

## THE MARKETING CHANNELS OF FISH CAUGHT IN LARGE SERBIAN RIVERS

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### MARKETINŠKI KANALI RIBE ULOVLJENE NA OTVORENIM VODAMA U SRBIJI

#### *Apstrakt*

Ribolov na otvorenim vodama u Srbiji obuhvata privredni, rekreativni i sanacioni ribolov. Zakonski je definisano da se prometom mogu baviti proizvođači, privredna društva i preduzetnici registrovani za promet ribe, kao i privredna društva i preduzetnici koji obavljaju privredni ribolov. Istraživanje je bazirano na prikupljanju podataka o prometu, anketiranjem prodajnih objekata (ribarnice i restorani u Beogradu) i anketiranjem ribara koji ribare na Dunavu. Cilj rada je da istraži marketinške kanale prodaje ribe ulovljene na otvorenim vodama u Srbiji, obrađivanjem podataka prikupljenih anketiranjem različitih nivoa prodaje. Aktivnosti vezane za ribolov su u nadležnosti 4 ministarstva što stvara ambijent koji je za ribare netransparentan. Organizovan otkup ribe ne postoji, najveći deo ulova ide tokovima sivog tržišta. Većina prometa ribe ulovljene na Dunavu prolazi kroz kratke marketinške kanale, zbog čega ribari ostvaruju malu zaradu.

*Cljučne reči: privredni ribolov, plasman ribe, otkup, izvoz i uvoz ribe*

*Keywords: commercial fishing, marketing of fish, exports and imports of fish*

### INTRODUCTION

Fishing in Serbia includes: commercial, recreational and cropping fishing (to prevent the development or reproduction of non-native species). The Law on the Protection and

Sustainable Use of Fish Resources ("Off. Gazette of RS", 36/2009), which regulates fishing activities, does not proceed to regulate trade of the catch, except for the section that defines who can participate in fish trade. Trade may be conducted by producers, companies and entrepreneurs registered for fish trade, as well as companies and entrepreneurs engaged in commercial fishing. There is no official purchase of the fish catch, so most of the catch is traded through the grey market. There are only individuals who have managed to resolve the secure sale of their catch, as well as fish processing and marketing of products.

The current organization of the entire fisheries sector is divided between four different Ministries in Serbia. The Ministry of Natural Resources, Mining and Spatial Planning are responsible for planning and organization of commercial and recreational fishing to comply with sustainable use, as well as supervision and inspection of fish stock usage. The Ministry of Energy, Development and the Environment covers the domain of natural resources protection. The Ministry of Agriculture, Forestry and Water Management regulate aquaculture, and define who may engage in aquaculture and trade, as well as fish traffic. This Ministry also covers the veterinary control of fish and fish products. The Ministry of Finance and Economy deals with the responsibilities that follow from the following definition: A fisherman must be an entrepreneur.

## **MATERIALS AND METHODS**

The fish trade was analyzed by combining data collected from relevant institutions: the Ministry of Agriculture, Forestry and Water Management, the Belgrade Chamber of Commerce, Chamber of Commerce of Serbia, and the Statistical Office of the Republic of Serbia and surveys of 35 fish markets (26 free market fish shops, 1 reseller, 7 fish departments within supermarkets, 1 commercial fisherman's shop), 9 restaurants in Belgrade and 122 commercial fishermen on the Danube. Two types of questionnaires were created: one on the sale of fish, and another for the survey of commercial fishermen. The surveys were conducted between March 2010 and September 2011. Analyses were done in SPSS and they are partly descriptive.

## **RESULTS**

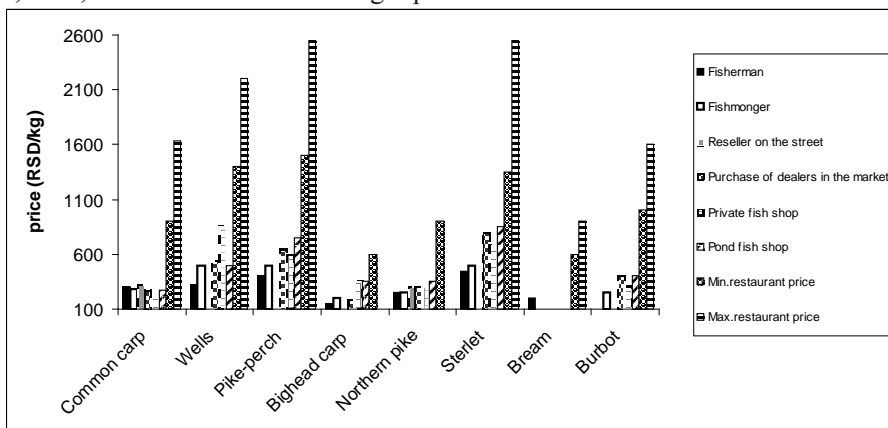
### Fishmongers

The demand for freshwater fish in Serbia usually is associated with the Christian Orthodox fasting periods. In 70% of the fish markets included in this study, fish sales were highest in December and January, which coincides with the period of fasting. When asked whether there are required standards for fish to be marketable, the majority of fish retailers (65.7%) stated that they have required standards, which usually include fish health. For 14.3% of the retailers there were no specific standards required, and 20% of the fish retailers did not respond the question.

Most fish markets have a mixed assortment of freshwater (domestic and imported) and marine fish. Most (63.1%) of the freshwater fish come from fish farms, while 23.7% have redeemed Danube fish from fishermen. Some interviewees (13.2%) did not answer what is origin of fish they sell.

Best-selling domestic freshwater fish species are common carp and trout, wells, bighead carp, with pike-perch, Prussian carp, sterlet, and grass carp that follow. According to the responses of employees in the fish markets, firstly price (45.7%), followed by species (40%), and size of fish (5.7%), determine costumers' choice of fish purchase. The

price affects the fish consumption. For example, the average retail price of carp during the survey was 253 RSD/kg, but the price in the fasting period was 160 RSD/kg. Average price of fish vary at different levels of sales, as shown in Figure 1 (vertical chain of sell). Differences in prices of fish through a vertical chain vary, starting from 3.6%, 25%, 30%, to as much as 6 times larger prices at the end of chain in the restaurants.



**Figure 1.** Average price of fish at different levels of sales (vertical chain).

Prices of fish are slightly different among markets in Belgrade. According to the fish sellers and owners, the difference in price and the offer of fish are most related to the economic structure of the population in certain parts of the city.

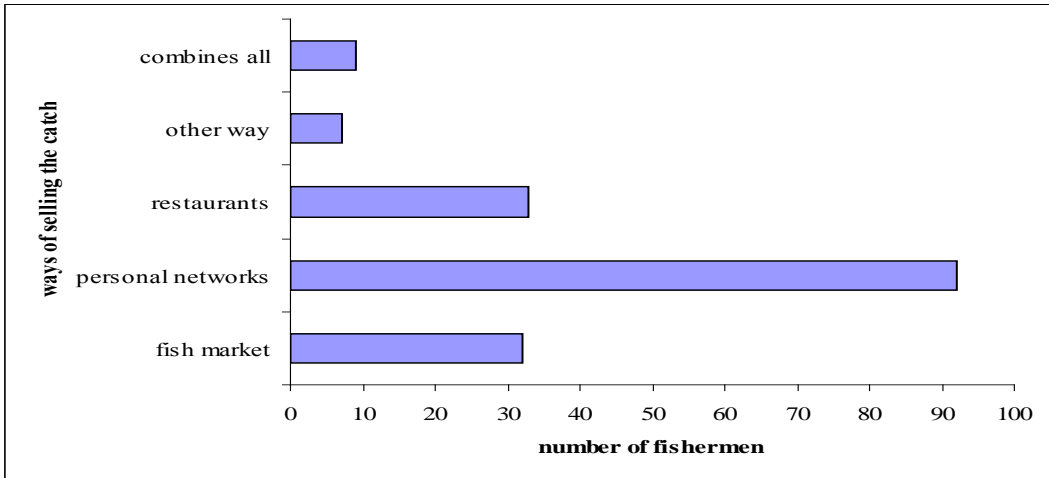
The amount of imported fish is increasing. Striped catfish (*Pangasius sp.*) is on third place among the most wanted species in fish markets, just after the carp and the trout. With low cost and simple way of preparing, it has become the most competitive fish on the market.

#### Restaurants

When it comes to restaurants, fish sales are highest during the summer months. In restaurants, the fish that are most in demand are wells and pike-perch, and then comes trout. Certain restaurants were previously exclusively oriented towards offering freshwater fish, but now their menus offer meats and marine fish as well. Of the 9 restaurants surveyed, 6 (66.6%) served freshwater fish purchased from Danube fishermen. Restaurants usually buy fish from a number of fishermen.

#### Marketing channels of fish caught on the Danube

Marketing of their catch is one of the most important problems for fishermen. Most fishermen (75.4%) sell their catch through personal networks, having their own regular customers (Figure 2) and their fish do not pass to the official fish market. Most of the catch is sold through the grey market, as the result of a lack of organized purchasing. Rent of the market place for the sale of fish, according to the opinion of fishermen is expensive. For example, in Zemun market monthly renting in 2010 was 30 000 RSD (price includes a gig, electricity, water).

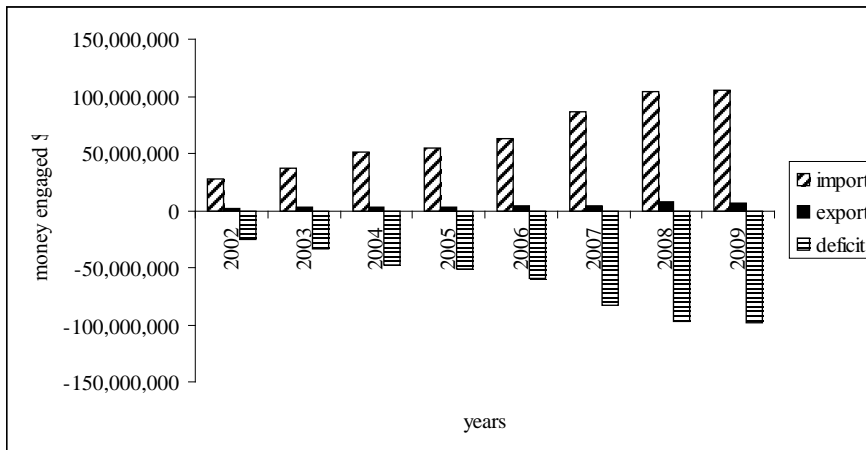


**Figure 2.** Ways that commercial fishermen sell their catch.

If the answers on the method of catch are crossed with the amount of catch in one year, significant correlations can be obtained ( $r = -0.266$ ,  $p = 0.027$ ). The fishermen who sell their catch through their own channels had a lower catch. Fishermen who had to sell their catch independently needed to set aside additional time for organizing their sales.

## DISCUSSION

In Serbia, the fish market is unregulated and disorganized. There is a problem in the division of responsibilities between the four different Ministries. The sale of freshwater fish is usually conducted by pond shops and retailers who purchase fish from fishermen. Serbia increasingly imports fish and fish products, and the low prices of imported fish compete with the marketing of domestic fish. In 2003, the price of fish from Argentina was 1.2 \$/kg (<http://www.fao.org>). Most fish sold in Serbia are imported from Vietnam, Argentina and Norway. In 2008 the most imported fish was the Argentine hake (*Merluccius hubbsi* Marini, 1933), and in 2011 the Striped catfish (*Pangasius hypophthalmus*, Sauvage, 1878) (Mišćević *pers.comm.* 2011). By comparing data, regarding the realized trade of fish in Serbia and the funds engaged in the process, we find that Serbia imports fish far more than it exports (Figure 3).



**Figure 3.** Trade in fish and fishery products according to the Ministry of Agriculture, Forestry and Water Management.

It is interesting that a kilogram of imported fish in 2002 cost 1.23\$ and domestic fish was exported at 1.37\$/kg, while in the 2009, 1 kg of imported fish cost 2.67\$ and 1 kg of exported fish cost 5.12\$. Comparing the prices of imported and exported fish, it is not surprising that more and more fish are imported and the price of imported fish is more accessible to customers.

For comparison, data were taken from the FAO (2013) on the turnover of fish in Bulgaria and Romania, since we share the same fishery resources. In Romania, supply comes from commercial marine and freshwater fishing, and saltwater and freshwater aquaculture. Fish distribution is carried out through various channels. Most of the fish pass through at least two separate "operators" before being sold to the consumer. This usually involves a producer or fisherman who sells directly to future sales or through an intermediary. The fish market is very low in Romania, as well as in Serbia, resulting in side-channel selling of fish. Many of these short marketing chains in the sale of fish, due to the high cost of transport and distribution, increases the price of fish. Local market in Bulgaria has a limited demand, and a ban on exports of fish products from Bulgaria to the European Union (starting in 2000) contributed to the reduction of production and catch. Most of the exports now go to Eastern and Central Europe (<http://www.fao.org>).

Fishing in Serbia is in the process of transition from a centrally planned to a market economy. Change to the dominance of the private sector, instead of the state, led to the problem in the fisheries sector. The shift from a centralized state structure to a private market system has occurred within the context of low incomes, limited investment possibilities, rudimentary market institutions and lack of government subsidies for the development of the fishing industry.

In Serbia, in the 2011 there were only two registered facilities to export fish to the EU and 7 facilities for fish exports to Russia (Mišćević *pers. comm.* 2011).

## **CONCLUSION**

1. Most of the fish caught in the Danube pass through short-marketing channels, causing fishermen to make a small profit. 2. Fishing is under the regulation of 4 ministries, which complicates the organization of the market and creates an environment that is not transparent to fishermen. 3. If one wants to engage in fishing, a fisherman must be registered. This creates (according to fishermen) significant costs and push fish marketing through gray market channels. 4. Due to low demand, improving the situation of fishermen can be achieved primarily through changes in the structure of supply and reducing the cost of business and creating opportunities for the use of more complex marketing channels. 5. To improve the position in the marketing chain, fishermen will (in the future) likely seek joint ventures, and their bargaining power with customers will thus be stronger than working individually.

## **ACKNOWLEDGMENT**

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