



Ministry of Agriculture and Forestry



**National Agency for Fisheries and
Aquaculture**

**National Strategic Plan for Fisheries
and Aquaculture**

2007 – 2013

Sofia, Bulgaria

List of Abbreviations

EU	European Union
EFF	European Fisheries Fund
ERDF	European Regional Development Fund
ESF	European Social Fund
EAFRD	European Agriculture Fund for Rural Development
CITES	Convention for the International Trade with Endangered Species
MAF	Ministry of Agriculture and Forestry
NAFA	National Agency for Fisheries and Aquaculture
NVS	National Veterinary Service
NFA	National Forestry Department
BAS	Bulgarian Academy of Sciences
NCAS	National Centre of Agrarian Sciences
PO`s	Producers' Organisations
AFPP BG-FISH	Association of the fish and products producers BG-Fish
NAFisA-BG	National Association of Fisheries and Aquaculture
FPAY	Association of Fish Producers, Yambol
FPAR	Association of Fish Producers, Ruse
FPAVT	Association of Fish Producers, Veliko Tarnovo
GDP	Gross domestic product
CFP	Common Fisheries Policy
FAA	Fisheries and Aquaculture Act
NSPFA	National Strategic Plan for Fisheries and Aquaculture
OPFA	Operational Program for Fisheries and Aquaculture
NSRF	National Strategic Reference Framework
FAD	Fisheries and Aquaculture Development
GT	Gross Tonnage
TACs	Total Allowable Catches



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Introduction

The Bulgarian authorities and social stakeholders in partnership have agreed on the **strategic vision and objectives** for the country: **By 2013 Bulgaria should become a country with a higher standard of living, based on a sustainable socioeconomic growth during the process of full integration into the European Union.**

To achieve its vision, Bulgaria has two **strategic medium-term goals**:

- To attain and maintain high economic growth through a dynamic knowledge-based economy in accordance with the principles of sustainable development.
- To improve the quality of human capital and to achieve employment, income and social integration levels, which provide higher living standards.

In order to achieve the above mentioned strategic goals and the National Strategic Reference Framework (NSRF) vision, interventions till 2013 will be focused on the following **strategic priorities**:

- Development of the competitiveness of the Bulgarian economy;
- Development of human resources and improvement of the social infrastructure;
- Improvement and development of the basic infrastructure;
- Sustainable and balanced regional development;
- Modernization of the Bulgarian administration and improvement of its services.

The implementation of the interventions envisaged to fulfil the country's strategy requires that the following main **thematic areas** should be tackled:

- Competitiveness of Bulgarian economy;
- Transport;
- Environment;
- Human resources;
- Regional development;
- Administrative capacity;
- Technical assistance;
- Rural development;
- **Fisheries and aquaculture.**

The interventions in the Fisheries and Aquaculture area are envisaged under financial assistance from the European Fisheries Fund (EFF). These interventions are organized, presented and formulated in the National Strategic Plan for Fisheries and Aquaculture (NSPFA) and in the OP Fisheries and Aquaculture (OPFA).

NSPFA defines the vision, the strategic goals and the national development priorities as well as the necessary financial resources and institutional framework required for their realization. Regarding the programming and management of the European Fisheries Fund (EFF) after 2007, the role of the NSPFA is to structure and present the strategic choices made by the national investment policy to ensure adequate co-ordination, justification and provision of financing of the interventions, co-financed by the EFF resources.



I. General description of Bulgarian fisheries sector

A. Geographical scope. Economic and social situation

The fisheries and aquaculture sector has a specific position and role in Bulgarian agriculture and in the national economy. The total income from fisheries and aquaculture is adding value to the Bulgarian economy of about €14.3 million (Tables 1 and 2, Annex 2 and Figure 1, Annex 3). The Bulgarian fisheries sector, including processing of fish provides a relatively smaller contribution on the national level (0.38% of the national workforce), nevertheless provides vital employment on regional level, especially in some coastal zones, making a significant contribution to local economies as they tend to be regionally and locally concentrated. There are about 12 260 employees /2003/ of which 16 % are women. The marine fishing sub-sector employs 3 430 people, inland fishing also make a significant contribution to regional economies – 1 620 people, aquaculture provides the greatest source of full time employment - almost 5 000 people and processing – 2 230 people (Table 3, Annex 2). It should be noted that many jobs in fish processing (possibly up to two-thirds) are seasonal only. It should be noted that in Bulgaria, fisheries dependency ratios (Table 4, Annex 2) are of the same order as those encountered within the EU. However the values are below those encountered in the European Unions most fisheries dependent regions (typically 20% or 30% at NUTS IV in some parts of Greece, Spain and Portugal).

The Black Sea coastline of Bulgaria is 378 km in length. Territorial sea (up to 12 nautical miles) is 6 506 km² the area of the continental shelf is 10 886 km² and the Exclusive Economic Zone in the Black Sea - about 25 699 km². Black Sea has a specific characteristics.

Due the big affluent of the river waters, the marine water in Black Sea is twice less salty (18‰) rather than the Mediterranean waters and the waters in World Ocean in which the saltiness is about 35‰. The high tides and the low tides are insignificant and are registered only with apparatus (3 up to 8 cm). Other specific characteristic in Black Sea is the availability of hydrogen sulphide in 150-200 m in depths, which embraces almost 90% of the total volume. The availability of hydrogen sulphide, as well as the shortage of oxygene in 150-200 m in depths makes impossible the existence of living organisms in this water volume, except of some anaerobic bacteria. See Figure № 1 below:

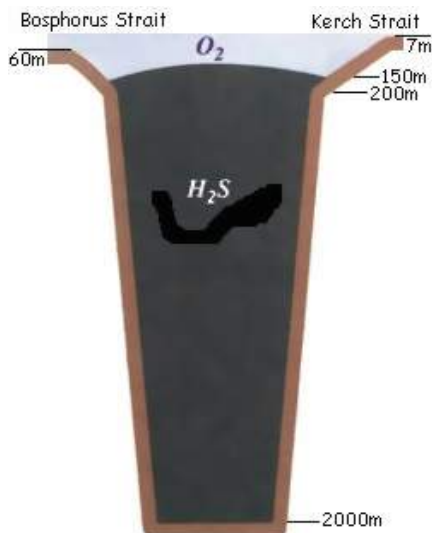


Figure № 1. Schem of the diffusion of hydrogen sulphide in Black Sea

Marine flora and fauna in Black Sea is composed mainly from about 292 macrophytes species and about 700 microphytes algae, fungus etc. species and about 3 190 animal species. There are about 125 fish species in Black Sea (26 of them with economic value). The main represented fish species in the catches were always been the pelagic ones, which are situated in open areas and also near to the coast.

Some of the Black Sea species have seasonal and/or migratory character. Other species are named as 'domestic' (non-migrated) and they are subject of year-round fishing:

- Domestic (non-migrated) species: Sprat (*Sprattus sprattus sulinus*); Turbot (*Psetta maxima maeotica*); Gobies (*Gobiidae*); Grey mullet (*Mugil cephalus*); Whiting/Black Sea (*Merlangius merlangius euxinus*);
- Migrated species: Anchovy (*Engraulis encrasicolus ponticus*); Horse mackerel/Black Sea shad (*Trachurus mediterraneus ponticus*); Danube herring (*Alosa pontica pontica*); Black Sea Spiny dogfish (*Squalus acanthias*); Blue fish (*Pomatomus saltatrix*); Bonito (*Sarda sarda*), etc.
- Mollusks / Crustaceans: Black mussel (*Mytilus galloprovincialis*) and Rapana/sea-snail (*Rapana thomasiana*), etc.



The most frequent species caught in the Black Sea are small finfish: sprat, anchovies, horse mackerels and whiting. Other species which are present, but in lower quantities are: mullet, dogfish and turbot. In addition to these species, Bulgaria has largely developed the exploitation of an invasive seasnail, the Rapana (Rapana thomassiana).

Most of the fishing activities are carried out in territorial waters (up to 12 miles). The main fishing ports are in Burgas, Varna, Sozopol, Nessebar and Baltchik. Fishing catch activities are located along the entire coast, but the central and northern regions are the main location for production of mollusks.

The total water area covered by freshwaters is 65 000 ha, including natural lakes, fishfarms (earthen ponds, raceways and dams), running waters and Danube River.

The total length of rivers for inland fishing is 20 231 km, with a water surface 15 000 ha and about 65 different fish species. A characteristic feature for the most Bulgarian rivers is the great fluctuations of the water level and the flood character in spring in their upper streams. Conditionally the rivers can be divided to trout, trout-barbel, barbell and carp area as the boundaries between them are not fixed. They are inhabited by more than 50 species and subspecies fish. The rivers have essential importance for the angling.

The highly mountainous lakes in Bulgaria are predominantly small in area and they do not distinguish with rich total biomass including ichthyofauna. They are inhabited by character highly mountainous hydrobionts. Most of our highly mountainous lakes fall into protected territories as only in some of them angling is permitted.

The rest natural lakes are situated in the plains: most of them are besides the Black sea – the Bourgas lake, the Varna lake, the Shabla lake, the Durankulak lake, etc.; besides the Danube river – Srebarna; there are also several small lakes inside the country. In case of heavy dry weather the bysea lakes got salted. They are distinguished with warm waters, with rich nutritional basis and ichthyofauna. Part of them also falls into protected territories. They have importance mainly for the angling.

The length of Danube River in Bulgarian part is 471 km. Danube River is distinguished as a river with the richest ichthyofauna in Europe (about 85 species) as the Bulgarian part is inhabited of about 65 fish species. In the waters of Danube River is accomplished angling as well as commercial fishing activities.

The total water surface of Bulgarian dams is 63 664 ha (Figure 2, Annex 3). Depending from the water surface, dams can be grouped as follows:

big dams	with water surface >200 ha
mid size dams	with water surface 20 – 200 ha
small dams	with water surface <20 ha

The biggest state-owned dams /about 250, with a total water surface area of 29 452 ha / are complexly used with zone' separation, as the defined zones are for irrigation, production of electricity, aquaculture, commercial fishing and angling. The big and with economic importance dams /51, following the definition in the Waters Act) are being used especially for angling and aquaculture in earthen ponds.

The small and mid size dams are being used for angling or only for aquaculture, or only for commercial fishing. The maximum fish production from dams during the 1980's reached 7 000 tons per year (about 40% of the total production).

The dams and areas around dams are appropriate for organizing fishing tourism.

The using of dams for aquaculture production is very important especially in NUTS IV regions. These regions have more than 2 500 dams, which are appropriate for fish production (Figure 3, Annex 3).

The division of the property of dams in Bulgaria is shown in Table 5, Annex 2.

The Bulgarian fleet is mainly fishing in the Black Sea /about 90 % from total catches/. The inland fishing in Danube River and in the inland rivers and natural lakes and dams represents about 10 % from total catches. Total fish production (caught and farmed) during 2005 is shown in Table 6, Annex 2 and in Figure 2, Annex



3.

The structure of **fish production** in Bulgaria has specific characteristics. Overall production of fish relies on 2 main sources – Commercial fishing and Aquaculture. Commercial fishing is divided into 2 groups – marine fishing /Black Sea/ and freshwater fishing /Danube River and inland waters/. Aquaculture also consists of 2 main parts – marine and freshwater aquaculture production. /See Figure 2 below/

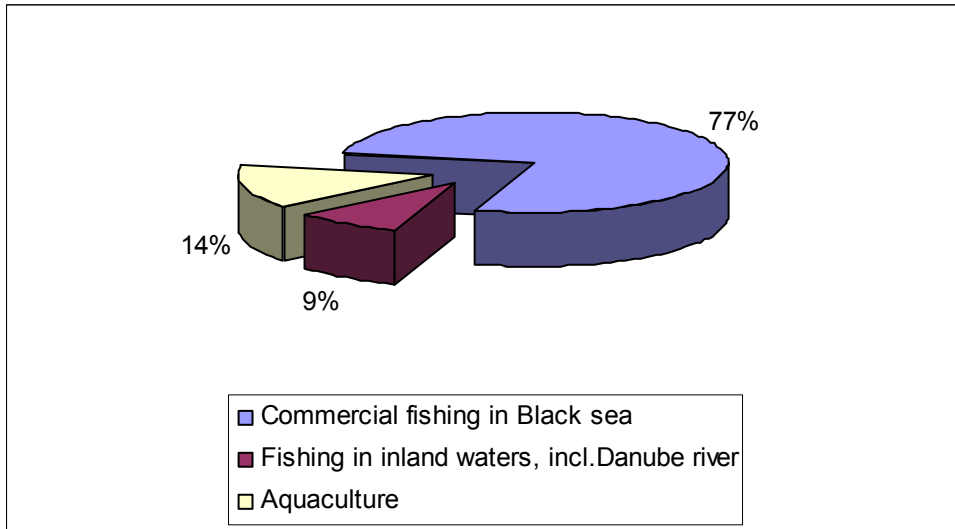


Figure № 2. Structure of fish production in Bulgaria (fishing and aquaculture) for the year 2005

Fisheries sector is very important for the population along the Black Sea and Danube River coast as it provides means for living.

Commercial fishing production:

- The catches in the Black Sea account for approximately 89.7 % of total fish production in Bulgaria. It is necessary to note that sea snail *Rapana* accounts for 47.7 % of total catches in Black Sea. From the other 53.3 % of the remaining production (catches of different fish species) nearly 80 - 85 % comes from catches of sprat /Table 7, Annex 2 and Figure 4, Annex 3/.
- Inland waters fish catches account for about 10.3 % of the total country production and consist of Danube River catches (about 1.8 % in average) and catches in artificial reservoirs (about 8.5 %) /Tables 8 and 9, Annex 2 and Figures 5 and 6, Annex 3/.

Aquaculture production:

- Aquaculture production comprises two distinctive sub-sectors: (i) *fresh water fish farming* and (ii) *marine farming of fish and mussels*, which jointly account for approximately 13.8 % of total production /Table 10, Annex 2 and Figure 7, Annex 3/.

Freshwater fish farming is traditionally well-developed sector but there is a necessity of production restructuring, as well as of introducing new value species with good market perspectives.

Marine aquaculture consists only of molluscs farming and it accounts for less than 1.0 % of the total production. There are no any marine fish farms yet in the country in spite of the good experience from the past. Marine aquaculture has good perspective for future development and need special measures of support.

A.1. State of the Bulgarian fishing fleet. Marine fishing



A.1.1. State of the Bulgarian fishing fleet

From 2 234 registered Bulgarian fishing vessels in 2005, only 58 were more than 15 m in length. From the total number of the vessels, only 95 % are less than 12 m. Several vessels over 15 m are old and inefficient for fishing, due to the lack of equipment and engines appropriate to their tonnage. Most of the fleet is based in Burgas, Varna and Sozopol.

The total number of fishing vessels registered and operating in different Black Sea regions, the segments of the Bulgarian fishing fleet, as well as the distribution of the capacity of the Bulgarian fishing fleet by category tonnage /GT/ and by category length are shown in Tables 12 – 13, Annex № 2 and in Figures: 8 – 9, Annex № 3.

The overall picture of Bulgarian fishing fleet in the Black Sea shows that the number of small-scale vessels prevails by far in the fleet. Fishermen operating in the short distance coastal zones use them.

The distribution of fishing vessels by ports is shown in Table 14, Annex 2.

A.1.2. Marine fishing

The total catches from commercial fishing in Black Sea are in decrease during the last years and the tendency is clearly shown in Figure 3:

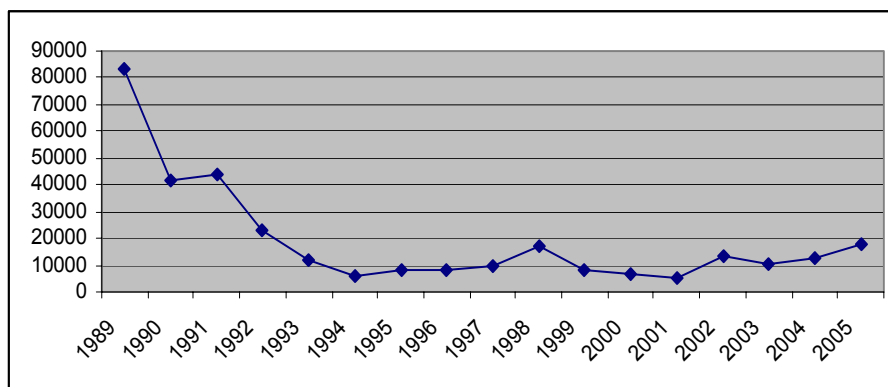


Figure № 3. Marine catches by years

According to the statistics information of the Bulgarian Fishing Association the marine catches in 2005 shows that these account at 17 620 tons with the most important species Sea snail (47.7%) and Sprat (40.9%) and for the other species the share is under 12% /Table № 6, Annex 2 and Figure № 4, Annex 3/.

As mentioned above the marine fishing sub-sector is an important source of employment in the rural parts of some regions. Fishing and aquaculture is significant player in the local economy and the fishing and processing activities are income generating in the following regions: Black Sea coastal regions – Primorsko, Bourgas region - 16.6% of jobs in fishing, Byala, Varna region - 11.9% of jobs in this activity (Table 4, Annex 2). Burgas and Varna, with significant numbers of jobs in fishing /677 and 232 respectively/ have lower levels of dependency /0.5 and 0.2 % respectively/. The total income per fisher /with fishing vessel/ in 2005 is estimated at € 1 850 each /Figure № 15, Annex 3/.

The NAFA's data shows that fishing licenses issued in the Black Sea are as follows:

vessels < 10 GRT	95 %
vessels 10 – 25 GRT	3 %
vessels 25 – 40 GRT	1 %
vessels > 40 GRT	1 %

Commercial Black Sea catches for 2005 by species are presented in Table № 7 Annex 2, as well as in Figure № 4, Annex 3.

According to the Institute of Fish Resources's data, the total volume of Sprat population in the Bulgarian



shelf zone is nearly 60 000 tons and the allowable catches of sprat from the available resources without having negative impact on its population is about 20 000 tons per year /Table № 16, Annex 2/. It is possible to catch such volume but market demand is not ready to absorb such a large quantity as it is neither of high value nor a high quality product. The Sprat catches are important for the processing industry - a large range and volume of different products /salted, marinated, canned/ should be prepared.

The Sea snail /*Rapana*/ is the main export-oriented product of the Black Sea fish catches with 47.7% (8400 t) of total catches. *Rapana* is a very attractive product at present. It is exported mainly to Japan, but some other markets are also interested in this product. The preparation of the product for export engages many workers and processing facilities in the country.

The most valuable fish species for the Black Sea fishing are turbot, dogfish, bonito, blue fish, grey mullet, sturgeons and Danube shad. The stock of Black Sea sturgeons decreased dramatically during the last 2 decades. Recovering the stock and conservation of these species, especially Beluga stock, needs to be protected by at least 5 to 10 years moratorium for the whole Black Sea area, including all other Black Sea coastal countries. The fishing of the Turbot (*Psetta maxima maeotica*) is subject to quotas now and this species needs to be protected. The dynamics of the catches of the most important and valuable species in the Bulgarian Black Sea shelf zone indicates downfall in comparison with the previous years. The only species with sustainable stock is Sprat (of the fish species) and the Sea snail *Rapana* (of the mollusks). There are some opportunities for alternative use of Sprat for fishmeal production but this idea should be subject to future investigation.

A.2. Situation of aquaculture

The total aquaculture production is slowly in increase during the last years. /See Figure № 4 below/:

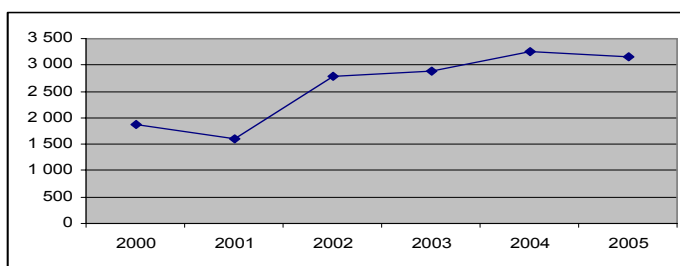


Figure № 4. Aquaculture production by years

There are two principle sub-sectors in Bulgaria: freshwater fish farming (farming of fish in warm or cold water) and marine aquaculture farming. The number of the registrated aquaculture farms in Bulgaria is shown in Table № 11, Annex 2.

A.2.1. Fresh water aquaculture

Bulgarian aquaculture has big potential with the availability of about 65 000 ha water area.

The total water area used for fish farming is about 9 178 ha as prevails the production of fish for consumption in non complete system farms from fatten type. Traditionally are used intensive and semi-intensive production systems. The main fish species reared in Bulgaria as aquacultures are Rainbow trout (*Oncorhynchus mykiss*) - 36.6% from the total aquaculture production in 2005, as well as Common carp (*Cyprinus carpio*) - 29.5% from the total aquaculture production in 2005.

Aquaculture production is mainly directed to the internal market /for exemple: about 100% of the sales from the produced quantities of carp species are marketed in Bulgaria/. The frozen fish products occupy the biggest part from the exported products.

From the semi-intensive aquaculture in Bulgaria dominate the polycultures as Common carp, Grass carp, Silver carp and Bighead carp, Grass carp and from the super-intensive aquaculture in net cages – monocultures from Rainbow trout.

The specific hydrographic particularities of the country determinate the irregular repartition of the



aquaculture farms in the 28 administrative territories /municipalities/ of the country. In 3 of them (Silistra, Haskovo, Shumen) there are no fish farms. From the registered more than 200 aquaculture farms in 2006, almost 2/3 (58%) are non complete system breeding farms. These farms are farms from fatten type for production of fish for consumption.

Warm-water fish farms represent 55 % of the farms for aquaculture production, as in 4 of them are reared sturgeon species. There are farms in which is cultivated warm-water, as well as cold-water fish species.

The types of installations for aquaculture production that prevail are the ground-type basins, used in principle in the warm-water aquaculture farms. Significantly lower is the number of basins from ciment type, used mainly for trout production. The farms with net cages installations are 13 for the year 2006 and represents 6.5 % of the total number of fish farms. In the country this type of installations are used essentially in the super-intensive production of Trout and Carp species.

Most of the fish farms in Bulgaria have a water surface between 1 and 10 ha, which represent 42 % from the total number of farms in the country. Relatively big is the share /29%/ of the farms with surface for aquaculture production less than 1 ha. About 34 aquaculture sites sweat water surfaces of more than 20 ha.

During the last few years there has been a tendency to build new net cage farms for growing mainly Common carp and Rainbow trout, as well as for production of Sturgeon species. The potential of these production facilities for growing high value species is excellent.

A.2.1.1. Warm-water aquacultures

Subject of aquaculture production from this kind aquacultures are: mainly Common carp (*Cyprinus carpio*); Bighead carp (*Hypophthalmichthys molitrix*) and Silver carp (*Aristichthys nobilis*); Grass Carp (*Ctenopharingodon idella*) and Black Carp (*Mylopharingodon piceus*); Bufalo species (*Ictiobus spp.*) and Tench (*Tinca tinca*). There is a tendency in increase the importance of the European catfish (*Sillurus glanis*), American /Channel/ catfish (*Ictalurus punctatus*), Pike - perch (*Sander /Stizostedion/ lucioperca*), Pike (*Esox lucius*) as product of warm-water aquaculture. There are made successful experiences for introducing and breeding of Eel (*Anguilla Anguilla*).

Part of the warm-water aquaculture species represents also the Crayfish (*Astacus astacus*), which production in 2005 amount to 2.5 t /0.08 % of the total aquaculture production in the country/.

The production from warm-water farms, including sturgeon's production for the year 2005 is 1813 t, which represent 57,7 % of the total aquaculture production in the country /Table 10, Annex 2 and Figure 7, Annex 3/.

The sturgeon species (which are positionated intermediary regarding the temperature requirements for warm and cold-water aquaculture farms) are reared in specialized freshwater farms for production of fish for consumption and for production of raw material. Bulgarian sturgeon farmers have achieved a significant success in farming sturgeons in net cages situated in artificial reservoirs. The main sturgeons' species for aquaculture are the following: the Russian sturgeon (*Acipenser gueldenstaedti*), Siberian sturgeon (*Acipenser baeri*) and some hybrids of theirs, Beluga (*Huso huso*) and the Danube sterlet (*Acipenser ruthenus*). The production of sturgeons is the fastest growing sub-sector in aquaculture during the last 6 - 7 years period of time.

A.2.1.2. Cold-water aquacultures

The main part from the cold-water aquaculture species in Bulgaria is represented by the Trout species - Rainbow trout (*Oncorhynchus mykiss*), Balkan trout (*Salmo trutta fario*) and Brook Trout (*Salvelinus fontinalis*).

There are used methods for intensive breeding in concrete water basins, as well as methods for super-intensive breeding in net cages. Trout production requires high quality and well-balanced granulated fodder and due to the lack of production of the above-mentioned, Bulgaria imports fodders.



The production from trout aquaculture farms in 2005 is 1157 tons, which represents 37% of the total aquaculture production in the country (Table 10, Annex 2 and Figure 7, Annex 3).

Rainbow trout production is concentrated mainly in the mountainous and semi mountainous regions in the country where raceways and net cage production systems are mainly employed. The output value at first sale during 2005 was about € 3.5 mlns.

The employment in fish farming in 2005 was 250 workers in trout farming and about 5 000 in carp farming. During the same year the annual income of the directed engaged in the aquaculture production is € 1 850 – 2 000 per capita (Figure 15, Annex 3).

A.2.2. Marine aquacultures

The farms for marine aquacultures (Black Sea mussel farms and farms for production of Kelp algae (*Cystoseira sp.*) Are 18 (Black Sea mussels farms - 16 and farms for production of Kelp algae - 2) and represent 9 % from the total share of the farms in the country.

The main raised species in marine aquaculture in the coastal aquatory is the Black Sea mussel (*Mytilus galloprovincialis*). The production in 2005 is 170, 59 tons which represents 5.4% of the total aquaculture production in the country (Table 10, Annex 2 and Figure 7, Annex 3).

During the last 3 years period there is a steady tendency for development of marine aquaculture alongside the Bulgarian coast. Four new farms for marine aquaculture were registered in the year 2006.

A.3. Situation in inland commercial fishing

The catches from commercial fishing in inland water basins by years are shown in Figure 5 and for the last few years are between 1 500 and 2 000 tons per year:

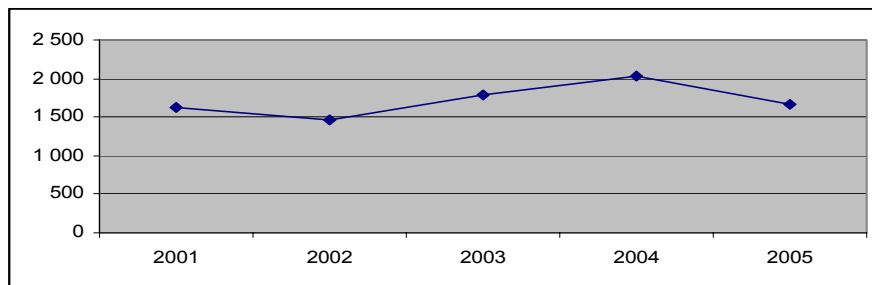


Figure № 5. Catches from inland water basins by years

Mainly small-scale fishing boats, operating in the dams and in some natural lakes, carry out commercial fishing in inland waters. In principle, the persons are in full-time engaged but the employment has seasonal character. Most of licences for commercial fishing are issued to men and less than 1 % to women.

The species more important for fishing in inland water basins are: Common carp (*Cyprinus carpio*), Crucian carp (*Carassius sp.*), Silver carp and Bighead carp (*Aristichthys nobilis*, *Hypophthalmichthys molitrix*), Grass carp (*Ctenopharingodon idella*) и Black Carp (*Mylopharingodon piceus*), Bream (*Abramis brama*), European catfish (*Sillurus glanis*), Pike - perch (*Sander lucioperca/Stizostedion lucioperca*), etc. The average annual catches vary between 1500 – 2000 tons. The catches in 2005 were 1 663.86 tons and this was approximately 7.3 % of the total fish production.

The catches by families and species, as well as the correlation between them for the year 2005 are shown in Table 9, Annex 2 and in Figure 6, Annex 3.

It should be mentioned that non a little part part from the small and medium-sized dams are at the moment treated from the legislation as sites for commercial fishing, but in fact they are functioning as non complete system breeding farms for fatten of fish for consumption. The fishing boats in them are used



for serving the technological process and activities in fish breeding.

For the big dams where there still exist zones for commercial fishing, the tendency is these zones gradually to drop out and dams to be used for angling, aquaculture or for other supplement activities, as fishing tourism and eco-tourism.

A.4. Situation of commercial fishing in Danube River

The total catches in Danube River during the last few years are between 300 and 500 tons/annually and are shown in Figure 6 below:

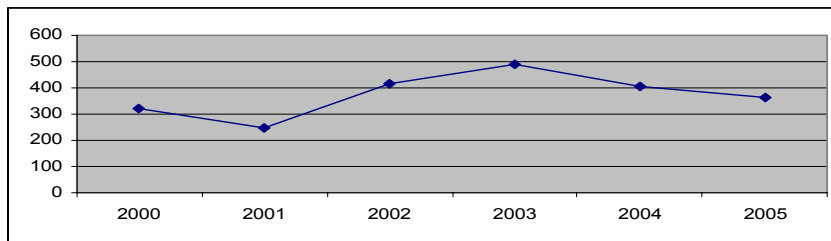


Figure № 6. Catches in Danube River by years

The commercial fishing in Danube River is accomplished by 1 126 small-scale fishing boats up to 10 GT (less than 12 meters in length) /Table 14, Annex 2/. In the regions of the country alongside the Danube River, the fishing activity is important for the population as means of living and manytimes is the only one opportunity for their income.

The total number of fishing licenses issued in 2005 to the Danube River fishing boats is 1 447. The following municipalities situated along the riverbank are the most dependent on fishing activities: Novo selo, Lom, Nikopol, Belene, Svishtov, Tutrakan, Silistra and most of the villages on the riverbank.

The average annual catches in the Danube River during the last five years are about 400 tons and for 2005 they are 360.82 tons. The catches by species in 2005 are shown in Table 8, Annex 2 and in Figure 5, Annex 3.

The species more important for the population engaged with fishing activity in Danube River are: European catfish (*Sillurus glanis*), Danube bream (*Abramis brama*), Barbel (*Barbus barbus*), Common carp (*Cyprinus carpio*), Crucian carp (*Carassius sp.*), червеноперка (*Scardinius erythrophthalmus*), Herbivorous species, as well as migratory species – Danube herring (*Alosa pontica pontica*) and sturgeon species. Sturgeon species are presented by: Beluga (*Huso huso*), Russian sturgeon (*Acipenser gueldenstaedti*), Starry sturgeon (*Acipenser stellatus*), as well as by the non-migrated fish species - Danube sterlet (*Acipenser ruthenus*).

The populations of the most important and valuable Danube species are not stable, the catches are not guaranteed and it is impossible to be planned in advance. Some of the sturgeons like the Ship (*Acipenser nudiventris*) and the Atlantic sturgeon (*Acipenser sturio*) do not exist any more in the river (they are included in the Red book as endangered species and their catches are prohibited). The populations of other sturgeon's species and especially the populations of Beluga are in steady decrease also and need special protection measures.

A.5. Situation of processing and marketing

A.5.1. Fish processing

The marine fishing and aquaculture are closely related to the fish processing industry. Some of the fish and aquaculture producers have their own processing facilities situated close to the fresh fish production sites and this helps to improve the quality of the final products. All EC requirements in the field of veterinary and sanitary control, quality and safety standards are applied by the sector. Fish processing industry in the



country is very well prepared now to meet EU standards and keeps first position in its readiness among processing industries of other sectors - meat and poultry processing and dairy. Some of the fish processing enterprises are reconstructed and are operating in line with the EU hygiene, safety and quality standards of the foods with the help provided by the pre-accession Program SAPARD.

In the Sozopol region fish processing accounts for about 1.4% of total employment. In Burgas (335 jobs) and Varna (320 jobs) fish processing accounts for about 0.2 to 0.3% of total employment (Table 4, Annex 2). The total income of employees during 2005 in fish processing is approximately € 2 150 per year (Figure 15, Annex 3).

Most fish is consumed fresh or chilled. The main fishery products are frozen, with less quantities of semi-preserved or canned products. During the period 1998 - 2000, the processed fish quantity fell by 7.1%, primarily due to reduced fish canning. The local market has a limited demand. The ban on export of fish products from Bulgaria to the EU countries contributed to the reduction in fish processing. Recently the situation in processing of aquatic organisms has improved.

The total number of persons employed in fish processing industry in 2005 is 2 230. The total number of working processing plants is 26, most of them are modernized, reconstructed and they export products to the EU. The processing of *Rapana thomassiana* has become a significant activity. Six business establishments are involved, one in Sozopol, two in Burgas, two in Varna, and one in Balchik. These companies receive live *Rapana* directly from fishermen. Sales revenue for 2005 is estimated at € 4 200 000.

Most of the people are employed in *Rapana* processing, 70 % of them women. About 70 - 75% of those employed in *rapana* processing are full-time engaged, since the work is seasonal and corresponds to the *Rapana* fishing season.

A.5.2. Marketing and trade with fish and fish products

Market infrastructure is not well developed in the country yet. There is a clear necessity for organization and construction of wholesale fish markets and of fish distribution network. There are several mountain and other rural regions where distribution of fish and fishery products is quite poor and therefore fish consumption in these areas is much lower than the average levels.

There is no auction system in Bulgaria. In order to implement the requirements of EU legislation concerning Common Market Organization, Bulgaria intends to establish some points for first sale of fish which to ensure transparency, better control of data and control of quality, as well as better conditions and prices for fishermen.

Inland and marine fish supplies are traded by wholesalers /or by registered buyers in accordance with the provisions of the Ordinance on the rules and procedure for first sale of fish and other aquatic organisms/, many of whom also trade in other food products. These receive fresh fish from coastal wholesalers, frozen sprat from processors and frozen imported fish from importers, and supply the inland retail markets and shops. The volumes of fresh fish are small (perhaps less than 20% of total catches) and supplies - sporadic. A small number of Bulgarian fresh fish products and live fish are sold in big shop chains.

A.5.2.1. Export of fish products

No more than 30 % of the total fish production is exported, including export of *rapana*. More than 50% of the entire export of fish products is the export of mollusks (mussels and Sea-snail/*rapana*). The most important export partners of these products are Japan, Turkey and Greece. The major part of the exported fish species comprises frozen fish products, primarily frozen Rainbow trout. Few quantities of live carp are exported to Greece and Former Yugoslavian Republic Macedonia.

Bulgarian fish producers are interested in increasing the export for some reasons like: export prices are higher than the domestic ones; escape the limitation of domestic market in connection with low rate of consumption.

The total fish production in 2005 in fishing and aquaculture sectors is 28 164 tons, the quantity exported represents around 10 200 tons raw material (Figure 10, Annex 3).



rainbow trout (frozen, gutted, vacuum packed)	200 tons
rainbow trout (frozen, vacuum packed fillets)	100 tons
common carp (live)	140 tons
bighead carp (live)	15 tons
sprat (marinated, salted)	1300 tons
rapana (processed, boiled meat)	(8400 tons raw material) 1400 tons

Total exports of 4 064 tons live and processed aquatic organisms account for 39.9% of fish production from fishing and aquaculture. From total production, the export of marine production is 37.0%. Only 2.9% of this is fresh-water aquaculture export. The value of exported living aquatic resources and products during 2005 is € 6 300 000.

The following freshwater fish species account for the major part of the exports:

- Rainbow trout (frozen, gutted, vacuum - packed) is directed mainly to some EC countries – Germany, Belgium, Netherlands etc.
- Common carp (live) is directed to some of the neighbouring countries like Greece, Former Yugoslavian Republic Macedonia, Serbia, and Montenegro and partly to Germany.
- Black caviar from sturgeon species is also subject to export. The major part of caviar production for export has come from natural resources in the Danube River and insignificant quantities from Black Sea. The caviar production from sturgeon species is regulated under CITES Convention. Some quantities of sturgeons' meat are exported too.

The total Bulgarian fish production exported is about 1 500 tons per year (in average).

The total rapana production is exported. The estimated quantity of raw material is about 8 400 tons. Rapana is exported processed (only boiled meat). This processing reduces the weight nearly 4 - 5 times; therefore total processed rapana exports are approximately 1 400 tons.

A.5.2.2. Import of fish products

The total quantity of the total fish production for the Bulgarian market is about 45 000 tons yearly. Half of this – from 20 000 to 25 000 tones - is imported fish. The import consists mainly of frozen fish (mackerel, hake and salmon, and other species) – about 90%, some fresh fish from Greece (sea bream, sea bass, tuna etc.) and some processed fish (marinated, salted and canned).

USA and Canada are the main exporters to Bulgaria of frozen fish. Big quantities of frozen fish are imported from some EC countries. From the neighbouring countries main quantities of frozen and cooled fish are imported from Greece and Turkey.

The import of fish and fish products in 2005 was 24 770 tons with about 90 % frozen fish. Mackerel is 80% of imported frozen fish (16 393 tons) /Figure 11, Annex 3/, with the main imports coming from the following countries:

USA	50 %
Canada	20 %
UK	10 %
Holland	6 %
Norway	5 %
Ireland	4 %

There were also imports of frozen fillets (1 520 tons) during 2005 mainly from the following countries (Figure 12, Annex 3):

Argentina	764 tones
Norway	136 tones
Germany	86 tones
Spain	67 tones
Holland	30 tones



The trade balance in this sector is negative – the value of imported fish and fish product is almost 2.5 times higher compared with this one of exported living aquatic resources.

There is a tendency for increasing the variety of fish products on the market and improving hygiene conditions in the processing units. This resulted in the authorization of some processors to export to the European Union.

A.6. Angling

Angling is traditionally a very popular recreational activity in the country. In the past, during the first half of 20th century, angling took place only in natural waters – Black Sea, Danube River and inland rivers, in the lakes and in the wetlands. Gradually the opportunities for angling became bigger thanks to the newly created water basins – many dam-lakes of all sizes built all over the country during the second half of 20th century. The dams were well stocked with different fish species of domestic ichthyofauna and with some new species introduced by artificial restocking. There are many dams for fishing as a leisure time activity – 160 dams with water area 42 265 ha (NAFA's estimate, 2005). Angling in Bulgaria is in close connection with the Fishing and Aquaculture sector; the situation with the angling reflects to the general situation in the sector because of some specific characteristics /domestic traditions and habits/, as well as some legal rights of the anglers.

There are about 110 000 people in Bulgaria who practice fishing as a leisure time activity or sport, and this number gets higher every year. This kind of fishing is allowed based on a permit for angling, exception is made for fishing in Black Sea where there is no need of permit to fish. Fishing activities linked with aquaculture facilities are also growing to meet the demand of recreational fishermen and in the aquaculture sites are offered paid possibilities for fishing. During 1990's the number of people fishing as a leisure time activity decreased dramatically (20 000 people), but without a decrease in the number of people involved with angling. This increased the pressure on natural resources. The number of issued angling permits during the period 2001 – 2005 are shown on Figure 7 below. At present, angling permits are issued and anglers are registered by NAFA.

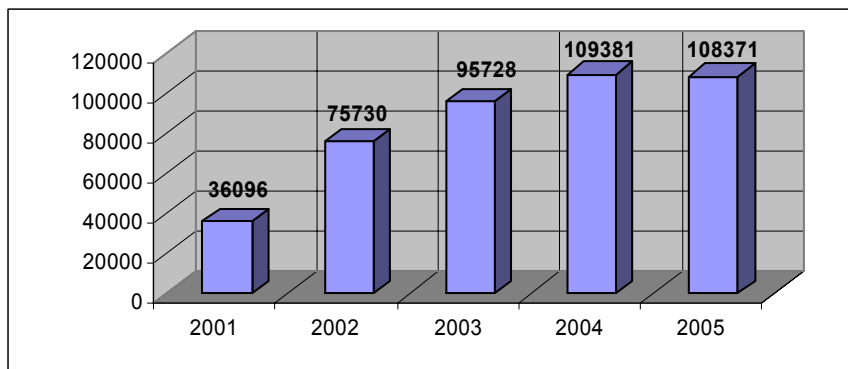


Figure № 7. Issued permits for angling by years

There are several angler's organizations (NGOs) and the biggest ones are: Bulgarian Union of Hunters and Anglers and Central Fishing Union. It is necessary to establish good connection and cooperation between the professional organizations, angling societies and state authorities. This will give better opportunities to manage and support more effectively the programs for sustainable development of fish populations, as well as will contribute to limitation of the illegal fishing activities. Thus all sides in this process that are interested in stabilization and sustainable development of fish resources will meet their interests.

According to experts' estimate, the legal catches from registered anglers amount to 3 000-4 000 tons/yearly. Probably the same quantities of fish are caught illegally. Thus, the total quantities of 6 000-7 000 tons per year should be taken into account because this represents about 20 - 25% of the total fish production in Bulgaria (commercial fishing in Black Sea, Danube River and inland waters, and aquaculture). Stronger legal and organizational measures must be first in the agenda to prevent poaching activities. Angling is



interested in collaboration with state authorities and aquaculture producers in order to ensure support for fish stocks, by effective measures.

A.7. Fish and fish products consumption

The fish and the fish products are important for the human diet as they offer valuable and healthy foods with lots of proteins, minerals and vitamins. The consumption of fish in Bulgaria, however, is traditionally low compared to the levels of consumption in neighbouring countries. The low level of fish and fish products consumption is a negative factor strongly impacting on fishing and aquaculture production.

The **consumption of fish** reached 6 kg/capita annually in the middle of 80s; in the 90s, however it plummeted to 3 kg/capita and during the last few years there is a tendency of slowly increase of fish consumption in Bulgaria /See Figure 8 below/. There were several reasons for this situation: economic crisis during the transition period to market economy, lack of tradition to prepare and eat fish regularly; seasonal character of fishing due to the specific climatic conditions of the different regions; lack of well-organized market infrastructure and poor promotion of fish products; higher prices of fish in comparison to meat from poultry; high prices of imported fish and fish products in comparison to the average incomes of the population. The positive trend for fish consumption in the country is presented in Figure 13, Annex 3.

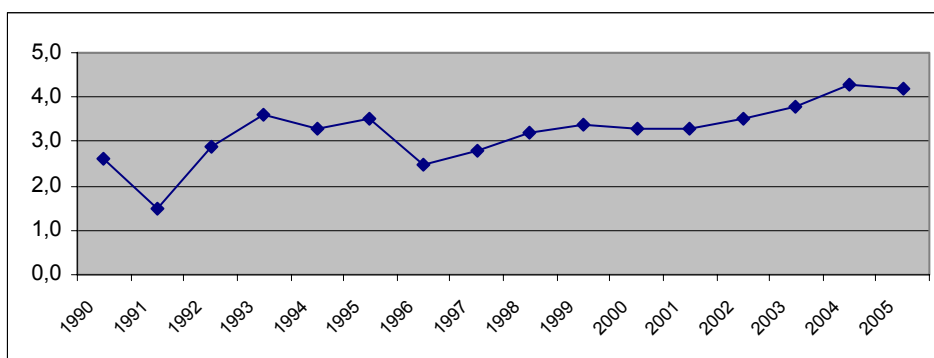


Figure № 8. Fish consumption per capita by years

Fish demand is increasing and consumer's preferences have diversified. With a total of 40 000 – 45 000 tons available for national consumption, it is estimated that individual consumption is more than 4 - 4.5 kg per capita.

It is necessary to improve the quality of market analysis and the provision of market data to identify the real figures for sales of fish and fish products, the structure of the sales and the real consumption. The consumption of fish caught by anglers (legal and illegal catches) has to be thoroughly studied and included in the data for general fish consumption. At the same time the consumers' requirements regarding the quality of fish and fish products rises, as well as the market demand for new ready-made fish products.

The policy is to increase the individual consumption of fish and fish products to 7 – 8 kg per capita. The production needed for this increased demand up to 2013 will come from increased aquaculture production (200%), marine catches (20 %) and imported fish and fish products. There exists a trend for slow increase of fish prices (retail and wholesale Figures 17 and 18, Annex 3) at the domestic market. It is a positive factor for producers reflecting to effectiveness of fish production, and for consumers it is a negative factor reducing market demand and the consumption level.

A.8. Protected areas and species in compliance with EU Conservation policy in fisheries

The particular geological and geographical situation of Bulgaria has determined formation of rich diversification of aquatic organisms. There is in the country a significant number of endemic species that are specific for the water basins in Balkan Peninsula. Thus the protection of genetic fund, as well as of the natural fish resources in the country becomes at present one of the activity with high priority in national, regional and global level.

A.8.1. Protected areas



Recently the water basins which are situated in protected territories in Bulgaria represent 20 304 ha, including the following protected areas: lake "Srebarna", lake "Durankulak", lake "Shabla", islands "Belene", lake "Pomorie", lake "Atanassovo", lake "Vaya", "Poda" area, Complex "Ropotamo" and island "Ibisha" (Fig. 14, Annex 3). The national legislation provides for the protection of biological diversity and the sustainable exploitation of its components, the focus being directed to the measures for protection. The Environmental Protection Act provides the general principles and the measures for the protection of the biological diversity.

The legal basis for the management, the protection and the utilization of the biological diversity in the country is considered finalized with the documents harmonized with the European directives in the Nature 2000 division:

- Directive 92/43/EC for the protection of the natural dwelling sites of the wild flora and fauna (Directive for the habitats);
- Directive 79/409/EC for the protection of the wild birds (Directive for the birds);
- Regulation 338/97/EC for the trade with the species of the wild flora and fauna.

It is high time be left the passive position of the authorities (including the scientific ones), the NGOs, etc. connected in any way with the management and conservation of the fish stocks and other aquatic organisms regarding the establishment of protected territories and not rely only on initiatives in relation to the preservation of other species like birds, mammals, etc. as only supporting them but to have active and leading position for the preservation, protection and rehabilitation of the water ecosystems. It is necessary starting thinking in direction of establishing protected areas also in marine waters where representative parts of marine habitats and ecosystems should be inviolable. On the one hand in the protected areas certainly the ecosystems will be recovered and migration of species outside these areas will appear, that is there will be natural support of the marine populations outside these borders, and on the other hand there will be standard according to which the changes in the rest humanly exploited parts of the Black sea will be measured.

After 1990 the polluting inflow into the Black Sea was considerably restricted with the beginning of the construction of purification plants. The investigations for 2004 indicate decreased value of biogenic substances. The metal content value is below the admissible limit or the detectable values. The dissolved oxygen content in the bottom layers is increased, indicating decreased volumes of dissolved organics.

A.8.2. Protected species

There are 41 fish species included in the Red book of the Republic of Bulgaria, Vol. 2 Animals (1985). This requires the implementation of adequate measures for their protection and for conservation of the population. The protection and the sustainable exploitation of the biological diversity provisions are stated in three main Acts (Protected Territories Act, Healing Plants Act and Biological Diversity Act) and secondary legislation acts.

The protected species in Annex 3 of the Biological Diversity Act in Bulgaria are: *Acipenser sturio*, *Alosa caspia bulgarica*, *Alosa caspia nordmani*, *Alosa fallax nilotica*, *Alosa maeotica maeotica*, *Alosa pontica pontica*, *Aspius aspius*, *Barbus meridionalis petenyi*, *Cottus gobio*, *Gobio albipinnatus*, *Gobio uranoscopus*, *Gymnocephalus schraetzer*, *Hucho hucho*, *Misgurnus fossilis*, *Rhodeus sericeus amarus*, *Sabanejewia aurata balcanica*, *Sabanejewia bulgarica*, *Zingel streber*.

A main problem is that the list with the species included in the Red Book is from 1985 and so far the picture has considerable changed. In it is included *Rhodeus sericeus amarus* which is popular species in Bulgaria and it should not be present there and at the same time are absent species which should find place in the Red book. The species contents needs updating. And the elaborating of such list will inevitably reflect also on the legislation in order to ensure adequate measures for protection and conservation of the fish populations.

All Sturgeon species are included in Annex II of CITES Convention for International Trade with Endangered Species from the wild fauna and flora. In order to implement CITES procedures, the common rules for conservation sturgeon species are incorporated in the Biological Diversity Act. According to the Act, the Minister of Environment and Waters and the Minister of Agriculture and Forestry prepare an Ordinance for



the regimes and conditions of conservation and regulated exploitation of sturgeon species. The ordinance regulates quotas determination, as well as conditions for possessing, marketing and transportation of the species. The ordinance regulates as well as the trade with black caviar in the internal market as introducing the CITES common system for identification of caviar.

The specific feature in Bulgaria is that the persons received export quota or domestic trade quota should make restocking of the Danube River with Beluga or Russian sturgeon. The attitude to these restockings is not unanimous among the experts. According to part of them the restockings contribute to the sustainable development of the sturgeon species. Other, greater part opposes against the restockings of this kind because of the lack of control regarding the genetic origin of the stocking material (if its origin is of the sturgeon populations in the Danube river) and the lack of back information whatsoever for survivability of the fish fingerlings which are artificially bred and to some extent tamed.

Bulgaria has undertaken the necessary steps for enacting a moratorium of sturgeon species for defence in the Black Sea and the Danube River regions. The fish resources in the Danube must be strongly supported through complex measures for fish protection and restocking to be implemented by the Danube countries. It is envisaged that a common Action Plan between Bulgaria, Romania, Ukraine and Serbia for the establishment of restrictive measures and protection of the endangered species in the region should be signed.

Of the marine species the turbot is with decreased stocks and is an object of quoting by NAFA. The main reason for the decreased amount of the turbot population is the unregulated fishing and fishing with smaller mesh size than the legally allowed. It is necessary strengthening of the control over the turbot catches and permanent monitoring regarding the dynamics of its stocks by scientific organizations.

The protection and the utilization of the fish resources should be developed in the following directions:

- Utilization of the structural funds and the EFF for investment in the development of eco-coherent activities;
- Favorable protection and conservation status for the marine habitats and the species that are not targeted by commercial fishing;
- Assessment and restriction of the harmful effect of the aquaculture production and the fishing activity over the environment and the biological diversity;
- Enhancement of the information level and stimulation of the interest of the stakeholders in the sector for the eco-coherent development of aquaculture production;
- Monitoring of the state of fish resources, their exploitation rate as well as the eco-coherent development of the fishing.

A.9. National Program for Sustainable Development of Fish Populations

Till 2006 every year is prepared National Program for Restocking, as well as is effectuated the restocking in inland water basins for angling. In compliance with the program are restocked the dams as: Iskar, Koprinka, Al. Stamboliiski, Belmeken, Ogosta, Golyam Beglik, Beli Lom, Ticha, Tzonevo, Kardjali, Studen Kladenec, Trakietz, Kamchia etc., as well as the inland rivers and Danube River.

Following the adoption of the amendments in the Fisheries and Aquaculture Act in 2005 there is a possibility to be elaborated long-term approach for supporting the sustainable development of the aquatic organisms and in particular for the development of fish species, as the efforts should be concentrated not only over the restocking but also should be oriented to other measures as:

- Breeding of fish species in natural conditions;
- Supporting fish reproduction and creation of premises for enhancement the surviving the spawns and eggs (setting up of artificial places for reproduction made from artificial and natural materials);
- Improvement of habitats of species (fish thresholds, establishment of shelters etc.);
- Transferring of sexually mature individuals from water basins with good condition of populations in water basins where the same populations are with lower stocks or are liquidated;
- “Ensuring” of migratory ways - passages of dikes etc.).



In the National program for sustainable development of fish populations it should be included the principles as:

- Research activities concerning the situation of fish stocks in the water basins and after restock with the adequate quantities and qualities of relevant species.
- Monitoring the restocking impact and other actions relevant to it.
- During the restocking, the raw material to be of the same origine as the region which is restock.
- Actual information for the dynamic of fish species in courant and standing waters.
- Special attention related to the endangered species, as well as searching of ways for restocking of desapeared species.
- Transparent rules for cooperation and interconnection with the Non-governmental organizations.

A.10. Fisheries infrastructure and organization

A. 10.1. Fishing ports

The main fishing ports are situated in Varna, Burgas and Sozopol and smaller ports in NUTS IV regions. Installations in harbour zones need modernization and an adequate capacity: Ice production, fitting out of sanitary/safe unloading zones, spaces for transport logistics, etc.

At present all Bulgarian fishing ports are state or municipality property. The main fishing ports, villages and the property of the fishing ports in Black Sea region are shown in Table 15, Annex 2.

It is envisaged to be modernized several fishing ports. The priority will be given to the development of the following fishing ports: Kavarna /Buna 3/, Kranevo /Buna Kavalkar/, Varna /Bunite, Kanal More - Ezero /UPMK/, Nessebar, Pomorie, Burgas, Sozopol, Primorsko, Kiten, Carevo, Ahtopol.

The level of modernization of fishing ports, landing sites and shelters along the Danube River is poor.

A. 10.2. Producers' organizations

There are no Producers' Organizations (POs) in Bulgaria in the sense of the European legislation /Regulation EC 104/2000/. Nevertheless there are several fishermen or fish producers' associations /with the statute of NGOs/ which could form the basis for POs. The main producers associations are:

- Association of producers of fish products - registered and headquarters in Sofia (BG FISH);
- National Association of Fisheries and Aquaculture in Bulgaria – registered and headquarters in Plovdiv (NARibA – BG);
- Bulgarian fishing association – registered and headquarters in Burgas (BFA) and part from the Association of producers of fish products /BG FISH/;
- Association of Fish Producers, Yambol (FPAY);
- Association of Fish Producers, Ruse (FPAR);
- Association of Fish Producers, Veliko Tarnovo (FPAVT).

During 2005 was created Bulgarian Federation of Fisheries and Aquaculture by now including in its structure NARiBA-BG, FPAY, FPAR and FPAVT.

A. 10.3. Promotion of fish and fish products

To develop aquaculture, fishing and fish processing industry it is necessary to organize special ***promotion actions*** and to carry out advertising project promoting fish and fish products as nourishing, healthy and dietetic food for people. The actions promoting the consumption of fish and fish products have to be based on comparison with the replacing commodity – different types of meat. In Bulgaria at present the consumption of meat is six times higher than fish consumption and the consumption of poultry – twice as higher.



The positive trend of consumption has to be supported by the state authorities and producers' organizations by organizing fish promotion and advertising campaigns. Health authorities have to join these actions in respect to promote fish as the most dietetic and healthy food. The restructuring of aquaculture production has to reflect to improvement of quality and safety standards of fish products and wider range of new products. This will better promote Bulgarian production to the EC market.

A.11. Action Groups in fisheries

Bulgaria envisages to determinate 7 potential areas and by open call of tender to be designated 2 or 3 Action Groups in Black Sea, 1 AG in Danube River and 1 or several for inland fisheries area.

In the process of selection of criteria for the establishment of Action groups in fisheries, NAFA made terms with the United Nations Development Program /UNDP/ for partnership agreement, by which agreement the mentioned organization to be engaged with the determination of relevant criteria for selection of groups, as well as with the identification of the groups. The main criteria for selection the groups are identification of the major actors and organisations that affect the success of the development strategy in fisheries, determination of points of common interest and of conflict, as well as tradition of cooperation between the fishing communities involved in the group, identification of the opportunities for accumulating joint capital and determination the weight of the private sector in the fisheries area, identification of environmental, cultural etc. groups, and their potential for organization of partnership, adoption of relevant actions for establishing channels of communication.

Cooperation in fisheries between Romania and Bulgaria in exchanging and sharing good practices, developing activities that might be of interest to fisheries groups, as well as of topics or activities developed that might have broader national and European policy impact is envisaged in Danube area.

The criteria for defining the fisheries area are territorial priorities of the country and traditions in fisheries; size and critical mass of the area; coherent targets for long-term development; homogeneity of the population (geographical, social, ethnical), opportunities for cooperation; human resources (unemployed human resources); lack of alternative ways of economic activity; special areas with national and international importance; tendency to decrease in fisheries and economical potential.

Fisheries Action groups should meet the following minimum of criteria:

- ✓ To represent public and private partners from the various relevant socio-economic sectors and according to a principle of proportionality as to achieve a balance between the socio-economic composition of the fisheries area and the composition of the partnership;
- ✓ To dispose of adequate administrative and financial capacity to administer the assistance and to ensure that the operations are completed successfully;
- ✓ To be based on existing experienced organisations, wherever possible.

B. Education, training and research

The scientific, research and education centers related to the fisheries sector in the country are:

- **Faculty of Biology within the Sofia University „St. Climent Ohridski”**, with the Department of “Hydrobiology and ichthyology” – is the main structure to prepare highly qualified specialists in the field of fisheries;
- **Institute of Fish Resources in Varna.**
- **Institute of oceanology in Varna.**

These are the institutes specialized for research activity in Black Sea.

- **Institute for Fisheries and Aquaculture in Plovdiv** – specialized in research activity in the area of aquaculture.
- **Institute of zoology with natural museum in Sofia** – with Department of hydrobiology and ichthyology;
- **Central laboratory of ecology in Sofia;**



- **Trakia University in Stara Zagora;**
- **National Veterinary Institute for Rresearch and Diagnostic activity within the National Veterinary Service to the Ministry of Agriculture and Forestry.**

NAFA will profit in a high degree from the appropriate activities and results of the research institutes in its obligations for organization and management of fisheries sector in Bulgaria, as well as the Agency will profit, organize and/or participate in education and training activities for its administration, for the professional organizations and for the employed persons in the sector.

The Institute of Fish Resources and the Institute of Oceanology in Varna accomplish scientific research activities and give recommendations for the sustainable exploitation of fish and other aquatic resources in Black Sea. Commercially exploited fish stocks in the waters are managed in accordance with the principles of the Common Fisheries Policy (CFP).

The scientific exploration of the dynamic of fish populations of the commercially important, valuable and protected endangered species in the dams, lakes and rivers are carried out in the Institute of Zoology, Bulgarian Academy of Sciences (BAS), in the Department of Biology, Sofia University, as well as in the Central laboratory of Ecology in Sofia.

The Institute of Fisheries and Aquaculture in Plovdiv is mainly engaged in scientific and research activity in the area of aquaculture, and especially in the development of technologies for breeding valuable and commercially important species, as well as in the production of raw material from productive species.

Besides the shortage of money for the existing scientific organizations, there is no sufficient communication between aquaculture producers, the fishermen organizations and the scientific institutes. The problem can be solved by using the options of the Community financial measures for the implementation of the EC Common Fisheries Policy, as well as by the provisions of the Convention for the Law of the Sea from 1982.

For dissolving the problem will also contribute the public and the private partnerships.

C. Other aspects of the Common Fisheries Policy - Bulgarian licensing and registration system

The **National Agency of Fisheries and Aquaculture** is the administration responsible for the organization of licensing system for fishing and for issuing all fishing licenses for commercial fishing and permits for angling. It has the rights to organize registration systems for aquaculture producers, as well as for the other activities subject to registration and to hold up the registers under Fisheries and Aquaculture Act provisions. NAFA has to organize and maintain Satellite-based fishing vessels monitoring system.

NAFA is also the main fisheries control administrative body and it organizes the control system for fishing activities jointly with the **National Forestry Department** (within the Ministry of Agriculture and Forestry), Directorate general "**Border Police**" /within the Ministry of Interiors/ and some other administrations. NAFA has 27 Regional Fisheries Inspectorates situated in all regional centers of Bulgaria (according to the state administrative structure).

The fisheries surveillance inspectors carry out their control activities on the fishing vessels in the Bulgarian aquatory of the Black Sea by inspecting the licenses for commercial fishing, of the completion and submission of fishing logbooks and landing declarations, the use of fishing gears and devices, the observing of quotas for certain fish species and defence period, the use of aquatic living resources, as well as the first sale and transport documents, the existing storage and freezing installations.

NAFA maintains a National Information Fisheries and Aquaculture Statistics System. The fisheries surveillance inspectors from the 27 Regional Fisheries Inspectorates carry out their control activities and collect initial information concerning:

1. Licenses for commercial fishing, for the registration of persons performing activities subject to registration pursuant to the provisions of the Fisheries and Aquaculture Act, and for the angling permits;



2. Control on the production, transportation and stocking of genetic material;
3. Control on the compliance with the conditions for use of fish resources;
4. Control the fishing gears and devices, the equipment and the auxiliary materials and other technical means for fishing;
5. Control on the issued veterinary certificates and genetic certificates;
6. Control on the trade in fish, other aquatic organisms and products thereof with regard to the origin and the rules for the first sale;
7. Inspection of vehicles, vessels and boats;
8. Check of documentation for transportation and trade in fish and other aquatic organisms;
9. Drawing up of statements against established violations.

The collected information is summarized in the respective NAFA's Fisheries Inspectorate and the information is submitted to NAFA's headquarter via the above mentioned system /NIFASS/ functioning in Internet domain. The presented statistical data for the current situation and development of the sector are being processed, summarized, analyzed and kept in the following forms and registers:

- Register of commercial fishing licenses issued;
- Register of angling permits issued;
- Register of aquaculture farms;
- Fishing Vessels Register (Executive Agency "Maritime Administration" holds up Fishing Vessels Register jointly with NAFA);
- Register of centers for first sale of fish;
- Register of fish buyers registered in accordance with Fisheries and Aquaculture Act;
- Register of recognized fish producers' organizations (FPOs) and inter-branch organizations in the sector recognized by the Minister of Agriculture and Forestry;
- Register of fishing rights for permissions issued for research purposes; administrative-penalty activity, enforced under FAA provisions; production of fish and other aquatic organisms; catch of fish and other aquatic organisms.

The statistical information is submitted annually to FAO and EUROSTAT.

D. Environmental Issues

The effective management of fish stocks is accomplished through scientific research activities on the dynamics of fish stocks and analysis of statistical data of catches by which quotas for certain species are determined. There are used the results from the research projects such as: "Quantitative and qualitative estimation of mussels field in Bulgarian Black Sea aquatory" /2005/ – Bulgarian Fishing Association research activity; "Estimation of Venus (*Chamelea*) *gallina* stocks in Bulgarian coastal area" /2004/ – research carried out in cooperation between the Institute of Fish Resources /Varna/ and the Bulgarian Fishing Association; "Action Plan for sturgeon species in the Bulgarian aquatory of the Danube River and Black Sea" /2003/ - Institute of Zoology, Bulgarian Academy of Sciences; "Dynamics of fish populations in winter-generative period in the Bulgarian aquatory of the Black Sea" /2000/ and "Dynamics of nutritive basis and commercial fish stocks in Black Sea" /1999-2000/ - Institute of Fish Resources, National Center of Agrarian Sciences; projects completed from the Institute of Oceanology /BAS/ concerning the ecological methods for preserving and restocking marine ecosystems.

The governmental and non-governmental organizations, as well as scientific and research organizations take advantage of the scientific data and documentation. The standpoints of the scientific bodies support NAFA's management decision-making process.

NAFA and the Institute of Oceanology signed an agreement for scientific cooperation with the following areas of cooperation: methods and means of sustainable management and development of fish resources and aquaculture in the Black Sea; problems and possibilities for eco-environmental exploitation of the Black Sea resources; determination of the dynamics of fish and other aquatic resources in Black Sea; assessment of populations of the endangered species and elaboration of measures for their conservation and sustainable restoration; elaboration of methodology and annually presentation of Maximum Allowable Catches /MAC/; preparation of motivated standpoints on the scientific basis concerning the



increase/decrease of the Maximum Allowable Catches /MAC/, respectively imposing of moratorium on the catches of certain species; development of aquaculture and possibility of introducing new technology in aquaculture; elaboration of standpoints concerning the impact on the environment; participation in international surveys.

E. Description of the fisheries administration. Fisheries legislation

E.1. Administrative capacity, competencies of different institutions

The **Ministry of Agriculture and Forestry /MAF/** is the main governmental institution responsible for the enforcement of the Bulgarian Fisheries and Aquaculture Act. In accordance with FAA, the Minister of agriculture and forestry has the power to regulate all administrative and organization procedures. All types of regimes - licensing, permitting and registration regimes in the fisheries and aquaculture sector and the other activities and procedures are under the jurisdiction of the Minister of Agriculture and Forestry. He has the power to regulate the rights, obligations and functions of governmental bodies responsible for the implementation of the Fisheries and Aquaculture Act. The Minister of Agriculture and Forestry jointly with the Minister of Environment and Waters determinate the rules and procedure for the accomplishment of fishing activities related to the species, included in Annex 4 from the Biodiversity Act, as well as the Ministers have the power to observe the rules and procedure for protection of fish population during the reproduction period and in dryness /insufficiency of water/.

The **National Agency for Fisheries and Aquaculture (NAFA)**, which was established within the Ministry of Agriculture and Forestry, is responsible for the management of the whole fisheries sector. The 27 Regional Fisheries Inspectorates of NAFA are responsible for field monitoring and control activities in place. NAFA's administration number is 350 persons, the major part of this figure represent the fisheries surveillance inspectors from the Regional Fisheries Inspectorates.

NAFA is both secretariat and operational co-ordinator of the NSPFA and OPFA and together with the Working Group, which includes all the stakeholders and is established following the decision on 18.11.2005 of the Coordination Council of the National Development Plan to co-ordinate the process of preparation of the programme documents for the participation of Bulgaria in the EFF.

NAFA is the Managing Authority of the EFF and because of this a specific Managing Unit was established in its central administration. The managing unit should be responsible for the implementation of the Monitoring/Management Information System. This Unit will work closely with the Monitoring Committee and will prepare the criteria for selection the projects and will set up the eligibility criteria for the incoming projects.

The Paying Agency will be the body that will implement EFF financing.

In order to reach its objectives, NAFA as the administration responsible for the management of fisheries sector in Bulgaria has the following functions:

- To draft development strategies for fishing, aquaculture and processing, according to the Government's economic policies;
- To manage the structural policies in the field of fishing and aquaculture;
- To regulate the specific legal framework;
- To control and inspect.

After Bulgaria's accession to the EU, NAFA will need support in all areas of its competences: more IT equipment and development of special software for different types of its activities; more ITC equipment and technical assistance in implementation of its Communication strategy; scientific equipment for molecular and genetic analyses and certification of fish species and for research and assessment of the fish resources in the Black Sea, Danube River and inland water basins; technical assistance for strengthening the administrative capacity of the Agency; more off road cars and patrol boats with GPS navigation, etc.

The **National Veterinary Service** within MAF is the government administration with the power to control all fishing and aquaculture activities, enterprises and facilities related to the sanitary requirements and



standards.

NVS has the authority and rights to organize the state veterinary monitoring and control system, in the fish processing enterprises, to register aquaculture production sites (aquaculture farms), to organize the national system of fish disease control, treatment and prophylaxes, as well as to issue veterinary certificates to fish and aquaculture production for selling to all markets, for transportation, processing, import and export. NVS holds up central and regional veterinary laboratories to monitor and control all aspect of veterinary, sanitary and safety status of fish/aquaculture production.

National Veterinary Institute for Research and Diagnostic activity is within the structure of the National Veterinary Service. The Institute has specific responsibilities and obligations in the field of veterinary and sanitary control in the fisheries and aquaculture sector. There is a laboratory within the Institute which laboratory is specialized for monitoring in the field of fish diseases. The above mentioned laboratory is authorized with Order No.RD 09-545/30.06.03 of the Minister of Agriculture and Forestry and carries out laboratory diagnostic research in compliance with the EC Directives 91/67/EEC and 93/53/EEC and Decision 2001/183/EC. The above mentioned laboratory implements the National plan for monitoring the application of veterinary medicine and the level of residual substances in fish and fish products, specified in Annex No. 1 of Directive 96/23/EEC.

The **National Forestry Department** within MAF is a state administration with the functions and authority to organize and control activities in the field of hunting and angling in accordance with the Forestry Act, Hunting Act and Fisheries and Aquaculture Act. NFD is working jointly with NAFA to organize and control angling, to issue angling permits etc.

The **Executive Agency “Maritime Administration” /EAMA/** within the Ministry of Transport is a state authority with the functions and rights to register and to control the civil fleet. EAMA holds up the Vessels Register and jointly with NAFA holds up the Fishing Fleet Register.

NAFA undertakes joint activities also with the **Directorate general “Border Police” /within the National Service “Police”/** to the Ministry of Interiors.

The Ministry of Agriculture and Forestry and the **Ministry of Environment and Waters** exercise the control on the preservation of the biological diversity of fish resources. The Ministry of Environment and Waters issues the relevant licences for water use and for use of water basins for the inland water bodies, as well as for the Black Sea.

E.2. Fisheries legislation

Bulgaria has undertaken certain commitments in the pre-accession negotiation period, that defined the priorities for the fisheries sector for adoption of the Bulgarian legislation in conformity with the Community legislation /Acquis communautaire/ as well as harmonization with the requirements of the internal market of the Union, for the effective implementation of the mechanism of the Common Fisheries Policy of the EU and the statistical methods of EUROSTAT in the statistical information sphere. The country fulfils the commitments undertaken for Chapter 8 “Fisheries”, the FAO Code for responsible fishing as well as the Convention for the International Trade with Endangered Species (CITES).

The Fisheries and Aquaculture Act /FAA/, providing for the management, exploitation and the conservation of the fish resources and the commercialization of fish and other aquatic organisms was adopted in 2001. With the recent amendments of the FAA, adopted in November 2005, the FAA was entirely harmonized with the fisheries Acquis. The amendments introduce the basic principles of the European legislation regarding the registration of the first sale of fish, the rules for the recognition of organizations that produce fish and other aquatic organisms and inter-branch organizations.

The following secondary legislative acts for the implementation of the Common fisheries policy /CFP/ have been adopted:



- Ordinance № 43/2006 on the rules and procedure of keeping the fishing logbook and issue and submission of landing declaration, /SG № 41/2006/;
- Ordinance № 4/2006 on the rules and procedure for first sale of fish and other aquatic organisms, /SG № 14/2006/;
- Ordinance № 7/2006 on the rules and procedure of use, maintenance and keeping of the system for monitoring and control of the fishing vessels, introducing the requirements of EC Regulation № 2244/2003, and establishing detailed rules regarding the Fishing Vessels Monitoring System, /SG № 15/2006/.
- Ordinance № 54/2006 on the content and procedure of keeping the registers under Article 16 from Fisheries and Aquaculture Act, which introduces the provisions of EC Regulation № 26 from 2004, /SG № 45/2006/;
- Ordinance № 41/2006 on the rules and procedure for recognition of organizations, which produce fish and other aquatic organisms, /SG № 40/2006/.

With the adoption of these ordinances, the Bulgarian legislation is fully harmonized with the *Acquis Communautaire* in the area of fisheries.

II. SWOT ANALYSIS AND CHALLENGES

A. SWOT Analysis:

A detailed SWOT analysis by sub-sectors is presented in Annex 1.

The main strengths are related to the potential of development of freshwater and marine aquacultures, the availability of underexploited natural fish and other aquatic resources, the high human resources potential combined with low cost of labour and market potential.

The main weaknesses are the limited access to financial resources, the outdated installations and equipment, the insufficient marketing and port infrastructure, as well as the limited possibilities of the internal fish and fish products market.

The main opportunities: increasing domestic demand for fish and fish products, diversification of activities and potential market niches, as well as export-oriented fish products production.

The main threats: increased competition on the EU market, insufficient capitalization in processing and aquaculture sub-sectors, environmental pollution.

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Potential market to be developed 2. Hydrographic network; 3. Existing natural fish resources; 4. Human resources potential 5. Tradition in research and education; 6. Specific resources (sturgeon, turbot). 	<ol style="list-style-type: none"> 1. Limited access to financial resources ; 2. Insufficient equipment and outdated installations; 3. Administration not fully adapted to the requirements of the CFP implementation; 4. Low diversity of fishing species; 5. Poor implementation of research results; 6. Insufficient promotion of fisheries products 7. Insufficient marketing infrastructure 8. Insufficient port infrastructure 9. Serious pollution of Danube River waters by the chemical industry 10. Heavy procedures to get legal permissions for accomplishment of fishing activities in dam-lakes.



Opportunities	Threats
<ol style="list-style-type: none"> 1. Increasing demand for fish and fish products; 2. Development of internal fish market. 3. Possibilities for introduction of new species in aquaculture 4. Potential market niches 5. Diversification of activities via development of fishing tourism and ecotourism in fisheries areas; 6. Potential to produce other aquatic organisms, other than fish species; 7. Converting fishermen to aquaculture production of more valuable fish species export-oriented. 	<ol style="list-style-type: none"> 1. Over fishing for some endangered species; 2. Increased competition on the EU market (EU-27); 3. Consumers' preferences changed to other products (imported marine products); 4. Processing and aquaculture sub-sectors not enough capitalized 5. Accidental or environmental pollution (Danube River and/or Black Sea); 6. Continuing the downward trend of the total volume of catches in marine fishing sub-sector.

B. Challenges:

B.1. Economic changes in the fisheries sector

Fishing and fish farming development can provide the opportunity to carry out auxiliary activities;

The development of the processing sub-sector leads to the opportunity for increased value-added, new jobs and a better import-export balance.

B.2. Development of civil society

Bulgaria's vision after the accession to the EU is that of a country with a high living standard, based on sustainable socioeconomic growth and full integration to the European Union. This will lead to a higher demand for quality, safety and diversity of products.

The fishermen accomplished commercial fishing or angling should be more responsible in using of natural resources and should be better integrated into the ecosystem. Aquaculture producers should increase their own requirements related to the use of environmental friendly production methods and technologies.

B.3. Environmental changes

The importance of an ecologically sustainable development (ESD) in the sphere of fishing activity is being increasingly recognised as based on the CFP principles.

III. VISION FOR BULGARIAN FISHERIES AND AQUACULTURE SECTOR IN 2013

The National Program of Fisheries and Aquaculture Development (the national strategic document for fisheries and aquaculture sector) supports and guarantees the fulfilment of the priorities and measures of the National Strategic Plan for Fisheries and Aquaculture (NSPFA) and the Operational Program for Fisheries and Aquaculture (OPFA) during the period 2007 – 2013, as they are determined in the Regulation of the Council of the European Union № 1198/2006 and in the Regulation of the European Commission № 498/2007, related to European Fisheries Fund (EFF). These strategic documents ensure the sustainable development of the fisheries sector in Bulgaria.

The Bulgarian fisheries sector:

- ✓ Contributes to the preservation of the environment, the protection of the biodiversity in the water ecosystems of Bulgaria, to the replenishment and maintenance of optimal stocks of valuable fish species in



natural water basins, and to the sustainable development of fresh and marine water aquacultures;

- ✓ Contributes to the increase of the culture of population in the country in healthy diet;
- ✓ Meets the European standards and requirements regarding the production, processing and marketing of fish and aquaculture products;
- ✓ Becomes a modern and competitive sector in a quickly globalizing world, due to the constant innovation activities fostered by strong links among science and research institutes and producers of fish and aquatic organisms products;
- ✓ Becomes a flexible self-regulating economic sector, because of the established partnership and the joint actions by the private stakeholders, the Non-governmental organizations and the respective national authorities and European structures;
- ✓ Becomes an economic sector with sustainable development that adds value to local products and brings rewarding incomes to the people involved with fishing and aquaculture activities in Bulgaria;
- ✓ Gets well integrated with Bulgarian traditions and other sectors of the economy – achieved by diversification with alternative activities [i.e. tourism, services, etc.].

Sustainable development and impact of the sector to the national economy could be identified and measured by several economic and production factors. The results from achieving progress in the sustainable development of the sector /along with the vision above/, should be identified within concrete parameters and measured with particular indicators, i.e.:

- Increasing the relative share of Fisheries sector in the GDP; The sector should achieve sustainable share in the formation of the GDP – each year adding approximately 1.0% to it;
- Increasing the share of fish and other aquatic products in the Bulgarian foodstuff market; the annual consumption of fish per capita should reach 7.5-8.0 kg on average;
- Increasing the annual production of aquaculture products to reach at least 12,000 tons of fresh and processed fish and fish products; the primary products for the produced foods should be from own sources;
- Increasing the share of the valuable and delicacy species of fish to at least 60% for total aquaculture production; the increase should be at the expense of the share of the carp species;
- Restructuring of the Black Sea fishing fleet and increasing that part with modernized fishing vessels with adequate and modern fishing equipment and facilities;
- Organization of effective Fisheries Statistics System with capacity to cover at least more than 90% of the total volume of fish and other aquatic organisms production /catches and aquaculture/;
- Number of projects by the private sector and by the the non-governmental organizations to support fish stock of valuable and market demanded fish species in the water basins;
- Increased income of the people employed in the sector;
- Increasing the share of specialists and workers in the sector with appropriate qualifications for their positions to 80 %.

Bulgaria is interested in having a sustainable development of fisheries sector and better use of its natural resources in conformity with the national and local traditions. In terms of food safety, sustainable development becomes even more acute as a result of the EU countries' acceptance without reserves of the Lisbon Strategy – 2000. Republic of Bulgaria undertakes to realize the objectives from its strategy, as well as to observe the structural reforms. In this sense, from NAFA is expected to have a main role in adapting the Bulgarian fisheries sector to the European requirements, as well as to ensure a balance of exploitation and conservation of natural resources.

From the present state of play of the fisheries sector in Bulgaria results the need for development of fishing, aquaculture and processing, in order to diversify fish products based on consumer demands and the standards of quality and food safety. These moves are necessary in the context of domestic needs, but also in order to support domestic production, given the impact generated by this market.



A. Definition of the problems evolving from the negative status of the fish resources, social-economic problems of the different parts of the sector, limitations of environment, globalization of fish and fish products market

A.1. Fish resources limitation

The status of fish resources in Black Sea (except Sprat) and Danube River having a trend of decreasing will be the permanent negative factor for the development of fisheries in coastal areas. Reduction of number of old fashioned and not adequately equipped vessels will become necessary and unavoidable measure. The reconstruction and modernization of fishing vessels in use and their technical and technological facilities is an obligatory measure.

In the inland water sites there are also changes in the state of the fish stocks in quantitative relation as well as changes in the proportion between the separate species (commercially valuable/not valuable) and in the age structure of the populations. This negative development of the state of the fish stocks leads to changes in the regimes for fishing regarding separate species as well as regarding separate water sites. In order to be compensated the worsened state of fish stocks it is necessary a set of measures to be undertaken by the state authorities together with the NGOs for recovery and support of the fish populations and at the same time the aquaculture production in these water sites to be developed including stocking material.

Causes for the decline state of fish and of other aquatic organisms in the country:

1. Excessively seizure of fish and other resources due to legal or illegal fishing;
2. Shortage of scientific researches of the status of fish resources and of the implementation of the results in their management;
3. To sustain optimal level of stocks in the inland water basins in the conditions of intensive fishing it is not enough only the natural reproduction of resources.
4. Shortage of target financing in for the implementation of measures for sustainable development of fish and other aquatic organisms' resources in inland waters, in Danube River and in Black Sea, as well as for further monitoring.

A.2. Socio-economic limitation

The common problems for the sector are the low consumption of fish and fish products due to the low level of purchasing capacity, lack of good market infrastructure and traditions.

The main specific problems for the different sub-sectors are:

- Old and not effective fishing fleet, as well as the lack of effective fishing methods and gears;
- Poor status of the fish resources of main high value species
- high level of poaching;
- Low level of investors' interest to invest in marine aquaculture;
- Lack of know-how and modern technologies and experience to construct new farms and to produce valuable fish species (Ex: Turbot, Crayfish, etc.);
- Lack of investments to rehabilitate and activate ponds and capacities in freshwater aquacultures;
- Low level of investors' interest to build up modern aquaculture sites;
- Poor state policy to stimulate aquaculture development as regards to waters and waters basins (reservoirs) effective and preferential use;
- Lack of developed market infrastructure to supply fresh fish in the whole country's territory.

A.3. Environment limitation

Subject of limitation of fish production has to be the net-cages fish farming in regard to the maximum admissible volume production in each concrete water basin. The limit of total fish production in net-cages depends on several factors and has to be determined in relation with each of them. Some of the main



factors are: water surface of the basin; deepness of the water basin; technology of production; water quantity supply to the basin; temperature regime during the year; fish feed and other components and materials in use; construction and material for net-cages and other facilities of the farm, etc.

Balance of these entire factors ensures both water and fish production quality.

Fish processing facilities are equipped with waste water cleaning installations and they cover environment requirements too. They are under the control and restrictions of environment and sanitary law regulations and administrations.

A.4. Globalization of fish market

Globalization of world's fish market has impacts on the Bulgarian fish market as well. More than half of the total fish production on the domestic market originates from different countries with well-developed and operating in long-distance fishing fleet.

EC market organization and rules will be implemented on the country market step by step. Bulgarian fisheries sector as a whole /state authorities, production sector and branch organizations/ and the market of fish and fish products are preparing for the EC market and for the open global market. The new rules and requirements will protect both consumers and the private sector.

B. Importance of the EC Common Fisheries Policy seven policy areas for the Bulgarian fisheries and aquaculture sector's key priorities

The National Strategic Plan "Fisheries and Aquaculture" is structured around the CFP seven policy areas, as set out below. Bulgaria is a new Member State and its fisheries sector defines its strategy and general objectives for each of these areas. Thus the most important strategic issues and goals for the country in each of these areas are:

B.1. Sustainable exploitation of fish resources

The most important factor for Bulgarian fisheries sector development is to ensure stability of resources and their sustainable exploitation. The measures which will be implemented through various future activities are:

B.1.1. Information and scientific monitoring of fish resources.

This affects mainly the Black Sea and the Danube River, as well as the situation in inland water basins. The administration, the scientific institutes and organizations in the sector are in preparation of all necessary measures to organize a well developed, situated and working Monitoring and Information System. The system will cover all information based on the data collected by the monitoring system: state of the resources available by species; amount of year catches by species; number of issued licenses and permits for fishermen, fishing fleet characteristics and total fishing effort.

Prognoses and recommendations for sustainable use of fish resources are being prepared based on the scientific approach of the fish stocks dynamics.

B.1.2. Rebuilding and management of fish stocks.

To ensure the development of the sector it is necessary to support the main fish species stock by different measures: control on fishing activities and angling to avoid over-catches and use of forbidden fishing gears, poaching, to observe the strict prohibition during the natural reproduction seasons etc.

B.1.3. Regulation of catches, fishing effort and fishing licenses.

The existing fisheries legislation and the administrative capacity of the state authorities have a good status and allow the organization of the regulation process. It is necessary to improve the management and the quality of the fishing effort regulation in accordance with the new legislation. The fisheries administration as well as and the sector are in the process of preparation for these actions.



B.1.4. Management and adjustment of the fishing effort.

The Black Sea fishing sector will adopt relevant measures for fleet reconstruction and adaptation /in conformity with the available resources/. In parallel, all other measures of fish resources protection will be introduced, including modernization of fishing gears and methods for selectivity in respect to the use of more environmentally friendly and protecting the resources measures.

B.1.5. Conservation and protection of resources.

Programs for the conservation, restoration and sustainable development of aquatic resources and their habitats have to be elaborated, approved, managed and implemented. The main is the National program for protection, restoration and sustainable development of the resources of fish and of other aquatic organisms for the programming period. The Program has to include some general measures of conservation, protection and restoration of resources and will be the basis of the elaboration of the annual programs for support the sustainable development of fish populations.

B.2. Product supply and market equilibrium

In the area of product supply and market equilibrium the focus is on several measures of the future sector development policy. These measures are as follows:

- To ensure the supply of fresh raw material coming from aquaculture for the processing sector all over the year (now this supply highly depends on the seasonal changes);
- To ensure the permanent supply of large range of fresh aquaculture production and fish products to the market for human consumption during the year;
- To organize the aquaculture production cycles as seasonally less independent technology in regard to make better a balance between fresh production supply and demand during the year;
- Market transparency needs more measures to ensure permanent supply of market information to all directions and customers involved: national statistics; sector statistics; consumers; whole traders and retailers; producers; fishermen; state and local authorities; research and scientific centers etc.

It is necessary to improve the domestic market by organizing fish wholesale markets and first sale points for better promotion and competition of fresh fish and processed production. This will lead to improvement of the quality of production and to increased market demand. It is necessary to organize national promotion and advertising campaigns strengthening the fish market and increasing the consumption of fish. Such measures are possible by joining the activities of the state authorities, producers and their organizations and media. It is necessary to distribute and to promote fish and fish products to small towns and villages. This is a goal for which the producers and traders should make common efforts. This will lead to an increase in fish consumption in the country as a whole.

Further measures to stimulate exports are needed. The following factors will contribute to the increase of exports: change in the production structure of aquaculture; increase of the share of valuable and market oriented species; increase of the share of processed products; improvement of the quality of the products – fresh, frozen and processed.

B.3. Sustainable development of aquaculture

Aquaculture is the most important sub-sector in the country for several reasons. First of all Bulgaria disposes with sufficiently water resources for the aquaculture development. Aquaculture has good traditions in the country. Several important species are subject of the aquaculture production and several new ones could be introduced. Aquaculture production covers both cold-water (for example trout species) and warm-water species (carp, sturgeons, wells etc.) because of the existing various water resources. Development of aquaculture will lead to the development of the “organic aquaculture” sector as well. Both – pond farming and net-cages farming have many options for development. Net-cages farms have special place in this process nowadays and in the future. Both – marine farming and fresh-water farming in reservoirs have good perspective for development.



Aquaculture production in the country could reach 25 000 tons and even more in the next 10 years. This will depend on how aquacultures will be supported by the state and on the investors' interest for developing this sector. The increase in the aquaculture production will result in a decrease of commercial fishing over the natural fish populations of the Black Sea and the Danube River and it will give opportunities for natural resources rehabilitation. At the same time aquaculture production will produce a large range of fish fingerlings to restock other water basins in the country – reservoirs and rivers. Thus aquaculture will multiply its results to other sub-sector, mainly to marine and Danube fishing activities and to fish processing as well, but mainly to fish resources conservation and protection.

Fresh water aquaculture should strive to increase the production of new more valuable (delicacy) species: sturgeons, eel, catfish, pike, pike-perch, freshwater shrimps, etc. instead of producing carp species. Aquaculture will provide the other sub-sectors with restocking material, with raw material, diversify of fish species and products.

Besides having good quality of water supply for aquaculture it is also necessary to improve water monitoring and control systems: state authorities monitoring and control in accordance with the legislation and self-control by introducing HACCP and Good Production Practices into all production sites.

In order to achieve diversification in aquaculture production, it is necessary to apply the new technological and technical achievements (for example closed re-circulation systems) and to introduce some new species for production.

A major priority for the country is the disease prevention measures and they are under the control of the National Veterinary Service and the Central Research Veterinary Institute within its structure. The system established is operating well and fish producers are cooperating with the state authorities.

B.4. Development and competitiveness of the sector

- Development of marine fishing, including the competitiveness of the Bulgarian fishing fleet and, in particular, of small-scale coastal fishing

The opportunities for marine fishing development are in relation with several factors. There is a limitation on the coastal fishing development and it is dependant from the state of the natural fish resources. The absence of a fishing fleet flying under the Bulgarian flag outside the Black Sea region is another factor.

There are no fish species in the Bulgarian zone of the Black Sea, which could be subject of interest to other EC countries fishing vessels. The existing fishing effort is relevant essentially to the sprat and to rapana resources. There is no special interest in Black Sea Sprat catches from other countries fleet and from small-scale local coastal fishing too, because these species are with low value and have a relatively small market niche. Rapana is of high value and is export-oriented species. However Bulgaria has very strict limitations in regard with the bottom fishing gears in the Bulgarian shelf zone.

Marine fishing development has to be adjusted to the existing resources. Marine fishing will be directed to modernization of the fleet; support of traditional local coastal zone fishing methods and gears (like trap-nets), which could also be attractive for ecotourism.

- Utilization of **all** catches, modernization of on-board equipment and storage condition

The utilization of all catches is an important goal for some species, especially for some seasonal over catches of Sprat in the Black Sea. There are big quantities of sprat caught by trawling on one side and at the same time there is a low demand on it. The possibilities for processing and the freezing facilities are poor. For these reasons part of the catches has to be thrown back into the sea.

That is why it is necessary to ensure full utilization of all catches of sprat by better coordination of fishing vessels and coastal facilities to process or freeze them. Sprat can be used for fish -meal production but this opportunity has not been explored enough. A survey is needed to examine what are the available quantities of other fish waste for further processing together with the sprat over-catches for meal production.

Modernization of on-board equipment is an important issue for the domestic fishing fleet and it has to be directed to fishing gears (mainly trawls) becoming more environmentally friendly and improving of the hygiene, sanitary and safety conditions.

- Improving the equipment and unloading, packaging and storage conditions ashore



It is necessary to improve the equipment and unloading, packaging and storage conditions ashore in some existing Black Sea fishing ports (such as Sozopol, Bourgas, Nesebar, Balchik) and in some new specific fishing sites and places (such as Primorsko, Tsarevo, Byala, Varna, Kavarna, Shabla). These activities could be managed by combining with some fish market purposes – first sale points etc.

- Fishing in **inland waters**

Fishing in inland waters, mainly in big and medium size dams where still zones for commercial fishing exist, the tendency is these zones to fall away gradually and the dams to be used only for angling and for aquaculture production. They are attractive for development of fishing tourism and eco-tourism.

Part from the small and medium sized dams, which at the moment are treated from the legislation as sites for commercial fishing, will function as farms with incompleteness system for feeding fish for consumption.

Inland waters fish production has good economic characteristics. The production consists mainly of natural domestic fish species, including valuable ones (catfish, pike, pike perch). The costs are relatively low level because of the good natural fish reproduction.

All these together contribute to the development and the diversification of economic activities and to the creation of alternative incomes.

- **Angling** practices are a subject of special attention by the state authorities with regards to:

- ✓ Legal regulation and administrative subordination of angling;
- ✓ Organization of effective control over illegal angling practices;
- ✓ Support for the fish stocks by effective measures including artificial restocking;
- ✓ Effective measures to support natural reproduction of fish populations;
- ✓ Organization of fishing/angling tourism in aquaculture or in commercial fishing sites;
- ✓ Elaboration of projects for ensuring sustainable development of fish populations by both sides – State authorities and producers' organizations.

- Development of the **processing** industry

The processing industry plays an important role in the whole sector for several reasons: the processing industry adds value to the fish raw materials and produces a wide range of new products for direct consumption. At present many processing establishments meet the EC standards and sanitary rules, regulations and requirements. In order to get a permission to work, every new processing enterprise has to meet these requirements.

In the longer term, the processing industry has to increase its production capacity and improve its technological level and production range, so that it could meet the increase of the fishing and aquaculture production during the next 7-10 years period. At the same time it is necessary to increase the exports oriented production.

- Development of **marketing**

To achieve better competitiveness and sustainability of the sector, marketing has to be organized in the following directions:

- ✓ Establishment of producers' organizations which will work in cooperation with the state authorities in solving the main strategic and operational problems for the sector development;
- ✓ Consumer protection and information as an important issue within the complex of requirements for food quality and safety;
- ✓ Development of fisheries areas, diversification of economic activities and creating possibilities for multilateral activities and alternative incomes there.



Improving the national and the regional fish market structure can develop marketing and its organization. It is necessary to formulate marketing strategy and operational programs, including advertisement and promotion campaigns, etc.

The improvement of marketing and information system for fish and fish products and prices will decrease the margin between the low wholesale prices and the high retail prices. While freedom of movement of fish products is high, market transparency needs more measures to ensure permanent supply of market information to all outlets and customers involved.

- Policy on innovation, research, quality labeling and the development of new products or high value-added products

The sector needs an innovation and research development to meet the requirements and challenges of the EU market.

The basic goals of the fisheries and aquaculture research development are: innovation in the aquaculture to achieve technological and technical improvement, introduction of cultivating technologies for new valueable species, research on the marine and on the Danube River fish resources.

- Analysis of the economic situation of businesses throughout the sector

The economic situation of the businesses in the sector has been difficult during the years of transition. Nevertheless there is a process of stabilization during the last 6 - 7 years, which is a positive trend.

The existing economic situation has various characteristics:

On one hand, there is a decrease in the natural fish resources; shortage of local and foreign investments and low access to innovation in different parts of the sector.

On the other hand there are amendments to the Fisheries and Aquaculture Act that are in line with EU legislation. There are opportunities to get financial support from the pre-accession program SAPARD. The future opportunities for financial support from EU funds will stimulate the sector. The country's economical and investment climate is improving thus creating new opportunities for local and foreign investments.

- Consumer protection and information

Consumer protection and information is an important issue within the requirements for food quality and safety. It is also becoming a very important part of products' promotion. Consumer protection and information is reflected in several laws: the Law for Foods and the Consumers' Protection Act; the Veterinary Activities Act and the Fisheries and Aquaculture Act together with the secondary legislation to them. All the legislation is already harmonized with the relevant EU legislative requirements.

B.5. Human capital and territorial dimension of the CFP

There is no any survey carried out to evaluate human capital and territorial dimension of the fisheries sector. This area needs special attention directed at improvement of human capital, qualification level and regional development.

- Medium-term policy on and quality of employment in the sector (contribution towards the Lisbon objectives)

Quality of employment needs special attention both by the state authorities and the branch organizations in the sector.

- Safety and improvement of living and working conditions

Working conditions have to be improved in parallel with other measures to build up the sector as a modern and competitive one (technical and technological improvement, quality and safety standards evaluation etc.).

- Development of vocational training, policy on access to the profession and the setting-up of young people

Relevant organization of the vocational training needs also special attention. Solving this problem will improve the access to the profession in the sector, including young people setting-up.



- The position and the role of women in the sector

The role of the women in the sector is very small at all production units, except in processing. More women are engaged in research and education units.

Development of aquaculture, especially in rural regions, will increase the role of women and will open new opportunities for them.

- Social dialogue

There are no syndicate organizations in the sector. Some of the existing branch organizations are engaged with solving labor problems typical for syndicates and are also a part of the social dialogue.

- Strategy for the sustainable development of the fisheries areas

It is important to develop measures in accordance with the sustainable development of the fisheries and aquaculture areas in line with other regional and rural programmes. Angling and fishing tourism could become a source of additional incomes for fish producers, as well as will contribute for diversification of activities in these areas.

B.6. Protecting the aquatic environment

The environmental protection as a horizontal priority is associated with the sustainable development, which will be promoted through the integration of environmental issues. It is legally ensured, including procedures applied, with the Law on Environment Protection and the Ordinance on the Conditions, Procedure and Methods for Environmental Assessment of Plans and Programs in force since 1.07.2004, which fully transposes the Directive 2001/42/EC. To ensure good environmental management, all parts of the sector (state and local authorities, fishermen and aquaculture producers and their organizations, researchers etc.) have to and will implement all necessary measure and make all practical steps for:

- Preventing and controlling pollution from outside the sector. This is well-organized process under the umbrella of Ministry of Environment and Waters and its regional inspection bodies and regional authorities of Ministry of Health.
- Surveillance of the condition of the aquatic environment and scientific monitoring
- Management of waste and the quality of waste water produced by the sector
- Policy on protecting and improving the aquatic environment and areas in which aquatic species reproduce
- Protecting the aquatic environment and areas in which aquatic species of interest reproduced.

B.7. Good governance of the CFP

To ensure good governance of CFP in Bulgaria all parts of the sector (state and local authorities, fishermen and aquaculture producers and their organizations, researchers etc.) have to and will implement all necessary measure and make all practical steps:

- To organize better inspections and controls over fishing and aquaculture activities and facilities, fish transport and first sale of products;
- To improve market structure and organization;
- To facilitate the whole information and data collection and to improve its quality;
- To support Producers' organizations establishing and management which shall work in cooperation with state authorities in solving the main strategic and operational problems for the sector development;
- To develop Black Sea and Lower Danube river Regional and inter-branch partnership;



The organizations in the sector work in cooperation with state authorities in solving the main strategic and operational problems for the sector development. According to the Fisheries and Aquaculture Act and secondary legislation all requirements of EC regulations regarding fish producers' organizations and inter-branch organizations are implemented and are already in force. Thus they have more power and possibilities to act as real partners of the state authorities and to induce effectively to the state policy and sector development.

C. Priority axes and objectives

C.1. Adaptation of the Bulgarian fishing fleet

The adjustment of the fishing effort in compliance with the principles of the CFP and the Fishing fleet adjustment plan, drafted by NAFA is a practical measure for implementation of the national policy for protection and conservation of the living marine resources with the view of establishing adequate conditions for development of sustainable fishing activities in a friendly manner regarding the optimum relations of biomass and the environment. Adequate methods and selective fishing gears for reduction of the by-catches have to be used for the purpose. The marine resources and the fishing effort have to be closely monitored.

Until the beginning of the 90s of the last century, Bulgaria used to be an important force in the ocean fishery. However, the transition to market economy, privatization, significant fuel price rise and a series of other factors resulted in closure of the company "Okeanski ribolov" (Ocean fishing). Bulgarian capacity for catch is under the available resources in Black Sea in the 12 miles zone of the country and recently the fishing activity is at a level that is considered to be significantly less than the allowable catches.

Objectives of Axis 1 Adaptation of the fishing fleet /Financial assistance envisaged amount up to 20 %/:

Funding will be available for equipment for reducing the impact of fishing on habitats and the sea bottom and on non-commercial species, as well as investment in more selective gears. Another idea is to provide modern equipment for the vessels, for navigation security and for improvement of work conditions, as well as investments in improving fish quality.

Small-scale coastal fishing is deserve attention, with operators who can potentially benefit from more funding and more favourable grant rates for investments on board and in more selective gears. Funds would be payable to fishermen and vessel owners to improve management and control of access conditions, promote the organisation of production, processing and marketing.

Socio-economic measures for fishermen affected by developments in fishing can also be supported, as long as these involve diversification with a view of promoting multiple jobs, training especially for young fishermen and retraining schemes.

Recovery and Management plans will be in details elaborated and presented in the Operational Program in accordance with Council Regulation 2371/2002.

C.2. Development of aquaculture, processing and marketing

The measures under this axis aim at increasing the fish resources from aquaculture production for supplying the market thus lessening the fishing pressure over the natural populations of aquatic organisms. The fish farming has to be in compliance with the requirements for environmentally friendly methods and technologies for fish breeding and strictly applied sanitary control. The objective aims at enhancement of the quality of the production and the technological level, application of the good production practices, system for monitoring of quality and the sanitary and hygiene measures.

Objectives of Axis 2 Development of aquaculture, processing and marketing /Financial assistance envisaged amount at least 50 %/: Sustainable development of Bulgarian aquaculture with enhancement of the quality of the production and the technological level, application of the good practices, system for monitoring of quality and the sanitary and hygiene measures has the following sub-objectives: support the sustainable development of Bulgarian aquaculture producing wider range of valuable fish species and bigger



production for the market and as raw material for processing, as well as re-enforcement the efficiency of the fish processing industry in respect of European Union standards and high quality level of marketing services.

Some practical steps must be made by:

1. Restructuring of aquaculture production aiming at the enhancement of the quality of the fish and other marine organisms and the products thereof. Warm water and cold water aquaculture:

- Application of new technologies;
- Restructuring of production facilities to produce large range of relevant species and production of high quality of fish fingerlings as material for restocking..

2. Restructuring of the aquaculture production aiming at enhancement of the diversification of the export.

There is a good market prospect for breeding of certain fish species. The European and the American catfish species are expected to have a good market realization both for the domestic market and for the international market. The pike and the pike-perch are expected to have a good market realization and there are possibilities also for export.

The sturgeon species form another part of the market and the export sector. Especially valuable are the Beluga /Huso huso/, Russian sturgeon, Siberian sturgeon and some hybrids and the Mississippi paddlefish (Polyodon spathula), the last being in a period of acclimatization in the country.

There is a possibility for introducing (acclimatization) to the country of the species African catfish and Trout-like perch.

- Development of a strategic plan for the priority development of valuable fish species breeding, specific for different regions of the country;
- Development of highly productive genetically pure herds of domestic species;
- Maintain output of carp culture sector by encouraging improvements in efficiency and collaborative marketing;
- Maintenance of genetic fund of highly productive domestic species for restocking;
- Development of a market strategy and advertising campaigns.

3. Development of the marine aquaculture production:

- Development of farms for breeding of restocking material and fish for consumption of the valuable marine aquaculture species.

The implementation of national quotas for catch in connection with the limited resources of valuable species will lead to activation of investments in aquaculture and to the establishment of more aquaculture farms producing mussels, turbot, sturgeons and other species and to increasing of fish product import.

4. Development of the processing industry:

- Improvement of the production conditions for meeting the increased sanitary and hygiene requirements;
- Improvement of the technological basis;
- Improvement of the quality of packing and labeling;
- Reducing negative impacts on the environment.

5. Improvement of the marketing of fish and fish products

- Producing and/or marketing new products, applying new technologies, or developing innovative production methods;

6. Public health measures

- Improving of co-ordination of different state authorities controlling the area of public health, e.g. central, regional and local bodies of National veterinary service and Ministry of health authorities;
- Improving of self-control measures in production sites by introducing of a HACCP system, Good production practices etc.



7. Animal health measures

- Regional plans for control and eradication of diseases in aquaculture production farms;
- Prioritization of prevention measure;

8. Inland fishing /Danube River fishing/

- Investments for the modernization of inland fishing facilities, with a view to improving safety, working conditions, hygiene and product quality;
- Investments in modernization of the on board equipment of vessels for fishing in Danube River.

C.3. Promotion of actions of common interest

Measures of common interest can include initiatives to protect and develop the aquatic environment, initiatives to develop common facilities, pilot projects, promotion and development of new markets and other collective actions with wider benefit. Measures of common interest represent a valuable means of investing in collaborative projects to develop the industry.

The main Objective of Axis 3 Promotion of actions of common interest /Financial assistance envisaged amount up to 25 %/ is the development of common interest measures in order to reach the goals of the Common Fisheries Policy and to implement the necessary environment for the development of the enterprises in the fisheries sector by: modernization of fishing ports, landing sites and shelters, development of new markets and promotional campaigns, capacity building and support of common actions for sustainable fishing and aquaculture development and resource management.

Fishing ports, landing sites and shelters

In order to ensure long-term competitiveness, ports with all the necessary facilities (e-services, ice factory, water, fuel etc.) must be modernized from fishing vessels to dock.

Development of new markets and promotional campaigns

A national market study, the creation of an "observatory" of fish consumption and demand, and campaigns of promotion for fish consumption will contribute to the increase of fish consumption. The big cities in the country are the places for potential fish markets, which could be used for the sector development. An electronic fish trade market is necessary in order to cover better market niches. Advertising campaigns for fish and fish products are also necessary. In order to obtain products that are competitive in the EU countries, production must follow the quality standards required by the European market with regard to food safety and traceability.

Producer organizations

Producer organizations must be supported and trained in order to have better management and human performances. Partnerships must be created between the research institutions, administration and producers' organizations, in order to correlate research and the real needs of the producers and have joint programs.

Resource management

The main objectives of resource management improvement refer to the preservation of the biological diversity, sustainable usage of natural habitats, wild flora and fauna, as well as the ecological renewal of degraded systems. Consistent with the natural-historic and socio-economic conditions in the country, the area of protected territories and zones within the National Environmental Network must constitute at least 15% of the country's territory by the end of 2010. It is also important to stimulate a more active involvement of the public in decision-making for environmental protection, at various levels.

In order for companies and associations to get and select new technical knowledge and use it afterwards, pilot projects should be established. These projects will focus on testing the current conditions of the production sector, environmental researches, develop tests to allow the fishing efforts and establish the fishing areas based on the biological and financial consequences, as well as on testing alternative



fishing methods.

C.4. Sustainable development of fisheries areas

There is a lack of policy and strategy for sustainable development in the fisheries areas. At the same time it is quite important to develop such a policy and strategy together with stakeholders in accordance to and in parallel with other state programs for regions and fisheries areas development where the NPSFA, with the support of the EFF, will guarantee indispensable investment in these areas.

According to definition in Axis 4 Bulgaria identify 6 - 7 potential areas to benefit from this measure (Annex 3, Figure 16). All regions have a low population density, and a significant level of employment in the fisheries sector and decline of fishing. The population in those regions is less than 100,000 inhabitants. The delivery of funding will involve Action Groups (AGs) established for each area, consisting of private and public partners set up to assist the sustainable development of given areas. Action groups would be responsible for executing development actions, based on a bottom-up approach. The intervention according Axis 4 in Bulgaria fisheries areas will offer the balance in the competing demands of different users of the same resources and to manage those resources sustainably.

The main Objective of Axis 4 Sustainable development of fisheries areas /Financial assistance envisaged amount up to 10 %/ is the development of areas with significant level of employment in the fisheries sector via accomplishment of fisheries development actions, based on a bottom-up approach.

The population dependent of fisheries should be engaged with diversification of their economic activities as soon as possible.

Relevant organization of vocational training is a mission of the state authorities responsible for the sector in collaboration with producers' organizations and other stakeholders.

The development strategy drawing-up will start from the existing situation analysis of the needs and territorial potential, in order to achieve an integrated development of fisheries areas. Putting together different economic activities will lead to a complex approach to the area, maintaining the population, leading to a living standard improvement.

The strategies' objectives are based on identify and development of:

- human potential to contribute to building-up fisheries dynamics;
- natural and cultural resources;
- diversifying economic activities, taking into account fisheries opportunities;
- Promoting environmental friendly activities.

This strategy will create a link between other financial sources that will be used at territorial level in order to sustainable development of fisheries areas.

C.5. Technical assistance

Financial assistance envisaged amount up to 8 %/

Objectives of the strategy are preparation, implementation, technical and administrative maintenance of requisite evaluations and audit with the aim of applying Council Regulation № 1198/2006.

These measures include:

1. Evaluations, investigations, statistics, tuitions and studies of general nature, related to the functioning of EFF.
2. Measures on giving information to partners, beneficiaries, publicity as a whole, of the opportunities for applying for resources absorption.



3. Measures on dissemination of information, on setting up of information network, on stimulation of cooperation and exchange of experience within the Community.
4. Introduction and exploitation of information system on management, implementation, inspection and evaluation of the Operational programme.
5. Improving methods for evaluation and exchange of information for best practices.
6. Setting up /on transnational level and on Community level/ networks of persons as regards sustainable development of fisheries zones with the aim of favouring exchange of experience regarding applying of best practices and stimulating transregional and transnational cooperation and dissemination of information.

D. Strategy to achieve the objectives

Concerning Priority Axis 1 the strategy will include mainly reparation and modernization of at least 30 % of the industrial fishing fleet, improvement of safety and hygiene conditions on fishing vessels which is aimed to achieving 100% equipped industrial fishing vessels in compliance with the EU regulations. The increase of the catches in the Black Sea /up to 20 000 tons/annually/ is based on the balance between scientific assessment of the stocks of the main caught species – Sprat and Rapana and economic analysis of demand. The increase of the catches of sprat from the Black Sea is envisaged to be 10 000 tons/annually by 2013. The increase of Sea snail catches /Rapana/ while applying sustainable and environmental catching methods is envisaged to reach 10 000 tons/annually by 2013. All the aspects of the national strategy in Axis 1 will be discussed in RAC for Black Sea with presumption to join efforts with other countries in this region for sustainable exploitation of fish resources.

The strategy for preservation of sustainable state of the stocks of the aquatic resources and for environmentally friendly management of fishing aquatic resources will be implemented through scientific developed program, based on the already signed Contract agreement between NAFA, Institute of Oceanology and Institute of Fish Resources for effective and sustainable management of aquatic resources and applied environmentally method for catching of species from Black Sea.

To reach the declared consumption of 8 kg per capita by 2013 concerning Axis 2 the strategy of development of the fishing and aquaculture production includes growth up to 50 %, i.e. 60 000 tons/annually by 2013 (current total consumption is more than 45 000 tons/ annually – about 20 000 tons from fishing and aquaculture production and above 25 000 tons from import).

Reconstruction of production facilities in fish farms includes reconstruction of 75% of the number of the operating farms. Simultaneously full complex of measures for the quality of the products and the hygiene of processing will be introduced. It is envisaged to be established new farms and processing facilities.

The strategy to increase carp production is planned on the increase of the average production from hectare.

The strategy to increase trout production by 2013 is planned on the basis of the intensification of trout production in smaller trout farms and expanding the farms and applying super-intensive farming in net cages suspended in different dams.

The strategy to increase the production of marine aquaculture by 2013 is based on the expansion of the black mussel production. The construction of mussel farms has been recently expanded and there is expectation that this is to continue in the future due to favorable conditions in the Black Sea.

The strategy of diversification of aquaculture activities with a high value species envisages the establishment of:

- Turbot land-based culture system;
- Black mussel farm;
- Sturgeon farms;
- Recirculation (closed) system for high value species;
- Fish farms for organic aquaculture;
- Experimentally operating farm for raising of freshwater prawn;
- Farms for other valuable fish species.



Concerning Axis 1 and 2 the strategy for training of labourers working on fishing vessels and in marine and freshwater fish farms is based on the registration of their necessities and development of training programs for special skills.

Concerning Axis 3 the strategy of modernization of present fishing ports will include special care for landing and freezing of catches. Infrastructure of ports and good possibilities for transportation of first sale fish, Control centers for inspections of catch activities and hi-tech innovation for first sale and market organization.

The strategy for promotion of fish and fish products includes development of a national programme for promotion of fish and fish products with campaigns in massmedia on national and regional level and e.t.c.

The strategy for creating of wholesale markets for fresh and live fish envisages the building of facilities for wholesale markets for fresh and live fish. Special attention will be given to the readiness of PO and their obligations in exploitation of markets and market organization. In this case the strategy for establishing transparent and competitive corps of wholesale traders for fresh fish is based on the presence of at least 100 registered traders buying fresh fish at each Black Sea point for first sale of caught fish.

With exception of Action Groups (AGs) for sustainable development of local areas concerning Axis 4 the strategy for development of fishing tourism includes the creating of five recreational bases.

The strategy for decreasing of unemployment in regions dependant from fisheries is planned on the development of training programs for fisheries and aquaculture.

Concerning axis 5 the strategy for informing of fishermen and aquaculture producers is based on the development of information system in the structure of NAFA /MAF/.

IV. INDICATING FINANCIAL RESOURCES FOR STRATEGY IMPLEMENTATION

The NSPFA sets out Bulgaria's high level objectives for the fisheries sector. These objectives are broad and far reaching and will be pursued through a range of measures, in addition to grant aid.

Table I. Financial assistance allocated to Priority Axis

Priority Axis	Financial assistance
Axis 1. Adaptation of the fishing fleet	Up to 20 %
Axis 2. Development of aquaculture, processing and marketing	At least 50 %
Axis 3. Promotion of actions of common interest	Up to 25 %
Axis 4. Sustainable development of fisheries areas	Up to 10 %
Axis 5. Technical assistance	Up to 8 %



Table II: EFF public contribution allocations for the Programming period 2007 - 2013

YEAR	EFF PUBLIC CONTRIBUTION
2007	7.27 %
2008	10.65%
2009	14.50 %
2010	15.27 %
2011	16.35 %
2012	17.44 %
2013	18.52 %

Remarque: According to Decision № 476/26.07.2006 of the Council of Ministers of Republic of Bulgaria, the financial contribution from the State budget for the period 2007 – 2009 is guaranteed

Table III. Financial assistance allocated to Priority Axis of the EFF

NSP		OP				
Activity	2006	2007- 2013				
	(Mln. €)	(Mln. €)				
		(1)	(2)	(3)	(4)	(5)
		EFF =(2) + (3)	EC funding	National public funding	Private funding	Total =(2) + (3) +(4)
Axis 1. Adaptation of the fishing fleet	≈ 0,30	≤ 21,33	≤ 16,00	≤ 5,33		
Axis 2. Development of aquaculture, processing and marketing		≤ 53,33	≤ 40,00	≤ 13,33		



Axis 3. Promotion of actions of common interest	≈ 0,07	≤ 26,67	≤ 20,00	≤ 6,67		
Axis 4. Sustainable development of fisheries areas		≤ 10,67	≤ 8,00	≤ 2,67		
Axis 5. Technical assistance	≈ 0,01	≤ 6,4	≤ 6,40	0,00		

Table IV. National financial assistance for other activities of CFP for 2006.

Activity	2006 (Mln. €)
Research	≈ 2,45
Data collection	≈ 0,05
Training	≈ 0,01
Operational costs	≈ 2,00
International cooperation	≈ 0,08

V. INDICATORS FOR EVALUATION OF THE PROGRESS IN ACHIEVEMENT OF THE OBJECTIVES

Policy areas according to the Common Fisheries Policy and their implementation in fisheries sector in Bulgaria

1. SUSTAINABLE EXPLOITATION OF FISHERY RESOURCES

Basic indicators

- Evolution of adjustment of fishing capacity, by main fisheries, of available and accessible resources to the Bulgarian fishing fleet

Optional indicators

- Relating to the management and adjustment of the fishing fleet: number of vessels, tonnage (GT) and power (kW) by main fisheries.
- Relating to measuring fishing effort: CPUE (Catch per Unit Effort) index.
- Relating to the scientific monitoring of resources: number of vessels deployed in scientific or oceanographic monitoring of fisheries areas.



2. DEVELOPMENT AND COMPETITIVENESS OF THE SECTOR

Basic indicators

- Evolution of the profitability of the fishing fleet, by main fisheries.
- Foreseeable evolution of the rate of coverage of domestic consumption (percentage of value and, optionally, percentage of tonnage).
- Foreseeable evolution of the share of supply of the internal market accounted for by aquaculture.
- Foreseeable evolution of the added value for the employment in the fishing, aquaculture and processing.

Optional indicators

- Foreseeable evolution of the value of products processed.
- Foreseeable evolution of the value of the products marketed.
- Evolution of the aquaculture production in final value and/or tonnage.
- Evolution of the domestic production in tonnes and value, overall and individually for the main species.

3. STRUCTURE OF THE SECTOR AND ECONOMIC ENVIRONMENT

Basic indicators

- Foreseeable evolution of the structuring of the profession (number of producers organizations, ship-owners' associations) and rate of participation in professional organizations.
- Number of fishing ports by the importance of landings.

Optional indicators

- Safety and working conditions: Number of accidents and number of deaths (at sea and ashore) and number of shipwrecks with loss of ship.
- Area (in square km) of marine protected areas and length of coastline of reefs (in km) for which measures to protect aquatic fauna and flora of fishing interest are taken or likely to be taken (development objectives).

4. DEVELOPMENT OF FISHERIES AREAS

Basic indicators

- Estimation of fisheries areas.
- Number of jobs created or maintained by gender.
- Foreseeable evolution of the economical activity percentage rate.

5. HUMAN CAPITAL AND COMMUNITY POLICIES



Basic indicators

- Foreseeable evolution for the investments with regard to the protection of the environment.
- Employment in the sector, at regional level where applicable, and overall activity rate in the same territorial unit and foreseeable evolution.
- Breakdown of employment by gender and in total for all sub-sectors.
- Foreseeable evolution of the training level of the fishermen (number of fishermen trained).

Optional indicators

- Number of training ships.
- Breakdown of manpower by level of training.

6. GOOD GOVERNANCE OF THE CFP

Basic indicators

- Actual public expenditure allocated and staff assigned to the sector and protecting aquatic resources of fishing interest.

Optional indicators

- Number of infringements found compared with the number of checks carried out (absolute figures and as a percentage).

VI. GOVERNANCE OF THE PROGRAMME AND COORDINATION WITH EAFRD, FEDER, ESF /European Social Fund/

A. Implementation of CFP

To implement the CFP through NSPFA, the EFF will grant financial support in meeting the economic, environmental and social goals in order to:

- ensure the long-term future of fishing activities and the sustainable exploitation of fishery resources;
- reduce pressure on stocks by matching fleet capacity to available fishery resources;
- strengthen the development of economically viable enterprises in the fisheries sector and make operating structures more competitive;
- foster the protection of the environment and fishery resources;
- encourage sustainable development and the improvement of the quality of life in fisheries areas affected by fishing and aquaculture activities;
- promote the development of human resources and equality between women and men active in the fisheries sector.

The establishment of protected zones and the possibility of their recreational use generate an increase in economic activities, different from extraction, organized and potentates, compatible with tourism use characteristics of the fisheries zones. Particularly on the coast, could be developed an alternative use of small fishing vessels fleet for navigation and fishing tourism activities.

Bulgaria has a large biodiversity heritage and recognises the need for its protection, thus the importance of



Natura 2000. Bulgaria has been developing a National Action Plan for the protection and rehabilitation of Black Sea and a National Strategy for Biodiversity.

B. Monitoring committee

The Monitoring Committee is a body, which gathers together all MAF partners: other ministries, fishing organizations, environmental protection and rural development institutions, researchers/experts, who can help Bulgaria make their choices.

This committee will be set up by the Minister of Agriculture and Forestry and will be chaired by the Executive director of the National Agency for Fisheries and Aquaculture. It will derive from the present Working group for preparation of NSPFA and OPFA.

Strategic Committee will also be set up and NAFA will provide the Secretariat to it. The committee will meet on a regular base to analyze strategic presentations, priority measures, programming and the main national intervention frameworks. It will also participate in the middle term review of the NSPFA (2010-2011), in order to provide recommendations on possible reorientations.

The Monitoring committee of the Operational Programme should include members of the Strategic Committee to give a better coherence between the NSPFA and the OPFA.

C. Thematic working groups

For the effective work on the objectives of NSPFA working groups will be set up by the Minister of Agriculture and Forestry discussing the the national plan in order to develop draft national strategic lines to be debated by the Strategic committee. They will work in the field of:

1. Fishing activities;
2. Development of sustainable aquacultures;
3. Processing of fish and marketing of fish products;
4. Collective measures;
5. Sustainable development of fisheries areas

Depending on the topics representatives from different organizations and institutions will take part in the working groups:

- Ministry of Agriculture and Forestry;
- Other ministries;
- Regional fisheries inspectorates /NAFA/;
- Representatives of authorities for the fisheries areas;
- Researchers/experts specialized in fishing, aquaculture, protection of water resources;
- Professional organizations and users (consumers, NGOs).

D. Information System

An unified Monitoring/Management Information System (MIS) is in the process of being set up for the purpose of the effective management, implementation, monitoring and evaluation of the EFF Assistance. The system is installed in the NAFA, which is responsible for the coordination and the effective management of the EFF Assistance in Bulgaria.

The system is used by the "Fish Markets and Structural Measures" Unit, the final beneficiaries, the members of the Monitoring Committees, the Certifying Authority and the Control bodies by the means of access passwords. The passwords allow different levels of access depending on the user.

The main unit of the information system are the individual projects and the data is submitted by the final beneficiaries. The system secures electronic flow of information for the programmes and projects.

The MIS allows to visualise the projects in process of implementation in a given municipality, as well as in the relevant district planning regions.



The system will be set up to ensure the ability to exchange electronic data between the MIS in Bulgaria and the system that is being developed at the European Commission (SFC 2007).

Web-site

Information and publicity measures concerning preparation for, and implementation of, the assistance from the EFF in Bulgaria will include a functioning public web-site: www.nafa-bg.org It is intended to increase public awareness and transparency of the programming process, relevant national and EU documents and EU funding opportunities. The information will be regularly updated to include news and events concerning the EU Fisheries Policy in Bulgaria. The NAFA and the Managing Authority will comply with the principles of publicity and transparency and will establish the necessary steps and the relevant instruments.

E. Connection with the rural development policy

The investments envisaged under National Strategic Plan for Rural Development and National Strategic Plan for Fisheries and Aquaculture are coordinated with the investments in human and physical capital which will be financed by EU Structural Funds. Main aim here is to organize consistency and compliance between the two strategic plans.

The first strategic goal of the National Strategic Plan for Rural Development associates with the development of a competitive agriculture and forestry and based on innovations in the food-processing sector. This will be achieved through supporting products, that add value to the primary agricultural products, and promoting transfer of innovation in the food-processing industry as well as increasing and developing the human potential.

The second strategic goal targets the preservation of natural resources and protection of the environment in rural areas. The interventions in that priority area will be associated with the development of agricultural methods and approaches that aim at preservation of natural resources and protection of the environment. Preservation of natural resources will be achieved through the support for sustainable land and forest management as well as protection biodiversity and NATURA 2000 areas.

The third strategic goal targets job creation and the improvement in the overall quality of life in the rural areas. These will be reached through the creation of alternative employment opportunities, diversification of economic activities, development of services, and building of the necessary infrastructure, preservation of natural resources and protection of the environment in rural areas.

In the 2007-2013 programming period, the specific interventions under the National Strategic Plan for Fisheries and Aquaculture will be targeted to the development of aquaculture production and marketing of fish and fish products, and the improvement of the production conditions in the aquaculture farms to meet high EU standards in the areas of hygiene and work safety. Additional efforts will be made to renovate the technological basis in the processing of fish and aquaculture products, to set up new technologies and to introduce innovative production methods which will reduce negative environment impacts.

The next area of intervention will be related to the modernization and adjustment of the Black Sea fishing fleet and the improvement of the working conditions and hygiene.

Additional areas of activities will be related to sustainable development of fisheries areas. The following activities will be included: strengthening the competitiveness of the sector, restructuring and diversification of economic activities, improvement of the existing infrastructure, creation, modernization and extension of the fishing tourism opportunities as well as the creation of alternative forms of tourism.

F. Connection with the Cohesion policy

According to the Strategic Guidelines for rural development and the Cohesion Policy of the Community, we have ensured complementary and coordination among the activities which will be financed by the Structural funds (namely: the European Regional Development Fund- ERDF; the European Social Fund – ESF; the Cohesion Fund) and the European Agriculture Fund for Rural Development (EAFRD) and the European Fisheries Fund (EFF). The guiding principles defining the demarcation line between the investments in rural development and fisheries and aquaculture and investments in human and physical capital financed by the Structural Funds and the Cohesion Fund of the EU have been adopted.

The investments in infrastructure will depend on the type of the municipality/settlement where the respective intervention will be carried out. The investments in road infrastructure supported by the EAFRD will be for



building and improving municipal roads and the streets in the towns and villages of the rural areas. The investments in infrastructure supported by the EFF will be for fishing ports, building and improving life quality in the fishermen villages of the fisheries areas, modernization of the fishing fleet and other special fishing activities. The improvement of the municipal roads among the villages of the rural areas will be supported by EAFRD, while the roads connecting towns to villages will be subject to support by the instruments of the Cohesion policy. Respectively, the support for motorways, first class, second class and third class roads of regional importance and connecting town centres and agglomerations with their surroundings will be supported by the Structural Funds and the Cohesion Fund of the EU.

The investments in water supply infrastructure and sewage systems supported by the EAFRD will be limited only to settlements with population equivalents below 2000 people. The settlements with equivalents population above 2000 people will be supported by the Structural instrument of the EU.

The EAFRD will support the construction of sites for the collection of animal carcasses, incinerators, as well as other infrastructure appropriate for collection/treatment of waste of agricultural origin. Therefore, other waste-depots and other waste-related infrastructure will be supported by the Structural Funds and the Cohesion Fund of the EU. EFF will support aquaculture farming and the construction for collection/treatment of waste of aquaculture and fisheries.

The EAFRD will support only registered agricultural farmers for investments in eco-infrastructure: rehabilitation and construction of drainage installations, small infrastructure protecting against floods and banks erosion; the remaining beneficiary groups for such investments will be supported by the instruments of the Cohesion policy.

The investments in renewable energy sources will be supported by EAFRD where eligible beneficiaries groups will be; registered agricultural farmers, micro-enterprises in the wood processing sector, and food processing enterprises which have up to 750 workers or annual turnover less than EUR 200 million and if they are processing products listed in Annex 1 of the European Community Treaty, from the sectors eligible under the EAFRD and if they are made in municipalities/settlements belonging to the rural areas. The investment in processing and marketing of fisheries products will be supported by the EFF. The remaining groups of potential beneficiaries will be supported by the structural instruments of the Cohesion policy.

The investments in human capital supported by the EFF and EAFRD will be targeted at the fisheries, agricultural and forestry producers and the workers in their enterprises, as well as the representatives of the local communities which will be supported in elaborating and implementing local development strategies. Also the investments in vocational training in the Fisheries sector will be supported by the EFF. All other groups of potential beneficiaries (including from the food-processing industry) for such type of investments will be supported by the structural instruments of the EU.

The investments in food processing industry will be supported by EAFRD only when they are initiated by food processing enterprises which have up to 750 workers or annual turnover less than EUR 200 million and if the investments are aiming at the processing and marketing of agricultural products listed in Annex 1 to European Community Treaty, from the sectors eligible under the Rural Development Programme, excluding fishery products. The investments in processing and marketing of fishery products will be supported by the EFF. The EAFRD will support also micro-enterprises processing primary forest products. The remaining groups of SMEs will be potential beneficiaries of the aid under the Structural funds

The investments in tourism will be supported by the EAFRD only for rural tourism projects, where eligible beneficiaries will be physical persons on the territory of the rural areas of the Republic of Bulgaria. Fishing tourism and diversification of fishing activities will be supported by the EFF. The potential beneficiaries supported by the structural instruments of the EU Cohesion policy will be the State Tourism Agency, the municipal administrations, SMEs in tourism, municipal associations, and branch, local and regional organizations in the area of tourism. The support will be targeting the development of spa, culture and eco-tourism, as well as the international promotion of the Bulgarian tourism.

Annexes



SWOT Analysis /Strengths, Weaknesses, Opportunities, Threats/				
	Marine fishing	Freshwater fishing	Aquaculture production	Processing and marketing of living aquatic resources
Strengths	<p>Lower quantities of catches of natural resources of marine fisheries than the marginal allowable catches</p> <p>Existing pelagic fish resources</p> <p>Existing mollusk resources (sea snail/Rapana and black mussel)</p> <p>Existing specific resources (sturgeon, turbot)</p> <p>Existing good level of land and water control by state authorities</p> <p>Highly qualified scientific experts in the field of ichthyology and hydrobiology are available /tradition in research and education/</p> <p>Existing good partnership between the fisheries administration and the scientific organizations</p>	<p>The catches are optimal and there is no negative influence on the population of species</p> <p>Existence of natural local species fish including delicacy species (Wels catfish, pike, pike perch)</p> <p>Existence of valuable species like sturgeon</p> <p>The freshwater fishing has good economical indicators</p> <p>Good tradition in angling</p> <p>Traditions in conservation and supporting</p>	<p>Environmental conditions and water quality are excellent for growing of fresh-water species</p> <p>Existence of water objects with unused capacity opportunities in fishery economical relation</p> <p>Improved quality of marine waters during the last years and increasing production through expanding the species of marine aquaculture;</p> <p>Good tradition and experience of net-cages fish production in big dams</p> <p>Favorable natural conditions attract foreign investments</p> <p>Human resources potential</p> <p>Permanent biology monitoring in natural water basins and fish breeding farms</p> <p>Applying of well developed environmentally friendly production technologies for farming of freshwater species;</p>	<p>Low cost of labour</p>

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		<p>of the sustainable development of the fish populations including restocking</p> <p>Traditions in the scientific research activity of the internal waters and the River Danube</p>	<p>Good developed technologies for intensive and super-intensive cultivating of freshwater species;</p> <p>Diversification with high market value species (sturgeon, crayfish);</p> <p>Not fully used opportunities for fish breeding in the existing fish breeding farms</p>	
	Marine fishing	Freshwater fishing	Aquaculture production	Processing and marketing of living aquatic resources
Weaknesses	<p>Lack of ocean /long-distance/ fishing fleet</p> <p>Old and amortized fishing fleet which urgently needs restructuring</p> <p>Insufficient port infrastructure</p> <p>Not well-developed rules for optimal use of aquatic resources potentialities;</p> <p>Insufficient financing of fisheries research institutes and scientific projects</p> <p>Inefficient catching sector and high proportion of inefficient, old, and small vessels;</p> <p>Extensive, widely distributed coastal</p>	<p>Serious pollution of Danube River waters by the chemical industry</p> <p>Insufficient fishing sector and high percentage of inefficient old small fishing vessels</p> <p>Low demand of some species results in fishing at subsistence levels</p>	<p>Ineffective use of the production capacity of many of the biggest aquaculture farms</p> <p>Irrational and ineffective general multifunctional use of state owned dams, as well as of middle and small dams of municipalities ownership as multifunctional facilities</p> <p>Need for reconstruction of production facilities /outdated installations/</p> <p>Limited access to financial resources</p> <p>Insufficient state financial support for production sector in</p>	<p>Insufficient interaction between the administration and fish and aquaculture producers and their organizations</p> <p>Lack of recognized Producers' organizations in the sense of EU legislation</p> <p>Low degree of integration between catching, processing and marketing enterprises and activities</p> <p>Lack of tradition to prepare and eat fish regularly</p> <p>Producing high volume of fish without well developed marketing strategy</p> <p>Lack of first sale centers and registered buyers of fish and</p>

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	<p>fleet, with low level of technology, excessive fragmentation of fishing enterprises;</p> <p>Weak organization of the sector</p> <p>Low diversity of fishing product</p>	<p>Insufficient port infrastructure</p> <p>Insufficient scientific researches during the years of transition to market economy</p>	<p>respect to save and develop breeding population of genetically clean, prolific and productive lines</p> <p>Environmental pollution</p> <p>Low quality of fish feed having negative impact on environment</p> <p>Some of the fees producers have to pay to the different state authorities (according to different legislation) are unjustifiably high</p> <p>Weak policy framework for development of the sector</p> <p>Insufficient experience in effective modern producing technology for new species of fish incl. re-circulation fish breeding systems</p> <p>Lack of organised marketing eliminates profitability of least efficient farms</p> <p>Poor implementation of research results</p>	<p>other aquatic organisms</p> <p>Wholesale/farm gate prices of fresh water species and marine catches are low;</p> <p>Undeveloped marketing and distribution channels /increased expenses for marketing of fish and fish products/</p> <p>Retail prices are relatively high compared with the low farm gate and first sale prices;</p> <p>Poor demand and weak traditions in consuming fish and other aquatic products /seasonal demand for fish and fish products/</p> <p>Lack of inland facilities for wholesale distribution of fresh and live fish from marine fisheries and aquaculture;</p> <p>Lack of infrastructure for first sale (port markets and storing places);</p> <p>Insufficient promotion of fish products and traditionally low consumption of fish and fish products in the country</p> <p>Lack of equipment and increased expenses for storage and marketing of production;</p>
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				Unfair competition on Bulgarian fish market (mainly by selling of non-registered and/or illegal production and fish got by poaching and other illegal trade operations, incl. import-export)
	Marine fishing	Freshwater fishing	Aquaculture production	Processing and marketing of aquatic resources
Oppor-tunities	<p>Marine water quality tends to improve and some live components of the ecosystem tend to be revived</p> <p>Potential of under-exploited resources of small pelagic fish and molluscs</p> <p>Modernization of fishing ports facilities. Building of new fishing ports</p> <p>Restructuring and modernization of the fishing fleet</p> <p>Development of Producer organisations will result in orderly marketing and concentration of landings at main landing sites.</p> <p>Increasing the complete use of scientific potential</p> <p>Better financial support of fishers for aligning with EU standards (national and European funds);</p> <p>Development of fisheries areas</p>	<p>Potential for development of fishing tourism;</p> <p>Potential for development of ecotourism;</p> <p>Increasing power of producer organizations will lead to sustainable using, better management and conservation of resources</p> <p>Development of fisheries areas</p>	<p>Priority development of aquaculture sector to compensate the critical situation with the natural fish resources</p> <p>Establishing and recognizing of fish producers organizations</p> <p>Effective use of financial EU instruments for better utilization of the available resources and capacity for production fresh-water and marine aquaculture products</p> <p>Building of new capacities for breeding of fish and other aquatic organisms</p> <p>Improvement of production infrastructure</p> <p>Improvement of competitiveness of fish producers on international markets</p> <p>Extension of qualifications</p>	<p>Laying down of adequate state policy and strategy and support to guarantee sustainable development of fisheries and aquaculture sector</p> <p>Availability of modern and reconstructed processing enterprises, as well as technical and technological capacities</p> <p>Improvement of marketing and distribution of fish and aquaculture products will provide new markets and market opportunities</p> <p>Investment in market infrastructure and processing will increase demand for fish and fish products /development of internal market/</p> <p>Potential for new market niches</p> <p>Establishment of PO's in conformity with the Acquis communautaire and increasing their role in the sector</p> <p>Enhancement of national fish and fish products consumption</p>

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			<p>and improving of technical skills of employees in the sector</p> <p>Enhancement of fish production effectiveness and profitability via introducing of new technologies, new fish species</p> <p>Increased demand of freshwater species</p> <p>Increased interest of investors in aquaculture production</p> <p>Potential for diversification of aquaculture production with market value and demanded on international market delicacy fish species and fish products (sturgeon, eel, crayfish, turbot, mussels etc.)</p> <p>Increased needs for fingerlings for supporting the natural populations in the inland waters and the river Danube.</p> <p>Potential for development and applying technologies for organic aquaculture</p> <p>Improving quality of fish feed and decreasing the negative influence on the environment</p>	<p>Increasing the variety of fish products</p> <p>Increased market demand especially for high value species and products</p> <p>Supermarkets with rising share of food shopping presents new distribution opportunities</p>
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			<p>Better financial support of producers for aligning with EU standards (national and European funds);</p> <p>Improving of fish processing facilities and capacities will be in direct link to the development and increasing of domestic aquaculture production and with the improvement of market demand and consumers requirements for quality and diversity of fish and fish products</p>	
	Marine fishing	Freshwater fishing	Aquaculture production	Processing and marketing of living aquatic resources
Threats	<p>Critical decrease of natural fish resources /the lack of organization and the deficient fisheries management mean a threat to the sustainability of resources./</p> <p>Over-fishing of some endangered species /turbot/</p> <p>Environmental pollution of the Black Sea;</p> <p>Continuation of unregulated and illegal fishing activities and fishing methods destroying fish stock and natural fish resources</p> <p>Bankruptcy of small scale fishing</p>	<p>Continuation of decreasing of nature populations of the most important fish species for fishing in Danube River – sturgeons, etc.</p> <p>Some species may be subject to overfishing (e.g. sturgeon)</p>	<p>Permanent closure of small scale aquaculture producers and loss of skills and productive capacity</p> <p>The development of the state policy in fisheries and aquaculture sector is in the beginning</p> <p>Lack of adequate state measures and compensations in case of natural disasters and high losses of production, especially losses of brood-stock and fish-fingerlings</p>	<p>Bankruptcy of small scale processing enterprises (mainly because of narrowed market for processed)</p> <p>Unregulated and illegal fish market</p> <p>Consumers' preferences changed to other products (imported marine products)</p> <p>Processing sector is not enough capitalized</p> <p>Increased competition on the EU market</p>

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	<p>persons (fishermen) and companies</p> <p>Increasing depopulation in coastal regions</p> <p>Continuing the downward trend of eventually losing viability of the marine fishing sub-sector</p> <p>No insurance, compensation and restoration system is existing to relieve the situation after natural disasters</p>	<p>Pollution of Danube with waste from various sources – chemical industry, agriculture, the ways of living</p> <p>High level of poaching</p>	<p>Conflicts on water resources exploitation between general and common use (water supply, electricity etc.) and complex plus specific use for aquaculture sector development</p> <p>Bankruptcy of small-scale aquaculture producers (mainly because of lack of adequate financial support and preferences, low market demand, lack of competitive farmed fish species and aquaculture technologies)</p>	
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Table № 1 Role of fishing and aquaculture sector in the Bulgarian economy:

	Income (€)	% of GDP
Fisheries	14 300 000	0.14
GDP	11 645 183 886	100.00

Source: Goulding and Staykov (2003)

Table № 2 The income from different activities in fisheries and aquaculture:

Sector	Estimated added value € million
Marine Fishing	1.5
Processing of fish	9.8
Aquaculture Production	2.5
Inland Fishing	0.5
Total:	14.3

Source: Goulding and Staykov (2003)

Table № 3 Employment in the fisheries and aquaculture sector (number of persons):

	Total	Men	Women
Marine fishing	3 430	3 430	0
Aquaculture	4 980	4 970	10
Fish processing	2 230	250	1 980
Inland fisheries	1 620	1 605	15
Total:	12 260	10 255	2 005

Source: Goulding and Staykov, 2003

Table № 4 Fisheries dependency ratios in coastal NUTS IV regions:

NUTS III	NUTS IV	Population	Estimated Workforce %	Estimated Workforce Number of persons	Unemployment %	Estimated Unemployment Number of persons	Number of persons employed		Employment dependency ratios		
							Fishing	Processing	Fishing	Processing	All fisheries
Dobrich	Balcik	22,311	41.2	9,192	20.5	7,308	125	40	1.7	0.5	2.3
	Kavarna	18,049	41.2	7,436	20.5	5,912	150	0	2.5	0.0	2.5
	Shabla	7,088	41.2	2,920	20.5	2,322	81	0	3.5	0.0	3.5
	Durankulak	NA					40		NA		NA
Varna	Varna	304,472	47.3	144,015	16.2	120,685	232	320	0.2	0.3	0.5
	Bjala	3,555	47.3	1,682	16.2	1,409	168		11.9	0.0	11.9
Burgas	Nesebar	16,963	43.0	7,294	19.7	5,857	230		3.9	0.0	3.9
		27,598	43.0	11,867	19.7	9,529	209	0	2.2	0.0	2.2
	Pomoria	435,704	43.0	187,353	19.7	150,444	677	335	0.5	0.2	0.7
	Burgas	16,408	43.0	7,055	19.7	5,666	227	80	4.0	1.4	5.4
	Sozopol	1,902	43.0	818	19.7	657	109	0	16.6	0.0	16.6
	Primorsko	11,903	43.0	5,118	19.7	4,110	151	0	3.7	0.0	3.7
	Carevo	NA	43.0				157	0	NA	NA	NA
	Ahtopol	NA	43.0				132	0	NA	NA	NA
	Rodona	NA	43.0				50	0	NA	NA	NA
	Kiten	NA	43.0				52	0	NA	NA	NA
	others						640				
	Total:						3 430				

Source: Goulding and Staykov (2003)

Table № 5 Properties of dams in Bulgaria:

NUTS III regions	State-owned	Municipality	Private	Total:
1. Blagoevgrad	90	171	1	262
2. Burgas	75	183	0	258
3. Varna	32	11	0	43
4. V. Turnovo	10	174	6	190
5. Vidin	16	4	0	20
6. Vraca	5	119	2	126
7. Gabrovo	5	62	1	68
8. Dobrich	7	32	0	39
9. Kjustendil	10	6	1	17
10. Kardjali	79	47	0	126
11. Lovetch	26	82	0	108
12. Montana	7	78	1	86
13. Pazardjik	65	83	1	149
14. Pernik	7	29	1	37
15. Pleven	23	101	5	129
16. Plovdiv	20	195	1	216
17. Razgrad	6	104	6	116
18. Russe	20	47	1	68
19. Silistra	0	61	0	61
20. Sliven	10	119	0	129
21. Smolyan	2	2	5	9
22. Sofia	27	77	4	108
23. Stara Zagora	21	232	2	255
24. Targovishte	10	78	10	98
25. Haskovo	349	1614	3	1966
26. Shumen	7	74	4	85
27. Yambol	18	320	0	338
Total:	947	4 105	55	5 107

Source: NAFA (2005)

Table № 6 Fish production in Bulgaria in 2005 (tons):

	Production from fisheries and aquaculture (tons)
Black Sea fishing	17 620
Fishing in Danube river	361
Inland fishing	1 664
Aquaculture production	3 143
Total:	22 788

Source : NAFA, BFA AND National Association of Fisheries and Aquaculture (2005).

Table № 7 Black Sea catches in 2005 (tons):

Species	Catches	
	Tons	%
Black Sea Sprat (<i>Sprattus sprattus sulinus</i>)	7 200	40,86%
Anchovy (<i>Engraulis encrasicolus ponticus</i>)	60	0,34%
Horse mackerel (<i>Trachurus mediterraneus ponticus</i>)	80	0,45%
Shad (<i>Alosa kesleri pontica</i>)	80	0,45%
Gobies (<i>Gobiidae</i>)	120	0,68%
Bonito (<i>Sarda sarda</i>)	1 100	6,24%
Bluefish (<i>Pomatomus saltatrix</i>)	350	1,99%
Turbot (<i>Psetta maxima maeotica</i>)	20	0,11%
Black mussel (<i>Mytilus galloprovincialis</i>)	50	0,28%
Sea snail (<i>Rapana thomasiana</i>)	8 400	47,67%
Other species	160	0,91%
Total	17 620	100,00%

Source : NAFA, BFA and National Association of Fisheries and Aquaculture (2005).

Table № 8 Danube River catches in 2005 (tons):

Species	Catches	
	Tons	%
Danube Sterlet	4,81	1,33%
Beluga	13,21	3,66%
Starry Sturgeon	0,65	0,18%
Russian Sturgeon	0,26	0,07%
Pike	10,49	2,91%
Common carp	19,46	5,39%
Other Carp spp.	180,92	50,14%
Herbivorous spp.	58,05	16,09%
Catfish	27,71	7,68%
Pike perch	14,10	3,91%
Shad	15,98	4,43%
Other spp.	15,19	4,21%
Total:	360,82	100,00%

Source: NAFA (2005)

Table № 9. Catches by families and species in inland waters in 2005 (tons):

Families and species	Catches	
	tons	%
Trout species	18,57	1,12%
Carp species	277,62	16,69%
Common carp	716,40	43,06%
Herbivorous species	561,86	33,77%
Pike	9,31	0,56%
European catfish	40,80	2,45%
Channel /American/ catfish	7,16	0,43%
Perch species	27,52	1,65%
Russian sturgeon	0,25	0,02%
Crayfish	4,16	0,25%
Other species	0,21	0,01%
Total:	1 663,86	100,00%

Source: NAFA (2005)

Table № 10. Aquaculture production (marine and freshwater species) in 2005 (tons):

Sub-sectors and species	Spawns (number)	Restocking		Fish for consumption (tons)	Total weight (tons)
		Number	Total weight (tons)		
Cold water fish-breeding (Balkan trout, Rainbow trout and Brook trout)	21 040 000	12 923 621	405,64	1 156,57	1 562,21
Hot water fish-breeding (Carp, Crucian carp, Herbivorous spp., European catfish, Pike perch, Pike, Tench and others)	44 294 979	12 918 562	581,41	1 504,45	2 085,86
Sturgeon species production (Beluga, Starry Sturgeon, Russian sturgeon, Sterlet, Paddlefish, Siberian sturgeon and Hybrids)	241 000	373 890	36,45	306,52	342,97
Crayfish production		10 000	1,00	2,50	3,50
Black mussel production				170,59	170,59
Production of other species		8 000	4,01	2,00	6,01
Total:	65 575 979	26 234 073	1 028,52	3 142,63	4 171,14

Source: NAFA (2005)

Table № 11: Registered aquaculture farms in 2005:

Type of farms	Number of farms
1. warm-water	109
2. cold-water	59
3. mixed	10
4. sturgeon	4
6. salt water /mussels farming/	16
7. salt water /other aquatic organisms/	2

Source: NAFA (2005)

Table № 12: Segmentation of Bulgarian fishing fleet in Black Sea in category length in 2005:

Category	Number	Tonnage (GT)	Power (KW)	VCU
< 12 m	2 149	3 807,10	39 960,94	41 922,03
12 - 15 m	27	431,86	2 514,06	2 524,51
15 - 24 m	46	1 575,77	7 151,73	7 894,78
> 24 m	12	1 583,00	3 304,76	3 707,73
Total:	2 234	7 397,73	52 931,49	56 049,05

Source: Annual Report, NAFA (2005) /It is used data for registered fishing vessels, according to the Fishing vessel register from National agency for fisheries and aquaculture /

Vessel Capacity Unit – VCU

VCU = length/m/ X width/m/ + 0,45 X power /kW/

Table № 13: Segmentation of Bulgarian fishing fleet in Black Sea in category Gross tonnage /GT/, in 2005:

Category	Number	Tonnage (GT)	Power (KW)	VCU
< 10 GT	2 131	3 514,85	38 584,58	40 218,81
10 - 25 GT	58	919,47	6 038,88	6 234,78
25 - 40 GT	22	749,82	2 856,07	3 655,63
> 40 GT	23	2 213,59	5 451,96	5 939,83
Total:	2 234	7 397,73	52 931,49	56 049,05

Source: Annual Report, NAFA (2005) /It is used data for registered fishing vessels, according to the Fishing vessel register from National agency for fisheries and aquaculture /

Vessel Capacity Unit – VCU

VCU = length/m/ X width/m/ + 0, 45 X power /kW/

Table № 14: Distribution of fishing vessels and boats by NUTS III region:

NUTSIII Region	Number of fishing vessels				Total
	<10GT	10 - 25GT	25 - 40GT	>40GT	
Black Sea	570	42	17	6	635
Varna	1 255	9	3	16	1 283
Burgas	306	7	2	1	316
Dobrich	2 131	58	22	23	2 234
Danube river					
Vidin	233	-	-	-	233
Montana	55	-	-	-	55
Vratza	186	-	-	-	186
Pleven	70	-	-	-	70
Veliko Tarnovo	82	-	-	-	82
Russe	230	-	-	-	230
Silistra	270	-	-	-	270
Subtotal	1 126	-	-	-	1 126
Total:	3 257	58	22	23	3 360

Source: NAFA (2005)

Table № 15: Fishing ports, villages and property of fishing ports, Black Sea region:

Regional Fisheries Inspectorates /Regions	Main fishing ports	Fishing villages	Property of fishing ports
Dobritch			
Shabla region			
		Shabla - North	Municipality
	Shabla		Municipality
Kavarna region			
	Kavarna		State-owned
		Buna Kavarna 1	State-owned
		Buna Kavarna 3	Municipality
Baltchik region			
	Baltchik		Municipality
Varna			
	Kranevo		State-owned
	Rodopa - Anton Ivanov		State-owned
	Asparuhovo		State-owned

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	Kamchia		State-owned
	Byala		State-owned
Burgas			
Nessebar			
	Nessebar		State-owned
Pomorie			
	Pomorie		State-owned
Burgas			
	Burgas		State-owned
		Rossenec	State-owned
Sozopol			
	Sozopol		State-owned
Primorsko			
	Primorsko		State-owned
	Kiten		State-owned
	Lozenetz		State-owned
Carevo			
	Carevo		State-owned
Ahtopol			
	Ahtopol		State-owned

Source: NAFA (2005)

Table № 16. Situation of fish stocks in Black Sea:

Fish species	Year	Region	Resource (tons)	Maximum value of the TACs		Maximum possible annual number of days for fishing
				Percentage	Tons	
Sprat	2000	Bulgarian coastal zone	56 000	33%	18 480	180
Horse mackerel /Black sea shad/	1994	Black Sea	206 000	25%	51 500	110
Bonito		Black Sea	150 000			60
Turbot	2002	Bulgarian coastal zone	900	13%	117	100
Anchovy	1994	Black Sea	826 600	25%	206 650	120
Gobies		Bulgarian coastal zone				220
Spiny dogfish	1992	Black Sea	90 000	12%	10 800	200
Grey mullet		Bulgarian coastal zone	15 000			150
Blue fish						50
Danube herring	1974		18 800			50

Source: IFA, Varna

Figure № 1. Income from marine fishing, aquaculture production, inland fishing and fish processing /in percentage/:

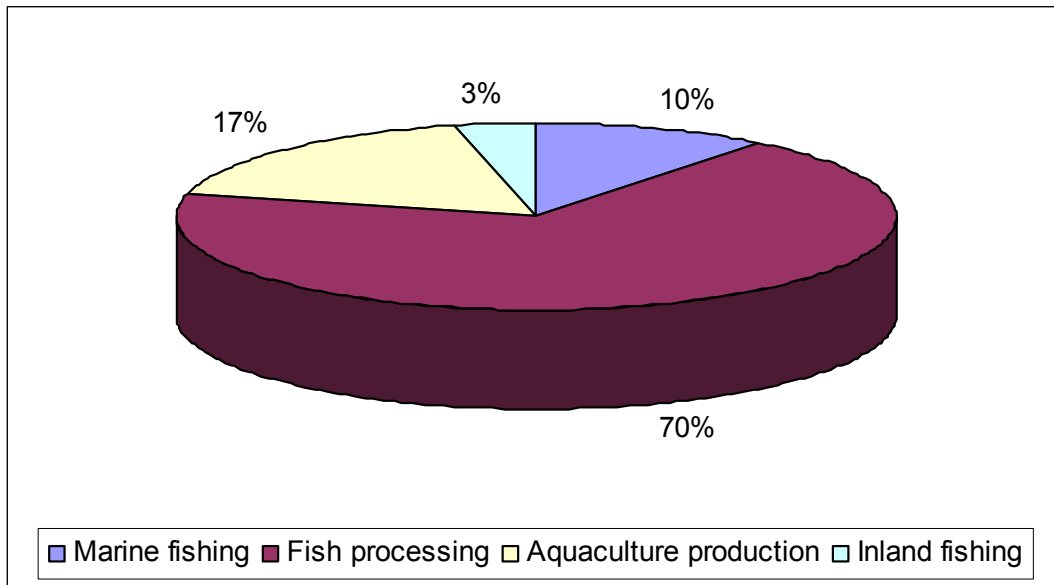


Figure № 2. Proportion of fish production in sub-sectors in Bulgaria /in percentage/:

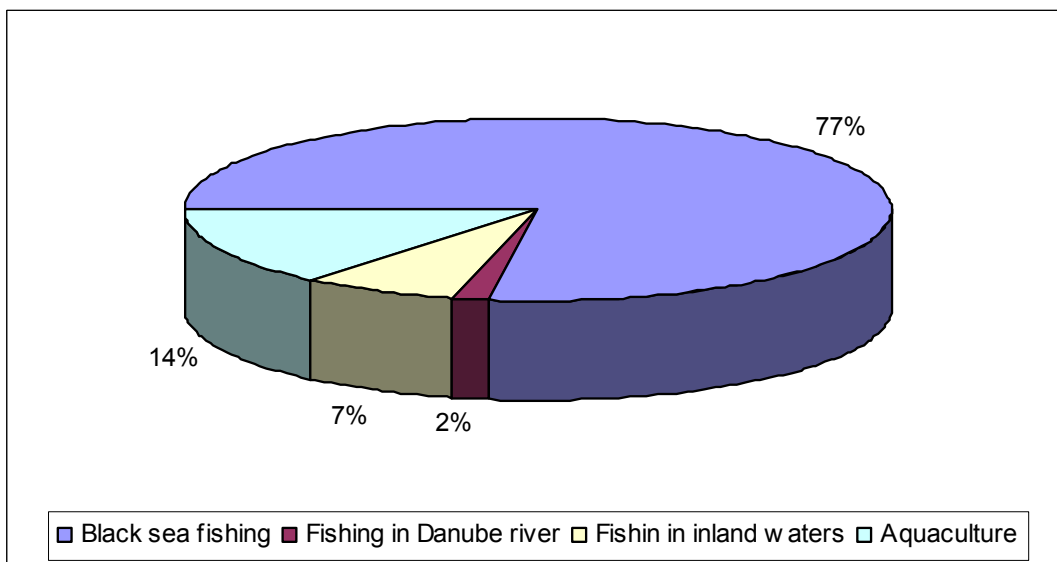


Figure № 3. Water surface /in ha/ of dams in NUTS III regions:

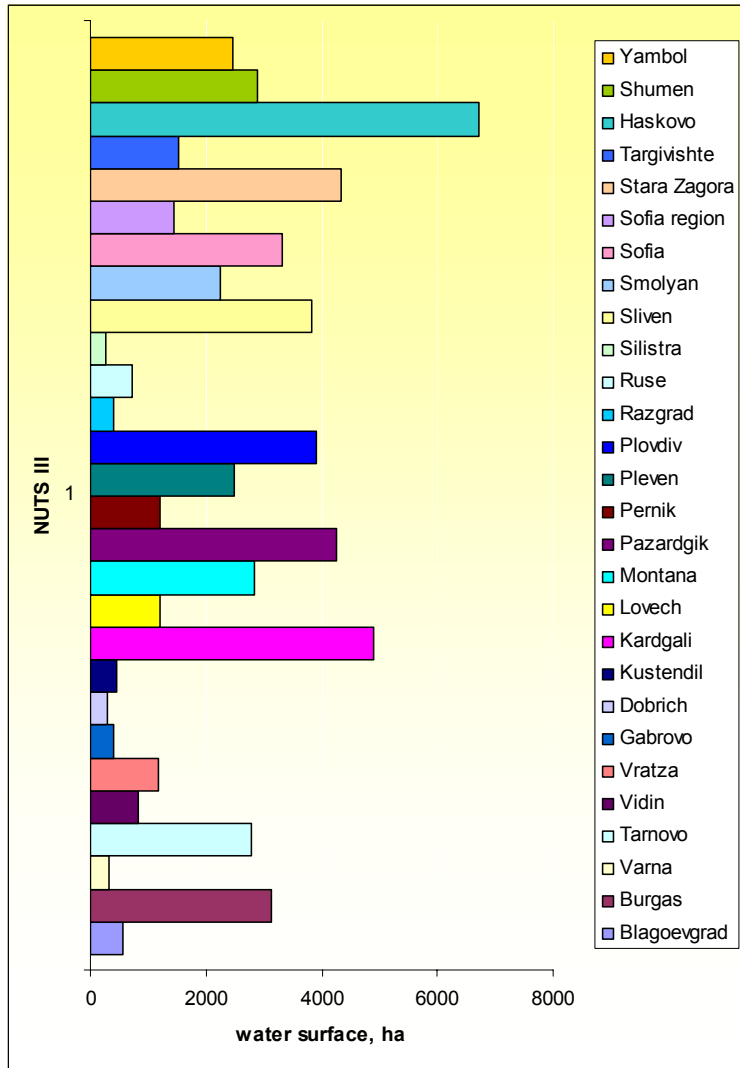


Figure № 4. Proportion of fish catches in Black Sea by species in 2005:

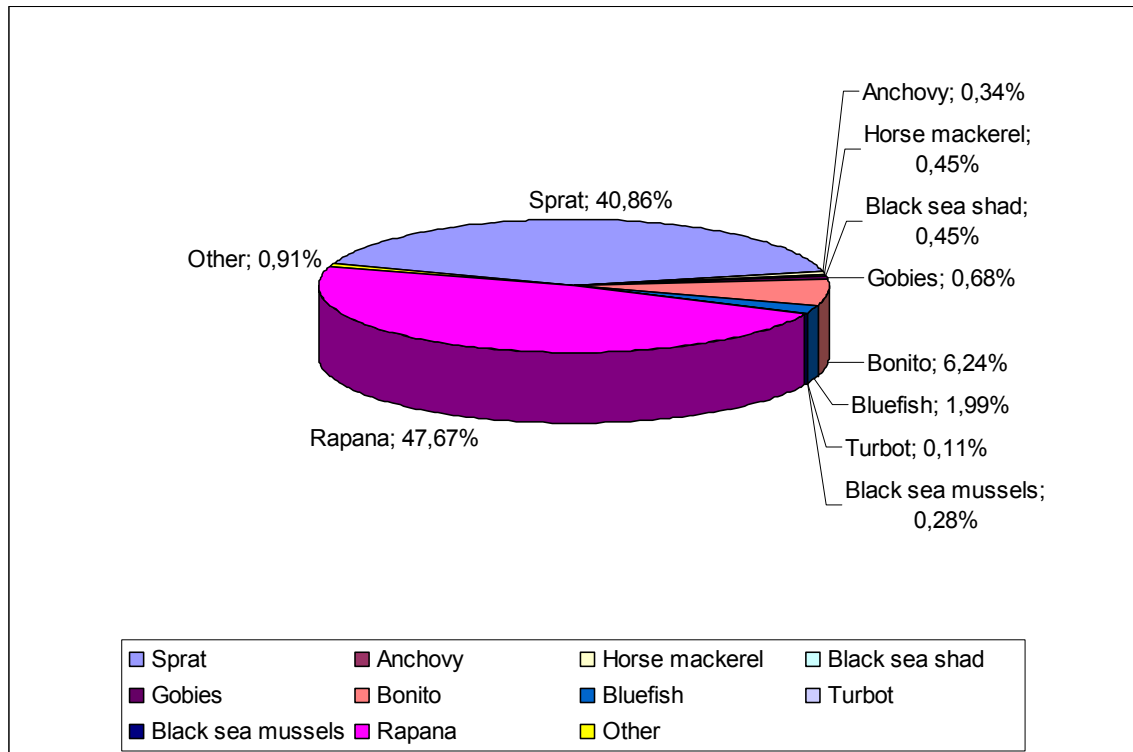


Figure № 5. Proportion of fish catches in Danube River by species in 2005:

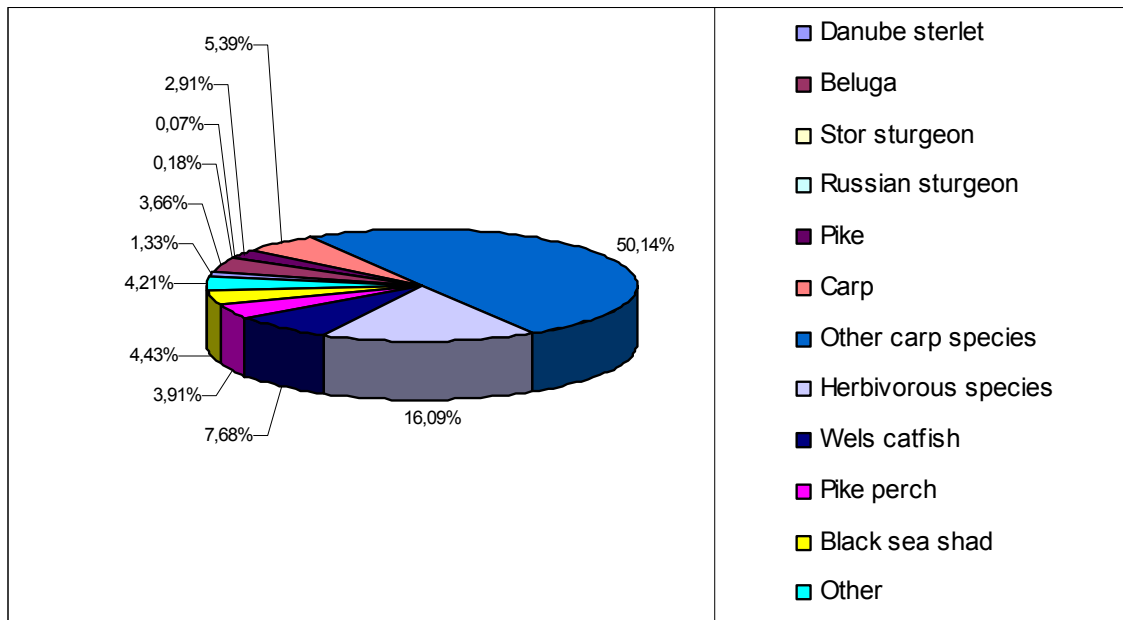


Figure № 6. Proportion of catches in inland waters by families and by species in 2005:

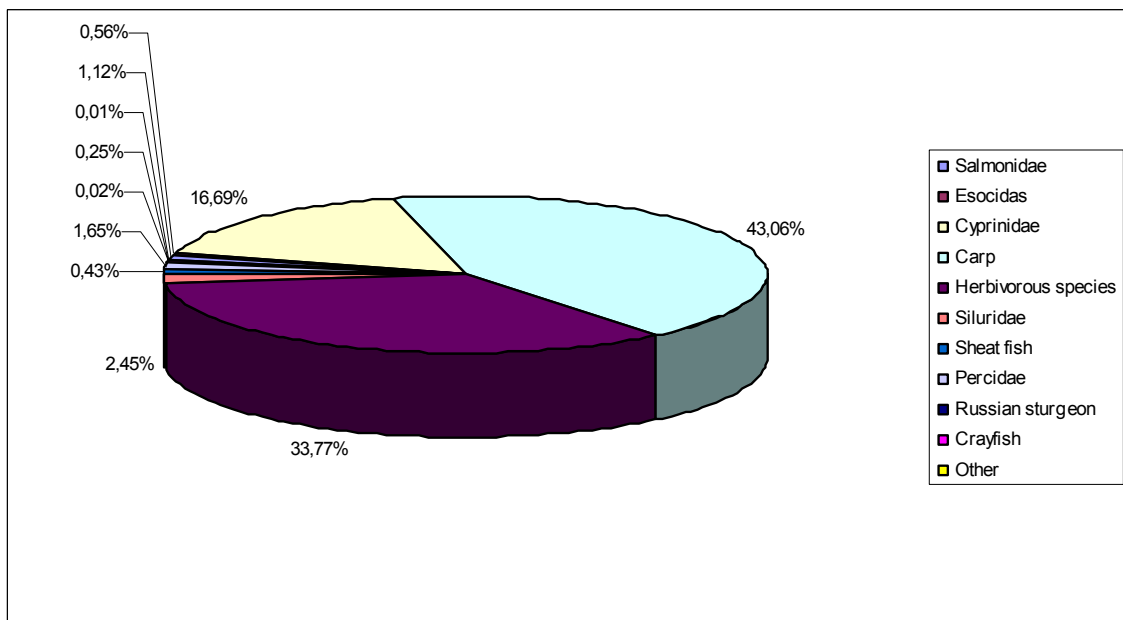


Figure № 7. Proportion of aquaculture production by sub-sectors and by species in 2005:

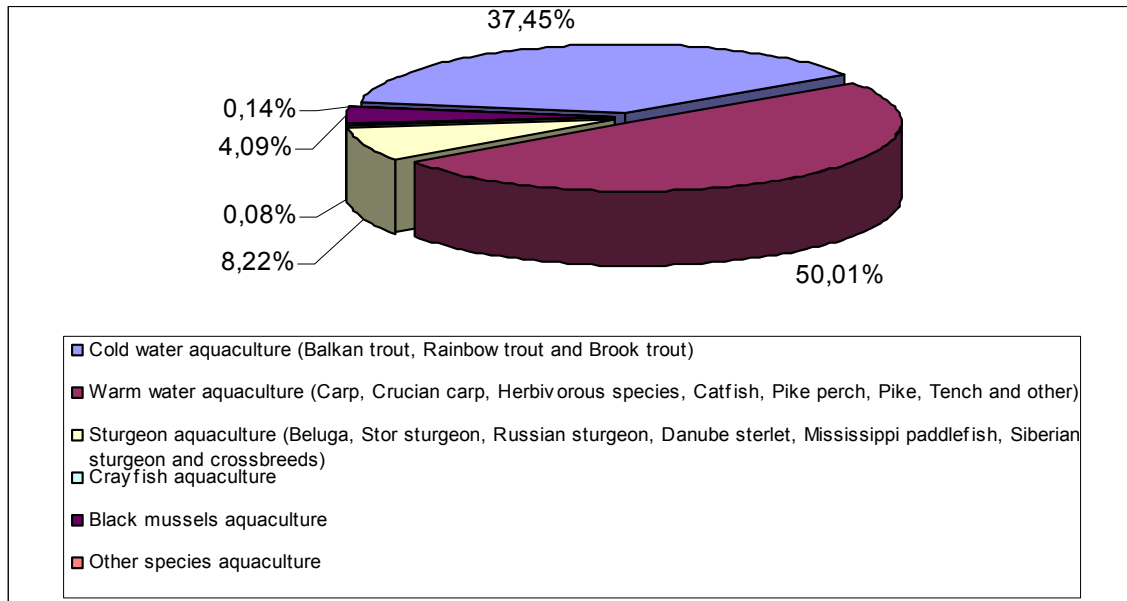
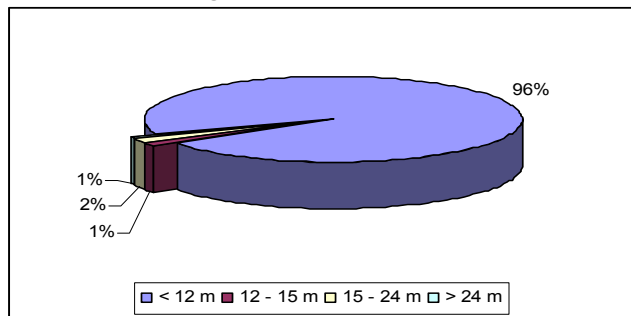
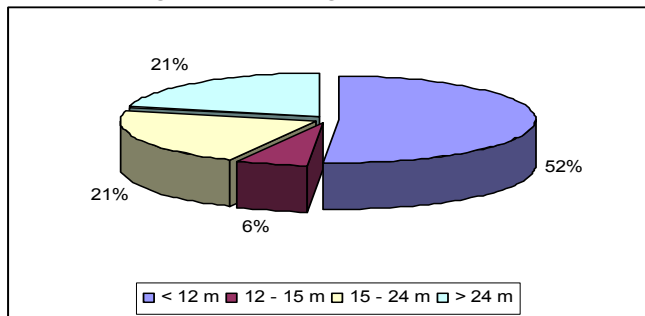


Figure № 8. Segmentation of Bulgarian fishing fleet in Black Sea in category length, 2005:

Number of fishing vessels



Gross tonnage of the fishing vessels (GT)



Main power of the fishing vessels (KW)

Vessels capacity (VCU)

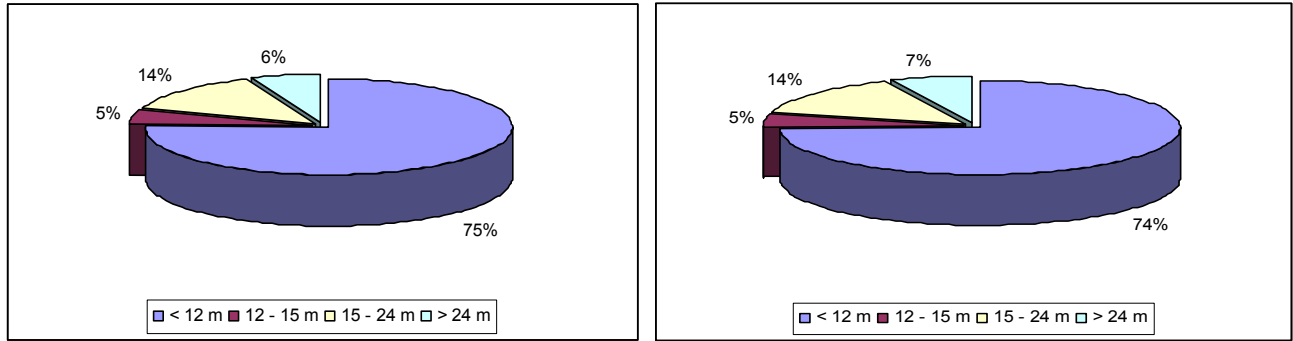
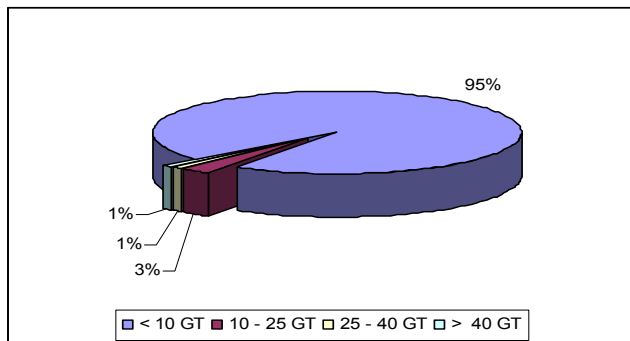
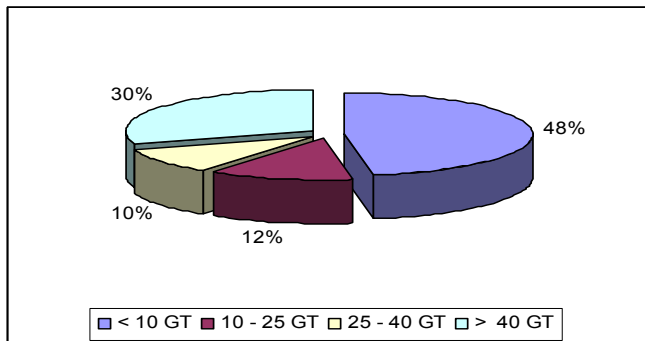


Figure № 9. Segmentation of Bulgarian fishing fleet in Black Sea in category Gross tonnage /GT/, 2005:

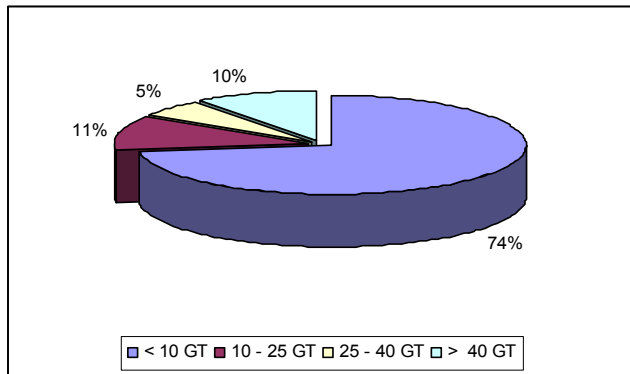
Number of fishing vessels



Gross tonnage of the fishing vessels (GT)



Main power of the fishing vessels (KW)



Vessels capacity (VCU)

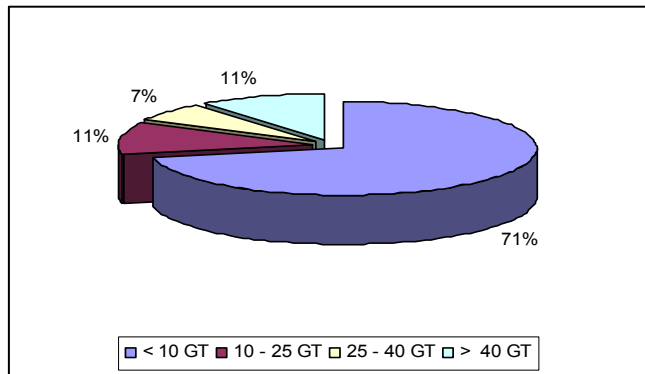


Figure № 10. Export of aquaculture production in 2005 /by species/:

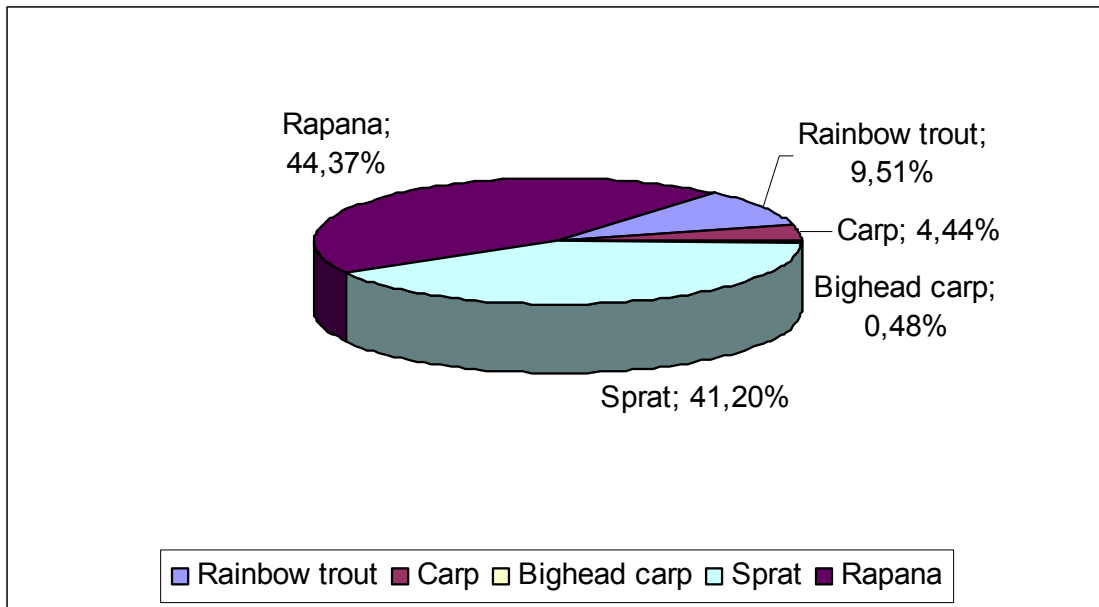


Figure № 11. Import of frozen mackerel in 2005:

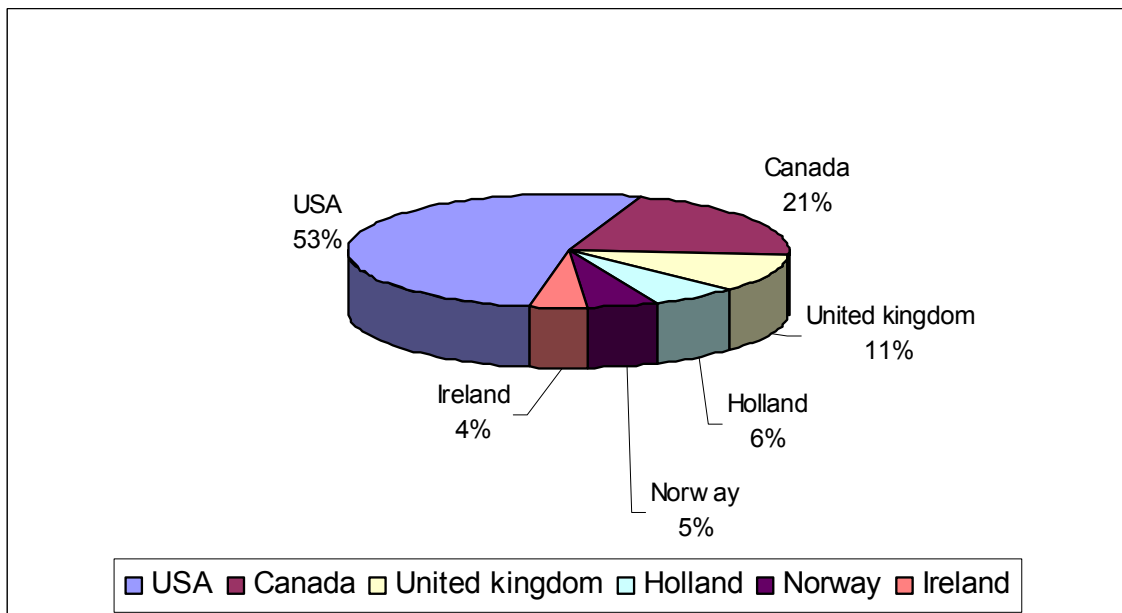


Figure № 12. Import of frozen fillets in 2005:

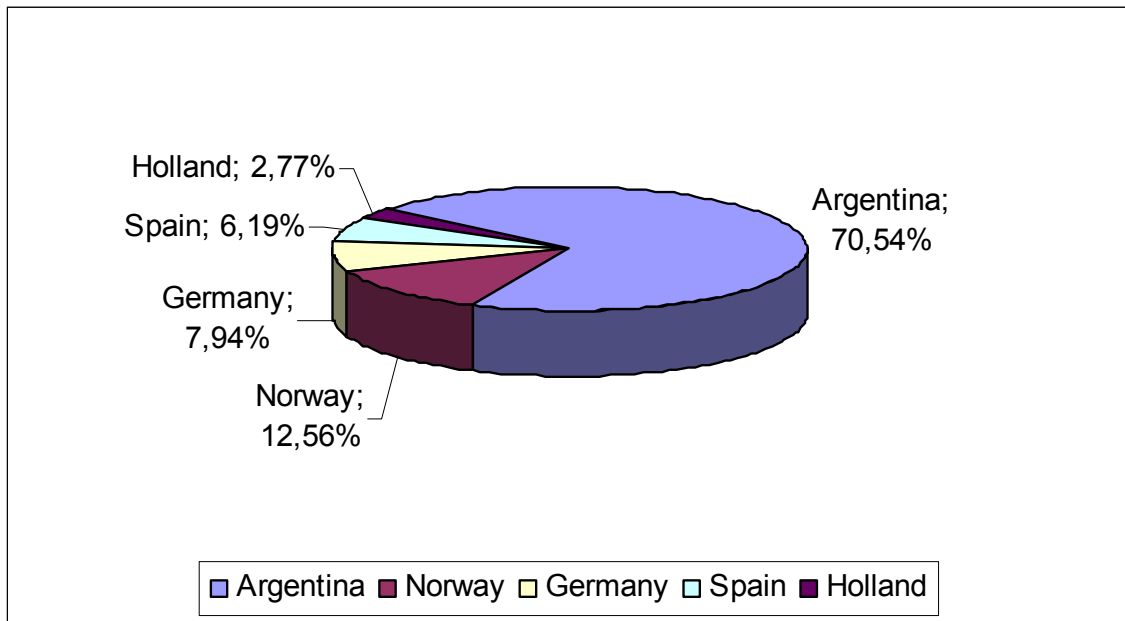


Figure № 13. Fish consumption per capita in Bulgaria /by years/:

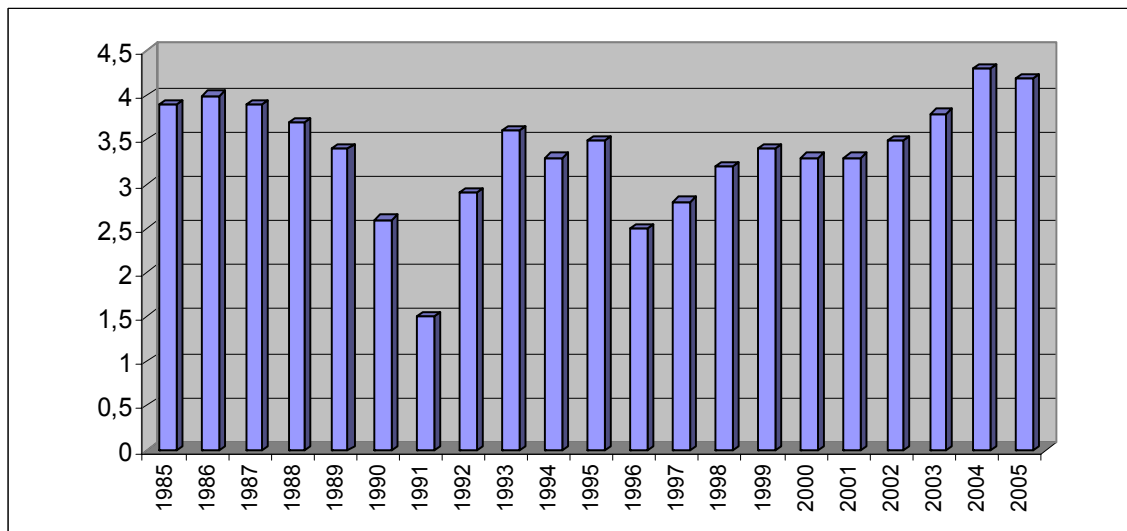


Figure № 14. Protected areas:

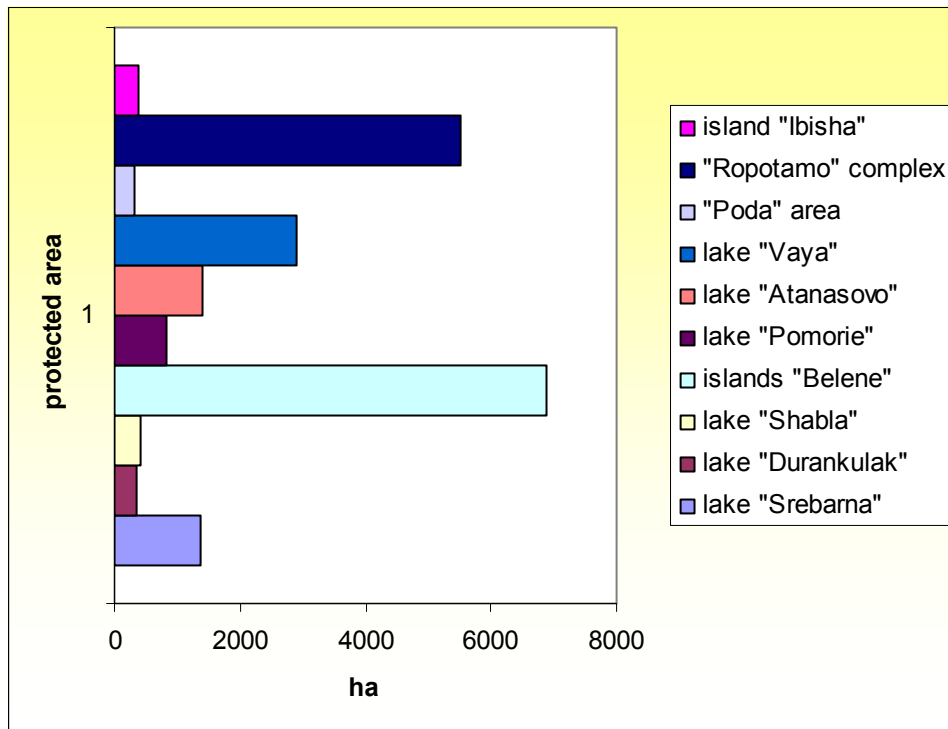


Figure № 15. Income for the employees in fishing, aquaculture and processing sub-sectors:

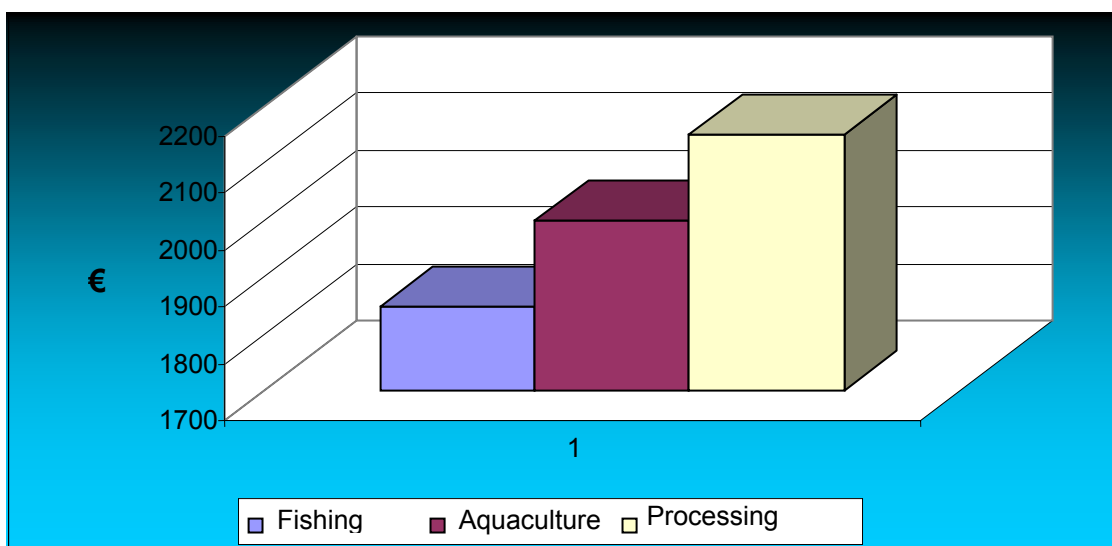


Figure № 16. Potential areas to benefit from Axis 4 “Sustainable development of fisheries areas”:

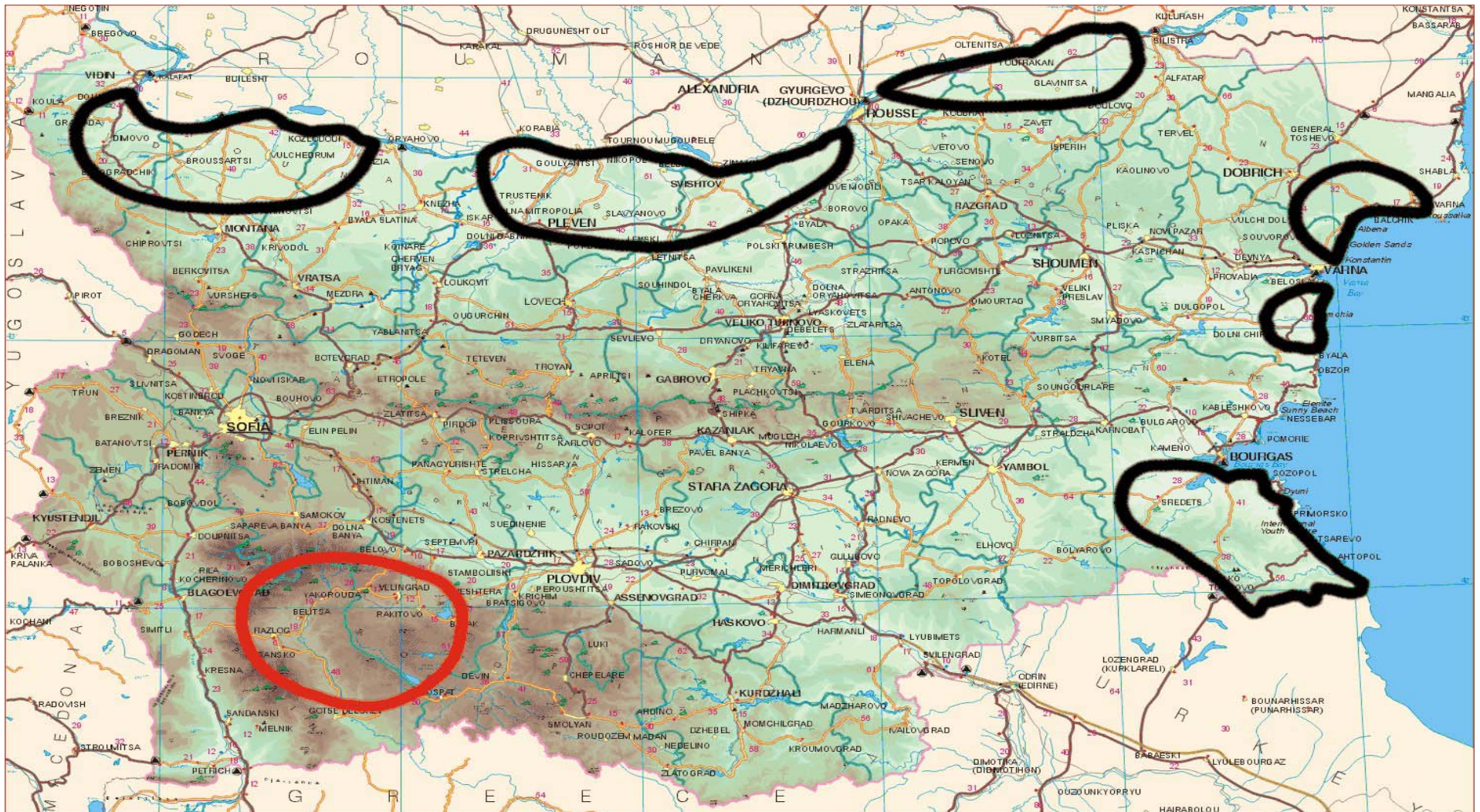
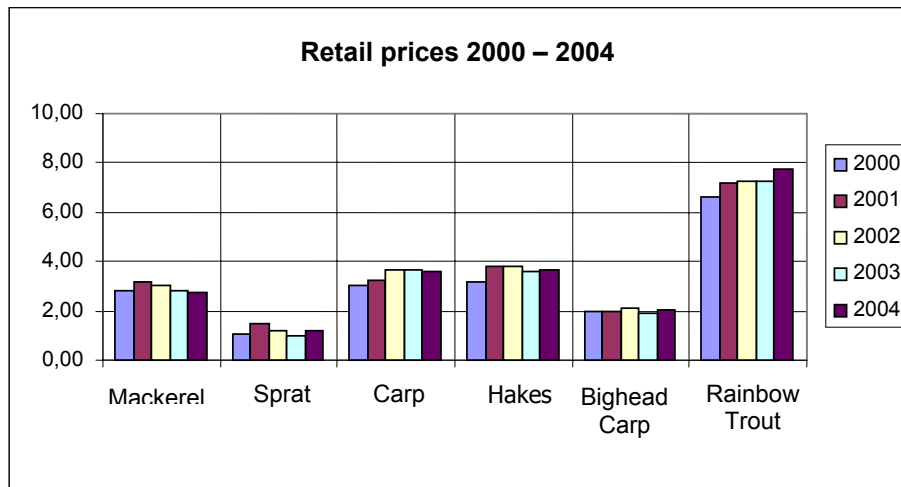
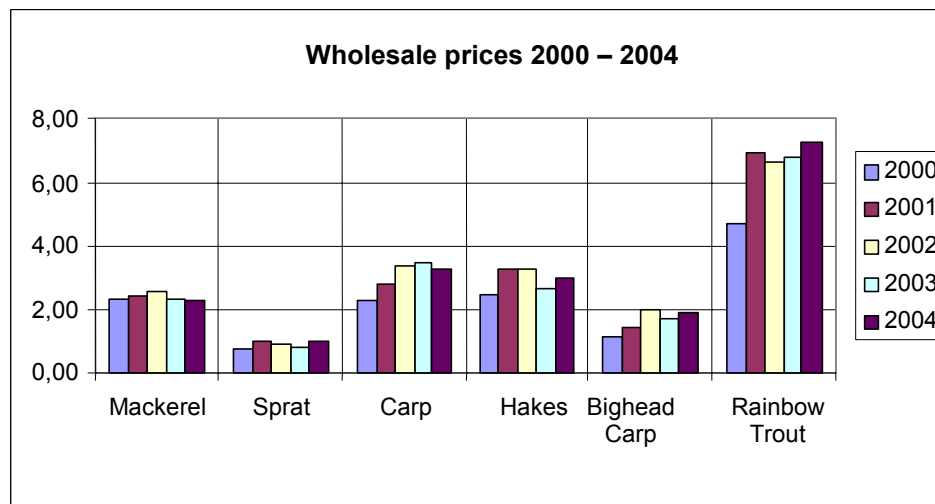


Figure № 17. Retail market prices for fish in BGN /2000-2004/:



Remarque: 1 EUR = 1,955 BGN

Figure № 18. Gross market prices in BGN for fish /2000-2004/:



Remarque: 1 EUR = 1,955 BGN