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FORMATION OF AN ENVIRONMENTAL AND ECONOMIC MECHANISM FOR BALANCED DEVELOPMENT OF RURAL TERRITORIES OF UKRAINE ACCORDING TO THE PRINCIPLES OF EUROPEAN INTEGRATION PROCESSES

The object of research is the theoretical and methodological aspects and practical levers of forming an ecological and economic mechanism for the balanced development of rural areas of Ukraine.

The research used general scientific and special research methods. Methods of analysis and synthesis were used to systematize theoretical provisions, the statistical method for data analysis, the comparison method for studying the dynamics of ecological and economic indicators, and the graphical method for visual presentation of the research results. Induction and deduction methods were also used for theoretical generalization of the material and formulation of conclusions regarding the development of rural territorial communities, which are aimed at implementing the principles of balanced development in the context of decentralization.

The research results consist in identifying and qualitatively substantiating the structural potential for increasing the efficiency of management of the balanced development of rural areas, in particular:

- directions of institutional synergy (consolidation of efforts of local governments and state institutions in a single planning format);
- regulatory harmonization levers (by adapting EU environmental incentive instruments into Ukrainian legislation);
- areas of motivational coherence in the context of the interaction of environmental and economic requirements, which will contribute to attracting private investment in the balanced development of rural areas.

The expected effect of the implementation of the proposed environmental and economic mechanism is the result of its systemic action and harmonization, which will ensure synergy between three key foundations, such as:

- implementation of the principles of European integration, which forms a specific regulatory and methodological framework that directs the activities of entities to achieve established standards of balanced development;
- interaction of economic incentives with environmental restrictions, which will create direct motivation for local communities and businesses for the rational use of natural resources;
- a course towards decentralization and strengthening of the resource potential of local self-government bodies, which will ensure not only consideration of the specifics of the territories, but also increase responsibility for the results. This together transforms the mechanism from a theoretical concept into an effective tool for the restoration and balanced development of rural areas.

Keywords: rural areas, balanced development, decentralization, ecological and economic mechanism, management, local communities, urbanization.

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1. Introduction

Rural areas of Ukraine have significant natural resource, production and labor potential; play a key role in ensuring food security, economic stability and investment attractiveness, which creates the prerequisites for the balanced development of the agricultural sector. The modern

system of rural areas management limits their functional purpose, focusing mainly on agriculture, since it is formed according to the sectoral principle. To effectively use the full potential of these territories, it is necessary to move to an integrated territorial-sectoral approach, which considers rural areas as spatial formations taking into account environmental, social, economic and resource factors.

In the deepening of the socio-economic crisis in rural areas, which is manifested in a decrease in the level of employment, increasing unemployment and poverty, mass migration of peasants, deterioration of the state of infrastructure and access to social services. In addition, key groups of challenges and problems of the development of rural territories and communities (socio-demographic, economic, environmental and environmental, institutional, political) are identified, summarized and systematized, the solution of which will ensure development on the basis of balance. The work [1] presents that each of the outlined problems is significant in itself, and their combination creates favorable preconditions for the emergence of crisis manifestations in rural development and leads to the destabilization of the national economic complex as a whole. However, a clear understanding of these problems creates an opportunity to determine the main directions of reforming rural development in Ukraine and choose tools for their implementation. The impact of various factors on the effectiveness of activities and financial capacity of rural territorial communities in the context of decentralization of power and local government reform is assessed.

Ensuring balanced development of rural areas is a complex and complex task, the solution of which is possible under conditions of macroeconomic stability and growth of gross domestic product, promotion of economic growth in agriculture, as well as the development of non-agricultural employment in rural areas [2].

The paper [3] analyzes the features of socio-economic development of rural areas in the countries of the European Union, outlines priorities for Ukraine in this area, namely: improvement of social and technical infrastructure, support of rural tourism, preservation of rural landscapes, implementation of specialized crediting and insurance mechanisms, active state support and specially created funds.

In the context of Ukraine, there are a number of key priorities for socio-economic development of rural areas, which include attracting land to circulation, carrying out land transactions, development of international corridors, increasing capital investments, expanding sales markets and regulating rent payments taking into account the agro-climatic characteristics of the regions [3]. Strengthening local self-government, supporting subsidized management, implementing scientific developments, high-quality training of personnel, and adherence to the principles of balanced development are important.

In [4], it is determined that the balanced development of rural areas of Ukraine today is one of the key directions in the context of the European integration course of the state. And such development should be multifunctional in nature, for the implementation of which it is necessary to actively involve non-agricultural sectors, efficient use of resources, environmental responsibility and the introduction of innovative approaches, modernization of infrastructure. All this should take place in accordance with the principles of European integration.

Rural development in the EU is aimed at overcoming socio-economic disparities between territories and to achieve this goal and ensure territorial integrity, inter-subject cooperation is being intensified at different levels of management and local development strategies are being implemented [5].

In the work [6], attention is focused on the importance of Ukraine's proper implementation of obligations related to accession to the EU in the field of agricultural and rural development. The key provisions of modern European Union documents concerning national strategic plans of member states on long-term vision of rural development are summarized. At the same time, a certain discrepancy between Ukrainian and European approaches to the strategic development of agriculture and rural areas is revealed and ways of strengthening the European orientation of strategic directions of Ukrainian agrarian policy are proposed.

The experience of countries in the process of their accession to the EU and the implementation of national legislation in accordance with EU requirements in the field of agriculture and environmental pro-

tection is analyzed. In particular, the key challenges and opportunities that states faced during the negotiation process, accession and further implementation of environmental obligations are considered [7].

The paper [8] highlighted the European experience in ensuring balanced economic development of rural areas and substantiated the prospects for its application in Ukrainian realities. Recommendations are presented on the adaptation of best European practices taking into account Ukrainian conditions, in particular, the importance of expanding access to financial resources, increasing the participation of local communities and strengthening institutional capacity is emphasized. The proposed approaches are aimed at integrating effective European mechanisms to ensure balanced development of rural areas of Ukraine in the context of their post-war recovery.

The development of rural areas is becoming particularly relevant in the context of global challenges such as climate change, population migration, urbanization and economic crises and requires a scientifically sound approach. In particular, the issues of improving the quality of life, decentralization, attracting investments, modernization of infrastructure and the introduction of innovative approaches to agriculture are becoming more relevant. A comprehensive study of these aspects is the basis for developing effective strategies for the development of rural areas, promoting their self-organization, etc.

Given Ukraine's European integration aspirations and the decentralization reform, the importance of a systematic approach to planning and implementing a policy of socio-ecological and economic development of rural areas is growing, which should ensure balanced development of villages and increase the living standards of the rural population.

Analysis of the country's spatial structure indicates the dominance of rural areas in most administrative regions of Ukraine. The issue of balanced development of rural areas, which is closely related to the effectiveness of the functioning of newly formed territorial communities, is gaining particular relevance.

The priority task of state regional policy, which is aimed at preserving food security, strengthening human potential and improving the quality of life of the population, should be to ensure an adequate level of support and development of rural areas.

The object of research is the theoretical and methodological foundations and practical tools for forming an ecological and economic mechanism for balanced development of rural areas of Ukraine.

The aim of research is to theoretically substantiate and improve the conceptual foundations of the ecological and economic mechanism for managing the development of rural areas of Ukraine in the context of decentralization, taking into account modern challenges and priorities of balanced development in accordance with the principles of European integration processes. For the balanced development of rural areas, taking into account the ecological and economic mechanism, the following tasks are envisaged:

- to offer proposals for adapting EU principles to Ukrainian legislation and national characteristics of agriculture;
- to form a model of the ecological and economic mechanism;
- to analyze the relationship between ecological and economic components to achieve the goals of balanced development of rural areas.

2. Materials and Methods

For the purpose, general scientific and special research methods were used:

- methods of analysis and synthesis for systematization of theoretical provisions;
- statistical method for data analysis;
- method of comparisons for studying the dynamics of ecological and economic indicators;

- graphical method for visual presentation of research results;
- methods of induction and deduction for theoretical generalization of the material and formulated conclusions regarding the development of rural territorial communities.

The information base of the research is legislative and regulatory legal acts, as well as analytical materials of the Directorate-General for Agriculture and Rural Development of the European Commission.

3. Results and Discussion

Rural areas are an important component of the country's economy as a whole, as well as a necessary condition for ensuring balanced development. The experience of administrative reforms in the world shows not only positive aspects, but also difficulties that society had to face. At the same time, new opportunities have opened up for improving management efficiency. This practice has been best implemented in EU countries, where the concept of balanced development has become the main principle of the future for society and the economy. In Ukraine, it makes sense to look closely at this experience, because it can become a good basis for its own rural development policy.

In the work [3], it is noted that taking into account the European experience of rural development allows to determine priority areas for Ukraine. This will also contribute to the formation of self-sufficient territorial communities and will become an important factor in strengthening local development.

In the context of integration into the global space, Ukraine must strengthen the competitiveness of the national economy. This can be achieved by diversifying its structure towards the development of industries with high added value and introducing modern technologies. Such measures will contribute to the creation of modernized jobs. In this context, special attention is paid to the institutional support of the process, which includes the development and implementation of effective strategies, state programs, projects and regulatory legal acts, etc. Local institutions and initiative groups united by common interests, knowledge and information resources are no less important. After all, it is such institutional changes that can motivate the transformation of socio-economic relations in rural areas, activate entrepreneurial activity and promote the development of local markets [5].

The Recommendations of the Committee Hearings on the topic "State of Preparation for the Negotiation Process with the EU in the Field of Agriculture" state: "Ukraine remains at the initial stage

of preparation in the field of agriculture and rural development. However, some progress has been made in approximating legislation to the EU acquis, in particular in matters of quality policy and organic farming" [9].

A number of international directives aimed at the integrated development of rural areas are in force in the countries of the European Union. They cover measures to support farms, improve infrastructure, protect the environment, stimulate innovation and improve the quality of life of the rural population (Table 1).

The above documents regulate the financing of agricultural and environmental projects through the European Agricultural Fund for Rural Development (EAFRD) [12, 13], provide support to small and medium-sized farms, promote the balanced use of natural resources and the introduction of innovative technologies in agriculture.

In the EU countries, the main priorities of rural development policy are overcoming rural migration, combating poverty, expanding employment, ensuring the level of opportunities, improving the quality of life and general social well-being. The European rural development policy is aimed at solving a wide range of environmental, economic and social problems, which are enshrined in the EU Common Agricultural Policy (CAP EU). One of the most important goals of the CAP EU since its reform in 2000 has been to promote the development of rural areas. This is the second pillar of the EU CAP, which supports the first pillar – income support and market stabilization by strengthening the social, environmental and economic balance of rural areas [11, 14].

The importance of rural areas in the structure of the European Union's agricultural policy has been traced since its inception more than sixty years ago, as the key objectives of the CAP remain unchanged, in particular:

- increasing the efficiency of the agricultural sector by promoting technical progress;
- ensuring the rational development of agricultural production and optimal use of production factors;
- ensuring a decent standard of living for agricultural workers, in particular by increasing their incomes;
- stabilizing agricultural markets and protecting both producers and consumers from external factors;
- guaranteeing and providing the population of EU member states with quality food through their own agricultural production at affordable prices [15].

Table 1

EU Directives on rural development

1	European Charter of Local Self-Government (ratified by Ukraine on 15.07.1997)
2	Association Agreement between Ukraine and the European Union (Chapter 17. Agriculture and Rural Development (Articles 403–406))
3	Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the integration of greenhouse gas emissions and removals from land use, land-use change and forestry (LULUCF sector) into the framework of climate policy for the period 2021–2030
4	Regulation (EU) 2020/2220 of the European Parliament and of the Council of 23 December 2020 establishing certain transitional provisions for support from the European Agricultural Fund for Rural Development (EAFRD) and from the European Agricultural Guarantee Fund (EAGF) in 2021 and 2022
5	Regulation (EU) 2021/2115 of the European Parliament and of the Council of 2 December 2021 laying down rules on support for strategic plans drawn up by Member States under the common agricultural policy (CAP Strategic Plans) and financed by the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD), and repealing Regulation (EU) No 1305/2013 and No 1307/2013
6	Regulation (EU) 2021/2116 of the European Parliament and of the Council of 2 December 2021 on the financing, management and monitoring of the common agricultural policy
7	Regulation (EU) 2021/1057 of the European Parliament and of the Council of 24 June 2021 establishing the European Social Fund Plus (ESF+) Programme for 2021–2027 and repealing Regulation (EU) No 1296/2013
8	Regulation (EU) 2021/1058 of the European Parliament and of the Council of 24 June 2021 on the European Regional Development Fund and on the Cohesion Fund
9	Regulation (EU) 2023/955 of the European Parliament and of the Council of 10 May 2023 establishing the Social Climate Fund

Note: formed by the authors based on [10, 11].

The CAP promotes the balanced development of rural areas through three long-term objectives:

- promoting the competitiveness of agriculture and forestry;
- ensuring sustainable management of natural resources and action on climate change;
- achieving balanced territorial development of the rural economy and communities, including job creation and support [16].

For 2023–2027, the Common Agricultural Policy is based on ten key policy objectives (Key policy objectives of the CAP 2023–2027), covering social, environmental and economic aspects (Fig. 1) [14]. These objectives form the basis for the formation of strategic CAP plans by the Member States of the European Union. In general, the CAP objectives are aimed at the comprehensive development of the agri-food sector and ensuring balanced economic growth in the context of global transformations.

The Common Agricultural Policy (2023–2027) is aimed at the environmental component of change, as well as supporting small and medium-sized farms, increasing the competitiveness of the agricultural sector and ensuring the country's food security. The lion's share of the budget is aimed at achieving climate goals and adapting agriculture to modern challenges, etc.

The agricultural policy budget for 2021–2025 reflects the EU's aspect of supporting the balanced development of agriculture, as well as adapting to today's environmental and economic challenges (Table 2).

The updated EU Common Agricultural Policy focuses on the socio-economic balanced development of rural areas (Rural Development Policy). It is expected that economic growth and employment in rural areas will be ensured through the development of renewable energy, bio- and circular economy, ecotourism. Particular attention is paid to the implementation of the concept of smart villages by strengthening resource potential, supporting innovation, attracting capital investments,

establishing partnerships, using modern financial instruments for infrastructure development, etc. A bottom-up approach is expected, in particular within the framework of the LEADER program (Liaison Entre Actions de Développement de l'Économie Rurale). At the initial stage, the emphasis is on achieving synergy between EU sectoral policies related to rural areas, as well as on improving the coordination of funding that will ensure their implementation [18]. Ukraine's accession to the EU is only a matter of time, while the National Strategic Plan of the Agricultural Policy of Ukraine will largely be determined by stakeholders [19].

In the context of research, the main European integration processes that open up opportunities for the balanced development of rural areas of Ukraine are presented, in particular: financial support and access to European markets, which are the green light for the successful integration and modernization of agriculture and improving the living standards of the rural population (Fig. 2).

In Ukraine, the process of forming the conceptual foundations of balanced development of rural areas began almost immediately after the signing of the Association Agreement with the EU [20]. In 2015, the Cabinet of Ministers of Ukraine approved the Concept of Rural Development, which defines the mechanisms for adapting the agricultural and rural sectors of Ukraine to the conditions of functioning within the free trade area with the EU. The main goals of this concept include diversification of economic activity, growth of real incomes from agricultural and non-agricultural activities in the countryside, ensuring guaranteed social standards and improving the living conditions of the rural population. In addition, the goals include environmental protection, preservation and restoration of natural resources, support for the rural population as carriers of Ukrainian culture, identity and spirituality. Among the last points are the creation of favorable conditions for expanding the potential of territorial communities and harmonization of legislation in the field of rural development with EU standards [16].



Fig. 1. Ten objectives of the Common Agricultural Policy for 2023–2027 [14]

EU CAP budget, 2021–2027

Directions of the Common Agricultural Policy (CAP)	Financing		
	billion EUR	%	% to budget
Block 1. Support for farmers and regulation of agricultural markets	291.1	75.3	24.1
Block 2. Development of rural areas	95.5	24.7	7.9
Together	386.6	100	32.0

Note: formulated by the authors based on [11, 17]

Table 2

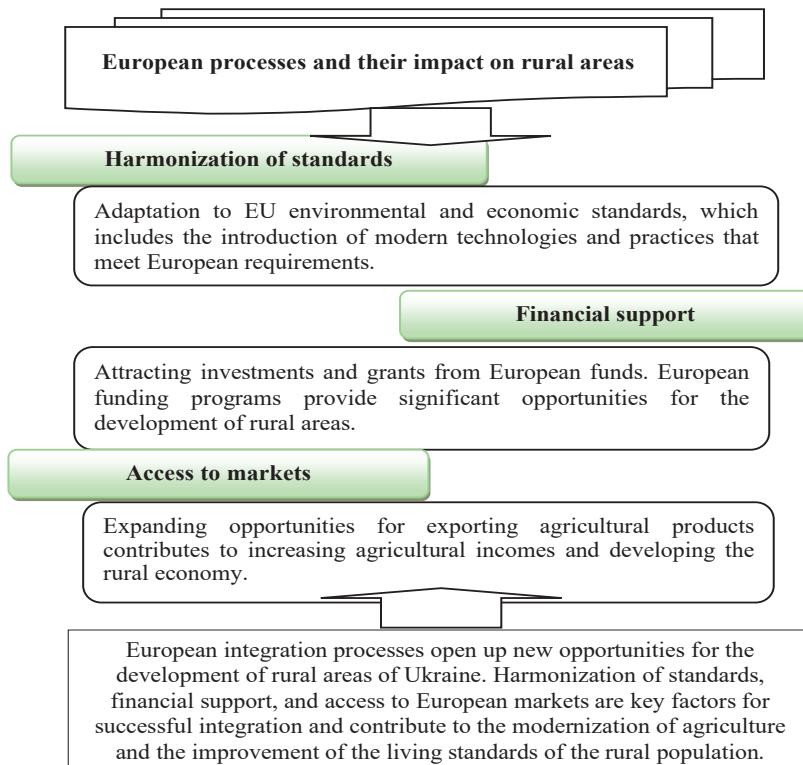


Fig. 2. European processes and their impact on rural areas of Ukraine

The increased interest in the development of rural areas is quite understandable, since ensuring equal living conditions for urban and rural residents is among the priorities of national ministries of the EU countries. To achieve this goal, both EU funds and national budget resources are usually involved. The European Commission approves and monitors programs, but the final selection of projects and the distribution of funding are made at the national or regional levels. In Ukrainian practice, this is done through relevant management decisions at the regional and ATC levels [19].

However, today in Ukraine, rural development is often associated with a mechanism for financial support for depressed areas through subsidies. The European model, on the other hand, is focused on a different approach – unlocking the economic potential of villages by supporting farming, preserving local identity, traditional lifestyles, cultural traditions, and protecting sustainable biodiversity. It is thanks to these factors that the development of green tourism and sustainable rural development is possible [9].

For Ukraine, where more than a third of the population lives in rural areas, preparation for participation in the EU CAP is of particular importance. According to internal surveys of the National Association of Agricultural Advisory Services of Ukraine, only slightly more than 8% of the active rural population – farmers, community leaders and managers – have minimal knowledge of this policy. Despite the positive attitude, for the majority of rural residents, European integration remains an abstract concept, without clear practical content [9].

Based on the analysis of development programs and effective measures of foreign experience, a model of effective management of the development of rural areas of Ukraine has been developed, the practical implementation of which is appropriate not only for the development of rural areas, but also for ensuring balanced development of the state as a whole. It is based on the integration of six key areas: economic, environmental, social, spatial, managerial and innovative (Fig. 3). The proposed model provides for a comprehensive approach to rural development, focused on intersectoral interaction, activation of local resources, community involvement and implementation of effective governance

practices, which, in turn, will contribute to social cohesion, innovation and balanced development.

Reducing the economic gap between the city and the countryside, supporting employment diversification and developing rural infrastructure contribute to raising the living standards of the rural population and creating a stable economic environment. The activation of the role of united territorial communities together with the implementation of post-war reconstruction programs will allow restoring rural communities and increasing their ability to guarantee the country's food security. In addition, this will contribute to overall economic growth through the implementation of a state support program that provides for increasing wages in rural areas, supporting exports and opening new markets. Important components are also expanding opportunities to attract international aid and investment in local facilities, providing preferential loans and grants for farmers and entrepreneurs in the affected regions.

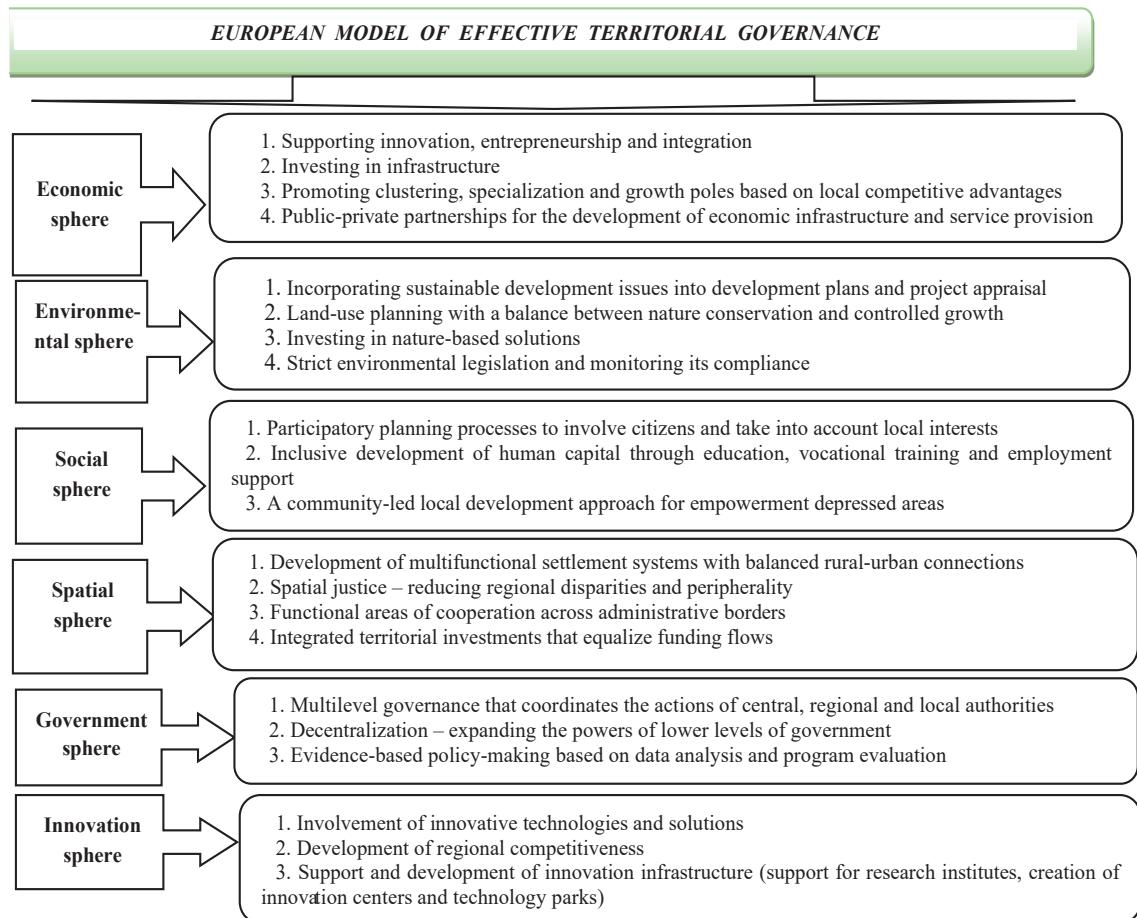
Under the conditions of the decentralization reform in Ukraine, there is an active formation of united territorial communities covering both rural and urban settlements. As a result of such spatial and administrative integration, rural areas gain access to additional resources, in particular due to the filling of local budgets with tax revenues from enterprises within the community cities.

In addition, residents of rural areas have the opportunity to use social infrastructure and other services, including education and health-care, concentrated in urban centers. This ensures an increase in the standard of living of villagers, the development of social mobility and a reduction in depopulation trends in villages.

However, active urbanization and industrialization of territories adjacent to villages creates both additional opportunities for economic development and potential environmental risks. Negative factors include the growth of man-made loads, in particular air pollution from industrial emissions, wastewater discharges into water bodies and unauthorized waste disposal. This leads to the degradation of agricultural landscapes, deterioration of the quality of agricultural products and increased risks to the health of rural residents.

The economic activity of urban centers at the same time contributes to the diversification of agricultural production, the development of new product sales channels, the modernization of logistics infrastructure and the introduction of innovations in agriculture. There is great potential for the development of intermunicipal cooperation in the field of implementing "green" practices, such as landscaping, energy efficiency, waste management and biodiversity conservation. The implementation of such initiatives allows mitigating the negative effect of urbanization and ensuring balanced development of rural areas in the context of regional policy.

Analysis of the dynamics of the formation of rural united territorial communities (UTCs) in Ukraine for 2015–2023 indicates a stable positive trend. If in 2015 93 rural UTCs were registered, then as of 2023 their number reached 627. Such rapid growth, almost seven times in eight years, reflects the intensity of decentralization processes and the effectiveness of local government reforms. Along with the increase in the number of rural UTCs, a significant expansion of their territories was observed: from 16.1 thousand km² in 2015 to 172.8 thousand km² in 2020–2023. Thus, the increase by 156.7 thousand km² reflects the process of active consolidation of administrative-territorial units, improvement of the spatial structure of management and unification of land and resource potentials within the communities (Table 3).

**Fig. 3.** Conceptual model of effective management of rural development in Ukraine**Table 3**

Dynamics of the formation of rural ATCs in Ukraine for 2015–2023

Years	Rural population, million people	Share of rural population in total, %	Number of rural ATCs	Share of rural ATCs in total number of ATCs, %	Area of rural ATCs (thousand km ²)
2015	13.256	31.0	93	58.5	16.1
2016	13.176	30.9	108	29.5	22.2
2017	13.102	30.9	173	26	37.0
2018	13.015	30.8	75	9.3	11.3
2019	12.897	30.7	116	11.6	21.5
2020	12.763	30.4	626	43.3	172.8
2021	12.628	30.3	626	43.3	172.8
2022	12.473	30.2	627	42.7	172.8
2023	12.473	30.2	627	42.7	172.8
2023 to 2015	-783	-0.8	+534	-15.8	+156.7

Note: formed by the authors based on data from the State Statistics Service of Ukraine

These changes contribute to increasing the capacity of rural communities, more effective use of budget resources, improving land asset management and ensuring the prerequisites for balanced development at the local level.

In the paper [2], it is noted that decentralization processes have created favorable organizational conditions and expanded the rights, powers and resource capabilities of local government bodies. However, so far this has not led to a significant increase in the efficiency of using the internal potential of rural areas and has not provided a significant improvement in their socio-economic development.

The full-scale war unleashed by Russia in 2022 has complicated the course of decentralization processes and the reform of local self-government in Ukraine. A significant part of rural areas has been destroyed as a result of hostilities, which has negatively affected their ecological state and socio-economic development. The decentralization reform at the same time increased the ability of communities to effectively mobilize resources and organize local resistance. In Ukraine, as in many other countries in Europe and the world, even before the war there were enough environmental problems, the main of which was air pollution, especially in industrialized cities, where large enterprises operate using outdated technologies.

The problem with waste is becoming more and more serious every year. The low level of waste disposal and recycling contributes to its accumulation in landfills, which leads to pollution of water bodies and air, contributes to the deterioration of the environment and negatively affects the health of the population. Waste recycling in Ukraine is only 5%, and 95% of all waste is taken to landfills, which are overcrowded. The areas under landfills occupy about 167 thousand hectares and exceed the areas of protected areas. Another urgent problem is the pollution of water bodies due to the discharge of untreated wastewater, as well as the outdated water supply system, which poses a threat to both aquatic and soil ecosystems, as well as drinking water supplies. Excessive deforestation and development of natural areas lead to the loss of biodiversity and the disappearance of certain species of plants and animals. According to various sources, before the war, Ukraine had from 10 to 12 million hectares of degraded land, which is more than 25% of the area of agricultural land. The main causes of degradation are the loss of humus, compaction, contamination with radionuclides, pesticides, and heavy metals. The area of degraded land increased by 80–90 thousand hectares annually.

Military operations have multiplied the environmental problems that existed in Ukraine before the war. More than 15 million hectares were directly affected by the fighting, almost 5 million hectares of arable land were not used in agricultural production due to mining and active fighting, and all this threatens food security. The war caused enormous damage to the protected areas of Ukraine: more than 800 objects of the nature reserve fund were affected (about 0.9 million hectares), 514 objects (0.8 million hectares) still remain under occupation, and such unique places as the Dzharylhach National Nature Park (the entire reserve area of 1,588 hectares was destroyed) and wetlands were almost completely destroyed. 2.9 million hectares of the Emerald Network (part of the European network) and 17 wetlands of international importance are under threat. These figures are constantly growing, as the war continues. There is a high probability of radionuclide contamination of new territories due to the enemy's occupation of the largest Zaporizhzhia NPP in Europe. The demolition of the Kakhovka HPP dam generally led to an ecological disaster, which negatively affected both the ecological state within Ukraine and the Black Sea (the death of unique species of flora and fauna). It will take more than a dozen years to restore the environment, and some Red Book species have disappeared forever.

From the analysis, a conceptual model of the development of rural areas as a system was formed, which reflects the influence of both internal and external factors on the self-organization of rural territorial communities (RTC), in particular their adaptation to challenges, stabilization of the situation and further development, including in the post-war period, which is now

especially relevant in modern Ukrainian realities. Implementation can contribute to the integration of different levels of government and the active involvement of local communities in decision-making processes. Thus, the model lays the foundation for the formation of a sustainable, adaptive management system capable of responding promptly to new challenges (Fig. 4).

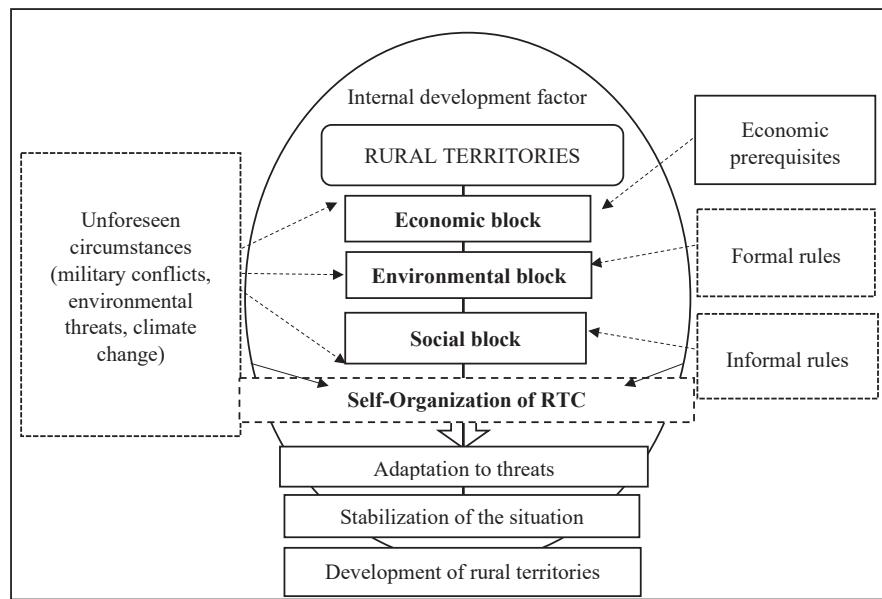


Fig. 4. Conceptual model of rural development as a system

Based on the analyzed economic indicators (Fig. 5), it is possible to see the unevenness of environmental and social indicators regarding the balanced development of rural areas of the country. The discrepancy in income levels between urban and rural populations reflects the presence of problems associated with insufficient development of infrastructure in rural areas, limited access to investment and lack of jobs. This situation requires the implementation or possible improvement of reforms to reduce the socio-economic imbalance between the city and the countryside.

The processing of employment data showed an overall decrease in the number of employed people aged 15–70 years – from 16,443 thousand people in 2015 to 15,610 thousand people in 2021. This indicates a decrease in labor potential, probably caused by demographic and migration processes and economic instability.

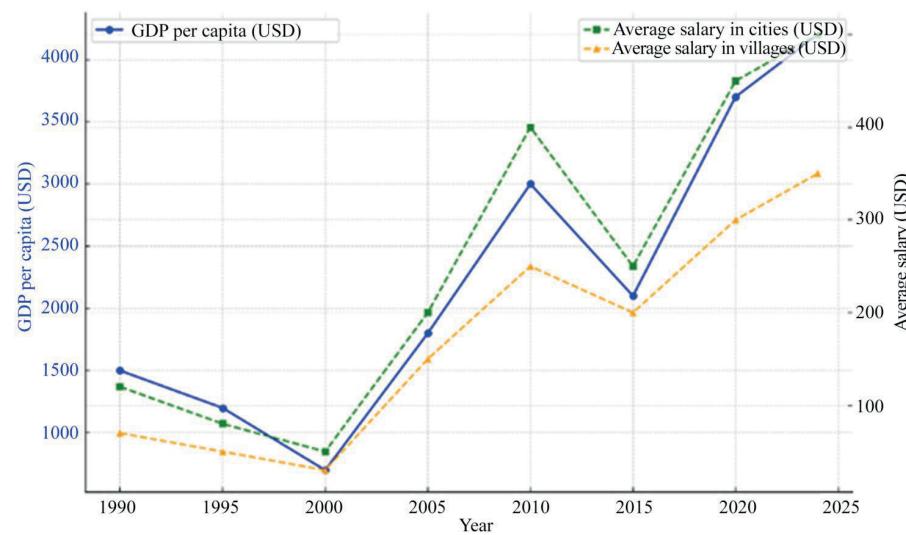


Fig. 5. Dynamics of economic indicators in Ukraine, 1990–2025 (developed by the authors based on FAO data)

In rural areas, the labor force decreased from 5,406 thousand people in 2015 to 5,184 thousand people in 2021, which is 95.9% of the 2015 figure. During 2015–2021, the employment rate of the rural population fluctuated in the range of 62.0–64.5%. At the same time, the unemployment rate among the working-age population increased by 13.1%, while the size of the labor force in this age group decreased by 4.1% (Table 4).

Despite the existing negative trends in 2015–2021, including a decline in employment, rising unemployment, and a decline in the educational level in rural areas, the share of the rural workforce in the overall structure of the employed remained stable. This indicates its significant and stable role in the national economy. The growth of the unemployment rate while simultaneously reducing the size of the workforce in rural regions of Ukraine indicates an urgent need to implement a comprehensive state policy aimed at supporting the rural population. Such a policy should include measures to develop non-agricultural activities, actively attract investments, create new jobs, improve working conditions and social protection in rural areas. At the same time, it is advisable to create conditions for vocational training and advanced training of rural residents to strengthen their competitiveness in the labor market.

In order to improve the quality of life of the population in both cities and rural settlements and create a balanced economic environment, it is important to have a state policy focused on:

- 1) expanding access to basic services and developing rural infrastructure;
- 2) increasing wages in the agricultural sector and supporting employment;
- 3) stimulating employment in rural communities;
- 4) diversifying production and promoting the export of agricultural products;
- 5) for post-war recovery, it is necessary to attract international assistance, taking into account the needs of rural territorial communities.

Rural areas of Ukraine play a leading role in ensuring the food and environmental security of the state and at the same time are an important component of the national economy. They form the basis for

tourism, certain production sectors, the functioning and development of agriculture, forestry and water management and other sectors of the economy, and at the same time these territories have significant potential for protecting landscape and biological diversity, preserving the natural environment, preserving the spiritual development and cultural heritage of not only the rural population, but also the state as a whole.

To ensure balanced development of rural areas, it is necessary not only to increase the level of state funding, but also to improve the mechanisms for distributing budget resources between relevant programs, which will guarantee a more rational use of funds and contribute to the achievement of strategic goals of regional development.

In EU countries, the development of rural areas is financed by the European Agricultural Fund for Rural Development (EAFRD), which provides for the implementation of special programs and co-financing from national budgets. Unlike the European Union, Ukraine does not have a state program to support rural areas with adequate funding, which would ensure their balanced development, and all this indicates that the strategic development of rural areas requires not only effective management, but also a stable financial basis capable of guaranteeing their competitiveness.

In 2022, the Government implemented 52 programs of state regional support for the development of territories, for the financing of which more than 3.66 billion USD were allocated. The main administrators of funds and responsible executors of budget programs were central executive bodies, in particular local authorities and self-government. The state directed the allocated funds to the local level in order to create conditions for the balanced development of territories (Fig. 6) [21].

Fig. 6 presents the criteria for financial support for community development and infrastructure development, only 43.9 million USD were allocated for the development of rural areas, which is only 1.2% of the total amount of funding. This indicates a relatively small share of state support directed specifically at the needs of the village, despite its fundamental role in preserving the natural environment, ensuring food security, and the socio-economic life of the state.

Table 4
Employment indicators in rural areas of Ukraine, 2015–2021

Indicators	2015	2018	2019	2020	2021	2021 to 2015, %
Employed population of Ukraine aged 15–70, total, thousand people	16443	16361	16578	15915	15610	94.9
Of which: by type of economic activity: agriculture, forestry and fisheries, thousand people	2870.6	2937.6	3010.4	2721.0	2692.7	93.8
Share of population employed by type of economic activity: agriculture, forestry and fisheries, %	17.5	18.0	18.2	17.1	17.2	98.3
Working age labor force in rural areas, thousand people	5406	5387	5422.5	5275.8	5184	95.9
% of the rural labor force to its total number	31.1	31.1	31.2	31.1	31.1	100.0
Unemployment rate of the working age population in rural areas, %	9.9	9.6	9.1	10.9	11.2	113.1
Employment rate of the population in rural areas, %	62.0	62.9	64.5	62.4	62.0	100.0
Of which: by level of education: complete higher, %	73.4	72.4	72.0	69.7	68.9	93.9
Basic higher, %	52.7	50.4	59.2	56.0	58.8	111.6
Incomplete higher, %	65.6	65.1	64.4	62.8	60.5	92.2
Vocational and technical, %	64.1	62.1	64.4	62.1	61.8	96.4
Complete general secondary, %	49.8	49.3	50.3	48.9	47.9	96.2
Basic, primary general secondary or no education, %	20.2	19.7	21.6	19.3	18.1	89.6

Note: compiled by the authors based on data from the State Statistics Service of Ukraine

The distribution of funding prioritizes the development of infrastructure of national importance, in particular road infrastructure, while rural areas, in order to ensure their balanced development in accordance with the challenges of decentralization and European integration, require increased funding and targeted programs.

Insufficient funding for the agricultural sector and environmental development of rural areas can limit their sustainability and competitiveness, and in order to achieve balanced development at the local level, there is a need to review state priorities. It has been determined that the process of creating communities should be aimed not only at obtaining additional financial resources and relevant preferences

at the local level, but should also be accompanied by a clear strategic vision for the development of united territorial communities.

In order to overcome these challenges and taking into account the experience of the European Union, a model of balanced development of rural areas of Ukraine has been formed (Fig. 7), which provides for a comprehensive approach to managing the development of rural areas by integrating environmental, economic and social factors and is focused on increasing the efficiency of management decisions, ensuring balanced development of rural areas, achieving social justice, strengthening environmental sustainability, stimulating economic growth and harmonizing with EU standards.

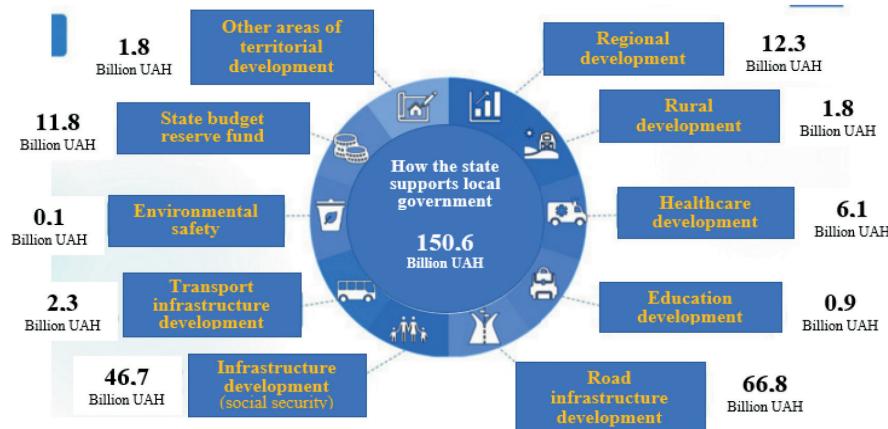


Fig. 6. State financial support for community development and infrastructure development, 2022, billion USD [21]

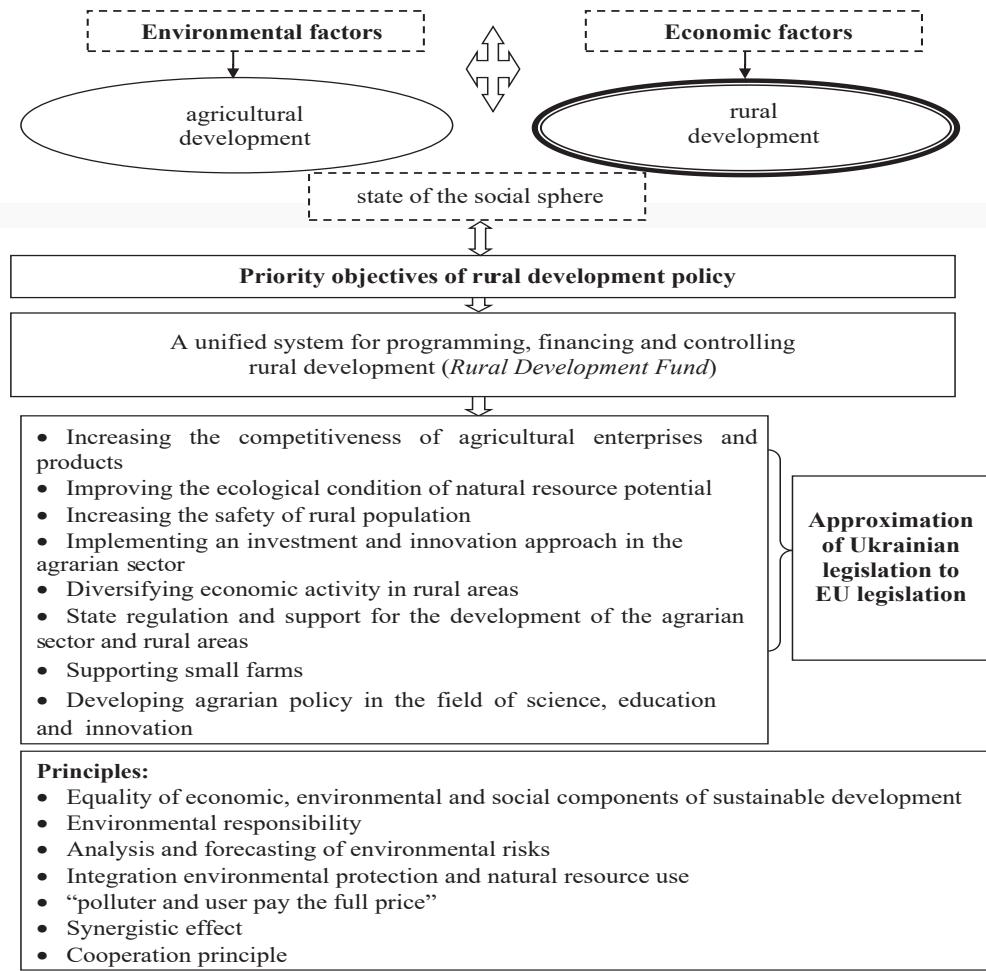


Fig. 7. Model of balanced development of rural areas of Ukraine taking into account the experience of the EU

The work [22] determined that the balanced development of rural areas and communities should be considered through the prism of the classical understanding of balance – as a harmonious combination of key components. The economic component involves achieving maximum aggregate income while preserving and increasing aggregate capital and expanding the production of competitive products. The ecological component of development contributes to ensuring a balanced interaction of natural and biological resources, preserving the integrity of the biosphere and maintaining the ability of ecosystems to self-reproduce. The social component is aimed at forming a favorable social state and improving the quality of human life as the main value of social development. The institutional component contributes to strengthening the role of local institutions in implementing balanced socio-economic development, as well as the coherence of levers of influence and regulatory legal acts that regulate the activities of local self-government bodies of united territorial communities at the basic level.

Particularly relevant in the current conditions of decentralization and integration of Ukraine into the European space is the problem of effective management of rural areas and their balanced development, taking into account the economic, environmental and social challenges of today, which necessitates the development of an effective model for improving ecological and economic management mechanisms, the essence of which will be to ensure a comprehensive approach to regulating the development of rural areas based on clearly defined goals, implementation subjects, principles and instruments of influence, united by a single goal – achieving sustainable development (Fig. 8).

Within the framework of this approach, special attention is paid to the issues of economic stability, adaptation to climate change, environmental protection, minimization of the consequences of military actions, etc. The interaction of central executive authorities, local state administrations, local self-government bodies, and public organizations should be based on the principles of transparency, trust, subsidiarity, partnership, autonomy, and shared responsibility for the future development of rural areas [23, 24].

The combination of environmental and economic instruments will contribute to a comprehensive approach to the balanced devel-

opment of rural areas and the improvement of the social component of local communities and the preservation of the natural environment (Fig. 8).

Effective implementation of ecological and economic mechanisms involves stimulating environmentally responsible entrepreneurship, supporting innovations in the field of balanced agriculture and developing environmentally safe technologies. This includes providing financial incentives and grant support for environmental initiatives, implementing an environmental monitoring system and raising the level of environmental awareness of citizens. Involving local communities in the decision-making process regarding nature use will contribute to the formation of an effective and balanced management model that guarantees environmental safety and economic sustainability of rural areas.

The implementation of such an approach will ensure increased economic self-sufficiency, environmental improvement, adaptation to climate change, restoration of damaged infrastructure of rural areas and, in general, will contribute to the integration of Ukrainian communities into the European space.

Research limitations. First, the lack of data necessary to assess the long-term dynamics of the implementation of European integration norms into domestic agricultural practice makes it difficult to predict the effectiveness of the proposed mechanisms. Secondly, the research focuses on the macro level, which limits the ability to take into account all the specific features of individual regions associated with their agro-climatic, socio-cultural and economic differences. Thirdly, the effectiveness of the mechanism's implementation largely depends on the availability of political support and stable financing, which are external, uncontrollable factors. The identified limitations emphasize the need for further applied research and improvement of the model during its practical implementation.

Prospects for further research should include ensuring regulatory and legal conditions for infrastructure restoration, improving access to basic services and raising the social level of the population, stimulating entrepreneurial activity, reducing unemployment and increasing economic activity in rural communities, reducing pollution, and protecting the environment in order to improve the quality of life in rural areas.

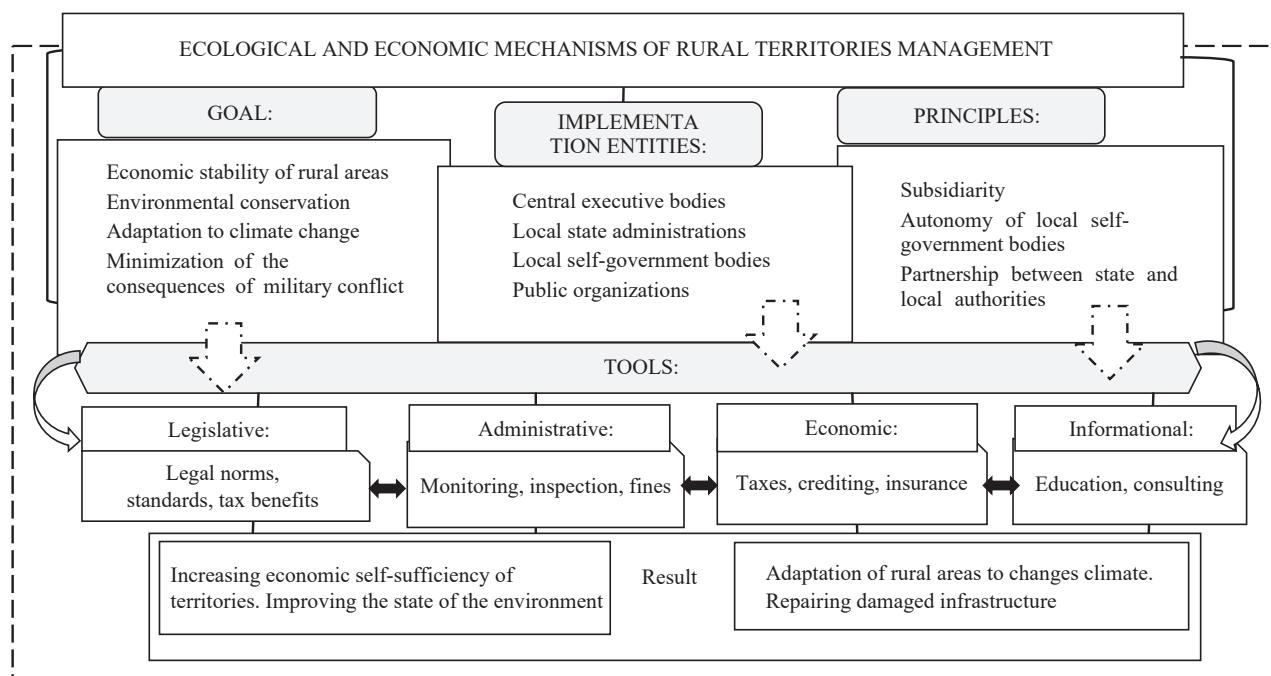


Fig. 8. Improving the ecological and economic mechanism of rural management in the context of decentralization

4. Conclusions

1. Proposals have been formulated for adapting EU principles to Ukrainian legislation and national characteristics of agriculture, such as:

- development of rural development programs to the SAP model;
- implementation of European standards with transitional stages;
- expansion of access to basic services and development of rural infrastructure;
- diversification of production and promotion of agricultural exports;
- for post-war recovery, it is necessary to attract international assistance taking into account the needs of rural territorial communities.

A conceptual model of rural development as a system has been proposed. It is based on a holistic approach focused on activating local potential, intersectoral interaction, community involvement and implementation of the principles of effective governance. The practical implementation of the model involves the implementation of integrated programs that combine the modernization of social infrastructure, environmental sustainability and economic diversification. The key tools should be transparency of procedures with community participation, coordination centers, public-private partnership mechanisms and a monitoring system based on clear indicators.

2. An ecological and economic mechanism for managing rural areas in decentralization has been formed, which includes implementing entities, principles, tools and levers. The above ecological and economic mechanism will help stimulate environmentally responsible entrepreneurship, support innovations in the field of balanced agriculture and the development of environmentally safe technologies. The proposed mechanism will make it possible to increase the economic self-sufficiency of the territory, improve the state of the environment, adapt rural areas to climate change and restore damaged infrastructure, etc.

Further support and effective cooperation with the European Union is an important factor in the success of this process, which will contribute to the successful adaptation and implementation of European standards in Ukraine.

3. The relationship between ecological, economic and social components to achieve the goals of balanced development of rural areas has been analyzed. Based on the analysis of development programs and the effectiveness of measures of foreign experience, a model of management of the development of rural areas of Ukraine has been developed. The practical implementation of which is appropriate not only for the development of rural areas, but also for ensuring the balanced development of the state as a whole. It is based on the integration of six key areas: economic, environmental, social, spatial, managerial and innovative, which provides for a comprehensive approach to the development of rural areas, focused on intersectoral interaction, activation of local resources, involvement of communities and the implementation of effective governance practices, which, in turn, will contribute to social cohesion, innovation and balanced development.

Conflict of interest

The authors declare that they have no conflict of interest in relation to this research, including financial, personal, authorship, or any other, that could affect the research and its results presented in this article.

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Data availability

The manuscript has no associated data.

Use of artificial intelligence

The following artificial intelligence (AI) tool was used in the preparation of the article: DeepSeek-R1-0528. This AI tool was used to generate methodological approaches for the initial proposal, as well as to search for literature sources using keywords and criteria. The authors tested the methodological approaches during the research of the text and checked the reliability of the information provided by the AI. The authors bear full responsibility for the final manuscript.

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Authors' contributions

Oksana Drebota: Project administration; **Mariia Vysochanska:** Conceptualization, Investigation, Writing – review and editing; **Nadiia Palapa:** Investigation; **Valentyna Bilotil:** Data curation; **Lyudmyla Sakharnatska:** Investigation; **Nadiia Klym:** Investigation.

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