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FOOD SECURITY FOR POPULATION OF KAZAKHSTAN: EXPERIENCE AND PROBLEM

Review

Abstract

Food security is the most important condition for the sustainable functioning and development of society, the basis of national security of the State. Ensuring food security is a complex and multifaceted problem, and functioning of the domestic agro-industrial complex is aimed at the solution of this task. The article defines three levels of food supply for the population. The cumulative specific share of domestic and imported production in food consumption is shown. In the structure of food production, the industries that occupy the main share are identified. Production factors that result in reduction of the competitiveness of Kazakhstani products in comparison with imported ones, cooperation mechanisms contributing to the increase in production efficiency are considered.

Keywords: food security, agri-industrial complex, food products, product quality, consumption, export, import, sales markets.

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ПРОДОВОЛЬСТВЕННОЕ ОБЕСПЕЧЕНИЕ НАСЕЛЕНИЯ КАЗАХСТАНА: ОПЫТ И ПРОБЛЕМЫ

Обзор

Аннотация

Продовольственная безопасность - важнейшее условие устойчивого функционирования и развития общества, основа национальной безопасности государства. Обеспечение продовольственной безопасности сложная и многоаспектная проблема, на решение которой ориентировано функционирование отечественного агропромышленного комплекса. В статье определены три уровня обеспечения населения продовольствием. Показан совокупный удельный вес отечественного и импортного производства в потреблении продуктов питания. В структуре производства пищевых продуктов определены отрасли, занимающие основную долю. Рассмотрены факторы производственного характера, снижающие конкурентоспособность казахстанской продукции по сравнению с импортной, механизмы кооперации, способствующие повышению эффективности производства.

Ключевые слова: продовольственная безопасность, агропромышленный комплекс, продукты питания, качество продукции, потребление, экспорт, импорт, рынки сбыта.

1. Introduction

Food security is the integral part of the country's economic security, the purpose of which is the reliable provision of the population with basic food types necessary for human life, in maximal possible independence from external food supply sources.

The main tasks of ensuring food security of the republic: prevention of internal and external threats, minimization of their negative consequences due to the constant readiness of the system to provide citizens with food products in conditions of unfavorable global market conditions, natural disasters and other emergencies; the formation of strategic stocks of high-quality

and safe food; sustainable development of the domestic production of basic types of food, sufficient to ensure food independence.

The article discusses the criteria for ensuring food security, forms of management existing in the republic. The actively forming regulatory framework of the EAEU member States is shown, which is aimed at extension of integration processes and cooperation development.

2. Methods

The theoretical and methodological basis of the study includes the research works on ensuring food security in Kazakhstan. For conducting analysis, methods of comparative analysis and generalization, method of systemic analysis are used. Forecasting and planning methods were used along with general scientific methods.

3. Results

Food independence of the State is a state of the economy in which own production of vital food products for one year is at least 80% of the population's annual needs in accordance with physiological nutritional standards; degree of satisfaction of a person's daily energy needs; sufficiency level of consumption of a particular food product.

The level of consumption is determined by the ratio of the actual consumption to the rational rate determined by the State, the level of economic accessibility of food products – is the ratio of the food costs to the total cost of all types of goods and services; the potential capacity of the domestic market by specific food products – is the product of the average per capita rational consumption of a certain food product by the average annual population.

At the inter-State and State levels, the main goal is the sustainable economic development and balance of domestic food markets. At the regional level, the main goal is to ensure the necessary income level, which guarantees the normative consumption of food products by all groups of the population.

The regional agro-industrial complex is accepted as a system-forming factor for the food security system, where sales and distribution, food reserves, consumption, management, personnel and financial support are systematically linked.

The food security system includes a system of interconnected subsystems, the purpose of which is the uninterrupted and sufficient supply of basic food products for the population according to medical standards.

Based on food approach, the state of food independence and the possibility of import substitution, three levels of security are determined, based on a coefficient as the ratio of production volume to the consumption volume of a particular type of food product; food security coefficient – the ratio of the amount of production and its imports to consumption, with the exception of exports.

The food independence coefficient in Kazakhstan is as follows; for grain – 1.5, potato – 1.27, egg – 1.0, vegetables – 1.41, meat and meat products – 0.76, milk and dairy products – 0.88, fruits – 0.28, vegetable oil – 0.74, fish – 0.72. Food security factors for grain – 1.06, potatoes – 1.32, eggs – 1.03, vegetables – 1.58, meat and meat products – 1.0, milk and dairy products – 0.97, fruits – 1.17, vegetable oils – 1.01, fish – 1.10.

An important parameter of food security level is the total share of domestic and imported production in consumption. The ratio of imports in consumption should not exceed 25%.

To assess the degree of food security, an indicator is used – the proportion of agricultural products, raw materials and food produced in the total volume of commodity resources of the domestic market, expressed as a percentage.

Criteria for ensuring food security – physical and economic accessibility of food products; food safety. Physical accessibility of food products – their presence on the territory of the country, at any time and in the volumes necessary to satisfy the needs of the population.

The agro-industrial complex of Kazakhstan is one of the most important sectors of economy, which is involved in ensuring national security through the formation of food security, and has prospects for further development: a wide network of sales markets, significant areas of arable land, irrigated land, export of oil and meat products, and in terms of grain and flour, it is one of the largest exporting countries in the world. The republic ranks ninth in the world in terms of territory and second place in terms of arable land per capita.

The efficiency of agricultural production in Kazakhstan is greatly influenced by the sharply continental climate. The growth in production volumes remains low, over a five-year period it amounted to 2.1%. Almost a quarter of the entire territory of the country is steppe lands, half is desert and semi-desert, a quarter of the territory is foothills. Therefore, 75% of the territory of Kazakhstan is used as agricultural land, which is more than 200 mln ha. The total area of arable land is 24.8 mln ha and pastures – 180 mln ha. Large fluctuations in yield capacity in some years are observed due to the low technological equipment at almost all production stages. Processing and selling food products require improvement.

Kazakhstan is one of the largest producers and exporters of grain and flour. Agriculture, despite a low share in national GDP, remains an important sector of the country's economy. This is primarily because about 45% of the country's population lives in rural areas and incomes of about 30% of the economically active population are generated through employment in agricultural sector.

There are three forms of management in the republic: agricultural enterprises, peasant (private) farms and households. Large farms are legal entities, peasant farms are individual entrepreneurs, households of the population remain the most important producers of livestock products.

The country's agro-industrial complex is aimed at increasing production volumes by enlarging economic entities, increasing efficiency by updating equipment, and subsidizing production. At the same time, small-scale agricultural production is one of the main factors hindering the increase in production and improving the product quality.

The production of AIC products is not sufficient to provide the population with own food products, there are significant import volumes. The monitoring and quality control systems of products manufactured by small farms and households are complicated.

The share of agriculture in the total investment is 0.2%. One of the main problems of agricultural production in Kazakhstan is the inadequate access to loan- financial resources. First of all, this is due to low liquidity which is resulted from the lack of collateral property at most agricultural enterprises, which is equivalent to the value corresponding to the requirements of the banks for use as a security guarantee.

In the republic, multilevel financing requires the development of agricultural risk institutions and a system of loan guarantees that will enhance the confidence of commercial banks in agricultural sector, in particular, lending to small and medium-sized businesses. Government participation is required in addressing the issue of cheap loans to agricultural producers from the budget [1].

There is no integrated approach to the full use of the resource potential of agro-industrial production. The average annual volume growth rates is not inferior to the consumption growth rate and population incomes, as a result, the free niche on market is replenished due to imports and its share in domestic consumption remains very significant.

The main share in the structure of food production is occupied by grain processing industry (20%), dairy (16.2%), meat processing (14%), bakery (13.5%), oil and fat (8.7%), fruit and vegetable (7.0%).

The average annual number of people employed in agriculture is 1 227 thous. people, the sown area in all farm categories is 21 899 thous. ha, including grain and leguminous crops – 15 000 thous. ha, cattle population- 7 150 thous. heads, sheep – 16,000 thous. heads, pigs – 800 thous. heads, poultry – 44.3 mln. heads.

In 2018 Kazakhstan produces 20,274 thous. tons of grain, 5,686 thous. tons of milk, 1,060 thous. tons of meat (slaughter weight), 5,574 mln eggs and other agricultural products. The production of meat per capita is 58 kg, milk – 309 kg, eggs – 305 mln pieces [2].

The total agricultural production is 12,794 bln USD, including crop production – 6,781 bln Tenge (53%), livestock production – 6,013 bln USD (47%).

In 2018, agricultural exports amounted to 3 018 bln USD, imports – 3 172 bln USD, that is, imports of goods exceeded exports – by 154 bln USD (5.1%). The share of exports in gross agricultural products reached 23.5%, imports – 24.8%. In the structure of food products exports: the share of processed products – 37.2% (1,125 mln USD), livestock products – 3.6% (109 bln USD), crop production – 59.2% (1,790 USD) [3].

A high share of imports remains in the most high-tech industries: cheese and cottage cheese – 46%, sausages – 41%, meat and meat-vegetable canning products – 42%, butter – 36.4%, sugar – 43.2%, fruit canned food – 84% of domestic consumption.

The analysis shows that the lower competitiveness of Kazakhstani products compared to imported products is characterized, first of all, by production factors: low production productivity; unsatisfactory quality of raw materials produced; seasonality of production and uneven flow of products. The low level of State regulation of prices for socially significant food products has a significant effect.

In the structure of domestic consumption, the share of imports of vegetables was 7.5%, fruits and berries – 66, grapes – 70, beef – 3.7, poultry – 50.2, milk – 8, butter – 39, cheese – 46, 5, sausages – 41, sugar – 39, canned fruits and vegetables – 8%.

As a result, the actual consumption of basic food products per capita is as follows: meat – 73 kg in a scientifically sound rate – 82 kg, milk – 234 kg (405 kg), eggs – 211 pcs. (292 pcs.), fruits and berries – 13 kg (60 kg), sugar – 21 kg (30 kg) [4]. There is a real possibility of increasing production of beef, lamb, horsemeat due to natural pastures and their irrigation.

To increase labor productivity and reduce cost of production, diversification of the structure of cultivated areas, introduction and development of scientifically based crop rotation, specialization of regions in the optimal use of farmland for production of specific types of products, taking into account natural factors and other conditions, stimulation of innovative technologies are necessary; increasing the availability of mineral fertilizers and herbicides, their cheapening, as well as the possibility of purchasing equipment through subsidizing leasing technologies, stimulating the development of seed production to ensure high-yielding varieties; basic subsidies, preferential loans for spring field and harvesting works, cheaper interest rates, investment subsidies for the renewal and development of fixed assets.

In order to increase production efficiency, two mechanisms will be used: horizontal and vertical cooperation. Horizontal cooperation allows small forms of business based on the association to increase profitability by reducing costs in production and sales of products. Vertical cooperation ensures integration and creates economically advantageous conditions for interaction with processed enterprises, other consumers of products and suppliers of production resources. Measures against degradation of agricultural land, salinization and waterlogging of irrigated lands are foreseen.

To meet growing consumption and reduce dependence on imports, the support will be provided for the construction of additional warehouse infrastructure facilities, vegetable stores with a volume of at least 600 thous. tons of fruit and vegetable products.

One of the measures to increase the availability of financing for agricultural production is guaranteeing loans: access to loan resources that do not have a sufficient collateral base, increasing the share of lending.

Commercial organizations will carry out comprehensive work on lending to the AIC, including lending partnerships, international financial organizations, second-tier banks, leasing organizations.

In promoting products to foreign markets and working closely with the Single Operator, exports will be based on the analysis of the development of domestic and foreign markets for food products in priority export directions.

To create a support system for sales markets and export development, it is planned to create a register of export markets, use modern technologies in production process, and improve legislation.

Analysis of the internal and external environment in Kazakhstan allows us to draw the following conclusions:
- agro-industrial complex has prospects for further growth and formation of national economy;

- agriculture requires large-scale modernization of production means and infrastructure, introduction of advanced farming technologies;
- systemic public support is needed aimed at meeting the needs of domestic market to increase and realize the products and food exports.

The introduction of intensive technologies in agricultural production requires the growth of technological equipment from 2 to 6%; the use of fertilizers and plant protection products will increase from 14 to 28% depending on the need.

The size of the sown areas of grain crops will decrease by 5.9% until 2022, the crops of oilseeds will increase by 38.9%, vegetables, melons and potatoes – 7.9%, fruit and berry crops – 2.2 times, feed – by 14%.

A set of measures in the implementation of scientifically based technologies will increase the yield of crops: cereals – by 4 kg/ha and 29.9%, oilseeds – by 3.1 kg/ha and 30.4%, vegetables, melons and potatoes – by 38 kg/ha and 30.5%, fruit and berry crops – by 31 kg/ha and 44.9%.

Barley production volumes will increase by 50%, oats – by 2.1 times, corn for grain – by 1.5 times, oilseeds – by 2 times, feed – by 2.2 times, sugar beets – by 6.4 times, poultrymeat – 2 times, beef – 1.2 times, lamb – 11%, milk – 9%, vegetable oil – 1.7 times, sugar – 2.7 times, mixed fodder – 2 times, sausages – 15%, canned meat and vegetable products – 30%, hard cheese – 1.6 times. Dairy processing volumes will increase by 30%, meat – by 10%, fruits and vegetables – 2.3 times.

Consumption of domestic production will increase in poultry meat by 74%, meat products in terms of meat by 76%, dairy products by 93%, vegetables – 97, fruit and berry crops – 66%, canned fruits and vegetables – 28% [5].

Imports will decrease in poultry meat by 21%, meat products – by 28, dairy products – by 13.7, vegetable oil – by 55.4%, vegetables – by 37.5%, fruit and berry crops – by 30, canned fruits and vegetables – by 28%.

The implementation of the developed measures, taking into account public support, will enhance the provision of the population of Kazakhstan with agricultural products and food in accordance with scientifically based consumption rates per capita.

In Kazakhstan, there has been an increase in prices for socially important food products, which has a significant impact on the dynamics of price index for goods and services, since food costs are 45%. To solve this problem, it is necessary to involve all resources in agricultural production.

It is advisable to stimulate supply and demand for food in the form of purchases for government needs, soft loans, the formation of an effective marketing system for agricultural products and food, conducting commodity and financial interventions, and stimulating the export of competitive products [6].

The adoption of public standards, technical regulations of food products will contribute to the development of common approaches to assessing the product quality and safety.

To regulate prices, incomes of agricultural producers and consumers, monitoring of economic indicators is proposed: production costs by groups of specialized farms and production; price parity for industrial and agricultural products [7].

When monetary resources are allocated to reduce costs, they are redistributed in favor of buyers of products and sellers of resources. If agricultural producers were given subsidies for fertilizers, then fertilizer sellers raise prices and earn incomes of about 75%, agricultural producers – 25%.

The ratio of world prices to prices within Kazakhstan should be equal to one for producers and consumers of agricultural products.

At the same time, the interests of producers, consumers and trade organizations should be focused on the efficient production of food products. At the same time, almost 80% of retail turnover is accounted for by trade organizations that control more than 15% of the domestic market, which impose conditions that are unacceptable to the manufacturer.

The main goal of extending agricultural integration of Kazakhstan is to strengthen the cooperative ties of the EAEU member States in various areas of the AIC on the basis of innovative development, competitive advantages, digitalization of management and technological solutions that ensure food security of the States, sustainable development of the agricultural sector, and increased mutual trade, import substitution and increasing the competitiveness of agricultural products and food [8].

Currently, the regulatory framework is being actively formed for the implementation of the main directions of the agreed agro-industrial policy, aimed at expanding integration processes and developing cooperation. In terms of forecasting, this is the formation of long-term forecasts for the development of agribusiness of the Member States based on the use of foreign experience. The work is conducted to assess the impact of public support measures on the common agricultural market, taking into account national characteristics of economic activity, to improve the system of accounting and control of the use of public funds by agricultural producers. As part of the formation of integrated information support for the AIC, preparation of proposals for the development of digital technologies and the formation of a single digital space in the AIC of the EAEU is planned [9].

Conflict of Interest

None declared.

Конфликт интересов

Не указан.

References

1. О республиканском бюджете на 2019-2021 годы. Закон РК от 30 ноября 2018года N 197-VI.-Астана. – 50 с.
2. Государственная программа развития агропромышленного комплекса Республики Казахстан на 2017-2021 гг. (с изменениями и дополнениями от 12 июля 2018 г. № 423). – Астана, 2018г. – 177с.
3. О региональных особенностях экспорта продукции АПК по итогам 2018г. – Астана: МСХ РК, 2018г. – 70 с.
4. Доступность рынков сбыта и развития экспорта. – г.Нур-Султан: МСХ РК, 2019г. – 30с.
5. Стратегия развития АО «НК» Продкорпорация» на 2017-2026 гг. – Астана, 2018г. – 42 с.

6. Jussibaliyeva A.K. Directions of realization of agrarian policy in the Republic of Kazakhstan /A.K. Jussibaliyeva, N.T. Baikadamov, B.Z.Zhumagaliyeva //Проблемы агрорынка. – 2019. – N3. – С. 34-42
7. Сигарев М.И. Государственное регулирование производства экспортноориентированной сельскохозяйственной продукции в сельских районах Казахстана /М.И. Сигарев, Ж.М. Нуркужаев. – Алматы:МОН РК, АСХН РК, 2018. – 49 с.
8. Мизанбекова С.К. Приоритетные направления регулирования агропродовольственного рынка / С.К. Мизанбекова, Б.Б. Калыкова, Г.К. Нурманбекова //Проблемы агрорынка. – 2019. – N1. – С.30-39.
9. Сайт Евразийского экономического союза [электронный ресурс].-2019. – URL:<http://eaeunion.org> (дата обращения: 21.10.2019).
10. Калиев Г.А. Рекомендации по совершенствованию системы учета и контроля использования государственных средств сельхозтоваропроизводителями, с учетом развития единого рынка сельхозпродукции и продовольствия в ЕАЭС /Калиев Г.А, Сигарев М.И., Нуркужаев Ж.М. – Алматы,2017. – 72 с.

References in English

1. About the republican budget for 2019-2021. The Law of the Republic of Kazakhstan dated November 30, 2018 N 197-VI. – Astana. – 50 p.
2. The State program for the development of the agro-industrial complex of the Republic of Kazakhstan for 2017-2021. (as amended on July 12, 2018 No. 423). – Astana, 2018 – 177p.
3. On the regional characteristics of the export of agricultural products in 2018. – Astana: Ministry of Agriculture of the Republic of Kazakhstan, 2018. – 70 p.
4. Availability of markets and export development. – Nur-Sultan: Ministry of Agriculture of the Republic of Kazakhstan, 2019 – 30 p.
5. Development Strategy of NK Food Corporation JSC for 2017-2026. – Astana, 2018 – 42 p.
6. Jussibaliyeva A.K. Directions of implementation of agrarian policy in the Republic of Kazakhstan /A.K. Jussibaliyeva, N.T. Baikadamov, B.Z.Zhumagaliyeva // Problems of the agricultural market. – 2019. – N3. – P. 34-42
7. Sigarev M.I. State regulation of the production of export-oriented agricultural products in rural areas of Kazakhstan / M.I. Sigarev, J.M. Nurkuzhaev. – Almaty: MES RK, ASHN RK, 2018. – 49 p.
8. Mizarbekova S.K. Priority areas of regulation of the agri-food market / S.K. Mizarbekova, B.B. Kalykova, G.K. Nurmanbekova // Problems of agricultural market. – 2019. – N1. – P.30-39.
9. Website of the Eurasian Economic Union [Electronic resource]. – 2019. – URL: <http://eaeunion.org> (accessed: 10.21.2019).
10. Kaliev G.A. Recommendations on improving the system of accounting and control of the use of public funds by agricultural producers, taking into account the development of a single market for agricultural products and food in the EAEU/ Kaliev G.A., Sigarev M.I., NurkuzhayevZh.M. – Almaty, 2017. – 72 p.