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**FORMATION OF EFFECTIVE PRODUCT DISTRIBUTION CHANNELS AS A  
LOGISTIC SYSTEMS ECONOMICS COMPONENT OF AGRICULTURAL COMPLEX  
OF UKRAINE**

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**Abstract.** The article highlights the essence of distribution channels and considers management aspects of sales channels formation and development for the Ukraine agro-industrial complex. Problems and main factors of influence on the logistics system formation of the agroindustrial enterprise with effective trade channels of national agricultural products are analyzed.

Today, in the process of realizing the geopolitical advantages of the national economy, it is worth paying attention to the potential of the national agro-industrial complex, which is the main budget-forming sector of the national economy of Ukraine. One of the key vectors of development for Ukraine's integration into the world economy is the formation of effective channels for distributing products of national agricultural producers to export markets. The participation in world trade may open opportunities for our country to enter a new stage of development.

**Keywords:** logistics system, distribution channels, trade, distribution logistics, agricultural enterprise, distribution channel schemes, agricultural products.

**JEL Classification:** A22, I20, I21.

## INTRODUCTION

Today, the organization of distribution channels is the weakest link in the system of functioning of national agricultural producers. Insignificant investments in sales logistics and low efficiency of distribution channels lead to the loss of part of the profit, incomplete satisfaction of demand, as well as increasing the level of risk associated with the sale of agricultural products in foreign markets. The process of movement of goods from the agricultural producer to the final

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consumer takes place through a system of distribution channels, the efficiency of which is achieved by ensuring uninterrupted flow of products in the agri-food market from producer to consumer. It primarily depends on the coordinated work of all parts of the sales channel. As you know, the system of channels of trade is a set of organizations that provide consumers with the opportunity to use and consume goods and services. The availability of distribution channels is a guarantee of competitive advantage for all entities that are part of the channel. Such distribution channels facilitate planning, ensuring the relationship between the functional units of the organization, market agents, production and commercial structures and the finally users. The organization of effective distribution channels of national agricultural products is one of the most promising areas of Ukraine's integration into the world economy and the implementation the concept of total quality management.

## **LITERATURE REVIEW**

Argumentation of theoretical positions and practical developments on the organization of effective channels of distribution of agricultural products are covered in the works of prominent foreign and domestic scientists, among whom were: A.N. Rodnikov, Yu.M. Nerush, VV Dybska, G. Astratova, P.R. Kols, M. Tracy, O. Berezin, Y. Glushko, I. Balanyuk, V. Goncharov, S. Potemkin, P. Sabluk, O. Shpykulyak and others. Some aspects of theoretical and practical nature of the logistics activities of agricultural enterprises in their work considered EV Крикавський, A.M. Gadzhinsky, VI Sergeeva, AG potter, L.B. Mirotina, N.Y. Konishchev and other foreign scientists.

## **PAPER OBJECTIVE**

The purpose of this is to reveal the essence and basic principles of organization of distribution logistics in the general logistics system of agricultural enterprises, as well as analysis of the management aspect of formation and development of effective distribution channels in the logistics system of national agricultural producers.

## **RESULTS AND DISCUSSION**

Each system is a set of elements that are in mutual connection and relationship with each other, forming a certain integrity, unity. The system is understood as a set of elements that are in interaction; a set of elements organized in such a way that the change, exclusion or introduction of a new element will naturally be reflected in the other elements of the system; everything that consists of interconnected parts. Elements of a system can only exist within it - outside the system they are only objects. They are heterogeneous but compatible. Any system has input and output. Also, it is integral and at the same time articulate. There are significant orderly connections between the components of the system that have the structure and determine its unifying qualities. The system as a whole has its unique integration qualities that are not inherent in its elements.

The logistics system of the enterprise has all the properties of the system, because it consists of interconnected and interdependent system-forming elements, which are arranged in a certain way and form a structure with predefined parameters. Analysis of modern domestic and foreign literature has shown that there is no single definition of the term "logistics system". So A.G. Kalchenko in his works, calls the logistics system an organizational and economic mechanism for managing material and information flows, the purpose of which is to deliver the required quantity and range of products prepared for production and personal consumption at minimum time and financial costs. However, the goal of the logistics system is not only to deliver products, but also to optimize all flows of the enterprise.

According to Y.M. Nerusha logistics system organizes the free distribution and exchange of products in order to ensure the optimal ratio of supply and demand, optimizing the activities of the constituent subsystems. In his work "Logistics" the scientist concluded that some logistics departments determine the required amount of products for the smooth operation of the enterprise, others - promote products from supplier to end user, others - analyze the market, suppliers and consumers, and others are involved in forming distribution channels (Nerush, Yu. M., 2011).

Foreign scientists, in particular VV Dybska, Ye.I. Zaitseva, VN Sergeyev and others are convinced that the logistics system is a complex organizationally complete economic system, which consists of interconnected in the management process, the set, tasks and boundaries of which are united by the internal purpose of the enterprise and its external goals (Krykavs'kyi YE.V., 2008).

A.M. Aucklander calls the logistics system of the enterprise an organizational and managerial mechanism for coordinating the actions of specialists from different departments that manage material flows in his works. Thus, the logistics system is considered as a subject of management that affects the object - the material flow [4]. However, it is advisable to consider the logistics system not only as a management mechanism, but also as a whole set of subsystems that operate to achieve a common goal.

It can be concluded that the concept of "logistics system" is multifaceted and has many definitions, but the most common of them is the definition of a leading scientist in the field of logistics, EV Krykavsky, who argues that the logistics system is an adaptive system with feedback. language, which performs certain logistic functions and operations, has developed links with the external environment and consists of several subsystems (Krykavs'kyi YE.V., 2006).

,Thus, analyzing the views of domestic and foreign scientists to determine the essence of the logistics system of the enterprise, we can conclude that the division of such a system at the macro level includes a number of constituent elements - subsystems:

- supply subsystem;
- storage subsystem;
- production subsystem;
- planning subsystem;
- distribution (sales) subsystem.

The logistics system of the enterprise and its functional subsystems is determined primarily by the specifics of its activities. Thus, the logistics system of an agro-industrial enterprise has a structure specific to such activities, different from enterprises in other industries.

Consider the aggregate scheme of the structure of the logistics system of an agricultural enterprise (Fig. 1).

From fig. 1. it is seen that sales or distribution logistics is an integral part of the overall logistics system of the agricultural enterprise. Distribution logistics is a set of interrelated functions that are implemented in the process of distributing the flow of goods between consumers. The logistics distribution subsystem is integrated with marketing. Its main purpose - the timely sale of finished products to consumers in the right place at the specified time. The main participants in the process of distribution of agricultural raw materials, products and food are the manufacturer, processor, storage system, wholesale and retail links and the final consumer.

The very concept of "distribution" in the economy is a phase of economic activity, which results in the transfer of ownership of the result of labor. It should be noted that within the distribution subsystem of logistics there are no resources or finished products - they are available outside it. In the process of implementing its functions, there is a close interaction between the agricultural producer and consumers, which form two micro-logistics systems, which are interconnected by a distribution channel. Such channels are a partially ordered set of various intermediary organizations and individuals who help bring goods from the agricultural producer to the final consumer (Pol A. Samuel'son i Vil'yam D. Nordhaus, 2004).

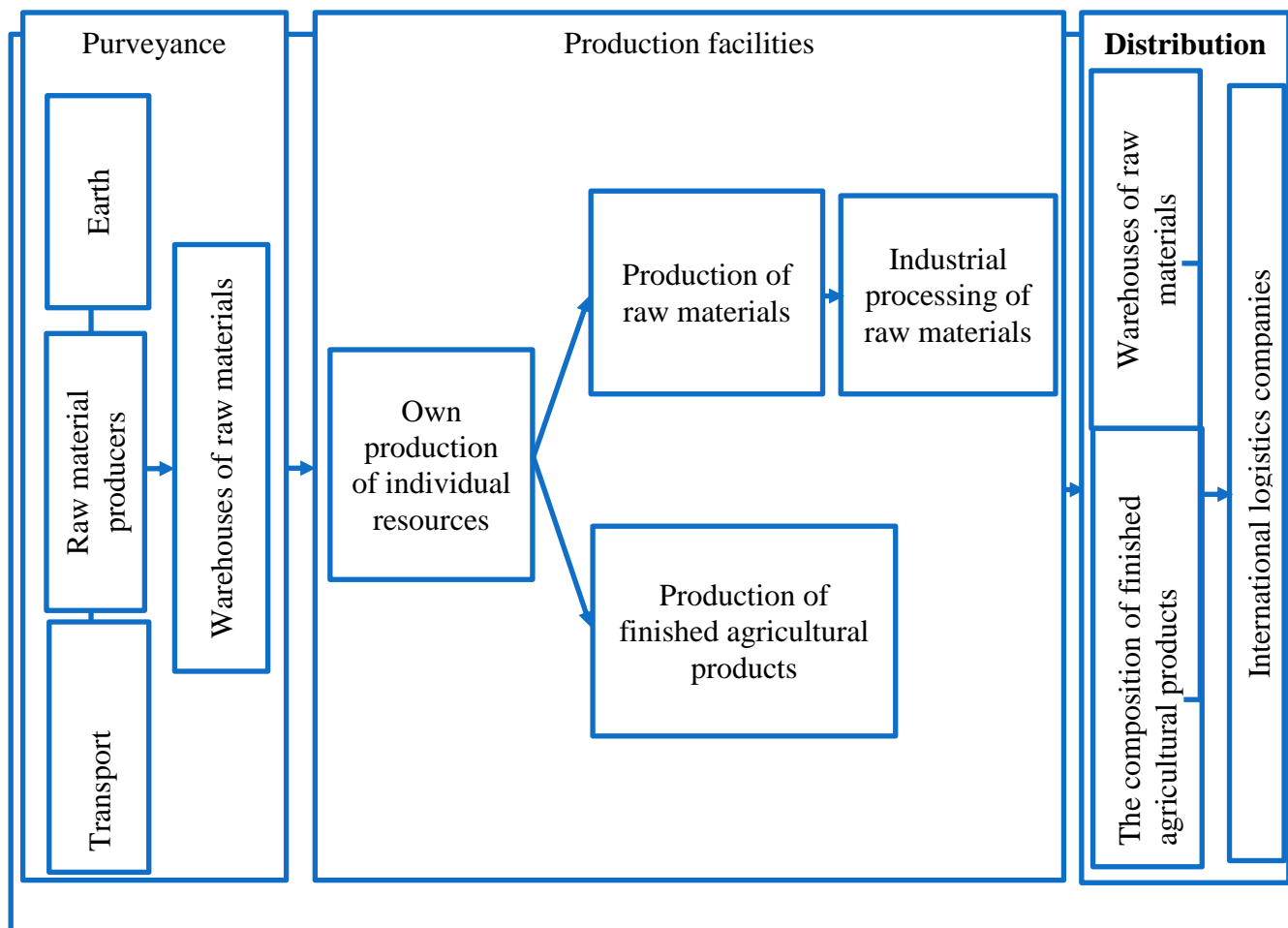


Figure 1. Aggregate scheme of the logistics system of the agro-industrial enterprise  
Source: Own compilation.

After the separation of individual participants in the process of promoting the material flow, the logistics channel is transformed into a logistics chain.

Traffic channels perform a number of important functions:

- 1) conducting market research;
- 2) data collection and analysis for exchange planning and optimization;
- 3) determining the conditions of purchase and sale of finished products;
- 4) sales promotion;
- 5) establishing and maintaining communication with existing and potential consumers;
- 6) coordination of prices;
- 7) production, packaging and sorting;
- 8) organization of goods movement (loading and unloading operations, transportation and warehousing).

In the economic literature there are the following types of distribution channels of agricultural products, depending on the established within the channel of economic institutions:

- government Procurement;
- vertical marketing systems;
- flexible marketing distribution channels;

- Channels with direct links.

Each distribution channel has its own boundaries, among which are the following:

1. Geographical (market area).
2. Economic (control over sales of certain products).
3. Social (ability to interact effectively within the channel).

The overall cost of distribution activities of the agricultural producer depends on the smooth operation of distribution channels. Thus, due to the inefficient functioning of logistics, technical losses of grain are 15% of the annual harvest, and total losses of agricultural products due to underdeveloped logistics are about 35% of the annual volume. And the profit and expenses of the distribution channel are up to 50% of the price of finished products. Therefore, in order to optimize costs, ensure the overall efficiency and competitiveness of the agricultural producer, the issue of organizing efficient distribution channels becomes problematic (Kennet Ye., 1996).

The formation of effective distribution channels of national agricultural producers is determined by the specifics of the agricultural market, seasonality of supply and uniformity of consumption of manufactured products. If the manufacturer sells products directly to the consumer, then such a distribution channel is called zero or direct sales. If the mediator is one - one-level channel, if two - two-level, and so on (Fig. 2).

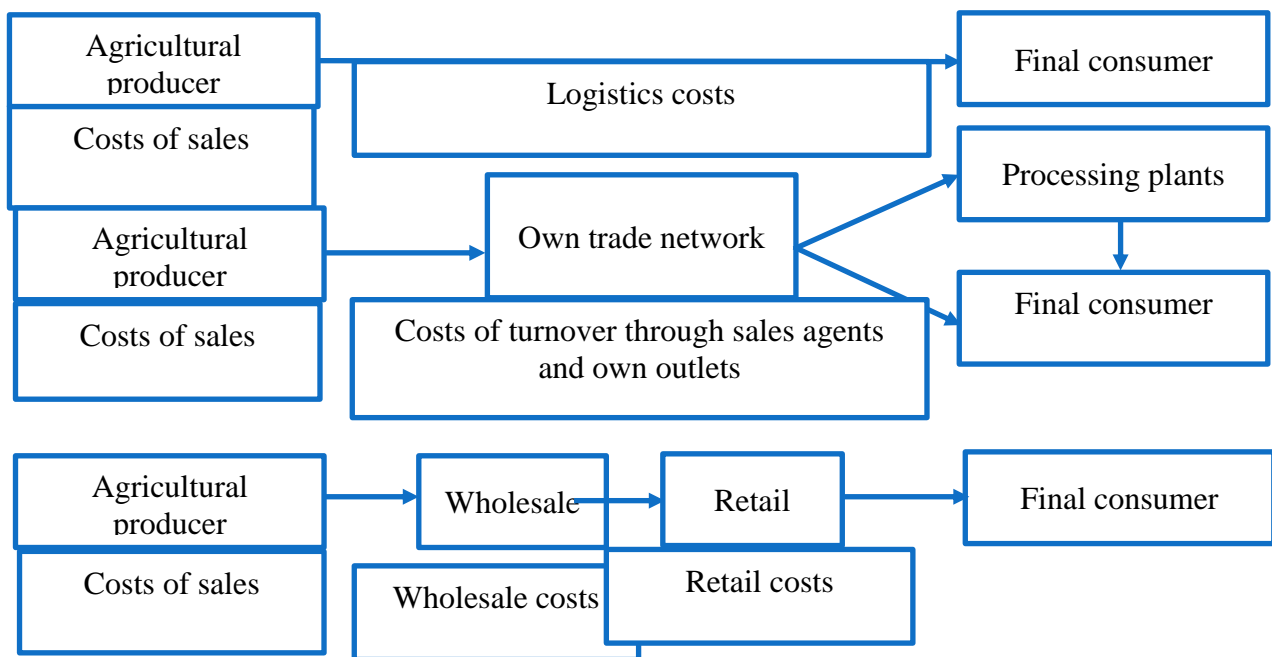


Figure 2. Network schemes of distribution channels of agricultural products  
Source: Own compilation.

It should be noted that such a scheme of distribution channels of agricultural products allows to optimize costs at all stages of the logistics chain, as well as minimize the so-called "transaction costs", which according to D. North and K. Arrow are not just costs of economic entities, but total costs of managing the economy of the logistics system of an agricultural enterprise. Today, the issue of adaptation of the national agricultural producer to the conditions of the world market economy on the basis of a clear organization of economic relations between trade enterprises and suppliers is becoming problematic. Therefore, direct contractual relations are especially important. As for indirect, which are associated with the movement of agricultural products from producer to independent participant in the movement of goods - wholesale company and buyer, they are used mainly to increase their markets, maximize sales and optimize costs, but the agricultural producer loses contact with consumers and control over distribution channels.

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Indirect channels are long, it consists of a larger number of participants and, accordingly, stages of trade, and direct - on the contrary, short. In order to reduce the length of the channel, the agricultural producer can use vertical integration by teaming up with other participants in the distribution channel, such as a wholesaler. In this way, the merged firm will gain a number of competitive advantages, including the optimization of costs for intermediaries, the ability to independently control distribution channels and ensure supply, gain greater independence.

In addition, in order to strengthen the position at its stage of the channel, the agricultural producer can expand (vertical or horizontal integration) - to acquire an enterprise of similar specialization. Thus, the national agricultural producer gets more market share, increases the size of the company, optimizes the cost of promoting its products.

Factors affecting the movement of goods in the distribution channels of agricultural enterprises can be divided into socio-economic, industrial, transport, geographical and trade (Table 1).

Table 1

*Factors influencing the movement of agricultural products*

Group of factors	Influencing factors
<b>Socio-economic</b>	- income level of the population; - population size and density; - submit and customs and tariff regulation of the state economy; - availability of effective market infrastructure.
<b>commercial</b>	- number of retail and wholesale operators in the market; - scale and location of commercial enterprises; - the complexity of the range; - volumes of batches of agricultural products.
<b>Transport</b>	- condition of roads and transport routes; - availability of modern vehicles; - availability of warehouses and equipment for sorting and loading and unloading operations; - norms of shipment of products.
<b>Geographical</b>	- location of production and consumption zones; - climatic specialization of agricultural production.
<b>Industrial</b>	- size and number of production enterprises; - the level of innovation and the use of modern technologies in the manufacture of agricultural products.

Source: Pot'omkin, S. K., 2015.

The efficiency of a multilevel distribution channel depends primarily on the number of consumers and the specialization of the agricultural producer. Trade channels of agricultural products are also classified according to the level of integration and participation of producers:

- conventional channels (formed by networks of independent traders, agents and ancillary enterprises, the purpose of which is to increase only their own profits);
- vertical channels (networks of agricultural producers and intermediaries striving for maximum efficiency of the channel as a whole).

Vertical channels of trade include cooperatives, large agricultural holdings, chains of retail stores and channels in which wholesalers are in the lead. The basis of specialization in distribution channels is to obtain competitive advantages.

The distribution of agricultural products can be divided into several types, each of which has its own characteristics of the organization of effective channels of trade.



*Table 2.*

*Ways to increase the efficiency of different types of distribution channels*

<b>Type of distribution</b>	<b>Ways to increase efficiency</b>
<i>Intensive</i>	Intensive distribution of agricultural raw materials and finished products is characterized by a large number of outlets where goods are sold at low prices. Therefore, the more intensive the distribution, the higher the efficiency of intermediaries in the logistics chain.
<i>Exclusive</i>	A small number of intermediaries who have the exclusive right to sell products in a certain area. Improving the efficiency of distribution of agricultural products is achieved by maximizing sales of agricultural producers, the ability to control pricing and maintain the call sign image of the organization. With the exclusive type of distribution, it will be expedient to use one or two retail outlets for agricultural products in each separate shopping area, while reducing the wholesale and retail trade organizations in the geographical area.
<i>Electoral distribution</i>	Electoral distribution is a synthesis of intensive and exclusive types of distribution. The supplier seeks to increase market share and at the same time to limit it by cooperating only with highly qualified dealers. Using the average number of wholesale and retail organizations, the agricultural producer receives more sales and profits, while maintaining control over the channel of trade.

*Source: Shholokova, O. M., 2011.*

Farmers should choose those distribution channels in which they have the leverage to influence the intermediary's strategy to promote and present finished products to consumers. The degree of such control is determined by the supplier's authority over the channel of movement and the possibility of imposing sanctions on the intermediary.

## CONCLUSIONS

The development of a modern agricultural enterprise involves the implementation of a systematic approach, based on the synthesis of capabilities of production, storage and distribution logistics subsystem. So today, logistics is a key tool for improving the efficiency of agro-industrial enterprises, because it is the organization of efficient distribution channels allows to optimize the movement of goods from the source to the final consumer. The choice of an effective scheme of distribution of agricultural products will minimize costs at all stages of the logistics chain, as well as optimize the "transaction costs" for managing the economy of the logistics system of agricultural enterprises.

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## **ФОРМУВАННЯ ЕФЕКТИВНИХ КАНАЛІВ РОЗПОДІЛУ ПРОДУКЦІЇ ЯК СКЛАДОВА ЕКОНОМІКИ ЛОГІСТИЧНИХ СИСТЕМ АГРОПРОМИСЛОВОГО КОМПЛЕКСУ УКРАЇНИ**

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У статті висвітлено сутність каналів розподілу та розглянуто управлінські аспекти формування та розвитку каналів збуту для агропромислового комплексу України. Проаналізовано проблеми та основні фактори впливу на формування логістичної системи агропромислового підприємства з ефективними каналами збуту національної сільськогосподарської продукції. Сьогодні у процесі реалізації геополітичних переваг національної економіки варто звернути увагу на потенціал національного агропромислового комплексу, який є основним бюджетоутворюючим сектором національної економіки України. Одним із ключових векторів розвитку для інтеграції України у світову економіку є формування ефективних каналів розподілу продукції вітчизняних сільгоспвиробників на експортні ринки. Участь у світовій торгівлі може відкрити нашій країні можливості виходу новий етап розвитку. Ключові слова: логістична система, канали розподілу, торгівля, логістика розподілу, сільськогосподарське підприємство, схеми каналів розподілу, сільськогосподарська продукція. У статті висвітлено сутність каналів розподілу та розглянуто управлінські аспекти формування та розвитку каналів збуту для



агропромислового комплексу України. Проаналізовано проблеми та основні фактори впливу на формування логістичної системи агропромислового підприємства з ефективними каналами збуту національної сільськогосподарської продукції. Сьогодні у процесі реалізації геополітичних переваг національної економіки варто звернути увагу на потенціал національного агропромислового комплексу, який є основним бюджетоутворюючим сектором національної економіки України. Одним із ключових векторів розвитку для інтеграції України у світову економіку є формування ефективних каналів розподілу продукції вітчизняних сільгоспвиробників на експортні ринки. Участь у світовій торгівлі може відкрити нашій країні можливості виходу новий етап розвитку.

**Ключові слова:** логістична система, канали розподілу, торгівля, логістика розподілу, сільськогосподарське підприємство, схеми каналів розподілу, сільськогосподарська продукція.