Agriculture in the Polar Regions: New Approaches to Historical Challenges

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Abstract. The implementation of the Northern Sea Route Development Programme aims to increase the permanent population of the Arctic zone of Russia. This problem cannot be solved without a corresponding enhancement of the food supply of the Arctic. The importance of the study is conditioned by the need to modernize the system of food supply of the Arctic territories in the context of external threats. The article examines approaches to developing agriculture and solving the problem of food security in the Arctic regions of Russia. The authors consider the possibilities of the permanent population of the Arctic to produce enough food for their own consumption and the influence of preferential regimes on the development of agriculture and the solution of food security. The authors have analyzed the current regulatory acts and the results of their implementation in the Arctic zone of the Russian Federation, based on which an assessment of the state policy’s performance in modern conditions is given, together with the authors' recommendations for addressing the above-mentioned task.

1 Introduction

One of the most promising alternatives to the existing transportation infrastructure connecting the countries of the Old World with the rapidly developing economies of Asia is the Northern Sea Route (hereinafter - NSR), which lies in the Arctic zone within the territorial waters and exclusive economic zone of the Russian Federation. The NSR is becoming the main alternative to the southern trade route through the Suez Canal, due to climate change and the prospect of extending navigation time in the Arctic zone to up to 9 months. These circumstances are fundamentally changing the approach to this transportation artery, which is transforming from an internal transport corridor, created to ensure northern imports, into an international transport and logistics corridor that can be used in the future not only by Russia but also by its partners, primarily China. The Fundamentals of State Policy of the Russian Federation in the Arctic until 2035 defines the development of the NSR infrastructure as one of the main tasks of Russia in the Arctic [1]. However, the development

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of infrastructure inevitably requires an increase in the labor force. This in turn raises the issue of food supply for the population.

For the purpose of creating new jobs and increasing the permanent population of the Arctic, the government has developed the state program [2], established preferential regimes [3, 4], and other measures are being taken.

The effectiveness of measures of state support for the residents of preferential regimes in the Arctic and the prospects of their implementation have been assessed in the studies of Voskresenskaya E. and Vorona-Slivinska L. [5], Smirnova O.O., Lipina S.A. and Bocharova L.K. [6], Kirillova T.V. [7], Zaikov K.S., Kondratov N.A., Kudryashova E.V., Lipina S.A. and Chistobaev A.I. [8], Karginova-Gubinova V.V., Vasilieva A.V., Moroshkina M.V., and Potasheva O.V. [9], and others, including the authors [10].

The problems of labor force development and socio-economic development of the Arctic regions were at the center of interest of Denisov V.I., Chernogradsky V.N., Potravny I.M., and Ivanova P.Y. [11], Malinina E.S., Ushakova T.N., Zykova N.V., Konovalova L.V., and Khudyakova O.N. [12], Zamyatin N.Y. [13], and others. The authors have previously considered this problem in the context of the development of the Arctic territories, also belonging to the Far Eastern macro-region [14, 15].


2 Materials and methods

The authors have analyzed the existing approaches in the scientific community regarding the problems of food supply to the Arctic regions and the ways of solving them, although they have found no coverage in the scientific literature of the impact of the new preferential regime (resident of the Arctic zone) on the solution of the mentioned problem. Therefore, the authors aimed to evaluate the results of the applied preferences and the achievements of the last 3 years using the methods of analysis and comparison of various statistical data. The investment conditions in the macro-region were chosen as the object of the study. And the indicators of investment dynamics and job creation are the subject of the study.

3 Results and discussions

Preferential regimes are operational in certain Arctic territories since 2015. There have also been cases of investment in agriculture prior to the period considered by the authors.

Table 1. Residents of the TASED «Chukotka» (compiled by the authors)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number of residents</th>
<th>Investment (planned / thousand rubles)</th>
<th>Jobs created (planned)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fisheries and aquaculture</td>
<td>13 (19,1%)</td>
<td>210 749,8 (0,03%)</td>
<td>132 (1,3%)</td>
</tr>
<tr>
<td>Agriculture and food industry</td>
<td>9 (1,3%)</td>
<td>1 171 287,8 (0,17)</td>
<td>102 (1,0%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>68</strong></td>
<td><strong>697 867 736,7</strong></td>
<td><strong>10 051</strong></td>
</tr>
</tbody>
</table>
The data presented by the authors indicate a high proportion of investors in the territories of advanced socio-economic development in the Chukotka Autonomous Okrug. However, in terms of total investments and jobs created, their contribution is insignificant.

The largest agricultural investment project in the TASED "Chukotka" is the greenhouse construction project with a total area of 10 080 m² initiated by the private entrepreneur Tyntin A.V. It was planned to build a vegetable processing plant with an area of 196 m² and greenhouses. The project was expected to be completed by the end of 2023. However, while the planned investment was 900 000 thousand rubles, only 20 063.2 thousand rubles (2.2%) had been invested by the mid-2023. The project was not implemented within the established timeframe, and only 12 out of the planned 28 jobs were created. As a positive factor, the authors point out that the project is operational and the products are being manufactured.

The Federal Law [4] introduced a new investor status - "resident of the Arctic zone of Russia" (hereinafter - RAZR). It should be noted that the costs associated with electricity, heat, gas, water and sewerage, as well as road construction, will be borne by the RAZR. This significantly increases the cost of implementing investment projects. In Russia, for example, the electricity connection fee for residential buildings (connected at favorable rates) averages between 4 000 and 10 000 rubles per 1 kW. At the same time, RAZRs receive substantial tax and customs benefits, and after successful implementation of an investment project, RAZRs are entitled to a subsidy from the federal budget of up to 20% of the cost of the investment project.

The law [4] has been in force for only 3 years, yet we can already assess its positive impact on the investment climate in the polar region. Meanwhile, a significant proportion of investors are investing in the development of agriculture, the food industry, fisheries, and aquaculture: 8% - the share of all investors involved in addressing food issues, while the volume of investment projects and the number of jobs created - 6.5% - 6.6%.

<table>
<thead>
<tr>
<th>Residents</th>
<th>Number of residents</th>
<th>Investment (planned)</th>
<th>Jobs created (planned)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>683</td>
<td>915 002 399,0</td>
<td>23 989</td>
</tr>
<tr>
<td>Industry - agriculture and food industry</td>
<td>32 (4,7%)</td>
<td>29 171 912,3 (3,2%)</td>
<td>660 (2,8%)</td>
</tr>
<tr>
<td>Industry - fisheries and aquaculture</td>
<td>21 (3,1%)</td>
<td>30 293 974,1 (3,3%)</td>
<td>906 (3,8%)</td>
</tr>
</tbody>
</table>

It should be noted that the number of residents and jobs created, as well as the amount of investment, vary considerably among the Arctic regions.

<table>
<thead>
<tr>
<th>Region</th>
<th>Industry</th>
<th>Number of residents</th>
<th>Investment (thousand rubles)</th>
<th>Jobs created (planned)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Murmansk Oblast (MO)</td>
<td>Fisheries and aquaculture</td>
<td>11</td>
<td>27 666 496,4</td>
<td>779</td>
</tr>
<tr>
<td>Chukotka Autonomous Okrug (Chukotka AO)</td>
<td>Agriculture and food industry.</td>
<td>5</td>
<td>419 139,0</td>
<td>115</td>
</tr>
<tr>
<td></td>
<td>Agriculture and food industry.</td>
<td>2</td>
<td>1 131 396,0</td>
<td>164</td>
</tr>
</tbody>
</table>
Murmansk Oblast has taken the lead in this regard, followed by Arkhangelsk Oblast and Chukotka Autonomous Okrug.

Of the 53 investment projects, seven have planned investments exceeding 1 billion rubles. Five projects are being implemented in the Moscow region, and one each in the Chukotka AO and the AO.

**Table 4.** Major projects in agriculture and fisheries in the Arctic (compiled by the authors).

<table>
<thead>
<tr>
<th>Region</th>
<th>Investor</th>
<th>Project description</th>
<th>Investment (planned / thousand rubles)</th>
<th>Jobs created</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chukotka AO</td>
<td>OOO Arctic-Atom-Service</td>
<td>Greenhouse facility in Pevek</td>
<td>1 088 896,0</td>
<td>158</td>
</tr>
<tr>
<td>AO</td>
<td>OOO Carapax</td>
<td>Construction of 1 crab fishing vessel</td>
<td>2 517 128,5</td>
<td>38</td>
</tr>
<tr>
<td>MO</td>
<td>OOO Antey North</td>
<td>Crab and fish harvesting, storage and processing complex, construction and modernization of crab fishing vessels</td>
<td>15 466 159,0</td>
<td>366</td>
</tr>
<tr>
<td></td>
<td>OOO Alpha Trade</td>
<td>Construction of 1 crab fishing vessel</td>
<td>2 433 795,3</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>OOO Eta-Trade</td>
<td>Construction of 2 crab fishing vessel</td>
<td>4 867 590,6</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>OOO Froster</td>
<td>Construction of 1 crab fishing vessel</td>
<td>2 517 128,5</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>OOO Russian Salmon</td>
<td>Salmon and trout farming facility with a processing complex</td>
<td>2 289 830,0</td>
<td>122</td>
</tr>
</tbody>
</table>

All projects are in the active stage of implementation.
4 Conclusions

Summarizing, the authors prove the necessity of developing domestic agriculture and food production in the regions of the Arctic zone of the Russian Federation through the following theses:

The territory of the Arctic is challenging for both transport and logistics.

It is necessary to reduce the dependence of the Arctic regions on external suppliers of food production. Therefore, there is an objective need to actively develop agricultural production in the Arctic zone regions.

The experience of introducing the new preferential regime has shown its viability and effectiveness in solving the problems mentioned above.

References

1. Decree of the President of the Russian Federation № 164 "On the Fundamentals of State Policy of the Russian Federation in the Arctic until 2035".