

*Translation from Bulgarian language*

## **RESEARCH ON THE IMPACT AND SOCIAL EFFECTS OF SEA FISHING IN ROMANIA**



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## 1. GENERAL INFORMATION



The evolution of fishing off the Romanian Black Sea coast over the years has been erratic, closely following changes in the living resources available in the marine ecosystem and the development of exploitation technologies (ships and equipment), while closely dependent on developments within the social and economic system of the industry. Traditional fishing is

gradually being replaced by modern methods which have the advantage of ensuring better catch and which are aimed at only one target species and not at mixed catch.

Fishing activities may be defined as a set of numerous actions: investment (tools, boats, equipment, treatment facilities, trained staff, etc.), research, identification, concentration, retention, treatment and others, all aimed at harvesting fish or other edible water biological resources. The fishing activities of the Romanian marine fisheries include several types of equipment (stationary, filtering and towing), as well as fishing technology for harvesting pelagic and demersal fish in commercial demand.

In order to guarantee sustainable exploitation of fish resources in the Romanian Black Sea region, it was necessary to conduct research and assess the impact of fishing methods and technologies used by the fishing industry in Romania on specific fish resources and their habitats, as well as to determine optimum exploitation conditions (regulating the total allowable catch, the fishing effort, etc.) to ensure sustainability of exploitation.

### **Stationary fishing equipment**

It is a category of equipment generally aimed at harvesting species of fish that migrate to spawn and feed in the region at depths from 3 to 50 m. The category includes the following types of equipment: longlines, gillnets, sea dragnets and goby cages.

Longlines belong to the category of equipment aimed at harvesting fish of high economic value. Longlines are a type of fishing equipment made of a series of hooks attached by means of flexible wire clips, designed to strengthen the line because of the expected load at fishing times. Longlines are the main equipment for harvesting demersal species of fish such as shark and goby, but can also be used as auxiliary equipment for harvesting European flounder, turbot, sturgeon, thornback ray and common stingray. Longlines are positioned by means of metal anchors at a depth of 8 to 50 m. Bait is put on the hooks of the longlines in order to attract marine inhabitants to be harvested when the hook is swallowed.

Dragnets belong to the category of fishing equipment which retains fish through hooking and entanglement. This type of equipment, depending on the mesh size, can be used to harvest pelagic species of fish (Danube herring, small Danube mackerel, golden grey mullet, bluefish and others), as well as demersal species which move on the sea bottom or immediately above (turbot, European flounder, shark, goby, red mullet, etc.).

Sea dragnets belong to the category of fishing equipment which constitutes a type of a large-sized trap positioned at depths of 5 to 12 m. In the case of sea dragnets the cages which retain the sea inhabitants are positioned parallel to the sea shore. They can reach lengths of 70 m, where fish is controlled by means of the wings made of nets measuring 300-500 m.

The functional shape of the dragnet is achieved through floating or wooden poles. Over the past years fishing effort using sea dragnets positioned along the Romanian coast has been on the constant decrease with target species being: sprat, anchovy, red mullet, bluefish, and Atlantic horse mackerel.

Goby cages are fishing equipment of the type of small-sized traps positioned at depths of 5-20 m. This type of equipment is shaped as a cylinder or a rectangular block, where the shape of the trap is held by a coiled spring made of stainless steel wire.

### **Active fishing equipment**

This category includes filtering fishing equipment (sea trawl) and filtering and towing equipment (beam trawls, bottom, and pelagic trawls).

Sea trawls are a type of filtering fishing equipment which catches sea creatures by narrowing the enclosed area and holding the collection of fish and other organisms within the enclosed perimeter.

A beam trawl is a filtering and towing equipment in terms of its structure, which consists of a cross element (a metal tube) supported at both ends with two metal 'shoes' and the part of the net (the collection basket consists of a cover, a base and sides).



A beam trawl

Beam trawl harvesting is done at depths from 20 to 29 m, where there is sand or sand-silt sublayer in the area between Cape Midia and Portita. This type of fishing targets whelk species *Rapana venosa*. It is possible to have non-targeted fish catch such as red mullet, common stingray, European flounder and others.

Bottom trawling is a type of filtering fishing equipment shaped as a truncated cone equipped with its own support system towed along the bottom of the sea or ocean by a ship using connectors in order to harvest demersal fish through filtering. The Romanian Black Sea coast offers opportunities to catch shark, turbot or occasionally thornback ray, whiting, European flounder, goby, sturgeon and others.

Pelagic trawls are a filtering fishing equipment towed by a ship and equipped with a support system ensuring optimal geometric shape during fishing and filtration of larger quantities of water. In the case of sea fishing along the Romanian Black Sea coast with pelagic trawls the main catch consists of sprat (90% of the composition of the catch), available in the areas accessible to coastal trawlers from March to October.



Pelagic trawl catch

In the months from August to October the catch is Atlantic horse mackerel and bluefish, often replaced by anchovy concentrated in the central and northern regions at depths of 20-25 m. Currently the targeted species harvested in the largest quantities along the Romanian Black Sea coast (reaching up to 95% of the total amount of living resources caught in Romania in 2016, namely 6,504.48 tons) is the gastropoda (whelk) *Rapana venosa* whose meat is a speciality offered in restaurants along the coast and also delivered around the country.

In 2016 industrial fishing in the Romanian marine industry was conducted in two ways: fishing with stationary equipment using coastal trawlers at depths of 20-60 m equipped with beam trawls, pelagic trawls and gillnets, as well as stationary fishing along the sea coast at depths of 3-11 m using dragnets, gillnets, longlines, sea trawls and cages.

Several categories of ships and boats were used for fishing, categorised by length, technology and fishing equipment. The total amount of the catch of fish, whelk and mussels harvested by the Romanian fleet in 2016 amounted to 6,839.461 tons.

The Romanian fishing fleet is within the field of competence of the organisation in charge of managing fishing regions - G.F.C.M., Area 37 – Mediterranean and Black Sea, Sub-area 37.4, Division 37.4.2, GSA 29.

Romania's fishing zone is situated between the Musura branch of the Danube and Vama Veche with length of the coastline of approximately 243 km and may be divided into two main sections in terms of geographical and geomorphological features: a) North section with a length of 158 km, stretching from the secondary delta of the Musura branch to Constanta Municipality; b) South section with a length of 85 km between Constanta Municipality and Vama Veche.

The distance between the sea shore and the continental shelf (depth of 200 m) varies between 100 and 200 km in the North Section and is approximately 50 km in the South Section. All

waters before the 20 m water line in the northern part of the Black Sea are included in the biosphere reserve of the Danube Delta (established by Law No. 82/1993).

The marine zone in the Danube Delta Reserve forms traditional spawning and feeding grounds from transboundary species and serves as a route for anadromous species (sturgeon, Danube herring).

The marine reserve Vama Veche – 2 May is located on the southern sea coast spreading over a total area of 5,000 hectares.

The marine reserve Vama Veche – 2 May is a region characterised by a wide diversity of biotypes and biotic communities, which is located along the migration route of the main pelagic and benthic species as well as of marine mammals.

Sea fishing along the Romanian coast is limited to the marine zone up to the 60-70 metre water line.

In 1986 Romania established an Exclusive Economic Zone (EEZ) in the Black Sea over an area of 25,000 sq. km. However, as provisioned in the United Nations Convention on the Law of the Sea, the fishing area in the Black Sea is to be defined more particularly following Ruling of the International Court of Justice in 2009 on Ukraine's negotiations regarding the marine platform stating that the EEZ is to be expanded to 29,000 sq.km.

The Romanian coastal fishing ships which use trawlers conduct their fishing activities at a distance of 30-35 nautical miles into the Black Sea within season depending on fish stock in the zone.

Another important fishing zone is the sea area of the Danube Delta biosphere reserve which serves as traditional fishing grounds with stationary or floating equipment and where trawl fishing is prohibited.

Nevertheless, the area close to the Black Sea coast up to the 20 m water line is outside the scope of activity of ships/small fishing vessels which use towing equipment. Fishing in the area is limited to the use of dragnets and gillnets.

### **Harvesting in the Black Sea**

In the period 2012-2017, the catch in the Black Sea registered a positive trend.

Catch in the Black Sea by year was as follows:

- 2012: 834.875 tons (turbot 43.21 tons; sprat 87.46 tons, mullet/golden grey mullet 1.32 tons, goby/knout goby 17.145 tons; anchovy 18.39 tons; shark 2.14 tons; mackerel/small Danube mackerel 25.52 tons; Atlantic horse mackerel 20.01 tons; red mullet 1.37 tons; mussels 1.9 tons; veined Rapa whelk 588.48 tons; other species 3.73 tons);

- 2013: 1,710.595 tons (turbot 43.2 tons; sprat 60 tons; mullet/golden grey mullet 1.66 tons; goby/knout goby 10.7 tons; anchovy 110.98 tons; shark 3.18 tons; mackerel/small Danube mackerel 34.52 tons; Atlantic horse mackerel 25.86 tons, red mullet 2.52 tons; mussels 2.89 tons; veined Rapa whelk 1,314.19 tons, other species 7.651 tons);
- 2014: 2,230.545 tons (turbot 43.18 tons; sprat 84.98 tons; mullet/golden grey mullet 1.995 tons; goby/knout goby 14.478 tons; anchovy 59.35 tons; shark 2.06 tons; mackerel/small Danube mackerel 11.192 tons; Atlantic horse mackerel 6.61 tons; red mullet 8.46 tons; mussels 5.08 tons; veined Rapa whelk 1,953.16 tons, other species 8.98 tons);
- 2015: 4,847.156 tons (turbot 31.15 tons; sprat 106.33 tons, mullet/golden grey mullet 1.55 tons; goby/knout goby 24.156 tons; anchovy 111.96 tons; shark 13.22 tons; mackerel/small Danube mackerel 22.43 tons; Atlantic horse mackerel 13.88 tons; red mullet 5.1 tons; mussels 45.61 tons; veined Rapa whelk 4,460.44 tons, other species 6.76 tons);
- 2016: 6,839.461 tons (turbot 29.49 tons; sprat 49.28 tons; mullet/golden grey mullet 1.86 tons; goby/knout goby 20.548 tons; anchovy 102.42 tons; shark 2.64 tons; mackerel/small Danube mackerel 13.783 tons; Atlantic horse mackerel 32.4 tons; red mullet 3.41 tons; mussels 67.42 tons; veined Rapa whelk 6,504.48 tons, other species 11.73 tons);
- 2017: 9,495.445 tons (turbot 37.91 tons; sprat 28.74 tons; mullet/golden grey mullet 0.97 tons; goby/knout goby 11.495 tons; anchovy 27.28 tons; shark 0.76 tons; mackerel/small Danube mackerel 9.21 tons; Atlantic horse mackerel 34.56 tons; red mullet 2.5 tons; mussel 136.7 tons; veined Rapa whelk 9,199.77 tons; other species 5.58 tons).

According to data provided by the National Agency for Fishing and Aquaculture the predominant species is the veined Rapa whelk, followed by mussels, turbot, Atlantic horse mackerel, anchovies and sprat. It should be noted that since the catch quota for turbot was implemented by the EC, the harvest has not exceeded 43 tons a year. However, due to the increased market demand for veined Rapa whelk, the catch has increased considerably over the last years. This trend is the result of the implementation of the turbot quota system by the EC, which limits the catch to approximately 40 tons a year, causing fishermen to revert to harvesting veined Rapa whelk.

### **Fishing ships and boats in the Black Sea**

Coastal ships with length of over 12 m moor in the ports of Midia, Constanta, and Sulina.

Boats used for small-scale fishing moor at other places without unloading berths: Mangalia, Olimp, Costinești, Mamaia, Cape Midia, St. George, and the unloading berth at Sulina.

Out of the 25 coastal fishing ships active in 1990, only 3 ships with length over 18 m were used in 2011. As for small-scale coastal fishing, 2011 saw the registration of 481 boats with length of up to 12 m.

According to data provided by the NAFA only 143 ships/boats were engaged in fishing activities in the Black Sea in 2012, of which 4 had lengths of over 12 m and 139 –lengths of up to 12 m.

According to data provided by the NAFA in 2017 the number of ships/boats engaged in fishing activities in the Black Sea was 212.

### **Employees in the sea fishing industry**

In 2017 the total number of people who participated in fishing/harvesting activities in the Black Sea was 1,081.

There was a decrease in the number of fishermen in 2017 when compared to 2015, when a total of 1,124 people were employed in the fishing/harvesting industry, and to 2016, when the number of people involved in fishing/harvesting activities was 1,221.

### **Fishing ports and unloading berths**

At the moment fishing ships in the Black Sea use the ports of Midia, Constanta, and Mangalia, but neither one has facilities for servicing fishing ships (unloading, storage, sales, ship maintenance and repair, filling with fuel and stocking with water and ice). In the areas of Agigea, Costinești and Olimp there are sheds for smaller boats. The total number of unloading points and primary sales centres is 14: Sulina 4 points, Jurilovca, Perioboina, Gura Portitei-Perioboina, Vadu, Cape Midia, Constanta, Costinești, Olimp, Mangalia, Vama Veche. Therefore, there is virtually no infrastructure in fishing ports providing specialised berths, storage space and organised primary sales of fish.

## **2. CURRENT SITUATION IN THE FISHING INDUSTRY**

In 2016 the Romanian fishing fleet consisted of 192 registered ships and boats with a combined gross tonnage of 1,400 GT, total engine capacity of 6,230 kW and an average age of 18 years.

The total number of employees increased from 1,005 in 2014 to 1,124 in 2015. The total number of employees in 2016 was 1,221. The total number of days at sea increased by 9% between 2008 and 2016, while fishing days increased by 1%. The total landed weights in 2016 was 6,839.461, of which 6,504.48 tons of veined Rapa whelk of an unloaded value of 3.5 million euro. The total load weight and the value of the landed weight in 2016 increased considerably when compared to previous years where the highest values were registered by the veined Rapa whelk – approximately 3.5 million euro.

**Table: Data on the development of economic agents and employees in the sea fishing industry**

Criteria No.		Criteria	Value
1	<b>2014</b>	number of authorised economic agents	56
		number of permits for commercial fishing	113
		number of specialised permits for turbot fishing	56
		number of permits for auxiliary boats	14
		number of licenses for harvesting molluscs and crustaceans	0
		number of authorised fishing boats	183
		number of employees in the fishing industry	1,005
		total number of permits	183
2	<b>2015</b>	number of authorised economic agents	68
		number of permits for commercial fishing	172
		number of specialised permits for turbot fishing	58
		number of permits for auxiliary boats	25
		number of licenses for harvesting molluscs and crustaceans	0
		number of authorised fishing boats	255
		number of employees in the fishing industry	1,124
		total number of permits	255
3	<b>2016</b>	number of authorised economic agents	92
		number of permits for commercial fishing	132
		number of specialised permits for turbot fishing	48
		number of permits for auxiliary boats	0
		number of licenses for harvesting molluscs and crustaceans	12

		number of authorised fishing boats	192
		number of employees in the fishing industry	1,221
		total number of permits	192
4	2017	number of authorised economic agents	79
		number of permits for commercial fishing	123
		number of specialised permits for turbot fishing	42
		number of permits for auxiliary boats	7
		number of licenses for harvesting molluscs and crustaceans	40
		number of authorised fishing ships	212
		number of employees in the fishing industry	1,081
		total number of permits	212

Criteria No.	Year	Criteria	Sea fishing
1	2014	number of employees in the fishing sector	1,005
		employees under permanent employment agreements	125
		fixed-term employees (seasonal)	765
		employees under service agreements	115
		percentage of male employees in the field	69%
		percentage of female employees in the field	4%
		percentage of pensioners	27%
2		number of employees in the fishing industry	1,124
		employees under permanent employment agreements	154

	<b>2015</b>	fixed-term employees (seasonal)	786
		employees under service agreements	184
		percentage of male employees in the field	76.5%
		percentage of female employees in the field	4.5%
		percentage of pensioners	19%
3	<b>2016</b>	number of employees in the fishing industry	1,221
		employees under permanent employment agreements	212
		fixed-term employees (seasonal)	805
		employees under service agreements	204
		percentage of male employees in the field	80.9%
		percentage of female employees in the field	4.1%
		percentage of pensioners	15%

### 3. DATA ON THE SEA FISHING INDUSTRY IN OTHER EUROPEAN COUNTRIES

#### 3.1 Greece

In 2016 the Greek fishing fleet consisted of 15,226 registered ships with a total capacity of 72,000 GT and 431,000 kW. The average age of the ships is 30 years. The number of ships, gross tonnage, and total capacity of the Greek fishing fleet continued following a downward trend. Most ships 13,567 (94%) are small-scaled with a total capacity of 26,000 GT and 252,000 kW. There are also 847 large ships with a total capacity of 46,000 GT and 159,000 kW.

Total employment in the industry is assessed at 24,759 work places. The average salary of workers and employees according to the FTE is very low (6,800 euro, 6,200 euro respectively). SSCF has a total of 18,490 FTE, thus contributing 79% of the total employment in the field for the country.

Small coastal ships use mainly the Greek coast using multi-purpose passive equipment (namely nets, longlines, vessels, and traps). The ships in the field are mainly family-owned and are characterised by low investment capital. On the other hand, the large-sized fleet includes bottom trawls and ships with purse nets. The bottom trawling industry accounts for approximately 2% of the Greek fishing fleet (282 ships) and includes 7.1% of the total national FTE. The fishing

industry employing purse nets comprises of 252 ships accounting for 2% of the Greek fishing fleet and hires 10% of the total national FTE.

### **3.2 Spain**

The number of ships in the Spanish fleet continues to be on the decrease year after year. The total number of ships in 2016 was 9,459 (8,349 active ones): 4,123 coastal small-scale ships (SSCF), 4,018 large ships (LSF) and 208 vessels with large tonnage, used in large-scale fishing (DWF). In order to achieve balance between fleet capacity and fishing opportunities, ship tonnage and the number of ships were decreased and this trend affected engine capacity by 842,100 kW for the general fleet: 111,000 kW SSCF, 453,000 kW LSF and 225,000 kW DWF. The last years saw a decrease of 12% in the engine capacity of the Spanish fleet.

In 2016 the Spanish fleet had 1,054 thousand days at sea and 1,031 thousand fishing days. This decrease was due mainly to LSF which marked a 5% fall in the number of days at sea.

In terms of employment, the total estimated number of employees for 2016 was 30,519, of which 7,887 fishermen were employed by SSCF, 17,980 by LSF and 4,682 by DWF. Results expressed in full-time equivalent (FTE) for 2016 were 29,214 for the entire fleet which saw a decrease when compared to the previous year.

### **3.3 Italy**

In 2016 the capacity of the Italian fishing fleet continued to decrease with a total of 12,311 ships with a combined gross tonnage (GT) of 158,000 tons and engine capacity of 994,000 kilowatts (kW). Employment in 2016 was estimated at 25,485 work places, marking a decrease in 2014 and 2015. The effort remained relatively stable in 2016 with approximately 1,438 thousand days at sea.

The small-scale coastal fleet, i.e. ships with a length of up to 12 metres, is estimated at 7,409 ships, accounting for 60% of the total number of ships and 9% of the total ship tonnage in 2016.

In 2015 the large-scale Italian fleet generated the highest net profit over the last five years. The weight and value of landed loads increased by approximately 10% when compared to 2014. However, between 2008 and 2015 the fleet saw a decrease at an average rate of 7.3% in the number of ships and a decrease of 9.3% in the total number of employees.

The number of large ships remained relatively stable with the number of active ships in 2015 being 1,052; the capacity (+ 2%) and engine capacity (+ 2%) followed a similar pattern. On the other hand, the data for 2016 revealed a drop in the large-scale fleet to 964 ships and a proportionate decrease in engine capacity. The small-scale fleet of 1,771 active ships accounted for 62% of the total number of active ships for 2015 but less than 2% of the total landed weight. In 2015 the total value of the landed weight generated by SSCF was 8 million euro amounting to 13% of the total. The number of active ships in SSCF increased considerably as a result of the

procedure for granting permits to ships used in a special category or coastal fishing for personal needs. It may be expected that this increase will not affect the total landed weight.

The most important segment of the fleet was the purse net (PS) segment with ship lengths from 24 to 40 metres. This segment includes 71 ships but accounts for 55% of all landed weight. The greatest number of active ships was in the fixed net segment (DFN, fixed nets: wire nets and nets with wheels) with ship lengths from 6 to 12 m, accounting for 25% of all active ships.

### **3.4 Croatia**

In 2015 the national fleet consisted of 23 fleet segments with a total number of 7,849 ships of which 2,823 active ones. In 2016 the active fleet was increased to 5,280 ships out of a total of 7,746 as a result of the continuous process of licensing coastal fishing for personal needs. In 2015 the general fleet had a combined capacity of 53,800 gross tons (GT) and 429,700 kilowatts (kW). The total number of employees in 2016 was 5,797.

The total number of days at sea in 2016 was 210,000 days. The total amount of landed weights was 72,000 tons, which was 1% less when compared to 2015. The value of landed weights was 56.9 million euro. The total revenue for 2015 was 65.3 million euro which marked a decrease of 12%.

Landed weights in 2016 included 115 species with a combined weight of 72,000 tons. Landed weights remained relatively stable time-wise. Small pelagic species included in the purse net fishing of the sturgeon and anchovy type dominated to a great extent in the general composition of the catch (approximately 87% of the general weight of the catch). Small pelagic species are also the most important type in terms of value which accounts for 50% of the total amount of the landed weight.

**SSCF – small-scale coastal ships; LSF – large-scale ships; DWF – ships with large tonnage; FTE – full-time employees.**

**Data taken from the EUROSTAT data base.**

## **4. COMPARATIVE RESEARCH BETWEEN SEA FISHING INDUSTRIES IN OTHER EUROPEAN COUNTRIES**

By comparing the Romanian sea fishing industry to other industries of the same type in other European countries we established that there are a number of weaknesses in the industry as well as several strengths.

**Weaknesses:**

- Seasonal nature of fish stock concentration;
- Concentration of fish at a great distance from ports;
- The majority of the species are migrating or widely distributed ones (Romanian fisheries are largely dependent on the condition of local stock reserves, resource management in neighbouring countries);
- The structure of the fleet is not adequate to the specific condition of the resources and labour conditions;
- Insufficient number of ships /boats/ for Black Sea fishing (failure to meet sprat quotas);
- Insufficient number of facilities for storing and preserving the catch on board the ships;
- Small-scale fishing boats which are not adequately equipped in terms of safety and catch preservation;
- Insufficient infrastructure (ports, primary sales centres, fish wholesale markets, fish markets).

**Strengths:**

- Diverse fishing resources – pelagic species (sprat, anchovies, Atlantic horse mackerel, Danube herring), demersal species (turbot, shark, whiting, red mullet, goby) and invasive species (veined Rapa whelk);
- Sufficient equipment in terms of selectivity and exploitation;

Available working force;

Traditions in the field, including in primary treatment;

Traditions in fish consumption (religious festivals, other traditions).

**Unlike other European countries (Spain with 27 kw/employee, Italy with 25.33 kw/employee, Croatia with 74.12 kw/employee and Greece with 17.4 kw/employee), Romania has 5.1 kw/employee.**

In order for the fishing industry to be properly developed (including creating new work places), it is first necessary to increase the kilowatts allotted to Romania and to improve the infrastructure.

## 5. Conclusions

Fishing in the Black Sea and continental fishing depend on two main factors closely related to the availability of the necessary water resources and to how efficiently fishing and marketing activities are organised.

On the other hand, there are a number of factors which hinder the development of the sector and its competitiveness. These factors could be grouped into three categories:

- small-scale production generated in the context of high levels of resource consumption for the obtained results;
- low revenue from the sales of the products which does not allow for accumulating capital;
- unfair competition on the fish market.

A. The small scale of production is in turn the result of:

◆ poor performance of operators who are faced with insufficient and old facilities, with a fishing infrastructure which is inadequate for current needs, shortage of staff with secondary vocational training and poor resources in the Black Sea.

The financial resources necessary to equip ships and boats may come from internal sources obtained from the activities of the fishermen or from external resources – from the banking system. Supporting activities which increase fishermen revenues by adding value to their produce (on-board treatment) and promoting related activities (tourism, recreational fishing) may lead, up to an extent, to increasing operator capital. Alternatively, another possible source of financing are banks, although this is not likely as fishermen may not provide securities.

The fishing infrastructure (ports, unloading berths, primary sales facilities, sheds) do not meet the needs of the industry neither from a geographical point of view nor in terms of specific port facilities. Taking budget limitations into consideration, a possible solution is to invest in the fishing infrastructure using European funds both as general interest shares which may help reconstruct the fishing port in Midia (for ships) and by implementing regional development strategies for the construction of unloading berths for boats.

Shortages in staff with vocational secondary education may be overcome by promoting human resource development – life-long learning, networking between fishermen and researchers or higher education institutions with involvement of interested public institutions.

Of all the problems which contribute to the poor performance of the operators, the problem of fishing is the one which is hardly possible to resolve. The seasonal nature of fish concentrations, their location far from any ports and the fact that most fish species are migrating or widely distributed cannot be changed. Furthermore, climate change and shoreline erosion lead to degradation of coastal marine ecosystems and affect levels of fish stock.

◆ Inadequate structure of the fishing fleet, mostly boats up to 12 metres in length used for small-scale coastal fishing with low performance. Taking into consideration capacity limits which do not allow for increase in the size of the fleet by acquiring new ships and the lack of funds to

finance replacement of existing ones, the structure of the Romanian fleet will remain centred mainly on small-scale coastal fishing over the following period as well.

- ◆ Various limitations relating to EU environmental and fishing policies, ban periods, the kW allocated to Romania further restrict fish production. On the other hand, such restrictions are imposed precisely in order to secure the sustainability of the industry. In this context operators may try to generate income by diversifying related activities but such measures relate mainly to the financial support of operators rather than to the competitiveness of the industry.

- ◆ High production costs are mainly due to fuel and maintenance expenses as well as to administrative burdens up to an extent.

Management plans may be prepared in order to support fisheries in paying for consultancy services with respect to their activities aimed at reducing said expenses. Also, the administrative burden can be reduced by increasing efficiency or eliminating, where applicable, public administration activities in order to reduce the expenses of fishing operators without compromising the fulfilment of their obligations. In this way, all obligations imposed by the EU or under the local legislation will remain in force while the costs for their execution will be reduced. Procedures for obtaining access to European funds will also be simplified.

B. There are various reasons for the relatively low amount of revenues generated from the sales of products:

- ◆ The low market value of the fish determined by prevalence of fish of no great commercial value. As much as possible in view of available stocks and harvesting conditions, operators need to prioritise species of higher commercial value.

- ◆ Direct sales without adding value to the product.

Informing fisheries and providing financial support in order to acquire on-board treatment equipment is a key factor in adding value and implicitly increasing sales income.

- ◆ Poor purchasing power of the Romanian market.

This is characteristic of the current economic situation in Romania and may be overcome by exporting production to foreign markets. However, this is not a feasible solution in view of the current poor production conditions and high production costs.

- ◆ Lack of structured data regarding the Romanian fish market.

This type of data will be publically available after conducting a survey of the Romanian fish market describing the current condition and current trends at national and regional level. By using this data operators may better organise their business and increase sales revenues.

C. Unfair competition, more specifically non-declaration and non-fiscalisation of production, which puts honest producers at a disadvantage and is a premise for increase in tax fraud. Measures against this phenomenon are being implemented at EU and EU member-states levels targeting illegal, unreported, and unregulated (IUU) fishing. In order to achieve greater efficiency it is necessary to promote inspection, control, and execution systems governed by the NAFA.

The strategy Europe 2020 (EU 2020) is a strategy of the European Union whose main aim is to overcome the crisis which has had a lasting effect on European economy. The strategy aims at eliminating faults with the current development model and creating favourable conditions for a smarter, more sustainable and more efficient economic growth. In order to achieve all this, the European Union has set five key goals which it aims to reach in this decade. They encompass fields such as employment, education, scientific research and innovations, social inclusion and eradication of poverty as well as energy/climate. The strategy Europe 2020 suggests three complementing priorities:

- a) smart growth – economic growth based on knowledge and innovations;
- b) sustainable growth – promoting a more efficient, environmentally friendly and competitive economy in terms of resource management;
- c) inclusive growth – promoting an economy of high growth of labour force to ensure social and regional cohesion.

In EU 2020 SNSP is described as a time horizon and vision aimed at developing the fishing sector and aquaculture with respect to competitiveness, sustainability, regional and social cohesion milestones.

## **6. RECOMMENDATIONS**

A). Increasing Romania's fishing capacity by a minimum of 12 kW/employee in view of veined Rapa whelk exploitation as an invasive species.

B). Training courses for young people who wish to work in the field of sustainable exploitation of water resources.

C). Encouraging and supporting young people who wish to start a business in this field.

D). Inclusion of women in the fishing sector by promoting the processing industry (creating units for processing veined Rapa whelk).

Reference:

1. Black Sea fishing – National Institute for Marine Research and Development Grigore Antipa
2. Statistical data – National Agency for Fishing and Aquaculture;
3. Annual report – National Agency for Fishing and Aquaculture;
4. Annual economic report on the fishing fleet in the EU - EUROSTAT;
5. National strategy for the fishing industry 2014-2020 – Ministry of Agriculture and Rural Development.

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*The undersigned Petar Petrov Galabov do certify that my Bulgarian to English translation of the document (s) herewith, namely "Research on the Impact and Social Effects of Fishing in Romania", said translation consisting of 18 (eighteen) page(s), is true and correct.*

*Translator: Petar Petrov Galabov*