
IMPORT SUBSTITUTION AS A FACTOR OF FOOD SECURITY

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Abstract. The paper addresses one of the most important elements of the government's social functions, namely, food policies in the context of agricultural import substitution. The authors analyse the state of food security in modern Kazakhstan. National interests in the food sector are analysed, as well as the main threats and risks in ensuring food security. Having analysed the state of food security in modern Kazakhstan, the authors draw a conclusion regarding a number of issues existing today in the analysed sphere, which call for solutions.

Keywords: food security; import substitution; national diet, agricultural products; food products; households

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1. Introduction

The role of food security reflects the fact that food is a fundamental requirement in human life. Thus, the national nutrition levels characterise the overall economic development profile of a country, as food production remains the first requirement of producers and all production, and food supply adequacy is viewed as a most important factor determining social standards and the viability of the national economic structure and the political mechanism of any country.

Food security is integral to the national security of any country (Tireuov, Mizanbekova, Kalykova, & Nurmanbekova, 2018; Trubilin, Gaydukm, Kondrashova, Paremuzova, & Gorokhova, 2020; Melnikov, Mikhailushkin, Poltarykhin, & Dibrova, 2019; Faridi & Sulphey, 2019). Food security is closely related to issues of water security and energy security (Monni, Iorio & Realini, 2018; Cardoso, Swan & Mendes, 2018; Moumen, El Idrissi, Tvaronavičienė & Lahrach, 2019; Tyo, Jazykbayeva, Ten, Kogay & Spanova, 2019; Dudin, Frolova, Protopopova, Mamedov & Odintsov, 2019; Tvaronavičienė, Baublys, Raudeliūnienė & Jatautaitė, 2020)

Improving food supply is a major socioeconomic problem for any CIS country. Ensuring food security is a primary focus of international cooperation, as it spans across a wide range of national, social, demographic and environmental factors.

According to the report of the Food and Agriculture Organization of the United Nations (FAO) on global food security, hunger may affect a quarter of the global population as early as in 2020 (Reshetnikova, 2019). In the next 40 years, the problem of food deficit will take the top spot, global experts warn. Many experts point at the

passing of the oil era giving way to the era when food will be the major driver of global politics.

The strengthening globalisation processes and the integration of Kazakhstan in the Eurasian Economic Union have exacerbated the nation's food security issues. Currently, the problem of food security has grown to become a global issue as a factor of national health (Kuzmina, & Tonysheva, 2018).

The purpose of this paper is to discuss the current state of food security in the Republic of Kazakhstan and to determine potential solutions to the existing problems.

2. Literature Review

The requirements of economic and food security imply that each country should produce key food supply items on its own. However, geographic diversity creates uneven conditions between countries, and no country could live off the natural economy. However, economic laws and political reasons dictate that any country would try to replace imports by own produce (Nassir, 2019; Sedova, Ananiev, & Ananieva, 2018).

The economic rationale behind import substitution concerns the potential of domestic production to create jobs and regain value added. The political logic reflects security interests: national budgets often cover subsidies (or other forms of support) for strategically important resources subsisting national security. This primarily applies to food products.

According to the definition of the FAO, food security involves physical and economic access to sufficient quality food to support the whole population (Food and Agriculture Organization of the United Nations (FAO), 2019).

Thus, support of agriculture in the EU takes up to a third of the all-European budget, approximately 50 billion euros on average. If national co-financing is included, the total amount of support equals approximately 100 billion euros. For 2014-2020, the EU budget earmarks approximately 373 billion euros to support agriculture. In the USA, the FCA program (Farm Service Agency, Farm Act PL110-246) operates to provide direct transfers to farms engaged in grain and oil farming, and the amount of payments is based on cultivated areas in the preceding year and rates on each crop variety (Eurasian Commission, 2017).

Kazakh laws define food security as "protection of the economy and specifically the agricultural complex, where the government is capable to ensure physical and economic access to safe and quality food products sufficient to meet physiological consumption rates and demographic growth".

As to food security in the context of agricultural import substitution in a post-socialist economy, there is some dedicated research focused on the economic essence of import substitution and the primary strategic objective of a national agricultural complex (Altukhov, Drokin, & Zhuravlyov, 2015), food market and consumer outlook (Annunziata & Vecchio, 2013), food market expansion (Cardozo, Barreiro, & Huenchuñir, 2008), bread and grain products in the Eurasian belt (Langrell et al., 2015), industrialisation of import substitution (Primo Braga, 2006), agricultural risks of import substitution (Zobov, et al., 2017).

Import substitution here provides a mechanism for restoring degraded food security and is one of the most probable government strategies. A key feature of import substitution is economic industrialisation through restriction and discrimination of imports (Bunchikov, et al., 2018; Soboleva, et al., 2018). In other words, the choice of import substitution strategy means the establishment of certain stimuli (trade and currency-related) to promote specific industries of national production and agriculture to improve their competitive profile in the domestic market.

Import substitution is a relatively new concept for Kazakhstan, primarily an attribute of the regulation process of the market economy (Lukhmanova, et al., 2018). Gradual import substitution means the creation of new

jobs and technology, as well as demand for agricultural output. Import substitution centres on quality standard improvement in the Kazakhstan agricultural industrial complex.

The development of local production and rational combination of its output with imports depends largely on external trade relations.

In addressing import substitution in the context of food security, one should keep in mind that it is not well-researched yet and no definition fully describes the notion. Based on the conducted research and comparison of different views, there are two major approaches to studying the economic category of import substitution.

The first approach addresses import substitution as an ungoverned and generally positive process for the country which is often time-bound resulting in the gradual substitution of foreign products by national substitutes.

The second one is a broad functional approach to import substitution as a specific type of strategy and government policies aimed at substituting imports in demand in local markets with national output. This involves high import duties and tax reliefs for local producers. An infrastructure development program is charted and implemented. Import substitution strategies are usually implemented at the import substitution stage of industrialisation (Kuznetsov, et al., 2018; Bryzhko, Semenovskikh, & Shkrebko, 2018).

An import substitution strategy in the agroindustrial complex is understood as a government strategy of industry development to rationalise imports through stimulation and support of agricultural producers, establish new production, with or without foreign capital, and ensure the production of items previously imported. Various control methods can be used by the government to bring down food imports.

Research hypothesis: The primary objective of food security efforts is establishing the negative factors threatening to undermine food security and mitigating these by means of import substitution.

3. Methods

The research was based on the agroindustrial governance sectors with the use of statistics (data provided by the Ministry of National Economy Statistics Committee of the Republic of Kazakhstan) and general and special research methods.

The expert survey method was used with further mathematical processing of the findings to produce rankings in order to:

- determine the criteria for profiling food supply availability in Kazakhstan;
- establish factors undermining stable agricultural development and affecting it negatively.

The expert survey also addressed the potential of agricultural import substitution.

Each of the experts ranked the criteria and factors from higher to lower preference levels. With that, each of the compared criteria and factors was assigned a rank (number) opposite which appeared in the respective sequence. The aggregate rank was derived as a median of all expert ranks across the expert group.

With the tolerable error of expert appraisal (5%), the required number of experts ($N = 0.5 \cdot (3/b + 5)$, where b is the tolerable error of expertise as a percentage/100) equals 33 experts.

The online expert survey engaged 36 employees of various sectors in the administration of the agroindustrial complex, with the term of tenure in the industry of 8 to 15 years.

4. Results

According to the expert survey, the following criteria are used in Kazakhstan to assess food access levels (Table 1).

Table 1. Assessment criteria for food access levels in Kazakhstan

Criterion	Rank
80-85% of the total food supply provided by domestic producers	1
food consumption with optimum calorie intake levels (2,353 kCal per day)	2
balanced nutrition structure and sound diet profile in line with physiological norms	3
quality compliance with technical regulatory requirements	4
maintenance of recoverable insurance food stock at 25% of the annual food consumption level	5
real potential to rely on imports to meet food requirements in products unavailable or under-supplied domestically	6
production of at least 1 tonne of grain per capita	7
<i>Note:</i> based on the expert survey	

According to the guidelines of food security monitoring, the respective criteria are as follows: physical access to food products; economic access to food products; safety of food products (Jurist, 2019a).

Physical access to food products largely depends on the development of commercial infrastructure. There are 117 thousand retail shops selling consumer goods, including trading companies. The retail network in urban areas is growing, more supermarkets are selling food products. The biggest food retailers in Kazakhstan are Magnum Cash & Carry (operating, by now, 33 shopping complexes in seven Kazakh cities under brands such as Magnum Cash & Carry and Magnum ATAK), ANVAR (the biggest retail chain in Aktobe, with branches in Astana, Atyrau, Aktau, Uralsk, Karaganda and Kyzylorda), supermarket chains SMALL of the Skif Trade company (more than 25 retail facilities in different Kazakh cities) (Musapirova, 2019).

Product supply to rural populations is maintained by sole traders, meanwhile, major food staples (meat, milk, eggs, etc.) are produced via subsistence farming. Partially, urban populations also resort to the produce of private household gardens and dachas to meet their consumption requirements in potatoes, vegetables, berries and fruits. To evaluate physical access, monitoring of food availability is conducted in the retail network of Kazakh cities (across a list of 65 items of bread, cereal, pasta, milk, fishery, meat and food processing products). The analysis found that the discussed items are generally and fully available.

Meanwhile, according to the Ministry of National Economy of the Republic of Kazakhstan, per capita grain production in Kazakhstan in 2017 showed an increase of 1,141 kg, or 14.1%, above the food security threshold. The per capita production of potatoes was twice the rate of physiological consumption requirements; for vegetables and gourds, the output was 2.2 times higher than the required rate. However, per capita meat and poultry production only met 67.1% of the physiological consumption norm; the figures for milk and eggs were, respectively, 93.8% and 95.9% (The Ministry of National Economy Statistics Committee of the Republic of Kazakhstan, 2018).

Moreover, physical access depends on domestic production, the country's comparative advantages in producing basic food staples and efficiency of such production (Alieva, 2017; Tonysheva, & Kuzmina, 2017).

However, as can be seen from Table 2, despite the continued growth since 2006 in the total carcass weight meat output and milk and egg production, the level of 1990 has only been attained in milk and eggs, with the figures for 2018 reaching above by 0.1% and 33.2%, respectively.

Table 2. Production of major food staples

Years	Average per year			
	Meat (live weight), thousand tonnes	Meat (carcass weight), thousand tonnes	Milk, thousand tonnes	Eggs, millions
1990	2,633.7	1,559.6	5,641.6	4,185.1
1991-1995	2,167.1	1,257.0	5,262.7	3,080.0
1996-2000	1,259.0	678.9	3,518.3	1,424.2
2001-2005	1,143.0	625.0	4,331.1	2,213.0
2006-2010	1,419.4	776.7	5,176.5	3,034.9
2011-2015	1,564.6	877.0	5,044.8	4,059.9
2016	1,701.6	960.4	5,300.0	4,731.5
2017	1,794.1	1,017.4	5,460.5	5,086.5
2018	1,870.7	1,058.2	5,642.2	5,574.6

Note: compiled and calculated by the authors according to data provided by the Ministry of National Economy Statistics Committee of the Republic of Kazakhstan.

It is often overlooked that currently, food products comprise not only agricultural but also processing industry output. The share of agriculture in the end price of food products is declining in developed countries, with the majority proportion of value created in processing, packaging, storage, transportation and marketing. Even if a country has the capacity to independently produce considerable volumes of agricultural supply, but lacks developed market infrastructure, the physical access to food would still be diminished.

Low production means the consumption of major food products per capita would be below medical requirements.

According to the FAO methodology, an important indicator of food security is the level of food deprivation, i.e., the share of the population with energy intake below the minimum acceptable levels.

A country is deemed to be secure in terms of food supply if the share of people affected by hunger is very low (less than 5%) (Tonysheva, & Kuzmina, 2017; Baiev, et al., 2019). If the level of food deprivation exceeds 35%, there is a hunger problem. According to the international classification of the FAO, nutrition value of 2,150 calories characterises persistent malnutrition, while the normal level is 2,600 calories (Food and Agriculture Organization of the United Nations (FAO), 2019).

Table 3. Annual consumption of main food products per capita according to a survey of households (kg)

Food items	Medical requirements	Minimum acceptable levels	1980	1990	1995	2000	2005	2010	2015	2017	2018
meat and meat products	82	41.9	58	73	52.0	44.4	40.0	53.1	73.6	72.9	77.9
milk and dairy products	405	99.3	314	311	229.0	234.6	189.0	204	233.6	237.7	261.3
eggs	292	142	239	225	97.0	102.0	108.0	129.9	164.6	168.5	193.3
bread and grain products	110	106.5	138	148	185.0	105.3	114.0	122.8	129.8	133.7	138.5
fish and seafood	18.2	8.4	17.6	10.3	4.8	3.5	7.9	9.2	11.3	10.7	13.2
potatoes	97	95	109	86	70.0	65.7	47.0	41.5	48.5	46.9	48.6
vegetables	146	80	97	76	56.0	85.5	71.0	70.7	90.2	88.5	94.1

Note: compiled and calculated by the authors according to data provided by the Ministry of National Economy Statistics Committee of the Republic of Kazakhstan.

Table 3 indicates that food consumption in 2018 showed a decline compared to physiological rates and the 1990 levels for most items. However, more recently, steady growth has been observed on the per capita basis. Only bread and grain products show consumption in excess of the medical requirements. Given the existing social prices for bread, people are obviously substituting inaccessible food items with bread and grain products. With that, an important point is that consumption levels for major food products per capita are generally above the minimum requirements applying in subsistence level calculations for main food items for different social groups in the Republic of Kazakhstan.

As to the dietary nutritional values in the Republic of Kazakhstan, the average daily energy intake per individual equals 3,140 kCal, which is 29.7% above the level of 2005 (2,420 kCal in 2005). Between 2005 and 2018, the share of the population with energy intakes below the minimum acceptable levels declined to 3% from 17%. The number of people with energy intake levels below the minimum acceptable levels declined 5.2 times (Ministry of National Economy of the Republic of Kazakhstan, 2019).

A sample survey of households in 2018 found that the level of food deprivation, or the share of the population with energy intake below the minimum acceptable levels, stood at 1.8%. There is considerable differentiation in this indicator between types of localities (Bulkhairova, et al., 2019). For example, in 2018, the share of the population with calorie intakes below the minimum acceptable levels was more than three times higher in urban areas compared to rural areas. The difference between urban and rural localities arises from the relatively improved nutritional profile of food consumption in rural environments. In 2018, the energy value of daily food consumption was 3,169 kCal per capita.

Among the CIS countries, the Republic of Belarus has gained considerable expertise in import substitution program implementation. Import substitution is a statutory priority at the national level (Chernysheva, et al., 2019). The program is subject to strict government control in Belarus, with a clearly set range of projects and developed accountability and reporting forms. The outcomes of import substitution projects include unleashing cash resources channelled to a special fund and redistributed for targeted support within industries, which helps to create new jobs.

A priority dimension, according to the experts, is import substitution in consumer demand. As one of the respondents specifically pointed out, “there are no state programs of agricultural import substitution in Kazakhstan which would target food import substitution and setting of a stable counterforce to prevent contraction in agriculture”.

The experts note that certain stages in the evolution of new industrial economies of Asia and Latin America have been marked by the pursuit of import substitution and export orientation strategies. The two strategies have their positives and negatives to them, however, they are not mutually exclusive. In all cases when the export orientation strategy was chosen, a dynamic and efficient import substitution would come first as an absolutely logical and necessary stage. Import substitution and export orientation strategies can be balanced, and either may be prioritised in certain periods.

Taking into account the objective of import substitution, i.e., the optimisation of the import-export balance, the key reference for import substitution purposes should be improved levels of capacity utilisation in the agricultural sector, food and processing industries. Moreover, import substitution in its core aims at improvement, i.e., attaining a systemic effect for the society or individual economic subject from the operation of this strategy (Gagarina, et al., 2019).

Turning to the dietary energy value of food consumption, the minimum requirement levels in the Republic of Kazakhstan and the regional differentiation, it is worth noting that the energy profile is above the minimum values in all regions. Consumption is higher in high-income population groups. However, even this level of consumption is supported by imports. The consumption of food products, such as vegetables, gourds and eggs, is below rational norms in all population groups, including those with high disposable incomes.

The findings with regard to the nutritional value of daily diets show that protein consumption ranges between 12-15%, fats – 30-37%, carbohydrates – 47-57%.

Most experts (89% of the respondents) conferred that there is no hunger problem in Kazakhstan, but the country still shows very low food deprivation levels.

Imports help to maintain physical access where it is not provided by domestic production. The analysis shows that the share of domestic agricultural production and output in the domestic market supply has increased incrementally, matched with a decline in the share of imports. Meanwhile, the analysis of resource balance and import-export statistics shows that the share of imports remains high and not in line with common norms.

The development program of the agroindustrial complex in the Republic of Kazakhstan for 2013-2020 “Agro-business – 2020” indicates the following figures for the share of imports by individual consumption items: fish and fish products – 76%, milk and condensed cream – 74%, vegetable and fruit preserves – 70%, confectionery – 67%, cheese and curd – 58%, sausage products – 45%, vegetable oils – 48%, butter – 33%, meat and meat products – 19% and even potatoes – 6% (Jurist, 2019b).

However, even with imports, consumption in Kazakhstan falls short of the medical requirements for reasons of economic access, which is the function of income and income distribution. The driver of economic access is the level of real disposable incomes, which are generally rising steadily across the country.

Agricultural supply availability depends on the stable development of the sector, which is a problem to be addressed.

Following the expert survey, the negative factors affecting the development of crop and animal farming were established and ranked. The general factors hindering steady development are laid out in Table 4.

Table 4. Factors hindering the steady development of agriculture

Crop farming	Rank	Animal farming	Rank
Diminishing of soil fertility and insufficient supply of mineral and organic fertilisers	1	Small commodity production, low level of specialisation	1
Disregard of scientific crop rotation schemes, weak seed farming practices	2	Extensive industry development with growing cattle headcounts but persistently low productivity	2
Low concentration of production in some industries	3	Insufficient feeding levels, irrational feed structure, prevalence of purchased feeds	3
Extensive industry operation driven primarily by the expansion of cultivated areas	4	Poor selection and breeding efforts and low quality of production	4
Lack of state support mechanism to promote soil fertility, yields and product quality with optimum public expenditure	5	Insufficient state support for minor economic entities	5
Low labour motivation, low incomes, imperfect marketing and liaison with partners	6	Underdeveloped marketing system and weak labour incentives	6
Declining effective demand amid growing consumer prices	7	Declining effective demand amid growing consumer prices	7

Note: based on the expert survey

Following an analysis of agricultural development in Kazakhstan, the experts identified the following specific negative factors hindering stability in crop farming and animal farming (Table 5).

Table 5. Specific negative factors hindering stability in crop farming and animal farming

Item	Sector	Negative factors	Rank
1	Grain production	volatile demand in the external market	1
		growing costs amid persistent trends of yield and price volatility	2
		significant vulnerability to weather conditions, as grain-producing regions are in a high-risk crop farming zone	3
		weak facilities	4
2	Sugar production	lack of resource-efficient technology	1
		imperfection of productive economic relations in sugar beet production, processing and marketing	2
3	Vegetables and potatoes	low concentration of production and high seasonality	1
		poor range and quality	2
		high imports of early vegetables and lack of modern storage facilities at production and consumption sites	3
4	Milk production	high merchantability of milk	1
		high imports of dairy products	2
		lack of an efficient system of measures to create specialised commodity operations in resource zones of processing enterprises	3
5	Meat cattle farming	lack of pastures fit for meat cattle farming	
		weak adoption of advanced technology	
		weak development of external marketing of the produce	
	Food industry	inadequate resource supply	
		underdevelopment of the system of preparation, transportation and storage of commodities	
		lack of working capital for commodity purchases	
<i>Note:</i> based on the expert survey			

The above problems, according to the experts, need to be addressed.

Thus, agricultural supply in the market of Kazakhstan fits into the small commodity profile, which is historically viewed by economists as inefficient in any type of production, as it fails to leverage the advantage of scale helping to bring down costs and improve competitiveness for all products.

Major social and economic indicators showed improved levels in 2018 compared to 1990 and 2000, which, though, does not fully reflect the situation with economic access to food. Real incomes should support the purchases of food products in volumes and ranges sufficient to meet the rational consumption rates at existing prices.

In the analysis of food security at the household level, a notable remark is that spending on food products in the total cash outlays of the analysed households has exceeded 45% in recent years, with an increase of 1.5% in 2018 compared to 2015 (2.1% compared to 2005). The figure is 3.6-7.1 times higher compared to developed countries, where the respective level is 6-12%.

In Kazakhstan, 505 thousand people (3.1%) live in more than 90 thousand households with incomes below subsistence levels; those with incomes less than the minimum food basket price are 3,920 households with 23 thousand individuals (0.11%).

Low incomes are observed in households in rural areas. Consumption of the most valuable food products on average is extremely low in the country, while the relative share of food spending is more than a third of the end-use spending (per household member).

However, an even more negative situation is observed in terms of economic access to food depending on the

level of disposable resources. The bottom 10% of the most economically disadvantaged population includes 1,715 thousand individuals. Income spent on consumption in proportion to the subsistence level for the top 10.5% and bottom 10.5% of the most economically advantaged and most economically disadvantaged population equals, respectively, 84.1% and 473.5%.

The share of households that spend up to 20% of their income is 3.4%, with 12% of population spending between 20.2% and 30.0% of their income. 20.8% spend between 30.1% and 40.0%, 28.5% spend more than 40% and the rest 25.6% spend more than 50% on food items. As can be seen, 90% of households spend between 30% and 60% of income (Annunziata & Vecchio, 2013).

The analysis shows that consumption of all food items, such as meat and meat products, fish and seafood, milk and dairy products, eggs, butter and fats, fruits and vegetables declines as the number of household members grows.

Households spending more than 70% on food make up 4.5% of the total, and those with one minor (aged under 18) represent 2.8%. Meanwhile, families with four, five or more children have bigger food spending, and the share rises, respectively, to 7.8% and 13.5%.

An analysis of food security in terms of economic access to food should take into account that consumption largely depends on price levels. The financial crisis pushed food prices up. In 2014, the highest price index levels (September 2017 vs. September 2011) were recorded for rice (119.2%), flour (114.7%), cheese (119.8%) and sugar (121.7%) while other groups of food fell within 114.0%. Declines in the price index were registered for cereals (97.7%) and vegetable oil (96.2%).

The experts stated that economic access to food depends on real incomes, price levels and real income distribution. A country with traditional demographic principles needs targeted social support to provide food to families with many children. Food security analysis shows that the higher the poverty level in a country, the bigger the number of people affected by hunger and malnutrition, which impact the national gene pool.

Growing prices and unemployment drive people to buy a majority of their foods at unregulated markets, bazaars and private sellers. Meanwhile, quality, safety, storage and transportation standards are compromised. Focusing on the price and natural origin, people would disregard food safety and quality, and this creates implications for the quality of life, life expectancy and public health.

Correspondingly, the third element of national food security is quality improvement and safety of food products.

Violations of statutory requirements were discovered at 60% of enterprises where inspections were conducted. Following inspections, more than 16.5 thousand lots of various products were withdrawn from the market due to quality concerns, missing certificates or improper labelling.

Food safety inspections by the Republic's sanitary and epidemiological authorities highlighted and banned 713 tonnes of food products in 2013. The reasons for incompliance were as follows: organoleptic incompliance (568 tonnes); products marketed past expiry date (100 tonnes); lack of safety certificates (34 tonnes); missing labels and production date information (4.7 tonnes); microbiological incompliance (2.2 tonnes), etc.

In 2017, food safety supervision by the epidemiological authorities resulted in withdrawing from the market and destruction of 140 tonnes of food products, including 55 tonnes of dairy products, 35 tonnes of drinks and beverages, 30 tonnes of meat products and 20 tonnes of confectionery.

5. Discussion

The findings of the research led the experts to confer that the food security outlook in Kazakhstan was mixed.

Food security criteria are not addressed in full, the experts believe. Physical access to food is relatively poor, though, without any indications of hunger or malnutrition in the country. By these measures, Kazakhstan is in a better position than other CIS countries in the Asian region. In terms of economic access to food, there has been steady improvement over the past few years, which means there is the potential for improvement in food security. A key factor for that in the near term is the growth of incomes and per capita output.

The experts mentioned that import substitution implies protectionist policies and brings about improvements in the national balance of payments, the normalisation of domestic demand, employment growth, development of knowledge-intensive industries and research capacities. The rationalisation of food imports implies that two major tasks should be addressed: increasing the share of technology, machinery and equipment in the import structure; creating a competitive environment for imported food products by advancing substitution production in agriculture and the food industry.

With that, the most economically disadvantaged groups should be addressed via targeted support programs with a mechanism in place to identify and subsidise these social strata. The food basket price and subsistence levels should be reviewed; a state support program should be developed to help those in need and to stimulate demand for domestic food products.

Taking into account Kazakhstan's membership in the Eurasian Economic Union, in order to improve its food supply in view of competition with Russia and Belarus, Kazakhstan needs to create a broad food security system and, in particular, a control system to supervise quality and safety of exported and imported products.

The experts pointed at the following consistent and cardinal measures to be taken to ensure food security:

- regulatory framework improvement to systemically approach food security;
- systemic improvement of monitoring, forecasting and control of food markets and food security;
- monitoring and regulation of export and import volumes in major strategic items of food supply, cutting down the imports that domestic producers could make up for;
- building and streamlining production capacities at processing enterprises;
- improvement of the system of economic relations in production, purchasing, primary and advanced processing, storage, transportation and marketing of agricultural products;
- development of the existing wholesale food markets, optimisation of their operations in line with international best practices, setting up of wholesale markets in rural areas with local producers;
- systemic improvement of HR, research, legal and information frameworks of agroindustrial enterprises.

Meanwhile, to address economic access and competitive pricing of domestic food supply both locally and in the global market, the following measures were recommended: flexible taxation of agricultural producers, provision of tax reliefs and other incentives, enhancement of investment appeal of the agroindustrial complex, supervision of financial rehabilitation measures in progress in line with the strategy of development of the agroindustrial complex. Simultaneously, the problem of food quality and safety and the objective of protecting people from hazardous products requires enhanced standardisation and certification efforts and their harmonisation with international standards, as well as adoption of advanced technology and quality management systems, modernisation and technical overhaul of agroindustrial operations in the sequence of "production – processing – marketing".

Conclusion

National food security efforts should target the negative factors threatening food security, diminishing food supply, degrading or eliminating nutritional or energy value of major food products.

Such factors include: significant overreach in terms of threshold saturation levels for imports in the market; low levels of efficient demand for food products; price distortions in the agricultural, fishery, commodity and food markets; destabilisation of financial and credit system; underdevelopment of infrastructure in the domestic market; moral and physical wear and tear of facilities in the agroindustrial and fishery complexes; lagging innovation; diminishing of national gene resources; potential expansion of biofuel production from agricultural products and commodities; shortage of skilled talent.

Thus, the research hypothesis holds, i.e., the primary objective of food security efforts is establishing the negative factors threatening to undermine food security and mitigating these by means of import substitution.

Further research might involve in-depth analyses of measures to ensure food security in Kazakhstan.

References

- Alieva, N.M. (2017). The Food Quality and Safety as Indicator of the National Food Safety Assessment. *Quality - Access to Success*, 18(161), 140-144.
- Altukhov, A.I., Drokin, V.V., & Zhuravlyov, A.S. (2015). Food Security and Import Substitution: Major Strategic Objectives of Contemporary Agricultural Policy. *R-Economy- Elektronicheskaya Nauchnaya Zhurnaly*, 1(3), 487-494.
- Annunziata, A., & Vecchio, R. (2013). Functional Foods Market and Consumer Perspective. *Current Nutrition & Food Science*, 9(4), 260-270.
- Baiev, V.V., Bakhov, I.S., Fokina-Mezentseva, K. & Boretska, N. (2019). Strategic Analysis of Development of Medical Tourism Macro-Destinations. *Journal of Environmental Management and Tourism*, 10(4), 801-808. [https://doi.org/10.14505/jemt.v10.4\(36\).10](https://doi.org/10.14505/jemt.v10.4(36).10)
- Bryzhko, V.G., Semenovskikh, D.V., & Shkrebko, V.P. (2018). Enhancing the Managing of Food Provision for Urban Populated Areas. *Revista Espacios*, 39(18), 38.
- Bulkhairova, Z.S., Saimagambetova, G.A., Kizimbayeva, A., Kadyrova, G.M., & Abdiyeva, S.R. (2019). The Situation of Food Security in Kazakhstan. *Space and Culture, India*, 7(1), 194-205. <https://doi.org/10.20896/saci.v7i1.469>
- Bunchikov, O., Usenko, L., Usenko, A., Ponomareva, E., & Kalashnikov, A. (2018). Diagnostics and management of the regional potential of food import phase-out. *Revista Espacios*, 39(45) 31.
- Cardoso, P.P., Swan, A.D., Mendes, R. (2018). Exploring the key issues and stakeholders associated with the application of rainwater systems within the Amazon Region. *Entrepreneurship and Sustainability Issues*, 5(4), 724-735. [https://doi.org/10.9770/jesi.2018.5.4\(2\)](https://doi.org/10.9770/jesi.2018.5.4(2))
- Cardozo, T., Barreiro, E.J., & Huenchunir, P. (2008). Functional foods. reflexions of a scientist regarding a market in expansion. *Rev SocQuimPerú*, 74(2), 138-147.
- Chernysheva, A.M., Gusakov, N.P., Trofimova, A.A. & Bulatenko, M.A. (2019). Diversification of Transit Risks of Oil Supplies Bypassing Ukraine as the Basis of Energy Security in Europe. *International Journal of Energy Economics and Policy*, 9(6), 461-468. <https://doi.org/10.32479/ijeep.8428>
- Dudin, M.N., Frolova, E.E., Protopopova, O.V., Mamedov, A.A., Odintsov, S.V. (2019). Study of innovative technologies in the energy industry: nontraditional and renewable energy sources. *Entrepreneurship and Sustainability Issues*, 6(4), 1704-1713. [http://doi.org/10.9770/jesi.2019.6.4\(11\)](http://doi.org/10.9770/jesi.2019.6.4(11))
- El Iysaouy, L., El Idrissi, N. E., Tvaronavičienė, M., Lahbabi, M., Oumnad, A. (2019). Towards energy efficiency: case of Morocco. *Insights into Regional Development*, 1(3), 259-271. [https://doi.org/10.9770/ird.2019.1.3\(6\)](https://doi.org/10.9770/ird.2019.1.3(6))
- Eurasian Commission. (2017). *Gosudarstvennaya podderzhka selskogo khozyaistva: razvitye i razvivayushchiesya strany* [State support of agriculture: developed and developing countries]. Moscow: Agricultural Policy Department of the Eurasian Economic Commission (EEC).

Faridi, M.F., Sulphay, M. M. (2019). Food security as a prelude to sustainability: a case study in the agricultural sector, its impacts on the Al Kharj community in The Kingdom of Saudi Arabia. *Entrepreneurship and Sustainability Issues*, 6(3), 1336-1345. [https://doi.org/10.9770/jssi.2019.6.3\(34\)](https://doi.org/10.9770/jssi.2019.6.3(34))

Food and Agriculture Organization of the United Nations (FAO). 2019. Retrieved October 20, 2019, from <http://www.fao.org/home/ru/>

Gagarina, G.Y., Sorokina, N.Y., Chainikova, L.N., Sizova, D.A., & Nadyrov, S.M. (2019). Tools to ensure the economic security of the old industrial regions. *Entrepreneurship and Sustainability Issues*, 7(1), 747-762. [https://doi.org/10.9770/jesi.2019.7.1\(53\)](https://doi.org/10.9770/jesi.2019.7.1(53))

Jurist. (2019a). *The guidelines of food security monitoring*. Retrieved October 15, 2019, from <http://online.zakon.kz>

Jurist. (2019b). Development program of the agroindustrial complex in the Republic of Kazakhstan for 2013 – 2020 “Agrobusiness - 2020”). Retrieved October 15, 2019, from <http://online.zakon.kz>

Kuzmina, N.L., & Tonysheva, L.L. (2018). Conceptual Logical Model of Managing the Development of Local Food Markets in the Context of Intermunicipal Socioeconomic Differentiation. *Journal of Advanced Research in Law and Economics*, 9(4), 1324-1330. [https://doi.org/10.14505/jarle.v9.4\(34\).19](https://doi.org/10.14505/jarle.v9.4(34).19)

Kuznetsov, N.I., Sukhanova, I.F., Lyavina, M.Yu., & Vorotnikov, I.L. (2018). Import Substitution as the Basis for Ensuring Russia's Food Security. *Revista Espacios*, 39(27), 28.

Langrell, S.R.H., Ciaian, P., Mary, S., & Paloma, S.G. (2015). The role of The Eurasian wheat belt to regional and global food security. *Technical Report by the Joint Research Centre the European Commission's inhouse science service*.

Lukhmanova, G.K., Syzdykbayeva, N.B., Baibulekova, L.A., Abdykalyk, S.E. & Seidakhmetova, A.A. (2018). Food security assessment in Kazakhstan. *Journal of Advanced Research in Law and Economics*, 9, 1337-1342. [https://doi.org/10.14505/jarle.v9.4\(34\).21](https://doi.org/10.14505/jarle.v9.4(34).21)

Melnikov, A.B., Mikhailushkin, P.V., Poltarykhin, A.L., & Dibrova, Z.N. (2019). Economic aspects of the resolution of the issue of food security: a case study. *Entrepreneurship and Sustainability Issues*, 7(1), 595-602. [https://doi.org/10.9770/jesi.2019.7.1\(41\)](https://doi.org/10.9770/jesi.2019.7.1(41))

Ministry of National Economy of the Republic of Kazakhstan. 2019. Statistics committee. *Analysis of food security in the Republic of Kazakhstan based on surveys of households with regard to living standards*. Retrieved October 15, 2019, from <http://www.stat.gov.kz>

Monni, S., Iorio, M., Realini, A. (2018). Water as freedom in the Brazilian Amazon. *Entrepreneurship and Sustainability Issues*, 5(4), 812-826 [http://doi.org/10.9770/jesi.2018.5.4\(8\)](http://doi.org/10.9770/jesi.2018.5.4(8))

Moumen, Z., El Idrissi, N.E.A., Tvaronavičienė, M., Lahrach, A. (2019). Water security and sustainable development. *Insights into Regional Development*, 1(4), 301-317. [https://doi.org/10.9770/ird.2019.1.4\(2\)](https://doi.org/10.9770/ird.2019.1.4(2))

Musapirova, A. (2019). *Riteil zhiv: Obzor roznichnoi trgovli v Kazakhstane* [Retail is alive: overview of the retail sector in Kazakhstan]. Retrieved October 20, 2019, from <https://kursiv.kz/news/tendencii-i-issledovaniya/2018-03/riteyl-zhiv-obzor-roznichnoy-torgovli-v-kazakhstane>

Nassir, A.M. (2019). Volunteerism culture among AL-Muthanna University Students: An Anthropological Study. *Opción*, 35(21), 401-413.

Primo Braga, C.A. (2006). Import substitution industrialization in Latin America: Experience and lessons for the future. *Paper presented at the Seminar in honor of Professor Werner Baer*, held at the University of Illinois, Urbana-Champaign. Retrieved October 15, 2019, from https://link.springer.com/chapter/10.1057/9780230297388_4

Reshetnikova, E.G. (2019). Development of the institutional system to ensure the economic availability of food in terms of current risks. *Revista Espacios*, 40(24), 13.

Sedova, N.V., Ananiev, M.A. & Ananieva, O.M. (2018). The effect of Russia's in-progress import substitution strategy on its agri-food security. *Revista Espacios* 39(45), 21.

Soboleva, O.N., Petukhova, A.A., Makarova, T.V., Spengler, A.V. & Yushina, E.A. (2018). Methodology for assessment of regional food security. *Academy of Strategic Management Journal*, 17(4).

The law of the Republic of Kazakhstan “On National Security”, as amended. Retrieved October 20, 2019, from <http://online.zakon.kz>

The Ministry of National Economy Statistics Committee of the Republic of Kazakhstan. (2018). *Agriculture, forestry and fishery in the Republic of Kazakhstan. 2013-2017*. Statistical yearbook. Astana: The Ministry of National Economy Statistics Committee of the Republic of Kazakhstan.

Tireuov, K., Mizanbekova, S., Kalykova, B., & Nurmanbekova, G. (2018). Towards food security and sustainable development through enhancing efficiency of grain industry. *Entrepreneurship and Sustainability Issues*, 6(1), 446-455. [http://doi.org/10.9770/jesi.2018.6.1\(27\)](http://doi.org/10.9770/jesi.2018.6.1(27))

Tonysheva, L.L. & Kuzmina, N.L. (2017). Assessment of performance of local food markets in the region: methodological approach. *Revista Espacios*, 38(49), 20.

Trubilin, A.I., Gayduk V.I., Kondrashova, A.V., Paremuzova, M.G., & Gorokhova, A.E. (2020). Management of integration formations in the AIC as food security tool. *Amazonia Investiga*, 9(25), 116-125.

Tvaronavičienė, M., Baublys, J., Raudeliūnienė, J., Jatautaitė, D. Chapter 1 - Global energy consumption peculiarities and energy sources: Role of renewables, Editor(s): Manuela Tvaronavičienė, Beata Ślusarczyk, Energy Transformation Towards Sustainability, Elsevier, 2020, Pages 1-49, ISBN 9780128176887, <https://doi.org/10.1016/B978-0-12-817688-7.00001-X>

Tyo, A., Jazykbayeva, B., Ten, T., Kogay, G., Spanova, B. (2019). Development tendencies of heat and energy resources: evidence of Kazakhstan. *Entrepreneurship and Sustainability Issues*, 7(2), 1514-1524. [http://doi.org/10.9770/jesi.2019.7.2\(50\)](http://doi.org/10.9770/jesi.2019.7.2(50))

Zobov, A.M., Degtereva, E.A., Chernova, V.Yu., Starostin, V.S., & Golodova, Zh.G. (2017). Analysis of the Agro Risks of Import Substitution of the Food Production. *Journal of Environmental Management and Tourism*, 8(3), 648-656.

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