

MECHANISMS OF PUBLIC MANAGEMENT FOR SUSTAINABLE DEVELOPMENT OF RURAL AREAS IN CONDITIONS OF HIGH LEVEL MIGRATION AND DEMOGRAPHIC CRISIS CAUSED BY THE RUSSIAN-UKRAINIAN WAR¹

МЕХАНІЗМИ ДЕРЖАВНОГО УПРАВЛІННЯ СТАЛИМ РОЗВИТКОМ СІЛЬСЬКИХ ТЕРИТОРІЙ В УМОВАХ ВИСОКОГО РІВНЯ МІГРАЦІЙНО-ДЕМОГРАФІЧНОЇ КРИЗИ, СПРИЧИНЕНОЇ РОСІЙСЬКО-УКРАЇНСЬКОЮ ВІЙНОЮ

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The study examines the challenges and threats caused by the Russian-Ukrainian war that have arisen in the of rural areas development in Ukraine. In particular, socio-ecological-economic losses and current trends in the demographic situation are analyzed in the study. The study reveals theoretical generalization and substantiation of the mechanism of public management in rural areas sustainable development as a set of economic, administrative-organizational, social, motivational, legal and political means of influence of public authorities as a subject of management on rural areas and settlements (objects of management). These are applied for solving socio-ecological-economic problems, preservation of natural resource potential, with an emphasis on protecting the interests of rural dwellers and meeting the needs of present and future generations.

It is proved that it is the territorial community that should determine the directions of the environment arrangement with an emphasis on creating favorable conditions for the development of various forms of management and diversification of its economic activity. The focal points of ensuring the agricultural sector in the conditions of a full-scale war are to be maintaining the efficiency of the following chain: production – processing – storage – providing food to population. In order to implement an innovative model for the agricultural sector development and to intensify economic growth, it is expedient to establish long-term relationships between business entities in the form of public-private partnerships, agricultural clusters and technology parks, to provide interaction of state and local authorities with self-regulatory organizations, to ensure partnership at the local level to support the initiatives of rural communities in the social infrastructure development.

The key task of the authorities is to support commodity producers, protect the environment, and support comprehensive projects for the rural infrastructure development. To stimulate the birth rate, it is necessary to provide jobs, decent wages, housing, education, quality medical services and financial support for the birthrate, especially for the birth of second/third child until the child reaches the maturity age.

Key words: Rural areas; sustainable development; demographic crisis; migration; state policy.

У статті теоретично узагальнено і обґрунтовано механізм публічного управління сталим розвитком сільських територій, що являє собою сукупність економічних, адміністративно-організаційних, соціальних, мотиваційних, правових, політичних засобів впливу органів публічної влади як суб'єкту управління на сільські території та поселення (об'єкти управління), для вирішення соціально-економічних завдань, збереження природно-ресурсного потенціалу, з акцентом на захист інтересів селян, задоволення потреб нинішнього і майбутніх поколінь.

На основі аналізу, узагальнення й систематизації наукових джерел висвітлено виклики і загрози, що постали на шляху розвитку сільських територій в Україні. спричинені російсько-українською війною. Зокрема, соціально-економічні втрати та сучасні тенденції демографічної ситуації; обґрунтована роль територіальних громад у визначенні напрямів облаштування середовища з акцентом на створення сприятливих умов для розвитку різних форм господарювання й урізноманітнення господарської діяльності; напрями забезпечення розвитку агросфери в умовах повномасштабної війни, зокрема, збереження ефективності ланцюга «виробництво – перероблення – зберігання – постачання населенню продуктів харчування. Запропоновано, метою реалізації інноваційної моделі розвитку аграрного сектора і активізації економічного зростання встановлення довгострокових взаємозв'язків між суб'єктами підприємницької діяльності у формі державно-приватного партнерства, аграрних кластерів і технопарків, взаємодії державних та місцевих органів влади із саморегульованими організаціями, партнерство на місцевому рівні щодо підтримки ініціатив сільських громад у розбудові соціальної інфраструктури; органам влади необхідність підтримки товаровиробників, захисту довкілля, розвиток сільської інфраструктури. Для стимулювання народжуваності, забезпечити робочі місця, гідні зарплати, житло, освіту, якісні медичні послуги і фінансову підтримку народження особливо другої і третьої дитини, до набуття кожною повноліття.

Ключові слова: сільська місцевість, сталий розвиток, демографічна криза, міграція, державна політика.

The problem statement in general terms.
The large-scale invasion of Russia into Ukraine has posed a huge challenge and threats to

achieving sustainable development goals to the state and its rural areas in particular. The colossal socioeconomic losses in the country are accom-

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panied by a deepening demographic crisis characterized by a significant decline in birth rates, an increase in mortality among both military personnel and civil population, including children, in temporary internal displacement of millions of the residents from dangerous areas, and in forced emigration of over 10 million people, comprised mainly of women and children.

In addition to the aforementioned problems, the destroyed infrastructure, economic and social damages, the country has suffered severe ecological losses that for decades will have the consequences not only for Ukrainians and their future generations but for entire European continent. It is evident that the longer the war lasts, the more horrible the social, ecological and economic consequences will arise, especially for agricultural sector and rural areas. The production development and the economic activity growth requiring an increasing number of natural resources utilization, obviously lead to a total intensification of anthropogenic pressure on the environment and disruption of the balance in the surrounding natural environment. Uncontrolled land use, carried out without clear criteria for delineating property rights to natural resources, inconsistencies and contradictions in the regulatory legal framework for ecological management, raises serious concern regarding the preservation of the natural resource potential for future generations, catastrophic destruction and the horrible consequences of war.

Rural areas have always been the basis of the agricultural sector in Ukraine. However, the situation has changed dramatically in recent years. Ukraine's agriculture, with its leading place in the commodity structure of exports and contributing to other industries development, remains export-raw material and import-dependent until now [1]. Quantitative, qualitative and structural imbalance caused by an irrational production structure, a decrease in the price competitiveness of agri-food products, the lack of an appropriate level of state regulation, excessive depletion of natural potential, poor material and technical support of agricultural entities make the list of domestic agriculture characteristics. Added to these are the problems of inefficient organization of the development of rural areas, their depression, insufficient diversification of activities, unemployment and impoverishment of the rural population, which has been decreasing. To stop this process, there is an urgent need for the state, business and economic science have to develop urgently a new approach to the implementation of the concept of sustainable development of rural areas. The concept should be aimed at achieving resource-balanced ecological and socio-oriented economic

growth, i.e. they have to stimulate investments, activate entrepreneurial activity and diversify the rural population employment making an emphasis on overcoming the demographic crisis, preservation and development of human capital through the mechanisms of public management and administration.

An analysis of recent studies and publications in the field of sustainable development reveals that the first significant study applied to rural areas – the Philippine Strategy for Sustainable Development – was published in 1990. The conceptual framework (PSSD) and its principal goal was to achieve economic growth with adequate protection of the country's biological resources and its diversity, vital ecosystem functions and overall environmental quality. According to this strategy, the economic growth goals must be compatible not only with the needs of society, but also with the natural dynamics and carrying capacity of ecosystems.

Also in 1990, Derick W. Brinkerhoff and Arthur A. Goldsmith [2] in their book *Focuses on institutional sustainability and its role in agriculture and rural development* noted that the key component of sustainable development is the institutional structure within which activities are conceived, planned, funded, implemented and managed (a key component of sustainable development is the institutional framework within which activities are conceived, planned, implemented, and managed).

According to the study results by Oprea M. G., Vladescu M.I. [3], after 1990 to 1999, there were only 49 publications (in international scientific and metric databases) dealing with the sustainable development of rural areas, which is less than 0.5% of the total number of papers. After the Sustainable Development Strategy was adopted in the EU in 2001, which was revised in 2006 and had the name «EU Sustainable Development Strategy», the number of publications increased dramatically. This strategy set the pace for research emphasizing that public policy should be based on a long-term vision that contributes to interrelation of economic development, social cohesion and environmental protection as interdependent elements that support each other and create a more sustainable world for future generations.

In Ukraine, the studies on the issues of the rural communities and rural territories development are carried out by scientists of the Institute of Agrarian Economics, headed by Yu. Lupenko [4].

Shubravska O. [5] devoted her research to the problem of increasing the general level of sustainability of agro-food production and the substantiation of economic levers and methods of its pro-

vision. The scientific papers of Popova O. [6] deal with the justification of the theoretical and methodological foundations of the economic mechanism of the agrarian sector sustainable development. Scientists of the Institute of Economics and Forecasting have proposed the Ukrainian model of agrarian development and its socio-economic reorientation [7].

We concur with the opinion of Pavlov O. [8], who suggests considering the concept of rural development as a territorial one, rather than sectoral one, in terms of its definition and essence. The concept should be creative in its orientation. Its heuristic content comprises the possibility to more fully, objectively and timely assess the functionality of rural areas both at the level of their subsystems and as a whole. In addition, it focuses on referring to human capital not as the object, but as the subject of systemic transformations on the way to the rural areas revival. Hereby, the object of the research in the context of rural development is its territories as a system entity sooner than individual components of territories. The thesis that all life activities of society take place within the boundaries of the rural and not the agrarian sphere is of great methodological significance.

A brand new socio-economic theory of sustainalism that prioritizes quality of life, social equality, culture, world peace, social justice and well-being is proposed by Hariram N.P.; Mekha, K.B.; Suganthan, V.; Sudhakar K. [9] It contains the six principles of sustainalism and defines sustainalists as individuals who embrace these new concepts. They explore ways to achieving sustainability in modern world through a sustainable revolution, a step towards a sustainable era.

Therefore, the key emphasis of the study on the issues of sustainable development of rural areas among foreign and domestic scientists is the promotion of sustainable methods of agriculture and natural resources management, ensuring food security, reducing the impact on the environment, expanding access to social services, such as education and health care in rural areas. In addition, the issues comprise promoting the development of rural entrepreneurship and the circular economy in order to create jobs and support sustainable economic development, promoting the development of rural tourism and diversification of the economy of rural areas, overcoming poverty and reducing inequality, energy security through improved access to renewable energy and transport infrastructure in rural areas.

Highlighting unresolved parts of the overall problem. Tracing the evolution of sustainable development the concept from its initial focus on the ecological dimension of economic

growth at the end of the 19th century to its comprehension, summarized in the UN 17 goals of sustainable development, it is worth noting that modern world faces a number of unpredictable challenges and threats. These include global climate change, natural disasters, the COVID-19 pandemic, growing social inequality, geopolitical tensions, military conflicts, and the russian-Ukrainian war, in particular, which necessitated the search for solutions that go beyond inertial economic doctrines. Therefore, our research is focused on the possibilities of implementing the main provisions of the concept of sustainable development of rural areas in the context of modern world trends in the conditions of war and post-war reconstruction through effective mechanisms of public administration, applying a combination of historical, statistical and theoretical methods of analysis, as well as surveying country dwellers.

The aim of the article is to substantiate the mechanism of public management in the sustainable development of rural areas in the conditions of socio-ecological and economic losses and a high level of migration and demographic crisis caused by the russian-Ukrainian war.

Presentation of the main material. Historically, rural areas in Ukraine have always been an important component of socio-economic development of the country, preserving its tangible and intangible rural heritage. They make the basis for solving environmental problems due to providing ecosystemic services to mitigate the negative impact on the environment and climate change, ensuring food security, contributing to the preservation of biodiversity, unique cultural landscapes, as well as the development of a closed-loop economy, thus promoting sustainable development.

Since 2014, positive practices of promoting sustainable development have emerged in Ukraine, however, since the beginning of full-scale military operations, the agricultural sector has faced a number of problems, in particular, those regarding its material, technical and financial support. According to the press service data of the Verkhovna Rada of Ukraine, as of February 23, 2024, the largest category of loss caused by full-scale invasion comprises damaged and destroyed agricultural machinery, which amounts to 5.8 billion US dollars or 56.7% of all damages [10]. In total, about 181,000 units of agricultural machinery and equipment were partially or completely damaged. Experts estimate losses from the destruction and theft of manufactured products at US \$1.97 billion, from destroyed capacities, in particular, damage to granaries – \$1.8 billion, damaged perennial plantations – \$398 million,

animal husbandry – \$254 million, aquaculture and fisheries – \$35 million.

The World Bank estimates the total indirect losses of the agricultural sector of Ukraine in the war year of 2022 at \$31.5 billion dollars. USA. The biggest losses – about 46% of the total amount – were caused by a decrease in domestic prices for export-oriented goods (wheat, barley, corn and sunflower seeds). Losses from the decrease in the production of annual and perennial crops (44%), the reduction of animal husbandry and fishing (6%), and the increase in production costs in agriculture (3%) in 2022 are significant [11].

Through the war, 25% of agricultural households in Ukraine (38% in the frontline regions) stopped or reduced their production volumes. 84% of agricultural enterprises in the areas under temporary occupation have suspended their economic and production activities [12].

An addition of the abovementioned economic problems, there have arisen environmental ones as about 30% of the territory of Ukraine (176 thousand km²) is contaminated with explosive objects and needs mine clearing. Due to the detonation of a dam in the Kyiv region (the Irpin river), the area of 46 km² was under flood and, as a result, pesticides and agrochemicals were washed from agricultural lands, construction materials were washed out from the dam facilities, paints from a metalworking shop and heavy metals from electrical infrastructure were carried outside. Passing-by heavy machinery makes the soil more compacted, and therefore, the fertile layer goes destroyed, the processes of air and moisture exchange are deteriorated. Harmful waste from metal fragments of projectiles (including sulfur and copper) enters the soil and can migrate

to groundwater and eventually enter the food chain, having a catastrophic effect on both people and animals. As a result, the ecological disaster expands and becomes global in scale: the environment has no borders – the effects of war spread throughout the world through the circulation of air, water and species migration. Hence, it is important to ensure that the environmental effects of war are effectively addressed and that communities and all areas are greenly restored.

In the current situation, human capital is critically important for the village, it makes the basis of economic growth, innovation, social stability and ecological balance. That is why human capital requires a new approach to the formation and implementation of public policy, in particular, regarding the solution to the demographic crisis in the countryside, which deepens due to migration processes, mobilization of men, low birth rate and high mortality.

Research has established that due to the lack of simple reproduction of the population along with effective mechanisms of public management in public authorities, owing to rapid migration processes caused by war and ineffective state policy, the demographic situation in the countryside reached its catastrophic limits and became the reason for the rural settlements dying away by 435 units in 1990–2022, fig. 1.

Moreover, even in 2021, before the current stage of the invasion, the demographic situation in Ukraine was so difficult that the UN recognized Ukraine as one of the countries most affected by the rapid rate of population decline. The main reasons for the reduction of the population of Ukraine after 1990 were the long-term negative birth rate (the number of deaths significantly exceeded

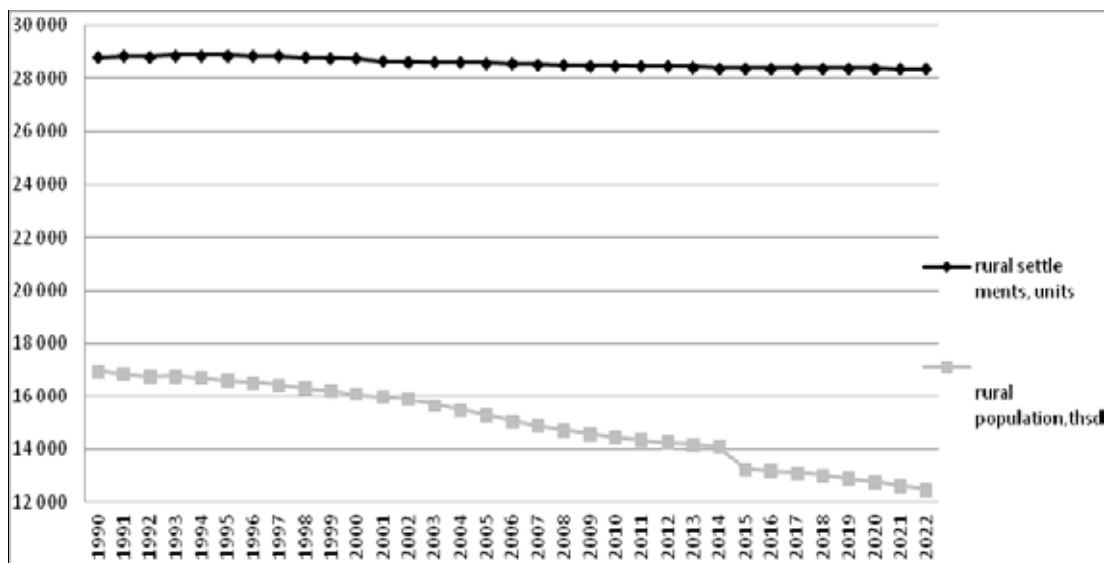


Fig. 1. Total present rural population and rural settlements in Ukraine, as of January 1

the number of births) and the very large scale of labor migration. In 1995, the growth rate of the population of Ukraine (the difference between the number of births and deaths in proportion to the total population) was -5.8%, in 2000 – 7.6%, in 2005 – 7.6%, in 2010 – 4.4%, in 2015 – 4.2% and -6.6% in 2019 (data of the State Statistics Service of Ukraine).

Due to the reduction of state support for the children birth, the drop in the living standard and the devaluation of the hryvnia, the political crisis and the beginning of Russian aggression in Ukraine, the birth rate among the rural population has significantly decreased. In 2021, the lowest number of births in villages – 96,700 persons – was recorded in recent demographic history. According to the Ministry of Justice of Ukraine, in 2023 there were one-third fewer births than before the full-scale invasion, and Texty.ua [13] notes that so low rate has not been recorded on the territory of our country for at least three centuries.

Prascheruk M.P., and Onegina V.M. [14] note that at the beginning of November 2023, there were 542 «dead villages» in Ukraine with none resident officially registered. The trend, along with the large-scale destructions caused by bombing, reveal that if the trend keeps remaining this scenario in the next 30 years, the rural population will decrease to 8 million people, which is an insufficient population potential for a very large (as for a European country) rural area [15]. Despite the somewhat similar situation in Europe, special factors manifested themselves in Ukraine.

In particular, in 2.5 years of full-scale war, the population of Ukraine has decreased by more than 10 million, with almost five million people living in the territories currently occupied by Russia. Both internal migration to the western borders and external migration have reached threatening proportions for communities. According to UN data, as of December 2023, the number of Ukrainians who stay abroad due to the war amounted to 6.3 million people. The situation is complicated by the growing number of widows and widowers, single elderly people, one-parent families and orphans. The problems of orphans and children staying without parental care are worsening: there has been increasing the number of children whose parents have died, gone missing, been forcibly deported, etc.

According to forecasts of the Center for Economic Strategy, after the termination of martial law and the opening of the borders, 88,000 to 155,000 men may leave Ukraine. Thus, the country may lose significant amounts of educational and labor potential in the near future along with economic losses that may amount to 3.9–6.3%

of the pre-war GDP annually [16]. Taking into account the fact that mostly middle-aged women and children went abroad, the non-return of these groups mean that the population of Ukraine will decrease in the future, and the trend of population aging will continue and intensify.

Therefore, Ukraine as a state should create all the best conditions for improving the demographic situation. One of the main directions of public policy regarding the return of our citizens should be the establishment of new institutional forms in the agricultural sector – diversified agricultural organizations that function on the basis of cooperation, integration and diversification. To stimulate the birth rate, it is necessary to provide decent salaries, real opportunities to have housing and financially support the birth, particularly the second and third child in the family, until each child reaches the adulthood.

We tend to evaluate positively the Government's actions in the agricultural sector support, but we still believe that the further state agrarian policy should be aimed at forming a new post-war model of its development with a balance of economic, ecological and social components that will meet the goals of sustainable development.

As for overcoming the demographic crisis, the state has developed a draft of the Demographic Development Strategy of Ukraine for until 2040 (which defines strategic goals and objectives aimed at solving demographic, social and humanitarian problems, and is specified in the state demographic policy). However, we hold the impression that it is focused on the problems rather than the mechanisms of their solution.

But, in our opinion, the enormous challenge our country has faced yet gives us a chance to move to a new worldview paradigm of sustainable development of territories with a balanced solution of socio-economic problems. While working out the conceptual framework for the rural areas development, it should be borne in mind that their sustainable multifunctional development should be based on an efficient rural economy, expanded reproduction of human capital and productive employment of the rural population, improvement of the living standard and life quality, rational use and reproduction of natural resources. This diversity requires interaction and compromises between all stakeholders in elaborating the domestic policy for multifunctional agriculture.

We assert that the key direction in the current industry development under the full-scale war is the increasing degree of agricultural raw materials processing, damaged infrastructure restoration and building modern infrastructure. Launching the new production facilities will allow the money sup-

ply to be effectively locked into new added value and generate related tax revenues. In the post-war recovery, diversification of agricultural production should be ensured through increasing the capitalization of human resources and the investment attractiveness of agricultural enterprises.

In order to implement an innovative model of agricultural sector development and boost its economic growth, it is advisable to establish long-term relationships between business entities such as public-private partnerships, agricultural clusters and technology parks, to provide interaction between state and local authorities and self-regulatory organizations, as well as partnerships at the local level to support rural community initiatives in building social infrastructure in villages.

Cooperation in the agricultural clusters development is one of the most promising forms of interaction between the state and business in the agricultural sector since it ensures increased competitiveness and profitability of the entrepreneurs through production specialization and concentration, involvement of innovative developments of research institutions, formation of closed production cycles. At the state level, the development of rural areas with modern agro-service, agro-industrial, residential and cultural zones (in the form of agrotowns) can provide their sustainable social and economic development [17].

It should be noted that currently Ukraine has already formed a network of powerful university centers, but unfortunately, their cooperation and interaction with communities has not yet been established. They play a key role in creating knowledge and transferring it to innovative products. Universities should not only train specialists, but also share knowledge, develop the students' creative ideas, and collaborate on projects applicable in rural areas. It is public-private partnerships that should facilitate such interaction. The mechanism of cooperation between public authorities, local governments, and the private sector in the form of public-private partnerships allows for coordination and consideration of mutual interests of the state and business in the implementation of joint innovation and investment projects, targeted sectoral programs, intensification of investment activities to develop multifunctional agriculture, etc.

Having outrun many other countries in digitalization, Ukraine has the all chances to rapidly introduce modern technologies into Ukrainian agricultural research and business and give a powerful impetus to the development of the industry through creating a unified information system for agricultural producers using modern technical tools of design and programming based on IT technologies via

the Internet, with the involvement of higher education institutions.

Conclusions. We consider the mechanism of public management in sustainable development of rural areas as a set of economic, administrative, organizational, social, motivational, legal and political means of influence of public authorities as a subject of management on rural areas and settlements (objects of management), designed to solve socio-ecological and economic problems, preserve natural resource potential, focused on protecting the interests of country dwellers, meeting the needs of current and future generations.

Taking into account the basis of the CAP, in particular, the rural development policy, we believe that it is the territorial community that should determine the directions of the environment with an emphasis on creating favorable conditions for the development of various forms of management and diversification of economic activity.

The main task of state, regional, and local authorities should be encouraging the producers, environment protection, and supporting comprehensive rural infrastructure development projects with the focus on the qualitative rather than quantitative parameters of the socio-demographic reproduction of Ukrainian villages. The implementation of new construction projects and energy-efficient housing programs, along with the creation of new jobs, should become a powerful incentive for rural development, in particular for providing housing for the resettles affected by the war. The projects should also contribute to social facilities restoration, infrastructure improvement, and the revival of the settlement network as a whole. The development of smart settlements in the 100-km zone around major cities, the creation of an extensive network of public spaces, and the development of transport infrastructure and communications will deter the outflow of people from rural areas.

With regard to the demographic problem, to stimulate the birth rate, it is necessary, above all, to provide decent salaries, real opportunities to have housing, education, quality medical services and financial support for the birth of the second and third child, especially until each child reaches the age of majority.

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