

**METHODOLOGICAL FOUNDATIONS AND BASIC METHODS OF STUDYING THE  
DEVELOPMENT OF AGRICULTURAL SECTOR UNDER CONDITIONS  
OF GLOBALIZATION**

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The impact of globalization and integration processes on the national economy demands both the development of sophisticated techniques, review and justification of appropriate methods of studying the agricultural sector and the identification of promising areas under new conditions. The article substantiates the need for creating new methodological principles of the agricultural sector's development in the context of globalization and outlines the general methods of its study under new conditions. Application of the proposed methodology and methods will make it possible to carry out a systematic analysis of the current state of the agricultural sector in Ukraine at the appropriate level and to work up practical proposals for its further development in the context of globalization.

*Keywords: methodology, methods, agricultural sector, development, globalization.*

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## **1. Introduction**

We will never understand the new quality in the modern global process, if we rely only on the proper theoretical frameworks and try to make them dogma (Gal'chins'kij, 2009). The impact of globalization and integration processes on the national economies demands both the development of sophisticated techniques, review and justification of appropriate methods of studying the agricultural sector and the identification of promising areas under new conditions.

Nowadays there is a need to review the methodological principles of development of the country's agricultural sector taking into account potential exogenous risks which arise as a result of globalization processes. A number of researchers emphasize this issue; A. Yerankin (2009), for example, indicates that globalization processes play especially important and significant role for future prospects of economic development of the agroindustrial complex in Ukraine. The agricultural sector of Ukraine's economy is entering a new phase of its development.

Scientists of the Institute of Economics and Forecasting of NASU note that the results of the domestic agro-food system's convergence with the world one are determined by the choice of strategies and specific mechanisms for entering the global space (Pashaver, 2009). Some methodological aspects of the agricultural sector's develop-

ment under conditions of globalization and European integration and the issues of progressive methods of its research are reflected in the works by T. Zinchuk (2008), O. Luka (2004), O. Jacenko (2006) and others. Also, the theory and methodology of the agricultural sector's development require further research to be done in the context of strengthening globalization processes and Ukraine's integration into the world economy.

The research objectives are to justify the need to create new methodological principles of the agricultural sector's development in the context of globalization and to outline the general methods of its study under new conditions.

Methodology is a set of research methods applied to a certain science; studies of methods of knowledge and reality transformation (Goncharenko, 1997). Methodology is a complicated issue since this notion is interpreted in different ways. Many foreign scientific schools do not distinguish between methodology and methods of research. In national scientific school methodology is considered as the doctrine of the methods of knowledge or the system of scientific principles the research is based on and the choice of cognitive tools, methods and techniques is made on (Cehmistrova, 2003).

Methodology of scientific knowledge of the economic mechanism of the agricultural sector's development under the conditions of globalization includes the principles of construction and the methods of scientific-cognitive activities. It defines a basic approach to studying phenomena of business management and is a key issue for the development of every science. A set of specific research techniques determines the methodology of scientific knowledge.

## **2. Results**

An important attribute of finding out such phenomenon as the agricultural sector's development in the context of globalization is the general method of research. These are specific means of obtaining and processing the actual statistical material. It is derived from the methodological principles and is based on them taking into account both the nature of globalization processes and the research objectives. Methods plunge into practical action. It does not fully define success in the research. You need to have not only a good technique, but also the methods of its application. Methodology integrates the methods and determines their mutual augmentability. General methodology refers to the whole research and presents the key methods and measures which pass through the entire block of research. It is important that due to the general methodology one could penetrate into the nature of such category as globalization and determine its causal relationships and driving forces.

General methodology of research must serve as a concretization of methodology and reflect its theoretical and practical possibilities. The application of general methodology of research in view of globalization is associated with the use of methodology as the system of the most important theories, principles and rules which are crucial for the formation of an appropriate mechanism and state policy in the new environment. Further development of the agricultural sector under conditions of globalization must not occur according to spontaneous principles, but due to perfect and pre-tested options.

Methodology should encourage clarification of the contents of general methods of knowledge regarding the improvement of qualitative features of the agricultural sector's development under the influence of globalization and integration processes. While forming methodology it is important to take into account that from the standpoint of the general research methodology it is a complex task and it should be solved comprehensively.

Further, the question of more specific highlighting the means of subject's knowledge, i. e. methods of research, is getting vital. In this regard the works by G. N. Klimko and V. P. Nesterenko (1997), A. S. Gal'chins'kij, P. S. Cshhenko and Yu. I. Palkin (1998) deserve a special attention. These authors consider that it is reasonable to differentiate the methods of research into two groups: general scientific and special ones.

Among the general scientific methods of learning the processes of agricultural sector's development under conditions of globalization a significant place should be occupied by structural-functional method, which envisages the consideration of phenomenon as a systematic one with mandatory analysis of functions of the interacting elements. Using this method we can define the export and import of goods, trace the changes taking place, determine the place and role of each item of export-import operations which are considered to be a systematic object with the links of appropriate levels: a) coordinating, which determine the conformity of the system's interacting structural elements and the element's place within the system; b) subordinated, which indicate the subordinate relationship of the elements in the systematic object; c) genetic, which show the element's connection with the history of the system's development. Thus, the structural-functional approach defines systematic attributes stored by the objects of study, regardless of the nature of their transformation. The system's features are integrity, focus, organization and management; combination of qualitative and quantitative analysis, which includes consideration of the phenomenon with penetration in its nature that can be determined by a mathematical formula. However, mathematical formulas should be supplemented by qualitative analysis.

Among the special methods of learning the processes of agricultural sector's development under conditions of globalization a significant role should belong to:

- scientific abstraction as the method of in-depth knowledge of reality. The method is based on the releasing the information material from accidental, incidental and outlining something steady and typical;

- analysis and synthesis as the process of mental or actual decomposition of the whole into parts, and synthesis as the combination of various elements, parties of the objects together. The systematic approach is impossible without unity and synthesis;

- logical and historical approach which frees the evaluation of historical development from contingencies, which are not peculiar to a particular process. It is necessary to compare the received conclusions with the facts, particular current process;

- experiment, in which a special attention is paid to transformations and reforms carried out at present as a result of Ukraine's integration into the world community.

While conducting research on the development of agricultural sector of the economy under conditions of globalization the application of systemic approach as

one of the main directions of methodology of special scientific knowledge must be obligatory. Its peculiarity is that some objects are studied not separately from each other, but as components of a single system. This approach promotes adequate formulating the nature of the researched problem that in future facilitates the choice of effective ways for its solution.

The systematic approach has its methodological peculiarity. Its characteristic feature is that the research objective is to explore the natural phenomena and mechanisms that form the object studied. The development of agricultural sector in the context of globalization is an extremely complex phenomenon, as it is characterized by a large number of different internal and external relations. In this regard, in order to have an idea of its essence and integrity the method of analysis, scientific research and combination of the basic concepts and interpretations must be used. For the purpose of understanding the nature of the agricultural sector's development under conditions of globalization one should make an abstract and logical comparison of existing theories and opinions of scientists.

The system of methods of studying the processes of agricultural sector's development in the context of globalization should also include other methods of economic research (Table 1).

For characteristics of the development processes of agricultural sector under conditions of globalization it is reasonable to use indicators characterizing the openness of the agricultural economy. There are various techniques for it. For example, to characterize the degree of economy's openness the International Bank uses the ratio of exports of goods to the production of these products in the country. Economics is conventionally considered to be closed, if the share of export production is less than 10%, and relatively open – 35%.

To determine the products of agroindustrial complex of Ukraine, the export of which is the most expedient, one should use an index defined as the ratio of a share of a certain type of exported products in the total exports of agricultural products to a similar share of the total world exports. In particular, to calculate this indicator for grain the following formula is used (Tsomik, 2007):

$$X = \frac{E_3^{UKR}}{E_{\sum_{agr.prod}^{UKR}}} / \frac{E_3^W}{E_{\sum_{agr.prod}^W}}, \quad (1)$$

where  $X$  – share of Ukrainian grain export in the world one;  $E_3^{UKR}$  – grain exports from Ukraine, USD;  $E_{\sum_{agr.prod}^{UKR}}$  – total exports of agricultural products from Ukraine, USD;  $E_3^W$  – world grain exports, USD;  $E_{\sum_{agr.prod}^W}$  – total world exports of agricultural products, USD.

Table 1. System of methods of studying the state, trends and prospects of the agricultural sector's development under conditions of globalization

Method	Area of application	Objective of application	Advantages	Disadvantages
SWOT-analysis	Defining factors influencing the development	Determining positive and negative factors of development	Creation of system of internal and external threats for development	Relative share of subjectivism in the process of defining factors of impact
Correlation analysis	Studying dependence of foreign trade volume on factors of micro- and macroenvironment.	Determining factors influencing foreign trade of agricultural products most of all	Except measuring level and closeness of links between factors, form and direction of links are also determined	The result depends on the factors chosen. Complex calculations
Rating economic method	Determining a long-term commodity structure of export and import.	The experts' determining effective structure of export and import of agricultural products	Except qualitative indices, quantitative ones must also be considered	The staff of specialists involved also influences the result
Assessment of economic risks	Calculating impact of risks on the efficiency of agricultural enterprises' activity.	Creating a system of qualitative and quantitative indices determining risks and assessment of their significance.	Assessment of risk of agricultural enterprises' functioning, possibility to decrease losses	Certain share of subjectivism in the process of defining and assessing risks
Expert method	Foreseeing the results of development of the phenomenon studied.	Working out a long-term prognosis of the agricultural sector's development	Makes it possible to evaluate and analyze phenomenon under conditions of uncertainty and constant change of situation	Specialists' staff influence the result of expertise

However, depending on the value of the calculated index one determines the prospects of export of a certain type of agricultural products. If  $X$  is less than 1, then this product is a commodity for the domestic market; if  $X$  is in the range of 1 to 10, it is an export-oriented product; and if  $X$  is more than 10, the products are leading export commodities. Increased competition in the global agro-food market strengthens attention to the problems of measuring international competitiveness of agricultural sectors of some countries. The indicators of international competitiveness of agricultural products include those ones which can determine the competitiveness of certain agro-food products of the country or its agricultural sector as a whole in the world market in the past and are based on the use of statistical data on the value of foreign trade of certain products (Luka, 2004; Yatsenko, 2006; Kvasha, 2003).

Among the indicators of this group the index of actual comparative advantages  $RCA_{ij}$  is most commonly used. It is calculated by:

$$RCA_{ij} = (X_{ij} - M_{ij}) / [T_{kj} (T_{iw} / T_{kw})], \quad (2)$$

where  $X$  – export;  $M$  – import;  $i$  – product;  $j$  – country;  $k$  – all products;  $w$  – world;  $T = (X+M)/2$ .

A positive value of  $RCA_{ij}$  index demonstrates the presence of comparative advantages, a negative value shows their absence. The greater is the value of the index, the greater are comparative advantages. The advantage of  $RCA_{ij}$  index is a relative simplicity of its calculation and the availability of necessary data for calculation.

To assess the level of development of foreign trade relations, B.M. Shevchik's approach can be used (Szewczyk, 2004), with application of the ratio of foreign trade balance. It is calculated by the following formula:

$$K = \frac{C}{T_3}, \quad (3)$$

where  $K$  – coefficient of foreign trade balance;  $C$  – foreign trade surplus;  $T_3$  – foreign trade turnover.

Besides, the coefficient automatically includes assessment of bilateral foreign trade relations. This follows from a more detailed study of the formula (3). After all, the value of foreign trade surplus and the value of foreign trade turnover are associated with the values of exports ( $E$ ) and imports ( $I$ ) in the following way:

$$T_3 = E + I \quad (4)$$

$$C = E - I \quad (5)$$

Substituting formulas (4) and (5) into formula (3) we obtain:

$$K = \frac{E - I}{E + I} \quad (6)$$

In this formula  $K$  is a function of two variables ( $E$  i  $I$ ). It has a maximum that is equal to 1 when  $I = 0$  i  $E > 0$  and minimum that is equal to  $-1$  when  $E = 0$  i  $I > 0$ . Function is equal to 0 when  $I = E$ . Thus, when balancing volumes of export and import, the coefficient of balancing foreign trade activity is close to 0. Having unilateral relations, i.e. when volumes of export and import are significantly different, the coefficient's value depending on the sign of foreign trade surplus is approaching  $+1$  or  $-1$ .

The values of coefficient, which are equal to  $+1$  or  $-1$ , affirm complete unilateralism of foreign trade relations, it means that these connections are represented either by export or only by import. With the value of  $K$  equal to 0 they are considered to be quite balanced. For the analysis it is advisable to take into account that within changes of  $K$  values from  $-0.5$  to  $0.5$ , foreign trade relations are more or less balanced. Within  $K$  changes from  $0.5$  to  $1$  foreign trade relations are not balanced and export exceeds greatly (Table. 2).

Table 2. Assessment of foreign trade activity of the countries on the basis of balance coefficient's values

Balance coefficient's values ( $K$ )	Economic interpretation of foreign trade activity of the countries
-1	absolute import imbalance
1	absolute export imbalance
-1 to -0,5	considerable import imbalance
-0,5 to 0	comparative import balance
0	absolute import and export balance
0 to 0,5	comparative export balance
0,5 to 1	considerable export imbalance

Thus, analysis of foreign trade relations' balance by means of balance coefficient is reduced to finding its quantitative value and determining the frameworks of this value. In addition, the coefficient allows to carry out simultaneous assessment of export-import operations, and hence – the level of bilateral relations.

For analyzing globalization and its impact on the development of the agricultural sector it is advisable to use such tools as models. Globalization and integration processes are too complex: in order to understand what is happening, to predict what will be the consequences, it is necessary to distinguish between essential and non-essential characteristics. What properties the researcher decides to consider, when creating a model, depends on the issues one is eager to solve. The fact that models make simplifying assumptions and produce many details is considered to be their strengths rather than their disadvantages. Using models provides the opportunity to clarify the reaction of agricultural policy (Stiglitz, 1997).

### 3. Conclusions

1. The impact of globalization and integration processes on the national economies demands the creation of new methodological principles of the agricultural sector's development. While studying the processes of the agricultural sector's development under conditions of globalization, first of all one must be methodologically correct in choosing and applying specific techniques and methods.

2. The process of creating the methodology of agricultural sector's development of the economy under conditions of globalization has the following components: formulation of objective, tasks and functions; selection of object and subject composition; determination of tools for mechanism implementation; definition of sources to provide its functioning; distinguishing the mechanism's subsystems; expected effect of its implementation; selection of general scientific and special methods of scientific research.

3. Using the proposed methodological principles and methods will make it possible to carry out a systematic analysis of the current state of the agricultural sector of economy and its economic mechanism at the appropriate level, to develop practical proposals for its further development under conditions of globalization.

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## METODINIAI PAGRINDAI IR METODAI TIRIANT ŽEMĖS ŪKIO SEKTORIAUS VYSTYMAŠI GLOBALIZACIJOS SĄLYGOMIS

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Globalizacijos ir integracijos procesų įtaka šalies ekonomikai reikalauja peržiūrėti, pagrįsti ir vystyti tinkamus metodus, tirti žemės ūkio sektorių ir identifikuoti perspektyvias sritis. Straipsnio tikslas – pagrįsti naujus metodinius principus žemės ūkio sektoriaus vystymui globalizacijos kontekste ir apibrėžti pagrindinius metodus. Siūlomų metodikų ir metodų taikymas leis atlikti dabartinės Ukrainos žemės ūkio sektoriaus padėties sisteminę analizę atitinkamu lygmeniu ir parengti praktinius siūlymus tolimesniam vystymui globalizacijos kontekste.

*Raktiniai žodžiai: metodologija, metodai, žemės ūkio sektorius, vystymas, globalizacija.*

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