

## TOOLS FOR ENSURING ECONOMIC SECURITY OF RURAL AREAS DEVELOPMENT

Vitalii BOIKO, Petro OLISHCHUK

Lviv National Agrarian University, V. Velykoho str., 1, Dubliany, Zhovkivsky district, Lviv Region, 80381, Ukraine, Phone: +38 032 2243 935; E-mails: v\_boyko888@ukr.net, petrol@ukr.net

**Corresponding author:** v\_boyko888@ukr.net

### *Abstract*

*The authors elaborated structural and functional characteristics to provide the economic security of the development of rural territories. The authors identified the types of threats by: incompleteness of institutional environment, increased irrationalism of economic activities management, reduced economic prosperity of the rural population, degradation of the social sphere, worsening of demographic situation, destruction of the logistics infrastructure, aggravation of environmental imbalances. It is proposed to aggregate the economic security of rural areas development with demographic, economic infrastructure, rural households, social and humanitarian and environmental security. The authors compiled a rating of rural areas of Ukraine by the level of economic security. The tools to ensure the economic security of rural areas development are justified in the article.*

**Key words:** rural areas, economic security, tools, threat, risk, institution

### INTRODUCTION

Transformation processes and imperfect agrarian reform in Ukraine have resulted in the decline of agriculture and led to the exacerbation of problems of functioning of economic complexes in rural areas. They are marked by such negative trends as lack of jobs, poverty of rural population, decline in socio-economic, road, transport and household infrastructure, destruction of natural landscapes and the constant disappearance of rural settlements from the administrative map of the state. The rural population, especially the young people in rural areas, is significantly limited in the self-realization of their own plans and ideas in rural areas. It leads to the emergence of acute sectoral and spatial-territorial imbalances, that in the aggregate leads to a violation of the principle of a systematic approach to the management of security processes at all hierarchical levels of the national economy. The aggravation of regional structural imbalances forms the prerequisites for increasing threats, strengthening the stagnation processes in rural areas and makes it difficult to establish the foundations of the ecological functioning of agriculture in

Ukraine. Overcoming of these negative trends and processes requires the development of balanced tools to ensure the economic security of rural areas development that take into account their features, structural characteristics and the possibility of fulfilment of the natural resource potential in modern conditions of functioning of economic complexes in the rural territories.

### MATERIALS AND METHODS

The results of studies on the issues of ensuring economic security at various hierarchical levels of economic management are reflected in the works of famous scientists. Thus, V. Horbulin and A. Kachynskyi assert economic security as the fundamental resource basis of the state to defend its national interests and gain strong stand at the geopolitical stage in the modern conditions of the distribution of strategic spheres of influence among the main players [4, p. 27]. The research of T. Vasylytsiv aimed to identify "the sectoral determinants of the formation of quantitative and qualitative parameters of the economic security of enterprises in the context of transformational processes of a market economy, taking into account the

sectoral specifics of economic management, as well as determining the nature of the interaction and the impact of the level of business security on the formation of government resilience to prevent risks and counter threats" [13, p. 10].

Z. Varnaly assigns the key role for the economic security of the state at the macro and meso levels to the legalization of economic relations that is based on the development of applied tools for reducing the size of the shadow economy, increasing the level of trust between the authorities and economic agents, eliminating the existing barriers to doing business transparently and paying taxes to the budget [12, p. 49].

In scientific papers on rural areas the attention of the authors is focused on theoretical and applied aspects of enhancing their socio-economic development. In particular, P. Cloke, T. Marsden and P. Mooney in their studies substantiated the mechanisms of reproduction of the natural resource potential of rural areas, developed the tools for introducing the technologies for greening the agricultural production, and developed measures to preserve the cultural and ethnic heritage among the rural population [2, p. 155-160].

A. Schmitz suggests the development of trade and economic relations in the rural area, system diversification in the agrarian sector of the economy, the introduction of innovative and savings management technologies, a decrease in the concentration of capital in one segment of the agrarian market to be the basic factors that reduce poverty among the rural population [9, p. 210-215]. The scientist V. Yurchishin asserts the rural territories as a spatial and resource base for increasing the efficiency of the agricultural sector's performance [14, p. 5].

Despite the presence of numerous scientific and practical developments, the scientist pay little attention to the problems of the formation of an appropriate level of economic security of rural areas development based on the creation of preventive mechanisms to counter the growing challenges and threats. Such preconditions ensured the formation of

the goal of scientific research, which consists in justifying the instruments for ensuring the economic security of rural areas development. Achieving this goal stipulated the expediency of creating an adequate set of research methods. The method of structural and functional analysis was used to carry out a classification of threats to the economic security of rural areas development.

The integral indicator of the economic security of rural areas development was calculated using the principal component method [11, p. 10]:

$$I = \prod_{i=1}^n z_i^{a_i}, \sum a_i = 1, a_i \geq 0 \quad (1)$$

where  $I$  – integral index of economic security;  $z_i$  – normalized indicator values;  $a_i$  – weighting coefficients;  $n$  – number of indicators.

The correlation between the primary signs and the components is described by such dependence in the model of the principal components [5, p. 30]:

$$y_i = \sum_{i=1}^m c_i G \quad (2)$$

where  $y_i$  – standardized values of the  $i$ -th component with unit variances; total variance is equal to the number of  $m$  attributes;  $c_i$  – the contribution of the  $i$ -th component to the total variance of a set of indicators [5, p. 30]. The  $G$  component is defined as:

$$G = \sum_{i=1}^m d_i x_i \quad (3)$$

where  $d_i$  – factor loadings;  $x_i$  – input data. In turn, the weight coefficients  $a_i$  are determined by the formula [5, p. 30]:

$$a_i = \frac{c_i |d_i|}{\sum c_i |d_i|} \quad (4)$$

The methodological approach to the separation of economic security zones was evaluated [6]: 1) 0-0.1999 – the critical zone; 2) 0.2000-0.3999 – the danger zone; 3) 0.4000-0.5999 – unsatisfactory area; 4)

0.6000-0.7999 – satisfactory zone; 5) 0.8000-1 – the optimal zone.

The method of system design was used to substantiate and develop effective tools to ensure the economic security of rural areas development. Such a combination of scientific research methods provided the possibility of obtaining the reliable results.

## RESULTS AND DISCUSSIONS

Rural territories of Ukraine have significant natural resource potential, and the establishment of its rational use is the source of the formation of strong resource reserves of the state economic security system.

Rural areas occupy about 90% of the total area of Ukraine. 42.7 million hectares of agricultural land are concentrated in rural areas, accounting for 68.8% of the total area of Ukraine. As a result of economic activities in 2017, the share of agriculture, forestry and fishery in the overall structure of the gross domestic product (GDP) of Ukraine was 12.1% (US \$ 13.5 billion), while the share of agricultural products in the export structure was 41.0% (US \$ 18 billion) [10].

Despite the significant natural resource potential and the significant role of rural areas in the Ukraine's GDP, it should be noted that the efficiency and scope of their economic complexes functioning are insufficient due to the low level of involvement of this potential in business processes and managerial failures in the implementation of applied basic principles of state policy. Such tendencies deliver negative impact on the processes of formation of economic security at both the state and spatial-territorial levels, and also violate the principle of the consistency of its ensuring. This together leads to the intensifying of negative trends in the development of rural settlements in Ukraine (Table 1).

Catastrophic trends are noticed for the period 1990-2017 in Ukraine: urban-type settlements reduced by 42 units, villages – by 467 units, rural population – by 3.9 million people and its share in the total structure by 1.8%. 17 villages disappeared on average per year

during the study period from the administrative-territorial map of Ukraine. Such destructive processes are caused by the exacerbation of stagnation tendencies in the countryside, the lack of jobs in sufficient numbers, the imbalance of the local government system, low social responsibility level and the unfair distribution of material benefits between the rural and urban population.

Table 1. Selected indicators of the development of rural settlements of Ukraine in 1990, 2000, 2010 and 2017\*

Indicators	Year				2017 to 1990, +,-
	1990	2000	2010	2017	
Urban-type settlements, units.	925	893	885	883	-42
Villages, units.	28,845	28,651	28,457	28,378	-467
Rural population, million people	16.9	16.0	14.3	13.0	-3.9
Share of rural population, %	32.5	32.6	31.3	30.7	-1.8
Population per one village, people	584	557	504	459	-125

\*Source: completed by the authors according to the data [3].

The growing influence of threats is the result of sharpening internal and external challenges, including the limitations of most natural (raw) resources, sharpening competition for resources, the risks of environmental conflicts [8, p. 70]. The following types have been identified, based on the compliance of the structural and functional aspect to the identification of threats to the economic security of rural development:

(i) threats of imperfect institutional environment (incompleteness and inconsistency of the legal framework, the prevalence of informal institutions over formal when making management decisions, excessive centralization of governance in rural areas; deformation of the institutional-psychological basis in rural areas);

(ii) threats of increasing the irrationalism of economic activity operation (inefficient use of the natural resources of rural areas, the distorted structure of agricultural producers, decay of the material and technical base of the agro-industrial complex; sectoral imbalances, low level of diversification of agricultural production);

(iii) threats to reduce the economic welfare of the rural population (excessive disparity of incomes of rural and urban residents, increased poverty and property stratification among the population, high level of unemployment, diffusion of the practice of the natural form of payment for leased land shares);

(iv) threats of social degradation (lack of a quality health care system, poor public services, stagnation of education in rural areas, decay of the cultural environment in rural areas);

(v) threats of deterioration of the demographic situation (gender and age structure imbalances of the rural population, the existence of spatial-regional demographic imbalances, migration of the rural population into urban areas, stagnation of human capital);

(vi) threats of destruction of the logistics infrastructure (abandonment of the road and transport communication; lack of development of cluster inter-farm interconnections; deterioration of communication networks; underdevelopment of information support in rural areas);

(vii) threats of aggravating environmental imbalances (increased human pressure on rural ecosystems, unbalanced use of natural resources, the occurrence of natural and man-made accidents and disasters, the destruction of rural landscapes).

The destabilizing effect of abovementioned threats complicates the processes of establishing the economic security of rural areas development and makes it impossible to ensure an adequate level of the latter. Taking into account the specifics, sectoral and regional peculiarities and existing structural and critical problems, the economic security of rural areas development is proposed to be aggregated from such components as:

(i) demographic security (determines the security parameters of the rural population reproduction from the point of view of their ability to level threats of deterioration of the age structure, exacerbation of depopulation problem, increase migration, deepening processes of "extinction" and "aging" of the demographic potential of rural areas);

(ii) economic and infrastructural security (characterizes the ability of economic complexes in rural areas to support the processes of expanded reproduction and form the economic capability of access to basic goods for the rural population);

(iii) security of rural households (determines the resource capacity of rural households to improve the quality of life and increase their own welfare on the basis of enhancing mechanisms to stimulate rural employment, diversify its income sources and improve the agricultural characteristics of these households);

(iv) social and humanitarian security (consists in the ability of the economic security system to support the most vulnerable groups of the rural population and ensure adequate conditions to meet their interests in the social and humanitarian sphere);

(v) environmental management security (characterizes the use of natural resources in rural areas from the standpoint of rationalism and environmental balance that allows to maintain the restoration capacities of the natural resource potential of rural territories at a safe level, to contain anthropogenic load on natural ecosystems within the maximum allowable limits and ensure the preservation of the latter for future generations).

A system was formed based on the theoretical and methodological generalizations with 47 indicators for assessing the economic security of rural areas development, aggregated into its integral index. To carry out the calculations, the software environment Statistica 10.0 (package "Principal Component Method") and Microsoft Excel 2016 were used. Table 2 presents the integral indicators of the economic security of the development of rural areas of Ukraine in 2012-2017 (Table 2).

Estimation of the economic security of rural areas development showed that during 2012-2017 its integral index was stably within the danger zone. The critically low level of this index is also observed in the regional dimension. Thus, an unsatisfactory level of economic security was recorded in seven administrative regions of Ukraine in 2017, and the rural territories of eighteen regions were within the danger zone. The highest level of economic security of rural development in 2017 was observed in Kyiv region, and Donetsk and Luhansk regions occupied the last places in the ranking. The results of diagnostics of the economic security

of rural areas development give grounds to state the following: the system of the state's economic security is structurally imperfect and resource inconsistent to implement its functions not only at the macro- but also at the meso-level; threats to the economic security of rural areas development are poorly controlled and managed; the mechanism of transformation for increasing the level of efficiency in the functioning of the agro-industrial complex in the process of strengthening the economic security of rural development is insufficiently effective; the irrational nature management leads to environmental imbalances.

Table 2. Integral indices of the economic security of the rural areas development of Ukraine in 2012-2017\*

Administrative regions	Year						2017 to 2012, +/-	Administrative region's ranking, 2017
	2012	2013	2014	2015	2016	2017		
Ukraine	0.3517	0.3630	0.3702	0.3760	0.3844	0.3985	0.0468	-
Autonomous Republic of Crimea	0.3198	0.2687	__**	__**	__**	__**	__**	__**
Vinnitsya region	0.3358	0.3402	0.3397	0.3741	0.3873	0.3887	0.0529	9
Volyn region	0.4362	0.4372	0.4500	0.4648	0.4125	0.4235	-0.0127	3
Dnipropetrovs'k region	0.3281	0.3209	0.3704	0.3782	0.3446	0.3378	0.0097	17
Donets'k region	0.3181	0.3120	0.2779	0.2684	0.2838	0.2784	-0.0397	23
Zhytomyr region	0.3562	0.3388	0.3524	0.3463	0.3456	0.3578	0.0016	15
Zakarpattia region	0.3754	0.3699	0.3831	0.3702	0.3683	0.3745	-0.0009	12
Zaporizhzhya region	0.3131	0.3107	0.3061	0.3071	0.3010	0.3125	-0.0006	21
Ivano-Frankivs'k region	0.3619	0.3689	0.3863	0.4067	0.3977	0.4025	0.0406	7
Kyiv region	0.4514	0.4886	0.4890	0.4786	0.4848	0.4923	0.0409	1
Kirovograd region	0.3240	0.3431	0.3400	0.3325	0.3329	0.3345	0.0105	18
Luhans'k region	0.2789	0.2807	0.2748	0.2532	0.2673	0.2573	-0.0216	24
Lviv region	0.4052	0.3985	0.4249	0.4225	0.4100	0.4224	0.0172	4
Mykolayiv region	0.2964	0.3458	0.3484	0.3475	0.3297	0.3325	0.0361	19
Odesa region	0.2746	0.2862	0.2570	0.2760	0.2711	0.2843	0.0097	22
Poltava region	0.3923	0.4095	0.4187	0.4151	0.4219	0.4183	0.0260	5
Rivne region	0.3930	0.4028	0.4165	0.4179	0.4267	0.4347	0.0417	2
Sumy region	0.3639	0.3680	0.3712	0.3611	0.3809	0.3748	0.0109	11
Ternopil region	0.3472	0.3562	0.3806	0.3813	0.3868	0.4122	0.0650	6
Kharkiv region	0.3463	0.3503	0.3283	0.3405	0.3593	0.3654	0.0191	14
Kherson region	0.3029	0.3124	0.3219	0.3131	0.3054	0.3157	0.0128	20
Khmelnysky region	0.3451	0.3516	0.3496	0.3397	0.3638	0.3784	0.0333	10
Cherkasy region	0.3613	0.3574	0.3656	0.3733	0.3630	0.3724	0.0111	13
Chernivtsi region	0.3585	0.3576	0.3703	0.3900	0.3888	0.3947	0.0362	8
Chernihiv	0.3267	0.3456	0.3389	0.3645	0.3498	0.3528	0.0261	16

\*Source: completed by the authors according to the data [10].

\*\* Statistical data are absent.

Improving the system of ensuring the economic security of the state at the meso-level involves reducing the influence of the informal institutions over formal ones in the development process [7, p. 10]. To do this, it is

necessary to increase the management capacity of local governments by ensuring the systemic reform of local government taking into account the community opinion, peculiarities of territorial location and infrastructure

potential of rural areas. An important aspect is the improvement of the institutional support for the functioning of land relations in the agrarian sphere by reducing the uncertainty level of the future expectations of agribusiness entities about the strategic parameters for the development of these relations based on completing the land inventory, demarcating the land fund and defining clear boundaries of rural settlements. This will allow to create prerequisites for a phased launch of the agricultural land market with mandatory restrictions on the concentration of land within the use of one owner, as well as a ban on the acquisition of land rights by foreign and legal entities.

Improving the resource and functional capacity of rural areas requires justification of financial instruments to support the economic security of their development, that provides for improving the budget process on the grounds of the transition to medium-term budget planning, levelling the effect of the inflation component and overcoming bureaucracy in the allocation of funds; reducing the dependence of the budgets of village and town councils on transfers, by diversifying sources of financial income, strengthening the role of real estate tax and creating incentives for entrepreneurs to register and pay taxes at the place of business; unshadowing of operation through increase in control over the violation of the law, countering the concealment of the real scope of business output and increase the level of tax culture of the population.

The formation of organizational and economic instruments for ensuring the economic security of rural areas development is crucial, implying the following strategic orientation:

(i) to modernize the network of infrastructure facilities in rural areas on the grounds of public-private partnerships and introducing the practice of compensating for infrastructure losses due to the conduct of business at rural areas;

(ii) to develop program-investment support for technical and technological re-equipment of economic entities of the agro-industrial complex, primarily small and medium-sized agricultural enterprises, on the grounds of

innovation and leasing, strengthen incentives for the development of cooperatives through the mobilization of resource potential, provide economic incentives for the transformation of households into farms on the basis of increasing their marketability;

(iii) to ensure the harmonization of domestic standards for ensuring the quality and safety of food with the requirements of EU member states by eliminating bureaucratic barriers and simplifying product certification procedures, creating preventive mechanisms to prevent exceeding the maximum permissible norms of harmful substances in food products, improving information support for producers of agricultural products in terms of requirements and provisions of the EU food regulations;

(iv) to intensify the diversification of risks of economic activities in rural areas, by stimulating the development of organic farming, increasing production capacity in the livestock industry, forming closed production and processing cycles, stimulating the development of rural green tourism, forestry and wood processing, fisheries, services and trade, alternative energy [1, p. 27-30].

Ensuring an adequate level of economic security of rural areas development is impossible without solving social problems, which requires the formation of socio-psychological instruments. For this, it is necessary to implement a set of measures aimed at creating a favourable institutional and psychological basis in rural areas and overcoming the destructive influence of the deviant behaviour of rural residents through the development of civil society institutions, overcoming the inert thinking of the rural population, searching for leaders and developing a sense of responsibility for village development, the revival and preservation of cultural customs and traditions.

The normalization of the demographic situation requires systemic measures. It involves overcoming the destabilizing tendencies of stagnation of human capital and the decline of the labour market in rural areas through balancing the age and gender structure of the rural population, creating favourable

conditions for living in rural areas, satisfying basic interests and needs, forming effective motivation for young people to return to their native village and living there after completing their studies, using acquired knowledge and skills for the development of the rural areas through the implementation of their own projects through entrepreneurial initiatives format, the establishment of mechanisms to overcome negative migration processes.

The strategic priority in the system of ensuring the economic security of rural areas development is the implementation of environmental instruments, that implies a focus on the introduction of environmentally friendly technologies; harmonization of human business activities with the functioning of natural ecosystems of rural areas, preservation of the reproductive properties of the natural potential of rural areas, cleaning polluted regional spatial areas, preserving and protecting the natural resource potential of rural areas from destruction for future generations, greening energy capacities on the basis of the development of alternative sources of energy through the usage of the natural resource potential of rural areas.

## CONCLUSIONS

The rural areas of Ukraine are characterized by depressive development due to the destabilizing effect of risks and threats on the processes of ensuring their economic security. The unformed system of tools for ensuring the economic security of rural areas development is caused by the declarative nature of government programs for socio-economic development, resource scarcity of the public administration system, its imbalance at various hierarchical levels, the second-ratedness of solving rural areas development problems. To increase level of the economic security of the development of Ukraine's rural areas provides for the expediency of systemic implementation of a set of tools, including institutional (improving regulatory and legal framework, completing local government reform, adjusting land relations), financial (improving the budget process, diversification

of financial income sources, unshadowing economic activities), organizational and economic (development of infrastructure facilities, technical and technological re-equipment of agribusiness, diversification of economic activities in rural areas), social and psychological (normalization of the demographic situation, improvement of the human capital quality, preservation of culture, customs and traditions), environmental (use of environmentally friendly technologies, the introduction of non-waste production, the development of alternative energy). The implementation of these tools will ensure the formation of resource reserves for levelling the disproportions of spatial and territorial development, improving the quality of life of the rural population and establishing the foundations for rational environmental management. All this will transform into a segment of strengthening the economic security of rural areas development.

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