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Quotas for Catch of Aquatic Biological Resources

A.N. Asanov, E.L. Li, E. Yu. Ageshina
Eastern State Planning Center, Moscow, Russia

ABSTRACT

The transformation of the system for distributing quotas for the extraction of aquatic biological resources (ABR) in quotas in Russia affects the interests of many parties. The new system of allocation of rights to catch ABR, which provides for quotas for investment, changes the established order in Russia in fisheries, which caused discussions in the industry. Innovations reduced the level of monopolization of industrial fishing, the development of shipbuilding and the ABR processing in Russia's territory. The aim of the study is to identify the structure of interests of economic entities and the population within the framework of the current quota system of ABR catch in Russia on the example of the Far Eastern fishery basin of the country. Being studying the materials for the paper, the authors used methods of scientific analysis and comparison in the research of the regulatory framework and the distribution of total allowable catches. There is an inductive method prevails in the statistical part of the study, and the monographic method allowed to combine the results obtained in the scientific paper. According to the analysis of the detailed structure and short-term dynamics of the allocation of quotas for the catch of ABR in the Far Eastern Federal District (FEFD), the authors found that the current system of distribution of rights does not fit to global trends aimed at reducing the catch of the wild resource, the capacity and number of fishing vessels. Innovations mainly reflect the interests of large fish producers to the detriment of small ones. However, the potential effect of introducing investment quotas is positive, as it ensures intersectoral cooperation. Against the background of unstable external demand for Russian products, this mechanism stimulates reorienting the activities of fishers from foreign markets to domestic ones, from the sale of raw materials to processed products and making added value within the country, including in the FEFD.

Keywords: investment quota; interest; aquatic biological resource; total allowable catch; Far Eastern fishery basin

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INTRODUCTION

In world practice, quotas for the extraction of ABR are one of the tools for regulating their volumes and diversity in natural habitats [1, p. 92]. The volume of quotas is set on the basis of "total allowable catches" (hereinafter referred to as TAC), which characterize the scientifically substantiated annual catch value that corresponds to a long-term strategy for the rational use of ABR stocks.

The main fishing countries use similar quota systems [2–7], but they reflect different interests of the main users of natural resources. The structure of the distribution of ABR production quotas between users indicates the priorities of the state policy in the development of the fishery complex. The main indicators of the distribution of interests are the volume of quotas for the most profitable types of extracted resources.

As the interest of the world community in maintaining the ecological balance in the water areas has increased, a new priority has emerged for the implementation of national policies of the main fishing countries, associated with a reduction in the volume of wild resource catches in territorial waters (200-mile zone) [8]. This trend is the basis for the adoption of a number of political decisions related to the reduction of ABR production quotas, the reduction of the fleet, the relocation of the production center from national waters to areas of foreign countries and the World Ocean, as well as the spread of the practice of production and consumption of aquaculture products, regulation of export-import operations volumes. (see *figure*).

The volume of quotas is an unstable value, depending on the annually set TAC and natural biological cycles of reproduction. However, individual countries have announced significant reductions in quotas for the extraction of wild resource in their own territorial waters (for example, Japan, Norway, and Iceland) without quantitative estimates of the scale.

The main indicator of the fulfillment of the indicated intentions is the reduction of the fishing fleet. In particular, government policies such as:

- redemption by the state of fishing vessels in order to withdraw them from the fishery (USA) [9, p. 682];
- a decrease in investment in the construction of fishing vessels (New Zealand) [10, p. 17; 11, p. 205];
- subsidizing the construction of ships, if their sizes are 1.3 times less than those being utilized (EU) [9, p. 682];
- payment of premiums for the export of large-capacity fishing vessels to other countries that stop operating in territorial waters (EU) [9, p. 682];
- support for the construction and operation of small coastal fishing vessels (Norway) [12, p. 812, 828];
- subsidizing fishing in the waters of foreign states and open areas of the World Ocean — "long-range fishing" (PRC, Japan) [9, p. 683; 13, p. 371]. In particular, the PRC provides government subsidies for fuel, the amount of which is directly proportional to the size of the vessel.

The withdrawal of fishing vessels outside their own territorial waters does not contribute to the overall reduction in fishing capacity. Thus, in 1950–2015, despite the reduction in global catch, the global fishing fleet more than doubled from 1.7 to 3.7 million vessels. Their number in the world may become even greater, as many developing countries continue to increase the capacity and volume of extraction of the wild resource in excess of TAC. [14, p. 12238].

It has also been established that public interests in maintaining ecological balance and biodiversity are contrary to the private interests of fish producers and enterprises of related activities (shipbuilding, fish processing,

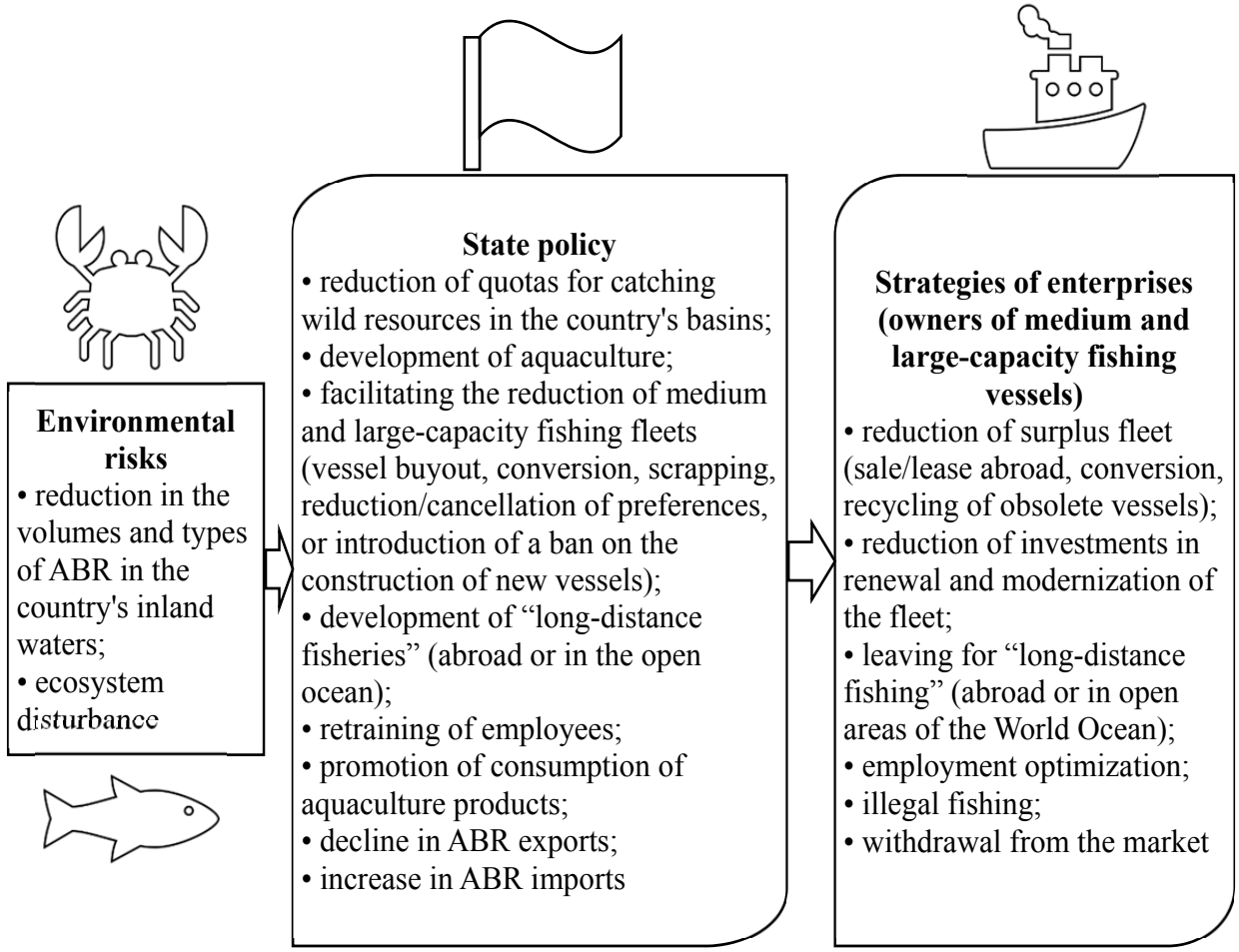

Fig. **Options of a state policy and strategies of fishing enterprises under conditions of environmental risks**

Source: compiled by the authors.

logistics, trade), since in the latter case the focus is on maximizing profits and ABR catch volumes.

Since 1992, the Food and Agriculture Organization of the United Nations has been criticizing the activities of states to provide subsidies and other support measures to fishing shipbuilding, since this leads to an increase in the number and total capacity of ships [15, p. 439]. However, this practice is currently widespread, since a significant part of marine fisheries is unprofitable and needs state subsidies to ensure food security, maintain employment, maintain the traditional lifestyle of the indigenous population, etc. [16, p. 6].

Thus, regulation of ABR catch volumes (changing the quota system, limiting the size of the fishing fleet) affects the interests of a large number of economic entities.

The Russian Federation also uses the ABR catch quota system, which has been in a mobile (changing) state in recent years due to the introduction of new types of quotas and the principles of their allocation.

The basis for the innovations was the criticism of the historical principle of quota distribution, which was a limitation for new players to enter the market and, in accordance with the statements of the FAS Russia and the Federal Agency for Fishery, contributed to the increase in the monopolization of the industry.

Until 2017, the country used the historical principle of distribution of ABR production quotas. In accordance with it, the amount of allowed extraction was set on the basis of the achieved volumes of resource extraction for the previous period. This approach provided preferences to participants that historically demonstrated higher production volumes, and allowed the emergence of new economic entities in the field of industrial fisheries only if there were free shares of quotas. The emergence of free quotas was ensured by an increase in the volume of resources and TAC, or by the refusal of part of the distributed quotas by other participants.

Since 2017, the ABR catch quota system in Russia has been updated with the introduction of new species and quota distribution mechanisms. As a result, the structure of interests in the fishery complex has changed, but, as of April 2022, the new system has not been finalized and is at the testing stage.

Over the past five years, the volumes and diversity of ABR available in the Russian Far East make it possible to catch an average of 3.5 million tons annually (no upward or downward dynamics can be traced). Government agencies do not restrain, but rather, through investment quotas, support an increase in the number of fishing vessels without focusing on their small-tonnage types. There are a number of subsidies and other measures to support industrial fisheries.

In domestic scientific papers, the specifics of the ABR catch quota system and the structure of the interests of the main participants in the fishery complex in Russia in general and in the Far East in particular, are poorly covered. The identified issues are partially addressed in a number of works and characterize the authors' assumptions about the possible consequences of the introduction of investment quotas.

Researchers do not affect the interests of all participants in the fishery complex. M.V. Kruchinin and S.M. Ryzhkova believe that the introduction of crab investment quotas can help reduce investment for those who use historical quotas [17, p. 331] because of the risk of not getting the rights to catch crab in the future. However, new players and investors who are ready to invest in the construction of crab fisheries are interested in these quotas. Yu.A. Levin, A.V. Volkov and V.D. Eremeeva argue that investment quotas are not in demand by small and medium-sized businesses that need a medium- and small-tonnage fleet [18, p. 207]. At the same time, the creation of such vessels is of great importance for the Far East, since it allows the population to be "fixed" on the coast, preserves the environment to a greater extent and reduces the risk of overfishing in the future with a downward trend in TAC. Thus, the interests of small and medium-sized businesses are infringed, while investment quotas are used by new players and enterprises that invest in the construction of large fishing vessels and fish processing plants. Yu.F. Anoshina and T.V. Naumkina believe that the issue of updating the fishing fleet is especially acute for Russia, since its wear and tear is about 80–90%. As a result of the implementation of the investment quota mechanism, it is expected to build more than 100 ships, but about 2.5 thousand need to be replaced. That is, this mechanism will allow only 4% of ships to be updated, which is extremely small [19, p. 105]. In this case, state interests will be satisfied only to a small extent. S.S. Vopilovsky, N.S. Ivanko, S.V. Lisienko and D.O. Sivakov generally positively assesses the changed quota system, expecting the achievement of strategic goals in the development of the fishery complex, since the country's fishing fleet will be significantly updated and become competitive [20, p. 67; 21, p. 254; 22, p. 136], which is in the interests of large fishing enterprises. N.V. Gontar calls investment quotas a reasonable measure due to the lack of direct budgetary costs [23, p. 19], which is important for the state.

In connection with the change in the quota system, domestic researchers did not take into account environmental and a number of state interests. In addition, the authors tried to assess the positive outlook in a generalized way. Thus, the negative facts that appeared at the first stage of approbation of investment quotas were not taken into account, in particular, that ships are equipped mainly with foreign equipment, the balance between processing on board and onshore is not taken into account, the proportions between the number of small, medium large-capacity fishing vessels.

According to the global trend, the quota systems created by the states ensure both private and public interests, smoothing out emerging contradictions, for example, in the field of ecology and environmental protection.

The current experience of ABR catch quotas in the Russian Federation has specific features related to the mechanism for granting quotas in exchange for investments in the construction of fishing vessels and fish processing plants. Thus, the structure of interests has changed, since, within the framework of private benefits, the new quota system provides large orders for a number of domestic shipbuilding enterprises.

The Far East basin accounts for the largest amount of ABR compared to all other water areas of the country. According to the strategy[1] the accelerated development of the fishery complex of the Far Eastern Federal District is based on an increase in the economic efficiency of the development of the main commercial species of ABR. The new quota system may have a significant impact on such areas as production (catch), storage, processing of ABR and the construction of fishing vessels.

[1] Decree of the Government of the Russian Federation dated November 26, 2019 No. 2798-r "On approval of the Strategy for the development of the fishery complex of the Russian Federation for the period up to 2030".

METHODS AND MATERIALS

The study was performed using the methods of synthesis, analysis and comparison based on Rosstat data and regulatory legal acts in the field of fisheries: Federal Law of December 20, 2004 No. 166-FL "On Fishing and Conservation of Aquatic Biological Resources" (hereinafter — Law No. 166-FL); Decree of the Government of the Russian Federation of December 15, 2005 No. 768 "On the distribution of the total allowable catches of aquatic biological resources in relation to the types of quotas for their production (catch)"; Decree of the Government of the Russian Federation dated November 26, 2019 No. 2798-r "On approval of the Strategy for the development of the fishery complex of the Russian Federation for the period up to 2030"; orders of the Federal Agency for Fisheries of the Russian Federation (hereinafter — Rosrybolovstvo/Russian fishery).

RESEARCH RESULTS

1. *Interests in the field of distribution of ABR production quotas have a different focus, depending on their type.*

The number of types of quotas established for fish farmers is unstable. The types of quotas and the mechanism for their provision (administrative procedures) are reflected in the Federal Law No. 166-FL. Currently, 11 types of quotas are available in Russia, which affect the interests of different groups of the fishery complex (*Table 1*).

The study assumes that the quota structure reflects the interests of the following main parties: business entities (users of nature and those operating in related industries) and public organizations that perform regulatory control and oversight functions, as well as external audit in the development of the fishery complex (including state authorities and environmental organisations). Users of natural resources are: the population engaged in amateur fishing and belonging to the indigenous peoples of the Russian

Table 1

Interests of the fishery complex participants in relation to different quotas

<table>
<tr><th>Quotas</th><th>State</th><th>Population</th><th>Environmental organizations</th><th>Fishermen</th><th>Related industries</th></tr>
<tr><td>Historical</td><td>Decrease</td><td rowspan="3">Increase (employment)
Decrease (resource depletion)</td><td rowspan="3">Decrease</td><td>Increase (for old players)</td><td>Increase</td></tr>
<tr><td>Investment</td><td rowspan="2">Increase</td><td rowspan="2">Increase (for new players)</td><td>Increase (raw materials, volume of goods and cargo, ship orders)
Decrease (competition)</td></tr>
<tr><td>Investment crab</td><td>Increase</td></tr>
<tr><td>Scientific</td><td rowspan="2">Maintenance</td><td rowspan="2">–</td><td rowspan="2">Maintenance</td><td rowspan="3">Maintenance</td><td rowspan="2">–</td></tr>
<tr><td>Educational</td></tr>
<tr><td>Aquaculture</td><td>Increase</td><td>Increase</td><td>Increase</td></tr>
<tr><td>Amateur</td><td rowspan="3">Maintenance</td><td rowspan="2">Increase</td><td rowspan="2">–</td><td rowspan="2">–</td><td rowspan="2">–</td></tr>
<tr><td>For indigenous peoples</td></tr>
<tr><td>In inland waters</td><td rowspan="3">–</td><td rowspan="3">Decrease</td><td rowspan="2">Increase</td><td>Increase</td></tr>
<tr><td>For Russia abroad*</td><td>Increase</td><td rowspan="2">–</td></tr>
<tr><td>For other countries</td><td>Maintenance</td><td>Decrease</td></tr>
</table>

* *Note:* Fishing zones are located outside the territorial waters of the Russian Federation.

Source: compiled by the authors.

Federation (hereinafter referred to as the indigenous peoples/IP); fishing organizations, as well as enterprises of related activities (fish processing, logistics, trade, shipbuilding).

The population is directly interested in quotas for recreational fishing and for indigenous peoples, the rest are of neutral or secondary importance: historical, investment and investment crabs ensure the sustainability of enterprises and employment; scientific — education; for aquaculture, employment, small business development and fresh produce. On the other hand, the capture by large companies of large amounts of the resource can deplete stocks in coastal areas that are traditional fishing areas for indigenous peoples, as well as in places for recreational fishing.

Russian fish producers (small, medium, large businesses)[2] seek to maximize profits by increasing the volume of quotas (historical, investment, in inland waters and abroad).

Due to the peculiarity of the distribution of historical quotas, a group of "old players" has formed, who receive the right to catch a resource based on previously achieved production volumes. Some of these enterprises

[2] There is no information on foreign companies.

are city-forming, on the activity of which the socio-economic development of the respective coastal settlements largely depends.

Investment quotas allow large "new players" who are not able to obtain the right to catch on a historical basis to enter industrial fishing, as well as to increase the share of production for owners of historical quotas.

Enterprises related to fishing industries are interested in increasing the volume of quotas (historical, investment) in order to maximize profits, since there will be more offers for the supply of raw materials and products in the field of processing, logistics and trade. Shipbuilding also benefits, as it forms a portfolio of orders for the manufacture of ships under the "quota in exchange for investment" mechanism. However, fish processors can also gain strong competition by building investment facilities related to ABR processing.

The state, represented by the Federal Antimonopoly Service (hereinafter referred to as the FAS Russia) and the Federal Agency for Fishery, acts as the main regulator in the fishery complex. Changes in the quota system are due to the formation of new priorities aimed at reducing the level of monopolization in fishing, updating the fishing fleet, and developing fish processing. This has been happening since 2020 with the introduction of investment quotas and by reducing the volume of historical ones. Plans to change the size of other types of quotas have not been announced.

Environmental organizations seek to reduce the amount of wild resource catch in order to preserve biodiversity, taking into account natural reproduction cycles and existing threats to the depletion of existing stocks. This applies to fishing quotas in the territorial waters of Russia and abroad. These organizations are interested in increasing quotas for the development of aquaculture and maintaining their volumes for scientific and educational purposes, since this ensures the reproduction of the resource, determines TAC and trains personnel, including in environmental and natural science specialties.

The indicated groups of economic entities of the fishery complex contradict each other in their activities or compete, which inevitably leads to the formation of conflicts of interest. The introduction of investment types of quotas has led to the emergence of new areas of intersection of interests between public organizations and private business, small and large enterprises, "old" and "new" players.

2. *The main center of concentration of interests of Russian fish producers in the field of quota distribution is the Far East basin.*

The size of each type of ABR production quota for economic entities in the Russian Federation is approved annually by the Ministry of Agriculture of the Russian Federation for each fishery basin of the country on the basis of TAC (*Table 2*).

In Russia in 2021, the total volume of quotas amounted to 4284.1 thousand tons, which is 3.9% more than in 2020 (due to an increase in quotas in the Northern Basin and catch in the new zone, outside the country — in Morocco).

The share of quotas that falls on the Far East basin is 69.2%; in 2020–2021, it decreased by 0.5%, i.e. insignificantly (due to the reduction of historical and investment crab quotas).

In accordance with the orders of the Federal Agency for Fishery in the Far East basin for 2020 and 2021, 7 out of 11 types of ABR fishing quotas were distributed (*Table 3*), excluding salmon.[3] In the Far East zones of the basin, no quotas are allocated for:

- educational purposes (perhaps this is due to the lack of applications from scientific and educational organizations of the Far Eastern Federal District);

[3] The distribution of the volume of permitted salmon fishing is carried out at the regional level by special commissions (Article 29.1 of Law No. 166-FL). Information about the results of the work of commissions is not published in the public domain, with the exception of individual cases, on the basis of which it is impossible to form a complete picture.

Table 2

Volumes of quotas for the catch of aquatic bioresources in marine fisheries basins and outside the territorial waters of Russia

Fishery basin	Volume, thousand tons		Change in 2021, %	The share of quotas from the Russian Federation, %	
	2020	2021		2020	2021
Total	4124.90	4284.10	3.9	100	100
Far East	2979.20	2965.00	–0.5	72.2	69.2
Northern	468.4	563.4	20.3	11.4	13.2
Volga-Caspian	23.1	23.1	0	0.6	0.5
Azov-Chernomorsky	0.0002	0.0002	–2.5	0.000005	0.000005
West	84.9	80.4	–5.2	2.1	1.9
Outside the territorial waters of Russia	569.3	652.1	14.5	13.8	15.2

Source: compiled by the authors.

Table 3

Types and volumes of quotas for the catch of aquatic bioresources in the Far East basin

ABR Production quota name	2020		2021		Изменение в 2021
	thousand tons	share, %	thousand tons	share, %	%
Total	2979.2	100	2965.0	100	–0.5
Scientific	1.8	0.1	1.5	0.1	–14.7
Amateur	0.21	0.01	0.24	0.01	16.5
For indigenous peoples	3.7	0.1	3.5	0.1	–4.3
Historical	2875.8	96.5	2833.9	95.6	–1.5
Investment	62.8	2.1	95.9	3.2	52.7
Investment crab	35	1.2	29.9	1	–14.4

Source: compiled by the authors.

- Russian enterprises in foreign water areas (since they are not included in the Far East basin);
- aquaculture.[4]

Also, in open sources there is no information on the size of quotas provided to foreign companies in the exclusive economic zone of Russia, including in the Far East basin.

In the structure of quotas in the Far East in 2020–2021 scientific quotas allocated in the public interest had a constant share of 0.1%, but in absolute terms their size decreased by 14.7%.

Quotas that meet the interests of the population (amateur and for indigenous peoples) also have a total share of 0.1% of the total, but in absolute terms, the decrease was

[4] At the same time, Primorsky Krai is one of the leaders in the country in terms of aquaculture production. Perhaps this discrepancy is explained by the fact that artificial breeding in the region is based on the use of ABR species that are not subject to quotas.

4.3%. The volume of quotas for recreational fishing is 0.01% (in 2021 it increased by 16.5%), for indigenous peoples — 0.1% (decreased by 4.3%). That is, the reduction in the volume of quotas for the population that occurred in 2020–2021 was due to a decrease in TAC for indigenous peoples.

Quotas intended for industrial purposes occupy a dominant position — 99.8% of the total (of which historical — more than 95%); reduction for 2020–2021 was 0.5% — the smallest, compared with the groups discussed above. However, the dynamics in the structure of these quotas is multidirectional: historical and investment crab quotas decreased by 1.5 and 14.4%, while the investment ones increased by 52.7%.

Thus, the increase in investment quotas occurred at the expense of historical and against the background of a decrease in investment crab, as well as other species that have a social and public purpose (for indigenous peoples and scientific). It can be assumed that the decrease in the latter is a consequence of the increase in investment quotas.

3. *More than 50% of quotas for industrial fishing in the Far East basin are distributed in the Sea of Okhotsk zone.*

The Far East basin geographically includes: the Chukhotsk Sea, the Bering Sea, the Okhotsk Sea, Sea of Japan, the waters of the Pacific Ocean adjacent to Eastern Kamchatka and the Kuril Islands with the corresponding basins of the rivers flowing into them.

The Far East basin is divided into 8 commercial zones,[5] washing the coastlines of 6 constituent entities of the Russian Federation in the Far Eastern Federal District (with the exception of the Republics of Buryatia and Sakha (Yakutia), the Trans-Baikal Territory, the Amur and Jewish Autonomous Regions).

The Sea of Okhotsk zone occupies a leading position in terms of most characteristics. It is adjacent to the largest number of regions (Kamchatsky and Khabarovsk Territories, Magadan, and Sakhalin Regions).

The localization of regions along the Sea of Okhotsk zone gives them a nominal territorial advantage in the implementation of fisheries activities, since it is the main fishing center in the Far Eastern Federal District — it concentrates the largest volume of ABR production quotas in the Far East basin (in 2021 — it amounted to 1687.6 thousand tons, or 57%).

The only parameter in which the Sea of Okhotsk zone is inferior to others in certain types of quotas is biodiversity or the number of commercial ABR species.

The Kamchatka Territory and the Sakhalin Region have the greatest advantages due to their proximity to the Sea of Okhotsk zone, as well as to other water areas. Consequently, the economic entities of these regions have the opportunity to satisfy their interests to the greatest extent related to the distribution of ABR catch quotas.

4. *The current priority of changing the quota system in Russia is associated with the development of shipbuilding and fish processing.*

The current state of the fishery complex by 2020 was characterized by a number of problems associated with the aging of fixed assets and their insufficiency. About 70% of the Russian fishing fleet is located in the Far East basin, of which 92% is outside the standard operating life.[6]

The domestic shipbuilding and ship repair industry mainly worked at the expense of military orders. Fishing shipbuilding, as well as ship repair and instrumentation, did not develop for a long time.

[5] Order of the Ministry of Agriculture dated May 23, 2019 No. 267 "On Approval of Fishing Rules for the Far Eastern Fisheries Basin".

[6] Russian Maritime Register of Shipping. URL: https://lk.rs-class.org/regbook/regbookVessel (accessed on: 15.09.2021).

In the context of the degradation of the domestic fishing shipbuilding industry, the renewal of the fleet in Russia in general and in the Far East in particular was mainly due to the acquisition of ships abroad, and most of them had a significant period of use (standard operating life).[7]

The lack of centers for comprehensive maintenance and repair of large fishing fleet vessels in domestic seaports that are competitive in terms of time and cost has led to a reorientation of Russian shipowners to their maintenance and repair abroad.[8] Currently, repairs and inter-trip maintenance are carried out in Russian seaports mainly for small and medium-sized fishing vessels, which is insufficient for modern vessels equipped with advanced equipment.

Due to the high concentration of foreign-made equipment, repairs and technical (including warranty) maintenance of ships in the shortest possible time were also more economically and efficiently carried out abroad.

Also in Russia, the practice of "non-entry" vessels (8% of the fleet in the Far Eastern Federal District), which carried out activities without calling at Russian ports and passing through the "customs clearance" procedure, in accordance with the production process or tax avoidance strategy, has spread.

Along with the maintenance of ships and equipment, there was an outflow of income from Russia and, accordingly, the tax base of the industry decreased due to the shift of service centers to the place of their production in foreign countries.

Also, the specificity of the fishery complex in the Far East and in the country as a whole is a high orientation towards the export of raw materials with a weak level of development of internal processing. This led to the transfer of Russian ABR processing centers to other countries (mainly China) and, accordingly, the loss of added value from the sale of finished products.

Thus, in recent years, significant distortions have developed in the fishery complex, requiring significant investments in development. The introduction of investment quotas has created a promising opportunity for organizing relevant industries in Russia at the expense of private capital investments. In the context of the current principle "where we build, we repair there", the construction of ships creates a promising demand for ship repair and instrumentation services [24, p. 222]. Increasing the capacity of the fishing fleet makes it possible to increase production volumes in the internal territorial waters of Russia, as well as outside them, which has a positive effect on the supply of raw materials for processing, obtaining added value for enterprises, employment for the population and the tax base for the budget. Further growth in processing volumes will create a chain of incremental economic effects in related industries, including logistics and trade. That is, the introduction of investment quotas is considered as a source of propulsive growth that ensures the development of related industries and internal cooperation between them, which have existed separately for a long time.

In accordance with the strategy for the development of the fishery complex of the Russian Federation (hereinafter referred to as the Strategy) for the Far East, it is planned to build 14 coastal fish processing plants by the end of 2022 through the mechanism of "quotas in exchange for investments" (long-term plans for a longer period have not been established)

[7] Analytical report "The current state of the fishing and fish transport fleet in the Far East", prepared in accordance with the work plan for scientific and methodological support of the federal autonomous scientific institution "Eastern Center for State Planning" of the Ministry for the Development of the Far East of Russia for 2020 and for the period 2021–2022.

[8] Decree of the Government of the Russian Federation of November 26, 2019 No. 2798-r (as amended on December 17, 2021) "On approval of the Strategy for the development of the fishery complex of the Russian Federation for the period up to 2030".

and by the year 2025[9] — it is planned to build 18 fishing boats and 25 crab-fishing boats. The strategic documents lack details regarding the qualitative characteristics of the renewal of funds, for example, in terms of the size of the new fleet and the capacity of commissioning coastal fish processing plants.

The implementation of strategic guidelines for the development of the industry will make it possible to redistribute historical quotas between their large holders, as well as create a cross-industry effect of growth in the field of shipbuilding, ship repair, processing of fish products, construction, logistics and trade.

As of April 2022, according to the materials of the Federal Agency for Fishery, 8 fishing vessels have been built for Far Eastern companies in Russia[10] and the construction of 6 supertrawlers is expected[11] (total: 14 vessels, of which 13 fishing vessels — 78% of the plan and 1 crab-fishing boat — 4% of the plan) and 9 fish processing plants[12] (64% of the planned volume established by the end of 2022).

The volume of construction of new fishing vessels envisaged in the Strategy is insignificant and will allow upgrading the industry fleet of the Far Eastern Basin by only 7%, i.e. will only partially alleviate the problem of high wear and tear of ships. At the same time, the fishing capacity of the fleet will increase significantly, as the structure of built and ordered vessels for investment purposes is dominated by large and super-large ones.

The lack of regulation on the number, size and power of the created vessels can lead to an increase in the catch of the wild resource, contrary to the existing global trends to reduce it. In this regard, the expansion of the fleet may increase the pressure on the existing resource base and form a conflict field between public and private interests. In the work of I.V. Levskaya, in order to reduce environmental risks, contains a recommendation on the distribution of investment quotas in exchange for the construction of medium-sized vessels [25, p. 98], with the exception of large and extra-large.

The strategic task of creating production facilities for high-quality products of deep processing in Russia and the Far Eastern Federal District is relevant (80% of fish products in Russia are sold after primary processing) [23, p. 18]. Investors are focusing on processing on ships, but this applies to shallow processing and the most profitable species — pollock[13] and herring, the production of which reaches the maximum level [26 p. 188; 27, p. 16; 28, p. 11]. A promising direction in this regard is the creation of coastal facilities, providing for a higher degree of processing and a wide range of products, including the production from non-fish aquatic organisms. The implementation of these projects will ensure the reorientation of activities from the sale of raw materials to processed products and the formation of added value within the country, including in the Far Eastern Federal District, as well as an increase in tax deductions to the budget system and an increase in demand for labor.

As of April 2022, nine plants with a total capacity of 2,378 tons per day have been

[9] The construction of ships has a long cycle of design, production, and commissioning, so the planned timeline is likely to be increased.

[10] 4 large trawlers of project ST-192 ("Vladimir Limanov", "Mechanic Maslak", "Mechanic Sizov" and "Kapitan Vdovichenko"; the customer is Russian Fishery Company LLC, Vladivostok); 3 medium trawler-seiners of the SK-3101R project ("Commander", "Leninets" and "Vasily Kaplyuk"; customer — Fishing collective farm named after V. I. Lenin, Petropavlovsk-Kamchatsky); 1 medium crab fishing-boat project 03141 (Okhotsk; customer — LLC Far East Coast, Khabarovsk).

[11] The customer of all 6 supertrawlers is Russian Fishery Company LLC.

[12] Factories were built on the territory of the Sakhalin Region, Primorsky and Kamchatsky Territories with a total fish processing capacity of 2378 tons per day.

[13] In 2020 and 2021 the total volume of investment quotas for pollock fishing amounted to 79% (orders of the Federal Agency for Fishery No. 686 dated December 13, 2019 and No. 704 dated December 18, 2020).

put into operation in the Far East on the territory of the Sakhalin Region, Primorsky and Kamchatka Territories. Since the volumes of the current and future needs for the development of processing capacities in the Far East and in the country as a whole are not indicated in the strategic documents, it is difficult to assess the contribution of new construction to the development of the complex. However, it is known that the need for port refrigeration capacities is up to 800 thousand tons of ABR at a time during the peak period. Accordingly, the constructed plants are able to process only 0.3% of the indicated volumes during periods of the highest loads.

Comparison of the constructed processing capacities with the existing shortage of refrigeration equipment is not accidental. During the season in the ports of the Far East, only 20% of ABR can be placed in low-temperature warehouses at a time for further processing and sale. The bulk of the products are sent at reduced prices to other markets, primarily foreign ones.

The need to expand refrigeration capacities in the Far East existed before, however, given the dominance of export supplies and the weak level of development of local processing, this was not a limitation for the industry. In the conditions of instability of external demand for Russian ABR in the Far Eastern Federal District, a commodity surplus of perishable products is formed. In connection with the ongoing changes and with the appearance of incentives for the development of processing in Russia (the introduction of investment quotas), the domestic fishery business (producers and processors) became interested in organizing conditions for the storage, processing and transportation of products in Russia. Therefore, with the introduction of new quotas, there was an interest associated with the development of the internal infrastructure of the entire fishery complex. However, the current wording of the investment quota distribution mechanisms does not support the implementation of such projects. In addition, in the state program for the development of the fishery complex of the Russian Federation, there are no measures for their creation / modernization in the Far Eastern Federal District.

The increase in the number of refrigeration capacities will allow fish producers to ensure the storage of stocks for a longer period, increase the volume of sales of products to the domestic market, increase revenues from the sale of whole products or with minimal processing at a stable, not reduced price during the fishing season. Processors will be able to establish stable year-round supplies of freshly frozen raw materials.

Thus, the introduction of a new type of quota marked new interests and guidelines for the development of the fishery complex of the Far Eastern Federal District. In general, the potential effect is positive, but not optimal, since it is not guaranteed that conditions for all participants will not worsen. Infringement of the interests of small users, as well as the expansion of wild resource extraction, can lead to significant social and public risks. In this regard, the mechanism for their provision needs significant improvement, related to the observance of the rights of not only large, but also small players, and minimization of negative social and public effects. In particular, when adjusting the allocation of ABR production quotas, it is advisable:

- to provide for a mechanism for the priority construction of medium-sized ships to replace those with an excess service life;
- to allocate proportional volumes of permitted catch for small users within the distribution of both historical and investment quotas;
- to create preferential conditions for investment in onshore ABR deep processing facilities, including species that are currently low-margin processing but have potential for payback and increased profitability;

• to take into account the possibility of building port refrigerated warehouses as investment objects.

CONCLUSIONS

Information on the distribution of quotas for the extraction of ABR in Russia in the public domain is incomplete — there is no data on granting rights to catch a wild resource for foreign companies in the fishery waters of the Russian Federation. In the presented study, the analysis was performed on the basis of open data, taking into account the interests of economic entities — the residents of Russia, but the participants in the fishing business from other countries were not taken into account.

The center of concentration of interests in the distribution of ABR production quotas in Russia is located in the Far Eastern Federal District (70% of Russia's TAC), primarily in the Sea of Okhotsk zone.

In recent years, there was only a slight change in ABR quotas, despite global trends associated with measures taken to reduce the catch of wild ABR. In the Far East and in the country as a whole, the focus on catching a wild resource remains. The insignificance of the volume of quotas for the development of aquaculture is due to the poor development of this area of activity.

Despite the introduction of new types of quotas, the transformation of the general system of their distribution has not taken place. The share of new types of quotas related to the implementation of investment projects is insignificant (less than 5%), the bulk (more than 95%) is still distributed according to the historical principle.

The principle of quotas in the Far East Basin reflects to varying degrees the interests of the participants — the state, the population, environmental organizations, fish producers, enterprises of related industries (processing, logistics, trade, shipbuilding, etc.).

The interests of a socially significant group — (population) are taken into account to the least extent in the current system of distribution of quotas. In recent years, their volume has decreased against the backdrop of an increase in investment quotas that are beneficial for large fishing enterprises and holdings — players capable of investing significant funds in the construction of ships and factories.

Small market participants, including communities of indigenous peoples, cannot compete with large investors, and, accordingly, do not have the opportunity to obtain a new type of quota. Due to the fact that investment quotas are formed at the expense of historical volumes, small industry players are deprived not only of potential investment quotas, but also of part of their historical quotas.

The absence of a mechanism for fixing the share of small business entities in the structure of investment quotas can lead to further infringement of their interests and deterioration of the socio-economic situation in small coastal settlements and places of compact residence of indigenous peoples.

The development of the fishing fleet in exchange for quotas is currently carried out through the construction of mainly large and large vessels, while the renewal of medium-sized vessels is taking place to a lesser extent. This means that the capacity for the extraction of the wild resource increases with a negligible level of fleet renewal.

The shortage of port refrigeration capacities can become a significant limitation for the development of the industry, including in the area of reorientation of activities from foreign markets to domestic ones. Currently, the rules for granting quotas in exchange for investment do not consider the creation of refrigeration facilities as an investment object. The distribution of quotas in exchange for the creation of port

refrigeration facilities would remove the existing restriction on the development of the industry.

In the context of the instability of external demand for products of the fishery complex, the interest of economic entities in reorienting activities from the external market to the domestic one, as well as from the export of raw materials to the supply of finished products, including to domestic markets, has formed. In this process, investment quotas have become an additional incentive for fish producers and enterprises in related industries.

Innovations in the quota system are being tested. In order not to infringe on the interests of small users, the mechanism for providing quotas needs to be adjusted. That is, it is necessary to allocate for them proportional volumes of permitted catch within the framework of the distribution of both historical and investment quotas.

Thus, the study revealed the following:

- interests in the area of distribution of ABR production quotas have different directions depending on their type;
- the main center of concentration of interests of Russian fish producers in the area of quota distribution is the Far East basin;
- more than 50% of quotas for industrial fishing in the Far East basin are distributed in the Sea of Okhotsk zone;
- the current priority of changing the quota system in Russia is associated with the development of shipbuilding and fish processing.

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ABOUT THE AUTHORS

Aleksandr N. Asanov — Cand. Sci. (Econ.), Associate Professor, Lead expert-analyst, Eastern State Planning Center, Moscow, Russia
http://orcid.org/0000-0002-6937-8904
Corresponding author
a.asanov@vostokgosplan.ru

Elena L. Li — Cand. Sci. (Econ.), Head of the "Quality of life and human potential" Project, Eastern State Planning Center, Moscow, Russia
http://orcid.org/0000-0002-2905-493X
e.lee@vostokgosplan.ru

Elena Yu. Ageshina — Cand. Sci. (Econ.), Director of scientific and methodological projects, Eastern State Planning Center, Moscow, Russia
http://orcid.org/0000-0002-5094-6609
e.ageshina@vostokgosplan.ru

The declared contribution of the authors:
A.N. Asanov — preparation of the major material (statistical data and text).
E.L. Lee — development of the general concept and paper editing.
E.Yu. Ageshina — critical work with materials and the formation of comments.

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