ESG ratings of rural areas as a tool for sustainable development of agriculture in the region

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Abstract. The goal and result of the study was the development of a new methodology for creating an ESG rating of rural areas, built on the basis of a hierarchical system of private, summary and integral indicators characterizing the environmental, social and corporate components of sustainable development. The proposed approach to constructing an ESG rating is distinguished by a combination of methods of comparative static and trend analysis, differentiation of rural areas into developed, depressed, developing and crisis, which will allow standardizing measures of state support for the sustainable development of agriculture and rural areas in the context of selected types of regions.

1 Introduction

Agriculture and rural areas make a significant contribution to achieving the country’s sustainable development goals, the importance of which is rapidly growing in the face of modern challenges and threats. At the same time, their condition is characterized by alarming trends: accumulated environmental problems are worsening, leading to the disposal of land from agricultural use, the processes of demographic degradation of the countryside continue, and high interregional, intraregional and intersettlement polarization in terms of the level of socio-economic development remains [5]. In these conditions, the questions of searching for a new paradigm for sustainable rural development and methods for assessing its environmental, social and economic parameters arise [2].

One of the most important tools for managing the sustainable development of the country’s regions is their rating, which makes it possible to systematize rural areas according to ESG criteria, creating opportunities for using a differentiated approach to developing sustainable development priorities, optimizing goal setting and prioritizing areas of state support for the industry for the integrated development of territories and increasing the efficiency of agricultural production [3], increasing the export potential of the industry [1] and entering the markets of friendly countries, where non-compliance of exporters with ESG standards can become one of the most significant barriers.

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This article proposes a methodology that makes it possible to quantitatively measure and aggregate into a single integral indicator the main parameters of sustainable development of rural areas as a tool for sustainable development of agriculture in the region.

2 Materials and methods

Having summarized the results of scientific works devoted to the issues of sustainable development of rural areas, we can conclude that economic research in this area is based on the general methodology of sustainable development using various methods and approaches used by the authors in accordance with the hypothesis put forward and the set objectives of incorporating the ESG concept into industry business models and processes.

With all the variety of methods for diagnosing the socio-economic development of rural areas, there is currently no universal approach to their rating according to ESG criteria, which is due to the dynamic nature of territorial systems and the multiplicity of goals, and, consequently, the criteria for such an assessment. [6]

To substantiate theoretical positions and argue conclusions in this study, methods of abstraction, generalization, formalization, analogies and other theoretical and general logical methods were used.

The information and empirical basis for using the proposed methodology for creating an ESG rating for the sustainability of rural development are information and analytical materials of the state statistics service, analytical, program, forecast and strategic materials of government authorities.

3 Results

The result of this study is an algorithm for generating an ESG rating of rural areas according to the criteria of sustainable development, which involves the implementation of a number of analytical stages and the construction of a hierarchical system of partial, summary and integral indicators.

At the first stage, the selection of private indicators included in the rating system is carried out. The primary statistical indicators selected at this stage should cover the influence of the maximum number of factors in the development of rural areas, and also satisfy the requirement of relativity, i.e. reflect a measure of effectiveness.[7]

At the same stage, the transformation of private indicators is carried out by standardizing them (normalizing). For these purposes, ordinal scaling, linear scaling or point scoring methods can be used.

The next stage of the proposed methodology is the calculation of the value of three aggregated (composite) indicators that assess the three basic components of sustainable development - environmental, social and corporate (agriculture as the main type of economic activity). It is carried out by averaging the normalized values of particular indicators that characterize individual parameters of sustainable development of rural areas in the context of each component.

\[
\frac{\Sigma w_i e_i}{n} = I_e, \quad \frac{\Sigma w_i s_i}{n} = I_s, \quad \frac{\Sigma w_i g_i}{n} = I_g
\]

Where \( I_e \) is an aggregated indicator of the environmental component of sustainable development of rural areas (E – Environment), \( I_s \) is an aggregated indicator of the social
component (S – Social), \( I_S \) is an aggregated indicator of the corporate component (G – Governance); \( w_i \) – weighting coefficients of the i-th partial indicators, established by the method of expert assessments or by determining the share of explained variance; \( e_i, s_i, g_i \) - normalized values of indicators of the environmental, social and corporate blocks, respectively. [4]

The third stage of the proposed methodology for forming an ESG rating of rural areas according to the criteria of sustainable development is the establishment of an integral indicator that gives a general assessment of the ESG profile of the territory:

\[
I = \sqrt{I_e \times I_s \times I_g}
\]  \( \text{(2)} \)

The interpretation of the integral indicator is carried out on the basis of a binary assessment - “above average/below average” for the country (relative to the median value).

To diagnose the degree of sustainability of development, a dynamic approach is built into the methodology, reflecting the trend of changes in the situation over a certain period. By establishing the ratio of the integral indicator in the reporting year to the base period, the rate of change coefficient (TI) for the period under study is calculated:

\[
\frac{I_1}{I_0} = T_I
\]  \( \text{(3)} \)

Where \( I_1 \) is the integral indicator at the end of the period under study, \( I_0 \) is the integral indicator at the beginning of the period under study.

This approach allows us to establish the nature of the dynamics (progress or regression) according to the criteria for sustainable development of rural areas for each region. A growth rate value of more than 1.0 indicates positive dynamics and progress according to the criteria for sustainable development of the territory and vice versa.

At the fourth stage, a two-dimensional grouping of rural areas is formed, where the integral indicator of the ESG rating is the primary grouping feature, and the development vector (progress or regression) is the secondary one. Combining static and trend assessments in the matrix of a comprehensive assessment of development sustainability allows us to distinguish four types of rural areas: developed, depressed, developing and crisis.

The “developed territories” type includes regions whose socio-economic condition is assessed as the best according to the criteria of sustainable development: the value of the integral indicator exceeds the national average and is combined with progressive dynamics. The main tasks of managing the sustainable development of these territories should include the preservation and maintenance of the existing mode of operation [9].

“Depressed territories” are characterized by a high level of development achieved in combination with negative changes. Continuation of negative dynamics in the future will lead to a transition to the worst possible state - into a group of crisis territories. Regulatory influences of the state should be aimed at enhancing the growth of environmental, social and corporate parameters of sustainable development of rural areas and agriculture, improving the positions of regions on a long-term basis and relocating a group of developed territories.

“Developing territories” have a high level of stability in terms of pace parameters, but a significant lag of the integral indicator from the national average. The pressure of negative factors in the future may lead to aggravation of the current situation and shift the situation of the districts of this group into a crisis situation. To overcome undesirable consequences,
management decisions are preventive in nature through the formation of growth incentives [8]. Territories classified as “crisis” are in the worst situation. Particular attention in these regions should be focused on identifying unused reserves.

The presented algorithm for generating an ESG rating of rural areas according to the criteria of sustainable development is cross-cutting in nature and is applicable both at the interregional, and at the intermunicipal and intersettlement levels.

4 Discussion

Most scientists studying the problems of sustainable development recognize the enormous role of agriculture (more broadly, rural areas) both in achieving the global goals of sustainable development and climate neutrality, and in ensuring the growth of the national economy and the well-being of the population. Rural areas today are not only a source of food security, but also an important element of the country’s export and tourism potential. The implementation of science-based measures will create the necessary conditions for further increasing agricultural production, increasing the level and quality of life of the population, as well as improving the environmental situation and attracting investments, including using “green” and “sustainable” financing.

5 Conclusion

The proposed methodology for forming an ESG rating of rural areas according to the criteria of sustainable development allows us to reveal internal reserves for reducing interterritorial asymmetry of socio-economic development, which can be taken into account by government authorities when developing programs and projects aimed at ensuring the progressive and sustainable development of regions. ESG rating as a non-financial ESG product will allow standardizing government support measures for regions with a similar ESG profile, and can also be useful within the framework of “green” and “sustainable” financing when assessing the ESG risks of financed projects.

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