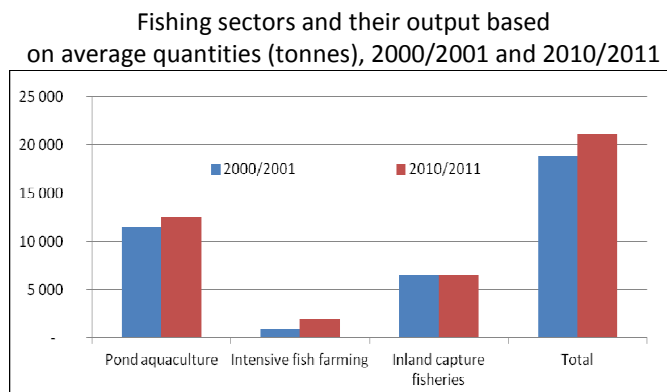


HUNGARIAN FISHERIES SECTOR

KEY CHARACTERISTICS OF THE SECTOR

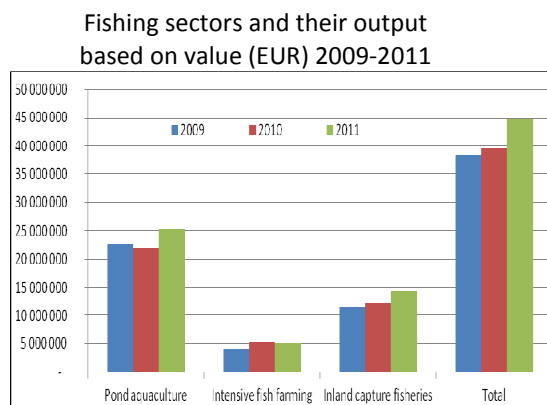
Capture fisheries has the form of *inland capture fisheries* while aquaculture can be divided into *pond aquaculture* and *intensive fish farming*. There is a close link between these sub-sectors; many companies are involved in two or three of these sub-sectors.

The output of the fisheries sector has increased in the last decade driven by increasing aquaculture production. Within aquaculture pond aquaculture production is dominant however the increase of intensive fish farming was significant in the last 10 years from less than 1000 tonnes to over 2000 tonnes.

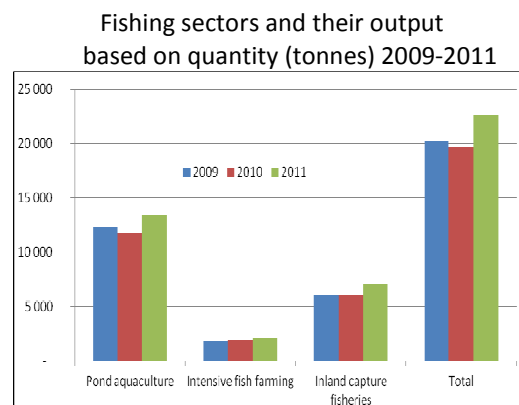


Source: Research Institute for Fisheries, Aquaculture and Irrigation, Research Institute of Agricultural Economics

In the last three years output based on quantity has increased in total; however there was a slight decrease in 2010. The economic performance of the sector increased from EUR 38,3 million to EUR 44,6 million between 2009 and 2011 thanks mainly to the increase in pond aquaculture which grew by more than EUR 2,5 million from 2009 to 2011. Increase in intensive fish farming was almost EUR 1 million. The output of inland capture fisheries was continuous between 2009 and 2011 and grew by EUR 2,7 million. With these amounts fisheries output is at around 0,7% of agricultural and 1,8% of the output of animal production.



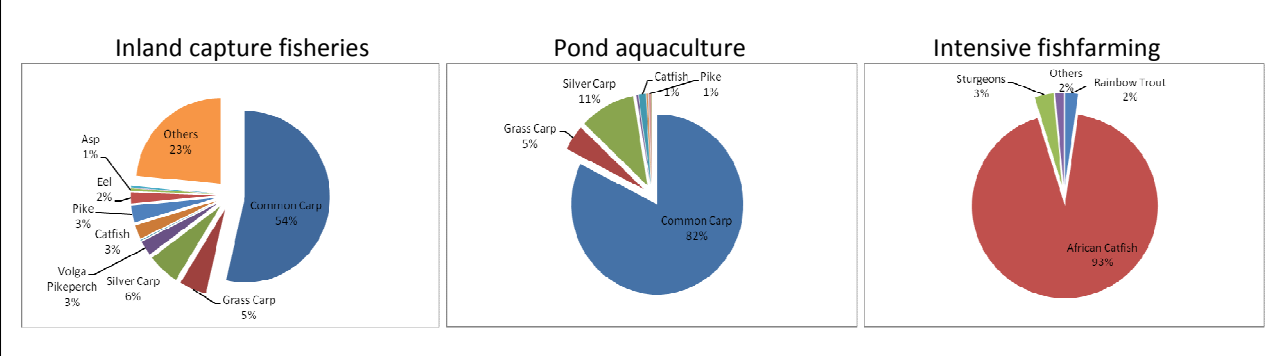
Source: Ministry of Rural Development



Source: Research Institute for Fisheries, Aquaculture and Irrigation, Research Institute of Agricultural Economics

Carp are the most popular fish species in capture fisheries (54%) and pond aquaculture (82%) while African catfish is the dominant fish in intensive fish farming. Inland waters have the most number of fish species and it has also the largest amount of high value predator species such as pikes, catfish and pikeperch.

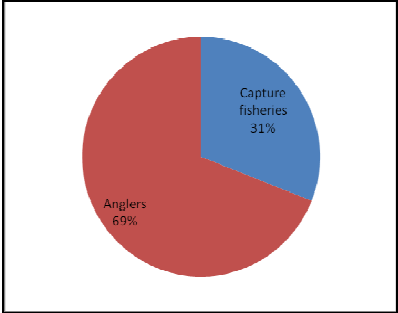
Main fish species in the fishing sectors based on quantity (tonnes), 2010/2011



Source: Research Institute for Fisheries, Aquaculture and Irrigation, Research Institute of Agricultural Economics

Angling is a significant activity in Hungary. Silver, bighead carps and eel are normally harvested by commercial fishers while common carp is mostly harvested by anglers.

Proportion of harvest (tonnes) by anglers and capture fishers, 2010/2011



Source: Research Institute for Fisheries, Aquaculture and Irrigation

LEGAL AND INSTITUTIONAL FRAMEWORK

Hungary is a member of the European Union; therefore implements measures according to the Common Fisheries Policy. Since Hungary is a landlocked country and does not pursue any marine fishing activity national legislation plays an important role in the fisheries management as well. The primary legislation in this field is the Hungarian Law on Fisheries which was adopted in 1997.

The Ministry of Rural Development is responsible for taking part in the EU policy development and adopting national fisheries legislations. The Agricultural and Rural Development Agency is collaborating with the Ministry in the implementation of the Fisheries Operational Programme (FOP), which is the development programme of the fisheries and aquaculture sector co-financed by the European Fisheries Fund and the national government.

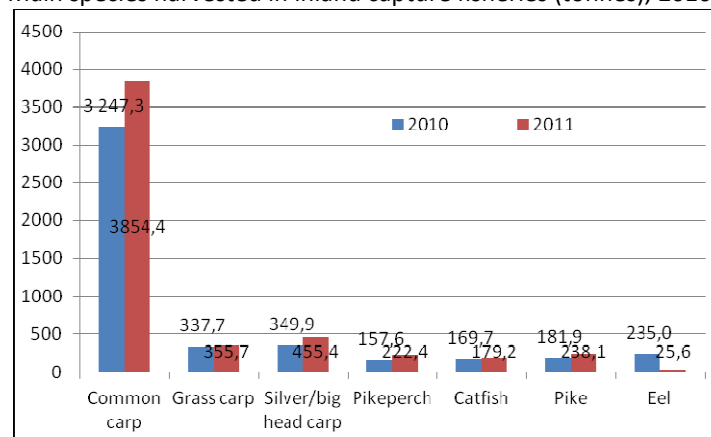
There are two producer associations in the fisheries sector; the Fishermen and Fish Producer’s Association (MAHAL) and the Hungarian Aquaculture Association (MASZ) while the anglers’ interest is represented by the National Federation of Hungarian Anglers (MOHOSZ).

CAPTURE FISHERIES

Performance

Capture fishing takes place in natural waters of Hungary. The area of inland waters has not changed significantly in the last decade. In 2011 the total area reached 140 989 ha while no fishing activity was reported on 3 366 ha. There are around 1650 fishing areas in Hungary, the three most significant are the Lake Balaton, the Danube and the Tisza rivers. These water bodies gave 41,5% of total inland water catches in 2011. The most popular species is common carp covering more than 50% of the total catch in natural waters. The share of carps is even higher if other carp species (grass, silver and big head carps) are also included.

Main species harvested in inland capture fisheries (tonnes), 2010-2011



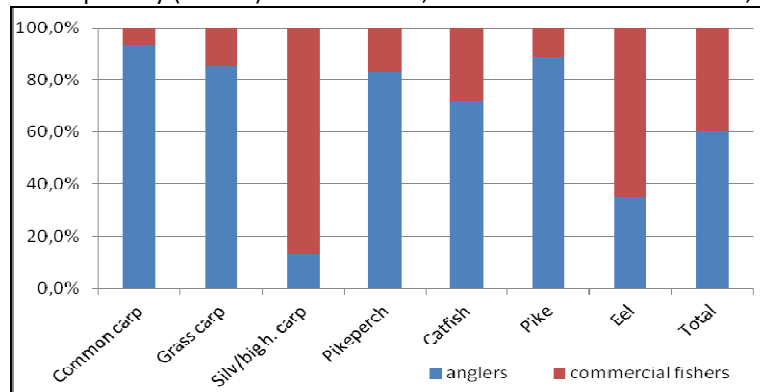
Source: Research Institute for Fisheries, Aquaculture and Irrigation

Currently there are 14 companies having their main activity in inland commercial fishery. The number of fishermen varies season by season; in 2010 there were 1860 fishers in inland waters while in 2011 1 921. A general characteristic of fishermen is that nowadays they are not doing this activity as their primary job.

Recreational fisheries

In Hungary angling is meant under recreational fisheries without commercial purpose as a leisure activity. On the majority of the natural waters there is both commercial and recreational fishing at the same time; however recreational fishing has significantly increased; in 2010 anglers harvested 4 404 tonnes. The harvest of anglers is larger than the harvest of commercial fisheries in the three main natural waters of Hungary (table 2). In 2010 only in the Lake Balaton was the harvest of the commercial fisheries larger than the harvest from angling activities. Silver and bighead carps and eel are normally harvested by commercial fishers while common carp is mostly harvested by anglers. European eel is not a native species in Hungary, restocking is prohibited in the country from 1992. The number of anglers was stable in the last decade; in 2011 there were 369 350 registered anglers in Hungary.

Proportion of harvest by anglers and capture fishers based on quantity (tonnes) in the Danube, Tisza rivers and Lake Balaton, 2010



Source: Research Institute for Fisheries, Aquaculture and Irrigation

Management of commercial fisheries

The Hungarian Law on Fisheries No. 41 and its implementing act of 78/1997. (XI. 4.) were adopted in 1997. The regulations concern fishing rights, official fishing and angling certificates, prohibited fishing methods and equipments and guarding activities. Protected fish species and fishery prohibition periods are regulated in 73/1997 (X.28.) Ministry Decree. Besides fisheries regulations Law on Nature Protection No. 53 (1996) and the Law on Water-management No. 57 (1995) have also fishing related paragraphs.

AQUACULTURE

Aquaculture activity takes place in two main forms:

1. Pond fish farming or pond aquaculture,
2. Intensive fish farming where flow-through and recirculation systems are used.

Pond aquaculture

In pond aquaculture ponds are maintained in a way that they facilitate the development of fish population at a higher yield than in the natural ecosystem. This is achieved with special density management, increased water productivity and feeding methods.

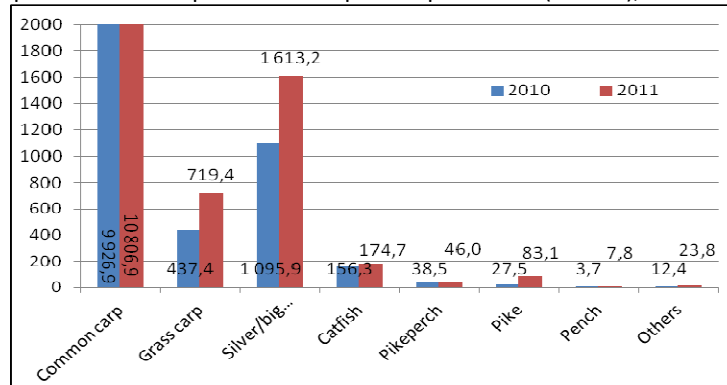
Since 1995 the area of operating fishponds has increased from 17 545 ha to 24 364 ha in 2011. The increased area of fishponds resulted increase in the production; while in 1995 production of fish for consumption was 9 360 tonnes, in 2011 this was 13 475 tonnes. In order to increase production, more and more producers are rather reconstructing instead of increasing the area of fishponds. In 2010 132 ha, in 2011 250 ha were reconstructed.

Common carp is the most produced fish in pond aquaculture while herbivorous species (grass, silver and big head carps) also have an important role in the widely used pond polyculture technology. Pond production has an important role in providing breeding stock (including protected and endangered species) needed for the stocking of natural waters.

High value carnivorous species such as pikeperch, pike and catfish are produced in pond aquaculture as well, although in smaller amount than in inland waters. While production of all carnivorous

species have increased from 2010 to 2011, production of pike reached its highest level which is due to the application of latest research results in the field of propagation (Table 3).

Main species and their production in pond aquaculture (tonnes), 2010 and 2011

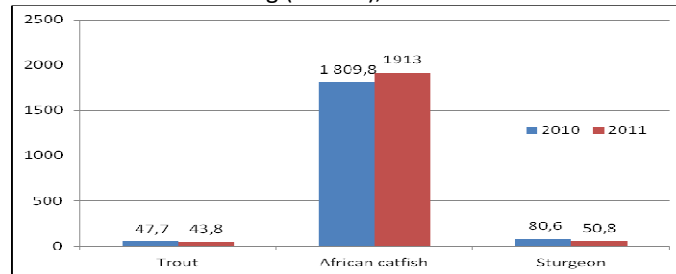


Source: Research Institute of Agricultural Economics

Intensive farming

Intensive fish farm production where fish are kept in controlled conditions and only pelleted feed is used dates back to the 1980s in Hungary. Production started to increase in the beginning of the last decade and has doubled to 2 000 tonnes by 2011. This increase is mostly driven by the growing African catfish production. Besides African catfish trout and sturgeon production has increased significantly as well (Table 4.).

Main species and their production in intensive fish farming (tonnes), 2010 and 2011



Source: Research Institute of Agricultural Economics

There were 377 companies with 441 fish farms in the aquaculture sector in 2011. The majority of fish farms are below 50 ha and their output ranges between 5 and 100 tonnes. The number of companies involved in intensive farming is slowly increasing; in 2011 14 fish farms pursued intensive fish farming activity. High start-up capital and high know-how could be the main barriers to start with intensive fish farming.

In 2011 there were 1343 people employed by the aquaculture industry which is higher than in the last two years, however lower than the middle of the last decade. It is an objective of the fisheries development programme to maintain the level of employment in the aquaculture sector.

Latest policy and research developments in the field of aquaculture are the following:

- the combination of intensive and extensive systems,
- effluent water treatment of intensive systems in constructed wetland,
- multi-functional pond fish farming,
- increased production of high value species using natural food in fish ponds,

- production of high value species in Recirculation Aquaculture Systems (RAS),
- using geothermal water resources for intensive aquaculture,
- applying pond-in-pond system,
- conservation of genetic resources in gene banks and breeding of common carp,
- genetic characterisation of common carp.

Hungarian policy developments are depending on EU policy developments. The European Commission has submitted its legislative proposal on the European Maritime and Fisheries Fund (EMFF) in 2011. The EMFF is the financial assistance fund for the EU fisheries and aquaculture sector starting from 2014. The main work regarding the new financial period in 2012-2014 will be the development of a multiannual aquaculture strategy and new fisheries operational programme for the period of 2014-2020.

FISHERIES AND THE ENVIRONMENT

Hungarian main fish species are omnivorous and herbivorous species, mostly carps that are fed by increased natural food production of the pond and complementary feed. The complementary feed of carps is mainly grain based and artificial feed fishmeal content is lower than 5%. Because of very limited fishmeal use and valuable wetland habitats created by fish ponds, pond polyculture is considered as a sustainable way of fish production that maintains biodiversity.

In 2011 around one third of the fishpond areas (7 049 ha) were Natura2000 sites which means that fish farmers must respect certain rules regarding nature conservation.

A new programme called aqua-environmental measure was launched in 2011 under the FOP in order to encourage environmentally conscious production among fish farmers. In frame of the aqua-environmental measure fish farmers voluntarily commit themselves to meet environment friendly production requirements for a minimum of 5 years.

Important external environmental threat for fish production is the Great Cormorant which is a fish-eating bird protected by the general protection scheme of the Directive 2009/147/EC on the conservation of wild birds. The population of Great Cormorant has been recently significantly increasing causing damage and loss of income in commercial fisheries, aquaculture, and also anglers.

The adverse impacts of aquaculture production are subject of research projects; among others considerable research was carried out on wetland systems. The application of the research results are encouraged by the Fisheries Operational Programme providing financial support for the investments.

GOVERNMENT FINANCIAL TRANSFERS

After joining the European Union in 2004 Hungary is providing support for the fisheries and aquaculture sector in close collaboration with and under the control of the European Commission.

The Fisheries Operational Programme is a fisheries development programme for the period 2007-2013 managed by Hungary and the EU. The programme is based on a strategy that defines priorities and development goals in the fisheries and aquaculture sector for the above period.

The total public expenditure for the 2007-2013 period amounts to EUR 47 million, with EU co-finance through the EFF of EUR 35 million. 98 % of the allocation is earmarked for the convergence objective regions; which mean the rural areas of Hungary except for the central region Budapest and Pest counties.

The programme has the following three main focuses:

Aquaculture, aqua-environmental measures, inland fishing, processing and marketing of fishery and aquaculture products (EFF priority axis 2.)

This programme finances investments in aquaculture, inland fisheries units and processing facilities. Additionally, aqua-environmental measure described above is available under this programme as well.

Measures of common interest (EFF priority axis 3.)

Measures of common interest include actions that serve the interest of the whole fisheries sector. Actions are supported that promote the link between production and research, also the marketing of fishery products is supported to increase fish consumption.

Technical assistance (EFF priority axis 5.)

This measure supports the implementation of the programme covering the administrative, information dissemination, communication and marketing expenses regarding the programme.

Besides the EFF Hungary is providing support from its national budget according to Articles 87 and 88 of the Treaty on the Functioning of the European Union and the Commission Regulation (EC) No 875/2007 of 24 July 2007. The aim of the financial transfer is to maintain the quality of carp genetic resources. The maximum level of the “*de minimis*” support is EUR 10 000 per beneficiaries in one year.

In 2010 and 2011 supports were provided in the field of aquaculture and processing developments, technical assistance and in frame of the “*de minimis*” support (table 5).

Table 5: Government financial transfers associated with fishery policies (million HUF), 2010 and 2011

	2010	2011
Direct Payments*	1 476,74	1 428,50
General Services**	55,63	69,80
Total	1 532,37	1 498,31

*EFF axis 2 and *de minimis* measures, ** EFF axis 5 measures

Source: Ministry of Rural Development

POST HARVESTING POLICIES AND PRACTICES

There is no dedicated national regulation in place on food safety and labelling for fishery products. General EU food safety and labelling legislation should be applied in the field of fishery products as well.

MARKETS AND TRADE

Markets

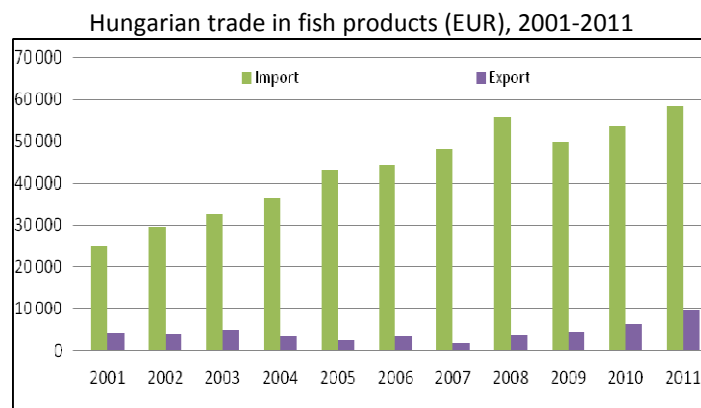
Fish consumption in Hungary is around four kilogram per capita per year. A general objective of the sector is to increase fish consumption. The FOP consist marketing measures, such as promotional campaigns that intend to promote the consumption of fish.

Buying live fish has a long tradition in Hungary, therefore the proportion of processed (frozen and canned) and live fish in consumers' purchases is around equal. In the middle of the last decade the ratio of processed fish started to increase exceeding live fish consumption which seems to correlate to the increase of imported fish products that are mostly processed. More and more traditional Hungarian food products are available ready-to-eat in the retail chains, just like fish soups that were originally made at home, yet the development of fish processing is still at a low level in Hungary.

Trade

Hungary has a negative trade balance in fishery products. Import has been increasing in the last decade and reached its highest level in 2008. In 2009 import fell back, however in 2011 it reached its 2008 level again. The main imported products are sea fish fillets and canned fish products.

The export has decreased until the middle of the last decade; however there is an increase from 2007 onwards and in 2011 export reached its highest level of more than EUR 4 million. The main export product is live fish; however processed products have an increasing share in the export as well.



Source: Hungarian Central Statistic Office

OUTLOOK

Due to the raising grain prices the traditional semi-intensive and extensive pond production technology is expected to change. Instead of cereals, farmers tend to use pellet fish feed as a complementary feed beside of the natural production of ponds.

The very low fish consumption has to be increased to create internal market for enlarged production of ponds and intensive aquaculture.

New law regulating the capture fishery and angling activity on natural waters is under construction to reduce illegal fishing and maintain freshwater fishery resources.