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Formation and implementation of the strategy of food import substitution in ensuring sustainable development of the border region (on the materials of the Amur region)

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Abstract. The article substantiates the importance and importance of the role of the implementation of the strategy of import substitution in ensuring the food security of the border region and its sustainable development. The hypothesis of the study is that the implementation of the import substitution strategy, which involves reducing food imports and organizing their production within the region, can be achieved through more efficient use of the potential of the border position. On the example of the Amur region, the article analyzes the labor supply for increasing agricultural production and calculates the need for labor resources for the future. It was justified the need for widespread use of foreign labor. The calculations can be used by regional authorities in the formation and implementation of import substitution strategies, as well as in determining the size of quotas for attracting foreign labor.

1. Introduction

One of the important factors of sustainable development and the condition for ensuring food security in the region is the formation and implementation of the import substitution strategy for food products.

The organization of food supply of the population is among the priority tasks recorded in the programs of socio-economic development of the Russian Federation and its regions in particular. This problem is most acute in the regions of the Far East, which, first of all, is associated with significant restrictions, due to the level of socio-economic development of the territory, infrastructure equipment, as well as natural and climatic conditions. For this reason, along with the development of the agro-industrial complex, much attention is paid to the organization of the delivery of food products from other regions of the country and from abroad.

In the context of the region's remoteness from the developed and densely populated centers of the country, especially a significant role in the provision of public procurement of food purchased outside the country. This situation has a negative impact on domestic producers of food and agricultural raw materials, as they do not withstand competition and are forced to close production. The acceptability of the current situation is significantly reduced in the context of international sanctions against Russia. Even taking into account the fact that the main supplier of food is China, which does not share the sanctions policy, increasing the level of self-sufficiency in the region by strengthening the competitiveness of local agricultural producers is becoming a priority regional and state task. To solve this problem, Russia imposed sanctions restricting food imports and creating conditions for domestic producers of agricultural products to increase their own food production.



However, the weakening of competitive restrictions does not exhaust the whole range of problems for implementing the task of import substitution in the food market. The existing potential of agriculture, in particular, does not allow us to count on an accelerated increase in production. Among the factors that impede this is personnel shortage. The Amur region is traditionally one of the labor-deficient regions.

As part of this work, the authors set the task, based on an analysis of the socio-demographic situation in the Amur Region, to assess the prospects for ensuring the process of increasing agricultural production from internal sources of labor resources and predict the need for attracting foreign seasonal labor in the Russian-Chinese border area.

2. Materials and Methods

Ensuring food security, being a global problem, at the global, state, regional and local level, differs in the set goals and objectives used by the mechanisms for achieving it [3]. Since this is about creating conditions for providing the population with food based on their own production, food security is determined primarily by the development of the agro-industrial complex, i.e. agriculture and the emerging socio-demographic situation.

Based on population censuses for 1979, 1989, 2002, and 2010, as well as current statistical reporting, a study of the socio-demographic situation was conducted in the Amur Region. The study analyzed the following indicators: changes in population size, localization in the region (remoteness from the district center), as well as favorable conditions for farming (belonging to a certain natural-climatic zone). As a result of the study, a database was formed for all municipal districts of the Amur region. On the basis of the obtained base, a typology of municipal districts was built, combined with the territorial localization of abandoned agricultural land, which can be used for production [3].

3. Results

The climatic conditions and the structure of the land resources of the Amur Region are the most favorable for agriculture among other subjects of the Russian Federation within the Far Eastern Federal District. About 60 percent of all arable land in the Far Eastern Federal District is in the Amur Region. Agricultural land, much of which remains deduced from economic circulation, is one of the largest underutilized resources in the region. In 2017, the sown area of the Amur region was only 63.8% of the 1990 level. Moreover, in 4 districts out of 20 less than 30% of the arable wedge in 1990 was used, in 4 districts from 30 to 50% were used, and only in 5 districts it exceeded 75%" [4].

The analysis shows that it is possible to return to agricultural use in the Amur Region in the amount of 267 thousand hectares of the arable land which is not used currently. At present, one of the main restrictions on the increase in agricultural production is the shortage of personnel directly related to the demographic situation in the villages of the region. The situation is influenced by the following factors: natural, economic and socio-economic parameters, uneven distribution of social facilities, availability of jobs, etc. Without setting the task to exhaustively describe the socio-demographic situation in the region, we note only its most significant elements:

1. *Significant spatial differentiation of demographic processes.* In Blagoveshchensk (the administrative center of the region) and the adjacent areas over the past 30 years, there has been a steady increase in population. However, in other districts of the Amur Region, the number of residents has been steadily decreasing. In 2017, in the most distant districts, the population compared to 1989 was: in Shimanovsky – 71.1%, Magdagachinsky – 60.2%, Skovorodinsky – 50.1%, Arkharinsky – 45.6%.
2. *Dependence of a number of demographic indicators on migration processes.* In the municipal districts of the region, the level of demographic old age (an indicator of the proportion of the population aged 60 years and older) was more than 12%. Over time, this trend will only get worse. In some districts, the proportion of people over 60 may differ by 5.1 points. In the areas with high migration growth of the working population, the lowest rate of aging is observed.

3. *In small villages, the decline in the population is on average 1.5 times higher than in the centers of village councils.* In 2002, the small settlements concentrated in themselves 27% of the population of the Amur region. The population census in 2010 showed a 41% loss in the number of small settlements made up of the total number of losses in the region. From 2002 to 2017, in the southern and central natural-climatic zones of the region, where the vast majority of agricultural organizations are concentrated, a decrease in the population of more than 50% was observed mainly in small agricultural-type settlements, which were the former branches of state farms with a population of 7 to 563 people. In 2002, 9% of the population lived in settlements of the Amur region with a population of up to 500. In the total number of losses, their share was 20%. The lack of a developed social infrastructure is one of the most important reasons for the low attractiveness of small remote settlements. All social infrastructure is concentrated, as a rule, only in the district center. This fact, in particular, draws the attention of S. A. Kovalev [5].

The reserves of arable land are concentrated in the peripheral part of the Amur Region, and there is a particularly shortage of personnel there. As a result, in these municipalities, there is no possibility for locating and developing enterprises producing and processing rural products that are very labor intensive. All this is reflected in the level of food security of the Amur region as a whole and its hotel municipalities. The experience of resettlement in the region does not allow us to count on a sufficiently large influx of personnel to the agriculture of the region and to those settlements where there are reserves of arable land.

High labor intensity eliminates the possibility of large-scale production of fruits and vegetables without the use of seasonal labor. The analysis of the migration policy shows that there is a tendency to reduce the number of attracted workers from the People's Republic of China, which does not quite meet the needs of the Amur Region and acts as a deterrent to the development of agriculture.

To determine the required number of foreign labor in the Amur Region, the need for labor resources for agriculture in the region was calculated according to the planned indicators of agricultural production using formula 1 [6].

$$E = P/Lb \quad (1)$$

where E – industry employment for the planning period; P – a production volume for the planned period; Lb – a labor productivity in the industry.

Table 1. Forecasting the need for labor resources for agricultural production of the Amur region.

	A number of people employed in the industry in 2016, thousand people	Labor productivity in the industry in 2016, mln rubles / thousand people *	The volume of production for the planned period of 2020, million rubles			The industry's need for labor resources for the planning period until 2020, thousand people		
			Conservative forecast	Basic forecast	Target forecast	Conservative forecast	Basic forecast	Target forecast
Agriculture	29.4	1795.5	62417.2	64984.3	66727.5	34.76	36.19	37,16

4. Discussion

The analysis confirms the hypothesis that in the coming years, many border areas of the Russian Federation, including the Amur Region, will face an acute shortage of labor resources in the development of agriculture [7]. This should form new approaches in calculating the required amount of foreign labor recruited annually. It seems that the regions should make maximum use of the benefits of the border position and, with an increase in the demand for foreign labor, first of all, consider the

possibilities of attracting it from neighboring countries. In the example of the Amur Region under consideration, it is reasonable to attract the necessary workers from the neighboring PRC.

Since the task is to eliminate the shortage of seasonal workers, the decision on quotas should be developed on the basis of the tasks and interests of the employers determined by the state. At the same time, attracting low-skilled labor resources is limited to certain types of work, including planting, harvesting, processing and packing the harvest (for example, vegetables, berries and flowers), caring for livestock (for example, sheep, pigs, or on-farm processing of poultry). Also, wages must be specified, not less than the minimum set at the national level, the relevant living conditions. All this should lead to the need to adjust migration policy.

5. Conclusion

The region has significant resources to increase agricultural production in the framework of the implementation of the import substitution strategy, which is based on land resources. The negative factors include the demographic situation in the rural areas of the region, the shortage of qualified personnel. The lack of internal sources of personnel for the development of agriculture in the region has no alternative to attracting the Chinese labor for seasonal works, especially when implementing large-scale projects for the production and processing of agricultural products. As noted by V. A. Kolosov, in the border areas of Northeastern China, a significant segment of the economy has been formed, focused on the Russian market. Many Chinese citizens who speak Russian can potentially become the “frontellers” (cross-border commuting migrants) in a number of Russian border regions [8]. However, this requires certain steps to form an appropriate regulatory framework at the federal level.

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