

SOCIAL ISSUES IN THE CONTEXT OF FOOD SECURITY IN KAZAKHSTAN

ҚАЗАҚСТАННЫҢ АЗЫҚ-ТҮЛІК ҚАУІПСІЗДІГІ КОНТЕКСТІНДЕГІ
ӘЛЕУМЕТТІК ПРОБЛЕМАЛАРСОЦИАЛЬНЫЕ ПРОБЛЕМЫ В КОНТЕКСТЕ
ПРОДОВОЛЬСТВЕННОЙ БЕЗОПАСНОСТИ КАЗАХСТАНА

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Abstract: Food security is a crucial aspect of social stability in Kazakhstan. In this context, social problems include rising food prices, dependency on imports, and the impact of economic and climatic factors that increase food costs and reduce accessibility for low-income population groups. *The goal* is to identify social barriers to food self-sufficiency in the country, outline their causes, and propose effective solutions aimed at improving the availability and quality of essential food products. *Methods* – analytical, economic-statistical, and comparative methods were used to study the current state of food provision. The research draws on the works of domestic and international scholars, materials from the FAO and OECD, and expert interviews. Special attention was paid to the influence of socio-economic indicators and the effectiveness of government programs. *Results* – the study highlights several challenges undermining agro-food security: low household incomes, price volatility, and environmental risks. It also examines measures contributing to the intensive development of the agro-industrial complex and the stabilization of the national food market under current global economic conditions: modernization of the agricultural sector, increased social support, price regulation, and the promotion of a healthy lifestyle. *Conclusions* – the author concludes that a comprehensive approach is needed to analyze the current state and threats to economic independence, which is not feasible without robust social and investment policies, protection of domestic agricultural producers, full realization of the potential of all forms of agribusiness, and improvement of the tax incentives system. These efforts will ensure domestic food needs are met and enable the agricultural sector to become a leading exporter of raw materials and consumer goods. It is essential to improve models that enhance the potential of rural areas as socio-ecological-economic systems, capable of mitigating negative impacts on food security.

Аңдатпа: Азық-түлік қауіпсіздігі Қазақстандағы әлеуметтік тұрақтылықтың маңызды аспектісі болып табылады. Бұл тұрғыда әлеуметтік мәселелерге азық-түлік бағасының өсуі, импортқа тәуелділік және азық-түлік шығындарын арттыратын және оларға аз қамтылған популяциялардың қолжетімділігін төмендететін экономикалық және климаттық факторлардың әсері жатады. *Мақсаты* – республикадағы азық-түлікпен өзін-өзі қамтамасыз етумен байланысты әлеуметтік кедергілерді анықтау, олардың себептерін белгілеу және негізгі өнімнің жалпыға қол жетімділігі мен сапасын арттыруға бағытталған тиімді жолдарды ұсыну. *Әдістері* – азық-түлікпен қамтамасыз етудің қалыптасқан жағдайын зерделеу үшін талдамалық, экономикалық-статистикалық және салыстырмалы. Отандық және шетелдік ғалымдардың еңбектері, FAO (Біріккен Ұлттар Ұйымының азық-түлік және ауылшаруашылық ұйымы), ЭЫДҰ (Экономикалық ынтымақтастық пен даму ұйымы) материалдары негіз болды, сараптамалық сұхбаттар талданды. Әлеуметтік-экономикалық көрсеткіштердің әсеріне және

crises. Their low income and limited access to nutritious food exacerbate social inequality (Food security and economic growth: the role...) [2]. The primary factors influencing food security include production efficiency, logistics, market pricing policies, and government support measures (State policy on ensuring food security) [3].

In Kazakhstan, various government programs are being implemented to ensure food security. For instance, the "National Project for the Development of the Agro-Industrial Complex for 2021–2025" is focused on modernizing agriculture, introducing digital technologies, and increasing local food production (Agricultural policies and food security: case study...) [4]. However, these initiatives have not yet fully addressed the issue of social inequality, as disparities in food access persist between rural and urban areas.

Additionally, climate change has a significant impact on food security. Droughts, water shortages, and soil degradation negatively affect agricultural productivity, which in turn leads to rising food prices (Climate change impact on food security: global...) [5]. To address these issues, there is a growing need to digitize agriculture, develop farmer cooperatives, and reduce dependency on imports (Analysis of food security strategies...) [6].

This paper aims to provide a comprehensive analysis of the social issues surrounding food security in Kazakhstan. It examines the underlying causes of these problems, including economic disparities, infrastructural limitations, and environmental risks, while also evaluating the socio-economic consequences of food insecurity for vulnerable groups.

Furthermore, the study explores contemporary approaches to addressing these challenges through government policy frameworks, the adoption of digital solutions, and the strengthening of social support mechanisms. In particular, the research highlights innovative practices applied in emerging economies that could serve as effective models for Kazakhstan's context (Innovative approaches to food security in emerging economies) [7].

By integrating these strategies, Kazakhstan can not only enhance its food security resilience but also contribute to reducing social inequality and promoting inclusive economic growth. A coordinated, multi-sectoral policy approach that combines technological innovation with targeted social assistance is essential for achieving long-term food security and socio-economic stability in the country.

Literature Review

Food security is a critical factor in ensuring social and economic stability. Several researchers have studied issues related to food accessibility, availability, and affordability. The concept of food security is closely linked to sustainable agricultural practices, government policies, and global trade dynamics (Concept of developing the agro-industrial complex...) [8]. In developing countries, including Kazakhstan, food security is influenced by agricultural productivity and government support programs (Tam V.W.Y., Le K.N., Tran C.N.N. et al.) [9].

As social inequality and economic instability grow, food security has become a significant problem for both developed and developing countries. Several studies have highlighted that food security is not just an agricultural or economic issue but also a broader social problem affecting public health and social unity (Hussain S., Sharma Sh., Sobti R.Ch. et al.) [10]. In Kazakhstan, scholars emphasize the importance of integrating food policy with social protection programs to improve access to nutritious food for vulnerable groups (Kazakhstan Social Protection Review) [11].

Digital transformation plays a crucial role in eliminating inefficiencies in food distribution. According to UN reports, digital monitoring systems and data analysis can increase transparency in food supply chains and reduce costs, especially in developing countries (United Nations Data Portal) [12]. For Kazakhstan, implementing such technologies is particularly important due to its vast rural landscape and seasonal agricultural cycles (FAO's report on Kazakhstan) [13].

Furthermore, academic discussions often focus on the role of public-private partnerships in increasing food production and accessibility. Research shows that cooperation between government agencies and agritech companies fosters innovation and enhances resilience to climatic and market shocks (World Bank's Agricultural Policy Summary) [14]. In this context, Kazakhstan's collaboration with international organizations has opened up new opportunities for rural development and the digitization of food monitoring systems (OECD's Agricultural Policy Review: Kazakhstan) [15].

From a social perspective, studies have shown that food security disproportionately affects women, children, and elderly individuals in low-income families. Targeted social programs, such as school meals and food vouchers, have proven effective in reducing the risk of malnutrition (Smith K., Fearnley C.J., Dixon D. et al.) [16]. Additionally, experts note that long-term food security requires systemic

changes in food management and sustainable land use (Avagyan A.B.) [17]. As a developing economy with vast agricultural potential, Kazakhstan must prioritize cross-sectoral policies to eliminate social inequalities related to food.

Materials and methods

The following research methods were employed in the study: expert assessment, analytical, economic-statistical, analysis and synthesis, and comparative analysis. Expert assessment was used to evaluate the effectiveness of national food security programs and policies by consulting specialists in agricultural economics and social development. Analytical and statistical methods enabled the examination of official data on agricultural production, food prices, trade balances, and social assistance measures, identifying long-term trends and disparities within regions.

The research base comprises the works of domestic and foreign scholars addressing international and regional trade-economic integration, as well as official reports and informational materials from international organizations, including GATT (General Agreement on Tariffs and Trade), WTO (World Trade Organization), FAO (Food and Agriculture Organization of the United Nations), and the OECD's Agricultural Policy Review: Kazakhstan. These sources provided authoritative data, comparative assessments, and policy recommendations.

In addition, an extensive review of scientific publications, analytical reports, online articles, official websites of international organizations, statistical databases, and case studies was conducted. Special attention was given to studies related to Kazakhstan's export potential, agro-industrial modernization, and the effects of global market fluctuations on domestic food availability. Leading interviews with experts and analysis of practical cases from Kazakhstan and comparable economies enriched the study.

The main issues of food security in Kazakhstan were analyzed in several key areas, including socio-economic inequality, government support programs, infrastructure development, and external market dynamics. Food security is defined as the population's regular access to sufficient, quality, and affordable food products. In Kazakhstan, this challenge remains closely tied to socio-economic factors, requiring comprehensive state interventions and sustainable development policies to ensure stable food access for all social groups.

Results

This research examines food security issues in Kazakhstan from several perspectives. Food security refers to the regular access of people to sufficient, quality, and affordable food. In Kazakhstan, this issue is tightly connected with socio-economic factors. Below are some of the key challenges:

- poverty and low income levels: one of the key factors in ensuring food security in Kazakhstan is the income level of the population. Many poor families cannot access basic food products or lack the budget to consume them. This situation negatively impacts public health and exacerbates social inequality;

- rising food prices: food prices in Kazakhstan can be unstable, influenced by the global market dynamics and domestic production levels. Price increases, particularly affect low-income families. This forces people to avoid high-quality but expensive food, while cheaper products are often of lower quality;

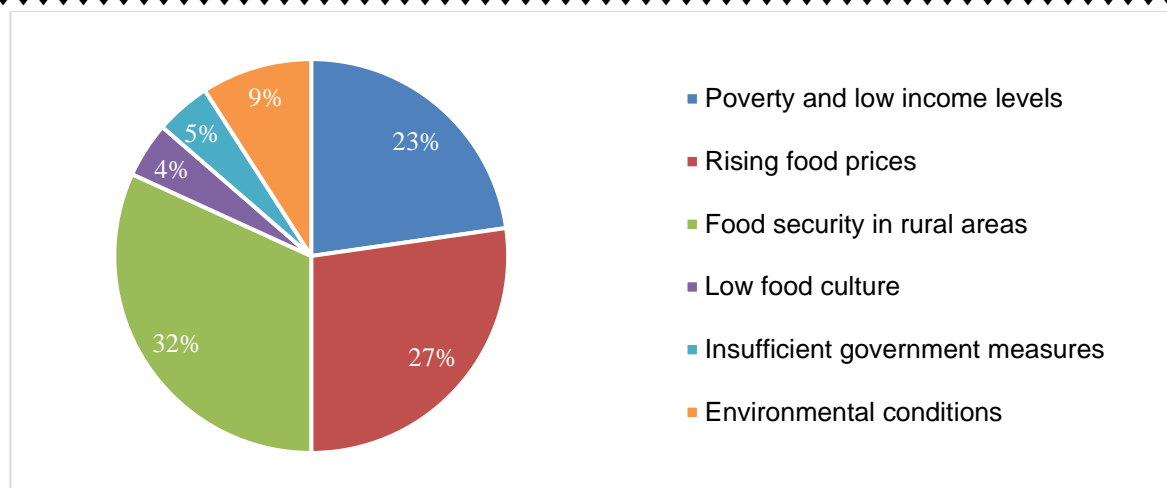
- food security in rural areas: in rural areas, most people are involved in food production, but issues such as lack of infrastructure, limited knowledge and information, and low production levels hinder their ability to ensure food security. Furthermore, difficulties in food distribution and sales affect the socio-economic conditions of rural residents;

- low nutrition culture: the lack of a proper food culture and the tendency to choose low-cost, high-calorie foods complicates food security. Often, people opt for cheaper but calorie-dense food products, leading to long-term health issues, especially among children and the elderly;

- necessary government measures to ensure food security: despite attention being given to food security at the state level, additional measures are needed to fully address the issue. These include agricultural development, regulation of food prices, and improving public access to food;

- environmental conditions: environmental issues, such as droughts, soil degradation, and water shortages, also significantly affect food security. These factors directly impact agricultural yields and the quality of food products.

Food security issues in Kazakhstan are not only economic but also deeply linked to social and environmental factors. To address this, a series of comprehensive measures are required at both the governmental and societal levels. The contribution of agriculture to food security in Kazakhstan is illustrated in figure 1.



Note: compiled based on the author's work

Figure 1- Share in agriculture (%)

This table presents the percentage impact of each issue on agriculture. Poverty and rising food prices are the most significant problems

affecting the agricultural sector. Table 1 presents an analysis of social issues in the context of food security in Kazakhstan.

Table 1- Analysis of Social Issues in the Context of Food Security in Kazakhstan

| Issue | Description | Social Impact | Solutions |
|----------------------------------|--|---|---|
| Poverty and Low Income Levels | Access to food is limited for poor households. People with low incomes cannot afford quality food. | Increases social inequality, leads to health problems, and reduces the overall quality of life. | <ul style="list-style-type: none"> - Increase state social assistance programs. - Employment support programs. - Special food aid for low-income families. |
| Rising Food Prices | Food prices are unstable due to global market fluctuations and domestic production conditions. | Reduces access to food for low-income families, negatively impacts public health. | <ul style="list-style-type: none"> - Regulate food prices. - Subsidize food production. - Increase domestic production of food products. |
| Food Security in Rural Areas | Limited access to food and lack of infrastructure in rural regions. | Higher poverty levels in rural areas, deteriorating public health, and increased migration issues. | <ul style="list-style-type: none"> - Develop agriculture. - Improve infrastructure. - Provide professional training to residents. |
| Low Food Culture | Lack of healthy eating habits in society, with a preference for cheap and high-calorie foods. | Negatively affects public health, particularly among children and the elderly, leading to obesity and various diseases. | <ul style="list-style-type: none"> - Public awareness campaigns on health and nutrition. - Regulation of public catering services. - Implement nutrition culture development programs. |
| Insufficient Government Measures | The necessary measures to ensure food security have not been fully implemented at the state level. | Food insecurity may lead to social tensions, health crises, and instability. | <ul style="list-style-type: none"> - Strengthen national food security programs. - Develop agriculture. - Implement legislative measures to stabilize the market. |
| Environmental Conditions | Environmental crises (droughts, water shortages, soil degradation) negatively affect agriculture. | Decreased agricultural output, food shortages, and rising prices. | <ul style="list-style-type: none"> - Support environmental projects. - Improve water resource management. - Implement eco-friendly technologies. |

Note: compiled by the author

These tables reflect various aspects of food security issues in Kazakhstan and the cor-

responding solutions. The barriers to addressing food security issues in Kazakhstan are presented in table 2.

Table 2- Barriers to Addressing Food Security Issues in Kazakhstan

| Issue | Barriers to Solutions |
|----------------------------------|--|
| Poverty and Low Income Levels | <ul style="list-style-type: none"> - Low wages and insufficient job opportunities. - Limited employment in rural areas. - Lack of effective government policies to combat poverty. |
| Rising Food Prices | <ul style="list-style-type: none"> - Instability of global food markets. - Lack of effective government measures to reduce costs. - Low efficiency of food production. |
| Food Security in Rural Areas | <ul style="list-style-type: none"> - Low technological level of agricultural production. - Lack of infrastructure (water supply, roads, electricity). - Inadequate education and vocational training. |
| Low Food Culture | <ul style="list-style-type: none"> - Lack of public awareness about healthy nutrition and general health. - Absence of a strong public opinion on the importance of proper nutrition. |
| Insufficient Government Measures | <ul style="list-style-type: none"> - Low effectiveness of state programs related to agriculture. - Limited financial support. - Presence of bureaucratic obstacles. |
| Environmental Conditions | <ul style="list-style-type: none"> - Inadequate measures to prevent ecological crises and natural disasters. - Poor management of water resources. - Lack of investment in environmentally friendly technologies. |
| Note: compiled by the author | |

This table outlines the main barriers encountered in addressing each social issue. Comprehensive measures and effective policies are required to resolve food security challenges. Several key strategies can be considered to address food security issues and overcome related barriers in Kazakhstan. Specific, targeted measures are needed for each issue. Below are strategies corresponding to each challenge:

1. Poverty and Low Income Levels

* *increasing wages and employment*: to create more job opportunities in the agricultural sector, it is necessary to implement vocational training programs and development projects focused on agriculture. Additionally, government support and subsidies should aim to increase the income of people working in rural areas;

* *strengthening the social protection system*: to combat poverty, it is essential to reform social assistance programs, particularly targeting rural populations. The effectiveness of social payments and support mechanisms should be enhanced through fair and transparent distribution systems.

2. Rising Food Prices

• *supporting food producers*: to stabilize food prices, the government should provide subsidies for agriculture, tax incentives, and low-interest loans aimed at increasing production efficiency. Measures to expand production volumes should be introduced to enhance the competitiveness of domestic producers;

• *implementing production innovations*: to prevent the rise in food prices, modern technologies must be introduced. Automation and digitalization can help boost productivity in agriculture.

3. Food Security in Rural Areas

■ *developing rural infrastructure*: improving infrastructure (water supply, electricity, roads) in rural areas is essential for the efficient development of agriculture. This will increase the accessibility and quality of food products in rural regions;

■ *enhancing education and vocational training*: specialized educational programs in agriculture and nutrition should be organized to improve the knowledge of rural residents. This will help enhance the quality of agricultural production and processing.

4. Low Food Culture

– *public awareness campaigns*: to foster a healthy food culture in society, the Ministry of Health and other organizations should conduct informational campaigns. Introducing nutrition-related courses in schools and universities is also important;

– *strengthening the healthcare system*: involving dietitians and experts to raise awareness about healthy eating is crucial. Additionally, the market for dietary and health-conscious products should be expanded.

5. Insufficient Government Measures

• *strengthening government programs*: dedicated national programs must be implemented to ensure food security. These should

include enhanced subsidies and financial support for the agricultural sector;

- digitalizing government services: to eliminate bureaucratic obstacles, government services must be digitalized. Moreover, legislation related to food security needs to be improved.

6. Environmental Conditions

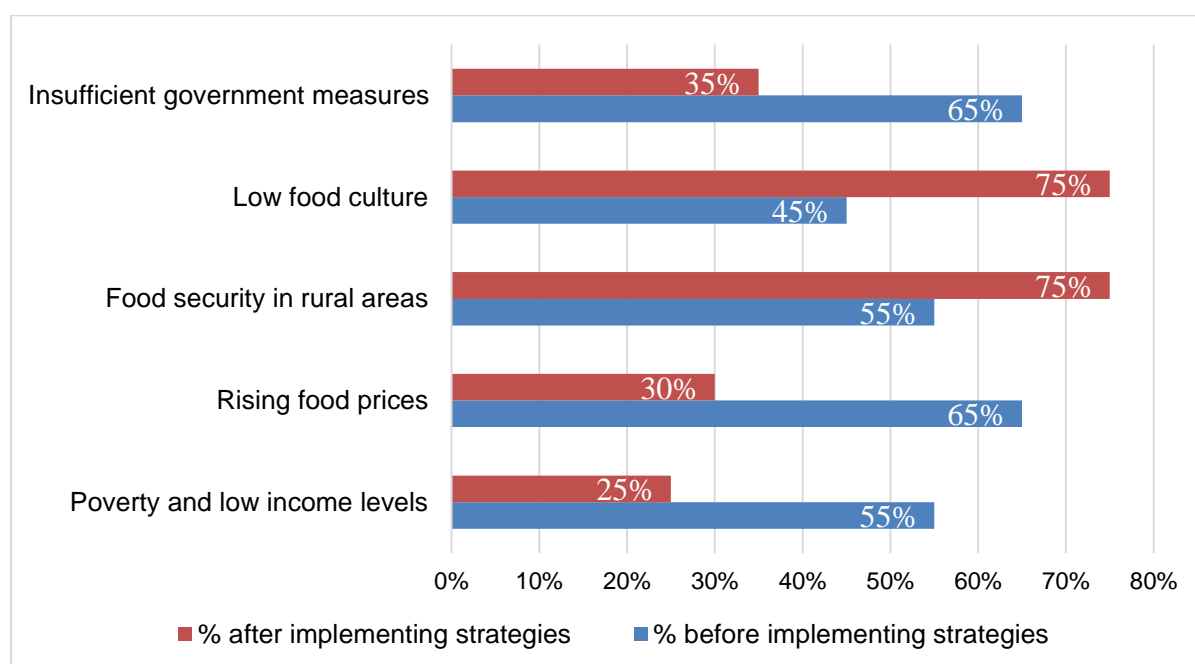
- introducing eco-friendly Technologies: government support should be increased to promote the use of environmentally friendly technologies and renewable energy sources in agriculture. This will benefit both the environment and the economy;

- efficient Water Resource Management: to tackle water scarcity and ecological crises,

programs for efficient water use should be introduced. Water-saving technologies must be widely adopted in agriculture;

- adapting to Climate Change: special research and preventive measures are required to help Kazakhstan's agricultural sector adapt to climate change.

These strategies represent systematic and comprehensive efforts to address food security issues. They contribute to the development of agriculture, the improvement of ecological conditions, and the resolution of social problems. The changes resulting from the implementation of these strategies are illustrated in figure 2.



Note: compiled based on the author's work

Figure 2- Changes after the implementation of strategies

Discussion

Food security issues in Kazakhstan are closely linked to various social and economic factors. Implementing appropriate strategies can help address these issues. For instance, supporting agriculture, developing rural infrastructure, and strengthening government measures can positively influence income levels in rural areas, stabilize food prices, and improve the population's food culture.

With the implementation of these strategies, the issue of poverty and low income levels can decrease from 50–60% to 20–30%, improving the well-being of rural residents. The rise in food prices may reduce from 60–70% to 25–35%, making food more affordable for the population. Food security in rural areas can increase from 50–60% to 70–80%, which will be

a result of agricultural development and infrastructure improvements.

The problems of low food culture and insufficient government measures will also improve enhancing public health awareness and education levels, while making government support more effective. These changes are crucial steps toward improving the standard of living in rural areas and ensuring food security. Moreover, by implementing these strategies, the level of food security in Kazakhstan will significantly improve, leading to a higher quality of life for the population.

Despite the results achieved, the sustainable development of rural areas requires further improvement. Given the main function of the social sphere, the main goal should be to increase the rural population due to natural

growth and attract urban residents to the countryside, especially young professionals.

Conclusion

1. Poverty and Low Income Levels: Income level is a crucial factor in ensuring food security in Kazakhstan. Poor families have limited access to quality food, exacerbating social inequality. To solve this issue, it is necessary to expand state-provided social assistance and employment programs.

2. Rising Food Prices: The instability of food prices particularly affects low-income families. As prices rise, they are forced to consume cheaper but lower-quality food. Addressing this issue requires food price regulation, production subsidies, and increased domestic food production.

3. Food Security in Rural Areas: Access to food in rural areas is limited, especially due to inadequate infrastructure and lack of education. To reduce social inequality in rural areas, it is essential to improve infrastructure and implement programs that support local food production.

4. Low Food Culture: The lack of a healthy food culture in society negatively affects food security. To tackle this problem, education and public awareness campaigns should be conducted, along with stronger public health initiatives.

5. Environmental Conditions: Environmental factors such as drought and water scarcity negatively impact agricultural productivity. To ensure food security, it is important to maintain ecological sustainability, use water resources efficiently, and implement measures to prevent ecological crises.

Overall, food security issues in Kazakhstan need to be addressed in a comprehensive manner. Through a series of actions at both governmental and societal levels, it is possible to overcome these challenges and ensure food security for all citizens.

Conflict of interests: the author declare no conflict of interest.

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