Risks Associated with the Implementation of Fishery Development Program in the Far Eastern Federal District

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Risks Associated with the Implementation of Fishery Development Program in the Far Eastern Federal District

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Abstract. The development strategy for the fisheries industry in Russia up to 2030 stipulates a number of projects aiming to fill the national market with quality fish products and ensure the sustainable development of fishery companies in the key fishing regions. Every project has target indicators, a set of actions to achieve the strategic goals and the expected results. Besides, projects are vulnerable to some risks that prevent the achievement of the desired goals. Thus, the assessment of plausible risks and implementation barriers for strategic actions allows for the early-stage forecasting of the situation development, adjusting strategy implementation, and minimizing the deviation from target indicator values. This article presents the discussion of the results of the preliminary analysis of risks affecting the implementation and goal achievement of the Development Strategy for the Fisheries Industry in Russia up to 2030 in the Far Eastern Federal District as one of the key fish producers. To analyze the risks, we used the expert risk assessment method that helped identify the key risks in the fisheries industry development projects.

1. Introduction

Fish production is a key component in providing the populace with quality food. Fish products are sources of proteins, fish oil, and valuable microelements. They have a positive impact on human health, and, therefore, the provision of quality fish products to the populace of Russia is an important goal. We believe that, currently, there are the following problems with providing quality fish products: 1) There is a trend for reduced consumption of fish products by Russian residents, 2) The prices for key types of fish products are growing against the overall reduction of the general purchasing power, 3) The export of fish products in increasing against the reducing consumption of fish products by Russian residents, 4) The consumption of substitute products (meat and poultry, soy substitutes) is growing, 5) The import of substitute products including farmed fish with a lower content of valuable nutrients is increasing. These and other negative processes result in people's receiving less quality and healthy fish products rich in micronutrients.

The development strategy for food and processing industries of the Russian Federation up to 2020 specified actions to develop fisheries industry and provide the populace with food. Besides, a

Development strategy for the fisheries industry of Russia up to 2030 (hereinafter referred to as the Strategy) was approved in 2019 [1]. It specifies a set of projects to develop the fish industry. This document determines a list of projects to develop fish-based food industries in the Far Eastern Federal District. Each of the projects mentioned in the strategy is exposed to risks hindering the achievement of desired goals and result indicators. We believe that the key risks include bad planning and setting unreasonably high goals and indicators that are not aligned with reality. Incorrect goal and indicator setting at the early stages results in the risk of failure to implement the development program for the fisheries industry.

This article reviews key projects, specific indicators, and plausible risks that hinder the achievement of strategic goals in the Far Eastern Federal District. The goal of this article is to analyze the risks associated with the implementation of the development strategy for the fisheries industry of the Russian Federation in the Far Eastern Federal District. The problems solved in this article include the identification and assessment of the risks affecting the accomplishment of the strategic goals.

2. Materials and methods

The study is based on the methodology used by the UN Food and Agriculture Organization (FAO) when researching the development features of the fisheries industries in different regions [2]. Besides, our research is based on the works on the analysis of commercial fishing, aquaculture, fishing fleet, fish stock condition, and fish processing and consumption [3-6]. The relevant development processes in the Russian fisheries industry are assessed in the works of Russian researchers [7-9]. We reviewed some of the methodological problems associated with the research of the Russian fisheries industry operations in our previous works [10-11]. As for the study material, we used the set of projects specified in the Strategy: New Cod Industry, Marine Biotechnology, Food Pelagics, Salmon Farming, and Valuable Seafood. We also used the classification of risks set out in the strategy to list the risks [1]. These included natural (resource), economic, financial, market, production/technical, social, environmental, and legal risks. Economic and financial risks were combined in a single category of economic risks for the sake of clarity.

To assess the risks, we used the methods based on assigning weighting probability coefficients by experts using the algorithm and project assessment system developed during the research. According to these methods, the risks were assessed on a 12-point grade depending on the impact of the risk on the accomplishment of the goals of the project in question. We used the following grading interpretations: 1-4 points – the risk has an insignificant impact on the accomplishment of the strategic goals; 5-8 points – significant impact; 9-12 points – significant or heavy adverse impact on the accomplishment of the strategic goals of the project. The risks were assessed by experts in the fisheries industry. After the expert assessment, the average point was calculated based on the grades provided. At the final stage, the risks were ranked, and the most notable risks were identified.

3. Results and discussion

Review the key results in more detail. We will only review the key aspects for the sake of brevity. A more detailed analysis shall be provided in further publications. The results of the analysis performed have the distribution shown in Figure 1.

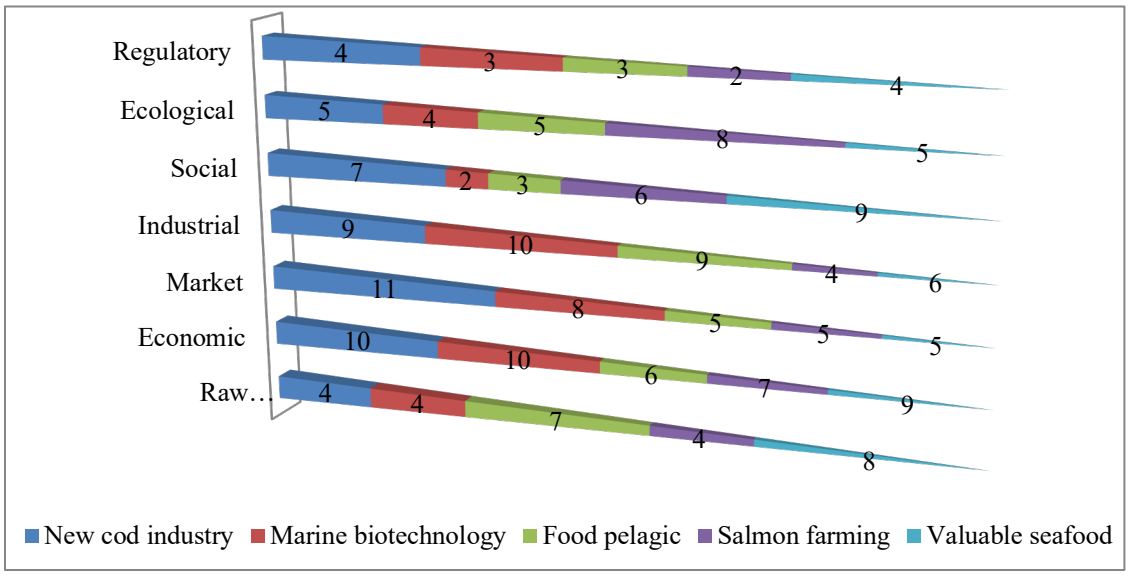
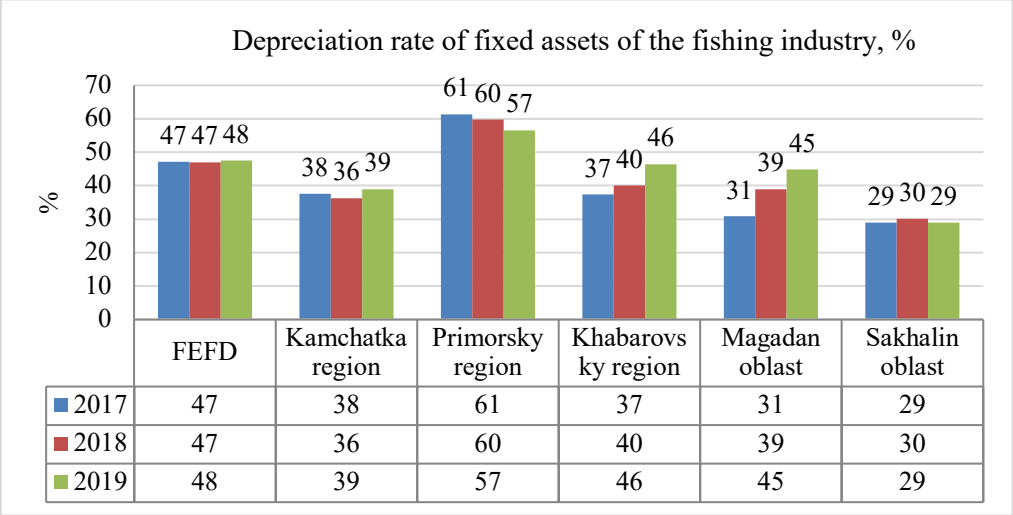


Figure 1. Point distribution across the types of risks associated with the projects within the Development strategy for the fisheries industry of the Russian Federation up to 2030.

The New Cod Industry integrated project [1] stipulates a comprehensive upgrade of the fleet and production facilities used in catching and processing the key cod quarries. When assessing the risks for this project, the market risks got the highest point (10.5) followed by economic and production risks. Currently, the transition from resource-based industries to deep processing required by the Strategy is almost infeasible due to the state of the production facilities. About 60% of fish products are sold as raw materials with little processing, and a limited set of standard products are sold in the market. The products of Russian companies fall within the category of raw materials with low added value, which is proved by the export statistics: it is dominated by raw materials [12].

The key goals of the project include the launching of fish products in the markets of the European Union and increasing the share of processed food products up to 50%. This goal is difficult to accomplish because currently the bulk of cod fillets and mince is exported to China (1702 t/year). The volume of exported frozen cod products is 914,823 t/year. The share of fish fillets in the exports is about 5% (about 80 thousand t/year) of the catch. The strategy stipulates reaching a share of processed products in exports of 50% over the short strategy implementation period by 2025-2030. If we consider the results of the previous strategy [13], the probability of accomplishment of this goal is very low, and the risks of failing to achieve the expected results are high.

Production and technological restriction is a prominent risk in strategy implementation scoring 8.5 points. The wear of production facilities is increasing, which will result in industrial disasters [14], the stalling of production programs, and failure to accomplish production results. The degree of facility wear varies across the regions of the Far Eastern Federal District (Figure 2). However, the wear of production facilities is growing in all of the regions of the Far Eastern Federal District. The only exception is the facilities of fishing companies in the Primorye Territory. The facility wear in this region decreased a little, even though the share of worn production facilities in Primorye is the highest in the Far Eastern Federal District. In 2019, the facility wear equaled 56% [15].



	FEFD	Kamchatka region	Primorsky region	Khabarovsky region	Magadan oblast	Sakhalin oblast
2017	47	38	61	37	31	29
2018	47	36	60	40	39	30
2019	48	39	57	46	45	29

Figure 2. The degree of wear of the key fishing industry facilities across the regions of the Far Eastern Federal District, % [15].

The implemented investment rate mechanism is insufficient to upgrade the worn-out production facilities, fishing fleets, and cod quarry processing plants. According to various assessments, upgrading 50% of the existing onshore production facilities and fleets requires a total of 1930 million rubles in investments for fishing fleet upgrade. Building finishing ships on Russian wharves shall cost 85-110 million US dollars each (add equivalent sums in rubles).

The Marine Biotechnology comprehensive project for the establishment of high-tech and innovative food and consumer goods production faces high production/technological risks followed by economic and market risks. High risks can be linked to unreasonably high production indicators. This project stipulates the construction of at least 20 medium-range vessels for harvesting pelagic fish, and up to five large-capacity trawlers-processors and three transport vessels for harvesting Antarctic krill. Currently, 5 vessels have been commissioned as part of the new projects, and 26 more are under construction. The key activities within the Marine Biotechnology project include the upscaling of fishmeal production waste recycling up to 150 thousand tons, as well as the 120 thousand ton increase in fish oil production by 2030. In 2020, only 9.5 tons of fishmeal was produced in Russia, which amounts to 6.3% of the planned value set out in the strategy. The production of fish oil as Omega-3 in the Far East is severely underdeveloped. The key manufacturers are small and medium companies that cannot produce 120 thousand tons of fish oil. According to the Strategy, the production of fish fodder in the Far Eastern Federal District alone should increase up to 525 thousand tons, even though there were only 384 tons, i.e. 0.073% of the planned amount, produced in Russia in 2020. Thus, there is a high risk that this goal of the strategy will not be implemented.

The Food Pelagics comprehensive project stipulates increasing the catch of pelagic fish species and supplying those to the internal food market. This project stipulates the upgrade of vessels and fish processing plants. The highest risks for this project are the production/technological ones scoring 8.5 points. The upgrade of the fishing fleet and key production facilities is slow, and their wear is increasing (Figure 2). As part of the investment rate mechanism, 43 vessels are planned for construction at 6 shipbuilding yards in Russia, with over 30 ships under construction currently. In 2021, 13-14 vessels were planned for commissioning but only 6 vessels were actually finished.

The Salmon Farming comprehensive project stipulates the artificial breeding of salmon species. The highest risks for this project are environmental ones, scoring 8 points. Currently, there are no necessary production infrastructure and fodder production facilities, which makes this project likely to remain unaccomplished. Economic risks are also high for this project (6.5 points). The project stipulates attracting investment of up to 80 billion rubles.

There is a high risk that due to the global economic instability and the coronavirus pandemic that restrict the economic growth in all areas, as well as the lack of funding both in the governmental and corporate sectors, this goal will not be accomplished. Currently, less than 5 billion rubles have been invested in salmon farming companies.

The Valuable Seafood project is aimed at the comprehensive development of offshore strips for the farming of valuable hydrobionts. The highest implementation risks for this project include economic (8.5 points) and social (8.5) ones. The high risk of failure to accomplish the goals set can be attributed to the planned economic impact represented by the additional contribution to the gross domestic product of Russia of up to 33 billion rubles by 2025 and the attraction of 41 billion rubles in investments. The strategy sets out a goal for the currency earnings of at least 120 billion rubles (1.6 billion dollars) a year from exporting aquaculture products, which is hard to achieve for aquaculture companies in the Far Eastern Federal District. Currently, the actual aquaculture product export is assessed at 2.5 million dollars in 2020 [12]. According to the Strategy, at least 50 thousand hectares of new water areas shall be developed by 2025 as part of the implementation of this project. The main share of the products from the Far Eastern Federal District is produced in Primorye Territory. In 2019, 30.5 thousand tons of marine culture products were produced, and in 2020, 49 thousand tons including 19.8 thousand tons of mollusks (scallops, oysters, mussels), echinoderms (sea cucumbers, sea urchins), and 10.5 thousand tons of kelp produced in 2019 [14]. Currently, the aquaculture companies of the Primorye Territory use a total of 289 fish farming sites with a total area of almost 70 thousand ha, i.e. the increase in the developed area must reach about 70% in a relatively short time.

4. Conclusion

To sum up, the analysis conducted, we must note that the New Cod Industry project go the most risk points. It is followed by Valuable Seafood, Marine Biotechnology, and Food Pelagics. The Salmon Farming project got the least risk points (Figure 3). Thus, the New Cod Industry projects are unlikely to be implemented in their current iteration. To be implemented, the concept and goals of this industry must be adjusted taking into account the implementation risks. Besides, a more relevant implementation plan and more relevant progress indicators shall be developed.

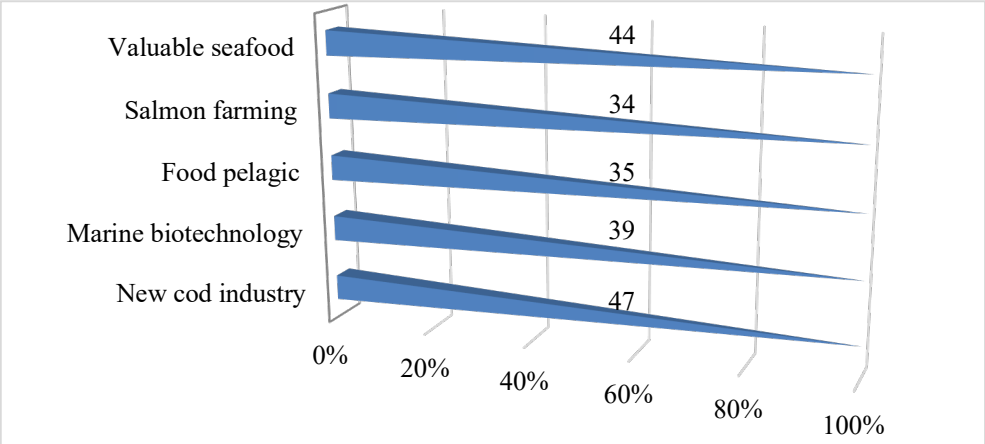


Figure 3. Total scores across risk types for the Strategy comprehensive projects.

Valuable Seafood and Marine Biotechnology projects also face high risks of not being implemented. Just as with the New Cod Industry project, their successful implementation requires concept adjustments based on considering the project risks and setting more realistic goals, as well as the availability of resources to facilitate the implementation of the strategies. Even though the Food Pelagics and Salmon Farming projects got the least risk points, they also run the risks of not being

implementing and not accomplishing project goals. Their successful implementation requires goal and resource adjustments, as well as quality monitoring of implementation progress.

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