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Theoretical and methodological bases of assessment of sustainable development of rural areas

The article considers the features of the assessment of sustainable development of rural areas taking into account the economic, social, environmental and institutional factors of the region. The main attention is paid to the indicator of socio-economic development of rural areas: gross regional product, actual final consumption of households, wages of employees, net taxes on production and others. According to the authors, to build the index, it is necessary to choose adequate indicators that will reflect the criterion of competitiveness and progressiveness of the industry structure. At the same time, it can be statistically available for evaluation. The article notes that for qualitative and quantitative assessment of sustainable development of rural areas should be used critical factors: economic capital, environmental resources, technical systems, geographical infrastructure, social infrastructure. The article defines «indicative plan-forecast» as the main tool of the strategy of sustainable development of rural territories. This reflects the most important priorities of socio-economic development of rural territories, methods and instruments of influence of state bodies on socio-economic development, the necessary volumes of economic resources. According to the authors, to assess the sustainable development of rural areas, it is necessary to calculate the indices taking into account the specifics of the competitiveness of regions and to determine the factors on the basis of the available analytical base.

Keywords: sustainable development, rural areas, indicator, economic factors, environmental factors, social factors, infrastructure

The transition to sustainable development of rural areas is impossible without an objective assessment of the existing financial, economic, social and environmental situations, as well as taking into account the institutional factors. However, there is currently no single methodology for comprehensive assessment of the sustainability of rural areas.

The existing mechanism for assessing the development of rural areas is based solely on the analysis of the so-called rating, expert assessments, which are used in certain industries, spheres. The mechanism is become the basis for ranking a particular territory in a number of administrative-territorial subjects. But, as a rule, even this assessment is not applied at the level of rural areas.

Usually, the development of the territory is estimated using indicators that are associated with the development of the regions of the country. According to G.N. Dugalova and D.T. Abenova, for indicators that perform the functions of socio-economic development of the region, it is necessary to include next [1]:

– indicator of «gross regional product», characterizing the process of production of goods and services;

– indicator of «actual final consumption of households», characterizing the final use of goods and services in the region. This indicator is important for studying the level of welfare;

– indicators of the income formation account (wages of employees, net taxes on production, gross profit of the economy and gross mixed income).

The indicators allow us to state the compliance of the socio-economic situation with the principles of sustainable development. However, an analysis of the economic, social and natural factors of the transition to sustainable development is needed to identify the causes leading to a given state.

Scientists V.I. Danilov-Danilyan and K.S. Losev state that indicators of sustainable development are classified into the following groups [2]:

– group of social factors: demographic dynamics and sustainability, income, health and education of the population, the level of poverty and others;

– group of economic indicators: changes in the characteristics and dynamics of consumption, production, the scale of implementation of «green» technologies and others;

– group of environmental indicators: indicators of conservation and restoration of natural resources (forests, water, soil, biodiversity), combating desertification and others;

– group of institutional indicators: creation of legal mechanisms for sustainable development at all levels, taking into account the priorities of sustainable development in the planning and management of the national economy, participation in international programs on sustainable development and so on.

Thus, sustainable development involves improving the quality of life of the entire population of the planet without increasing the use of natural resources to an extent that it would lead to an excess of the earth's capabilities as an ecological system. This is confirmed by S.N. Alpysbayeva and other scientists [3], who note that in order to bring the economy to the direction of sustainable resource-saving ecological and economic development, including at the regional level. It is necessary to develop new methodological approaches to assessing and measuring the quality of the country's economic system, taking into account environmental approaches.

An important condition for building an index that would most fully reflect how competitive a particular region is and the choice of adequate indicators that should sufficiently fully reflect the criterion of competitiveness and main competitive advantages. Which reflect the progressiveness of the industry structure, as well as be statistically accessible and contain a minimum of subjective interpretation. The choice of indicators is also determined by the availability of statistics on these indicators.

Thus, the main ranking indicators of the regions of the Republic is defined by scientists A.B. Temirova, A.Sh. Abdimomynova the indicators are [4]:

– economic development index;

– index of living standards of the population;

– index of scientific and innovative development;

– index of infrastructure development of the region.

In foreign practice, for multi-criteria and multidimensional systems, the pentagon-model is common, which received its name due to the geometric illustration in the form of a pentagon. The pentagon-model is generated from the original stylized pentagon-model [5], and allows us to consider significant (critical) factors that have quantitative and qualitative indicators for different systems, based on the formulated goals and conditions necessary to achieve them.

The pentagon approach is implemented in the field of energy policy, urban quality assessment, transport research, sustainable rural development. The results obtained showed its methodological effectiveness and reliability of the results obtained.

Currently, there are original models that allow to develop new areas of research. The following factors were used in this model: economic capital; environmental resources; technical systems; geographical infrastructure; social infrastructure.

In addition, the most recent example of a model published in 2009 to support sustainable rural development is based on the necessary conditions and concepts used in relation to the physical, social, economic, local and creative systems [6, 7].

In our opinion, one of the problems of rural development is the lack of a unified methodology for the analysis and evaluation of their sustainable development, which must necessarily take into account the specifics of the territory. Properly conducted analysis will help in the development of plans, programs of socio-economic development, will determine the actual socio-economic level of development of the territory at different stages and under certain operating conditions. It is an objective assessment of the situation in rural areas that should become the basis for management decisions and the formation of agricultural policy at the regional and local levels.

The most common tool for assessing sustainability is the indicator that quantifies the qualitative characteristics of the process. V.I. Frolov and E.O. Agafonova offer an indicative approach to the assessment of sustainable development of rural areas [8].

This approach is based on the calculation of indicators, each of which reflects a certain aspect of sustainable development, which may violate the integrity of the development picture of the territory.

Presented by R.M. Gazizov, method of evaluation of rural areas [9] is to calculate the aggregate indicator of sustainable development, based on the calculations of indicators of economic, social and environmental development. There are only three types of rural areas (high-resistant, medium-resistant and low-resistant areas), which makes it difficult to develop a long-term plan for the development of individual territories.

The proposed method of O.N. Kusakina, Yu.A. Dykan [10] includes the calculation of a multicomponent indicator of the state and development of rural areas, designed to determine the vector of their socio-economic development and justification of appropriate management decisions. This technique consists of seven stages:

– at the first stage, indicators that quantitatively characterize different groups of factors that determine the main components of rural areas are selected. This selection is preceded by a theoretical analysis of various factors that determine the development of rural areas;

– the second stage is associated with a general performance indicator, multi-component assessment and development of rural territories and visualization of relationships of the indicators determining the economic meaning of indicator;

– in the third stage, the calculation of points for each of the indicators and their scaling is carried out. This process involves the reduction of heterogeneous indicators measured in different units to dimensionless values varying from 0 to 1. These dimensionless values are calculated as the ratio of the difference between the indicator for a given year and the minimum value for the studied period of time and the difference between the maximum and minimum values of the indicators for this period;

– the fourth stage is aggregation of the scaled indicators into the final indicator. The final indicator is the arithmetic mean of the indices;

– at the fifth stage, the results of the influence of a set of factors are summarized and a component-by-component assessment of the state and development of rural areas of the region is carried out;

– at the sixth stage, the indicator of evaluation of each component of sustainable development of the region is determined using the calculated indices;

– on the seventh stage is the weighting of results multicomponent assessment and development of rural territories, based on the result of expert evaluation, summarizes the results of the influence of various factors on the assessment of the status and development of rural areas by year, identifies those that require revitalization through the development and implementation of system software institutionally-economic, socio-demographic and environmental events, providing a higher level and quality of life in terms of sustainable development of rural territories.

In the proposed methodology, target indicators act as criteria for assessing the implementation of tasks to ensure sustainable development of rural areas. In this regard, the list of key indicators can be expanded. Thus, qualitative and quantitative assessments of implementation results should be reflected:

– demographic policy and the creation of conditions for resettlement in rural areas;

– diversification of the rural economy and results of employment policies;

– development of social infrastructure (indicators of provision of social infrastructure).

The most important indicators of sustainable development of rural areas according to E.V. Voloshenko, K.Yu. Voloshenko are [11]:

– index of agricultural production in farms of all categories;

– level of employment of the able-bodied population (%);

– average monthly salary;

– per capita disposable resources of the rural population;

– the share of the population with available resources below the subsistence level in the total number of poor people (%);

– provision of the population with the total area of housing, the level of gasification of houses with network gas (%);

– provision of the population with drinking water (quality drinking water);

– provision of settlements (at least the largest) entrances on roads with high-quality hard surface;

– population size.

As we can see, these indicators of rural areas are developed on the basis of detailing the directions of sustainable development. Such indicators allow not only to assess the level of achievement of goals and tasks in specific socio-economic conditions, but also to identify how the development of rural areas in General corresponds to the specified parameters of sustainable development at the regional and national level, what is the efficiency and effectiveness of measures to achieve the target indicators.

Indicative planning and forecasting should become one of the main tools for forming a strategy for sustainable rural development. Indicative forecast plan is characterized by: the most important priorities of socio-economic development of rural areas; methods and tools of influence of state bodies on socio-economic development; the necessary volumes of economic resources.

According to scientists Zh.Zh. Suleimenov, S.G. Raimbekov the structure of the indicative plan-forecast of socio-economic development should include the following main indicators [12]:

– characterizing the goals and objectives of socio-economic development;
– state and dynamics of resource potential;
– indicators of the development of the production sector;
– development of non-productive sphere;
– state of the consumer market;
– state and development of market infrastructure.

The indicative plan-forecast of development of rural territories offered by scientists from positions of the expanded reproduction means formation of such ratios and proportions between separate elements of a social and economic complex which would create conditions for effective inclusion of the region in territorial division of work and the decision of the intraregional problems providing consistent advance in the social sphere, improvement of quality of life of the population.

However, indicators reflecting the economic, social and environmental situation in rural areas of the region should be used to calculate the indicative plan-forecast. Therefore, consider the methods of assessing the development of rural areas proposed by other scientists.

Thus, A. Bogachev offers a methodology for assessing the differentiation of rural areas on a complex integral indicator of the level of socio-ecological and economic development. There are 11 groups of indicators: demographic situation, labor market in rural areas, quality of life, agricultural sphere of activity, non-agricultural (alternative) sphere of activity, housing stock and housing security, engineering, transport, social, information and communication infrastructure, environmental situation, which allow to assess the multifunctional rural development [13].

This technique allows you to quickly and clearly calculate the indicator of sustainable development and quantify the difference between one region from another.

The method of integrated assessment of sustainable development of rural areas, proposed by I.I. Novikova and A.L. Medkov [14], considers the indicators of economic, social, environmental and institutional development, demographic, information and innovative indicators.

We consider the results of the monitoring of sustainable development of rural areas of Omsk region conducted by O.V. Shumakova and M.A. Rabkanova [15] interesting, but we would like to note that the number of analyzed indicators (53) and the score (-2 to 2) can be difficult for a wide range of users to understand, which can lead to distortion of the obtained results.

Developed by N.V. Logantsova [16] typologization of rural areas by the level of socio-economic security includes the method of rating and cluster analysis. This method of typologization allows to define system-forming branches, to consider opportunities and threats of development of rural areas, and also to optimize offers for the most perspective programs of planning of territorial development taking into account social-economic and agro-climatic conditions. The complexity of the typologization method of cluster analysis is the need to apply special knowledge and skills to work in a special application program for cluster zoning. The second disadvantage is the impossibility of forming clusters from a small number of districts.

The presented author's technique V.P. Cherdantsev, S.A. Shakleina express analysis of sustainable development of rural areas has its own characteristics. Express analysis consists of 5 stages [17]:

– introductory, which determines the relevance, purpose and objectives, as well as the object and subject of the study;
– theoretical, there is a choice of statistical indicators;
– expert, which carried out an expert assessment of the selected indicators;
– settlement, i.e. the system of a point estimation of economy of rural territories in dynamics for three years is developed;
– finally, there is a grouping of rural areas according to the level of sustainable development, depending on the amount of points scored.

This technique allows to develop a prospective plan of development of the territory taking into account the socio-economic situation, priority directions of development of agriculture, climatic conditions, historical and cultural factors and human demographic processes, and to evaluate the effectiveness of measures to improve the socio-economic situation in the territory, to provide targeted budget support and to predict the development of settlements.

E.V. Gorbenkova and E.V. Shherbina propose a model that includes five main systems and determine the critical factors necessary to achieve the goal of sustainable development of the settlement system: ecological system, economic system, administrative system, anthropogenic (physical system), social system (su-

prastructure). The totality of these systems determine the necessary conditions for the successful implementation of local and state government policies [18].

The ecological system is connected both with the quality and potential of the natural environment and with its stability under the influence of anthropogenic factors. The impact on the environment of production activities and forecasts of its changes in the framework of the study.

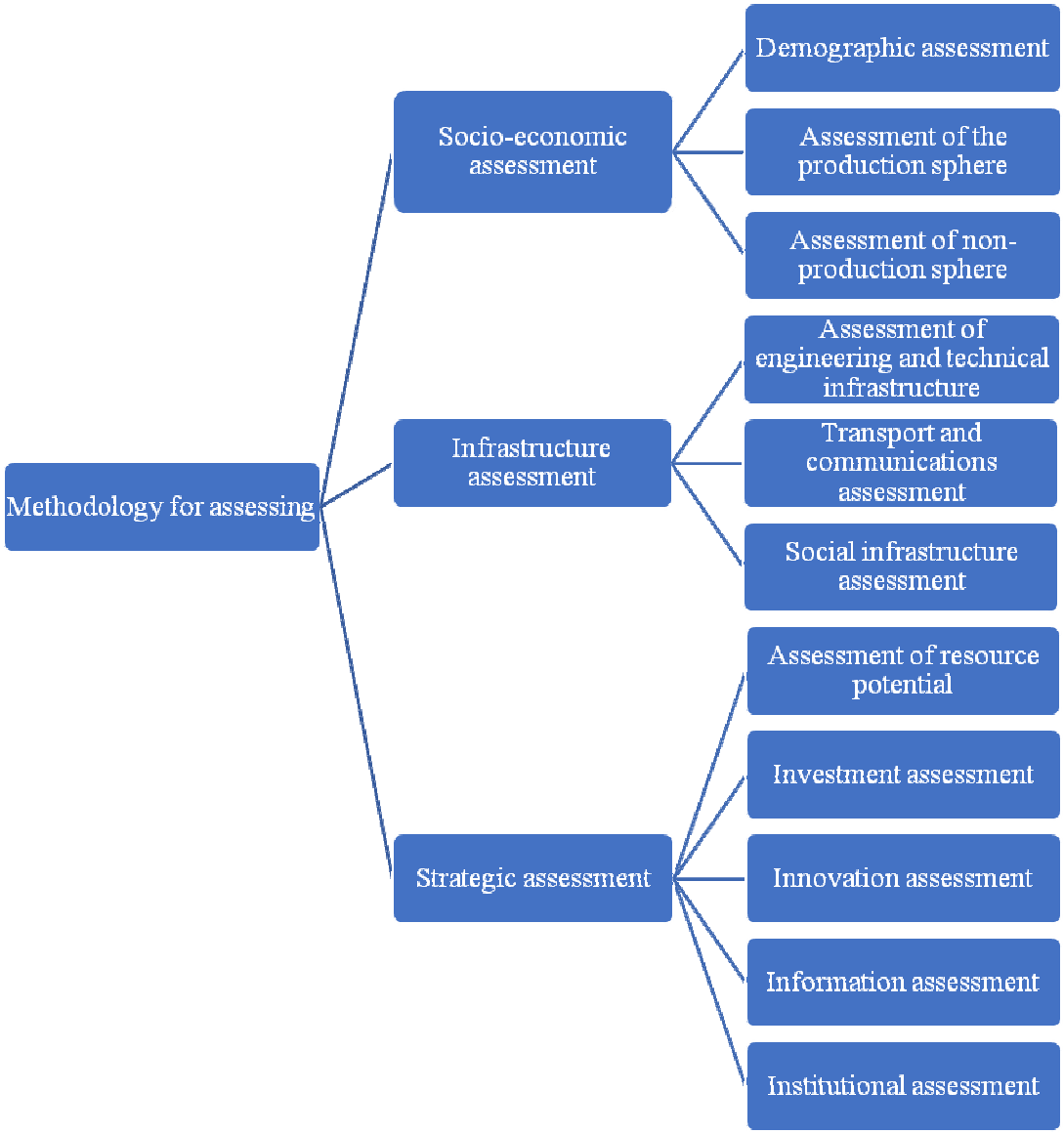
The economic system contains indicators characterizing economic activity.

The administrative system represents conditions and possibilities of the decision of administrative and administrative questions, including quality of administrative decisions and opportunities of their realization.

The anthropogenic (physical) system is the quality of production, through which it is possible to determine the welfare and standard of living of people.

The social system (suprastructure) characterizes the quality of social opportunities in rural areas.

We have considered different opinions of scientists on the application of various indicators of integrated assessment of regions and territories. In our opinion, the methodology for assessing rural development includes socio-economic assessment, infrastructure assessment and strategic assessment (see Fig.).



Source. Compiled by the authors [10, 12–14].

Figure. Methodology assessment of rural development

The essence of the proposed methodology for assessing the development of rural areas is that it characterizes:

– current state of socio-economic development of rural areas;

– the state of infrastructure of rural areas in terms of sustainable development;

– the necessary amount of economic resources needed for the strategic development of rural areas.

Thus, in order to assess the sustainable development of rural areas, it is necessary:

– to make calculation of indexes taking into account specificity of competitiveness of regions. The main indicators of the assessment may be the demographic situation, the labour market in rural areas, agricultural and non-agricultural activities, housing stock and housing security, infrastructure and others that allow to assess the multifunctional rural development.

– to define factors on the basis of available analytical base allowing to identify in due time changes of social and economic, institutional, ecological, demographic situation for the purpose of increase of validity of formation and timely updating of program documents of development of rural territorial formations.

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А.Б. Тасмаганбетов, А.А. Абаев, А.С. Рахманова, К.Б.Тлеукабылова

Ауылдық аумақтардың тұрақты дамуын бағалаудың теориялық және әдістемелік негіздері

Мақалада аймақтың экономикалық, әлеуметтік, экологиялық және институционалдық факторларын есепке ала отырып, ауылдық аумақтардың тұрақты дамуын бағалау ерекшеліктері қарастырылған. Негізгі назар ауылдық аумақтардың әлеуметтік-экономикалық даму индикаторларына бөлінген: жалпы өңірлік өнім, үй шаруашылықтарын нақты түпкілікті тұтыну, жалдамалы қызметкерлердің еңбек ақысы, өндіріске таза салықтар және басқалар. Авторлардың пікірінше, индексті құру үшін салалық құрылымның бәсекеге қабілеттілігі мен прогрессивтілігін көрсететін, сондай-ақ бағалау үшін статистикалық қолжетімді болатын тиісті көрсеткіштерді таңдау қажет. Мақалада ауылдық аумақтардың тұрақты дамуын сапалы және сандық бағалау үшін экономикалық капитал, экологиялық ресурстар, техникалық жүйелер, географиялық инфрақұрылым, әлеуметтік инфрақұрылым сияқты сыни факторлар пайдалануы тиіс деп көрсетілген. Мақалада ауылдық аумақтарды тұрақты дамыту стратегиясының негізгі құралы ретінде «индикативтік жоспар-болжам» айқындалған, онда ауылдық аумақтарды әлеуметтік және экономикалық дамытудың аса маңызды басымдықтары, мемлекеттік органдардың әлеуметтік және экономикалық дамуға әсер ету әдістері мен құралдары, экономикалық ресурстардың қажетті көлемі көрсетілген. Авторлардың пікірінше, ауылдық аумақтардың тұрақты дамуын бағалау үшін өңірлердің бәсекеге қабілеттілігінің ерекшелігін ескере отырып, индекстердің есебін жүргізу және қолжетімді сараптамалық база негізінде факторларды анықтау қажет.

Кілт сөздер: тұрақты даму, ауылдық аумақтар, индикатор, экономикалық факторлар, экологиялық факторлар, әлеуметтік факторлар, инфрақұрылым.

А.Б. Тасмаганбетов, А.А. Абаев, А.С. Рахманова, К.Б. Тлеукабылова

Теоретические и методические основы оценки устойчивого развития сельских территорий

В статье рассмотрены особенности оценки устойчивого развития сельских территорий с учетом экономических, социальных, экологических и институциональных факторов региона. Основное внимание уделено индикаторам социально-экономического развития сельских территорий: валовый региональный продукт, фактическое конечное потребление домашних хозяйств, оплата труда наемных работников, чистые налоги на производство и др. По мнению авторов, для построения индекса необходимо выбрать адекватные показатели, которые будут отражать критерий конкурентоспособности и прогрессивность отраслевой структуры, а также быть статистически доступными для оценки. В статье отмечено, что для качественной и количественной оценки устойчивого развития сельских территорий должны быть использованы критические факторы: экономический капитал, экологические ресурсы, технические системы, географическая инфраструктура, социальная инфраструктура. В статье в качестве основного инструмента стратегии устойчивого развития сельских территорий определен «индикативный план-прогноз», в котором отражаются важнейшие приоритеты социально-экономического развития сельских территорий, методы и инструменты воздействия государственных органов на социально-экономическое развитие, необходимые объемы экономических ресурсов. По мнению авторов, для оценки устойчивого развития сельских территорий необходимо произвести расчет индексов с учетом специфики конкурентоспособности регионов и определить факторы на основе доступной аналитической базы.

Ключевые слова: устойчивое развитие, сельские территории, индикатор, экономические факторы, экологические факторы, социальные факторы, инфраструктура.

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