

SCIENTIFIC HORIZONS

Journal homepage: <https://sciencehorizon.com.ua>

Scientific Horizons, 26(5), 137-150



UDC 330

DOI: 10.48077/scihor5.2023.137

Strategy of investment attraction for the development of rural areas for the economic restoration of the agricultural sector

Larysa Vdovenko*

Doctor of Economic Sciences, Professor
Vinnytsia National Agrarian University
21008, 3 Sonyachna Str., Vinnytsia, Ukraine
<http://orcid.org/0000-0002-6283-2385>

Oksana Ruda

PhD in Economics, Associate Professor
Vinnytsia National Agrarian University
21008, 3 Sonyachna Str., Vinnytsia, Ukraine
<https://orcid.org/0000-0002-3266-7470>

Olena Koval

PhD in Economics, Associate Professor
Vinnytsia National Agrarian University
21008, 3 Sonyachna Str., Vinnytsia, Ukraine
<https://orcid.org/0000-0003-4192-4456>

Mykola Horlachuk

PhD in Economics, Associate Professor
West Ukrainian National University
46009, 11 Lvivska Str., Ternopil, Ukraine
<https://orcid.org/0000-0001-8030-1193>

Vasyl Herasymchuk

Postgraduate Student
Vinnytsia National Agrarian University
21008, 3 Sonyachna Str., Vinnytsia, Ukraine
<https://orcid.org/0000-0002-9438-9760>

Article's History:

Received: 2.03.2023

Revised: 12.04.2023

Accepted: 10.05.2023

Suggested Citation:

Vdovenko, L., Ruda, O., Koval, O., Horlachuk, M., & Herasymchuk, V. (2023). Strategy of investment attraction for the development of rural areas for the economic restoration of the agricultural sector. *Scientific Horizons*, 26(5), 137-150.

Abstract. The research aims to study the implementation of a strategy for attracting investments to develop rural areas, which, based on the use of an investment platform and stimulation of business processes, allows for accelerating the reconstruction of infrastructure facilities in the countryside, involving interested investors in the cycle of economic restoration of the country's agrarian sector. The research was conducted using the following methods: analysis of indicators in the structure of foreign investments; analogies and comparisons of directions of capital investments by private investors for the development of rural areas; inducing macro factors that hinder the implementation of investment policy; synthesis of indicators of the profile matrix of SWOT analysis and PEST analysis; creation of spatial models of landscapes of investment sites. The results of this study are the identification of priority foreign investment companies of the countries



Copyright © The Author(s). This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (<https://creativecommons.org/licenses/by/4.0/>)

*Corresponding author

of the world, which ensure the attraction of direct foreign investments in the agricultural sector of the economy of Ukraine. Based on SWOT-analysis and PEST-analysis matrix profiles, macro-factors of the internal and external investment environment of rural areas are determined, which have a significant impact on the acceleration (inhibition) of the implementation of the investment platform and stimulation of business processes for the reconstruction of infrastructure facilities. A three-level profile of the landscape of the platform of investment and stimulation of business processes for the reconstruction of infrastructure objects of rural areas in Ukraine was modelled

Keywords: infrastructure facilities; rural areas; capital investments; strategic planning; budgetary investments; private investors

INTRODUCTION

Existing state regulation tools for ensuring the stability of investment infusions for the development of rural areas in the country prove their inability to influence positive changes due to the negative consequences of the war, which multiplied the risks and further worsened the socio-economic condition of rural communities that are on the verge of "survival". Moreover, the existing trend of economic cycles, from the point of view of attracting and distributing investment flows in the state for the development of rural areas, cannot ensure the stability and efficiency of their use even in the short term (Lobas, 2012; Usova, 2013).

Therefore, the restoration of rural areas requires intensive measures aimed at expanding the format of the investment landscape between the centres for the distribution of investment resources for the village restoration under the currently existing mechanisms and models for the implementation of the strategy of attracting investments with their maximum return in the income structure of rural communities. This reduces the dependence of the development of rural areas not only on the economic cycles of the agricultural sector but also on the influence of the internal and external macro-environment of the country, in particular export-import relations, the number of financial structures, population migration outside the country, etc.

It should be noted that at the stage of restoration of rural areas, considering the peculiarities of modern macroeconomic trends, investments should be made by those entities of economic activity and institutions that can accelerate rural infrastructure development. The study of innovative systems of the agrarian sector of the economy and the principles of cyclical investment development of rural areas was carried out by Haji (2021), who focused on modern and future trends in the development of rural infrastructure.

At the same time, authors such as Abreu *et al.* (2022), Woollett *et al.* (2022), and Carson *et al.* (2022) focus on the use of investment platforms as a new form of safe financing for the development of rural areas, provided that the agricultural sector is economically viable. At the same time, in modern scientific practice, there is a lack of complex studies on the structural development and functionality of the investment platform of rural areas, considering the modern development of the agrarian sector of the economy. O. Lazareva (2021)

believe that the functioning of each rural settlement, the development of its infrastructure and the income of its inhabitants should be ensured at the expense of optimizing the use of agricultural land, regulating prices for agricultural products, organizing the agricultural market, that is, at the expense of the agricultural sector.

A. Marushchynets (2018) considers the transformation of the agrarian sphere as a process of changing the institutional, sectoral, and territorial character in the system of infrastructural and socio-economic development of the region, caused by the transformation of the entire economic system. Key attention from the point of view of social geography during the consideration of transformational processes in the agrarian sphere of the region should be devoted to the improvement of investment policy directions in the territorial aspect.

The priority of this research is the justification of the strategy of attracting investments for the development of rural areas, which, based on the use of the investment platform and stimulation of business processes, makes it possible to accelerate the reconstruction of infrastructure facilities in the village by attracting additional investment flows from the public-private sector, which plays an important role at the formation stage of innovative, profitable agricultural production in Ukraine.

MATERIALS AND METHODS

The information base of the study consisted of statistical data from the electronic library "OECD International Direct Investment Statistics", search results from the official website agroportal.ua, reports of the State Statistics Service of Ukraine from the official website ukrstat.gov.ua regarding capital investments by sources of financing. Data on the formation of Ukrainian territorial communities' budgets from the independent research platform Tableau Public were also used. In particular, the statistical data of the Ministry of Finance of Ukraine regarding the formation of the state budget of Ukraine from 2016 to 2021 and the Ministry of Communities and Territories of Ukraine were analysed in detail. 2021 regarding the review of state budget expenditures in the field of regional development in terms of supporting the formation of the infrastructure of united territorial communities.

The study on problematic aspects of the research topic employed economic and macroeconomic laws, principles of strategic planning and the integration of external and internal factors of investment flows in

the strategic environment. In particular, the works of British, Czech, Spanish, Chinese, Japanese, Tanzanian, Australian, American, and Ukrainian scientists were studied regarding research and analysis of long-term differentiated investment impact on the development and modernization of the infrastructure in rural areas.

To achieve the research goal, a set of general scientific research methods was used, in particular the analysis method, comparative analysis of indicators in the structure of attracting direct foreign investment from various countries of the world to the Ukrainian agrarian sector with indicators of capital investments for the development of rural areas financed by venture funding funds; the analogy and comparison method – characterization and substantiation of the private investors' operation vectors and directions of capital investments for the development of Ukrainian rural areas during 2014–2021 with indicators of capital investments for the development of rural areas financed by loans from banking institutions of Ukraine.

The induction method – the identification of macroeconomic factors that prevent the implementation of the investment platform and the stimulation of business processes regarding the economic revival of the agricultural sector, in particular the socio-economic growth of the village. Synthesis method – substantiating the values and indicators of the profile matrix of SWOT analysis and PEST analysis of macro factors of acceleration (inhibition) of the implementation of the investment-incentive platform for the reconstruction of rural infrastructure objects in Ukraine. Modeling method – employment of specialized MATLAB software with the basics of three-dimensional spatial analysis to create spatial models of investment platform landscapes and to stimulate business processes of reconstruction of infrastructure objects in rural areas of Ukraine according to various structural elements.

RESULTS

The models of attracting venture funds for the implementation of investment platforms and stimulation of business processes to promote additional investment resources for future projects for the development of

rural areas can be presented in the following form (Kovalchuk & Kozenkova, 2017; Wightman, 2021): market model (developed financial market with high availability of venture capital); corporate-state model (high level of state management, presence of large companies, efficient banking system); cluster model (connection between all participants in the process, phased implementation of the project from stage to stage, mutually beneficial relations between the state and business); meso-corporate model (stages of investment attraction in innovative processes, aimed at rapid implementation of agro- and biotechnologies).

When forecasting the dynamics of attracting investments for the development of rural areas, the nature of their cyclicity in the period is established. The economic cyclicity of the Ukrainian agricultural sector functioning depends on international economic relations with a purposeful European vector of attracting investments for the development of rural areas and is based on mandatory rules and regulations for access to investment resources without restrictions, within the framework of rate quotas for export and import of agricultural products. That is, the exchange of resources with EU countries provides Ukraine with 83.1% rate lines in the process of exporting agricultural raw products to their territory and 35.2% rate lines when importing European agricultural products to the territory of Ukraine (Vdovenko *et al.*, 2021; Merrell *et al.*, 2022).

It should be noted that the geographical transformation of Ukraine's agricultural exports and imports during the signing of international agreements contributed to changing the conditions for the obligation fulfilment by the EU countries and the world regarding the attraction of foreign investments in the country's agricultural sector (Rogach *et al.*, 2019). This ensured the formation of a new powerful investment platform and stimulation of business processes in the country for the revival of infrastructure facilities in rural areas. Thus, in 2010–2021, according to the geographical structure of attracting foreign direct investment in the agricultural sector of Ukraine, investments by companies registered in Cyprus, the Netherlands, Austria, Switzerland, Korea, Seychelles, Japan, Belize, the Virgin Islands, Panama, USA (Fig. 1).

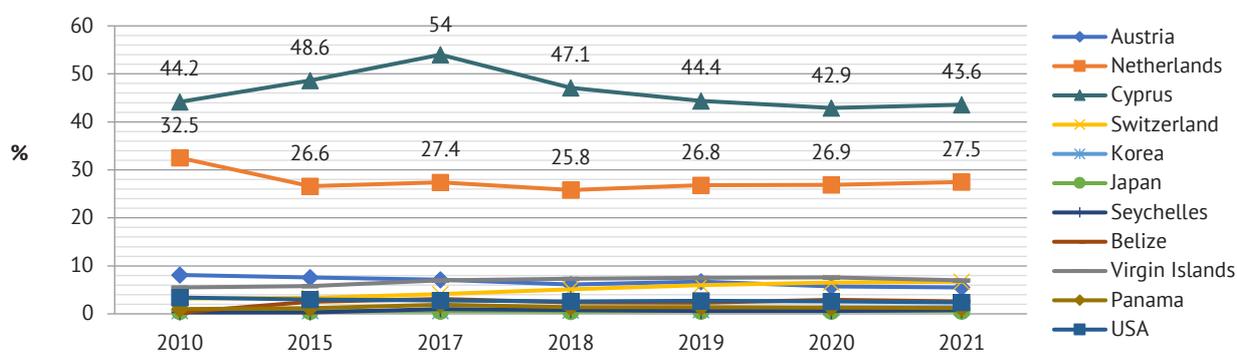


Figure 1. The structure of the attraction of foreign direct investment from the countries of the world in the agricultural sector of the economy of Ukraine for 2010–2021, %

Source: completed by the authors based on (OECD, 2021; State Statistics Service of Ukraine, 2021)

However, in 2021, compared to 2010, investment companies of the Netherlands reduced their share of investment in the agricultural sector of Ukraine by 5%, Austria – by 2.6%, Cyprus – by 0.6%, and the USA – by 1%. In the same period companies, located in Switzerland, Korea, Belize, and the Virgin Islands, increased the number of investment resources in agricultural production reproduction objects by 3.5%, 0.8% 2.3% and 1.5%

respectively. At the same time, the change in the global geopolitical landscape with the weakening of external and systemic risks in 2018-2021 caused an inflow of investments for the development of rural areas of Ukraine from venture financing funds G-7 of the country's world (Ukraine in figures..., 2021; Verner, 2021). Their specific weight in 2020-2021 was 1.4-1.7%, while in 2018-2019 it was equal to 2.1-3% (Fig. 2).

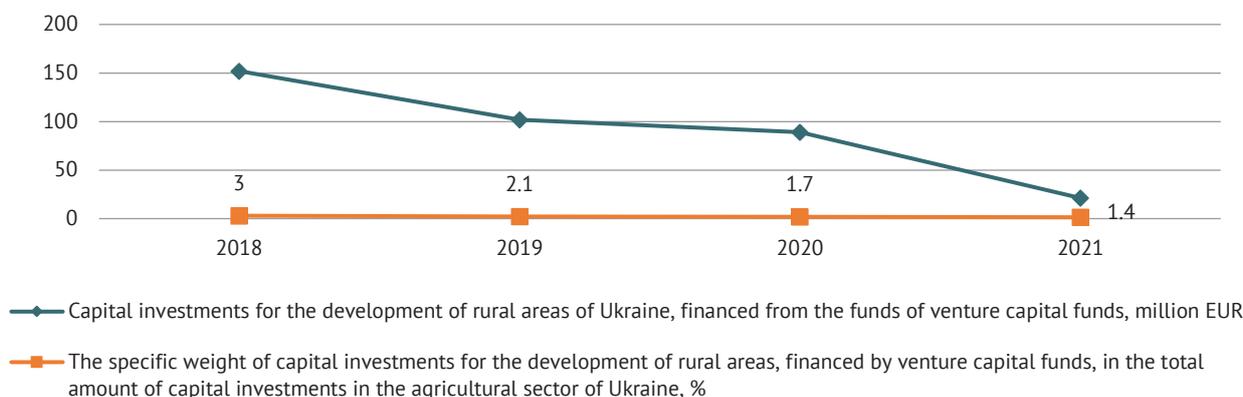


Figure 2. Capital investments for the development of rural areas, financed at the expense of venture financing funds for 2018-2021

Source: compiled by the authors based on (ULEAD with Europe, 2021; Ministry of Finance of Ukraine, 2021)

The largest number of rural infrastructure facilities were modernized and reconstructed in the cycle of budgetary and fiscal decentralization. This is confirmed by the dynamics of private investors' capital investments decreasing in the rural areas in the period 2018-2021. As such, if in 2018 the amount of

investment of private companies in the infrastructure of rural settlements amounted to 13.43 billion EUR (70.8% specific weight of the total volume of capital investments for the development of rural areas), then already in 2021, it was equal to only 12.74 billion EUR (Fig. 3).

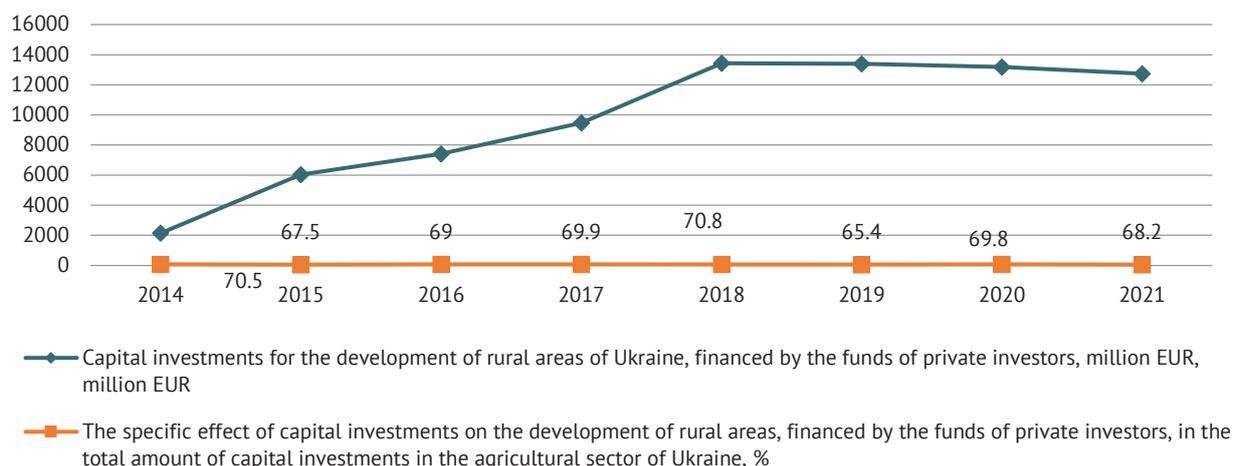


Figure 3. Capital investments for the development of rural areas, financed from the funds of private investors of Ukraine for 2014-2021

Source: completed by the authors based on (Ministry of Development of Communities and Territories of Ukraine, 2021)

During 2014-2021, banking institutions increased crediting of investment projects for the development of rural areas and, on the contrary, reduced it (Fig. 4). The largest amount of credit support for investment projects for the reconstruction of infrastructure

facilities in rural areas was carried out in 2018-2021 – from 1353.6 million EUR to 2226.2 million EUR from a partial compensation of financial costs for the payment of credit interest at the expense of state and local budgets.

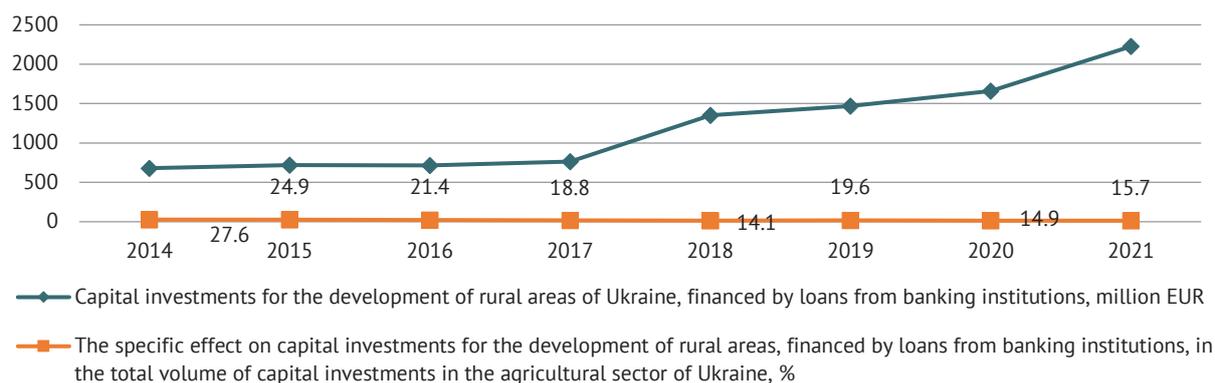


Figure 4. Capital investments for the development of rural areas, financed on account of loans from banking institutions of Ukraine for 2014-2021

Source: completed by the authors based on (ULEAD with Europe, 2021; Ministry of Finance of Ukraine, 2021)

With the constant change in the economic restoration of the country's agrarian sector, it is necessary to focus on the investment risks that are present in the socio-economic system of rural areas in the event of negative trends in the cycles of economic revival of the country's agrarian sector, which weaken the strengths of the regions, and, as a result, inhibit the introduction of investment platforms and stimulation of business processes for the reconstruction of infrastructure objects (Smaliukh, 2017).

It is appropriate to analyse the negative macro-factors that prevent the implementation of the investment platform and stimulation of business processes: currency and inflation risks; military conflict in the country; the imperfection of regulations for foreign investors;

corruption; bureaucracy and regulation of business processes; lobbying of individual investment projects; economically unreasonable and excessive tax pressure; low transparency and inconsistency of the procedure for providing and developing investments; dispersion of elements of the investment environment, etc.

To determine the macro-factors of the internal investment environment of rural areas, which have a significant impact on the acceleration (inhibition) of the implementation of the investment platform and the stimulation of business processes for the reconstruction of infrastructure facilities, a SWOT-analysis profile matrix (Table 1) was used, which assessed the importance of each macro-factor on business processes and the overall result – their weighted assessment (Q_i).

Table 1. Profile matrix of SWOT-analysis of macro-factors accelerating (inhibiting) the implementation of the investment and stimulation platform of reconstruction of infrastructure facilities in rural areas in Ukraine

The name of the environmental factor	v_i	b_i	Q_i
Strengths			
Favourable natural and climatic conditions	0.07	2	0.15
Advantageous geographical location	0.11	3	0.33
A mechanism for supporting investment projects for the development of rural areas by Ukrainian and foreign partners	0.11	3	0.33
Approval at the city and regional levels of investment attraction programs for the development of rural areas and improvement of the investment climate in rural areas	0.11	3	0.33
An opportunity for investors to rent a plot of land, movable and immovable property, privatization of land plots	0.07	2	0.15
Competitive cost of labour	0.11	3	0.33
Availability of customs in ports and international airports of cities	0.11	3	0.33
Implementation of measures to improve the investment climate of rural areas at all levels	0.07	2	0.15
Availability of state support, stable state investment and financing from local budgets, venture capital funds	0.11	3	0.33
Active reinvestment of private investors' resources	0.11	3	0.33
Total		27	2.76
Weaknesses			
Variability of the regulatory field	0.08	3	0.23
Insufficient information provision for the population, entrepreneurs and civil servants about the state, trends, and problems of the investment environment of rural areas	0.05	2	0.10
The lack of information on the development of investment projects for the development of rural areas complicates the stages of evaluating their effectiveness	0.05	2	0.10

Table 1, Continued

The name of the environmental factor	v_i	b_i	Q_i
Suspension of special (free) economic zones on the territory of Ukraine	0.08	3	0.23
Low level of development of legal and judicial protection of investors' rights	0.08	3	0.23
Insufficient level of qualification of managers in the investment field	0.05	2	0.10
Negative investment image and investors' mistrust of the authorities	0.08	3	0.23
Low level of capitalization of profits of private investors	0.05	2	0.10
The imperfection of the investment risk insurance system	0.08	3	0.23
The formality of the actions of state institutions regarding the promotion of the coordination of actions within the framework of the implementation of the policy of attracting investments for the development of rural areas	0.08	3	0.23
Insufficient level of harmonization of interests in public-private partnership regarding investment support for the development of rural areas	0.08	3	0.23
The procedure for exemption from taxation is rather complicated and long-term	0.05	2	0.10
Insufficient financing of investment projects for the development of rural areas from the state and local budgets	0.08	3	0.23
Insufficient level of strategic planning and implementation of investment projects leads to a delay in the development of allocated allocations for the development of rural areas	0.05	2	0.10
Total		39	2.67
Opportunities			
Creation of conditions for a positive investment image of rural areas	0.10	3	0.29
Improving the level of qualification of investment project managers	0.10	3	0.29
Activation of mechanisms of activity of private investors	0.10	3	0.29
Using the experience of international investment funds and venture financing funds in the field of preparation of investment projects for the development of rural areas	0.06	2	0.13
Stimulation of entrepreneurial activity in rural areas	0.10	3	0.29
Preservation and creation of new jobs in rural areas	0.10	3	0.29
Development of the information support system for investment business processes for the reconstruction of infrastructure facilities in rural areas	0.06	2	0.13
Consolidation and coordination of the actions of institutions of the investment environment of the agrarian sector of the economy with institutions of local self-government	0.10	3	0.29
Establishing communications between the state, entrepreneurial businesses, and investors	0.06	2	0.13
Improvement of mechanisms for attracting investments for the development of rural areas	0.06	2	0.13
Expanding and improving the terms of credit support for investment projects for the reconstruction of infrastructure facilities in rural areas	0.06	2	0.13
Formation of a single platform for investment and stimulation of business processes for the reconstruction of infrastructure objects in rural areas to agree, coordinate and consolidate actions regarding the distribution of investment resources between private investors, budget investment and venture financing funds, banking institutions and specialized centres (business incubators)	0.10	3	0.29
Total		31	2.68
Threats			
High level of inflation	0.07	2	0.13
Currency restrictions on the domestic market	0.07	2	0.13
Internal destabilization of the socio-economic system of the agrarian sector and its dependence on external creditors	0.07	2	0.13
Military conflict	0.10	3	0.30
Imperfect regulations for foreign investors	0.10	3	0.30
High probability of inappropriate and inefficient use of investments	0.10	3	0.30
Bureaucracy and high regulation of business processes	0.10	3	0.30
Lobbying by the state of certain investment projects for the development of certain rural areas that are of commercial interest	0.07	2	0.13
Economically unreasonable support of the country's agricultural sector	0.07	2	0.13
Fiscal policy rigidity	0.10	3	0.30
Existence of monopolization in agricultural markets	0.07	2	0.13
Low transparency of operations in the investment environment of rural areas	0.10	3	0.30
Total		30	2.58

Source: compiled by the authors

Following the data in Table 1, the strengths of the internal investment environment of rural areas slightly prevail over the weaknesses (weighted scores: 2.76 and 2.67 respectively). By focusing on the identified opportunities of the external investment environment, it is possible to minimize the impact of threats and mitigate the effects of weaknesses. The macro-factors of the external investment environment of rural areas were structured and their influence on the platform of investment and stimulation of business projects for the reconstruction of infrastructure facilities was assessed using the PEST analysis. Following the data in Table 2, it is proved that the negative

direction of influence of the investigated sets of macro-factors prevails. Thus, the final scores for a set of political macro-factors are (-17), economic – (-181), social – (-74) and technological – (-73). The low political macro-factor indicator is determined by the fact that the effect of negative metrics is compensated by the effect of positive macro-factors, which are caused by the results of the decentralization of rural areas. The structure of the landscape of the platform for investment and stimulation of business processes for the reconstruction of infrastructure facilities in rural areas of Ukraine is formed from the volume of capital and foreign investments.

Table 2. Profile matrix of PEST-analysis of macro-factors of construction and development of the platform of investment and stimulation of business processes for the reconstruction of infrastructure objects of rural areas in Ukraine

The name of the environmental factor	x_i	y_i	U_i	S_i
Political factors				
Military conflict	3	5	-	-15
Sharp changes during international economic relations of the state concerning the cycle of agrarian sector restoration	2	4	-	-8
Ambiguity in the interpretation of acts of the regulatory legal framework and gaps in the legislation regarding the development of rural areas	2	3	-	-6
Insufficient level of initiative, authority and responsibility of state authorities and local self-government in the field of attracting investments for the development of rural areas	2	4	-	-8
The unpredictability of political changes at the international level regarding the movement of investment capital	2	3	-	-6
State participation in international cooperation programs and agreements in the field of investment promotion and mutual protection, settlement of investment disputes	3	4	+	+12
Regulatory and financial obligations to external creditors	2	4	-	-8
Development of the investment infrastructure of the agrarian sector of the economy and the development of rural areas	3	4	+	+12
Corruption	3	4	-	-12
Membership of Ukraine in the WTO	2	3	+	+6
Integration in the EU	2	3	+	+6
Transformation of customs regulation	2	4	+	+8
Availability of processes of lobbying the interests of local self-government bodies at the state level	2	3	-	-6
Lack of appropriate funding and support at the state level for initiative groups and investment projects for the development of rural areas	3	4	-	-12
Development of investor protection	2	2	+	+4
Variability of investment guarantee conditions	2	3	-	-6
Possibilities of applying the preferential investment regime of the agricultural sector of the economy and rural areas	2	4	+	+8
Nationalization of capital does not apply to foreign investors	2	4	+	+8
Privatization opportunities for investors	2	3	+	+6
Total				-17
Economic factors				
A significant level of inflation	2	4	+	+8
Devaluation processes	2	4	-	-8
Decrease in the creditworthiness of the population	2	3	-	-6
Reduction of parity of purchasing power and demand	2	3	-	-6
Increase in tariffs, prices for goods and services	2	3	-	-12
Expansion of the shadow sector of the economy	3	4	-	-12
Increase in unemployment	2	3	-	-6
Decrease in business activity	2	3	-	-12
Liquidity crisis and bankruptcy of private investors	3	4	-	-12

Table 2, Continued

The name of the environmental factor	x_i	y_i	U_i	S_i
Reduction of reinvestment volumes	3	4	-	-6
Reduction of lending, an increase of credit and accounting rate	2	3	-	-6
Inequality of economic development by region	2	3	-	-15
Reduction of the country's GDP	3	5	-	-12
Growth of budget debt	3	4	-	-6
Imperfect market infrastructure	2	3	-	-12
Significant tax and administrative pressure on business processes, stopping long-term investment	3	4	-	-12
Capital outflow from the country	3	4	-	-12
Export-oriented production and its dependence on foreign market conditions	2	3	-	-6
Production with a low level of added value	3	4	-	-12
Total				-181
Social factors				
The forced migration of the population and its significant differentiation by regions	2	4	-	-8
Insufficient level of formation of civic consciousness	2	3	-	-6
Low standard of living of the population	3	4	-	-12
High tendency to corruption	2	3	-	-6
Negative attitude towards institutions, public distrust of the authorities	2	3	-	-6
The outflow, and as a result, a shortage of personnel	3	4	-	-12
Demotivation of employees	2	3	-	-6
Non-compliance of working conditions and safety equipment with international standards	1	2	-	-2
Financial illiteracy	2	4	-	-8
Mentality and changing values of society	1	2	+	+2
Culture of consumption and savings	1	3	+	+2
Insufficient provision of information to the population regarding investment alternatives	2	3	-	-6
Inadequacy of education to the needs of the labour market	2	3	-	-6
Total				-74
Technological factors				
The backwardness of technological infrastructure facilities in rural areas	3	4	-	-12
Imperfect state policy regarding structural and technical modernization and reconstruction of settlements in rural areas	2	4	-	-8
A significant level of depreciation of fixed assets	3	4	-	-12
Low level of funding of the National Research and Development Institute for the revival of the agricultural sector and rural areas at the state and regional level	2	4	-	-8
Demotivation of private investors to implement innovations in rural areas	2	3	-	-6
The imperfection of intellectual property protection	2	3	-	-6
Insufficient integration of digital IT systems into the spheres of life of the population of rural areas and the agrarian sector of the economy	3	3	-	-9
Reduction in the number of university graduates in technical and economic specialties	2	3	-	-6
The low percentage of development of new agricultural and biotechnologies	2	3	-	-6
Sum				-73

Source: completed by the authors

From the perspective of a spatial approach, a qualitative analysis of the structural landscape of the investment platform and stimulation of business processes for the reconstruction of infrastructure objects in rural areas in Ukraine was carried out. Since the one-dimensional space limits the understanding of the structural landscape of the platform, the three-dimensional space (Sokolov & Mykhailov, 2017) with its visualization was analysed in the MATLAB system.

The spatial dynamics of the studied data for 2014-2021 indicate a slight recovery of the investment attractiveness of rural areas in Ukraine. The main plane of the landscape structure is formed by the capital investment volume growth from the state and local budgets, as well as from financial investments of private investors, including the banking sector of the economy. The structure of the multidimensional space of the investment landscape indicates its heterogeneity based on

the various types of investments formed. To clarify the structure of the surface response, indicators describing the platform landscape were considered in pairs.

Figure 5 shows the surface of two components, namely the volume of capital investments from state and local budgets, as well as private investors'

resources. The obtained surface of the structural components of the landscape of the investment and stimulation platform shows a linear dependence of capital investments on the number of financial investments of private investors since their growth rates are almost the same.

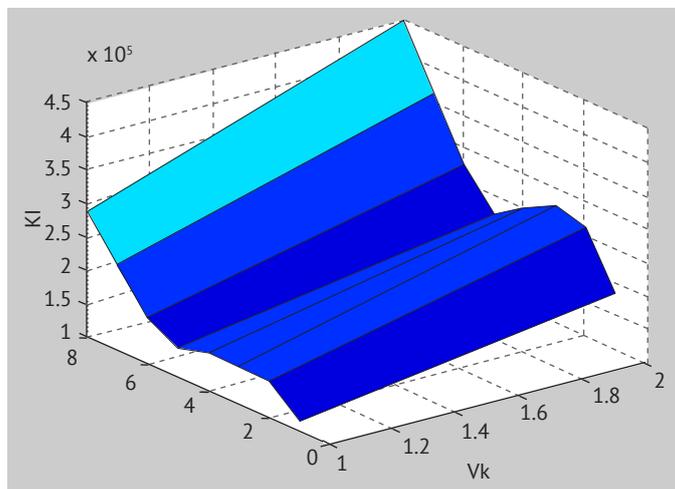


Figure 5. The landscape of the platform for investment and stimulation of business processes for the reconstruction of infrastructure objects of rural areas in Ukraine by structural components: KI , V_k

Source: completed by the authors

In Figure 6, the pair of structural components of the platform landscape, namely the volume of capital investment and foreign direct investment are considered. The resulting surface is smooth, characterised by the change

in the investment volume of projects for the reconstruction of infrastructure objects in rural areas and reflects the ratio of points in time. This indicates minor fluctuations in the dynamic cycle of investment attraction.

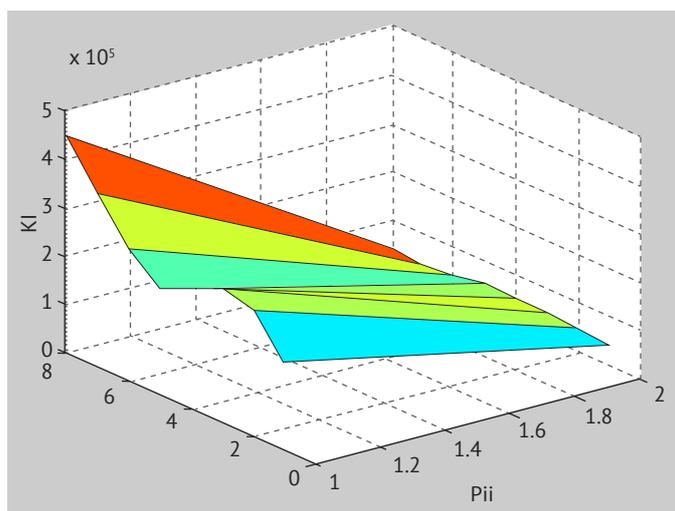


Figure 6. The landscape of the platform for investment and stimulation of business processes for the reconstruction of infrastructure objects of rural areas of Ukraine by structural components: KI , P_{ii}

Source: completed by the authors

In Figure 7, another pair of structural components of the landscape of the investment platform and stimulation of business processes for the reconstruction of infrastructure

objects of rural areas in Ukraine were reviewed, namely the number of private investors' resources and direct foreign investments from the venture capital fund.

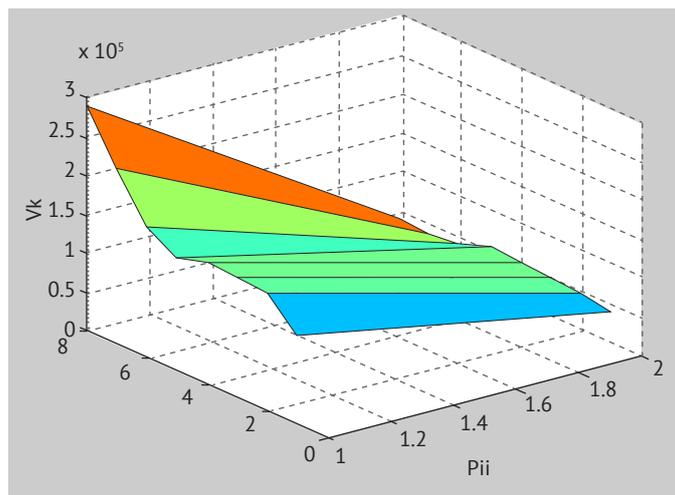


Figure 7. The landscape of the platform for investment and stimulation of business processes for the reconstruction of infrastructure objects of rural areas of Ukraine by structural components: V_k, P_{ii}

Source: completed by the authors

Analysing the results of calculating the Figure 6-7 data, it is established that the constructed graphs are almost similar and show smooth surfaces with a slight break, which was recorded at the level of 2018-2019. The turning point changed the dynamics of the amount of investment in projects for the reconstruction of infrastructure facilities in rural areas in Ukraine and their growth rates. Thus, after hacking, domestic investment has a much faster growth rate than foreign investment, which is visible from the obtained surfaces.

The proposed approach to the analysis of the spatial landscape of attracting investments for the development of rural areas makes it possible to ensure the systemic character of investment business processes at the regional level of the country, to equalize investment flows following modern economic realities. The three-dimensional structure of the platform landscape smooth's investment heterogeneity is determined using means and technologies of financial compensation and mechanisms of territorial redistribution of investment resources in projects of reconstruction of infrastructure facilities and necessitates the search for tools to eliminate the shortcomings of the investment image of rural areas.

DISCUSSION

The main concepts of investment policy are formed following the main transformational changes of the agro-industrial complex in a specifically defined region, in particular rural areas. At the same time, the interrelationship of environmental, economic, and social problems is considered and the understanding that their solution is possible only on a comprehensive basis, considering the balance of the interests of the development of nature and society.

Given the importance of the agrarian sphere both in Ukraine and in many other countries, the dependence of the socio-economic development of the territory and

the state of the agrarian sphere on the intensity of investment flows is characterized by the following factors: active development and agriculture are based on labour, incomes of rural residents and relevant investment assets from the public-private partnership.

The stable and rapid development of the agricultural market has a significant impact on increasing the financing of the construction and maintenance of social infrastructure facilities. The system of rural settlement, transport service, administrative structure, and management are closely interconnected, and the development of the agrarian sphere has always been identified with the improvement of rural settlements.

Scientists from the Czech Republic, A. Vaishar and M. Šťastná (2019), considered the regional development strategy of the Czech Republic, highlighting economically and socially threatened rural regions. The authors analyse in detail the economic situation in regions with different geographic locations. Their research aimed to differentiate rural areas internally, which allows focusing attention on areas that require increased investment rates for appropriate infrastructural development. During the study of two separate peripheral regions, the geographical analysis and synthesis methods, as well as the investment planning method, were used to determine their most significant strengths and weaknesses, as well as possible strategies for further development. In particular, the most effective direction of rural development was the increase of investment flows in the field of agritourism.

The opinion of Czech scientists is justified. However, they did not analyse the field of agrarian tourism as an important direction for attracting investment flows and rural development. It is also important to note that the operation of agrotourism must be included in the business process, which necessarily requires the modernization of the infrastructure of the village.

Researchers from Spain E. González-González and S. Nogués (2019) examined the main principles of the relationship between European and national transport policy, which requires effective territorial unity and adequate funding. Long-term transport impact assessments in under-explored areas covering large areas of Europe play an important role in identifying problematic issues related to transport investments. In more detail, scientists analysed the consequences of the transport policy development and the corresponding investment in the North-Western region of Spain, where about 95% of municipalities are considered rural. The results show that the gap in accessibility between urban and rural areas has been eliminated by an active investment policy in the infrastructure development of rural areas, through the formation of an extensive transport system and corresponding accessibility to the market for services and goods. However, these improvements are only one of the few steps to break the so-called inertia of rural areas and reduce their socio-economic disadvantages.

The research results of scientists should be supported regarding the need for the development of transport infrastructure due to the increase in investment indicators in this area. However, they are relying more on the economic restoration of rural areas through the development of the agro-industrial complex of the region. And in this case, the transport industry is one of the areas of modernization of infrastructure facilities of rural communities.

Scientists from China, Q. Zhou *et al.* (2022) examine the impact of the environmental situation on the domestic investment attractiveness of rural regions, which in recent decades has been characterized by an increase in direct residential CO₂ emissions (DRCE), which are still growing rapidly. Thus, the study of the relationship between the growth of DRCE on population density in rural areas and the realization of rural revitalization includes the study of the relationship between infrastructure investment, household income and DRCE using Granger non-causality tests and systemic mediation analysis. Spatial development analysis indicators reflect geographic convergence between rural DRCEs and rural infrastructure investments. That is, rural households depend on the development of the electricity grid infrastructure. The regression results show that the positive impact of rural infrastructure investment on rural DRCEs varied following the structure of the investment. With a 1% increase in investment flows in the development of rural energy and transport infrastructure, the DRCE indicator, which affects the population density in rural areas, increases by 0.041%. In turn, when investment attractiveness increases by 1% of the volume from other investments in rural infrastructure, in particular water supply, wastewater disposal, waste processing and environmental sanitation, the DRCE indicator increases by 0.169%. That is, the implementation of a balanced climate policy requires

urgent countermeasures regarding the effective reorganization and modernization of specifically defined infrastructural elements of rural areas. In general, the result of the study is the provision of information on the analysis and prospects for the implementation of low-carbon revitalization in rural areas, considering existing investment flows.

In this research, the issue of greening in the territory of rural settlements, as it is shown in the results of research by Chinese scientists was not separately analysed, but the importance of considering the basic principles of climate policy when it comes to the use of natural land resources, which are the basis and resource in agriculture is completely relevant. In particular, the importance of the economic effect on the output of business processes in the agricultural sector cannot be underestimated, as it directly includes the minimization and assessment of possible environmental losses, given the attraction of priority European investments.

Researchers from Japan and Tanzania Y. Tsuchiya *et al.* (2020) point out that one of the directions for increasing investment flows in the development of village infrastructure with the active involvement of agricultural lands, which are currently characterized as unproductive or degraded, is the possibility of designing solar photoelectric plants. Currently, this type of alternative source of electricity is spreading in sub-Saharan Africa and many other countries of the world. The authors investigated several cases of photovoltaic systems in the production and use of electricity in rural Tanzania using a life cycle assessment. The energy payback time calculated based on the use of photovoltaic systems, considering the inventory data of the International Energy Agency revealed unsatisfactory performance. In particular, the actual electricity production figures at the facilities significantly exceeded the expected solar radiation calculations based on the values. In one location, the payback time for the electricity even exceeded the lifetime of the photovoltaic panel, indicating that energy recovery is not possible. As for the return on investment, the profit obtained from investment flows made to increase the rate of return on current operating costs indicates a negative return on investment. Conversely, diesel power generation has proven more suitable in these regions due to low and volatile electricity demand. Thus, it is necessary to carry out research in the direction of increasing the efficiency of the photovoltaic system and reducing the payback period through the improvement of service, and management, as well as increasing the electricity demand (Sava, 2017; Vdovenko, 2021).

The development of electricity supply infrastructure and energy consumption using alternative energy sources, which are located precisely within rural regions, was not considered in the research. However, this is an effective, modern method of providing rural settlements with energy resources, with the predominance

of the economic restoration of the agricultural sector, which in turn requires large amounts of electrical energy, considering maximum resource conservation and smart investment.

CONCLUSIONS

A rural territory with an untapped potential for investment and with a certain type of economic activity in the investment mode can establish business relations with entities belonging to related types of service to other rural communities, and thus ensure the manifestation of a large-scale absorption effect of a certain territory. The rural population is slowly getting involved in the development and implementation of development programs. The success of the implementation of investment projects for the development of rural areas is directly dependent on the interested participation of the local population in the formation and implementation of regional development programs.

However, unfortunately, the principle of participation is often ignored, which leads to the decline of the economy of rural areas of the country. Due to the war, their internal reserves are limited, so special importance should be given to the issue of increasing foreign investment income and developing self-organization processes to attract them. The expectation of an increase

in investment income and, as a result, the development of new agricultural and biotechnologies, which will increase the number of jobs, led to the introduction of new mechanisms for the development of certain territories, types of economic activity, where, under certain conditions, the state organized special preferential regimes (tax, customs, and others).

The efforts of the state, business, population, and other interested groups of investors should be consolidated through cooperation, development of local self-government and activities of public organizations in Ukraine to increase the efficiency of the functioning of infrastructure facilities with a large-scale resource provision, which will be integrated through international economic relations. This will make it possible to transform and modernize the transport system, improve the logistics of investment flows in communication innovations and telecommunication services, and increase state support for rural areas for the development of priority investment projects.

ACKNOWLEDGEMENTS

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

- [1] Abreu, I., Mesías, F.J., & Ramajo, J. (2022). Design and validation of an index to measure development in rural areas through stakeholder participation. *Journal of Rural Studies*, 95, 232-240. doi: [10.1016/j.jrurstud.2022.09.022](https://doi.org/10.1016/j.jrurstud.2022.09.022).
- [2] Carson, D.A., Carson, D.B., & Argent, N. (2022). Cities, hinterlands and disconnected urban-rural development: Perspectives from sparsely populated areas. *Journal of Rural Studies*, 93, 104-111. doi: [10.1016/j.jrurstud.2022.05.012](https://doi.org/10.1016/j.jrurstud.2022.05.012).
- [3] González-González, E., & Nogués, S. (2019). Long-term differential effects of transport infrastructure investment in rural areas. *Transportation Research Part A: Policy and Practice*, 125, 234-247. doi: [10.1016/j.tra.2018.01.026](https://doi.org/10.1016/j.tra.2018.01.026).
- [4] Haji, K. (2021). E-commerce development in rural and remote areas of BRICS countries. *Journal of Integrative Agriculture*, 20(4), 979-997. doi: [10.1016/S2095-3119\(20\)63451-7](https://doi.org/10.1016/S2095-3119(20)63451-7).
- [5] Horna, M., Ishchuk, Ya., & Khalilova, T. (2017). [Conditions and factors of formation of investment attractiveness of Eastern European countries](#). *International Economic Policy*, 2, 137-155.
- [6] Kovalchuk, K.F., & Kozenkova, N.P. (2017). [Network methods of financing the activities of innovative enterprises](#). *Economic Bulletin*, 4(60), 142-153.
- [7] Lazareva, O. (2021). [Socio-economic development of rural areas](#). Mykolaiv: Petro Mohyla Black Sea National University.
- [8] Lobas, I. (2012). [Foreign experience of state support for venture investment in innovative activities](#). *Bulletin of the National Academy of Public Administration under the President of Ukraine*, 1, 196-203.
- [9] Marushchynets, A. (2018). [Transformation of the agrarian sphere and socio-economic development of the Kyiv Dnieper region](#). Kyiv: National Academy of Sciences of Ukraine Institute of Geography.
- [10] Merrell, I., Phillipson, J., Gorton, M., & Cowie, P. (2022). Enterprise hubs as a mechanism for local economic development in rural areas. *Journal of Rural Studies*, 93, 81-91. doi: [10.1016/j.jrurstud.2022.05.016](https://doi.org/10.1016/j.jrurstud.2022.05.016).
- [11] Ministry of Development of Communities and Territories of Ukraine. (2021). [Report on the review of state budget expenditures in the field of regional development in terms of supporting the formation of infrastructure of united territorial communities](#). Retrieved from <https://www.minregion.gov.ua/wp-content/uploads/2021/03/1-zvit.pdf>.
- [12] Ministry of Finance of Ukraine. (2021). [Execution of revenues of local budgets of Ukraine](#). Retrieved from <https://mof.gov.ua/uk/vykonannia-dokhodiv-mistsevyykh-biudzhetiv>.
- [13] OECD International Direct Investment Statistics for 2014-2021. (2021). Retrieved from https://www.oecd-ilibrary.org/finance-and-investment/oecd-international-direct-investment-statistics_2307437x.
- [14] Rogach, S., Vdovenko, L., & Polishchuk, O. (2019). Agriculture of Ukraine under the joint policy of the European Union. *Baltic Journal of Economic Studies*, 5(3), 178-184. doi: [10.30525/2256-0742/2019-5-3-178-183](https://doi.org/10.30525/2256-0742/2019-5-3-178-183).

- [15] Sava, A.P. (2017). [Formation of a model of development of rural areas under the influence of European integration processes](#). *Innovative Economy*, 1(67), 28-35.
- [16] Smaliukh, Ya. (2017). [The problem of attracting investments in the agrarian sector of the economy](#). *Bulletin of the Lviv National Agrarian University*, 24(1), 54-58.
- [17] Sokolov, M.O., & Mykhailov, A.M. (2017). [Formation of investment resources in the economy of Ukraine in conditions of globalization](#). *Economy of Agro-Industrial Complex*, 12, 44-51.
- [18] State Statistics Service of Ukraine. (2021). *Capital investments by sources of financing*. Retrieved from https://ukrstat.gov.ua/operativ/operativ2021/ibd/kindj/arh_kindj_2021_u.html.
- [19] Tsuchiya, Y., Swai T., & Goto, F. (2020). Energy payback time analysis and return on investment of off-grid photovoltaic systems in rural areas of Tanzania. *Sustainable Energy Technologies and Assessments*, 42, article number 100887. doi: 10.1016/j.seta.2020.100887.
- [20] Ukraine in figures: Statistical publication. (2021). Retrieved from https://ukrstat.gov.ua/druk/publicat/kat_u/2022/zb/08/zb_Ukraine%20in%20figures_21u.pdf.
- [21] ULEAD with Europe: Budget of territorial communities of Ukraine. (2021). Retrieved from https://public.tableau.com/app/profile/ulead/viz/_16360623127390/sheet0.
- [22] Usova, H.V. (2013). [Approaches and methods of implementing business process reengineering](#). *Economy. Management. Innovations*, 1.
- [23] Vaishar, A., & Štátná, M. (2019). Economically underdeveloped rural regions in Southern Moravia and possible strategies for their future development. *Journal of Rural Studies*, 97, 356-364. doi: 10.1016/j.jrurstud.2022.12.024.
- [24] Vdovenko, L.O. (2021). The financial aspect of the activities of small and medium-sized businesses in the agricultural sector and their role in the development of rural areas. *Economics, Finance, Management: Current Issues of Science and Practice*, 2(56), 26-37. doi: 10.37128/2411-4413-2021-2-2.
- [25] Vdovenko, L.O., Martseniuk, O.V., Ruda, O.L., Titov, D.V., & Kholiavitska, K.S. (2021). Determinants of the growth of the financial-economic potential of rural territorial communities of Ukraine. *International Journal of Agricultural Extension*, 2, 119-139. doi: 10.33687/ijae.009.00.3969.
- [26] Verner, I.E. (2021). Statistical Yearbook of Ukraine. Retrieved from https://ukrstat.gov.ua/druk/publicat/kat_u/2022/zb/11/Yearbook_2021.pdf.
- [27] Wightman, M. (2021). A winning strategy for profitable growth in Asia. *EY*. Retrieved from https://www.ey.com/en_gl/wealth-asset-management/a-winning-strategy-profitable-growth-in-asia.
- [28] Woollett, A., Duncan, J., Voskoboynik, M., Shackleton, M., Dooley, M., Blum, R., McPhee, N., Wright, T., Wan Wong, Z., Dixon, J., & Jane, S.M. (2023). A capability framework to inform the fundamental requirements for clinical trial unit development, growth and long term success in outer metropolitan and rural areas. *Contemporary Clinical Trials Communications*, 32, article number 101072. doi: 10.1016/j.conctc.2023.101072.
- [29] Zhou, Q., Liu, Y., & Qu, S. (2022). Emission effects of China's rural revitalization: The nexus of infrastructure investment, household income, and direct residential CO₂ emissions. *Renewable and Sustainable Energy Reviews*, 167, article number 112829. doi: 10.1016/j.rser.2022.112829.

Стратегія залучення інвестицій у розвиток сільських територій для економічного відновлення аграрного сектору

Лариса Олександрівна Вдовенко

Доктор економічних наук, професор
Вінницький національний аграрний університет
21008, вул. Сонячна, 3, м. Вінниця, Україна
<http://orcid.org/0000-0002-6283-2385>

Оксана Леонтіївна Руда

Кандидат економічних наук, доцент
Вінницький національний аграрний університет
21008, вул. Сонячна, 3, м. Вінниця, Україна
<https://orcid.org/0000-0002-3266-7470>

Олена Вікторівна Коваль

Кандидат економічних наук, доцент
Вінницький національний аграрний університет
21008, вул. Сонячна, 3, м. Вінниця, Україна
<https://orcid.org/0000-0003-4192-4456>

Микола Анатолійович Горлачук

Кандидат економічних наук, доцент
Західноукраїнський національний університет
46009, вул. Львівська, 11, м. Тернопіль, Україна
<https://orcid.org/0000-0001-8030-1193>

Василь Григорович Герасимчук

Аспірант
Вінницький національний аграрний університет
21008, вул. Сонячна, 3, м. Вінниця, Україна
<https://orcid.org/0000-0002-9438-9760>

Анотація. Метою дослідження є вивчення реалізації стратегії залучення інвестицій для розвитку сільських територій, яка на основі використання інвестиційної платформи та стимулювання бізнес-процесів дозволяє прискорити реконструкцію інфраструктурних об'єктів на селі, залучивши зацікавлених інвесторів до циклу економічного відновлення аграрного сектору країни. Дослідження проведено з використанням таких методів: аналіз показників у структурі іноземних інвестицій; аналогії та порівняння напрямів капітальних вкладень приватних інвесторів на розвиток сільських територій; індукування макрофакторів, що стримують реалізацію інвестиційної політики; синтез показників профільної матриці SWOT-аналізу та PEST-аналізу; створення просторових моделей ландшафтів інвестиційних майданчиків. Результатами даного дослідження є визначення пріоритетних іноземних інвестиційних компаній країн світу, які забезпечують залучення прямих іноземних інвестицій в аграрний сектор економіки України. На основі матричних профілів SWOT-аналізу та PEST-аналізу визначено макрофактори внутрішнього та зовнішнього інвестиційного середовища сільських територій, які мають суттєвий вплив на прискорення (гальмування) реалізації інвестиційної платформи та стимулювання бізнес-процесів з реконструкції об'єктів інфраструктури. Змодельовано трирівневий профіль ландшафту платформи інвестування та стимулювання бізнес-процесів реконструкції інфраструктурних об'єктів сільських територій в Україні

Ключові слова: інфраструктурні об'єкти; сільські території; капітальні інвестиції; стратегічне планування; бюджетні інвестиції; приватні інвестори
