



---

## **METHODOLOGICAL ASPECTS OF THE RESEARCH FORMATION AND REGIONAL MARKET DEVELOPMENT OF ANIMAL PRODUCTION**

Volodymyr IVANYSHYN<sup>1</sup>, Mykola MISIUK<sup>1</sup>, Maryna ZAKHODYM<sup>1</sup>,  
Taras HUTSOL<sup>1</sup>

<sup>1</sup> STATE AGRARIAN AND ENGINEERING UNIVERSITY IN PODILIA

\* Corresponding author: e-mail: mzahodym@gmail.com

---

### **KEYWORDS**

*methods, meat, milk,  
market, livestock  
products.*

---

### **SUMMARY**

The formation and functioning methodological aspects of the market for livestock products should be viewed as a system, combining the producers' interaction of agricultural products and market institutions in order to ensure food security, guaranteed access of the population to meat and dairy products in sufficient quantity and quality necessary for nation health.

Providing Ukraine's population with livestock products and expanding the potential and market real capacity for these products requires the development and methodological approaches application for determination of market capacity forming factors. Development formation of the livestock products market is based on scientific abstraction methods, induction and deduction, analysis and synthesis, logical and evolutionary approaches to the economic phenomena cognition and processes.

The sustainable economic development methodological foundations make it possible to single out the food market as the research independent object, to justify the need to develop the organizational and economic foundations of its development in modern conditions, which reflects in the general cycle: production, distribution, exchange and consumption. The livestock products market is the integral part of food market, which is socio-economic relations combination of arising in the production process, processing, marketing and livestock products consumption. Thus, the livestock products market functions as an integrated subsystem, which has its own characteristics, purpose unity, close production and technological links, organizational and economic relationships, aimed at improving the social conditions of society living.

Only if the methodological support is provided, scientific research can have an objective character and achieve a certain result. The livestock products' market research is based on the methodology as a single, logic integrated interaction, principles and methods, which together constitute the logically completed system for the object study, starting from the goal, arising from this task and ending with obtaining concrete theoretical and applied results. From the science point of view, the methodology is a complex and multistage education, encompasses a number of cognitive procedures methods and operations by means of which it is possible to give a deep and comprehensive characterization of the phenomenon or process being studied.

The basis of both methodological and theoretical research was the cognition dialectical method, an economic theory based on the objective economic laws fundamental provisions, the development concept of the agro-industrial complex and Ukraine' agrarian market, scientific developments of domestic scientists on the formation of food market.

---

Formation of the development concept of the livestock products' market is based on scientific abstraction methods, induction and deduction, analysis and synthesis, logical and evolutionary approaches to the economic phenomena cognition and processes.

At the first stage studying, it is necessary to use the inductive method, which provides for collection, systematization and synthesis of reliable facts related to the practice and involved in the research of the livestock products' market. The inductive method next stage is the derivation from them of economic principles, theories, generalizations. The next step is to use the deductive method, when the solution to the problem begins not with the facts' collection, but with theoretical abstract reflection on it, relying on the thinking logic, intuition, random observation.

Hence, inductive and deductive methods complement each other in their value, and their application results - economic principles and generalizations, theories, techniques, recommendations can be used to formulate a strategy for the market development for meat and dairy products.

In addition to cognition general methods of induction and deduction, specific methods and research methods, such as monographic, analysis and synthesis, economic-statistical, correlation-regression, balance, normative, abstract-logical, economical mathematical, computational and constructive methods.

The continuity (interrelation) principle of a single (integral) financial and economic space in the formation and development implementation of the economy is based on the livestock products' market research. Therefore, this principle means that when forming the sustainable development concept of the meat and dairy market, it is necessary to proceed from the fact that it is impossible to systematically and comprehensively stabilize this market without a similar (systemic and complex) stabilization of the country's economy without coordinating these processes.

As one of the scientific research directions is the system approach, which includes: first, research object consideration as a hierarchical system, that is, as a certain set of interrelated and interacting elements; second, determining the structure and system elements' organization, identifying the main links between them; third, the external links identification of the system, its functions and role among other systems. The market, as the economic system, has a purpose, a set of resources related to the external environment and is distinguished by a pronounced hierarchical structure that we consider as the economy subject. The system approach proceeds from the study of the phenomenon as a part of the whole, taking into account the environment in which it functions. As applied to the livestock products' market development as the economy

subject, the usage of this approach means the need for its study, on the one hand, as an integral set of its constituent elements, and on the other hand, as constituent element part of a higher order system, that is, the food market. In this case, the livestock products' market is viewed as a system consisting of the elements' certain set. In this regard, the sustainability essential foundations of the market development for livestock products as a subject of the economy are legitimately determined on the analysis' basis of its basic structural elements; agricultural enterprises, households, processing enterprises and individuals usage it for structural analysis.

In this case, it is possible to identify the primary economic relations origins, that lay the foundations for the stable functioning of the economic system, and to build its logical scheme.

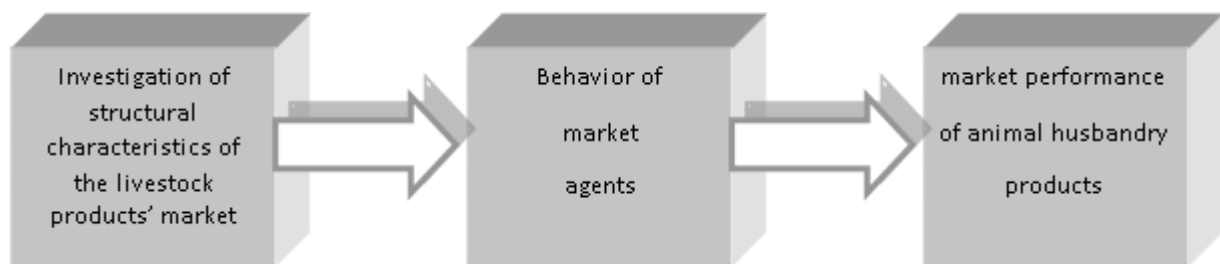
The research was conducted according to the logical scheme: the past - the present - the future. The analysis method is market processes in the agricultural sector, and the theory task of agro-food market structures is to study how transformation processes direct the activities of commodity producers to meet consumer demand. Therefore, without knowledge of the productive markets' development in economically developed countries, the economic development history and modern economic reality in Ukraine, it is impossible to form any concept, to build a scientifically sound system.

In the process of market transformations research and agrarian sector analysis, the processes of livestock products' market formation, economic reality, the quantitative approach is used, the essence of which is the transition from qualitative estimates to quantitative ones using calculations, economic-mathematical and statistical research methods, expert assessments, quantitative approach to research on the meat and dairy market development is realized by establishing dependencies between technical and organizational and social-economic indicators, the origin of the supply and demand laws' action mechanisms, the scale and time-saving laws, the diminishing returns and marginal utility laws, the interrelationships law of costs in the production and consumption spheres. Within the framework of these tasks, the factors that lead to the market processes violation and their regulation methods with the view of ensuring the economy effectiveness are investigated. In the opinion of T. O. Ostashko «... the difference in the theory methods of branch market structures from the microeconomic theory methods is, on the one hand, in market processes wider breadth, and on the other hand, in the greater concretization of institutional details» [1]. Therefore, we agree that such methodological approach provides significant advantages in the meat and dairy market analysis, despite the fact that its institutional structure has not yet been formed.

An important aspect of the analysis and definition of the sustainable development main directions of the livestock sector in general and the market formation and effective functioning

of its products, in particular, is the study of the processes determining its state. The market characteristic is its imperfection as a result of unregulated complex interaction of formal and informal institutions, and it is the latter's influence that explains the unstable and inefficient nature of market development.

At the same time, the institutional approach is applied based on the generic attributes identification of qualitative characteristics and functions structural elements of the economic system. In substantiating this approach to the industry markets analysis, in particular livestock products, it is necessary to refer to the theoretical development of the founders and institutionalism theory followers - Douglas North, Oliver Williamson, Ronald Coase, and others [2, 3, 4]. Models of industry markets diagnostics examine the individual industries effectiveness and markets depending on the sellers and buyers behavior, which in turn depends on the market structure. In the framework of the theory of the industrial markets structure, this approach was called the paradigm «structure → behavior → performance» by which we will conduct a study of the livestock products' market (Figure 1).



**Fig. 1. SCHEME OF THE MARKET ANALYSIS PARADIGM OF ANIMAL PRODUCTS**

Source: investigated and adapted on the basis of the source [5]

The institutional aspects analysis of the livestock products' market will give the opportunity to explain, from the economic theory point of view, a number of phenomena that have accompanied the formation of this market and affect the development effectiveness in a market economy. Therefore, the institutional approach is considered the most successful for assessing the markets' effectiveness, their structural elements and structural changes. Guided by this theory, an effective market assumes the developed system of institutions, both formal and informal, which implies low transaction costs at the individual contracts level. The high cost of transactions in the transition period, according to national scientists, in Ukraine significantly influenced by informal factors, among which almost the greatest contribution of future uncertainty, which deformed the motives and market participants behavior [6].

The comprehensive government program absence, the consistent state agrarian policy uncertainty to reform the agrarian sector and the transparent food market formation has become

the root cause of the market transactions high cost that are at the formation stage of market institutions themselves and can not ensure the markets' effectiveness. Thus, instability of the institutional environment leads to inefficient markets.

The high cost of transaction costs in the livestock products market leads the market agents' orientation to short-term goals and adaptation to an ineffective institutional system instead of the balanced long-term development strategy, and the new efficient institutions' formation. Particularly there are certain problems with the quality characteristics definition of meat and dairy products, in connection with Ukraine's accession to the SOT. Therefore, this situation led to the transaction costs increase associated with the adaptation of the market for milk and meat to the international standards requirements.

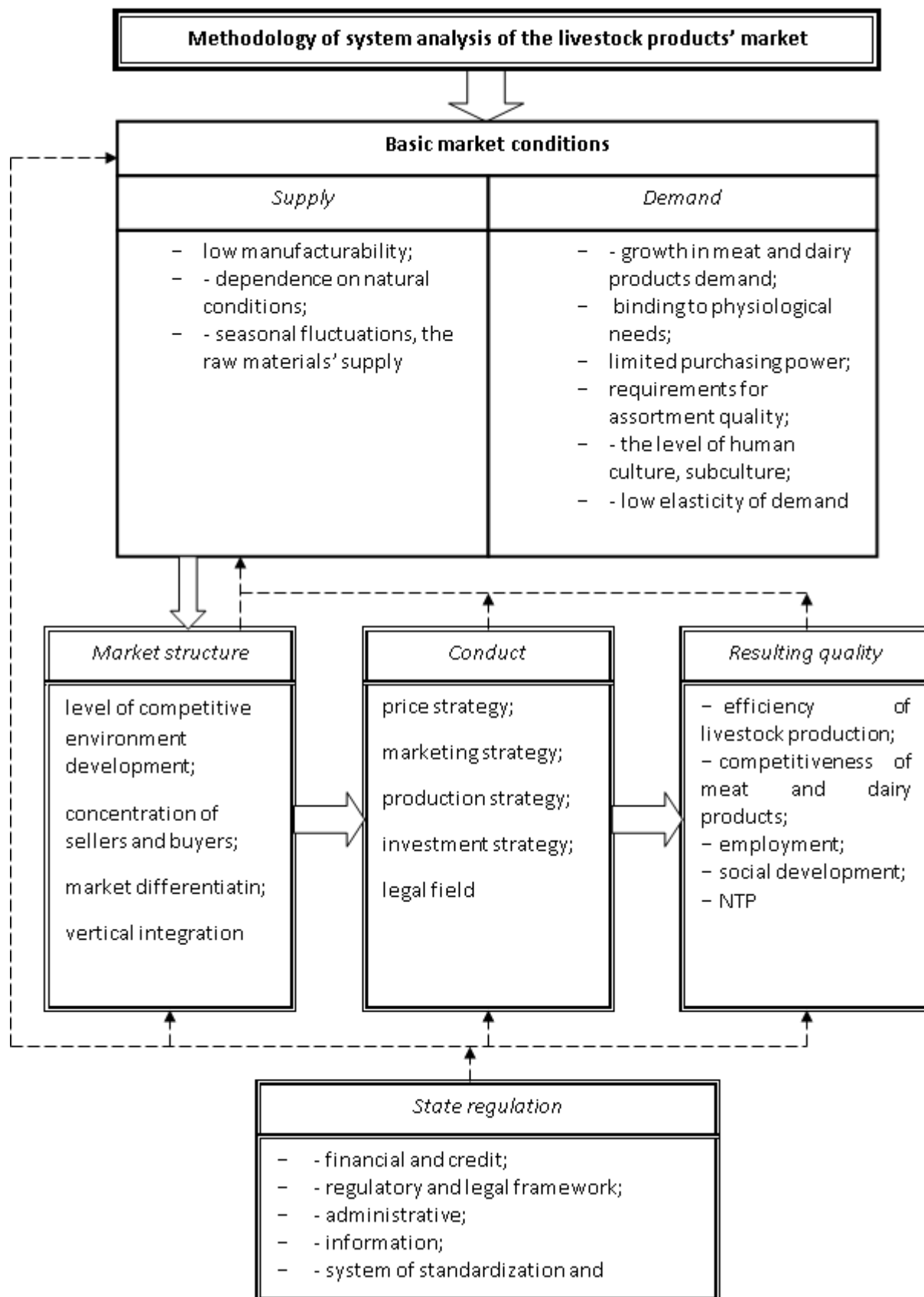
When using the analysis methodology of sectoral market structures, the integrated approach is used to study the formation and development processes of the livestock products market, which is based on the object description in the middle of inter-system interactions and the provision of theoretical generalization, technical, technological, economic, organizational, social and environmental components. This will allow us to substantiate the strategic directions for increasing the sustainability of the reproduction processes and to agree on the sustainable development concept of meat and dairy products at three levels, including the global economic system level, the second level - the macroeconomic (Ukraine), the third level - the macro level (subjects in the livestock sector ).

Figure 2 presents the diagram of the structural changes analysis and productivity of the livestock products' market, concretizes the paradigm «structure → behavior → performance» and shows that in addition to the three main blocks (structure, behavior, effectiveness) there are two more: the first - the basic conditions that determine the analysis features of the meat and dairy products' market in specific historical conditions; the second - state regulation, affects the basic conditions, agent behavior, structure and effectiveness.

Analysis of the livestock sector products market, in accordance with this methodology, should be carried out in 5 stages.

The first stage consists in analyzing the basic conditions that create the structure of the market and characterizes, on the one hand, the production features and meat and dairy products' consumption in comparison with other branches, and on the other hand, the specific situation specificity for the livestock development.

Therefore, it is under the influence of the basic market conditions that supply and demand form the structure features of this market, which are the main components of the market mechanism.



**Fig. 2. SCHEME OF SYSTEM ANALYSIS OF MARKET STRUCTURES OF ANIMAL PRODUCTION**

Source: investigated and adapted on the basis of [5]

The most influential basic conditions for supply are seasonal fluctuations in the raw materials' supply, dependence on natural and climatic conditions, which cause instability in the agricultural producers' incomes, low manufacturability of livestock products, and low technical equipment of the industry.

The basic market conditions, with regard to demand, are the low elasticity of meat demand and dairy products, which leads to low price elasticity, the linking of demand to the physiological population needs, the demand restriction due to the low purchasing power of the population, and the impact of volatile global market conditions. Effective demand, absolute and relative indicators of its characteristics, incomes' absolute size of the population and their dynamics, per capita value, sufficiency for providing nutrition to the population according to scientifically justified norms, territorial and group differentiation are the most influential system-forming element of the livestock production market.

The second stage is to analyze the livestock sector market structure is to determine the scope and methods of government regulation, because the performance of the meat and dairy market largely depends on it. In the market relations system there are two components, one of them is the free behavior guarantee in the producers' and buyers' market at all levels, determines the optimal supply-demand ratio, the other is an economic market regulation mechanism whose goal is to focus on effective activity and full consideration of all subjects market interests.

The main factors of the agrarian policy of Ukraine regarding the state regulation of the livestock sector is the structural approach and structuring, taxes, financial and credit resources, prices, tariffs, import quotas. In addition, the state can be market subject. When regulating the market from the state can use two levers - financial and economic and administrative, which leads to market inefficient development. Professor O. M. Mohylnyi considers that «there is a real aspiration of the old system of agrarian relations to self-preservation and the existence of an administrative-command economy» [7].

The current uncertainty of the agrarian policy on the livestock sector development in the state requires the deep analysis of state regulation of market relations between market entities. Changes in the methods and scale of support for producers and market state regulation for livestock products are expected from Ukraine's fruitful activity in the SOT and measured steps for European integration.

The third stage of this research method of market structures is the market characteristic, namely the concentration of sellers and buyers, the market differentiation, the competitive environment level, the vertical integration level, starting from the production of milk and beef

in retail trade, production diversification. To adapt the methodology for analyzing the sectoral market structures in the market structure, it is necessary to take into account the peculiarity that not only two actors-producers of livestock products and end-users, but also an intermediate chain between them, that is intermediaries interact on it. In the stable institutional system conditions, intermediaries are professional traders, they know the market situation, have established ties with buyers and their actions reduce the risks associated with meat and dairy products, contribute to market efficiency. However, at the market formation initial stage, the mediators made a negative contribution to the agrarian crisis deepening, the «loop» of which has not yet been broken. This led to a reduction in the number of intermediaries in this market and contributed to the vertically integrated structures formation that infringed the agricultural producers' interests. Analysis of the market for meat and dairy products differentiation also has its own specifics, which consists in the fact that, along with product differentiation, market competitiveness is explored, and institutional differentiation is investigated. It includes market infrastructure, spatial differentiation, exploring regional, national and external markets and temporary differentiation, that is, the development of market structures over time.

The fourth stage in the basic paradigm of «structure → behavior → efficiency» is the market subjects' behavior, that is, it is necessary to analyze the legal field in which market actors operate, evaluate the price, marketing, production and investment strategies, analyzing the behavior of other market actors - the state, consumers, intermediaries. The market agents' behavior, as a rule, largely depends on the price strategy, directly or indirectly concerns prices and pricing of agricultural products and food.

In order to conduct research on pricing in the market it is important to analyze fluctuations and price ratios. The main directions of this analysis are: 1) the variation in prices when purchasing products by various social and economic categories (quintile groups); 2) the discrepancy between prices on individual submarkets (state, cooperative, private); 3) different prices' evaluation for one type of product or commodity group; 4) price variation in regions, zones; 5) price variation over time.

The price correlation (P) and the oscillation analysis are based on the variation of the variation:

$$\Delta P = P_{\max} \rightarrow P_{\min} \quad (1),$$

Which characterizing the gap between the minimum and maximum prices for goods and shows the differentiation of the population consumption level.



Subjects of the market, according to the market economy criteria are entitled to determine the price of their products independently, as well as the right to determine it based on an agreement with consumers when concluding purchase and sale transactions between them. And this, in turn, leads to the price competition emergence between producers. Therefore, each of them seeks to sell their goods, and not only to preserve, but also expand their niche in the market to strengthen their positions on it. This is achieved by those producers who produce products with high price competitiveness, by which they understand the extent to which the commodity producer can reduce his goods' price in comparison with the market price, which ensures the break-even of his production.

At this stage of the study, it is important to assess and analyze the price competitiveness of products' certain types, using existing methodological approaches of price determining of products' proposal for the products' highest quality are sold at consumer's favorable time. High price competitiveness is enjoyed by commodity producers, they are economically able to sell their products at competitive prices and at the same time to receive profit. The livestock products' price competitiveness should be considered in close connection with its competitiveness in quality (especially in the context of Ukraine's accession to the SOT). Improving the quality of products requires additional costs (material, monetary, intellectual labor), which leads to production cost rise, and therefore in this situation it is important to know at which higher price it becomes economically justified to sell more expensive but high-quality products in order to maintain the level price competitiveness. For this, we can use the methodology proposed by V. H. Andriichuk [8]:

$$P_{\Pi O} = \frac{U_x - C_1}{U_x} \quad (2)$$

where  $P_{\Pi O}$  - the sales' profitability, achieved in the base year (coefficient)  $U_x$  - the search minimum price at which the realization of the produced higher quality products with the increased cost price ensures the sales' profitability achieved in the base year (price competitiveness)  $C_1$  - prime cost of the highest quality products.

Having made certain mathematical transformations, we obtain a formula by which we determine the level of price increase, based on the market analysis, it is possible to envisage the possibility of selling high-quality products at a next or higher price.

$$U_x = \frac{C_1}{1 - P_{\Pi O}} \quad (3)$$

Provided that we come to the conclusion about this sale reality, then we can make a decision on the additional costs implementation for improving the products' quality.

Providing eating healthy way (which is largely affected by meat and dairy products), ensuring the growing demand in the markets is directly related to high-quality livestock products.

At the last stage, the fifth, the market effectiveness is analyzed, based on an assessment not only from production efficiency point of view, but also in terms of employment and social justice. The price parameters and the satisfaction level of demand in the domestic market of livestock products are also investigated.

The specific economic situation (conjuncture) that has developed in the market of livestock products at a particular point in time can be estimated using a system of indicators characterizing certain developmental aspects (Table 1).

**Tab. 1.** SYSTEM OF THE ECONOMIC SITUATION INDICATORS (conjuncture) of livestock production markets

	Data
<b>Demand</b>	demand by satisfaction degree, origin forms, market conditions and purchase place; capacity of the market of means of production, consumer goods, services
<b>Offer</b>	production and raw material supply potential; - volume, structure and dynamics of supply; - elasticity of supply
<b>Trends in the market development</b>	growth rates of sales; - price growth rates; - rates of commodity stocks' growth
<b>Regional particularities</b>	- regional variation in the supply-demand ratio; - regional variation in the pace of the dynamics of the market development main parameters; - regional variation in the consumption level (per person)

Market proportionality	regional market structure; - the supply and demand ratio; - the markets' ratio, production means and consumer goods; - sellers' structure; - customers' structure
Oscillation, cyclicity	- seasonal fluctuations in market development; - coefficient of variation in sales, prices
Scale of the market	- total sales of products; - share of small, medium, large agricultural producers
Risks	risk of making marketing decisions; - investment risk

The final methodological aspect of the study provides the strategic program substantiation for the market development for livestock products, aimed at producing high-quality and competitive meat and dairy products and providing the population in accordance with scientifically sound norms, creating powerful export resources that will strengthen the country's economy.

## REFERENCES

1. Ostashko T. O. Substantiation of Ukraine's position as for agriculture in the negotiations of the Dorian round of WTO. *Economist* № 8, 399 (2008).
2. North D. Institutions, institutional changes and the economy functioning. Trans. from engl. A. N. Nesterenko, P. 17. M.: Nachala (1997).
3. Willyamson O. I., Galperina V. M Vertical integration of production: considerations about market failures. Is. 2: Theory of the firm, P. 11–32. Sp. L. Economic School (2000).
4. Krouz R. G. Nature of the firm. Vsb. Milestones of economic thought. Comp. and Society. Ed. Galperina V. M. T 2: Theory of the firm. Sp. L. Economic School, (2000).
5. Dudar V. T. Organizational-economic bases of formation of the agrarian market of competitive products. *Bulletin of Ternopil State University of Economics*. Issue. 2. P. 129–136. Ternopil (2006).
6. Ostashko T. O. Structural and institutional analysis of the agrarian market. Institute of Economics and Forecasting, Kyiv (2006).
7. Mohylnyi O. M. State regulation of agrarian production in the economic transformation period. IAE UAAN, Kyiv (2002).
8. Andriichuk V. H. Economics of agro-industrial complex enterprises. KNEU, Kyiv (2013).
9. Volodymyr Ivanyshyn, Ulyana Nedilska, Veronika Khomina, Rita Klymyshena, Vasil Hryhoriev, Oleg Ovcharuk, Taras Hutsol, Krzysztof Mudryk, Marcin Jewiarz, Marek Wróbel, Krzysztof Dziedzic: Prospects of Growing Miscanthus as Alternative Source of Biofuel / Renewable Energy Sources: Engineering, Technology, Innovation: ICORES 2017, 801-812, (2018). DOI 10.1007/978-3-319-72371-6\_78

10. Ivanyshyn, V., Hutsol, T.: The Ukrainian agricultural groups state and agromachinery rovision. Scientific achievements in agricultural engineering agronomy and veterinary medicine: Polish-Ukrainian cooperation: monograph. State Agrarian and Engineering University in Podilya, Agriculture University in Krakow. Vol. I. Krakow: Traicon 1 (1), 5-18 (2017). [https://www.researchgate.net/publication/321295222\\_THE\\_UKRAINIAN\\_AGRICULTURAL\\_GROUPS\\_STATE\\_AND\\_AGRO-MACHINERY\\_ROVISION](https://www.researchgate.net/publication/321295222_THE_UKRAINIAN_AGRICULTURAL_GROUPS_STATE_AND_AGRO-MACHINERY_ROVISION)