MAIN PROBLEMS OF FOOD PROCESSING ENTERPRISES AND THEIR SOLUTIONS

Abstract. The stability and security of the food system are key factors in the quality of life of the population. The purpose of the study is to develop mechanisms to ensure the stability and security of the food system of Kazakhstan, taking into account the solution of current urgent problems.

To achieve the goals, the authors used methods of statistical, expert and comparative analysis. The results obtained were achieved through the use of systematic and constructive approaches. The analysis of changes in prices for socially significant food products in the Republic of Kazakhstan for the period 2016-2022 was also carried out, the ratio between the volume of production per capita and the rate of food consumption per capita was studied. In conclusion, the authors make proposals for sufficient provision of the population with socially significant types of food on the basis of strengthening the activities of processing enterprises with the support of the state, taking into account the level of specialization of the regions. It is assumed that the authors’ recommendations will solve such urgent problems as the low share of domestic agricultural products in the domestic market, the decline in the country’s export potential, the lack of stable sources of income for rural budgets, the inefficiency of the mechanism for the sale of agricultural products, the low share of the introduction of innovative technologies in the development of the agro-industrial complex.

Keywords: food safety, consumption, processing of food products, domestic products, export and import.

Introduction

Today, food security is a major global problem. The COVID-19 pandemic has exposed the vulnerability of food systems around the world and further exacerbated social inequality [1]. The ongoing war in Ukraine is disrupting supply chains and further affecting grain, fertilizer and energy prices. These conditions led to a further increase in food prices in the first half of 2022. In 2022, compared to 2019, the number of people facing food shortages worldwide increased from 135 million to 345 million [2]. The number of people without access to adequate nutrition increased by 112 million to approximately 3.1 billion [3].

In order to combat the global food shortage, all countries are taking measures at their own level [4,5]. Kazakhstan is considering various measures to increase its agricultural potential. Because for Kazakhstan, the agrarian sector plays an important role in the socio-economic development of the country. The agricultural sector has achieved a number of successes within the framework of state support programs and important strategic documents, pilot projects and regulatory documents.

In the structure of the country’s gross domestic product, agriculture will make up 5.3% in 9 months of 2022, which is 0.2% higher than in the corresponding period of 2021, and 0.9% higher than in 2019 [6]. Therefore, the volume of production of agricultural products is gradually increasing every year. But in the first years of independence, this indicator is low. The highest indicator of the share of agriculture in GDP was recorded in 1999 and was 9.9%. In 2012, the lowest rate was 4.2%. After this year, it gradually increased and reached 5.4% in 2020. Unfortunately, this indicator did not maintain a steady growth, in 2021 it decreased again and showed 5.1%. Such instability in the agricultural sector creates instability in food prices and limits the possibilities of price control. As a result, the price of food products of social importance increased by 22.7% in 2022 compared to 2021, which is 12.8% compared to the corresponding period of 2021 high.
In order to maintain the stability of product prices, it is important to effectively organize the work of processing enterprises in the country. In particular: providing them with raw materials, full use of their production capacity, replacement of outdated technologies with high production costs, innovative technologies with low productivity. It is important to combine small enterprises into cooperatives to prevent dependence on imported products and raw materials, to increase the production skills of small business owners, and to fully provide consumers with food products. If we show specific mechanisms for effectively solving this problem, the food market in the country will develop steadily, and our people will be provided with quality domestic products.

Materials and methods

As an information base of the research, the authors used scientific information that indicated domestic and global food safety and the main problems of processing enterprises in Kazakhstan. In addition, he used the information in the strategic documents developed for the purpose of ensuring food security of the country. Databases of the National Bureau of Statistics of the Agency for Strategic Planning and Reforms of Kazakhstan, the program of the United Nations (UN) and statistical collections were used. The authors used a variety of methods while writing this study. Among them, a systematic approach is used to justify the strategic orientations of the development of the agro-industrial complex of Kazakhstan. Statistical-economic, analytical, comparative analysis methods were used to describe the current state of food security in Kazakhstan. In addition, the monographic method was used to recommend the generalization and implementation of the experience of the world countries in the country, and the comparative analysis method was used to determine the dynamics of the development of agricultural industries and the level of providing consumers with types of food products. In the process of identifying problems in the field of food safety and processing enterprises in our country, an abstract-logical method was used.

The agrarian sector of Kazakhstan is one of the successful industries that provides the necessary food for the domestic and foreign markets of the country and has ample opportunity to gradually increase its size [7]. Among them, it is very important for Kazakhstan to stimulate the flow of investments to the regions and ensure food security by strengthening the work of food processing enterprises. Despite the abundant opportunities of the raw material potential of food products in the field of agriculture in our country, some types of products specified in the scientifically proven standards of the World Health Organization are not consumed at all, such products are not produced and processed in the country at all.

The methodological basis of this study was the analysis and evaluation of the current state of food processing enterprises by comparing the level of consumption of food products by the population with the average standards determined by the state.

In the article, processing enterprises are faced with such problems as: the raw material base required for processing is in the hands of small farms, morally and physically obsolete technological equipment, the presence of many intermediaries in moving agricultural products to the market, insufficient amount of agricultural food raw materials suitable for processing it was said. According to this, the study showed the need to create specialized processing plants in promising rural settlements or district centers in the country, to create a network of agro-logistic and wholesale distribution centers to increase export potential, to improve the mechanisms of agricultural cooperatives in order to strengthen food security.

Literature review

In order to ensure food safety, many countries conduct scientific research to increase the productivity of processing enterprises and rely on the achievements of developed countries and global best practices. The term food security was introduced into the scientific circulation in the first half of the 70s of the 20th century, after the research from the recommendations of the UN International Food and Agriculture Organization (FAO) after the grain crisis of 1972-1973 [8,9]. In an unstable political situation in the international arena, problems of food shortage can cause a crisis in any country, which in turn affects the development of the economy and the condition of the population [10,11] in this regard, the state's activities should be aimed at ensuring social stability. In this regard, it is very important to develop processing enterprises in order to minimize the dependence of the country on imported supplies, to ensure the development of food production.


In the works of these authors, the state of supply of the main types of food products in the current domestic market, the indicators of local production for the supply of the population are considered [12]. Despite the food safety results achieved, indicated factors that led to further increases in food prices in the context of emergency situations and
the COVID-19 pandemic, as well as political conflicts between Russia and Ukraine. In many states, it was said that the issue of food safety is one of the main conditions for ensuring the national security of the country [13]. It was shown that the consumption ration of food products in the country today is [14].

Results and discussion

Processing enterprises cannot fully use production capacities due to the shortage of raw materials. In particular, in 2020, the level of capacity loading of milk processing enterprises is 66.6%; meat production 16% [7]. As a result, the average costs of enterprises are increasing, prices are becoming unstable in the domestic market (Table 1).

In 2022, the five most expensive and socially important food products are: sugarcane (65.5%), rice (36.0%), rozki (34.8%), first grade wheat flour (27.4%), chicken and eggs (24.6%).

<table>
<thead>
<tr>
<th>The name of food products of social importance</th>
<th>2016</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>Deviation (+/-) 2022/2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>First grade wheat flour</td>
<td>107.4</td>
<td>130.90</td>
<td>100.2</td>
<td>105.3</td>
<td>127.4</td>
<td>20</td>
</tr>
<tr>
<td>Bread made from first grade wheat flour</td>
<td>118.7</td>
<td>113.50</td>
<td>100</td>
<td>105.9</td>
<td>113.9</td>
<td>-4.8</td>
</tr>
<tr>
<td>Rozhki</td>
<td>111.5</td>
<td>120.20</td>
<td>99.9</td>
<td>100.7</td>
<td>134.8</td>
<td>23.3</td>
</tr>
<tr>
<td>Rice</td>
<td>102</td>
<td>128.00</td>
<td>100</td>
<td>90.4</td>
<td>136</td>
<td>34</td>
</tr>
<tr>
<td>Buckwheat groats</td>
<td>145.4</td>
<td>180.50</td>
<td>100.6</td>
<td>117.4</td>
<td>123.8</td>
<td>-21.6</td>
</tr>
<tr>
<td>Sunflower oil</td>
<td>100.9</td>
<td>100.6</td>
<td>129.8</td>
<td>116.9</td>
<td>116.9</td>
<td>-</td>
</tr>
<tr>
<td>Unsalted butter</td>
<td>113.6</td>
<td>100.2</td>
<td>104.6</td>
<td>122.8</td>
<td>122.8</td>
<td>-</td>
</tr>
<tr>
<td>Beef - a part of the breast</td>
<td>105.7</td>
<td>116.30</td>
<td>100</td>
<td>106.8</td>
<td>110.1</td>
<td>4.4</td>
</tr>
<tr>
<td>Chicken (thigh bone with adjacent soft meat)</td>
<td>110.7</td>
<td>113.80</td>
<td>100.1</td>
<td>118.8</td>
<td>124.6</td>
<td>13.9</td>
</tr>
<tr>
<td>Pasteurized milk 2.5%</td>
<td>107.3</td>
<td>105.60</td>
<td>100.3</td>
<td>107.1</td>
<td>122.9</td>
<td>15.6</td>
</tr>
<tr>
<td>Buttermilk 2.5%</td>
<td>105.1</td>
<td>104.50</td>
<td>100</td>
<td>105.1</td>
<td>120.8</td>
<td>15.7</td>
</tr>
<tr>
<td>Cottage cheese</td>
<td>107.4</td>
<td>100.40</td>
<td>100.2</td>
<td>104.1</td>
<td>116.9</td>
<td>9.5</td>
</tr>
<tr>
<td>Potatoes</td>
<td>114.7</td>
<td>114</td>
<td>101.4</td>
<td>118.5</td>
<td>113.9</td>
<td>-0.8</td>
</tr>
<tr>
<td>Carrot</td>
<td>103.8</td>
<td>104.9</td>
<td>101.5</td>
<td>126.2</td>
<td>99.8</td>
<td>-4</td>
</tr>
<tr>
<td>The main onion</td>
<td>94.2</td>
<td>112.8</td>
<td>100.9</td>
<td>104.7</td>
<td>136.1</td>
<td>41.9</td>
</tr>
<tr>
<td>White cabbage</td>
<td>93.5</td>
<td>105.4</td>
<td>101.2</td>
<td>135.1</td>
<td>85.7</td>
<td>-7.8</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>116.2</td>
<td>77.3</td>
<td>100.1</td>
<td>114.9</td>
<td>165.5</td>
<td>49.3</td>
</tr>
<tr>
<td>Eggs, category I</td>
<td>118.6</td>
<td>113.00</td>
<td>101.2</td>
<td>103.8</td>
<td>124.4</td>
<td>5.8</td>
</tr>
<tr>
<td>Salt</td>
<td>115.6</td>
<td>100.8</td>
<td>100</td>
<td>101.2</td>
<td>119.5</td>
<td>3.9</td>
</tr>
<tr>
<td>Food products of social importance</td>
<td>112</td>
<td>110.40</td>
<td>100.4</td>
<td>109.9</td>
<td>122.7</td>
<td>10.7</td>
</tr>
</tbody>
</table>

Source: Compiled by the authors [6].

12 types of food products in the country for 100% (beets, potatoes, rice, cucumber buckwheat groats, lamb, eggs, wheat flour, bread, pasta, milk, salt); by 80% in eleven product types, which are tomatoes, cabbage, carrots, peppers, onions, beef, horse and pork, sour milk products, butter and sunflower oils), as well as in 6 types of products from other countries (poultry and sausage products, cheese and cottage cheese, apples, sugar, fish) are imported [16]. In practice, no country can provide itself with all types of food products. However, the production of socially important food products and keeping their prices stable are strategic goals of the state. Therefore, we believe that it is very important to increase the production capacity and strengthen the potential of socially important food processing enterprises in the country.

The main branches of Kazakhstan's agriculture are grain, dairy and meat products, fruits and vegetables, butter and frozen foods.

The following problems can be noted in the field of grain. The republic has a large network of elevators, grain receiving enterprises, and grain storage warehouses. But their competitive features require high quality grain for processing.
As we can see from the picture, if we take into account the dynamic changes in the population’s main food consumption indicators, in 2021, compared to 2016, the level of consumption of vegetables (9.74%), oil and fatty products (16.92%), potatoes (4.73%) decreased somewhat. The unaffordability of the price of meat products among social goods increases the demand for fish and eggs as substitute goods.

In January-October 2022, 21,393 thousand tons (US$ 2,398,6 thousand) of non-condensed milk and cream products without added sugar or other sweeteners were imported. During this period, the export volume was 12.5 thousand tons (9441.0 thousand US dollars). The intermediate balance is 8902.9 thousand tons or 14542.7 thousand US dollars. This indicates an insufficient level of milk and dairy products in the domestic market.

The volume of meat processing and canning and the production of meat products in the Republic in 2020 is about 300.0 billion tenge or increased by 2.0 times compared to 2015.

Due to the COVID-19 pandemic, the prices of imported products have increased excessively in 2020. Production costs in agriculture have increased. In Kazakhstan, the price of socially important food products in 2021 increased by 9.3% compared to 2020 [17].

On January 11, 2022, the head of state K.K. Tokayev’s statement at the Majilis of the Parliament of the Republic of Kazakhstan emphasized the need to strengthen food security in the country. He said that if there is not enough food in the country, no measures will help to contain inflation, and he paid special attention to the Government and mayors that the main priority at the state level is to fundamentally solve the problem of food security in the next three years [18].

Therefore, we believe that it is the main task for scientists to show the real problems in recycling enterprises and to propose mechanisms for their effective solution.

The results of the research show that there are several reasons that negatively affect the development of food processing in the agricultural sector of Kazakhstan:

1. Dispersion of closely related industries by territorial location. These conditions do not make it possible to effectively organize the abundant resources of the raw material base necessary for the production of food in the republic, to fully provide the basic types of food necessary for the population. And it is not profitable for processing enterprises to receive raw materials from such scattered villages, especially from remote areas. For farmers producing raw materials, the lack of infrastructure for transportation, storage, and distribution of their products to processing enterprises encourages them to hand over their products to intermediaries and does not allow timely delivery to wholesale and retail outlets.

2. Agricultural food raw materials suitable for processing are not produced in sufficient quantities, the infrastructure capable of timely delivery to processors and markets is not developed in the fields of product purchase, storage, primary processing, transportation and marketing.

3. In the promotion of agricultural products to the market, many intermediaries cover the distance from the producer to the consumer. Processing inhibits the small commodity nature of agricultural production. The share of private households in the total output of the agricultural sector is high. They offer raw materials of low quality and in some cases unsuitable for industrial processing. Nevertheless, farmers are not satisfied with the low purchase prices set by the factories. And recyclers, in turn, constantly complain about high production costs due to the increase in tariffs for heat and electricity, water, and technological equipment.

4. High tariffs set for morally and physically obsolete technological equipment in processing enterprises, an outdated system of quality control of both raw materials and finished products, lack of coordinated and interested relations between enterprises of related industries do not allow effective use of agricultural potential. Kazakhstan’s producers are forced to compete with foreign producers. Imported products often have priority due to processing and packaging technology. Even production in neighboring countries can be cheaper, which leads to a reduction in the cost of imported products.

5. The main factors hindering the development of dairy and meat industries in our country are the presence of the raw material base in the hands of small farms and their weakness. It is no secret that smallholders and farmers have low production and financial literacy. Currently, especially in the northern regions of the country, the lack of trust of farmers in joining cooperatives does not encourage them to join agricultural cooperatives, because of this, the quality of the produced products is low. Its main reasons poor breed of cattle, lack of necessary quality fodder for animals, non-compliance with nutritional rations, use of manual milking, etc. As a result, insufficient amount of raw materials is formed in processing enterprises, and the quality of processed products decreases. We believe that these measures will have a significant impact on the development of recycling enterprises in the country.

Conclusion

The above-mentioned set of problems requires to present the main mechanisms of effective solution of these situations to the specialists studying the problems of food safety in the processing enterprises. Supplying agricultural products processing enterprises in the country with raw materials in sufficient quantity, full utilization of production capacities in enterprises, replacing outdated, high-cost, low-performance technologies with innovative and digital technologies, by improving the literacy of small business subjects, it is possible to unite them into production cooperatives, to provide consumers with high-quality domestic food at an affordable price. We believe that the following measures should be taken for this purpose:
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First, to develop a map of territorial location depending on the level of specialization of regions and rural areas. It is very important to create specialized processing plants in the centers of the district (promising rural settlement) according to the level of its specialization. Specialized enterprises are an effective mechanism for product quality control, movement of agricultural products along the technological chain from the producer to the consumer: production > storage > processing > sale. Since these enterprises are large-scale producers, they are directly responsible for the quality of the manufactured product and its price to consumers. Such enterprises produce products that meet sanitary requirements. Therefore, they are always competitive and increase their export potential. As a result, there are opportunities to expand the domestic and foreign markets.

Secondly, we believe that it is important to create a network of service and agro-logistic, wholesale distribution centers near processing enterprises in the district or promising rural areas in order to ensure stable sales of products produced by small entrepreneurs and farmers and to promote them to consumers without intermediaries. Such centers create opportunities for small economic entities and farms (cattle breeders), especially cooperatives, to sell products at wholesale and retail prices, reduce product transportation costs, make large batches of food products, and export products to the domestic market.

Thirdly, to organize agricultural cooperatives, increasing the production and financial literacy of small economic entities and farms. This form of economic organization is an effective tool for protecting the interests of cooperative members and farmers, for saving agricultural products, moving them to the market, and solving the problems of initial processing of products. In addition, feedlots and slaughterhouses, milk reception points and other such infrastructure facilities allow to increase the volume of production and processing of milk and meat, and to control their quality.

REFERENCES 1:

REFERENCES 2:
ОСНОВНЫЕ ПРОБЛЕМЫ ПРЕДПРИЯТИЙ ПО ПЕРЕРАБОТКЕ ПИЩЕВЫХ ПРОДУКТОВ И ПУТИ ИХ РЕШЕНИЯ

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Аннотация. Стабильность и безопасность продовольственной системы выступают ключевыми факторами качества жизни населения. Целью исследования является разработка механизмов обеспечения стабильности и безопасности продовольственной системы Казахстана с учетом решения текущих актуальных проблем. Для достижения целей авторами были использованы методы статистического, экспертного и сравнительного анализа. Полученные результаты достигнуты посредством применения системного и конструктивного подходов. Также проведен анализ изменения цен на социально значимые продовольственные товары в Республике Казахстан за период 2016-2022 годы, исследовано соотношение между объемом производства продукции на душу населения и нормой потребления продуктов питания на душу населения. В заключении авторами даны предложения по достаточному обеспечению населения социально значимыми видами продовольствия на основе укрепления деятельности перерабатывающих предприятий при поддержке государства с учетом уровня специализации регионов. Предполагается, что рекомендации авторов позволят решить такие актуальные проблемы как низкая доля отечественной сельскохозяйственной продукции на внутреннем рынке, снижение экспортного потенциала страны, отсутствие стабильных источников дохода для сельских бюджетов, неэффективность механизма реализации сельскохозяйственной продукции, низкая доля внедрения инновационных технологий в развитии агропромышленного комплекса.

Ключевые слова: продовольственная безопасность; потребление, переработка продуктов питания; отечественная продукция; экспорт и импорт.