Relationship between the Russian fishing fleet and domestic ports as the core for performing its state mission

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Abstract. The article provides a rationale for the main task of the Russian fishing fleet to implement the Food Security Doctrine of the Russian Federation under the terms of public-private partnership. The paper describes changes in the activities of the fishing fleet in the Northern fishery basin that were caused by the process of operating in the market economy environment, the way these factors impact on the activities of subsidiary and service companies, as well as the development of enterprises and companies involved in the fishery sector. The paper provides the reasons for the low availability and quality of domestic fish products for the population in the Arctic region. In connection with the predominantly export-oriented trends in the fishing industry of the Murmansk region affecting the calls of trawlers at Russian ports it was concluded that there was a need for a national policy regulating these closely related processes. The article justifies measures to improve the relationship between fishing vessels and domestic ports in the Arctic region. To increase the supply of raw fish and fish semi-finished products for coastal fish processing factories, as well as to increase a number of high-level processed fish products, it was suggested to use medium fishing freezer trawlers (MFFT, according to the classification adopted by PINRO) according to the rules of coastal fishing. The paper provides assessment for possible impacts from the delivery of fish products by “non-call” fishing vessels (i.e. fishing vessels that did not perform customs declaring procedures) on the level of economic activities in the fisheries industry. Expert assessments for the costs of repairing “non-call” fishing vessels abroad are provided as well. The paper provides estimates of additional tax investments into the Russian national budget from the Murmansk ship-repair factories in case servicing of “non-call” fishing vessels is provided in the Russian Federation. Refocusing of fish landings will provide a fisheries cluster in the Northern Basin.

1. Introduction
The most important task of the Russian fishing fleet is to participate in the implementation of the Food Security Doctrine of the Russian Federation approved by RF Presidential Decree No. 120 on 10 January 2010 [1].

Under current geopolitical conditions, Russian economy is becoming more independent from the international community. In our opinion, the level of food supplies in the Russian Federation is considered to be the most important macroeconomic indicator. It is important for ensuring national security, achieving better standards of living and for promoting appropriate demographic policies. To provide people with sufficient, nutritionally adequate and safe food, there is a need for an appropriate
institutional frameworks, the development of industries involved in the food production (i.e. Russian agriculture and fisheries), as well as the development of relevant technologies.

2. Main part

Investigations conducted by Knipovich Polar Research Institute of Marine Fisheries and Oceanography (FSBSI "PINRO") and Luzin Institute for Economic Studies – a subdivision of the Federal Research Centre «Kola Science Centre of the Russian Academy of Sciences» (IES KSC RAS) – in 2018 have shown that recommendations to provide the Russian population with fish products within the established limits by means of domestic resources are implemented approximately for 2/3. As the above-mentioned studies have shown, the way to deal with this issue in Russia is to improve the fisheries management [2]. Being steadily developed in coastal regions and based in particular seaports, fisheries became the main activities and the backbone of the marine economy. Currently, fisheries can be considered as the core of the maritime cluster. The companies and factories that are involved in the development of fisheries are as follows: fishery seaports, fish processing factories, ship-repair factories, companies and factories that make fishing gear and containers for fish products, supply vessels with fuel, food and other products, as well as institutions and facilities for staff training and fishing fleet maintenance.

The country's population, local authorities in coastal regions, production and service companies that are involved in the fishing fleet activities (including fish processing factories, seaports, ship-repair factories, factories that make fishing gear and many others) have a vital interest in the calls of fishing vessels at Russian ports. They provide additional employment, budgetary income at all levels, new orders for companies that maintain the fishing fleet, enhancing production and competition, as well as lower prices in the domestic market and a greater efficiency in the export. Research papers provide various data on the cumulative economic effect from fishing vessels calling at ports for fish landings, repair works and the other above listed services. The authors of this paper used the data from the “Program for recovery and stability of the fishery industry in the Murmansk region” (hereinafter referred to as “Program”). The program was implemented in 1996 by a group of fisheries experts who were interested in fish landings at Murmansk Sea Fish Port. According to the developers of the “Program”, a multiplier per 1 ton of cod and haddock landed at the port could be [3]:

a. in terms of sales of goods and services – 2.75;
b. in terms of budgetary and off-budgetary income – 1.9;
c. in terms of additional employment – 4.7.

Additionally, the cumulative economic effect can be obtained in the ship-repair industry. According to the data from the non-profit organization “the Union of Ship Repair Companies”, the average cost of repair for vessels calling at Russian ports is about 10 % of the cost of the products sold.

The fisheries in Northern European Russia during the Soviet period was arranged as a regional production complex. The Ministry of Fisheries was responsible for their management. The Ministry was made up of 8 all-union fishery associations, including “Sevryba” that was used as an example in the paper to illustrate the fishery industry activities and proposed innovations. In addition, the USSR Ministry of Fisheries included 2 Republic ministries, the Russian Soviet Federative Socialist Republic and Kazakh Soviet Socialist Republic, as well as 11 fisheries directorates under the Council of Ministers of the Union Republics [4].

Including fisheries companies, the all-union fishery association “Sevryba” was made up of departments that support the fisheries activities and the Association. They were fish processing factories, ship-repair factories, a seaport, a fishing gear factory, a packaging factory, designing companies, training facilities and others. The company “Murmanrybsbyt” paid for fish products and it was responsible for fisheries trade and sales in the local market and other regions. Estimated prices were used to pay for raw fish and fish semi-finished products.

The all-union fishery association “Sevryba” operated before October 1988, and after 1 January 1990 the fishing industries of Murmansk, Arkhangelsk regions and Karelia were rearranged as the
Association of Fishing Companies (AFC "Sevryba"). In later years, the privatization of factories occurred and they were rearranged as new companies. The total number of companies within the fisheries sector in the Northern basin in the early 2004 was 440 [4].

The structural reforms resulted in lower catches, lower production of fisheries companies, the lack of fishing vessels calling at Russian ports, particularly those vessels that were purchased abroad without any customs clearance (i.e. 24 % of their total cost were not intended for the national budget). The same procedure is applied for the calls of vessels that were repaired abroad.

Available by the mid-1970s, the productive capacity of the fishing fleet provided the average annual catch and processing of over 1 600 thousand tons of marine living resources in 1975-1990. In the early 1990s, large and medium-size fishing vessels did not operate in the South Atlantic and the Pacific areas, the total catch in the Northern fishery basin decreased to 45 % of the above-mentioned size by 1995.

Deregulations in the international economic activities, higher prices in the foreign market caused an increase in exports, particularly its share in the total catch (table 1).

| Indices                                           | 1988  | 1990  | 1995  | 1997  | 2000  |
|---------------------------------------------------|-------|-------|-------|-------|-------|
| Total catch (thousands of tons)                    | 1590.6| 1593.0| 610.2 | 775.3 | 775.3 |
| Fish products (thousands of tons)                  | 879.0 | 865.1 | 401.1 | 418.1 | 417.7 |
| Exports (thousands of tons)                        | 161.0 | 200.0 | 23.6  | 218.2 | 18.3  |
| Exports in the total production, %                 | 18.3  | 23.1  | 58.2  | 52.2  | 45.1  |

The data presented in table 1 show that, compared to 1988 and 1990, the total catch in 1995 decreased by 60 % that was predominantly caused by two reasons: the closure of fisheries in distant areas and the depleted resource supply in the Barents Sea and adjacent waters.

However, the portion of exported fish products increased from 18.3 % in 1988 to 58.2 % in 1995. In later years, it decreased but it remained at a high level, i.e. about 50 % [8].

On the one hand, the excessive exports of fish products to foreign countries was one of the main reasons for their deficiency and, respectively, higher prices in the domestic market. On the other hand, it resulted in significantly lower prices for the exported fish from Russia. In 1993, they were almost 2 times lower than in 1991. For that reason, the losses of fishermen who carried out fisheries in the Northern basin were 212 million NOK in 1992, 470 million NOK in 1993 and 168 million NOK in 1994 [7].

The isolated privatization of fishing and on-shore processing facilities, the liberalization of the pricing policy for fish raw materials and primary processing products on fishing vessels, and its export from the fishery abroad (to Norway) led to a significant increase in the cost of production at traditional coastal fish processing enterprises and a sharp decline in the volume of production processed. So, in 1994, the volume of fish food production amounted to 17.7 thousand t (a decrease of 4.7 times as compared with 1990); of canned and preserved products - 16.1 thousand t (a decrease of 1.9 times); of non-food products - 4.7 thousand t (a decrease of 6.2 times). During this period, the transition of traditional enterprises to new legal forms has already been observed. In 1994, their specific value in food production reached 41%, of canned food - 63% [7]. In subsequent years, all traditional enterprises will go bankrupt, and the number of newly registered ones will reach 60 units [4].

In the early 90s of the last century, changes in the activities of the fishing fleet, including uncontrolled foreign trade and service in foreign ports, led to a sharp reduction in their calls at the Murmansk Marine Fishing Port (MMFP) and fish production landing, which significantly complicated the economic situation of the port with all resulting negative consequences. Cargo turnover for 1991-1995 decreased in 6 times, from 3,300 thousand t to 550 thousand t [9].

Since 1989, the Murmansk shipyard also begun a decline in the production volume. For three years, the production volume decreased by 14%. The main reasons were the decrease in the number of
vessels in operation (in the period up to 2005, 321 vessels were withdrawn from the fleet), as well as 
the repair of trawlers in foreign ports to which fishing products were delivered.

By the mid-1990s, as a result of the negative phenomena associated with the market restructuring 
of the economy, fundamental changes took place in the Russian ship repair market, which led to a 
decrease in demand for its services. In 1990-1995, at the Murmansk Shipyard enterprises, the 
production decreased in 3.8 times, the market share - in more than 4 times [8].

In 1988-1995, in Murmansk and region, along with the transformation of the state-owned ship-
repair enterprises into market structures, more than 250 joint-stock companies, limited liability 
partnerships, joint ventures, private enterprises, etc. were created and registered with them. The production potential of these formations was negligible, they were not able to carry out ship 
repairs and contributed to the collapse of a high-class ship repair base in the North Basin [8].

Other enterprises serving the fleet were also privatized in the early 1990s and launched into an 
independent “voyage”. Their production volumes also decreased due to the reduction of orders from 
fishing vessels.

Thus, the excessive export of fish products and the cessation of calls of fishing vessels at the ports 
of the Northern Basin led to an increase in prices for fish products in the domestic market and the 
deterioration of the socio-economic situation in all enterprises of the Northern Basin, which were 
previously associated with its activities.

It has been 28 years since the Russian economy functions in market conditio
ns. During this period, 
the owners of fishing companies have confirmed that they are free from obligations to the state and 
society, except for the payment of taxes. A fishing fleet has been formed, which vessels supply foreign 
countries with fishery products and do not enter domestic ports. Among 139 active fishing vessels of 
the Northern Basin 63 units have not been cleared, and cannot call at the domestic ports (45.3%), 
including 53 trawlers of fishing companies registered in the Murmansk region (49.1%) [10]. In 
addition to them, according to the Union of Fishermen of the Northern Basin, 19 vessels that have 
been repaired abroad are non-calling at Russian ports. In accordance with the research conducted by 
the PINRO and the IEP KSC RAS, the trawlers listed above have mastered the overwhelming amount 
(about 70%) of the aquatic biological resources allocated to companies of the Murmansk region since 
2011 [11].

The level of delivery of catches abroad at the present time by fishing vessels registered in the 
Murmansk region is shown in table 2.

| Table 2. Percent of catches that were taken by fishing vessels registered in the Murmansk region and exported, % [12, 13, 14] |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Fish species                  | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   |
| Cod                           | 82,4   | 72,4   | 80,9   | 66,1   | 72,8   | 91,2   | 98,4   | 96,0   |
| Haddock                      | 55,4   | 50,9   | 54,9   | 47,6   | 47,0   | 96,8   | 89,1   | 97,2   |
| Saithe                       | 4,9    | 4,0    | 12,2   | 48,2   | 20,7   | 11,2   | 35,7   | 60,2   |
| Redfishes                    | 64,5   | 69,9   | 68,7   | 50,4   | 82,8   | 54,6   | 51,2   | 2,1    |
| Halibuts                     | 46,2   | 60,2   | 57,3   | 35,0   | 48,7   | 43,5   | 56,5   | 57,9   |
| Mackerel                     | 46,9   | 41,4   | 26,2   | 26,6   | 56,7   | 38,2   | 41,6   | 51,8   |
| Horse mackerel               | 100,0  | 98,9   | 96,9   | 96,8   | 100,0  | 99,6   | 97,8   | 93,4   |
| Blue whiting                 | 37,6   | 30,2   | 22,2   | 33,6   | 52,5   | 47,9   | 28,9   | 36,0   |
| Sardine                      | 18,9   | 47,7   | 48,7   | 18,8   | 11,0   | 84,5   | 38,9   | 82,5   |
| Herring                      | 5,8    | 37,8   | -      | -      | -      | -      | -      | -      |
| Other species, including seafood | 32,9   | 54,0   | 46,9   | 90,7   | 85,5   | 65,3   | 79,8   | 41,1   |
| Total export                 | 46,4   | 47,3   | 51,7   | 48,7   | 57,8   | 66,7   | 67,3   | 71,7   |

The data presented in the table show that with minor fluctuations in the size of catches, the share of 
products from them that were sent for export was constantly increasing. In 2016, it was higher than the
2010 level by 24.4%, including cod and haddock, as the main objects of the fishery, - by 26.0% and 46.3%, respectively. In recent years, cod and haddock catches of vessels registered in the Murmansk region have been almost completely exported.

That promoted the creation of economic “scissors”, as a result of which a sharp decrease in fish landing in the domestic ports created a man-made deficit and inflated wholesale prices, and on the other hand, significantly reduced the demand for expensive fish raw materials. Thus, in 2014, in the domestic market, the wholesale price for cod increased from 85-90 rubles / kg to 195-200 roubles / kg (more than 2 times). At the same time, the share of fishermen in the retail price increased from 50% [15] to 85% [16].

It should be noted that in Murmansk the wholesale prices continued to rise in the following two years. At the end of 2017, the prices for frozen headed cod were 215-220 roubles/kg. Compared to the above-said, they increased by about 10% [17], but the next significant increase in wholesale prices was observed in 2018. At the end of December 2018, compared to December 2017, the wholesale price level was 134.9%, for haddock - 138.5%, for halibut - 119.8%, for flounder - 137.5% and for mackerel - 169.1% [18].

Naturally, the increase in the wholesale prices led to a rise in the retail ones. Thus, the average price for one kg of frozen fish, processed in 2017 in the Murmansk region was 256.6 roubles (174.2% of the level of 2013 - the last year with stable prices), of frozen round fish - 125.5 roubles/kg (191.5%), of fillet - 441.8 roubles/kg (149.2 %) [12]. It can be assumed that the level of differentiation of the retail prices was affected by the deterioration of the range of the purchased fish. So, according to the authors of the paper, at the end of 2018, cod fillet costed 530 roubles/kg in the chain stores.

The above-mentioned data on fish prices by type of processing reflects the change in average retail prices for all types of fish included in these groups. Naturally, buyers, with a significant increase in prices, switched to the purchase of fish having a lower cost - instead of cod, haddock and redfish, they began to buy pollock, blue whiting and others. Thus, the increase in prices for fish products is the cause not only of a decrease in their consumption, but also of a deterioration in the quality of affordable fish products. It is important to note that the increase in retail prices for cod and haddock in 2007-2014 occurred in the context of an increase in the domestic quota (2.3 times) and the daily catch rate of the main types of trawlers (2.2-2.3 times) with simultaneous reduction in the price of fuel (1.7 times) and the great increase in taxes [19].

Should the owners of fishing companies take into account these factors, bearing in mind the insignificant supply of the domestic market with products, the socio-economic situation in the country and the factor of low income of Russian citizens, compared with importing countries? The discussions on the situation in the fish industry held in Murmansk in the form of round tables and deputy hearings in the Murmansk Regional Duma showed that the owners of fishing companies did not consider it expedient to set the wholesale prices below the export ones, although the financial standing of companies allowed that, because the profitability of goods sold in the recent years had been 70-74% [20, 14]. Seven companies that produce 107.3 thousand tons (37.3% of the TAC of the Murmansk region) have profitability ranging from 81.6% to 293% [21]. One of the reasons for this is the assumption that the products will not be cheaper for buyers, and only retail premiums will increase. Deputies refer to the absence of levers of influence on prices. In this situation, in our opinion, certain measures on the part of the federal authorities are needed.

Russian President Vladimir Putin drew attention to the problems with prices in a speech at a meeting of the Presidium of the State Council of the Russian Federation on October 19, 2015. Then, at a meeting with business representatives in 2018, he also said that the high currency value of the goods was not a reason to transfer these prices to the domestic market. However, these arguments of the President were not heard by the representatives of the fish business.

It is likely that the current preparation of the draft law on the crab auctions is the result of the fishing business ignoring the warning of the President of the Russian Federation.

The current situation in the Northern Basin with trawlers calling at domestic ports, excessive export of fish abroad and using export prices to sell fish products in the domestic market, in our opinion, can
be referred to the so-called “market failures” [22]. To solve it, the government intervention is necessary.

First of all, it is necessary to provide an economically grounded relationship of fishing vessels with domestic ports, primarily in Murmansk. For these purposes, in our opinion, it would be advisable to oblige fishing companies to land fish products in Russian ports, as it is done in most countries with developed commercial fishery. The fees for aquatic biological resources should be abolished as compensation for financial losses to increase conversions, which would also be consistent with international practice. By the way, for many years they accounted for about 0.8% of the cost of production and marketing. Even if the fees are increased to full face value, their share in the cost of production will be about 4%. To stimulate repairs in Murmansk it is necessary to build a boathouse using recommendations [23]. Port facilities of the Murmansk Fishing Port need to be modernized. As a tool for managing the process of activating investment activities, it is advisable to create a strategic map of the Murmansk region [24].

It is possible to use the experience of Great Britain, which has adopted the document entitled “Licensing of fishing vessels and supporting economic ties with the fishing community of the United Kingdom” [23], in order to increase the number of fishing vessel visits to the ports and fish landing. One of the measures for this purpose provides for “landing” of at least 50% of the vessel’s catch from the weight quota in the UK.

Russian Federal Agency for Fisheries’ activities related to the promotion of coastal fisheries (Orders of the Federal Agency for Fisheries No. 860, 861 of December 13, 2017 and No. 762 of December 24, 2018) have a certain effect on increasing the number of calls of fishing vessels at the ports and fish landing.

As a result, in 2019, the base quota for cod and haddock coastal fishery is equal to 41,533 t, which is 11,296 t more than in the previous year (~ 40%). However, in 2019, the total quota for cod and haddock coastal fishery is only about 10% of the volume allocated to all fishing companies of the Murmansk region.

According to the data presented at the Vth International Conference “Fisheries in the Arctic: Modern Challenges, International Practice, Prospects” in 2018, 11 fishing companies applied to the Federal Agency for Fisheries for the construction of fish processing plants using investment quotas. This means that the volumes of coastal quotas and calls of vessels with fish at the ports of the Northern Basin will increase.

In accordance with the data of the Register of fishing vessels in the Northern Basin, there are 43 medium refrigeration trawlers (SRTM), including 34 units fishing among them. These trawlers are technically outdated and not subject to modernization and, in our opinion, are most effective when working in the “fresh” version according to the rules of coastal fisheries, where they can sell at least 25% of the aquatic biological resources.

Delivery of fish products to the port of Murmansk will not lead to a significant change in the financial results of fishing companies, as it will be carried out instead of delivering fish to foreign ports.

3. Conclusion

Additional delivery of 118,176.0 thousand t of cod and haddock fish products to the Russian market will help reduce prices, increase the availability and consumption of fish products by the population, and enhance the contribution of fishing industry to food security.

The multiplicative effect of the increase in value and services, according to the data above, will be 56,581.3 million roubles (table 3).

In addition, significant tax payments will be received at the expense of repairs of "non-calling" vessels at domestic enterprises. According to the calculations of the Leading Scientist of IEP KSC RAS, Doctor of Sciences (Economics) V. Khrapov, the current value of the costs of “non-calling” vessels abroad is about 4 bill. roubles a year. With a tax burden of 7.9%, the tax revenue to the budget system of the Russian Federation will be about 316 mill. roubles.
Table 3. The increase in the cost of goods and services due to the multiplier effect

| Indicators                                                                 | Value*  |
|---------------------------------------------------------------------------|---------|
| Non-calling vessel catch in 2017, t cod, t                               | 205,970 |
|                                                                           | 167,309 |
| haddock, t                                                               | 38,661  |
| The factor of the conversion of the catch to food products:              |         |
| cod                                                                       | 0,57    |
| haddock                                                                   | 0,59    |
| Average annual wholesale price:                                          |         |
| frozen cod, b / g.: roub./kg                                              | 290     |
| frozen haddock, b / g.: roub / kg                                         | 205     |
| Cod cost at wholesale prices, mill. roub.                                 | 27656,2 |
| Haddock cost at wholesale prices, mill. roub.                             | 4676,0  |
| The multiplication factor of the cost of goods and services              | 2,75    |
| Increase in the cost of goods and services in enterprises and organizations engaged in fishery, mill. roub. | 56581,3 |
| The increase in the amount of tax revenues according to the standard in fisheries in 2017, mill. roub. | 5035,7  |

* - author's calculations

National natural resources, including fish, should, first of all, be put at the service of society and the state. To this end, the paper proves that the fishing fleet needs to be reoriented towards increasing economic relationship with Russian ports.

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