
Problems and Mechanisms of Sustainable Development of Rural Areas (at the example of the Republic of Mordovia)

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Abstract:

Sustainable development of rural areas is a priority in today's Russia, as evidenced by the system of regulations adopted in 2010-2015. Measures of government regulation aimed at ensuring food security and improving the living standards of the rural population include activities for the growth and modernization of agricultural production, development of the market of agricultural raw materials and food, as well as expansion and strengthening of the network of rural social infrastructure. These measures which are actively used since 2006, have failed to overcome the crisis processes in most regions, which indicates the need for revision of rural development policy. In the article the need for differentiation of government support in accordance with the typology of rural areas, considering the potential and the level of social, economic and environmental development is argued. The system of indicators and an integrated approach to assessing the sustainability of rural areas are suggested. The proposals for additional measures to support the depressed rural areas are suggested.

Key Words: *rural areas, typology, sustainable development, government policy*

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1. Introduction

1.1 Introduction of the problem

The last thirty years on the international agenda there is an acute problem of sustainable development of the world civilization, separate countries and local subsystems, which include rural areas. They take 2/3 of the territory in Russia and are occupied by 26% of the population. With a rich potential (natural, historical, cultural and other), rural areas perform numerous national economic functions, including those which do not have the proper government support (for example, maintenance and improvement of the potential of nature, or social control over the vast sparsely populated areas of the country). However, the critical condition of rural areas is recorded almost on the entire territory of the country; it is reflected in the low living standards of the rural population, the outflow of personnel from agriculture, depopulation of rural settlements. It leads to the lack of domestic production and increased food imports, depopulation of rural areas, which ultimately hinders the achievement of the main objectives of the agrarian policy of the country.

1.2 Importance of the problem

On the government level in Russia the following documents are dedicated to the solution of the problems of sustainable development of rural areas: the Concept of sustainable development of rural areas of the Russian Federation for the period up to 2020 (2010), the Federal Target Program "Sustainable development of rural areas 2014-2017 and for the period up to 2020" (2013), Strategy for sustainable development of rural areas of the Russian Federation for the period up to 2030 (2015). Since 2003 the implementation of the federal target program "Social development of rural areas till 2013" has been carried out, which has contributed to house construction and some development of the manufacturing infrastructure, however the necessary level of social comfort of living of the rural population has not been achieved and the negative processes continue. This shows that the measures applied by the government do not fully consider the diversity and complexity of the conditions and processes of development of rural areas, individual events are scattered, not systemized, and don't have stimulating character for self-development of rural communities.

The theory of the development of rural areas is at the stage of its formation, since scientific studies are actively conducted for only last five years, and until recently, the predominant focus was on the development of agriculture and the social and labor relationship in the industry. There are practically no scientific studies on the rural settlements as the most important spatial ecological social economic formations, representing them as a system consisting of the population - the keeper of the unique traditions and culture, environment, economy, ecology and social sphere. In addition, Russian practice needs methodological support of management for sustainable rural development due to imperfections of the applied tools. The study represented in the article is dedicated to this.

1.3 Background/Review of literature

Studies of sustainable development of rural areas are carried out in the framework of sustainable social and economic development in balance with the environment, proposed by the United Nations World Commission on Environment and Development and stated in the report "Our common future» (Report of the World Commission on Environment and Development, 2008).

The approaches developed by the international community on agricultural policy and sustainable development of rural areas have a great importance. Thus, a systematic approach by the Food and Agriculture Organization (FAO) provides a combination of different directions and mechanisms of action to stimulate the overall economic and social development, the growth of the rural economy, development of market relations and institutional environment of the market, the rational use of natural resources and environmental protection. The system of methods of policy implementation includes legal and administrative, organizational, economic, and social and psychological methods 1, for example, education and advertising (Hardaker J.B., 1997).

The legal framework for sustainable development of rural territories of the Russian Federation declares an approach which differs from the FAO. In Russia, according to the strategy of sustainable development of rural territories of the Russian Federation for the period up to 2030 the main focus is on the development of the social and economic sphere of the rural areas, and questions of ecological balance and security not emphasized (On approval of the strategy of sustainable development of rural territories of the Russian Federation for the period up to 2030, 2015).

Features, trends and factors of spatial changes in rural areas are studied by economists-geographers Nefedova (2013), Treyvish (2010), Patsiotsirkovskiy (2010), Semina and Sotova (2014).

Academic economists pay their attention to the problems of social and economic development of rural areas, assessing the potential and possibilities of self-development, directions and instruments of government support for agricultural development. This trend is represented in their works by Antohonova (2009), Adukov and Adukova (2011), Bondarenko (2014), Merenkova (2011), Merzlova, (2012), Mishchenko (2012).

In recent years in national economics considerable attention is paid to the identification of differences in the conditions and the level of social and economic development of rural areas, their typology, the need for differentiation of government support. The works of Palatkin (2008), Merzlov (2009), Trotskovskiy (1997), Mantino (2010) are of great interest.

However, despite numerous theoretical and practical developments, taking into account multidimensional nature and complexity of the studied object, there is an urgent need for further studies to prove the conceptual model of sustainable rural development, development of criteria and a typology of rural areas for the purposes of government administration.

1.4 Hypotheses and research design

Working hypothesis of the study is to develop a new paradigm of sustainable development of rural areas, which should be the basis of government policy of conservation of the rural population and improve the quality of life. The mechanism of government regulation of sustainable rural development should consider their deep differentiation and contribute to its smoothing, including by stimulation of local authorities to the development of self-settlements.

The study is devoted to the substantiation of the mechanism of government support for the development of rural areas, for which it is necessary to solve a number of conceptual problems:

- to develop a system of indicators of social and economic development of rural areas;
- to make a typology of rural areas in the Republic of Mordovia;
- to propose a model and measures to support sustainable development by types of rural areas of the republic.

2. Method

The study was conducted based on information from the Federal State Statistics Service, Territorial authority of Federal State Statistics Service of the Republic of Mordovia, policy papers, study reports, and reports of the Ministry of Agriculture and the Ministry of Agriculture of the Russian Federation and Ministry of Agriculture and Food of the Republic of Mordovia.

2.1 Statistical methods

The information base for the study were the official data of the Federal State Statistics Service and the Territorial authorities of Federal State Statistics Service of the Republic of Mordovia, characterizing social and economic development of rural areas at the national, regional and municipal areas, allowing identifying the economic and geographical situation, level and trends in demographics, economic and financial condition. The database is processed using the method of groups, correlation and cluster analysis. It is possible to determine the differentiation of social and economic development of rural municipalities, rural areas classified by treating the numerous statistics that have different scale values, and have both quantitative and qualitative characteristics.

2.2 Taxonomic method

On the basis of the taxonomic method the comprehensive assessment of the sustainability of rural development, consisting of four stages was implemented: 1) selection of the relevant indicators on the basis of statistical data and reporting of municipalities for 2009-2013; 2) the calculation of standardized indicators allowing converting individual parameters submitted by various qualitative and quantitative indicators into a single standardized system of measurement; 3) definition of the general integral indicator of rural development in points; 4) the classification of types of territories by the level and sustainability of their development.

2.3 Method of strategic analysis

To assess the resource potential of rural areas (geographic, demographic, industrial, social and other), as well as applied methods of government regulation of development SWOT-analysis was applied comprehensively assessing the advantages and disadvantages, opportunities and main threats for key social and economic development of selected types of territories. The proposals for differentiation of instruments of government support allocated to types of territories were proved on its basis.

3. Results and Discussion

3.1 One of the most important and most complex issues of sustainable development of rural areas is the study of indicators that can objectively reflect the ongoing social and economic processes, the efficiency of local authorities and the impact of government influence on them. In the course of the study the official government and local approaches to building a system of indicators, and scientists' offers were explored.

Among the official approaches the Passports of municipalities are the object of interest, which are compiled by the Federal State Statistics Service since 2006. The municipalities there are presented by municipal districts, urban districts, urban and rural settlements. The original passports of municipal districts consisted of 28 indicators combined into 3 groups: agriculture (9 indicators); employment and salaries (17 indicators); housing construction (fig. 2). By 2013, the number of indicators increased to 3370 indicators, united in 18 groups. The following groups are the most ambitious in the number of indicators: population (2337 indicators), employment and salaries (336 indicators) and agriculture (304 indicators). Passports of smaller rural settlements, as of 2013, contain 752 indicators, of which 68.2% are demographics, employment and salaries -17.0%, financial services 3.5%. Obviously, for the control of the development of rural areas and evaluation of social and economic policy, as well as the efficiency of government support such number of indicators is redundant.

Since 2009, a reliable source of official information is compiled on a regular basis reports of local government of municipal areas in order to assess their effectiveness in accordance with the Decree of the President of the Russian Federation dated April

28, 2008 No. 607 “On the assessment of the effectiveness of local government urban districts and municipal areas”. The assessment is based on a system of indicators in the following areas: economic development; health care and public health; preschool education; general and further education; physical culture and sport; housing and utilities; housing construction and provision of citizens with housing; organization of municipal management; energy saving and energy efficiency; landscaping. The radical change in the structure of indicators was in 2013, when their number was significantly reduced from 150 to 65, namely the main it was the list of indicators - from 30 to 13, the list of additional indicators - 31 to 27, the regional list of indicators - 4-6.

Offers of scientists are very diverse in the number and composition of indicators, depending on the hierarchical level (national, regional, municipal, settling) of the conducted studies, a set of indicators from the top to the local level is reduced due to the lack of municipal statistics and difficulties in obtaining of departmental information.

A wide set of indicators characterizing the development of rural areas is presented by Trotskovskiy (1997), who identified four groups of indicators: population (14 indicators), settlement system (26 indicators), social (48 indicators) and the production sphere (26 indicators). Merenkova (2010) offers a diagnosis of rural development based on the assessment of social (6 indicators), economic (7 indicators), environmental (6 indicators) and institutional (6 indicators) development. System of indicators of Budazhanaeva (2014) characterizes not only the level of social and economic development (6 indicators), but also the condition of economic potential, including natural resources, manufacturing, financial and human elements (13 indicators), as well as infrastructure, environmental, administrative and social and cultural restrictions on the use of the potential (9 indicators).

The system of indicators was formed by the authors to measure the sustainable development of rural areas based on expert perceptions of the most important indicators of economic development (15 indicators), social (16 indicators) and environmental (4 indicators) for directions provided in Table 1.

Table 1. The system of indicators to measure the sustainable development of rural areas

	Indicators
Economic development	1. Shipped goods of own production, works and services made using own resources for large, medium and small organizations, thousand RUB.
	2. Retail trade turnover per capita, thousand RUB.
	3. The total volume of investments per capita, thousand RUB.
	4. Investments in fixed capital per capita, thousand RUB.
	5. The unemployment rate of the economically active population, %

	6. Average nominal salary, RUB	
	7. New housing per capita, sq.m.	
	8. Grain production in economies of all categories, tons	
	9. Milk production in economies of all categories, tons	
	10. Production of livestock and poultry in live weight in economies of all categories, tons	
	11. Production of vegetables in the open field by agricultural organizations, tons	
	12. Potato production, tons	
	13. The local budget revenues per capita, thousand RUB.	
	14. The share of own revenues, %	
	15. Municipal product, thousand RUB	
	Social development	16. The birth rate, people per 1,000 population
		17. The mortality rate, people per 1,000 population
		18. The number living in dilapidated homes
		19. The number of families who received accommodations and improved living conditions in the reporting year, of 1,000 families
		20. Provision of places in preschool institutions, %
21. The number of hospital beds per 10000 people		
22. Number of physicians of all specialties in health facilities per 10000 population		
23. The number of nurses in health care facilities per 10000 population		
24. The number of public libraries per 10000 population		
25. Number of institutions of cultural and leisure type per 1000 people		
26. The number of objects of public services that provide hairdressing and beauty services per 1,000 people		
27. The number of reported crimes per 10000 people		
28. Municipal budget expenditures for social policy, thousand RUB		
29. The length of paved roads (including departmental, km), in % to the previous year		
30. The level of education of the population (on 1000 persons aged 15 years and over)		
31. The number of sports facilities per 1000 people		
Environment condition	32. Current costs for environmental protection, thousands RUB.	
	33. The number of objects that have stationary emission sources;	
	34. Pollutants released into the atmosphere from stationary sources – total, tons	
	35. Ecological load on the territory	

Taking into account that the most important indicators of development of the country and the region are the gross domestic product and gross regional product, we consider it necessary to define the indicator “municipal product”, which is not calculated at the municipal level. The formula for calculating the municipal product is:

$$МПР_i = \frac{BПП}{q_3} \times ЧЗМР_i \times C3нл_i, \quad (1)$$

where MIP_i – municipal product of the i -th municipal district;
 BPI – gross regional product of a subject of the Russian Federation;
 $ЧЗ$ – the number of employees in the subject of the Russian Federation;
 $ЧЗ_{mp_i}$ – the number of employees by the i -th municipal district;
 $CЗ_{пл_i}$ – the ratio of the average monthly salary for the period of i -th municipal district and the subject of the Russian Federation as a whole.

Further we need to move from base indicators to the standardized coefficients, for that each indicator with the best ratio of the highest value is calculated on the value of a specific area to maximize its value for a set of objects. In terms of the best indicators with the lowest value coefficient is defined as the inverse relationship. All the coefficients are in the range from 0 to 1, the value 1 receives the best possible achievements.

Then integral indicators of levels of economic and social development, environmental conditions and the general level of stability in rural areas are calculated. All the necessary information is available for analysis of the municipal districts. In accordance with international methodology of differentiation of areas into urban and rural, developed by the Organization for Economic Cooperation and Development, depending on the proportion of the population living in rural areas there are predominantly rural areas (more than 50% of the rural population), intermediate (15% to 50% of the rural population) and predominantly urban areas (less than 15% of the rural population) (OECD, 2009). In the Republic of Mordovia according to this classification there are 18 rural, 4 intermediate municipal areas and 1 city district Saransk. Calculations were made on rural municipal areas (Table 2).

Table 2. Integral indicators of the sustainability of rural areas in the Republic of Mordovia

Municipal areas	Total stability in points:			
	economical	social	ecological	total
Ardatovskiy	4,42	10,33	3,18	17,93
Atyur'evskiy	2,69	9,31	2,88	14,88
Atyashevskiy	6,53	10,11	3,07	19,71
Bol'shebereznykovskiy	3,78	9,63	2,82	16,23
Bol'sheignatovskiy	3,63	9,66	2,36	15,65
Dubenskiy	4,53	9,97	2,67	17,17
El'nikovskiy	3,38	9,89	3,11	16,38
Zubovo-Polyanskiy	6,69	9,62	2,85	19,16
Ichalkovskiy	5,32	10,99	2,90	19,21
Kovylkinskiy	6,74	11,27	3,03	21,04

Kochkurovskiy	4,45	10,15	2,92	17,52
Krasnoslobodskiy	5,59	11,71	3,38	20,68
Lyambirskiy	8,30	10,34	2,83	21,47
Romodanovskiy	7,05	11,43	2,76	22,24
Staroshaygovskiy	4,82	9,57	2,92	17,31
Temnikovskiy	4,53	10,01	3,28	17,82
Ten'gushevskiy	3,08	10,08	2,62	15,78
Torbeevskiy	5,62	10,65	1,88	18,15

The extent of variation of the integral indicator for the level of economic development of regions is more than 3 times (from 2.69 in Atyur'evskiy to 8.30 in Lyambirskiy district), in the social development differentiation is lower - about 26%. Total integral indicator ranges from 14.88 points in Atyur'evskiy to 22.24 in Romodanovskiy district or differs 1.5 times.

3.2 Management of social and economic development of rural areas is not possible without considering their existing spatial differentiation, which leads to the need of development of a typology of rural municipal districts, which should take into account the following criteria: the level of economic potential and development, the demographic situation and the level of social development, as well as the degree of matching between them. Since the assessment of the municipalities was carried out on 35 parameters, the integral point of each area may be formally in the range from 0 to 35, it is rational to distinguish 4 types: 1) over 30,1 points - stable, with the optimal resettlement and balanced development of economic and social infrastructure; 2) 25,1-30,0 points - potentially sustainable, with the trend of economic growth and the potential for self-development; 3) 20,1-25,0 points - unstable, with significant disparities in the social and economic development; 4) lower than 20.0 points - unstable (depressive).

Comparing the proposed grouping of areas with the calculations in Table 2, we see that there are no municipal areas with stable and potentially sustainable indicators in the Republic, 4 districts (Kovylkinskiy, Krasnoslobodskiy, Lyambirskiy and Romodanovskiy) belong to the group of unstable, and 14 rural districts - to group 4, unstable or depressed. It should be noted that the area of the last three groups, namely Atyashevskiy, Zubovo-Polanskiy and Ichalkovskiy, is close to crossing the limit of group 3. The above areas are different from each other by better infrastructure, public transport links, including rail, on their territory there are large industrial and agricultural enterprises. A common problem for all rural areas is low level of income and social comfort of living, which explains the migration of the rural population from their native places. A direct correlation between the integral indicators of the sustainability of rural areas and immigration rate is shown. For example, in the Atyur'evskiy area in 2013 migration loss ratio was 39.8 per mile, while in the Lyambirskiy area migration gain was observed at 3.1 per mile.

3.3 In the adopted in 2015 strategy for sustainable development of rural territories of the Russian Federation for the period up to 2030 the need for a differentiated approach in the development and implementation of public policies in each region is underlined, which requires the model validation and support measures for identified types of rural areas. Target orientation for the model of sustainable development in rural areas of the Republic of Mordovia should be saving the rural population and improving the quality of life. The main instruments of active government policy are: 1) an introduction to the practice of social standards for the rural areas, on the basis of which equal access to social services may be provided; 2) creation of conditions for self-development of rural areas through the integrated use of potential, considering its possibilities and limitations and balance; 3) consolidation of the rural communities to participate actively in the formulation and implementation of development programs; 4) strengthening the responsibility and the formation of the incentive scheme of government and municipal administration for positive changes in the main indicators of rural development and the reduction of the differentiation of rural settlements by key indicators.

The Republic of Mordovia, according to the typology of Russian regions, reflected in the Concept of Sustainable Development of Rural Territories of the Russian Federation for the period until 2020, is attributed to a group of regions with a predominantly agricultural specialization, with favorable natural conditions and social development, but historically underdeveloped social and market infrastructure aggravating demographic situation and making economic growth difficult.

At present for the development of rural areas a set of measures is applied by the government aimed at: the development of the rural economy, its diversification by supporting small businesses and all forms of self-employment; ensuring the development of market infrastructure and improving access of small and medium-sized producers to markets for agricultural products, including rural cooperatives; improving the living standards of the rural population due to the affordability of housing and the quality of social services.

Considering the depression of the Republic these general measures are not enough, so the following additional measures are required: support the reduction of migration outflow and expansion program of resettlement of compatriots for population stabilization and preservation of development of the territory; more targeted support for rural families with children of preschool age and the level of per capita income below the subsistence level (benefits and payment of additional allowances); development and application of a compensation system for rural residents of the territories, significantly lagging behind in social and economic development by the consequences of the policy of polarized development; mechanisms for mobilizing the internal resources in rural areas, including the involvement of public and other parties in the management processes; constant attention of the government and municipal authorities to the specifics of the depressed areas and the problems of

their development through rapid and detailed monitoring and responsibility for the achievement of key performance indicators.

The formulated proposals can serve as a base for the development of the provisions of strategies for sustainable rural development in the country and municipalities by themselves, which currently don't exist. That makes the process of strategic management difficult. In formation of strategies different levels of development of rural areas, comparative advantages and threats, growing points must be taken into account which is provided by internal regional typification and strategic analysis for each type of rural areas.

Now the development of scenarios and strategies for different types of rural territories of the Russian Federation is actual, their diversity is great and the creation of a unified methodology is virtually impossible. Further studies by the authors of this publication will be devoted to this issue.

4. Conclusion

The conducted systematic organization of the scientific approaches, measures of government regulation in Russia and the empirical study of the problems and trends of development of rural areas in the Republic of Mordovia, having a high proportion of the rural population and agricultural business as a specialization of the region, gave grounds to state the need for creation of a new paradigm for agricultural development in the country. Without removing from the agenda the growth of agriculture and processing industry in order to ensure food security and import substitution for all the food which is likely to be produced in the country, the focus of the strategy for sustainable development of rural areas should be on saving the population and quality of life of the rural population. This can be achieved, provided that the key performance indicators of local government will be positive demographic trends and the growth of social comfort of living in rural areas, reduction of the level of spatial differentiation in living standards and the growth of access to social services (especially to health care), and their efficiency and the quality. This requires the consolidation of the actions of government, local authorities, business, community and residents on certain rural development, which is impossible without the formation of a mechanism for coordinating of real-time interests of all participants of this relationship. In our opinion, this mechanism should be in the focus of scientists and practitioners, because individual measures will not help to solve the problem.

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