

УДК 338.43:316.422

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## GLOBAL PRACTICE OF REGULATION AND MAINTENANCE OF THE FOOD SECURITY AND POSSIBILITIES OF ITS APPLICATION IN UKRAINE

*The global practice of regulation and maintainance of food security is investigated. Methodology for estimation of the resistance mechanisms to ensure physical access to food supply to population is grounded.*

*Keywords: public policy, mechanism, evaluation of stability, food security food security regulation.*

**Орленко Я. Ю. Світова практика регулювання і підтримування продовольчої безпеки та можливості її використання в Україні**

*Досліджено світову практику регулювання і підтримування продовольчої безпеки. Обґрунтовано методологію оцінки стійкості механізмів забезпечення фізичної доступності продовольчого забезпечення населення.*

*Ключові слова: державна політика, механізм, оцінка стійкості, продовольча безпека продо-вольче забезпечення, регулювання.*

**Орленко Я. Ю. Мировая практика регулирования и поддержания продовольственной безопасности и возможности ее использования в Украине**

*Исследована мировая практика регулирования и поддержания продовольственной безопасности. Обосновано методологию оценки устойчивости механизмов обеспечения физической доступности продовольственного обеспечения населения.*

*Ключевые слова: государственная политика, механизм, оценка устойчивости, продовольственная безопасность продовольственного обеспечения, регулирования.*

### Introduction

The food supply in Ukraine in the context of the general problem of economic security is a very important question today, because the conceptual areas of food policy under the new conditions of formation of market relations are based on it. In the conditions of a radical reform of the economic mechanism and reforms initiated in the political and social spheres as the priority areas in Ukraine, which define the problem of national economic security, the consistent economic reforms with the aim to achieve economic growth and high food supply exist.

### Analysis of recent research

On the relevance of public policy problems in the sphere of food supply indicate numerous theoretical studies and synthesis of both domestic and foreign scientists, including works of: A. I. Altu-khova, V. J. Ambrosova, Y. D. Bilyk, V. I. Boiko, O. I. Datsiy, S. M. Kvasha, M. H. Koretsky, A. S. Li-setsky, I. I. Lukinova, P. M. Makarenko, V. Masla-kova, L. Y. Miller, V. M. Oleynik, B. I. Paskha-ver, E. E. Rumyantsev, P. T. Sabluk, I. N. Topiha, V. A. Tochylyna, M. I. Khorunzhiy, Y. S. Khromov, G. V. Cherevko, A. M. Shpychak, V. Yurchyshyn;

scientific works of scientists dealing with the food security – I. Y. Bogdanov, V. Geytsa, B. V. Gubsky, Y. A. Zhalilo, V. I. Muntian, S. Pyrozhkov, V. Senchahova, V. T. Shlemka and other scientists, economists, and some of my own accumulated experience with the questions of research.

### Statement of research objectives

– to explore the international practices and regulations in the field of maintaining food security;

– to justify the methodology for estimation of the resistance mechanisms of ensuring physical availability of food supply to the population.

### Results

The value of the food independence of the country in the development of market economy is being strengthened by the country's dependence on imported food, which leads to such negative macroeconomic consequences, as a reduction in foreign exchange reserves, external debt growth, the export of scarce resources, meaning the problem of providing food to the population and prices for agricultural products. And all this are not only the problems of territories – economic and political, but also problems of national security.

The problems of food supply policy came to the attention of representatives of the national science in the sphere of public administration recently. The factor of the permanent and increased attention to these problems is the transformation crisis of the Ukrainian economy, which covered all areas and has become a significant obstacle to sustainable development of economy and society. Therefore, the issue of development, forecasting and predictable regulation of food independence and security of Ukraine can be considered as one of the most important priorities, which requires an increased attention of scientists to the study of the whole complex of issues related to food security, particularly on improving the methodology of assessment of stability of food supply to the population [3, p. 172]

The world practice in regulation and maintenance of food security has made quite clear measuring instruments, namely:

- As to the imports of food there exists a certain critical limit at the margin of 25 %: exceeding it causes the collapse of domestic production, the gradual transformation of the country into the import-dependant one, the rising of the food import bills by reducing other important social costs and as a result – the loss of food independence – one of the most important components of economic and political security. This critical limit is relevant for Ukraine. The import of certain production of food industry increased from 30 to 40 % of their consumption. The import of meat increased in 2009 in 3,8 times, milk and eggs – in 1,9 times;

- The second criteria is an adequacy of the diet ratio, meaning the actually consumed food compared with the scientifically based standard. The critical feature of this indicator is 50 % – half of a rational science-based standards, failing which reflects the increasing malnutrition and direct threat of an approaching famine as well as the destabilizing of physiological, demographic and social processes;

- The third indicator, which is a modification of the first one to some extent, is considered to be the limit of saturation energy diet.

From the measuring instruments implies that the policy of food security can be characterized on the basis of certain indicators, on the base of which should be put the following criteria: the level of self-sufficiency, the availability of food, the adequacy of diet.

It is believed that the country is in a state of food security if it is able to provide enough food

for all citizens under normal conditions and the minimum necessary – under the extraordinary circumstances. That means that the food security can be defined as the state of security of population from malnutrition, and even hunger, and the presence in the state of all necessary features in order to prevent it [5].

Based on these criteria of evaluation of food supply, we believe that the first stage of the analysis of resistance mechanisms of ensuring the physical availability of food supply to the population of Ukraine should become the establishment of the reasons that have a negative impact on food security of the country. The establishment of the reasons enables to not only analyze the impact of various factors, but also to build forecasts for the future sustainability of food supply, or vice versa.

The second step should be an analysis of possible unforeseen factors. In particular, the stability of food supply can be affected by emergency factors. The peak of abnormally negative impact on the parameters of the system is the natural disaster. Under the disaster one should understand an abrupt change that occurs as a sudden response from a side of the system to a smooth change in external conditions. All disasters are known to be a subject of three laws: the spatial relevance, the repeatability (and the more the power of destruction is, the less likely it is to occur again), the dependence on the scale of destruction.

During the analysis of disasters one should consider the following factors: the probability of disaster, the likelihood for the appearance of the destructive processes, different external conditions, the effects of the disaster.

During the third phase one should analyze the sources of food supply. In this regard it is proposed to conduct the research on three sources of food, which are: domestic food production, contributions from the neighboring countries and revenues from abroad.

It should be noted that the presence of many sources of food supply provides insurance from various negative cases and at the same time does not allow food-exporting countries to use it as an instrument of political pressure [5].

In the next stage of analysis we should move to the analysis of real quantitative expression stability of food supply to the population, meaning the setting of certain limits for each type of resistance mechanisms of food supply. Thus, the fourth stage of the analysis should be the assessment of food supply and installation of its type of resis-

tance mechanisms. The fifth stage is the analysis of the mechanisms of food and weather resistance on the formation of food supply.

To the indicators of the development of food industry, in our opinion, should be included the following: the index of physical volume of manufactured products, the volume of manufactured goods, the capital, the personnel's strength, the profitability, the level of income (loss).

We offer to undertake the comparative characteristics on the basis of the analysis of the import of food, the cost of a set of basic foodstuffs, the value of living for one person and his/her average income per month.

So, using the proposed model of the methodology for the assessment of stability of the mechanisms of food supply, we should evaluate the state of food supply to the population in Ukraine. [5, p. 118].

First of all we should concentrate our attention on the analysis of the reasons that lead to a decrease in resistance mechanisms of food supply to the population.

Recently, Ukraine is experiencing a tendency to declining levels of food supply to the population and the daily consumption of food by the population in Ukraine is on the verge of a critical level and the worst in Europe [6]. In terms of food consumption the country moved from 7th place in 1990 to the 71<sup>st</sup> among all countries. The current state of food supply is characterized by mostly negative trend of performance indicators.

The owners of households independently determine which products are there to be grown or produced, in what amounts and on which channels they should be to realized, which doesn't make it impossible to carry out calculations in connection with the forecasting the level of the country's food supply for the future. Moreover, as each producer, the owner raises exactly the product, which is the most profitable for him, which may result the rise of a surplus of some types of agricultural products and at the same time the lack of others, meaning that in this situation the state is practically not able to regulate the volume of production, in other words at this stage there are virtually no effective mechanisms of regulation of food production in Ukraine [1].

In order to achieve the stability of food supply the state must take a number of measures in connection with the interest of farms in increasing the production volumes of certain products and also the protection of them from the monopoly, which

was formed among the major consumers of agricultural products – processing enterprises.

It should be emphasized that the problems of food security are closely related to the environmental safety issues. Agricultural production is one of the major causes of environmental degradation in Ukraine and in the world (falling soil fertility, pollution of water bodies etc.). On the other hand, degradation of natural resources has become a serious limitation of livestock and crop production. In the environmental situation that has developed in recent years in the agro industrial complex of Ukraine, there was no positive change.

As the result of price increase the volume of work to preserve and improve soil productivity annually reduced. The construction of erosion waterworks is almost suspended. The scope of works on creation of protective forest plantations declined in 4 times compared to 1990. There is a progressive degradation of soils. The annual soil loss of agricultural land is 1.5 million tons of fertile soil, an increase of areas affected by erosion reaches 1.5 thousand hectares, and the area of 80-100 hectares of ravines increase. The loss from erosion is estimated at 20-30 millions of hryvnas annually (in the prices of 1990), which is about 10 % of the income earned in agriculture. If this trend continues through next 20-25 years Ukraine can lose an average of 5-10 cm of humus horizon. Therefore, soil erosion is a serious threat to food security.

There remains the urgent problem of the pollution of agricultural land and groundwater with heavy metals, fluoride and other dangerous toxins as a result of industrial emissions. This is one of the reasons for the low productivity of agricultural land. Thus, the yield of grain and leguminous crops in Ukraine is 3-4 times lower than in Western Europe, almost 2 times lower than in Canada, and 4 times lower than in the U.S.

Another reason for the threat to the country's food supply should be considered an insufficient use. There remains the urgent problem of pollution and agricultural land and groundwater with heavy metals, fluoride and other dangerous toxins as a result of industrial emissions. This is one of the reasons for low productivity of agricultural land. Thus, the yield of grain and leguminous crops in Ukraine is 3-4 times lower than in Western Europe, almost 2 times lower than in Canada, and 4 times lower than in the U.S.

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use of significant natural potential of agricultural sector and the consequent low efficiency of use of agricultural land and natural resources, the high loss of products.

In agriculture and processing industry mostly outdated technology is being used. Until now, the labor productivity, the capital productivity, the energy and materials consumption of the final product, the efficiency of investment, the rate of return, as well as indicators of competitiveness have not gained the priority in the implementation of government policies on agricultural sector of national economy [2, p. 141].

In Ukraine the cost of labor per \$ 100 of gross cost in the years 1990-2009 decreased from 83 to 52 man-hours and urechevna increased from 35 to 50 man-hours, meaning that the intensity in the decrease of total labor costs was low and it was within 1-1.5 man-hours per year.

In the current period this figure is on-trend for some growth, but the expected increase in labor productivity is not observed for the following main reasons:

- Firstly, because of insufficient consistency of machines in the complexes and the reduction of the maintenance and technological reliability of most cars by 20-30%, and in extreme conditions – at 30-45% or more;

- Secondly, the technical reliability of machines does not meet the standards (0,95-0,98), which is reduced by 10-20 % each year and more in subsequent years of operation. Troubleshooting and repair techniques divert considerable man-power and funds for their implementation;

- Thirdly, significantly affects the low versatility and incompleteness of many machinery complexes of domestic production. For example, the existence of many types of drills cannot be justified in the system of machines and agricultural enterprises, while it is possible to cut them down to 2-3 types (grain-herbal, beet-Maize-vegetable).

It should be noted that the pricing mechanisms of hardware and agricultural products are not regulated, and the ratio between the prices of industrial and agricultural products do not meet the requirements or internal reproductive process or international standards. Also the cause for the reduction of food supply is that the productive potential of agricultural production in Ukraine has

sharply fallen down. The specificity of agriculture (its seasonal character, the overwhelming need for funds and material resources for the preparatory and initial stages of production, the long operating cycle, the significant dependence on climatic conditions, etc.) and open agricultural markets for food imports in the context of globalization of trade lead to the need of protectionism from the side of public policy.

The main negative feature is that there is no legislative provision for contractual relations between agricultural producers and the state, which should guarantee its sale at prices that reflect the socially necessary costs of production. They must be constant for a certain period (3-4 years), meaning within the development of basic technical tools and resources – components of the cost of production [4, p. 51].

An agricultural production is insolvent for seventeen years already because the prices for industrial products are 6.35 times higher than the relative prices for agricultural goods themselves, which negatively affected the value of exploitation expenses and production costs, and this led to the loss of demand to technics from a side of agricultural companies. Because of this, the volume of acquisition of new vehicles fell in a dozens of times, and in regards to some machines – stopped completely.

The analysis of the performance of fixed assets in crop production has shown that the dominant value in its costs has the hardware, and therefore the effective use of it is leverage for cutting costs, time and money.

### Conclusions

Thus, the accumulation of negative economic results, the absence of an effective mechanism for ensuring the logistics of agricultural producers, the large power consumption of production cannot stabilize the financial situation in the agricultural sector. Over the past decade in terms of production of most major types of agricultural products the country was turned by 15-20 years into the past. The expansion of import of foreign products to Ukraine which were traditionally produced in our state and the lack of competitiveness of domestic producers brings in the threat of a food-supply security.

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