The level and quality of food consumption as a factor in ensuring the social security of the population of the Amur region

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Abstract. The article analyzes the level and quality of food consumption, identifies the main trends in the formation of the diet of the population of the Amur region. The factors affecting the consumption of basic foods are analyzed.

1. Introduction

In the economically developed countries of the world, one of the most important issues of state policy is the health of the population, which largely depends on a healthy diet. Food consumed by a person, its quantity, as well as its properties determine the physical development and growth of a person, starting from early childhood, creates a tendency to diseases, to reduce working ability, lays a lifetime resource and neuropsychic state [5, 6].

The Order of the Government of the Russian Federation approved the Basics of the state policy in the field of healthy nutrition of the population for the period up to 2020. On its basis, the work of the Federal Service for Supervision of Consumer Rights Protection and Social Security of Society is built. The problem of food security should be addressed not only at the national, but also at the regional level. Since there are significant differences between food production and the need for it in areas with different climatic and environmental conditions [1].

The purpose of the work is to study nutrition as a risk factor for the health of the population of the Amur Region. To study this problem, the following questions were analyzed: analysis of the balance of nutrition in terms of the consumption of basic products and the assessment of the economic affordability of the minimum food mix.

2. Materials and Methods

The study used data for the Amur region for the period 2011-2017. Were analyzed indicators of the volume of production and consumption of basic foodstuffs in the Amur region [3].

The study used methods: statistical, comparative, ranking.
3. Results

To determine the level of food security of an individual in the world practice, standards of normal nutrition are used. Recently, this figure is equal to 2700 kcal per day. The categories of hungry people include the population consuming 1520 kcal, on the verge of starvation and malnutrition - 2150 kcal.

To determine the norms of proper nutrition, monitoring of the food security of an individual is carried out across countries and regions, taking into account the natural and social living conditions of the population.

When monitoring criteria are used:

- **Energy**: a daily caloric intake of a person. The critical limit is 0.5 of the physiological norm of the average person. There are three levels of vital activity associated with daily energy consumption: optimal 2500-3500 kcal, insufficient 1500-2500 kcal, critical <1500 kcal;
- **Component**, an amount of proteins, fats, carbohydrates, vitamins consumed by man per day;
- **Food safety**, a proportion of products produced with a content of contaminants is greater than the maximum allowable amount, which reduces the amount suitable for the consumption of food.

Standard nutrition standards existing in the Russian Federation are associated not only with the change in energy consumption per 1 kg of human body weight, but also with the standard of living of the population, with the peculiarities of climate, culture and traditions. Officially, this is spelled out in the Decree of the Government of the Russian Federation of January 28, 2013 No. 54 "on the approval of guidelines for determining the consumer basket for the main socio-demographic groups in the constituent entities of the Russian Federation." 10 natural-climatic zones have been established, each of which is distinguished by the specifics of the set of products, and hence the norms for ensuring the energy value of the food ration.

A set of food products is created that are necessary to preserve human health and ensure its vital activity, taking into account the possibility of satisfying the needs of the main socio-demographic groups of the population, in nutrients based on the chemical composition and energy value of food. But the minimum set of food products cannot be regarded as the recommended diet, because it is designed only to meet the needs of the subsistence minimum.

In the Russian Federation, to assess food security, the ratio of the actual consumption of certain types of food to scientifically based nutritional standards (energy, protein, fat, carbohydrates, vitamins) is considered [2]. Such an assessment shows a clear picture of the general malnutrition of the country's population, reveals a deficit of individual nutrients, which allows for the proper construction of the state agri-food policy and the food supply system.

For the Amur region in 2017 compared with 2016 there was a decrease in the consumption of a number of staple foods: vegetables and melons - by 1.7%; fish and fish products - by 2.2%, fruits and berries - by 3.4%, sugar and confectionery - by 5.9%. At the same time, consumption increased: bread and bread products - 1.5%, potatoes - by 3.1%, milk and dairy products - by 4.0%, vegetable oils and fats - by 4.5%, meat and meat products - by 5.8%; eggs - by 6.3%. At the same time, the expenditures of the population on food in 2017 compared to 2016 decreased by 0.7% and amounted to an average of 5,531 rubles per month per person.

Despite a slight increase in the consumption of basic foodstuffs (meat and meat products, milk and dairy products), in comparison with physiological norms, the population of the Amur Region experiences a significant deficit in the consumption of meat, milk, fruits and vegetables. And the observed increase is not significant and is due to finished products imported from neighboring regions. The existing deficiency is covered by the excessive use of potatoes, bread and bread products, which indicates a poor quality of nutrition.

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\text{Table 1. Consumption of basic foodstuffs in the Amur region per capita per year, kg.}
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The analysis showed that consumption of basic foodstuffs in the Amur Region is lower than the average in Russia. The Amur region ranks 48th in the rating list of regions of the Russian Federation, meat ranks 48th in milk, 68th in milk consumption, and 14th in potato consumption and 8th in bread and bread products (ranking in descending order).

The level of food consumption is closely related to the volume of production [3].

### Table 2. The production of basic foodstuffs in the Amur region, in thousands of tons.

| Product name          | 2011  | 2012  | 2013  | 2014  | 2015  | 2016  | 2017  |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|
| Meat and meat products| 14.2  | 14.9  | 14.7  | 14.9  | 13.8  | 18.5  | 18.8  |
| Vegetable oil         | 4.7   | 6.5   | 4.3   | 2.8   | 1.7   | 0.8   | 1.2   |
| Corn                  | 20.1  | 19.1  | 9.0   | 17.9  | 22.7  | 26.6  | 26.7  |
| Potatoes              | 325.3 | 352.3 | 158.2 | 324.3 | 367.4 | 270.4 | 336.5 |
| Fruits and berries    | 3.6   | 3.2   | 2.6   | 3.1   | 3.1   | 2.7   | 3.1   |
| Vegetables and gourds | 135   | 165   | 102   | 166   | 176   | 158   | 188   |
| Sugar                 | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Milk and dairy products| 154.8 | 148.1 | 147.6 | 126.0 | 128.9 | 128.1 | 124.0 |
| Fish and fish products| 57.3  | 57.5  | 57.6  | 57.7  | 57.8  | 57.9  | 57.2  |
| Eggs, mln.            | 246.2 | 231.0 | 239.4 | 240.1 | 203.1 | 199.6 | 206.2 |

The absence of an increase in volumes, and often a reduction in agricultural production, requires additional measures in order to avoid a food threat to the region. Such low volumes of livestock production and crop harvesting have a negative impact on local food industry enterprises. Production capacity of food enterprises are used by less than 50%. For example, in 2017, the utilization rate of the average annual capacity of enterprises for the production of sausage products was 53%, and whole-milk products - 75.2%. Replenishment of the missing raw materials is carried out by importing livestock products from other regions of the country or imports. Dairy products are made from recovered a raw material, which negatively affects the taste and nutritional qualities of the final product.

The impossibility of self-sufficiency of food enterprises in the region with basic foodstuffs is explained by the harsh natural and climatic conditions of the region. The Amur region does not have the climatic conditions that are necessary for many crops, the growing season does not allow growing
crops, and natural disasters (floods) dramatically reduce crop yields. Therefore, regional enterprises are largely dependent on the supply of imported food. When analyzing the supply of imported food can be divided into three main groups of food: fruits, vegetables and meat products. Thus, the lack of vegetables and fruits in the Amur Region is being replenished by importing products from the PRC. The development of cross-border trade allows us to provide the region’s food market with fresh vegetables, fruits and citrus fruits. According to statistics, the import of this product is 40% [4]. In the future, if the volume of food production continues to decline, the region will fall into economic dependence on imports. The consumption of imported potatoes, vegetable oil, dairy products will exceed a critical figure. It should be noted that the quality of imported food does not always meet the hygienic standards for sanitary-chemical or microbiological indicators. On this basis, in order to ensure the food security of the region, it is necessary to conduct a thorough inspection of imported food, especially imported from China. An increase in the consumption of fruits and vegetables imported into the Amur region from the Republic of China may lead to an increase in the level of health risks due to their low quality and nitrate content.

To assess the food security of an individual in the regions of the Russian Federation, it is necessary to take into account the ratio of the actual consumption of certain types of food to scientifically based nutritional standards [4]. To review the quality and usefulness of nutrition of the population, the analysis of the average caloric level of the daily diet in the Amur region with a critical caloric value of the daily diet was conducted.

Table 3. The change in the ratio of the average daily caloric intake in the Amur region to the critical value of the daily intake of calorie.

| The critical value of caloric intake, kcal | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|------------------------------------------|------|------|------|------|------|------|------|
| The actual caloric content of the daily diet, kcal | 2267 | 2474 | 2428 | 2481 | 2569 | 2512 | 2374 | 2610 |
| Ratio | 1,091 | 1,071 | 1,094 | 1,133 | 1,108 | 1,047 | 1,151 |

The table shows the annual increase in the ratio of the average daily caloric intake in the Amur Region to the critical value of the daily intake of calories, which is associated with an increase in the economic availability of food to the population of the region.

The cost of the food minimum included in the consumer basket in the period of 2017-2018 in the Amur Region is set at 4,515.2 - 4,551.42 rubles. The minimum wage in the region in 2017 was 7,800 rubles, while the average wage was declared in the amount of 3,5100 rubles. Such a significant difference in monthly income forces the residents of the region to form their own food basket from affordable foodstuffs. The population of the region with the average per capita cash income of up to 10,000 rubles is about 15%. Therefore, solving the problem of ensuring healthy and wholesome nutrition for the entire region’s population requires a programmatic approach and is a regional problem.

4. Discussion

Thus, an analysis of the physical availability of food and nutritional adequacy in the Amur Region reveals significant deviations from the threshold values of the food safety indicators specified in the RF food security doctrine.

The tendency to an increase in the economic dependence of the Amur Region on food imports has been revealed.

In the diet of the population of the Amur region there is a shortage of milk and dairy products, fruits, vegetables, meat and meat products. In abundance of potatoes, bread and bakery products, eggs. Such features in the diet of the inhabitants of the region is the cause of a deficiency of vitamins, macro and microelements and an excess of fast carbohydrates. The current nutritional imbalance can be
explained by the poverty of a significant part of the population. Solving this problem requires an integrated approach on which the country's food and social security depends.

5. Conclusion
Ensuring social security is one of the most important problems of our time. Social security is associated with the protection of the interests of the state and society, regions, social groups and the individual, with the system of life support and socialization of people. The problem of food security in the Russian Federation should be addressed not only at the national level, but also at the regional and municipal levels. Since there are differences between the need of the population for food and the possibility of food production. The ability of the regions to produce basic food products largely depends on the climatic conditions and, consequently, on the availability of agricultural raw materials and animal products.

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