Ways to improve the protection of national food security by the state

Formas de mejorar la protección de la seguridad alimentaria nacional por parte del Estado

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ABSTRACT:
The article deals with theoretical basis of national food security in the market economy conditions and analyzes views of modern domestic and foreign scientists on this issue, as well as presents the author's vision of the essence of food security problem. It is established that food security criteria to a certain extent reflect the socio-economic situation in the country. The authors suggest considering food security as a component of sustainable development, while using food security criteria as measures characterizing the level of socio-economic development of society. The authors analyze approaches to food security protection at the state level in both advanced and developing countries, and give recommendations on improvement of state protection mechanisms of food security of Kazakhstan taking into account the existing international practices.

Key words: food security, food security criteria, state protection of food security, protectionism, allocating investment support.

RESUMEN:
El artículo se ocupa de la base teórica de la seguridad alimentaria nacional en las condiciones de la economía de mercado y las opiniones de los modernos científicos nacionales y extranjeros sobre este tema, así como presenta la visión del autor de la esencia del problema de seguridad alimentaria. Se establece que los criterios de seguridad alimentaria reflejan en cierta medida la situación socioeconómica del país. Los autores sugieren considerar la seguridad alimentaria como un componente del desarrollo sostenible, utilizando los criterios de seguridad alimentaria como medidas que caracterizan el nivel de desarrollo socioeconómico de la sociedad. Los autores analizan los enfoques de la protección de la seguridad alimentaria a nivel estatal, tanto en los países avanzados como en los países en desarrollo, y formulan recomendaciones sobre la mejora de los mecanismos estatales de protección de la seguridad alimentaria de Kazajstán teniendo en cuenta las prácticas internacionales existentes.

Palabras clave: seguridad alimentaria, criterios de seguridad alimentaria, protección estatal de la seguridad alimentaria, protecciónismo, asignación de
1. Introduction

Food security (hereinafter – FS) has always been considered one of the most important problems of human activity. It is known that nations, who fully provide their own food requirements, achieve greater progress in other areas as well. Therefore, states seek to protect their populations from underconsumption (hunger), that is, to provide the necessary level of FS in the country. Food problem is one of the most acute problems of our time, although its nature and structure differ dramatically across countries.

At the present development stage of society, FS issue is becoming ever more relevant. This is caused by a number of problems of both global nature and internal difficulties of each country. Currently, in addition to rapid population growth, their incomes are rising that leads to increased demand for food. The formation of the middle class in developing countries, particularly in China and India, leads to increase in purchasing power of the population and accordingly nutrition transition toward more meat and dairy products that requires production of a larger amount of crops.

The FS problem is caused also by the catastrophic impact of global climate change that has adverse effect on agriculture because of rising temperatures, abnormal precipitation patterns, and increased probability of droughts and floods which greatly affect the harvest amount.

Ensuring FS requires the development of a long-term strategy that provides both increasing agricultural production and improving access to nutritious food for low-income segments of the population worldwide. For centuries, people have responded to food shortages by expanding the acreage, however, rapid population growth and fast urbanization make this solution less realistic under current conditions.

In turn, efforts toward increasing food supplies should be focused on the research and dissemination of technological innovations, more efficient use of existing resources, such as water and soil, as well as minimizing losses during harvesting, storage, and marketing of a crop.

Therefore, the solution of FS problem is relevant both at the global level and in each particular country, taking into consideration both general development trends and their specific manifestations in individual countries.

To determine measures necessary to improve FS protection we should consider the essence of food security, possible threats and influencing factors.

The definition of “food security” notion was constantly changing over the past four decades. When in the 70-ies it came into use for the first time, the attention was focused on the volume and sustainability of food supplies. Exactly this was the main concept of "The Universal Declaration on the Eradication of Hunger and Malnutrition" adopted by the UN in 1974. In the 80-ies this Declaration was supplemented by a provision on accessibility for all people of products that are necessary for an active and healthy lifestyle. In 1996, at the World Food Summit the following definition of FS was proposed: FS is a condition in which “a human permanently has physical, social and economic access to sufficient, safe, and beneficial products which provide his needs and food preferences for an active and healthy lifestyle” (FAO, 1996).

Altukhov A.I. defines FS as ensuring the availability and sufficiency of food consumption for all segments of population, mainly due to the domestic agro-food production (Altukhov 2006). Agaev V.G. treats FS as the presence in the food market of sufficient amount of food and its availability to all segments of the population arguing that the presence of food is determined by the supply, while availability of food – by the demand (Agaev 2012).

Kuanova G.A. defines FS as “the ability of the state to ensure and provide in all circumstances...
the needs of the population in ecologically clean health food at evidence-based consumption level provided financial solvency at the level where one-third of income is spent on food” (Kuanova 2002). According to the definition of Gizzatova A.I., FS of a state is “the ability to meet the needs of the population in food under conditions of limited financial and environmental capacities of the state in accordance with evidence-based standards, personality traits, and solvency, as well as price level” (Gizzatova 2004, p. 20).

According to Orazbakov G., the essence of FS consists in the ability of the state to ensure in all circumstances the needs of the population in food at the level of evidence-based consumption standards and in accordance with its ability to pay, and current pricing on the food market. Also, seems intriguing his idea that FS should become the foundation of social policy development and definition of living wage as the basis of the minimum wage and pension, as well as other indicators characterizing socio-economic situation in the country (Orazbakov 2002)

Study of the different approaches allowed us to formulate our own interpretation of FS in both narrow and broad senses. In a narrow sense, FS of a country, in our opinion, should be considered as the national food system status which is within certain threshold values. At the same time, when security is considered as a status, it is impossible to talk about the security system, because the status cannot be controlled. Therefore, security can be characterized as a kind of activity, since the status is static notion, while activity is the dynamic notion. Thus, in a broad sense, FS of the country is kind of activity aimed at countering threats and dangers, as well as status of food system of the country, which allows implementing national economic interests and maintain state integrity.

Defining the essence of FS and possible threats, it is necessary to note that it depends on variety of factors, the main of which are given below:
- development level of the agricultural sector, including private farms;
- development level of the food industry;
- the level of export-import operations;
- the level of purchasing power and culture among the population;
- the opportunities of using innovative technologies;
- the financial capacities of enterprises;
- business logistics and investment attractiveness of farming sector;
- state support in providing benefits and effective fiscal policy with regard to farming sector (Papelo, et. al. 2014)

2. Research Methodology

Given noted factors of FS we can define the following basic assessment criteria to evaluate its level:
- food sovereignty criterion;
- the criterion of food consumption sufficiency (energy value of daily per capita food ration must be not less than 2.5 thousand Kcal);
- the criterion of food procurability (food expenditure should not exceed 60% of the family budget) (Conway and Barber 1990).

According to international practice, exactly latter two criteria, i.e. food sufficiency and procurability are considered the basic threshold criteria when assessing the food situation, which reveal the essence of FS concept in the contemporary polarized world:

- for poor country it is provision of survival ration, which consumes a significant portion of personal income;
- for rich country it is satisfaction of various food preferences of consumers at relatively low cost
Therefore, the strategic goal for Kazakhstan in terms of ensuring FS consists in solution of twin challenge - to catch up with developed countries in the area of food consumption in terms of:
- food quantity and quality;
- economic procurability of food (in fraction of family budget).

Criterion of food sovereignty is defined by the proportion of food import in total volume of food consumption. The same meaning has the market share of domestic production in providing the main production resources to agricultural sector. The cumulative effect stops, i.e. the industry sector is no longer influencing the economy in terms of supporting its growth in case if imports exceed 20%. Thus, food sovereignty can be considered sufficient if market share of domestic foodstuffs in the total volume of consumption is at least 80%. Consequently, 20% is important economic boundary that defines stagnation. And even if in the food markets of individual countries import does not exceed the specified FS value, under certain adverse conditions there is a risk of approaching it, where the "excess" level of imports is transformed from a complement to domestic production into factor of narrowing reproductive capabilities of the industry that leads to a decline in production.

According to international practice it is considered that the threat of FS occurs in the country where an import quota is greater than 30%. Exceeding the maximum critical value of imports causes a threat to FS that leads to loss of food sovereignty.

In recent years the share of food import in total volume of its consumption varies within the range of 13-15%. Because of some differences in the value of this criterion, we can assume in general that the food sovereignty starts alarming when the import quota exceeds 30%, therefore the current level of food sovereignty can be regarded as satisfactory.

However, it should be noted that when determining the level of FS based on food sovereignty criterion in accordance with the existing calculation procedure, there are certain reservations. In particular, since food sovereignty is measured as percentage of the cost of food products of domestic production in the total value of food consumption, official statistics calculates this indicator based on turnover of the trade network. However, according to the experience, just half of the total food products are sold through the trade network. The other part is sold through the urban markets. Besides, a significant proportion of food consumption (in particular, for the rural population) consists of home-grown products. Consequently, these channels of food distribution have very small proportion of imported products that makes the resulting calculated data rather relative.

The criterion of sufficiency of food consumption is defined by the ratio of the actual level of per capita consumption of basic food products to evidence-based standards of healthy eating (recommended by medicine). In addition, the international statistics uses another quantitative threshold criterion that defines the minimum level of FS, namely caloric content of daily per capita food ration, which should be not less than 2.5 thousand Kcal.

The criterion of procurability of food consumption is the ratio of the cost of annual per capita food package, which corresponds to evidence-based standards of healthy eating (recommended by medicine), to annual per capita income. Based on the indicator of per capita income and taking into account purchasing power parity of the national currency, the World Bank identifies four types of countries depending on their level of economic development: high-income economies, upper middle-income economies, lower-middle-income economies, and low-income economies. Kazakhstan belongs to the third type, and in terms of wage level lags behind most countries in the world. The development of market economy contributed to the physical procurability of food products, though the elimination of unmet demand through the mechanism of equilibrium prices exacerbated the problem of economic procurability.

3. Research outcomes
The leading countries of the world consider FS as an important condition of internal political and socio-economic stability as well as external independence of the country. In this regard, consider state measures protecting national FS, which are implemented in foreign economies, as well as their possible adaptation to national circumstances.

Thus, the main priority of the agri-food policy in the USA is the high level of food supply and export promotion.

The development of an effective national FS became possible due to clear system of measures of state regulation and support of agriculture, which is a major component of FS. This has enabled the country not only to ensure the production of a wide range of food at relatively low prices, but also to become a world leader in agricultural trade.

The main guarantors of FS in the USA is first and foremost the farmers’ support program entitled “The Farm Income Stabilization Insurance Program” (it includes three subprograms: “Price Support State Program”, “Crop Insurance”, and “Agricultural Loan”) that consumes up to 50% of total agricultural budget allocations (Kuchukov 2007).

In addition, significant amounts of financial resources in the USA are used to purchase surplus crops from farmers with the goal of keeping procurement prices and ensuring profitability of agricultural producers (this experience, in our opinion, should be actively used in Kazakhstan). Secondly, support of vulnerable segments of the populations by providing food assistance to pensioners, unemployed people, as well as free school meals and the like.

Thus, as reported by the United States Department of Agriculture (USDA), every ninth American uses food coupons. According to official data, food coupons in 2009 were distributed among 33 200 000 low-income Americans, for which they received food (worth on average $114 per month). In 2009, the US Congress has allocated $54 billion, while for 2010 the cost of this program was estimated at $60 billion (Every ninth American is forced to use food stamps to survive).

The United States believe that a sustainable production of needed agricultural products is not sufficient condition for ensuring FS. Therefore, the country has established a system of quality control and food safety. Thus, on December 21, 2010, the US Congress approved a law on food supply security aimed at ensuring food security in the US by stressing on the fact that from now the attention of the federal regulation agencies will be focused not so much on responding to cases of food contamination, but to prevent them. The law provides for strict supervision of food products, which are imported into the USA (15% of the food is imported into the USA from abroad). The law also states the need to improve training for officials responsible for food security at the local, territorial, tribal, and state level. According to the law, it is permitted to provide grants for training, conducting inspections, strengthening the capacity of laboratories, and implementation of programs providing food safety (Legislation in the field of food security).

The idea of creating a common European system ensuring FS and protection against cheap imports to support national producers and food exports to the EU appeared after the Second World War, when there was a problem of food shortage. As a consequence, in 1957, six countries (Germany, France, Italy, the Netherlands, Belgium, and Luxembourg) signed the Treaty of Rome and created the European Community. The Treaty provided for the unified food policy-making of the community that pursued the following goals: increasing productivity of agricultural production through technical upgrading and ensuring the rational development, as well as optimal utilization of factors of production; ensuring a decent standard of living to rural residents; stabilizing agricultural markets; guaranteeing food supply; and ensuring affordable consumer food prices (Bernstein, et. al. 2012).

The objective of the European Union (EU) food policy is the achievement of high standards of food security, protection and improvement of consumer health, and environmental protection. Thus, the European Commission has developed a document on food policy of the community, entitled “White Paper on Food Safety”. This document envisages a number of measures to improve the current system and ensure full control over the circulation of food, starting with the
forage until the moment when food product gets consumer. “White Paper on Food Safety” introduces the so-called concept of “farm to dining table” 9 Food policy of the European Union). One of the main mechanisms of providing FS by EU consists is financial support of farmers, the annual level of which amounted to $92 billion in 2006 (it is paid depending on area of farmland and livestock number). (Kuanaliyeva, et. al. 2013).

Tough protectionist policy to ensure FS is conducted by Japan. Thus, this country adheres to policy restricting the import of food (by setting high import barriers) with regard to those products, whose imports can compete with domestic production. For example, import of rice is almost entirely prohibited (despite the fact that the state buys it on the domestic market at prices significantly above the international market prices).

The main regulation lines of FS in the country are state regulation of prices, foreign trade regulation, regulation of the food market, as well as structural programs (Food policy of the European Union).

In most advanced countries exports of food (and other agricultural products) is stimulated by trade financing (trade credit) under the guarantee of export credit agencies (ECA) that allows the importer to raise funds for the long term (3-7 years). At that, the cost of such funding is significantly less than that at core lending.

Export credit agency (ECA) is a state institution, which supports the export potential of the country by giving the banks guarantees on loans issued to foreign companies for the purchase of goods produced in this country (Grinkov 2011).

Given the significant export potential of Kazakhstan, in our opinion, it is advisable to establish the specified state institution to promote exports of domestic products including food and agri-industrial products.

In general, it should be noted that the experience of countries with advanced market economy shows that they almost “exempt” the agricultural sector from market economy when taking care of food security. As a consequence, instruments of state regulation of FS in advanced countries are aimed at supporting farmers' incomes, promoting exports of food and agricultural raw materials (if necessary), providing the population with affordable and quality food, developing rural regions and infrastructure, greening the production, carrying out environmental protection measures, etc., in other words, quantitative indicators are gradually reoriented to qualitative food security metrics.

Developing countries mainly pursue agricultural policy opposite to that followed by advanced economies, primarily USA and EU countries. Instead of subsidizing and supporting manufacturers, they mainly subsidize consumers, often to the detriment of food producers. Thus, in Mexico since the late 1930-ies the state subsidizes the supply of food for disadvantaged population, distributing it through the network of special Diconsa stores of the Conasupo state national nutrition company, which, firstly, was buying agricultural products from small producers; secondly, having substantial food reserves, which was purchased not only domestically but also in foreign markets, the company controlled about 50% of the national market for basic foodstuffs (corn, beans, rice, wheat, soybean, etc.) and through the regular interventions supported retail prices on these products at relatively low level; and thirdly, the trade of food-stuffs was carried out at accessible fixed prices.

One of the main directions in regulation of the food market in China is price administration, namely pricing of agricultural products guaranteed by the state. China keeps using "a two-tier price system" (state fixed prices and various types of non-governmental prices). Food prices are determined by the market, though under the direct control of the state to ensure prices level and stability. Maintaining the balance between supply and demand on the market is carried out through a system of transitional reserve stocks and storage buffer of food and grains, in the first instance. These reserves are used to control prices, commodity supply to the market, and mitigate fluctuations in agricultural production (Korkunov 2012).
In 2011, Bolivia passed a law, which was supposed to ensure a sufficient amount of food in the domestic market. In particular, seeds and fertilizers that were previously imported now are produced domestically by state-owned companies. Thus, the authorities plan to increase production and the amount of crops grown in the country (Bolivia has passed the law on food security: state-owned companies to substitute imports).

Thus, the study of the regulatory experience of FS in various countries shows that in advanced countries food is considered as one of the main and accessible tools to improve population longevity and quality of life, while in developing countries the food problem still comes down to overcoming hunger and malnutrition of a significant part of the population.

4. Discussion of results

Taking into account the existing international practices, it is useful to provide FS in Kazakhstan using the mechanisms of state protectionism and state regulation (organizational, legal, economic, etc.).

State support should be received by all of the economic sectors comprising national FS, i.e. agriculture, food and processing industry, and trade. Besides, it is necessary to ensure food procurability for the population. In addition, the state policy in providing FS in Kazakhstan should be primarily focused on facilitation of agricultural production by domestic producers and the implementation of export-oriented development strategy of the industry sector with the appropriate substitution of food-stuffs, as well as maintaining a high purchasing power of Kazakhstan's population by improving its living standards.

When analyzing FS problems, it is necessary to identify factors that led to these difficulties. Kazakhstan is characterized by lack of effective agricultural policy, which consists in non-comprehensive approach to the development of the whole agri-food complex including all its components starting with the enterprises that provide the development of agriculture, directly agriculture and all its components, especially farming, as well as industry sectors dealing with agricultural production processing, including food storage and transportation to consumer. At the same time there is a need to address the concerns of the rural population and its social and living conditions.

Such background in farming sector development in Kazakhstan led to a certain moral and physical wear of fixed assets, lack of working capital, and reduction in the number of skilled workers.

Based on causes and threat agents of national FS, it is necessary to develop appropriate measures to solve these problems. In this case, the issues which are proposed to be addressed at the legislative level should be brought to the executive bodies, which would implement and monitor compliance with the current legislation. Therefore, it is necessary to form a new organizational-economic mechanism that would bring together all levels of management aimed at the implementation of the food security of the country.

We propose a functioning and development scheme for both agri-food sector as a whole and each of its structural units. In this case, it is necessary to consider FS along with other national security factors given their interdependence.

Ensuring the effective performance of the FS system directly depends on the stability of the financial system, structural changes in the farming sector; investment policy; the formation of the technical support subsystem; improving tax legislation; the organization of banking services; creation of commodity stocks of supplies; the current system of crop and property insurance of agricultural enterprises; and scientific and information support.

Food security is guaranteed by the measures to be undertaken at the micro and macro levels, namely at the state level and the level of individual agricultural enterprises. Thus, the following will be appropriate at the macro level:

1. Promoting investment attractiveness of agricultural production through the implementation
of tax incentives for investors.

2. Regulating agricultural exports through the export expansion of deep processing production of agricultural raw materials.

3. Promoting highly efficient, socially oriented mixed economy of farming sector as the basis for ensuring food security of the state.

4. Developing and implementing state programs on reforming agricultural enterprises activities determining short-, medium- and long-term challenges.

5. Creating a legislative and legal base for infrastructure development and the improvement of the socio-economic situation in rural areas.

6. Reforming agricultural production, increasing production volumes of agricultural products through the establishment of a market economic environment.

7. Creating favorable conditions for the animal husbandry stabilization and development.

8. Providing state financial support of peasant farms and farming companies.


At the micro level, it is advisable to focus efforts on the following:

- Implementing new technologies and techniques in the agricultural production.
- Focusing activity to improve competitiveness of agricultural enterprise.
- Ensuring timely and sufficient financing of agricultural production.
- Implementing innovative management methods in agricultural enterprises.

We must begin with the restructuring of the organizational and economic mechanism of farming sector in general, and its individual enterprises. This activity represents a set of managerial forms and methods of production and labor based on the new engineering and technological framework that changes labor conditions, makes it more attractive for the village and is directed towards final outputs, satisfaction of population with quality food products, as well as allows on this basis gaining long term profits, which will be distributed to ensure the interests of the producer, the economy, and the state.

Managerial forms may be different, though always focused on the end result. At the present stage it is impossible to provide FS of the country just at the expense of small farmers and households. Large and medium-sized economic entities such as agricultural factories and holdings, which have the additional “production scaling” effect, should become the major producers. First and foremost, this effect concerns financial capacities and innovation-based technical and technological support. Second, this concerns the implementation of scientific organization of production and labor, including that in arable farming, as well as support of crop rotation that is impossible for small companies. Agricultural factories include not only agricultural production but also processing, storage and field selling, as well as have their own financial centers. Agriholdings and clusters are diversified structures with their own financial structure combining various economy sectors for the realization of their own interests. Small farming enterprises and households need to join together in various kinds of cooperatives to move from the general production to processing and sales.

5. Conclusion

The need to ensure food security requires maintaining an appropriate level of food self-sufficiency and reducing food dependence on imports that involves the use of state support of domestic agricultural producers, as well as initiating measures of import controls to protect domestic producers from foreign competitors.

For the development and effective functioning of the agricultural enterprises, which act as guarantors of food security, as well as provide improvement of investment and financial
assurance of the country, it is necessary to carry out a number of activities, namely:
- to eliminate intersectoral imbalances in the economy that will lead to the elimination of
disparity in prices for resources and agricultural products;
- to enter the state program on financial support of agricultural producers with the objective of
ensuring FS;
- the state must contribute to equivalent exchange between the agricultural sector and other
economy sectors through the mechanisms of relationships distribution;
to obtain the same corporate revenue performance in various economy sectors and agro-
industrial complexes to increase agricultural production;
- to improve the rational use of financial and investment resources;
- to ensure agricultural production development by timely and sufficient financing;
- to improve structure of funding stream and investment pattern;
- to allocate funds for the acquisition and use of the latest technology and equipment that
ultimately will improve management results of agricultural enterprises;
- to use effective and new management techniques aimed at improving agricultural production
and increasing the volume and quality of agricultural products.

The place and the role of the state in this process is to create sustainable transparent and clear
rules of market relations, provide preferences and concessional loans, as well as the
government orders for the purchase of agricultural products to create storage buffer and
reserve stock. The state should introduce indicative planning of certain types of products,
coordinate the macroeconomic activities of the agri-food sector at all levels in order to ensure
self-sufficiency of the state directly from the manufacturer.

State support of agricultural production in Kazakhstan should be aimed at ensuring the
profitability of production at a level that ensures extended reproduction, creation of favorable
social living conditions of rural population and improvement of their families’ well-being, as well
as meeting the needs of the population of Kazakhstan in high-quality affordable food products.

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