

співробітника підприємства. Це, в свою чергу, дозволить налагодити процес надання достовірної інформації щодо стану підприємства його власнику та прийняттю своєчасних та виважених управлінських рішень.

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ТРАНСПОРТНА ЛОГІСТИКА НА РИНКУ ЗЕРНА: СУЧАСНІ РЕАЛІЇ ТА ВИКЛИКИ

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TRANSPORT LOGISTICS IN THE GRAIN MARKET: CURRENT REALITIES AND CHALLENGES

Abstract. The research outlines the current state and trends of grain production by agricultural enterprises in Ukraine. It is substantiated that an important issue is to provide conditions for storage and transportation of grain from the producer to the final consumer. The article analyzes the total capacity of simultaneous storage of grain by elevators in the main grain regions. The volumes of grain transportation by different types of transport are analyzed. The specifics of grain cargo transportation in the context of different types of transport are outlined. It is established that the largest grain terminals of Ukraine in terms of transshipment volumes are Yuzhny, Black Sea, Mykolayiv and Odesa. The TOP 10 river terminals of Ukraine in terms of transshipment volume have been identified. The analysis showed that the railway is the main mode of grain transport. It is established that the state of the railway system of Ukraine is the most serious problem and limitation for market participants. At the same time, road transport is used for transportation over relatively short distances. However, it has limitations due to low bandwidth. At the same time, water transport can be an important reserve for increasing traffic. This will be possible only if investment increases and infrastructure is restored. This is especially true in the case of river transport. It is substantiated that the current growth trends of grain transportation and the current situation of transport infrastructure require improvement of logistics quality and the formation of new logistics routes, especially for the development of water logistics.

Key words: logistics, transport, grain, infrastructure, elevators, transportation, efficiency, export.

The problem statement . The topic of supply chain and logistics processes for agriculture and food production is really rather complex. Operators are responsible for all actions carried out throughout the chain working with the logistics of such products. The importance of logistics for the agri-food industry has become increasingly recognized around the world over the years. Wherever you are in the world, it is important that the quality of raw materials is maintained at all times and reaches its final destination in the consumer state. This is especially true of food.

Agriculture is one of the most important sectors of the economy in Ukraine. Today Ukraine is one of the world's leading producers and exporters of grain. The growth of world food needs contributes to the integration of Ukrainian agricultural products into the EU economy. This is key to making Ukrainian agricultural products part of the world economy. However, this result largely depends on the quality of logistics and the development of appropriate infrastructure.

There are prospects and opportunities for increasing food production and supply to markets in other countries considering the existing potential and current trends in the food markets in Ukraine. It is possible to increase the production of raw materials, process products and form food batches with a large share of added value. At the same time, there are reserves for further improvement of logistics because it is currently a weak link between domestic producers and foreign buyers.

Certain shortage of elevators, their obsolescence and the need for modernization is a characteristic phenomenon for the domestic agricultural sector; low quality of road infrastructure is a problem for many regions; the railway needs significant modernization.

The problems of the available logistical support became especially acute in the conditions of signing the association between Ukraine and the countries of the European Union, which significantly increased the volume of trade. In modern economic conditions, the markets of European countries are becoming more accessible to Ukraine, respectively, a significant number of producers enter into trade agreements with partners from EU countries. Ukraine increases the volume of grain exports every year. The above mentioned necessitates the further development of the domestic logistics system using progressive world experience.

Analysis of recent research and publications.

The publications of many researchers focuses on the development of agriculture and logistics. Thus, Andriichuk V.H. studied modern agricultural policy, i.e. its problematic aspects [1]. Many information sites contain information about grain production in Ukraine [2]. Holomsha N.Ye and Dziadykevych O.Ya. studied the prospects of the world grain market [3]. Delz S.V. researched transport approaches to assess the effectiveness of logistics schemes for export grain [4]. The official website of the State Statistics Service of

Ukraine contains information on foreign trade, production and storage of grain [5]. Kvasha S.M. and Ilchuk M.M. carried out the economic substantiation of the program of wheat grain production in Ukraine [6]. Kovalova O.M. assessed the development potential of the grain subcomplex of the Ukrainian economy [7]. Kozak O.A. and Gryshchenko O.Yu. studied the development of the grain industry of Ukraine at the present stage [8]. The logistics of the commodity market is studied in a monograph edited by Burkynskyi B.V. and Lisiuk V.M. [9]. Nikishyna O.V. studied the mechanisms of regulation of the integrated grain market [10]. Information about the company Nibulon developing river logistics is reflected in a number of information resources [11]. Rodionova M.R. investigated general approaches to improving the infrastructure of the grain market [12]. The TOP-15 regions of Ukraine in terms of investment needs in the construction of elevators are presented on information resources [13]. Shvydanenko O.H. studied the economics of the enterprise, i.e. approaches to the formation of logistics chains [14]. Shpykuliak O.H. and Materynska O.A. studied the efficiency of grain production by agricultural enterprises [15]. However, a significant number of issues related to current trends in the development of transport logistics need further research.

The development of grain logistics needs further research. We mean determining the actual state of grain logistics; identification of the main trends of recent years; determining the benefits of freight and the level of efficiency using different modes of transport; formation of proposals and prospects for the development of transportation of grain products, taking into account the existing needs, as well as prospects for growth of agricultural production in Ukraine.

Ukrainian grain logistics was chosen as the object of research, as trends in the agro-industrial complex and growing volumes of grain exports through seaports require finding better ways to improve freight efficiency by reducing costs and optimizing logistics chains.

The aim of the article is to research the current state and prospects of transport logistics in the grain market.

The task of this research is to assess the total capacity of simultaneous storage of grain at existing elevators, analysis of the current state of grain transportation by various modes of transport, ranking of the largest grain terminals in Ukraine by transshipment and outlining short-term and long-term prospects for transport logistics in the grain market.

The main part. Logistics plays an important role in the current conditions of rapid development of international trade. Logistics management may include such business functions as transportation management, fleet management, warehousing, materials handling, order fulfillment, inventory management, and demand planning.

The research of the grain logistics market should be started from the analysis of growing products and the availability of containers for its storage. The TOP regions in terms of total grain harvest are presented in Figure 1. It should be noted that no region has sufficient

capacity to store grown grain. The above mentioned necessitates the planning of logistics chains in order to supply products from producers to domestic and foreign consumers.

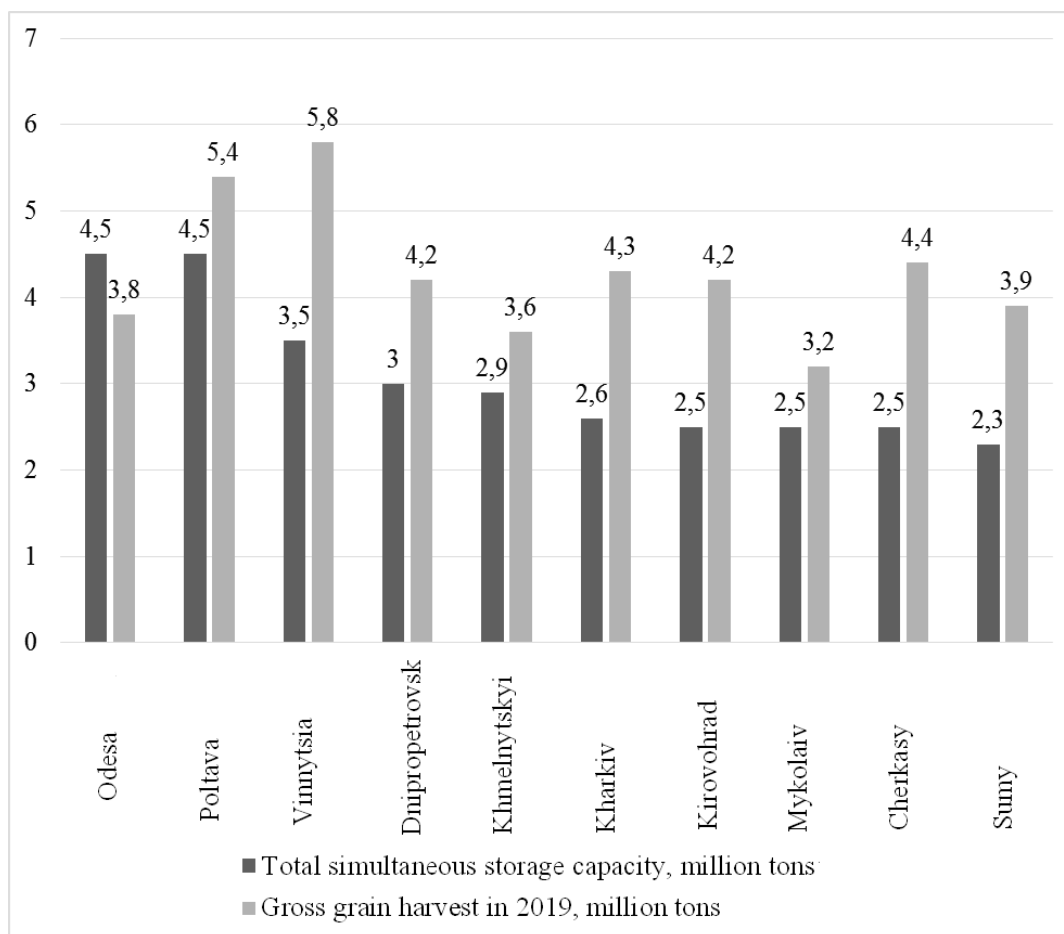


Fig. 1. Total simultaneous storage capacity of elevators

Source: based on data [5].

It should be noted that Odesa, Poltava, Vinnytsia and Dnipropetrovsk regions have the leading positions assessing the elevator capacity for storage of grain crops. In 2010-2020 these regions modernized the existing logistics systems and managed to increase significant storage capacity. This allows producers of these regions to sell their products at a time when prices are most optimal for them.

Manufacturers, packers, processors, distributors, retailers, food suppliers and consumers have a shared

responsibility to ensure the best logistics connection from the producer (from the agricultural enterprise) to the final consumers (they can be in any corner of the planet).

The need to modernize the logistics system is applied to products or goods. Transport is an important component in logistics chains. However, it should be noted that different types of transport are used. Rail transport is the most popular for domestic transportation of products (Fig. 2).

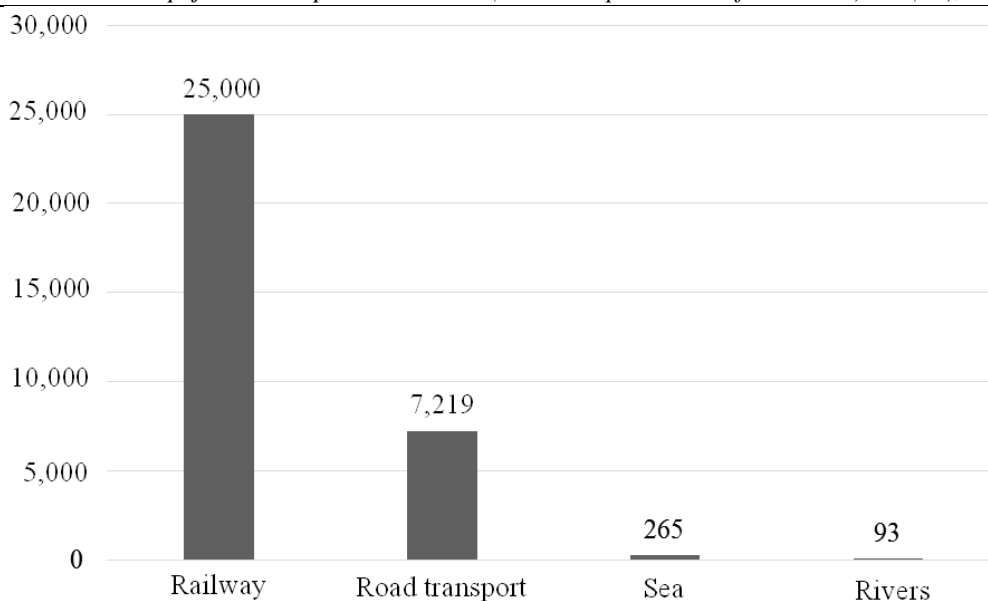


Fig. 2. Volumes of grain transportation by different types of transport, thousand tons, 2019
Source: based on data [5].

Although many small businesses focus on developing and manufacturing their products and services to best meet customer needs, long-distance product delivery is needed. In order for a business to be profitable, you need a well-coordinated logistics system. The more efficiently raw materials can be purchased, transported and stored for use, the more profitable a business can be. Accordingly, an important role is played by transportation.

Each type of transport has its own specifics and features of application, it is manifested in the logistics of

grain. Thus, rail transport has a limited capacity of linear elevators. The problem of road transport in Ukraine is a problematic issue for road transport. As far as water transport is concerned, the problem is to reduce the operational length of rivers (Fig. 3). The above problems of operation of different modes of transport are typical especially in the transportation of grain. As Ukraine is one of the world's leading grain producers, logistics is extremely important.

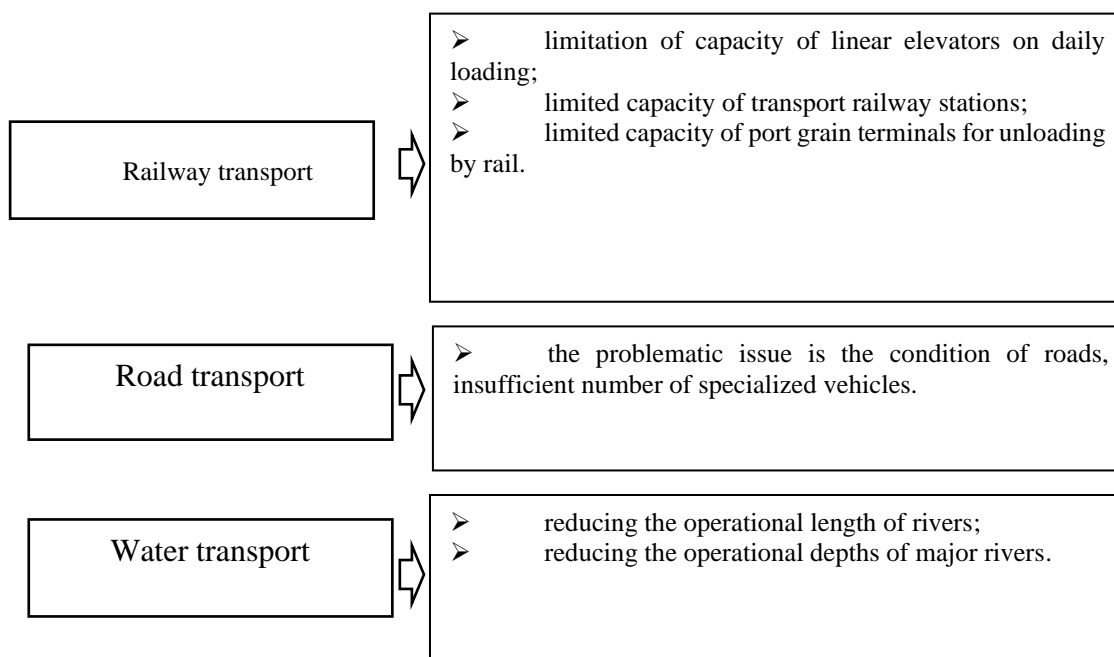


Fig. 3. Specifics of grain cargo transportation in terms of different types of transport
Source: based on data [13, 16].

The study of the specifics of grain transportation in the context of different modes of transport, allows us to argue about the existing problems in logistics.

Currently, the existing transport systems cannot fully ensure the transport of agricultural products from growing areas to ports, which are mainly concentrated

in the south of the country. Excessive load on highways is typical, resulting in significant destruction and damage to the latter.

It is important to ensure timely supply and compliance with logistics chains in the logistics of agricultural products, namely grain. If products cannot be manufactured and shipped on time, customer satisfaction may decline, which will also negatively affect the company's profitability and long-term viability.

The analysis showed that the railway is the main type of grain transport. At the same time, the state of Ukraine's railway system was recognized as the most serious problem and limitation for market participants. At the same time, road transport is used for transportation over relatively short distances. However, it has limitations due to low bandwidth. The development of water transport has significant prospects for Ukraine. Water transport can be an

important reserve for increasing traffic. However, this will only be possible if investment increases and infrastructure is restored.

Considering the specifics of the grain industry we should mention that an important role belongs to grain terminals providing grain transshipment. The largest grain terminals of Ukraine in terms of transshipment volumes are Yuzhnyi STP, Black Sea STP, Mykolayiv STP and Odessa STP (Fig. 4).

The annexation of Crimea had a significant impact on logistics in Ukraine, it necessitated the reformatting of logistics flows. Nowadays the seaport Yuzhnyi is leading in terms of grain transshipment, it is located in the town of Yuzhne on the Black Sea coast. According to open sources of information (American Association of Port Authorities), in 2015 the seaport Yuzhnyi ranked 91st in terms of total cargo turnover among the world ports [16].

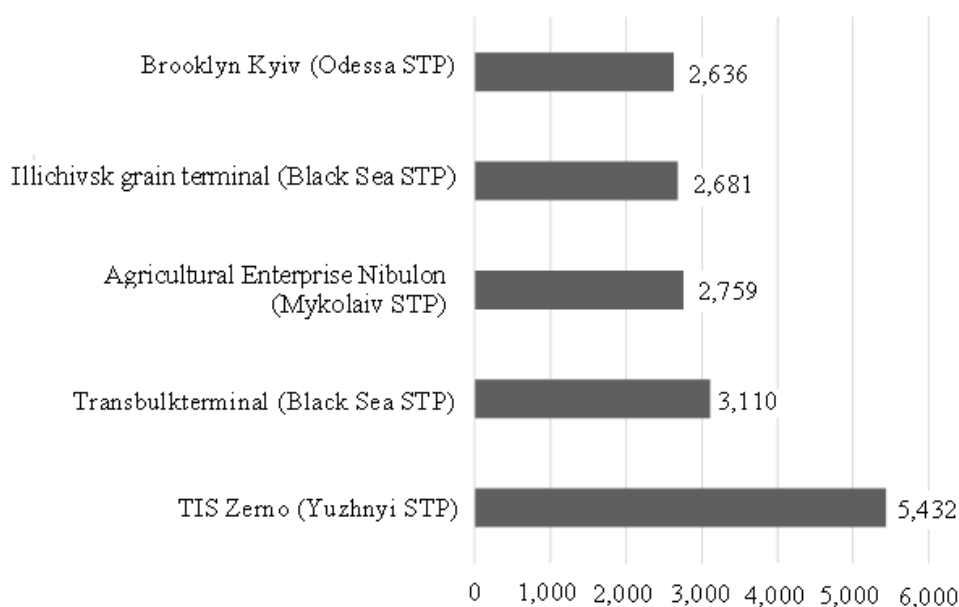


Fig. 4. Most grain-growing terminals of Ukraine after the volumes of crossing, volumes of crossing, thousand tons per year

Source: based on data [5, 13].

Considering the growth of grain production and its exports increase domestic logistics with river transport application is gaining considerable relevance.

In 2019 the top 10 river terminals of Ukraine in terms of transshipment volume are presented in Figure 5. The first place (3.284 million tons) is occupied by the transshipment terminal for transshipment of grain and oil cargo in the city of Mykolayiv, which belongs to Nibulon. The second place (2.2 million tons) is

occupied by the Kyiv river port. Third place (1.6 million tons) is occupied by Zaporizhzhia river port owned by Ukrrihflot. The arrangement of river infrastructure and its adaptation are rather problematic. It is necessary to clear riverbeds and cultivate the area. The above mentioned measures require appropriate public and private funding, creating favorable conditions for attracting domestic and foreign investment.

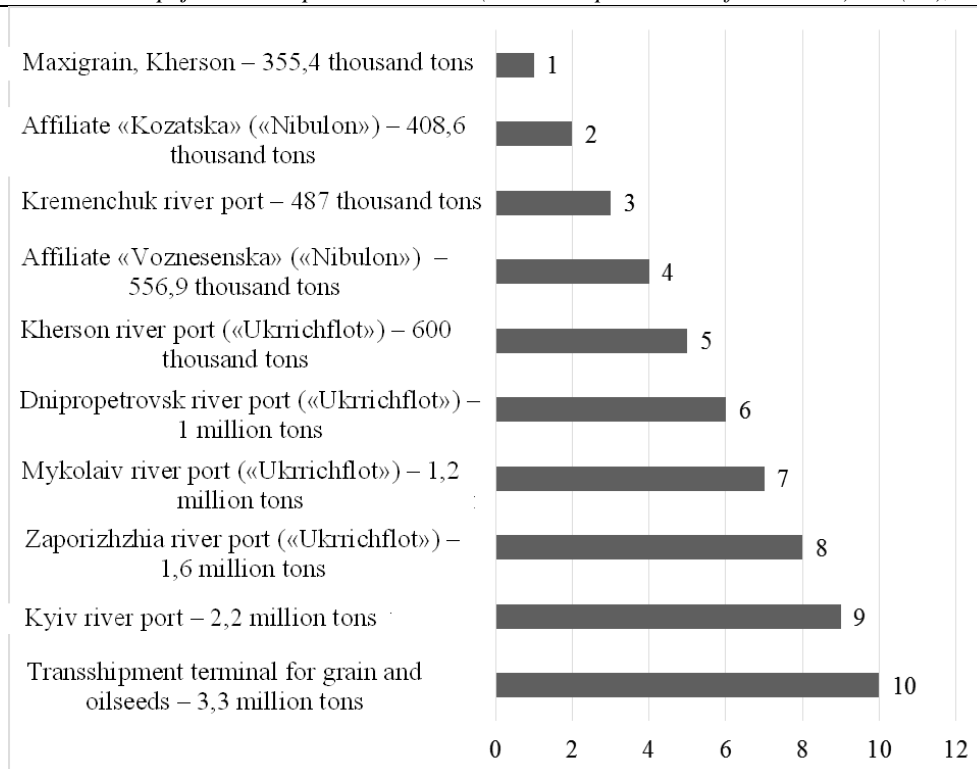


Fig. 5. TOP 10 river Ukrainian terminals by volume of transshipment in 2019
Source: based on data [5, 16].

Over the last two decades, the flow of grain has increased dramatically, mainly due to the effects of elements such as the concentration of production systems and the globalization of sales. The transport of agricultural goods plays an important role in the logistics system and should therefore be evaluated and thoroughly researched to achieve the best results.

Conclusions. Agriculture is one of the most important sectors of the economy in Ukraine. Today Ukraine is one of the world's leading producers and exporters of grain. The growth of world food needs contributes to the integration of Ukrainian agricultural products into the global logistics system. This is key to making the Ukrainian economy part of the EU economy. However, this result will depend on the available logistics.

It is important to ensure timely supply and compliance with logistics chains in the logistics of agricultural products, namely grain. It should be noted that none of the regions of Ukraine has sufficient capacity for grain storage, which necessitates investment in this industry.

Taking into account the specifics of the grain industry, an important role belongs to grain terminals providing grain transshipment. Yuzhnyi STP, Black Sea STP, Mykolayiv STP and Odessa STP are the largest grain terminals in Ukraine in terms of transshipment volumes.

Current trends in the growth of grain transportation and the current situation of transport infrastructure require improved logistics quality and the formation of new logistics routes taking into account the development of water logistics and infrastructure investment.

The study found that the annexation of Crimea had a significant impact on logistics in Ukraine, it necessitated the reformatting of logistics flows and the need to modernize other existing logistics hubs. As of 2019, the championship in terms of grain transshipment belongs to the seaport located in the city of Yuzhne. At the same time, the change in logistics routes has caused an excessive load on the roads. Currently, the existing transport systems (highways) cannot fully ensure the transportation of agricultural products from growing areas to ports mainly concentrated in the south of the country. The ongoing process of road construction and repair requires significant investment and slows down the movement of agricultural products. The above necessitates the systematic development of various modes of transport.

A promising area of further research is the study of foreign experience, namely European, on the development of the logistics system. It is important for Ukraine to study approaches to the introduction of green logistics in order to minimize the negative anthropogenic impact on the environment.

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УДК 339:338:711, 332.12

ГРНТИ 06.52.17

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SUSTAINABLE URBAN DEVELOPMENT IN MODERN CONDITIONS

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Abstract. The article examines and analyzes global and national goals of sustainable urban development. The results of the First Voluntary National Review of SDG in Ukraine have been evaluated. Positive results were noted in terms of insuring the availability of housing; increasing the number of monuments of national importance included in the State Register of Immovable Monuments of Ukraine. Unsatisfactory results of the review are analyzed and ways to overcome obstacles to achievement are identified. It was found that in modern Ukrainian realities the vector of sustainable urban development is inclusion as a vector of economic development and direct participation of the population in its achievement, including decision-making on economic growth, based on full access to their rights and opportunities. In order to solve the problem of sustainable urban development on the basis of inclusion, which we have identified as fundamental, a number of measures have been proposed.

Key words: city, region, sustainable urban development, inclusion, global goals, population, business.