“Development of complex system for ensuring economic safety of agrarian sector of Ukraine”

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At present, the system of ensuring economic security of the agrarian sector of Ukraine is not effective enough. This is primarily due to the fact that at the state level, there are no clear national decisions on ensuring the economic safety of the agrarian sector. The study established that development of economic safety system for the agrarian sector should take into account its resistance to external and internal factors, which could lead to systemic crisis in the agrarian sector development. In this regard, the category of the agrarian sector's economic safety can be interpreted as the state of agrarian economy sector protection from all kinds of threats, which enables it to form and implement its own economic policy in the field of regulation and stimulation of the agrarian sector development in the indicative limits established by the state, as well as to provide economic stability and the ability of the agrarian sector to reproduce and develop. The strategic goal of building a comprehensive system of agrarian sector economic safety is to create the necessary conditions for the development of agrarian sector enterprises and to provide economic stability and territory socio-economic development stability. In order to achieve this goal, a task tree and an algorithm for building an integrated system of Ukrainian agrarian sector economic safety have been developed.

INTRODUCTION

Due to globalization, the issue of ensuring the country’s economic safety is prioritized and is aimed at protecting the state national interests from all kinds of threats. The varying economic potential of the regions and their level of development, the recent economic and financial problems of the country, the unresolved armed conflict in the East, the presence of a large number of settlers from the occupied territories and other disadvantages faced by the Ukrainian economy beginning from 2014, require a special approach to solving the problem of ensuring the economic safety of the agrarian sector as the leading industry in Ukraine. There is a danger that the entry into force of the Free Trade Agreement between Ukraine and the European Union countries on January 1, 2016 will cause significant difficulties in the near future (2018–2020 years) in the domestic agro-industrial complex (AIC), in addition to the lack of technological equipment and low profitability, may aggravate a number of economic and social problems, especially in the issues of providing the population with domestic qualitative food production. The agro-industrial regions of the country, including the Vinnitsa region, are the most vulnerable, as the agricultural production and processing industry has a high proportion of the gross regional product. The significant proportion of the
population is relatively economically active and can, under certain favorable conditions, ensure a stable and rapid development of agro-industrial production.

The economic safety of the country can be ensured only when the country’s dependence on established indicators (criteria) does not exceed a certain threshold, otherwise there is a threat to national sovereignty. In this regard, the agrarian sector plays a special strategic role in maintaining the economic safety of modern Ukraine.

1. LITERATURE REVIEW

The goals of achieving economic safety of the state, regions, separate branches of the economy, as well as study of issues related to them, are reflected in the great amount of foreign and domestic scientific works. But, at the same time, not all issues related to the provision of economic safety of the state and, above all, its agrarian sector have found their theoretical and practical solution, although there has been paid considerable attention to them.

First of all, it is necessary to determine the features of economic safety, its essence and features. Thus, Akimov (2003) believes that “economic safety is a set of conditions and factors that ensure the independence of the national economy, its stability and resistance, its ability to update and improve continually; the protection of economic, political, ecological, legal and other needs of society and its citizens; providing conditions for survival in crisis and further development; protection of vital interests of the country and its territory, taking into account resource potential, balance and dynamics of development; creation of internal immunity and external protection from destabilizing influences; the country’s competitiveness in world markets, objects and territories on the domestic market and the stability of the financial situation; ensuring the proper living conditions and sustainable development of the individual, preservation of the environment”.

Varnalii (2011) has a slightly different view: “economic safety is a combination of forms and methods of reconciling various interests of economic entities, which allows to solve conflicts with the least cost and using the least destructive method for economics”.

Heets (2006), an academician of the National Academy of Sciences of Ukraine, believes that “the state of the economy, society and institutions of state power is economically safe when there is guaranteed protection of national economic interests and progressive socio-economic development of the country”.

Gradov (2005) gives the following interpretation of this category: “economic safety is the state of the national economy that can support the vital needs of the country in the material goods, despite any socio-political, economic or environmental force majeure circumstances appearing in the world economic system or inside the country”.

Hubskiy (2001) believes that “economic safety is economic opportunity and readiness to maintain sufficient living conditions and development of a person, socio-economic and military-political stability of society and a state, and the ability to resist the influence of internal and external threats”.

Denisov (2014) provides the following interpretation of this category: “economic safety is the state of the national economy, which makes it possible to maintain resistance to internal and external threats, to ensure high competitiveness in the global economic environment and characterizes the national economy as being able to grow steadily”.

Ermoshenko (2001) thinks that “economic safety is characterized by a balanced and steady resistance to negative impact of internal and external threats, by the ability to provide sustainable and effective development of the domestic economy and social sphere based on the implementation of national economic interests”.

Żukrowska (2013) gives the following interpretation: “the economic safety of the state means the conditions of harmonious development, which makes it possible to build sustainable welfare of
the citizens of the state. In terms of macroeconomic safety, this is the stability of employment, low unemployment, and predictable prospects for economic development. In the microeconomic dimension, it is the solvency of the business entity, business. In both cases, we are talking about the ability to balance commitment with regard to the needs of the medium term”.

Księżopolski (2011) believes that “the economic safety of the state is the continuous functioning of the economy, that is, the preservation of the main indicators of development, as well as the provision of a comparative equilibrium with the economies of other countries”.

Pasternak-Taranushenko (2003) believes that “economic safety is the ability of the state, to provide the opportunity to create and develop conditions for the productive life of its population, the perspectives of its economy’s future development and the well-being of its inhabitants”.

Raczkowski (2012) has a somewhat different view: “economic safety is a balanced state of the endogenous and exogenous functioning of the national economy, in which there is a risk of a violation of the equilibrium, the reduction of which requires the implementation of certain and approved organizational legal norms and standards, principles of social coexistence”.

Trach (2011) believes that “economic safety means economic relations aimed at achieving the certain level of economic development with satisfaction of needs and guaranteed protection of the interests of all economic actors, even under unfavorable external and internal conditions”.

Thus, economic safety is a complex polysystem phenomenon, the genesis and development of which are conditioned by the objective need to ensure the reproduction of the national economy in conditions of internal and external threats and dangers.

Despite the single essence of economic safety at the macro and meso levels, at each of these levels, it has certain differences and specifics of safety. Therefore, there is a large number of interpretations of the concept of region economic safety.

Economic safety of the region is the ability of the regional economy to function in the mode of expanded reproduction, that is sustainable economic growth, maximally ensure acceptable living conditions and personal development for the majority of the population (Krylenko, 2013). Economic safety at the regional level is also the ability of the economy to counteract destabilizing manifestations of internal and external socio-economic factors, as well as not endangering other structural elements of the region and the environment. Economic safety of the region is a system of economic and social indicators, within which the region is developing steadily over the long term (Kozlovskyi & Jurakovskiy, 2015).

It is known that the indicator of economic safety of the agrarian sector is a quantitative or qualitative characteristic of the agro-industrial complex, which makes it possible to assess its economic stability, opportunities for expanded reproduction of agricultural production and ensuring food safety of the country.

The purpose of this work is to develop a comprehensive system for ensuring the economic safety of the agrarian sector on the basis of establishing links between the components of the economic safety system of the agrarian sector and the structural components of the agrarian sector.

2. GOAL AND RESEARCH METHODOLOGY

The methodological foundations of the study include the conceptual foundations of management theory, the concept of dialectical logistics, the study of Ukrainian and foreign scientists in the field of economics and management based on the strategic approach are the methodological basis of the research.

In the process of research, the following methods were used: expert assessments – in assessing the factors affecting the economic security of the agrarian sector; systemic – in studying the principles of assessing economic security; synthesis, analysis, grouping – in determining the factors of influence and justifying the choice of factors that affect the economic security of the agrarian sector.
Sustainable development of agrarian production and the whole agroindustrial complex (AIC) as branches providing economic safety of the country is only possible due to reaching the certain level of agrarian production profitability, which will enable the expanded reproduction of the main types of agricultural products. Agricultural production is the factor which becomes an inbound element of the food production process, which gives impetus to the development of all subsequent stages of the final agrarian production. Thus, one agricultural worker creates preconditions for the employment of six employees in related industries, indicating that there are certain patterns in the functioning of the agrarian sector management system, namely, a clear manifestation of the principles of proportionality and the optimal correlation of certain management system basic elements. In other words, any process, any control system, regardless of the level of development of economics, is a set of elements between which there is a certain proportionality and optimal correlation.

The correlation suggests that each element of a complex system (such an agro-industrial complex) must be consistent with each other, the goals and objectives of development, and ensure the most efficient functioning of the whole system, reflect the functional and structural capabilities of its development under the so-called principle of “flow”. Under the correlation of the system elements it is necessary to understand that the development of the incoming “flow” should be carried out at a more dynamic pace than the development of subsequent “flows”, otherwise there will be “inhibition” of the development of further components (elements, subsystems) of this management system. It means that agriculture must develop at a higher pace than the processing industry and its structures that produce and “bring” the final agricultural product to the consumer.

This approach should be put into the development of a comprehensive system for ensuring the economic safety of the agrarian sector, the initial stage of which is a comprehensive assessment of the agro-industrial complex economic safety level. In turn, a comprehensive assessment of the agro-industrial complex economic safety level implies the use of a systematic approach to the investigation of threats and threats that directly or indirectly influence the formation of the concept of ensuring the economic safety of the agrarian sector in the context of institutional transformations.

We believe that the economic safety of the agrarian sector is a complex multilevel system consisting of the economic-financial, industrial-technological, natural-ecological, social-intellectual, institutional, political-integration components.

Each of the presented components is a relatively independent sub-system of economic safety of the agrarian sector, for which there is a certain set of relationships that have different orientations and the degree of influence on the final qualitative state of the system itself, which ensures the economic safety of the agrarian sector.

The peculiarity and complexity of the agrarian sector economic safety system development is its dependence largely on the human factor. In this regard, we can identify two fundamentally different approaches to the development of the agrarian sector economic safety system, these are objective and subjective.

Objective approach is formed by issue analysis and involves the capacity to develop and make decisions to resolve it. This approach implies generations of goals and objectives, relevant ideas, methods for evaluating them, etc., which serve for making and converting decisions fixed in norms, standards, laws, etc. An objective approach, as a rule, tends to formalization and is used to solve typical tasks. It is usually used at the state level, large corporation level, as well as in computer systems for the justification, acceptance and support of managerial decisions.

The subjective approach is shaped by the peculiarities of human thinking and action, which can affect the quality of the decisions made, contributing to the solution of the problem or vice versa, generating new risks. The essence of the subjective approach is the development of certain procedures, criteria, methods, etc., which in standard situations would give roughly the same result as the person who makes the decision. But this raises the
complex task of ensuring the possibility of implementing this approach, since the solution is in the field of mathematical psychology, which involves developing a system of rules to adopt managerial decisions taking into account possible options of human actions based on the use of formal methods and computer systems. At the same time, the prospect of this approach application is very broad.

To build the system of economic safety of the agrarian sector (Strategy of development of agrarian sector of Ukraine till 2020), it is necessary to identify possible links that may exist between the components under consideration of the subsystems of the agrarian sector economic safety, and the structural components of the agrarian sector. This system of interconnections is shown in Figure 1.

The system of links between components of the agrarian sector economic safety system and the structural components of the agrarian sector, which is shown in Figure 1, allows us to draw the following conclusions (Burlaka, 2014; Kozlovskyi, 2015):

a. the economic phenomenon or process is a complex system consisting of interconnected, interdependent and interdependent elements; therefore, all subsystems of the economic safety system of the agrarian sector should be considered in the complex;

b. interacting with each other, the subsystems of economic safety of the agrarian sector use a great many different types of connections;

c. when the economic safety of the agrarian sector is a dynamic system, which, on the one hand, is characterized by internal connections between subsystems and, on the other hand, by external connections that directly or indirectly influence the state of economic security of the agrarian sector, the macroeconomic environment (the political environment, the state of the economy in the country, the state of social processes, etc.) and the environment of immediate surroundings (resource providers, competitors, labor market, consumers of agrarian products, etc.);

d. it is necessary to develop an appropriate system of quantitative and qualitative indicators to characterize each of the components of the agrarian sector economic safety and to establish the regularities of their development.

The offered system of links between components of the economic security system and the structural components of the agrarian sector economic safety system and the structural components of the agrarian sector.
Components of the agrarian sector require the development of new modern mechanisms and models for regulating the development of the agrarian sector in order to provide the economic security of the agrarian sector as a country in general and its regions.

It should be noted that in the issues of providing economic security to the agrarian sector, one should adhere to the principle of separation of powers, the essence of which is that the formation and implementation of mechanisms for reducing the overall threats to the development of the agrarian sector is the provision of state authorities, and neutralization of specific threats to the development of the agrarian sector, this is a task of the regional management level (Jurakovskiy, 2015).

Nowadays the system of ensuring economic safety of the country’s agrarian sector is not sufficiently effective. This is primarily due to the fact that at the state level, there are no clear national decisions regarding the provision of economic security for the development of the agrarian sector, and these decisions that are adopted from time to time, in the majority, they do not overlook the specifics of each agrarian branch region, and often have no systemic nature, they do not take into account potential threats, but are mainly oriented to solving current issues and tasks.

At the same time, the current economic situation in the world places new demands on the functioning of the agrarian sector as a state and its agrarian regions (Kozlovskyi, Grynyuk, Baltrems, & Ivashchenko, 2017). The acceleration of the globalization processes of the world economy, the prospect of Ukraine’s possible accession to the EU, the wide range of nominated products of the foreign food products offered on the domestic market, the rapid development of external markets, etc., set Ukraine’s task as soon as possible to make decisions on the formation of a modern model of economic provision the security of the agrarian sector development both at the state level and at the regional level.

Taking into account the fact that Ukraine has a huge natural potential for the development of agrarian production, its own energy resources, skilled labor force, good scientific potential, etc., it can be stated that Ukraine has 162 places in terms of sound management policy (as of 2016) of 178 countries under the inscription of economic freedoms (The official website of the 2016 index of Economic Freedom; Human Development Report, UNDP, 2014) in the sphere of agrarian production, will be able not only to ensure the necessary level of the agrarian sector economic safety of the state and its regions in the long-term perspective, but also it will offer wide opportunities for the development of new food markets and strengthen the image of Ukraine as a major agrarian state (Kaletnik, Kozlovskyi, Kireeva, & Pidvalna, 2015).

As is well-known, the threat to the economic security of the agrarian sector is recognized by the world practice of a decline in the volume of gross agricultural production in relation to the base period by more than 30-40%. In 2013, the change in the gross agricultural output in all categories

![Figure 2: Volume of gross agricultural output (in comparable prices in 2012, UAH billion) in Ukraine](image-url)
of state-gifts in comparison with the year 2012, determined as the base, amounted to 29.5%, in 2014, compared with the base year 2012, 34.8%; in 2015 compared with the base 2012, 22.9%; in 2016, compared to the base year of 2012, 38% (see Figure 2), which indicates that the agrarian sector of Ukraine is in a state of development and there is no sufficient reason to speak about deterioration of the basic economic index of its activity.

At the same time, the study of the pace of growth of the agrarian sector is of considerable interest, since its low growth rates may indicate the presence of the influence of certain negative factors, which, in turn, may jeopardize the economic security of the entire agrarian sector.

In the socio-economic conditions that exist today in the world, it is necessary to develop a complex state policy to ensure the agrarian sector economic safety, which would be able, using a certain set of mechanisms, to reduce or eliminate the general and specific threats affecting the development of agrarian industry of the country and its regions. The main objectives of such a policy should be, firstly, creation of conditions for the restoration and revival of lost agricultural production; and secondly, ensuring the quantitative and qualitative growth of food and other types of industry related to the production of agricultural products; and thirdly, stimulate the sustainable development of agroindustrial complexes by introducing effective regulatory mechanisms and shaping the modern sectoral market infrastructure (Zhmudenko, 2012).

The main regulatory mechanisms for solving these problems are:

- at the first stage, there is the improvement of state regulation of prices for agrarian products (Kozlovskyi, 2015) in order to ensure an equivalent exchange of goods between the main branches of the agro-industrial complex, as well as between agro-industrial complex and other branches of the economy;

- equalization of the level of remuneration of workers in agriculture with the level of remuneration of labor in related industries, with the provision of additional targeted benefits to employees in providing their housing, the possibility of raising their qualifications, etc.;

- formation of a developed social infrastructure;

- increase of pensions for employees of agriculture and agroindustrial complex as a whole.

While developing an integrated system for ensuring the economic security of the agrarian sector, it should be taken into account that it is practically impossible to construct this system at a single moment, and the operation of this system can not be the same throughout all stages of its functioning. This is explained by the fact that building a comprehensive system of economic security of the agrarian sector, the principle of phasing is applied. That means that the construction of a system of agrarian sector economic safety is a progressive process characterized by processes of synchronism and cyclicity (Shulga, 2012).

Therefore, deciding on the construction of a system of agrarian system economic safety, it is necessary to determine the stage of the economic cycle of development is the country’s economy (crisis, depression, recovery, rise). Without taking into account this circumstance, it will be impossible to develop a system of reliable quantitative and qualitative indicators, which will help to assess the level of agrarian system economic safety.

In addition, constructing a agrarian economic safety system, the principle of stability of this system to external and internal threats, which can lead to systemic crises in the development of the agrarian sector, should be taken into account. The use of the principle of sustainability will make sense only if all the other above-mentioned principles of building a system for managing the economic safety of the agrarian sector are observed.

Taking into account all of the foregoing, the following interpretation of the category of “economic safety of the agrarian sector” can be suggested.
Economic safety of the agrarian sector is such a state of protecting the agrarian economical sector from all kinds of threats, which allows the formation and implementation of its own economic policy in the field of regulation and stimulation of the agrarian sector development in the established limits of the state, as well as ensuring economic stability and the ability of agrarian enterprises to reproduce and develop (Kozlovskiy, Khadzhynov, Vlasenko, & Marynychak, 2017).

The algorithm for building a comprehensive system of economic security of the agrarian sector involves the creation of a so-called “tree of tasks”, which is shown in Figure 3, and the algorithm for building a comprehensive system of economic security of the agrarian sector should cover the stages shown in Figure 4.

The strategic goal of building a comprehensive system of agrarian sector economic safety is to create the necessary conditions for the development of
enterprises of the agrarian sector of the economy and ensuring economic stability and socio-economic stability of the territory development. To achieve this goal, it is necessary to develop an appropriate mechanism for ensuring the economic safety of the agrarian sector development at each level: at the state, regional, local and at the enterprise level.

At the heart of the methodology for assessing the level of economic security of the agrarian sector lies the deductive method that allows us to consider in detail the issues of economical-financial, industrial-technological, natural-ecological, socio-intellectual, institutional, political and integration efficiency of the agrarian sector, to identify threats from an ever-changing environment, as well as determine the reserves that form the compensatory potential of the agrarian sector. The methodology should make it possible to isolate and examine in detail the “bottlenecks” in the agrarian sector, identify the main problems affecting the development of the agrarian sector and its economic security.

**CONCLUSION**

Economic safety of the agrarian sector is a complex multilevel system consisting of the following components: economic-financial, industrial-technological, natural-environmental, social-intellectual, institutional, political-integration. Each of the presented components is a subsystem of economic safety of the agrarian sector, which has its own set of relationships, having different orientations and the degree of influence on the qualitative state of the system. In the system of economic security of the agrarian sector, it is necessary to identify five types of links between components of the agrarian sector economic safety system (functional, organizational, resource, technological, globalization) and structural parts of the agrarian sector itself, which will enable the development of new mechanisms and models to regulate the development of the agrarian sector in order to ensure the economic security of the agrarian sector both in the whole country and its regions. The use of the model of economic safety of the agrarian sector by the components installed in the work will reduce the risks of emerging threats and will allow the operational management influence by the authorities.

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