



MARITIME SPATIAL PLAN
OF THE REPUBLIC OF
BULGARIA
2021—2035

FISHERIES AND AQUACULTURE

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7

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LIST OF ABBREVIATIONS

BFSA	Bulgarian Food Safety Agency
EAFSA	Executive Agency for Fisheries and Aquaculture
EAMA	Executive Agency Marine Administration
EU	European Union
GESME	Good environmental status in the marine environment
IO	Institute of Oceanology — BAS
MFP	Maritime and Fisheries Programme 2014—2020
MSFD	Marine Strategy Framework Directive
SEPI	State Enterprise “Port Infrastructure”
SG	State Gazette
WFD	Water Framework Directive
MD	Ministry of Defence

FISHERIES AND AQUACULTURE

1. Introduction

The Ministry of Agriculture, Food and Forestry implements the state policy in the field of fisheries and aquaculture and the implementation of the Common Fisheries Policy and the Common Market Organisation for fishery and aquaculture products. The Executive Agency for Fisheries and Aquaculture (EAFSA) based in the city of Burgas monitors the implementation of the Fisheries and Aquaculture Act and carries out activities related to the Common Fisheries Policy of the European Union (EU).

The Common Fisheries Policy is a set of rules for the management of European fishing fleets and the conservation of fish stocks. It manages a common resource by ensuring equal access for European fishing fleets to EU waters and fishing zones and enabling fishermen to compete fairly. While renewable, fish stocks can be partially depleted. EU countries have therefore taken steps to ensure that the European fishing industry is sustainable and does not endanger the size and reproduction of fish populations in the long term. The latest changes to the Common Fisheries Policy entered into force in 2014 with (Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC).

The Common Market Organisation is a policy of The European Union for the management of the market in fishery and aquaculture products and one of the pillars of the Common Fisheries Policy. The Common Market Organisation strengthens the role of producers of fishery products and local aquaculture, by setting up producer organizations of fishery and aquaculture products, associations of producer organisations and interbranch organisations.

The EAFSA performs state supervision and control over fishing activities in fishery waters and sites, and its main functions are defined by its Rules of Procedure¹ and are related to:

- implementation of the Common Fisheries Policy of the European Union;
- control of fisheries, aquaculture and the first sale of fishery products;
- issuing authorisations and licences for commercial fishing;
- registration of the persons who farm and raise fish and other aquatic organisms, as well as of the persons performing the first sale;
- verification and certification of catch certificates for import/export of fish and fishery products from/to third countries;

¹ published in SG No 41/01.06.2010, amended and supplemented in No 62/09.08.2016

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- allocation of fishing quotas of the Republic of Bulgaria provided under international agreements and treaties;
- conservation of fish resources and control of the compliance with the rules for recreation fishing and fishery commercial activities;
- concession of the right to use fish resources that are private state property.

The human resource in the organisational structures and administrative units of the agency amounts to a total of 226 full-time positions, 167 of which are directly responsible for control activities. EAFA's control and monitoring of the sector are also supported by the Bulgarian Food Safety Agency (BFSA), the Border Police General Directorate of the Ministry of Interior and the Executive Agency Maritime Administration (EAMA). EAFA played an important role in the Operational Programme for the Development of the Fisheries Sector (2007—2013) during the previous programming period 2007—2013 and performed the functions of a Managing Authority.

Legal framework in the field of fisheries and aquaculture

Bulgaria has signed and ratified as a party the following global or pan-European conventions relating to fisheries and aquaculture:

- Convention on Biological Diversity (published in SG No 22/15.03.1996)

Conventions targeted at a geographical region and containing general instructions for its use:

- Convention on the Protection and Use of Transboundary Watercourses and International Lakes;
- Convention on the Protection of the Black Sea Against Pollution;

Conventions aimed at the conservation of specific species:

- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention);
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention); Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The latter introduces various instruments for the conservation of sturgeons, including export quotas, licencing requirements for legal traders and keeping registers of such traders, the introduction of a system for registration of caviar processing enterprises, a universal labelling system, among others.

European Union nature protection legislation relating to the fisheries and aquaculture sector comprises the following important documents:

- *Marine Strategy Framework Directive 2008/56/EC* of the Republic of Bulgaria aimed to establish a framework for Community action in the field of marine environmental policy

(MSFD) in order to maintain or achieve good environmental status in the marine environment (GESME) by 2020

- *Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.* The Directive lays down the conservation of natural habitats and of wild fauna and flora and requires EU Member States to take adequate measures to maintain or restore certain habitats and species by ensuring their favourable conservation status in their natural range. To implement the main goal of the Habitats Directive, the European System of Special Areas of Conservation (SACs) is established, which together with the specially protected areas (SPAs) under the Birds Directive form the Natura 2000 network.

According to this Directive, a number of waters in Bulgaria are defined as areas with a special protection regime due to the presence of fish species of Community importance, described in Annex 2 of the Directive. Effective management of Annex 2 fish protection areas requires the establishment and implementation of monitoring programmes that ensure an adequate assessment of both the species' conservation status and their spatial distribution.

- *Water Framework Directive* (Directive 2000/60/EC of the European Parliament and of the Council, 2000). The overall objective of this Directive is to achieve good ecological status for surface waters.

The following pieces of national legislation are most directly related to the conservation of fish stocks and marine biodiversity, as well as to the regulation of fisheries and aquaculture activities:

- *Biological Diversity Act (BDA)*, published in SG No 77/9.08.2002, amended and supplemented in SG No 98/27.11.2018 — transposes the basic principles and requirements of the Birds Directive and the Habitats Directive. BDA regulates the creation of the National Environmental Network as part of the European Environmental Network Natura 2000.
- *Fisheries and Aquaculture Act (FAA)*, published in SG No 41/24.04.2001, amended and supplemented in SG No 98/13.12.2019 — regulates the determination of quotas; the introduction of prohibitions on fishing during breeding periods in certain areas or parts thereof; the introduction of temporary bans on catches reflecting changes of the stocks of certain fish species; the introduction of specific bans on fishing gear use; the development of aquaculture as a measure limiting the pressure on natural resources.
- *Water Act (WA)*, published in SG No 67/24.07.1999, amended and supplemented in SG No 61/2.08.2019 — regulates the use of water resources for aquaculture.
- *Environmental Protection Act (EPA)*, published in SG No 91/25.09.2002, amended and supplemented in SG No 81/15.10.2019 — a basic law, its provisions are further developed in a number of specialised laws such as the *BDA* and the *FAA*.
- *Veterinary Practices Act*, published in SG No 87/1.11.2005, amended and supplemented in SG No 13/14.02.2020

- *Food Act*, published in SG No 90/15.10.1999, amended and supplemented in SG No 106/21.12.2018

In line with the Common Fisheries Policy, catch limits have been set which are sustainable and allow fish stocks to be maintained in the long term. This ensures that fishing practices do not impair the ability of fish populations to reproduce. In this regard, the opportunities for fishing some fish stocks and groups of fish stocks are determined annually for the Bulgarian Black Sea area. Of the exploited species in the country, quotas for turbot and sprat have been introduced, and since 2016 a special regime for monitoring Black Sea shark (*Squalus acanthias*) catches has also been introduced.

The Fisheries and Aquaculture Act provides for administrative possibilities the Minister for Agriculture and Food, in coordination with the Minister for Environment and Water, to impose temporary prohibitions and limitations for fishing in certain fisheries or areas thereof or prohibitions on catching certain species of fish or other aquatic organisms in order to protect their populations. For the same purpose, in 2019, in order to achieve long-term protection and sustainable development of fishery resources, Order No RD-09-69 of 1.02.2019 of the Minister of Agriculture, Food and Forestry introduced a ban and restrictions on commercial fishing in Black Sea waters.

2. Fisheries

The fisheries sector is divided into four subsectors: recreational fishing, commercial fishing, aquaculture farms and fish processing. A three-level scale (high, medium and low) based on expert assessment is used while evaluating the significance of each subsector. It is based on various indicators, e.g. social (high employment levels), economic (sustainable economic performance), environmental (low environmental impact), biological (pressure on resources) and technical (overuse). Each of these indicators is directly dependent on the way the biological and natural resources are being used.

Table 1: Indicators for evaluation of fisheries activities

	High	Average	Low
<i>Social and economic</i>			
<i>Environmental, biological and technical</i>			

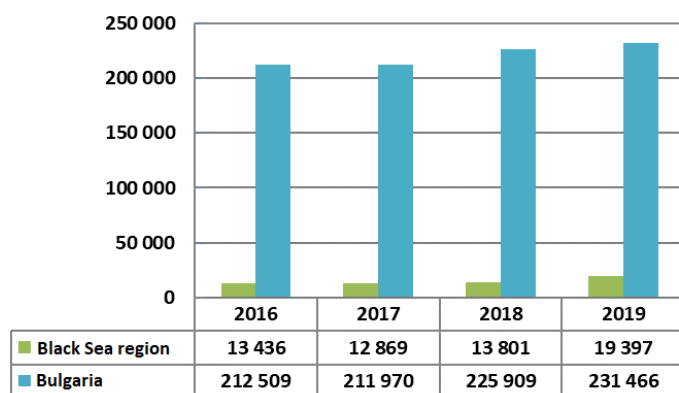
Source: EAFA, 2019

2.1. Recreational fishing

Recreational fishing is an activity in which fish and other aquatic organisms are caught by individuals for entertainment or with a sports-competitive character, organised according to certain rules. According to the current regulations, recreational fishing is carried out by individuals holding a valid recreational fishing ticket and the quantities caught are not used for commercial purposes.

Recreational fishing takes place in the Bulgarian section of the Danube, the inland sea waters, the territorial sea and the exclusive economic zone in the Black Sea, as well as the lakes and marshes close to the Danube and to the sea, the inland lakes and marshes, rivers and old riverbeds, quarry reservoirs, dams and equalisation towers, rowing canals, hydro parks and reservoirs. Recreational fishers must use no more than 3 fishing rods with no more than two hooks (single or double) installed on each of them in the artificial water bodies, in the Black Sea and in the Danube. A multiple hook paternoster rig may be used on one of the fishing rods in the Black Sea and in the Danube. This restriction sets the level of the technical indicator as low.

Figure 1: Recreational fishing tickets issued for Bulgarian inland waters and the Black Sea coast, 2016—2019



Source: EAFA, 2019

All species of the species diversity in the Black Sea are authorised for recreational fishing, with the exception of those subject to a quota: European sprat (*Sprattus sprattus sulinus*) and turbot (*Scophthalmus maximus*). According to EAFA data, the ratio between issued recreational fishing tickets for Bulgarian inland waters and the Black Sea coast for a four-year period (2016—2019) as depicted in Figure 1.

As the data shows, the ratio remains the same in the four years, with Black Sea Licences being only 7 % of nationwide totals. This is mainly due to the exemption in Article 23(1) of the Fisheries and Aquaculture Act² according to which a fishing ticket is not required for the Black Sea. Taking this into account, the number of people engaged in recreational fishing can be estimated as being significantly higher, which ramps up the social indicator. This in turn poses a high risk to the biological diversity of fish stocks. The widespread practice of returning the caught fish back to the water could lead to increased morbidity and mortality among some species. Also, the possibility of keeping trophy specimens leads to a shift in population structures as well as to habitat disruption, therefore the risk levels of environmental and biological indicators are high. Applying joint management practices (by governmental and non-governmental organisations) can help balance social and economic benefits with conservation objectives. Technological and methodological advances improve the ability to monitor the biological, social and economic dynamics of recreational fishing, which underpin the ability to maximise the benefits of recreational fishing

² Published in SG No 4/2001, amended and supplemented in SG No 98/13.12.2019

through effective management actions. Conclusions from the analysis of recreational fishing in the Black Sea based on the set of indicators are presented in Figure 1.

Table 2: Evaluation of recreational fishing in the Bulgarian Black Sea area according to a set of indicators

<i>Indicators</i>					
<i>Level</i>	Social	Economic	Environmental	Biological	Technical
	High	-	High	High	Low

Source: EAFA

2.2. Commercial fishing

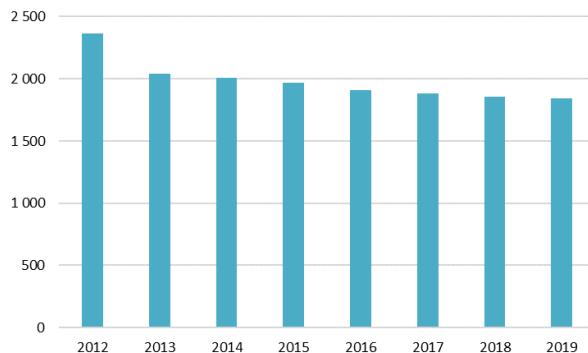
Commercial fishing implies catching fish and other marine organisms (a natural resource) in order to make a commercial profit. The majority of those working in commercial fishing are self-employed, with their remuneration partly or entirely depending on the proceeds from the sale of their catches. The fishing fleet (aggregate of all vessels engaged in fishing based on a fishing licence) of the Republic of Bulgaria operates only in the Black Sea within territorial waters (up to 12 nautical miles).

As of 31 December 2019, the Bulgarian fishing fleet consisted of 1 841 vessels operating only in the Black Sea, with a total capacity of 6 027.43 GT and 53 590.17 kW. Over the years, the number of vessels in the fishing fleets has been declining. This is due to a number of factors, such as:

- The high average age (over 23 years) of the vessels;
- the rapid depreciation of fishing vessels due to their exposure to aggressive environmental influences;
- the high average age of those engaged in commercial fishing without continuity of generations;
- the insufficient return on investment to cover running costs;
- the policies for permanent cessation of fishing effort.

By implementing measures for the permanent cessation of fishing activities, the Maritime and Fisheries Programme aims to alleviate pressure on fishery resources and adapt the fishing fleet by reducing technical overcapacity. According to EAFA data, 103 fishing vessels with a total fishing capacity expressed in GT of 1 594.77 (-20.71 %) and 7 550.82 kW (-12.51 %) were scrapped by December 2019 under the programme.

Figure 2: Number of vessels in the fishing fleets for the period 2012—2019

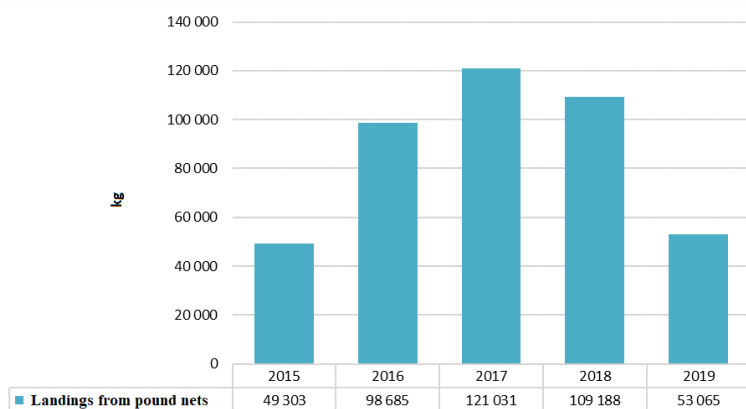


Source: EAFA

The fishing gear used in commercial fishing is split into passive and active. This division is based on the target species behaviour and the fishing gear principle of operation. For passive gear, the catching of fish is based on the movement of the target species toward the gear (e.g. traps, pound-type traps, etc.), while active gear pursues fish (bottom and pelagic trawls, dredges, etc.). Passive fishing gear is most common in small-scale coastal fishing. It is classified into nets, traps, hooks and fishing rods. Mesh gear comprises single or several nets anchored to the seabed (gill nets). The operation principle of gill nets is based on the movement of the target species during migration or feeding, as the fish becomes entangled in the gill area (between the head and the body) in of the gill net. This technique is most effective in dim light or in muddy water, where the likelihood of the fish avoiding the gill net is diminished. Gill nets are used to catch a wide variety of demersal and pelagic fish species. The general principle of hook fishing is to lure the fish into being hooked and retained. Hook fishing uses three gear types: fishing rods, multiple hooks paternosters and longlines. Fishing rods and paternosters are mainly used from fishing vessels with a total length of up to 12 meters. This type of fishing is done from anchored or slow moving vessels (speeds depend on the meteorological conditions, e.g. current, wind, waves, etc.). Recent years have seen a trend to mechanise this type of fishing using multiple hooks attached to several hundred meters of winched lines. These devices have actually not put much pressure on fish stocks. The target species in this type of fishing are all pelagic. Longline fishing is another technique in use. The gear consists of short cords and hooks tied to a very long main line. Longlines can be adapted for both pelagic and demersal fishing. Main line lengths can reach several kilometres, with thousands of hooks attached. The last type of passive fishing gear are the traps and pots. Trapping gear is based on luring the target species into a confined space, with returns to its natural habitat hard or impossible. The technique targets demersal species like shrimp, crabs, gobies, etc.

Pound nets are among the specialised commercial fishing gear in the Black Sea. The pound net is a stationary net for passive fishing which is located in a certain part of the Black Sea, has an area of operation and is fastened to the sea bottom or shore. This type of fishing has a significant application in catching shoals of migratory fish or odd specimens off the coast. In environmental terms, these passive stationary devices have no destructive effect on the seabed and do not lead to deterioration of natural habitats and species in shallow water areas. Among the disadvantages of pound nets are the high price, the difficulty of installation and the destruction risk due to the lack of coastal relief elements forming protected areas such as bays, to strong winds and storms in the Bulgarian Black Sea. According to EAFA data, 64 pound net licences have been issued in 2019. 2015—2019 catches from economically viable pound nets are shown in Figure 3, based on EAFA data.

Figure 3: Landings from pound nets in the period 2015—2019, in kg



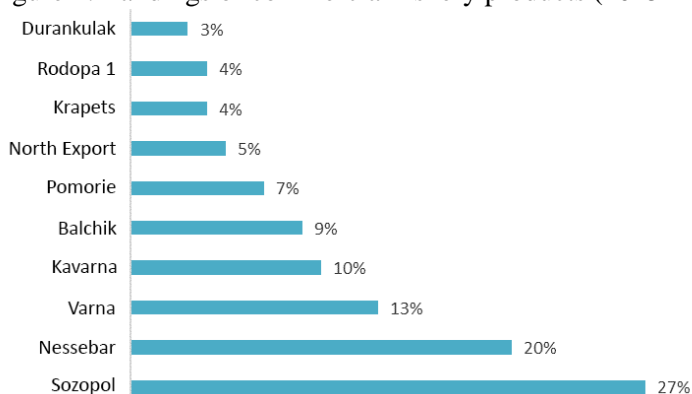
Source: EAFA, 2019

The active fishing gear is trawls. They comprise pelagic and demersal (beam) trawls. A trawl is a cone-shaped net bag that is dragged along the seabed (beam trawl) or closer to water surfaces. Trawling fishing accounts for over 65 % of total catches. Pelagic trawls usually have higher selectivity of species, as they are used to catch pelagic species at similar maturity, in single-species aggregations. Beam trawls are widely used to catch various demersal fish species. Target species size selectivity can be adjusted to some extent by trawl bag mesh sizes. Ideally, a certain mesh size should allow the release of all fish below the minimum allowable size.

The biological, environmental and technical indicators of commercial fishing are determined by the fishing effort made to catch the target species required of one, several or a group of fishing vessels. Fishing effort is estimated by multiplying the fishing capacity used expressed in gross tonnage or the engine power in kW by the time required for the catch (days, hours). On the other hand, the fishing gear used has an additional impact on resource utilisation. To achieve a complete and accurate picture, the fishing effort is also calculated for the specific gear used by multiplying the fishing capacity expressed in gross tonnage or the power in kW by the number of hooks, number of pots, length of nets, and trawling area. Statistics results for the last three years show an average level of biological and technical indicators. The restrictive measures provided for by European and national legislation, the enhanced monitoring and the intensive control of the entire sector play a key role in achieving a balanced commercial fishing.

A total of 75 landing places for commercial fishing products are in use on Bulgarian territory (Appendix 1), with ten of them being the most viable and of greatest significance: Sozopol, Nesebar, Varna, Kavarna, Balchik, Pomorie, North Export (Varna), Krapets, Rodopa 1 (Varna) and Durankulak. Landings in these ports account for 84 % of the total.

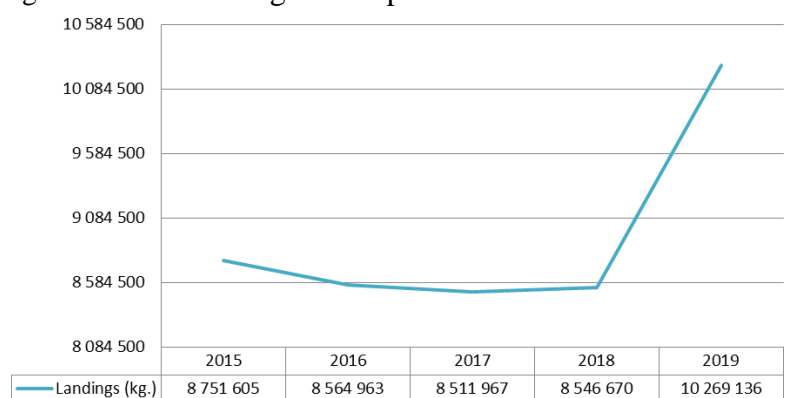
Figure 4: Landings of commercial fishery products (2015—2019)



Source: EAFA

Due to the close relationship between commercial fishing and the direct marketing of fresh produce, without additional processing aimed at adding value, the social indicator is considered as a combination of fishermen and registered buyers. The total number of persons employed is 3 540, including 1 738 fishermen. Although the number of people employed in commercial fishing is not high, the social indicator is set at an average level due to the importance of the industry as a major supplier of Black Sea fish and organisms to ensure food diversity in the country.

Figure 5: Catches in kg for the period 2015—2019

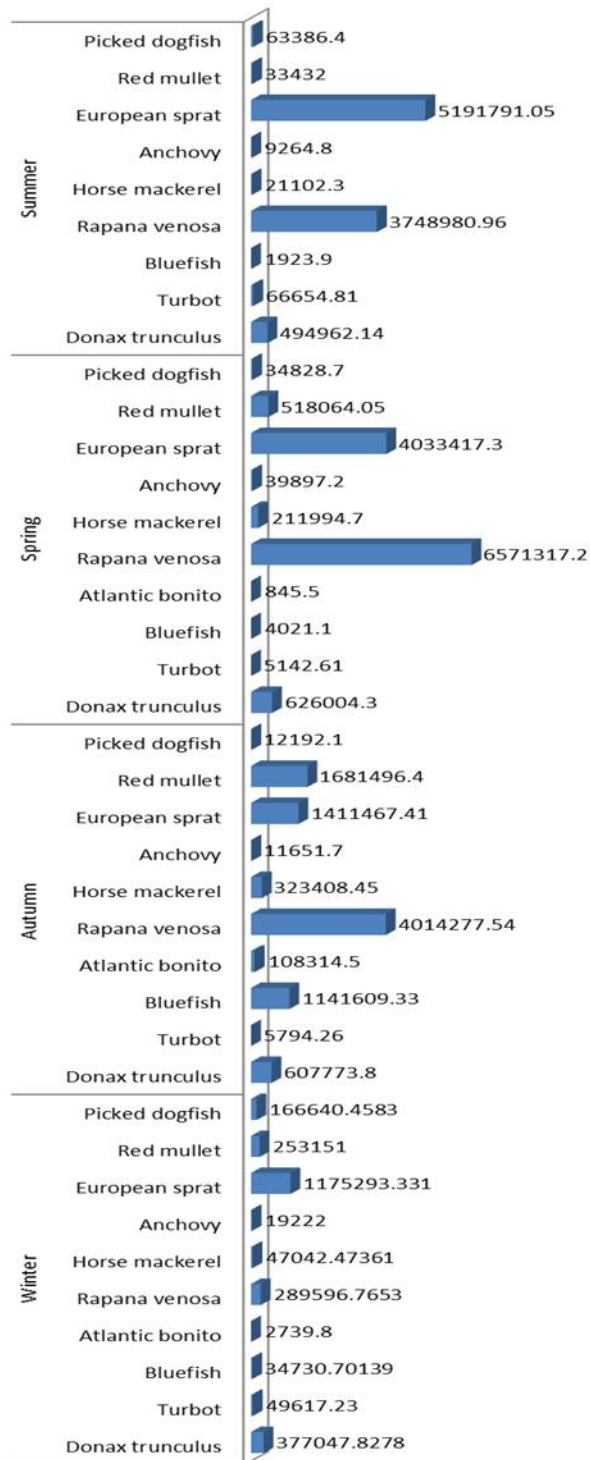


Source: EAFA

The economic indicator is set at an average level despite the significant increase in return on investments indicator, from 0.23 % in 2017 to 12.34 % in 2018. In 2015 and 2016, return on investments fluctuated substantially and even reached a negative value in 2016. In conclusion, the economic indicator is stable in the shorter rather than in the longer term.

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Figure 6: Seasonal distribution of catches by species for the period 2015—2018



Source: EAFA

Conclusions from the analysis of commercial fishing in the Black Sea based on a set of indicators are presented in Table 3.

Table 3: Evaluation of commercial fishing in the Bulgarian Black Sea area based on a set of indicators

<i>Indicators</i>					
<i>Level</i>	Social	Economic	Environmental	Biological	Technical
	Average	Average	Average	Average	Average

Source: EAFA

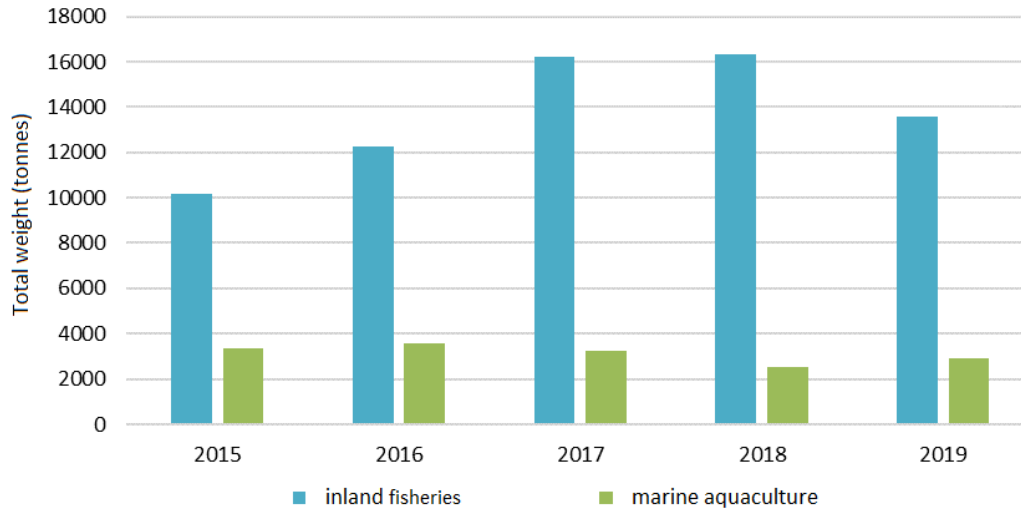
2.3. Aquaculture

During the last decade aquaculture output in Bulgaria has increased, with more species being farmed. EU policy to reduce commercial fishing in marine waters in view of the proven decline in local populations and the increasing demand for fish and fishery products at national level reveals the need to restructure the industry. Aquaculture is designed to reproduce and cultivate various aquatic organisms. A wide range of plants and animals are being farmed, divergent not only in their biology, but also in their habitat and farming environment, e.g. oceans, seas, rivers, etc. Two aquaculture sub-sectors have been developed in Bulgaria: freshwater fish farming (in warmer or cooler water) and marine aquaculture farming. Following the ban on commercial fishing in the country’s inland waters in force since August 2012 and the necessary re-registration, the number of active registered aquaculture producers has seen an increase. The upward trend in registered freshwater aquaculture farms over the years has led to 84 % of the total 2018 aquaculture output in Bulgaria coming from them and the remaining 16 % — from Black Sea aquaculture. Marine aquaculture facilities are mainly for black mussel farming. According to the EAFA, recent years have seen marine aquaculture diversifying into other species like turbot, demersal sea worm, etc. However, 2017 and 2018 have also seen a slight decline in coastal water aquaculture due to farms going out of business. A boost in output is expected in 2019, with the opening of new farms as well as the modernisation and enhancement of production capacity under the Maritime and Fisheries Programme. The total number of production facilities in 2019 was 750, with 25 of them being Black Sea aquacultures. Analysis of the output volumes during the 2015—2018 period has shown a clear growth trend in the sector reaching 16 513.78 tons in 2019, but most of the increase in national production is due to increased output in inland water bodies. The trend of increasing the share of Black Sea aquaculture in the total aquaculture output continues in the period 2018—2019, despite setbacks due to a few mussel plantations going out of business.

Output trends for the period 2015—2019 in Figure 7 show better performance among freshwater compared to marine aquacultures, due to the more favourable natural conditions than along the Black Sea coast.

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Figure 7: Annual aquaculture output in Bulgaria for the 2015—2019 period, in tonnes



Source: EAFA

Various factors have played a role in the creation of marine aquaculture in the Bulgarian waters of the Black Sea. On the one hand, these are the requirements for the soil, the physical and chemical properties of the water, the nature and speed of sea currents, the depth, the choice of location, and on the other hand — the regulatory requirements for the technical facilities in the waters of the Black Sea.

The factors that constrain the development of aquaculture on our Black Sea coast are the lack of well-protected areas, such as estuaries, inland bays cutting deeper into the shoreline, and the annual temperature fluctuations of seawater. These factors weigh down on the cost of farming of marine organisms. Having said that, along the Bulgarian coast there is no shortage of favourable conditions for mussel farms, and the farming activities generate high quality of mussels and healthy yields. Closed production cycles through installing mussel processing plants look particularly promising.

A significant negative factor for marine aquaculture is the strong anthropogenic pollution, resulting in heavy eutrophication and algal blooms causing oxygen depletion and death in affected coastal areas. Increasing the number of purification facilities and prevention of oil spillages will foster better aquaculture performance in more areas along the Black Sea coast. Apart from site selection and creating proper conditions for aquaculture, the regulatory requirements of national and European law must also be taken into account.

Aquaculture production has an increasingly important role in meeting the demand for fish and is an alternative to commercial fishing which results in constantly declining and highly endangered fish resources in natural waters. The biological and environmental variables of aquaculture stand low due to the lack of pressure on natural populations and the environment. The economic (value of production) and social (number of employees in the sector, general importance) indicators are

good, while the technical indicator is low due to insufficient diversity of marine aquaculture production.

Table 4: Assessment of the aquaculture sector in the Bulgarian Black Sea area according to a set of indicators

<i>Indicators</i>					
<i>Level</i>	Social	Economic	Environmental	Biological	Technical
	High	High	Low	Low	Average

Source: EAFA

2.4. Fish processing

Processing starts from the moment the fish or other aquatic organisms are caught or farmed and covers operations all the way to the delivery of the final product to the customer. Although fish processing refers specifically to fish, it covers virtually all aquatic organisms harvested for commercial purposes, whether caught in the wild or product of aquaculture.

Consumer habits have changed significantly as of late due to more dynamic lifestyles resulting in weaker demand for fresh, uncut fish. This has an extremely negative social and economic impact on commercial fishing and aquaculture farms. This trend requires adaptation of the sector, and one of the ways to adapt is to add additional value to catches or output through processing. This will lead to diversified final products (filleted, cleaned, additionally flavoured, cured, etc.), which allow to get better value from the fish. 49 fish processors with a total of 1 715 employees operate in Bulgaria.

Table 5: Assessment of the fish processing sector in the Bulgarian Black Sea area according to a set of indicators

<i>Indicators</i>					
<i>Level</i>	Social	Economic	Environmental	Biological	Technical
	High	High	-	-	-

Source: EAFA

2.5. Import and export of fish and fish products

According to the National Statistical Institute (NSI), a total of 42 469 tons of fish and fish products were **imported** into the country in 2018. This is 2.3 % less than in the previous year due to shrinking imports of aquatic invertebrates, frozen fish and fillets, while the import of fresh, chilled and dried fish, crustaceans, molluscs and processed fish products and other aquatic organisms have grown.

EU Member States have traditionally accounted for the largest share of imported fish and fish products in the period 2015—2018. The key EU importers were Romania, Spain, the Netherlands, Poland, Greece, Denmark and Sweden. Fish and fish products imports from third countries have also grown in 2015—2018. They have mostly come from Canada, Iceland, Morocco, Turkey and China. Frozen fish has traditionally occupied the largest share in total imports of fish, aquatic

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organisms and fishery products. On the other hand, imports of fresh fish and crustaceans has also grown.

Table 6: Imports of fish, fishery products and other aquatic organisms from the EU and third countries, in tonnes

Year	European Union	Third countries
2015	26 376	8 660
2016	28 050	9 686
2017	32 514	10 940
2018	30 014	12 455

Source: NSI

Table 7: Imports of fish, other aquatic organisms and fishery products, in tonnes

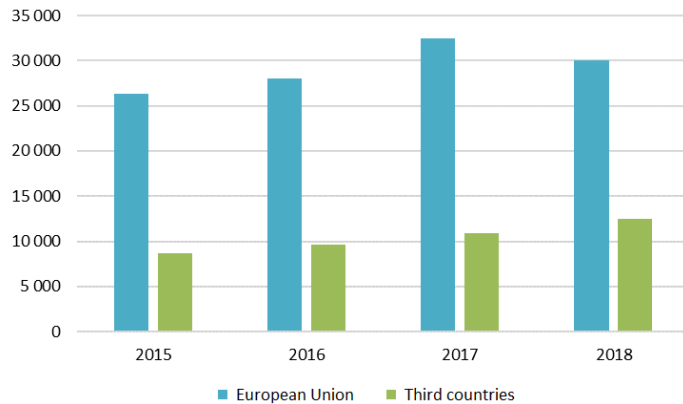
Products	2015	2016	2017	2018
Fish, fillets, crustaceans, molluscs, including	30 975	37 724	43 454	42 469
Live fish — freshwater and marine	274	22	115	241
Fish, fresh or chilled, excluding fillets	3 789	3 496	4 298	4 818
Fish, frozen, excluding fillets	18 585	18 596	19 104	18 406
Fish fillets and other fish meat, fresh or chilled, frozen	3 224	3 343	3 293	2 751
Fish, dried, salted and smoked	356	347	451	770
Crustaceans	2 224	3 463	4 159	4 658
Molluscs	1 114	1 070	2 809	3 429
Aquatic invertebrates other than crustaceans and molluscs	1 390	2 548	5 393	2 917
Prepared foods and canned fish, caviar	2 795	3 060	2 831	3 473
Crustaceans and molluscs, preserved	1 101	1 778	1 000	1 006

Source: NSI

According to NSI data, the **total exports** of fish, other aquatic organisms and fish products decreased in 2018, with a significant reduction in mollusc (fresh, frozen or dried) and live fish exports. Significant quantities were exported to Romania, Sweden, Greece, Belgium and Spain. Exports of fish and fishery products to third countries are shrinking, targeting mainly South Korea, Serbia, Bosnia and Herzegovina, Japan and China.

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Figure 8: Imports of fish and fish products from the EU and third countries, in tonnes



Data source: NSI, data processing EAFA

Table 8: Exports of fish, fishery products and other aquatic organisms from the EU and third countries, in tonnes

Year	European Union	Third countries
2015	8 058	2 966
2016	9 673	2 890
2017	13 564	4 135
2018	13 122	3 587

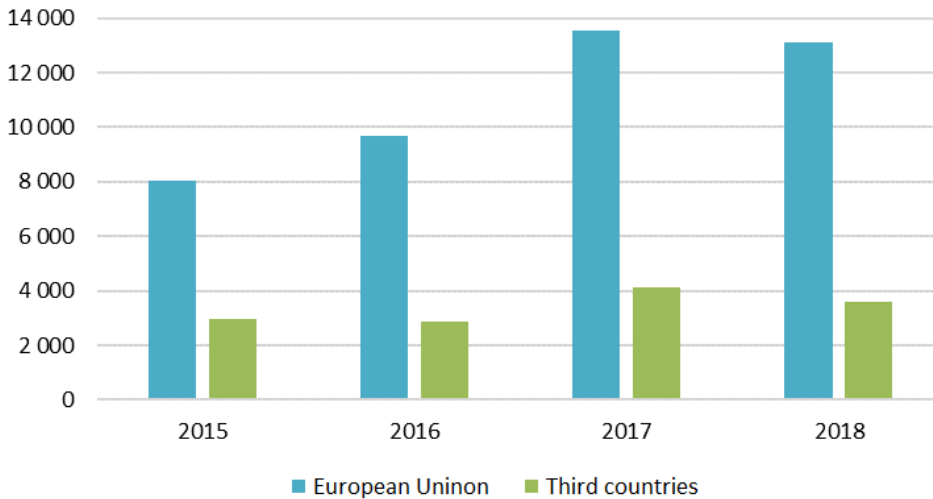
Source: NSI

Table 9: Exports of fish, other aquatic organisms and fishery products, in tonnes

Products	2015	2016	2017	2018
Fish, fillets, crustaceans, molluscs, including	5 911	12 134	17 698	16 709
Live fish — freshwater and marine	1 242	1 149	2 147	1 414
Fish, fresh or chilled, excluding fillets	974	1 658	1 866	2 347
Fish, frozen, excluding fillets	1 897	1 148	1 630	1 980
Fish fillets and other fish meat, fresh or chilled, frozen	216	213	222	360
Fish, dried, salted and smoked	383	196	327	745
Crustaceans	49	82	130	120
Molluscs	1 151	2 668	5 061	3 545
Prepared foods and canned fish, caviar	1 339	2 070	2 116	2 653
Crustaceans and molluscs, preserved	2 233	2 902	3 826	3 306

Source: NSI

Figure 9: Exports of fish, fishery products and other aquatic organisms to EU and third countries, in tonnes



Data source: NSI, data processing EAFA

According to NSI data, Bulgaria ranks at the bottom in terms of fish and fish products consumption among European countries. Recent years have seen a decrease in fish and fish products consumption, with 2017 having the lowest values.

Table 10: Average consumption of fish and fish products per household member

Products	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fish and fish products — kg	5.3	5.4	5.4	6.7	5.7	5.2	5.0	4.9	5.2

Source: NSI

Several reasons have led to the relatively lower levels of fish consumption:

- lack of tradition to eat fish;
- seasonal constraints in fish and fish products sales related to production cycles;
- specifics of production and fishing, determined by the country’s climate;
- lack of well-organised market infrastructure for fish and fish products and ineffective advertising.

3. Measures for the development of the fisheries sector

Development in the sector is supported by the Maritime and Fisheries Programme (MFP) aimed at achieving a dynamic, sustainable and competitive development of fisheries and aquaculture in the period 2014—2020. The amount of grant per applicant varied between 50 % and 100% of the total project cost, depending on the chosen procedure. The programme budget amounted to BGN 222 071 249.13, with BGN 172 243 341.03 sourced from EU funding. As of 4 January 2020, the implementation progress was 64.73 %. The Strategy of the Maritime and Fisheries Programme

2014—2020 supports the implementation of the main goals and priorities of the EU for the period 2014—2020 and the principles of the Common Fisheries Policy (CFP) aimed at viability, competitiveness and environmental sustainability in the fisheries and aquaculture sectors and promoting social cohesion and employment in fisheries-dependent communities. Given the identified challenges and priorities of the European Maritime and Fisheries Fund (EMFF), the national strategy of the Maritime and Fisheries Programme defines the following priorities and objectives for its implementation:

Priority Axis 1. Promoting environmentally sustainable, innovative, competitive, knowledge-based and resource-efficient fisheries;

Priority Axis 2. Promoting environmentally sustainable, innovative, competitive, knowledge-based and resource-efficient aquaculture;

Priority Axis 3. Fostering the implementation of the EU’s Common Fisheries Policy (CFP);

Priority Axis 4. Increasing employment and territorial cohesion;

Priority Axis 5. Promoting marketing and processing;

Priority Axis 6. Promoting the implementation of the Integrated Maritime Policy.

Priority axes 3 and 6 are mainly related to the performance of the control and monitoring activities by administration for the fisheries sector and are not of interest to private investors. The measures under the programme which finance investments in fishing, creation of aquaculture farms and processing of fish and fish products, respectively priorities 1, 2 and 5, are of the greatest interest for the sector, both for existing companies and for new investors. The opportunities provided by these three priority axes are presented below.

Priority Axis 1: Promoting environmentally sustainable, innovative, competitive, knowledge-based and resource-efficient fisheries.

Beneficiaries under this priority axis are legal entities and sole traders; fishing vessel owners; municipalities and legal entities that own fishing ports, landing quays, fish markets and boat shelters; partner research institutes and organisations for the innovation measures. Projects under the following measures are financed:

1.1. Diversification and new forms of income — investments that contribute to the diversification of fishermen’s income through complementary activities, including on-board investments, fishing tourism, restaurants, environmental services and fisheries education activities, are supported.

1.2. Health and safety — the measure supports investments on board or in individual equipment to improve the hygiene, health, safety and working conditions of fishermen, provided that such investments go beyond the requirements of the EU or national law.

1.3. Permanent cessation of fishing activities — provides assistance in the event of permanent cessation of fishing activities, by scrapping fishing vessels or by modifying vessels to engage in activities other than commercial fishing.

1.4. Limiting the impact of fishing on the marine environment and adapting fisheries to the protection of investment-related species — funding goes to equipment designed to improve the selectivity of fishing gear; equipment that ensures the cessation of discards by avoiding and reducing by-catches of commercially significant stocks or by-catches that need to be landed; equipment to limit or, where possible, eliminate the physical and biological impact of fishing on ecosystems or the seabed; equipment designed to protect fishing gear and catches from mammals and birds.

1.5. Innovations related to the conservation of marine biological resources — support for the development or introduction of new technical or organisational knowledge leading to a reduction in the environmental impact of fishing activities, including better fishing techniques and greater selectivity of fishing gear, or achieving more sustainable use of marine biological resources and coexistence with protected predators.

1.6. Conservation and restoration of marine biodiversity and ecosystems and compensation regimes in the framework of sustainable fishing activities related to investments in: collection of waste at sea by fishermen; construction, installation or modernisation of stationary or portable facilities aimed at the protection and development of marine flora and fauna; better management or conservation of marine biological resources; preparation, including studies, drawing up, monitoring and updating of plans for the conservation and management of fisheries-related activities in relation to NATURA 2000 sites and special protection areas referred to in Directive 2008/56/EC and activities related to other special habitats; management, restoration and monitoring of marine protected areas, protected NATURA 2000 areas and sites.

1.7. Added value, product quality and use of unwanted catches — support to investments that add value to fishery products, in particular by allowing fishermen to process, market and sell their own catches directly; innovative investments on board of vessels that lead to an increase in the quality of fishery products.

1.8. Fishing ports, landing quays, fish markets and boat shelters — support for investments designed to improve the infrastructure in fishing ports, fish markets, landing quays and boat shelters, including investments in waste collection facilities and marine litter. Support under this measure does not cover the construction of new ports, new landing quays or new fish markets.

Priority Axis 2: Promoting environmentally sustainable, innovative, competitive, knowledge-based and resource-efficient aquaculture

The beneficiaries under Priority Axis 2 are legal entities operating in the fisheries sector and newly established companies; partner research institutes and organisations for the innovation measures; non-governmental organisations for measures related to aqua-ecology. Measures supported under Priority Axis 2 include:

2.1. Innovation — support for the development of technical, scientific or organisational knowledge in aquaculture farms, helping to reduce the impact on the environment and the dependence on fishmeal and fish oil, promoting the sustainable use of resources in aquaculture, improving animal welfare or the application of new, sustainable production methods; development and introduction of new types of aquaculture for the market, new or significantly improved products, processes or management and organisational systems; the study of the technical and economic feasibility of innovative products and processes.

2.2. Productive investments in aquaculture — supports productive investments in aquaculture; diversification of aquaculture and farmed species production; the modernisation of aquaculture facilities, including the improvement of working conditions and safety for workers in the sector; the improvement and modernisation of animal health and welfare, including the purchase of equipment to protect farms from wild predators; improving the quality or added value of aquaculture products; restoration of existing artificial reservoirs or lagoons used for aquaculture by removing sludge or investing in the prevention of sludge deposition; diversification of the income of aquaculture enterprises through additional activities; reducing the negative impact or increasing the positive impact on the environment, as well as efficient use of resources; promotion of closed recirculation systems; increasing energy efficiency and promoting the transition of aquaculture enterprises to renewable energy sources.

2.3. Encouraging new aquaculture producers — supports the establishment of sustainable aquaculture enterprises by new aquaculture producers.

2.4. Transition to environmental management and auditing schemes and to organic aquaculture — transition from traditional production methods in aquaculture to organic aquaculture.

2.5. Aquaculture providing environmental services — financing of methods for production of aquaculture that are compatible with the specific needs of the environment and are subject to specific requirements for management of NATURA 2000 protected areas; costs directly related to participation in ex-situ conservation and reproduction of aquatic animals in the framework of biodiversity conservation and restoration programmes developed by or under the control of public authorities; protection and improvement of the environment, biodiversity and landscape management and the traditional characteristics of aquaculture areas.

Priority Axis 5: Promoting marketing and processing

Beneficiaries under Priority Axis 5 are commercial and non-profit legal entities operating in the fisheries sector. Priority Axis 5 supports the following groups of measures:

5.1. Production and marketing plans — support for the elaboration and implementation of production and marketing plans by producer organisations.

5.2. Storage support — compensating producer organisations and associations of producer organisations for the storage of fishery products.

5.3. Marketing — support for the establishment of producer organisations, associations of producer organisations or interbranch organisations; seeking new markets and improving the conditions for placing fishery and aquaculture products on the market; improving quality and added value by facilitating the direct marketing of fishery products by small-scale coastal fishermen or fishermen fishing from shore, the presentation and packaging of products and the tracing of fishery or aquaculture products.

5.4. Processing of fishery and aquaculture products — support for energy savings or reducing the impact on the environment, including waste treatment; improving safety, hygiene, health and working conditions; support for the processing of catches of commercially significant species that cannot be intended for human consumption; processing of by-products resulting from major processing activities; processing of organic aquaculture products that lead to new or improved products, new or improved processes or new or improved management and organisational systems.

4. Summarised Conclusions

The following strengths and weaknesses can be summarised from the analysis of the development of the Fisheries and Aquaculture sector:

Strengths:

- Availability of an information and statistical system in which data from the Fisheries and Aquaculture sector are registered, processed and summarised. Its maintenance and data access are provided by the Directorate for Fisheries Management and Protection of Fishery Resources at the EAFA, according to its Rules of Procedure;
- Constant presence of EAFA inspectors at the major ports, which, in addition to effective control opportunities, allows the provision of important information on fisheries management to stakeholders;
- Raising stakeholder awareness in the industry through information campaigns, regular meetings and publishing information on the EAFA website;
- Continuous monitoring of turbot fishing vessels. According to national rules, any vessel aiming to catch turbot must be equipped with a tracking device connected to the Fishing Vessel Monitoring Centre;
- Cooperation of other administrations with the Executive Agency Maritime Administration (EAMA) regarding the technical characteristics of fishing vessels and the fight against illegal, unreported and unregulated fishing (Border Police and Bulgarian Food Safety Agency);
- Intensified joint inspections of the EAFA and the EAMA to inspect and measure fishing vessels' engine power;
- Enhanced control and monitoring activities to improve the timely administration of the fishing effort through improved communication and coordination between the units and the central management of the administration;
- Improved national legal framework through amendments to the Fisheries and Aquaculture Act (FAA) that allow effective measures to be taken against inactive vessels, as well as against failure to submit economic statistics forms. This allows the collection of more accurate and complete economic information about the state of Bulgaria's fishing fleet;
- Existing administrative measures against illegal, unreported and unregulated fishing through the application of a scoring system for serious infringements which may lead to the revocation of a commercial fishing licence.

The key issues of the subsector are related to the following identified **weaknesses**:

- Scattered regulations in various laws and regulations, a multitude of responsible institutions and overlapping or discrepant responsibilities and incompatible procedures;

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- Dependence on the seasonal catches of certain valuable fish species;
- Unsatisfactory condition of the infrastructure, insufficient equipment and obsolete production installations;
- Underutilisation of scientific achievements and new technologies in the subsector;
- High depreciation rates of fishing vessels that hamper good economic efficiency;
- Underinvestment in fishing gear replacement aimed at higher selectivity, vessel safety and better working conditions;
- Lack of arrangements for long-term use of water bodies which creates uncertainty in fish producers and discourages investment;
- Limited navigation area of a large part of the fishing fleet. As evident from the information above, the Bulgarian fishing fleet consists mainly of small boats, most of which only use permits within the area up to 2 nautical miles from the shore;
- Aging workforce — the average age of employees in the subsector steadily increases.

Since 2007, the sector has developed in line with the main strategic goal of the Operational Programme for the Development of the Fisheries Sector (2007—2013): to transform fisheries into a competitive, modern and dynamic sector based on sustainable development of fisheries and aquaculture, as well as to improve living standards in fisheries areas. During the 2007—2013 programming period, Bulgaria for the first time implemented support for local development from the European Fisheries Fund. Six Fisheries Local Action Groups (FLAGs) have been established and operate to cover the territories of 17 municipalities. The FLAGs cover more than 4 053 km² and a population of over 104 467 people; new jobs have been created.

Port facilities and space use have been improved (e.g. ice production, supplies to sanitary and safety zones, transport spaces, etc.) across small coastal settlements. The development of aquaculture supports natural populations and indirectly contributes to sustainable fishing activities and job openings in different parts of the country. Targeting aquaculture to undeveloped production niches, such as adding new valuable export-oriented species to traditionally farmed species and focusing on organic aquaculture production, will also improve the economic performance of aquaculture farms and the balance between fish and fish products imports and exports, and hence boost incomes in the subsector. Improvements in the processing industry subsector provide an opportunity to increase added value, create new jobs and encourage the development of many small settlements across the country.

The Fisheries and Aquaculture sector provides a significant share of local economies at regional level, contributing to the development of the processing industry and tourism. The Bulgarian authorities are making efforts to ensure the sustainability of fishing from an economic and environmental point of view, while protecting the interests of consumers and accommodating the needs of fishermen. The reform of the EU's Common Fisheries Policy which entered into force in January 2014 aims to ensure the livelihood of employees, while stopping the resulting overfishing

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and stocks depletion. Between 2014 and 2020, the European Maritime and Fisheries Fund has financed projects aimed at introducing innovative fishing techniques; creating new seafood markets and, in parallel, improving the quality of life in coastal areas. The Bulgarian fishing industry is being supported towards sustainable fishing practices in coastal areas and diversification of the economy.

SOURCES OF INFORMATION

Convention on Biological Diversity (published in SG No 22/15.03.1996)

Convention Concerning the Protection of the World Cultural and Natural Heritage

Convention on the Protection and Use of Transboundary Watercourses and International Lakes;

Convention on the Protection of the Black Sea Against Pollution;

Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention);

Convention on the Conservation of Migratory Species of Wild Animals (мъан Convention);
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

European Union nature protection legislation relating to the fisheries and aquaculture sector

Marine Strategy Framework Directive 2008/56/EC of the Republic of Bulgaria aimed to establish a framework for Community action in the field of marine environmental policy (MSFD) in order to maintain or achieve good environmental status in the marine environment (GESME) by 2020

Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. The EU Habitats Directive (92/43/EEC) lays down the conservation of natural habitats and of wild fauna and flora and requires EU Member States to take adequate measures to maintain or restore certain habitats and species by ensuring their favourable conservation status in their natural range (European Commission, 1992). To implement the main goal of the Habitats Directive, the European System of Special Areas of Conservation (SACs) is established, which together with the specially protected areas (SPAs) under the Birds Directive form the Natura 2000 network. According to this Directive, a number of waters in Bulgaria are defined as areas with a special protection regime due to the presence of fish species of Community importance, described in Annex 2 of the Directive. The effective management of Annex 2 fish protection areas requires the implementation of monitoring programmes that ensure an adequate assessment of both the species' conservation status and their spatial distribution.

Framework Water Directive (Directive 2000/60/EC of the European Parliament and of the Council, 2000). The overall objective of this Directive is to achieve good ecological status for surface waters.

National law

Biological Diversity Act (BDA), published in SG No 77/9.08.2002, amended and supplemented in SG No 98/27.11.2018 — transposes the basic principles and requirements of the Birds Directive and the Habitats Directive. BDA regulates the creation of the National Environmental Network as part of the European Environmental Network Natura 2000.

Fisheries and Aquaculture Act (FAA), published in SG No 41/24.04.2001, amended and supplemented in SG No 98/13.12.2019 — regulates the determination of quotas; the introduction of prohibitions on fishing during breeding periods in certain areas or parts thereof; the introduction of temporary bans on catches reflecting changes of the stocks of certain fish species; the introduction of specific bans on fishing gear use; the development of aquaculture as a measure limiting the pressure on natural resources.

Water Act (WA), published in SG No 67/24.07.1999, amended and supplemented in SG No 61/2.08.2019 regulates the use of water resources for aquaculture.

Environmental Protection Act (EPA), published in SG No 91/25.09.2002, amended and supplemented in SG No 81/15.10.2019 — a basic law, its provisions are further developed in a number of specialised laws such as the *BDA* and the *FAA*.

Veterinary Practices Act, published in SG No 87/1.11.2005, amended and supplemented in SG No 13/14.02.2020

Food Act, published in SG No 90/15.10.1999, amended and supplemented in SG No 106/21.12.2018