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World Experience of Territorial Communities Infrastructure Development

Abstract. *Introduction. The article is aimed at defining the essence of infrastructure and infrastructure components of territorial communities. Research of world experience in the development of infrastructure of territorial communities, namely some of its components.*

Purpose. *The purpose of the article is to study the world experience of infrastructure development of territorial communities*

Results. *It is established that the production infrastructure of the territorial community consists of transport, information, environmental and recreational components. Social infrastructure consists of housing and communal services and the educational component, medical and social and cultural support. It is determined that the development of infrastructure depends on the specifics of industries and communities and is carried out in accordance with changes in the production sphere. A review of the Polish experience in the development of the transport component of the production infrastructure of territorial communities. It is proved that after joining the European Union, Poland's funding opportunities have significantly improved, in particular, the largest share in the structure of financial support from the EU fell on transport infrastructure, namely the construction of roads. It has been established that stable incomes that allow Poland to plan and implement infrastructure projects of territorial communities are local incomes, real estate tax and land tax on which a private house or apartment building stands. It is investigated that the peculiarity of Estonia's experience in the development of the educational component of the social infrastructure of territorial communities is its financing, which is carried out from the state budget, and not the educational costs are covered by the local budget. Examining the experience of the development of the environmental component, the experience of Canada and the EU countries was considered.*

Conclusions. *The basis for the formation of territorial communities is certainly high-quality infrastructure, in particular, the availability of quality roads, water supply network, education, ecology, etc. In modern conditions, local self-government uses a new approach to management as the community understands what to spend money on. In particular, the community leadership is accountable to the people who live there. Therefore, the funds are primarily spent on improving living conditions in the community. The study of world experience has shown the feasibility of transferring management levers from the state to the regional and municipal levels. Thus, the expansion of the powers of local governments will enable communities to solve their problems regarding the development of infrastructure. In addition, taking into account foreign experience will help intensify the investment process by directing part of the proceeds, taxes and fees to the development of infrastructure of local communities. The article mentions only the experience of developing some components of the infrastructure of territorial communities. Therefore, it seems appropriate to further study the world experience of development of other components of the infrastructure of territorial communities and develop on this basis measures to adapt it to domestic territorial communities.*

Keywords: *territorial community; infrastructure; production; social; infrastructure components; foreign experience.*

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Світовий досвід розвитку інфраструктури територіальних громад

Анотація. *У статті досліджено сутність та складові інфраструктури територіальних громад. Встановлено, що виробнича інфраструктура територіальної громади складається з транспортної, інформаційної, екологічної та рекреаційної складової. Соціальна інфраструктура складається з житлово-комунального господарства та освітньої складової, медичної та складової соціально-культурного забезпечення. Визначено, що розвиток інфраструктури залежить від специфіки галузей і громад, здійснюється відповідно до змін у виробничій сфері. Проаналізовано польський досвід щодо розвитку транспортної складової виробничої інфраструктури територіальних громад. Доведено, що вступивши до Європейського Союзу можливості фінансування Польщі значно покращились., зокрема найбільшу питому вагу в структурі фінансової підтримки з ЄС припадало на транспортну інфраструктуру, а саме на будівництво доріг. Встановлено, що стабільними доходами, які дозволяють Польщі планувати та реалізувати інфраструктурні проєкти територіальних громад є місцеві доходи, податок на нерухомість, а також податок за землю на якій знаходиться приватний житловий будинок чи багатоквартирний будинок. Досліджено, що особливістю досвіду Естонії щодо розвитку освітньої складової соціальної інфраструктури територіальних громад є його фінансування, яке здійснюється з державного бюджету, а не освітні витрати покриває місцевий бюджет. Досліджуючи досвід розвитку екологічної складової було розглянуто досвід Канади та країн ЄС.*

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Formulation of the problem. As a result of decentralization reform, local communities have gained new opportunities to develop their own infrastructure. Due to this reform, there was a 41.5-fold increase in state support for regional development and infrastructure development of territorial communities, which provided an opportunity for regions and communities to implement more than 12 thousand projects in 2015-2019. At the same time, most components of the territorial communities infrastructure of Ukraine in today's conditions are in unsatisfactory condition. This especially applies to the transport component (unsatisfactory condition of roads, high level of moral and physical deterioration of material and technical base), information infrastructure (the deterioration of fixed assets, insufficient coverage of the Internet), environmental component (insufficient control over emissions, no permanent accounting waste, not always compliance with sanitary and epidemiological norms in the construction of new facilities, educational and medical component (outdated and imperfect system of territorial location of social infrastructure), etc. Also, the main problem of infrastructure development of domestic territorial communities is the lack of budget funds for its effective development in communities [1]. Therefore, it is advisable to study the world experience of infrastructure development of territorial communities.

Analysis of recent research and publications. The scientific literature presents many works that highlight the theoretical foundations and practical aspects of infrastructure development. The formation and development of social infrastructure were considered in the works of T. Bashinsky [9], K. Dubych [5], S. Kyrychenko [5], L. Mishchenko [1], the study of financial resources for the development of production infrastructure was done by I. Abramov Kovalenko, O. Vlasiuk, Y. Nabatova, T. Taukesheva and others. Foreign experience in the development of territorial communities was studied by such scientists as: K. Vashchenko, O. Boryslavska, Y. Kovbasiuk, I. Kostyniuk and others. Despite the significant contribution of these scientists in the development of theoretical and practical aspects of the development of territorial communities, in particular their infrastructure, in-depth study requires the implementation of world experience for the development of infrastructural communities.

Formulation of research goals. The purpose of the article is to study the world experience of infrastructure development of territorial communities.

Outline of the main research material. Infrastructure plays a key role in the development of the economy of a territorial community, as its existence is associated with the state of productive forces and the territorial division of labor, as well as the efficiency of material production. To ensure the provision of all necessary services to citizens, a capable territorial community must have the necessary infrastructure, including premises for staff of relevant services and departments of executive bodies. Part of the territorial communities, which is formed around the current district centers and cities of regional importance, is already provided with the necessary premises. In particular, cities of regional significance already have the appropriate powers with the appropriate infrastructure. In the district centers, the local self-government bodies of the territorial communities will receive the existing infrastructure and powers that the district state administrations and district councils have today. Other territorial communities, in order to become able, must take care of providing the necessary administrative facilities, especially for the location of newly formed executive bodies: services, departments, divisions [2].

At the same time, the development of infrastructure depends on the specifics of industries and communities and is carried out in accordance with changes in the production sphere. Note that the current structure of production is characterized by a growing focus not on the industry but on the regional management system. Infrastructure is a set of industries and sub-industries, the main functions of which are production services and ensuring economic circulation in the national economy. In turn, the infrastructure consists of production and social component (fig. 1) [1].

Production infrastructure is a part of the infrastructure that provides services of a production nature, ie provides connections in the production sphere of the economy.

Along with this, the production infrastructure of territorial communities consists of such components as:

- transport component, which provides a set of transport routes and points of all modes of transport and ancillary equipment aimed at direct maintenance of roads and transport points [3]. Business activity and the amount of revenues to the community budget and the social welfare of its population depend on the level of development and efficiency of its functioning.
- component of communication (information infrastructure) is a system of information equipment and technologies, electronic communication, information services that provide information activities in the local community, provide services in the process of information transfer, as well as those responsible for information support of social spheres, local and state administration;

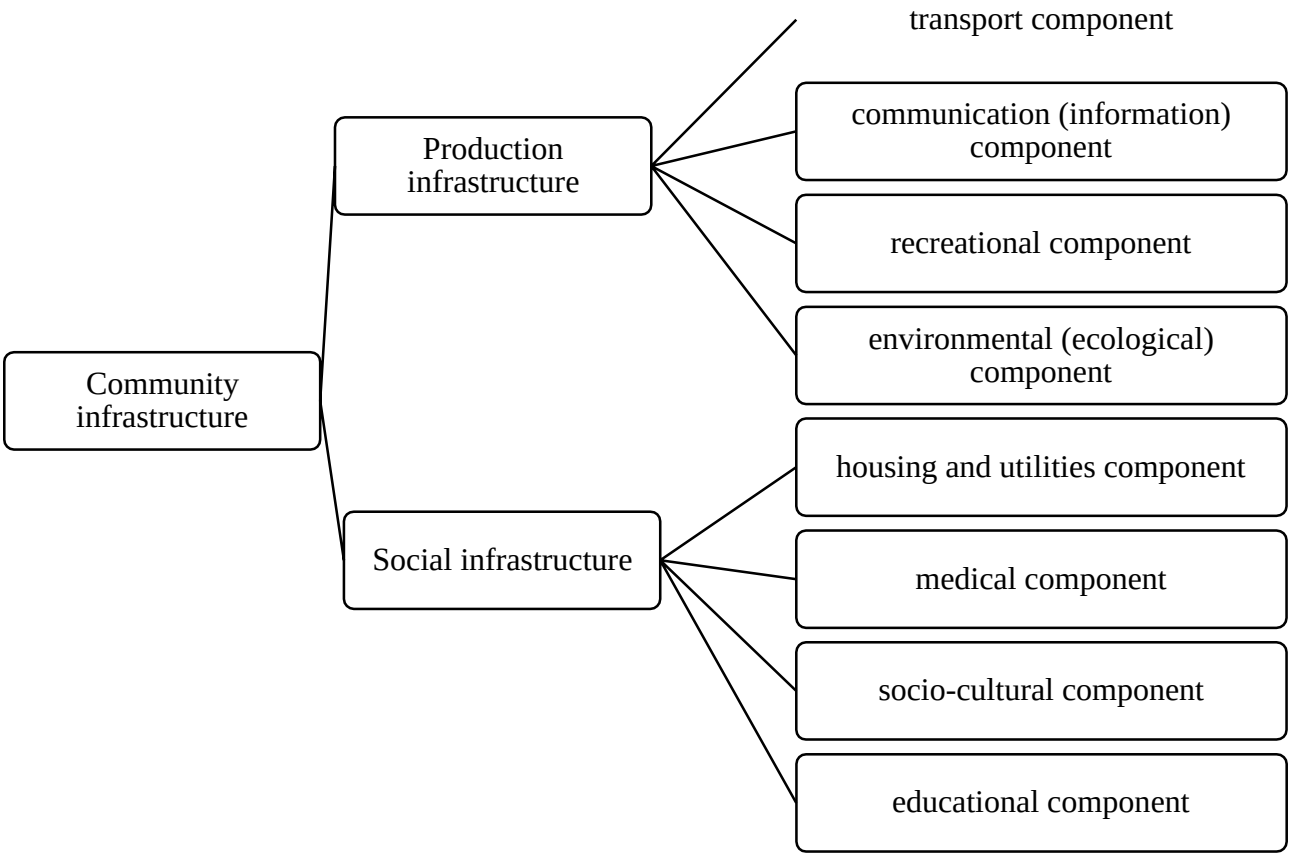

Figure 1 – **Components of the infrastructure of the territorial community**

Source: formed by the author

- environmental (ecological) component is a socio-ecological subsystem, a dynamic complex of interconnected natural, natural-anthropogenic and artificial objects and systems, objects and phenomena that provide living conditions for the population of the territorial community;
- the recreational component includes the following elements: accommodation establishments, food establishments, leisure and household service establishments, transport infrastructure, communication and information support, human potential [4].

Social infrastructure is a set, or complex, of industries, the purpose of which in the social division of labor is to meet the needs of the population in socio-domestic and socio-spiritual services. The social infrastructure of the territorial community consists of:

- a component of housing and communal services, considered as a complex of subsectors that ensure the functioning of engineering infrastructure of various buildings of settlements, which creates convenience and comfort of living and staying in them by providing them with a wide range of housing and communal services. Housing and communal services are one of the important and priority branches of the national economic complex, which ensures the vital activity of the territorial community and significantly influences the development of various relations in the state;
- educational component, which provides a set of institutions, educational and other educational institutions that provide educational services, including training, retraining and advanced training, as well as through lifelong learning;
- medical component, which is considered to be a sufficient number of medical-treatment and medical-preventive institutions, including ambulance and primary emergency care, family medicine, diagnostic centers, laboratories, pharmacies, sanitary and epidemiological services, etc .;
- component of socio-cultural support, which provides for the organization and enterprise, various agencies, communal property, etc., providing services to meet the needs of the population in cultural, spiritual and sports development, recreation, leisure, tourism, health, etc.

As mentioned above, most of the infrastructure components of the territorial communities of Ukraine today are in unsatisfactory condition. Therefore, to solve these problems it is necessary to study the world experience of infrastructure development of territorial communities.

Transport is the basis of trade infrastructure, significantly affects the competitiveness of certain sectors of the local community. At the same time, the impact of the transport component of the production infrastructure on the economy of the territorial community is difficult to overestimate.

Therefore, in recent years in European countries, special attention is paid to the modernization of transport infrastructure [5]. Its development and improvement is one of the ways to grow the economy of the territory, which is manifested in the intensity of development of economic relations, transport hubs, mobility of delivery and services. Therefore, achieving economic growth is possible with appropriate transport infrastructure.

Consider the experience of Poland in the development of infrastructure of territorial communities (voivodships). It is worth noting that Poland's accession to the European Union in 2004 gave the country a chance to quickly rebuild its transport infrastructure and improve its quality standards due to increased financial capacity. As a result of the administrative-territorial reform in Poland, which was adopted in 1998 and entered into force in 1999, the administrative division took place on three levels.

Thus, as a result of the reform, 478 gminas (municipalities or communes) were formed on the territory of Poland, 373 counties appeared at the regional level (they can also be called counties or districts), from which 65 counties have the status of separate cities - cities on rights of counties. Note that the new territorial entities have received broad powers, including responsibility for the implementation of regional development policy, including its own infrastructure [6, p. 6]. Regional self-government bodies received the right to independently establish strategies and development plans, as well as to develop programs and projects aimed at their implementation at the voivodship level [7, p. 7]. At the same time, the existing potential for the development of transport infrastructure facilities of the new territorial formations of Poland was effectively used and developed through its translation into market principles of operation.

By joining the European Union (EU), Poland's funding opportunities have improved significantly. The largest share in the structure of financial support from the EU fell on transport infrastructure, namely the construction of roads. Thus, in the period from 2004 to 2013, transport projects accounted for 36% of the total cost of all project financing agreements, from 25% in Kuyavian-Pomeranian Voivodeship to approximately 45% in Łódź Voivodeship [8 p. 20]. It is also worth noting that since 2004, the World Bank, the European Bank for Reconstruction and Development and the European Investment Bank have allocated significant sums for the development of transport infrastructure.

Local revenues are a stable income that allows Poland to plan and implement infrastructure projects of territorial communities. Also, the tax remains in the gmina, which is paid in the form of a «tax card», which is in fact the equivalent of our single tax. In a certain percentage, the budget of gminas, counties and voivodships includes shares from the personal income tax (PIT) and from the profit of enterprises.

A big advantage of the Polish experience in the development of transport infrastructure is that the road is the responsibility of different levels of self-government: gminas, counties, voivodships and are still national. Therefore, when a pothole appears on the road, it is not necessary to write letters to the Prime Minister or the President, but it is enough to address this question to the mayor of the gmina.

Repair and construction works of the transport infrastructure are also financed from local budgets, and if there are not enough funds, the local council decides to take a loan, which then will be paid back. But there are other examples of resolving this issue. For example, some municipalities have issued bonds to finance infrastructure projects. An example of this can be the issuance of municipal bonds in Gdynia in 1996, which allowed to purchase of several dozen buses with low suspension [9]. The bonds allowed communes to buy capital on a competitive basis. They have made it possible to finance long-term investments efficiently and effectively. The ventures, which were created as a result of the bond issue, were aimed at stimulating the future economy of local communities. Through municipal bonds, local governments have been able to obtain their shares in investments, which could, in turn, enable them to attract funds from the European Union through programs such as PHARE and ISPA. At the same time, bonds have become a means of actively involving local communities. They gave them the opportunity to get new and attractive investors. Through the issuance of municipal bonds, local communities have been able to make investors, funds and banks aware of them as reliable and innovative partners [10, 11].

In addition, one of the important local taxes, which partially provides the opportunity to build roads and other social and infrastructural facilities, is the real estate tax, the land tax on which a private house or apartment building stands. For commercial premises used for offices or other economic activities, the amount of such real estate tax is many times higher.

Thus, the financial self-sufficiency of local communities, which occurred as a result of EU accession and administrative-territorial reform, made it possible to maintain most transport infrastructure facilities in good condition, as well as to achieve certain synergy effects due to the combined efforts of local governments and business structures. , which implemented investment projects in the field of transport infrastructure. As a result, the modernization of transport infrastructure has become sustainable and balanced and its results have led to positive changes in other areas of the economy.

The social infrastructure of domestic territorial communities is one of the dominant factors in ensuring the satisfaction of diverse human needs and regional development.

Most countries in the world prioritize the educational component of social infrastructure, as they consider it a long-term investment in the future. Decentralization is one of the key approaches in the management of education and the formation of strong and independent local governments in the EU [12].

The development of the educational component of social infrastructure in Estonia is taking place with a dominant position of local governments. In the 1990s, the government transferred preschools to urban and rural municipalities (here called parishes). Subsequently, reforms were carried out to consolidate them. The development of secondary education is financed in Estonia through the education subvention and additional revenues of municipalities. The educational subvention finances the salaries of teachers and their professional development, the salaries of the school administration, school meals, and the payment of textbooks. Other expenditures are financed by the local government at its own expense, including utilities, school cleaning, and the work of social workers and psychologists.

The issue of school network consolidation is the responsibility of municipalities. At the same time, municipalities received the right to fully dispose of money for education, to close and build schools and kindergartens. And the schools themselves make decisions about the curriculum and hire or fire teachers. At the same time, many administrative services, such as - bringing students to school, cleaning the school is solved with the involvement of professional companies (carriers, cleaning, etc.).

The development of the educational component of the social infrastructure of local communities in Estonia presupposes strict adherence to the principle of "money follows the student", which allows educational institutions to compete for each student. Such competition in the schools of Estonian communities is particularly fierce, because if a student moves to another school outside the municipality, he must transfer money for his education, not only the funds of the education subvention allocated by the state, but also its own financial resources for student education. . The educational subvention here is received not only by public educational institutions, but also by private ones [13].

An important factor is that when allocating funds for the school, the municipality takes into account the number of students, the location of the school and the special educational needs of children. At the same time, if the state subvention is not used in full, the saved funds can be used to improve education, but in no case for non-educational needs. The balances can be, for example, if you find a cheaper option for in-service teacher training or buy teaching materials that can be used not by one student, but by the whole class [14].

Thus, the development of the educational component of the social infrastructure of the territorial community (parish) of Estonia is financed entirely from the state budget, and not the educational costs (utilities, salaries of non-teaching staff) are covered by the local budget. At the same time, the state sells the property of optimized educational institutions, thus directing these funds to the development of the material and technical base of the educational infrastructure.

Good ecology is the well-being of the community. But not every community has enough opportunities to address environmental issues. This is especially true for communities with underdeveloped infrastructure and facilities. The environmental component of product safety in the literal sense should be considered primarily as a type of public good, the creation of which should be focused on environmental policy.

According to research, for some environmental experts, the only area in which local governments are endowed with detailed, substantive functions and powers is the management of household and other waste, as well as drinking water supply.

World experience shows that waste sorting and recycling can not only make rivers and wastewater drinkable, but also significantly reduce the consumption of imported energy resources, as well as reduce the cost of many goods and production. In rural areas of the EU, waste disposal services cover more than 95% of the territory. The practice of these countries shows that the solution to the problem of waste in rural areas should be sought at the municipal level. It is due to the high level of development of self-organization of municipalities that it has become possible to implement a number of rather costly infrastructure projects for waste recycling.

For example, the experience of Germany shows that at the municipal level there is a Center for the Improvement of Local Self-Government, which is funded by the contributions of the communes. It prepares regulations that are not normative in nature, but are recognized and used by almost all communes. In particular, the Center has developed a list of competencies of local administrations, which consists of thematic sections (management, social sphere, waste disposal), and this list is generally followed by all communes.

At the same time, foreign experience shows that when solving tasks that go beyond the capabilities of one small municipality (for example, the construction of a waste processing plant), municipal associations are created with neighboring settlements. For example, in Finland there are 262 joint municipal councils that cooperate in the field of electricity and water supply, waste management, vocational education, child protection and more. From a legal point of view, inter-municipal councils are independent financial and administrative bodies [15]. They have the right to set

their own taxes and form their own budget from state grants and municipal contributions, the amount of which is determined by the participating municipalities.

The experience of the Balkan countries is a successful example of the development of the ecological component of the production infrastructure. An important factor in achieving results in these countries is the effective interaction of private operators with the authorities responsible for waste management. The joint efforts of public authorities and private operators have allowed not only to generate demand for modern mechanisms for solid waste management, but also to implement these mechanisms more efficiently than municipal operators could do if they worked independently.

Quite effective foreign experience in the development of the environmental component of the production infrastructure is the introduction of a coordinating agent as a separate structure or non-profit organization with exclusive or partial rights to handle waste generated in a particular area. Coordinating agents enter into agreements and settlements with organizations that provide services and operate the relevant infrastructure. Within such a system, the coordinating agent is empowered to manage waste streams, select service providers and set tariffs for consumers. The municipality is only one of the customers of services (for example, for garbage removal from public places, cleaning of territories and provision of other services within the public sector). In particular, the financial capacity of local budgets is often limited. The use of the most efficient processing technologies and the scale effect allow to reduce the unit cost of solid waste processing [15].

A study of Canada's experience has shown the Government's significant contribution to the development and dissemination of tools and resources that support local governance in waste management. For example, Canada's Department of Natural Resources has supported the development of a guidance document to assist municipalities in developing waste management systems. Attention is also paid to projects and utilization of landfill gas with energy production. The government has supported a number of infrastructure projects aimed at improving municipal solid waste disposal systems.

Infrastructure projects, including in the field of waste management, are funded in Canada by municipal funds. For example, the Canada-Northwest Territories Municipal Rural Infrastructure Fund (MRIF) stipulates that twenty percent of community taxes should be used to fund "green projects" that use innovative technologies and practices.

In addition to specialized funds, the municipal waste collection system is financed by municipalities through special payments from households or municipal taxes, and in some countries there is a “pay for what you throw away” system.

Conclusions. From the above we can conclude that the basis for the formation of territorial communities is certainly a quality infrastructure, in particular, the availability of quality roads, water supply network, education, ecology and more. In modern conditions, local self-government uses a new approach to farming as the community itself understands what to spend money on. In particular, the community leadership is accountable to the people who live there. Therefore, the funds are primarily spent on improving living conditions in the community. The study of world experience has shown the feasibility of transferring management levers from the state to the regional and municipal levels. Thus, expanding the powers of local governments will enable communities to solve their problems regarding infrastructure development. In addition, taking into account foreign experience will help intensify the investment process by directing part of the proceeds, taxes and fees to the development of infrastructure of local communities. The article mentions only the experience of developing some components of the infrastructure of territorial communities. Therefore, it seems appropriate to further study the world experience of development of other territorial communities infrastructure components and develop on this basis measures to adapt it to domestic territorial communities.

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