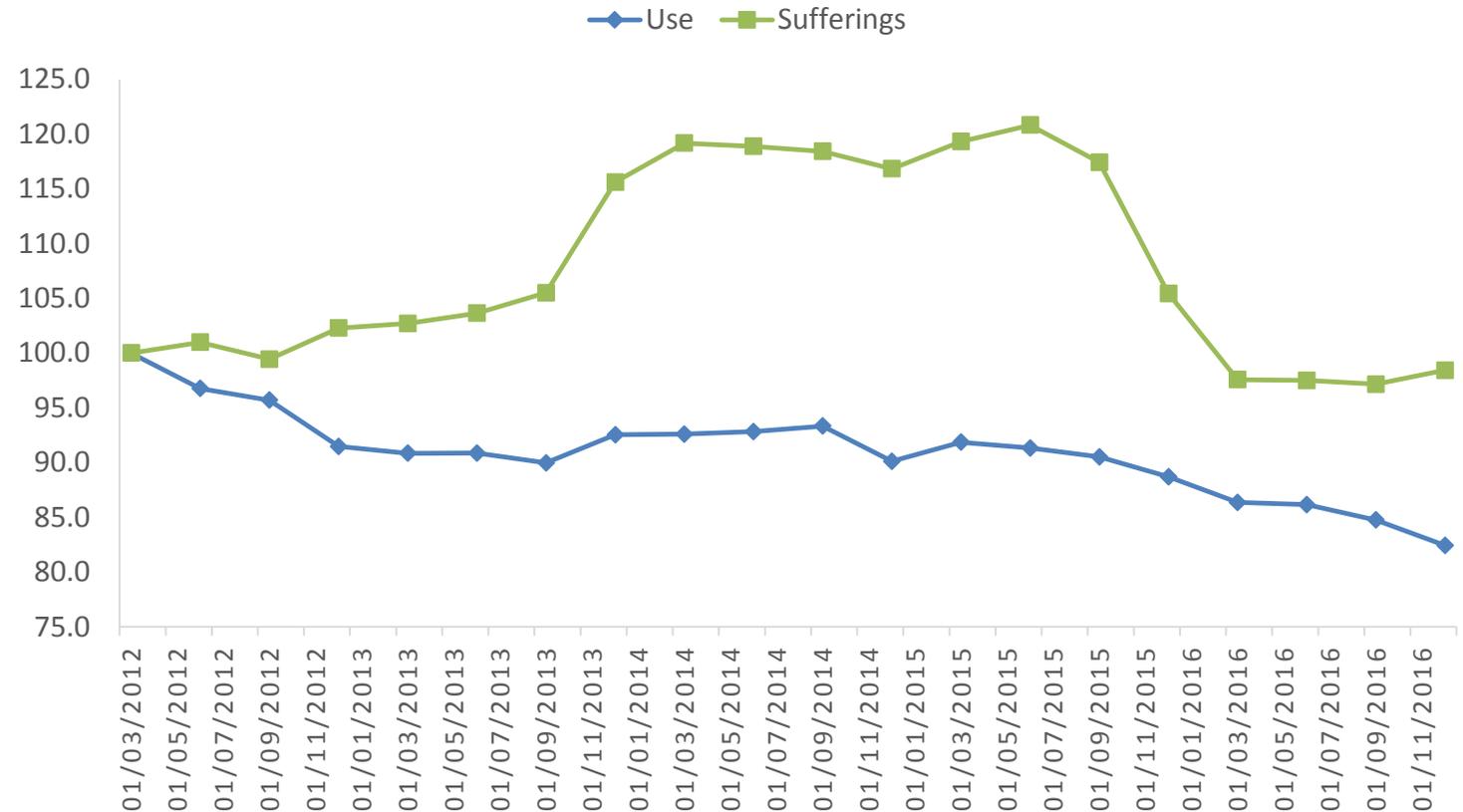


Trend of the sufferings and use in the fishery and aquaculture sector. Index numbers 2012-2016 (2012=100).

IN CONCLUSION:

Analysis of combination of the *use* and *sufferings* of loans in the fishery and aquaculture sector (2012-2016).

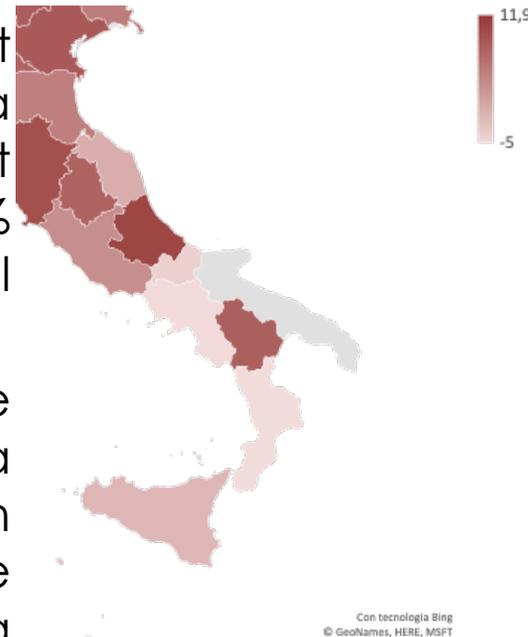
Figure shows the deterioration of credits as well as of their relative quality from 2012 to 2016; in particular, the *use* curve shows a reduction equal to 18%, while the *sufferings* curve is quite stable, with a smaller decrease of 2%.



Annual average percentage change in debts (2007-2015).

The Italian fishery sector faces a difficult situation in terms of debt exposure, with a positive percentage change in debt exposure from 2007 to 2015 equal to 28% and an annual average growth rate equal to 3.1%.

This trend is very diversified across the Nation, with most Northern regions in a dramatic situation and Central regions with slightly lower percentages. Among the Central regions, only Marche records a favourable situation, with a negative annual percentage average growth rate of the debt level equal to 0.2%. Finally, the Southern regions present a diversified scenario, with generally negative values reaching -5% for Calabria.



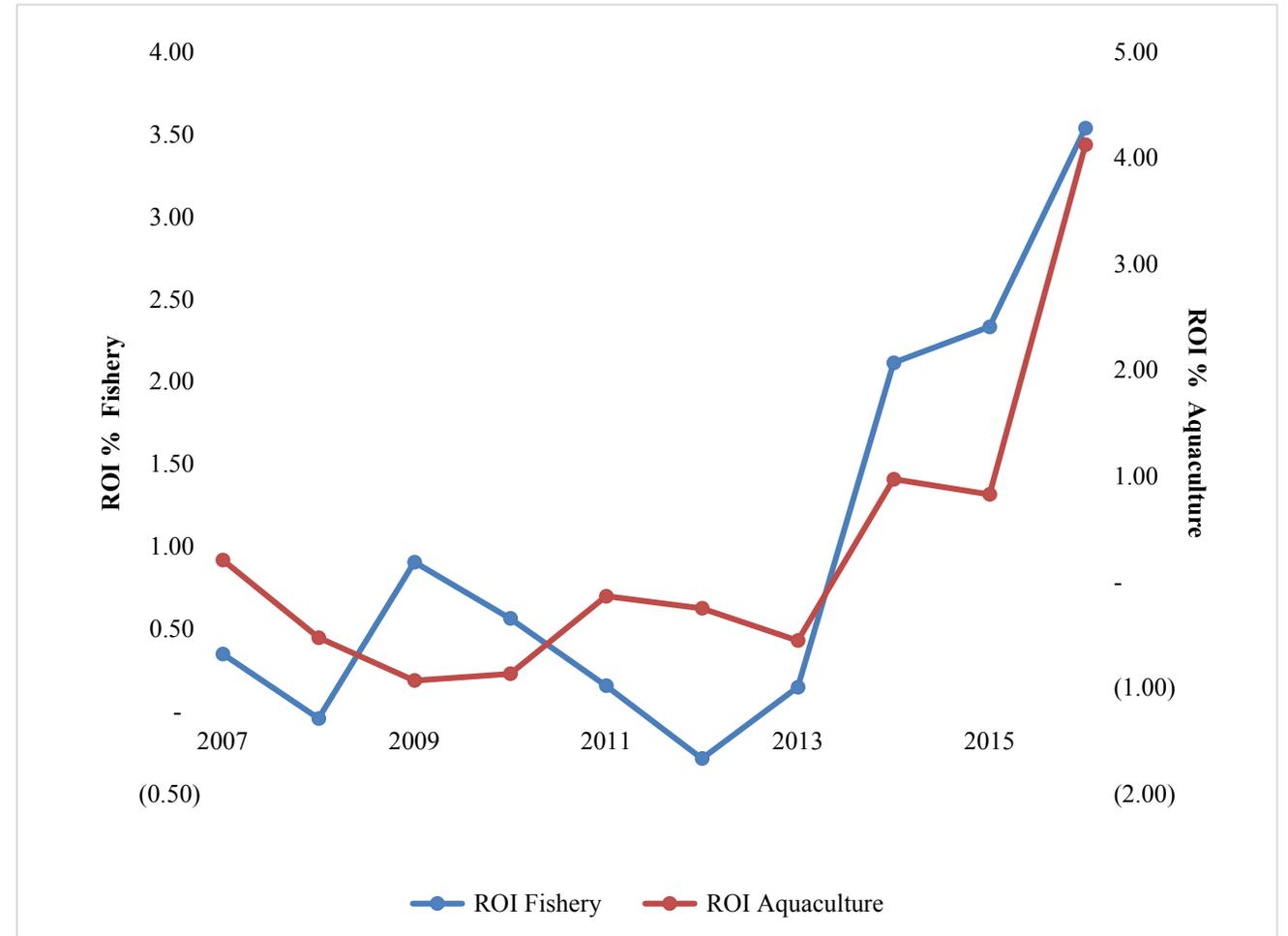
TO SUM UP

- Companies in the sector suffer from difficulties in accessing credit
- There are several reasons for this, such as the lack of specialisation in agricultural credit or the lack of adequate guarantees.
- Companies in the North of Italy have less bad balance sheets and can access credit more easily, despite significantly higher exposure on debt situation
- The sector has suffered a serious crisis, in fact the lack of loans has deteriorated the quality of the balance sheets of the companies which have increased their difficulties

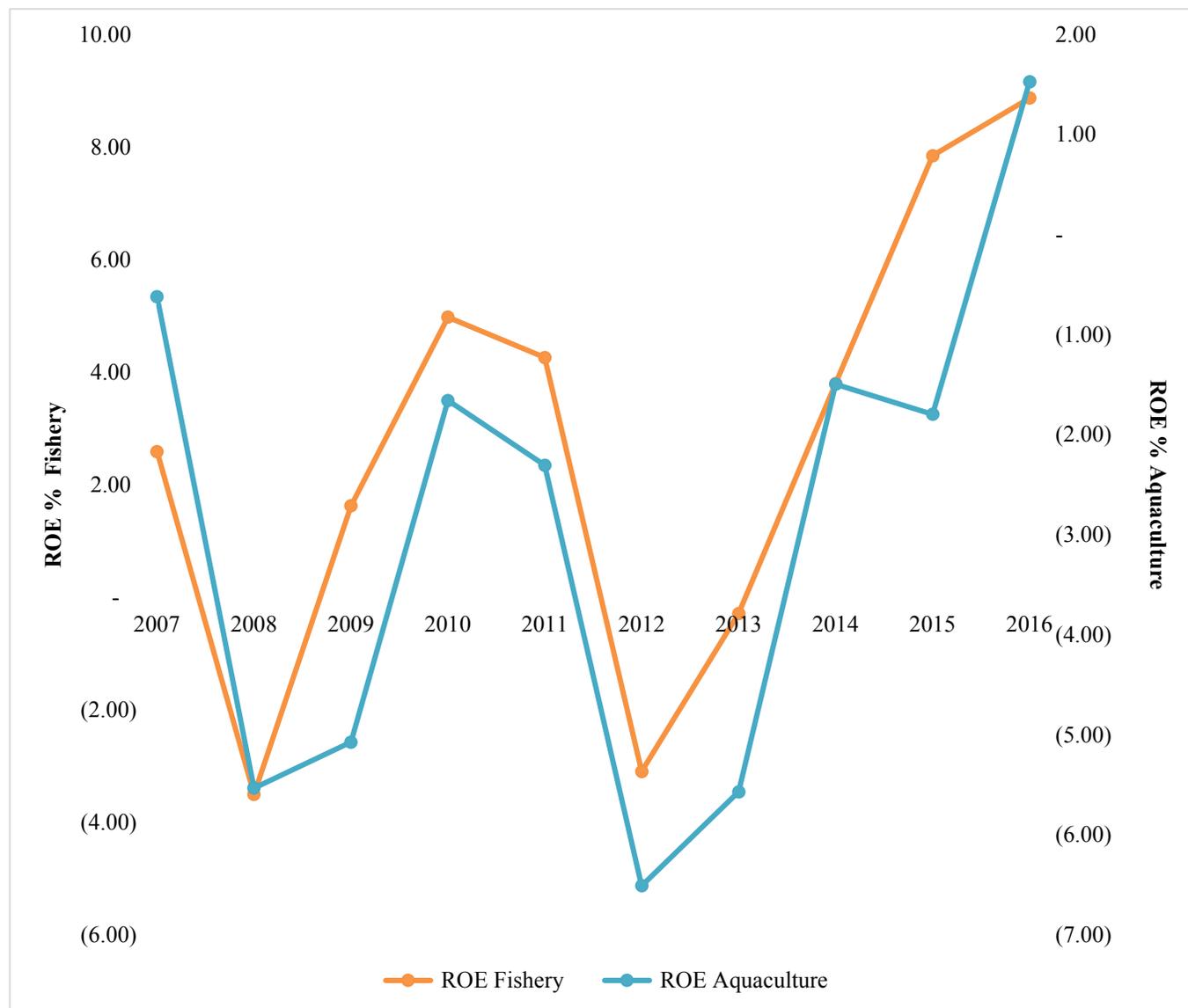


ROI

The first considered indicator is the ROI (Return on Investment), that display how investments in the fishery sector start to generate profits after a downturn period, especially from 2013. A quite similar situation is recorded by the aquaculture enterprises, that faced a positive trend of the ROI only from 2014. Between 2015 and 2016, the ROI of both sectors converged in the same value of +4.13%.



ROE

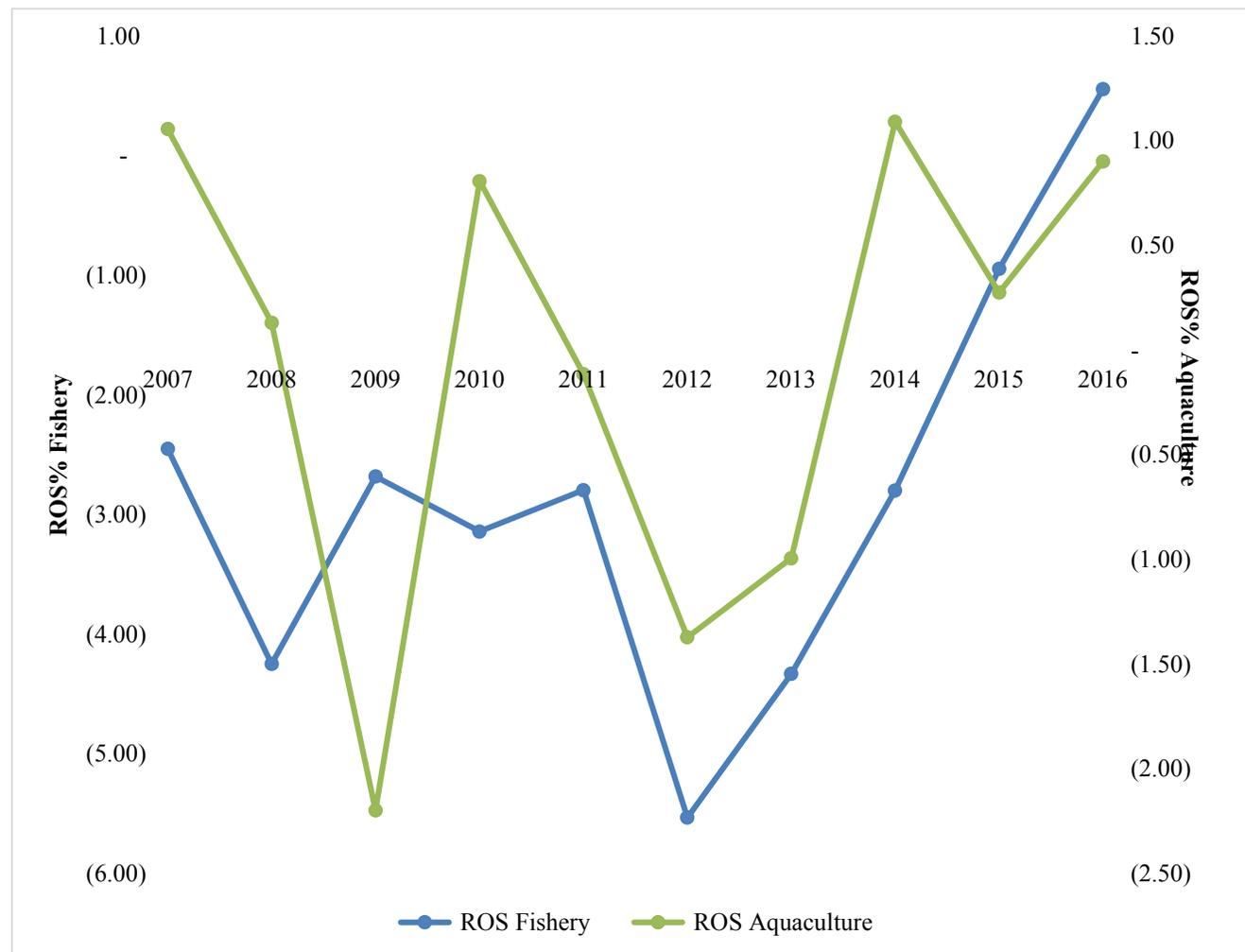


The second indicator taken in examination is the *ROE* (Return on Equity), that has a positive trend for the fishery and aquaculture sectors from 2013. Although the value of aquaculture fell in 2015, its value reached that of the fisheries sector in 2016.



ROS

The third analyzed indicator is the *ROS* (Return on Sales) that registers some differences between the fishery sector and the aquaculture sector: the former measures clearly negative values between 2007 and 2012, while the latter shows very diversified results.





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