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Research paper



Aspects of Development of Rural Territories in the Russian Federation

N. A. Shyurova[1*], A. A. Tsarenko[1], I. V. Schmidt[1], M. E. Rubanova[1], O. S. Bashinskaya[1], L. I. Chekmareva[6], G. N. Popov[7]

[1]The Saratov State Agrarian University, Saratov, Russia
**Corresponding author E-mail: shyurova.n.a@mail.ru*

Abstract

Background/Objectives: The research presented in the article is devoted to the problems of rural areas development in the Russian Federation, as well as to land-use planning based on the cadastral data. The authors have analyzed the notion of rural areas, revealed several directions of sustainable development of rural areas based on the state programmes and strategies, adopted in the Russian Federation. Several particular problems (establishing the boundaries of settlements and inter-settlement territories) are presented through an example of concrete municipalities of the Saratov region. Methods: The study is based on the methods of scientific research: systemic, geoinformational and statistical method. Findings: Introduction of changes into regulatory legal acts will stimulate identification of boundaries of settlements, establishment of boundaries of the land plots, which are situated on inter-settlement territories, but have address reference points of settlements; and vice versa, the boundaries of some settlements comprise land plots, which are located on the territories of other categories. It is a difficult process of ordering of the state cadastral registration of boundaries of settlements. This process is basic and principally important for the execution of documents for strategic planning of a municipality development and, generally, for further effective development of rural territories. Applications/Improvements: Boundary delimitation of land plots, establishment of boundaries of settlements, determination of the legal status of lands will have an impact on the investment policy, which contributes to social and economic development of territories, to the development of agricultural businesses, thus attracting labour resources and raising the social standard of living of rural population. Consequently, it will lead to sustainable development of rural territories of the Russian Federation.

Keywords: *sustainable development of rural territories, territorial planning, rural territory, cadastre, geoinformation system, development strategy.*

1. Introduction

Territorial planning and development of rural territories is an integral part of the regional governance and special planning of a municipality in the Russian Federation. That proves the topicality of the present studies.

Regional governance and land-use planning is based on the study of structuring of the territorial economic space and the territorial entities included into the space, territorial management of economy, and administration of the territorial development [1].

In Russian regulatory and legal acts there are several definitions of the notion "rural territories".

In the federal targeted programme "Sustainable Development of Rural Territories for the period of 2014–2017 and for the period until 2020" the term 'rural territories' (rural area, countryside) is interpreted as rural settlements or rural settlement areas and inter-settlement territories united by the common territory within the boundaries of a municipal district, and also rural localities and work settlements, that are part of municipal districts (excluding the municipalities which have on their territory administrative centers of the Russian Federation), urban settlements and inner-city municipalities of Sevastopol, which have on their territory the prevailing activity connected with agricultural production and processing [2].

In the Strategy of Sustainable Development of Rural Territories of the Russian Federation for the period until 2030 the following terms are used: 'rural territories' – territories of rural settlements and inter-settlement territories; 'rural settlement areas' – one or several rural localities united by the general territory, which are self-governed by the population directly and (or) by means of elected and other public bodies; 'inter-settlement territories' – territories that are situated beyond the boundaries of settlements; 'countryside' – all the rural settlements as a whole; 'sustainable development of rural territories' – steady social and economic development of rural territories, growth of agricultural production output, growth of efficiency of the agricultural industry, achievement of the complete employment of the rural population and rise in their living standards, rational usage of lands [3].

The main terms used in the Concept on Sustainable Development of Rural Territories of the Russian Federation for the period until 2020 are interpreted in the same way as in the Strategy of Sustainable Development of Rural Territories of the Russian Federation for the period until 2030. The notion 'sustainable development of rural territories' is elaborated and sounds in the following way: stable social and economic development of rural territories, growth of agricultural and fish production output, growth of efficiency of the agricultural and fisheries industry, achievement of the complete employment of the rural population and rise in their living standards, rational usage of lands [4].

Whereas O.O. Zaytsev presents in his research paper [5] quite a full definition: "rural territories are territories of settlements located beyond the city boundaries (villages, stations, settlements, kishlaks, mountain villages, farmsteads, etc.), which comprise a

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complex social and economic system, the internal environment of which consists of economic, social and ecological subsystems with definite qualitative characteristics; the system which carries out multiple national economic functions".
Unfortunately, many research papers devoted to rural territories and their sustainable development do not take into consideration the fact that rural areas in the Russian Federation do not always have definite boundaries and owners, and the information about them in the Real Estate Cadastre are not full.
The authors of other works pay special attention to sustainable development of rural areas, presenting the main problems and offering possible solutions: "The European Union Rural Development Policy (RDP) for the period 2007–2013 seeks to establish a coherent and sustainable framework for the future of Europe's rural areas and is closely related to the improvement of living conditions in the countryside involving aspects of housing, the environment, infrastructure, communication, employment possibilities, land management, etc." [6].

2. Research Material and Methods

The study of the present condition of rural territories. As of the beginning of 2016 the land resources of the Russian Federation made 1,712.5 million ha which is 2.6 million ha (0.2 %) more than in 2015 due to the area of the Crimea Federal District. The long-term tendency of reducing agricultural lands has not been broken yet. In 2015 they were reduced by 1.8 million ha (0.5 %), and their share – by 0.1 percentage points and made up 22.4 % of the country's land. Its main structural part still consists of forest resources, which cover about 2/3 of the whole territory [7].
In Russia on rural areas, there are 20.2 thousand municipalities, including 1.8 thousand municipal districts and 18.4 thousand rural settlement areas uniting 153 thousand villages. On average, each municipal district includes approximately 10 rural settlement areas, 84 villages and 31.5 thousand people, and one rural settlement area includes about 8 villages and 1,835 dwellers.
Russia is rich in land resources available for agriculture. However, for more than 20 years the area of the available land has constantly been reducing. As of 2014 the area of farmland was equal to 220.2 million ha, including the area of tillable land equal to 121.5 million ha. In general, during the period from 1995 till 2013 the farmland area of the lands of all categories was reduced by 1.8 million ha, the area of tillable land reduced by 8.7 million ha. The main reasons of such reduction of farmlands are unsatisfactory financial and economic conditions of agricultural producers. This leads to the situations when farmers give up the lands, when the lands are recategorized into lands for building constructions in the suburbs, or when there are not enough measures aimed at amelioration, recultivation and soil fertility recovery [3].
The area of the land plots of citizens (that they received as a result of the land reform carried out in the Russian Federation), including the title in the joint land property, makes up 94.9 million ha, which is equal to 74 per cent of all the agricultural land that is privately owned. Among land plots of citizens, the area of abandoned land portions was equal to 20.9 million ha.
The question under discussion is considered below through a particular example of one region of the Russian Federation – the Saratov region of the Russian Federation. According the state statistical recording of lands within the administrative borders of the Saratov region there are 10,124.0 thousand ha. On the territory of the region there are several cases of out-of-boundary and extraneous land tenure: The Ulianovsk region uses 0.2 thousand ha in the Khvalynsk district of the Saratov region; the Petrovsk district of the Saratov region uses 0.1 thousand ha in the Penza region. Thus, the land resources of the Saratov region, including the lands of all categories, are equal to 10,123.9 ha (Fig. 1). The Saratov region includes 38 administrative districts.

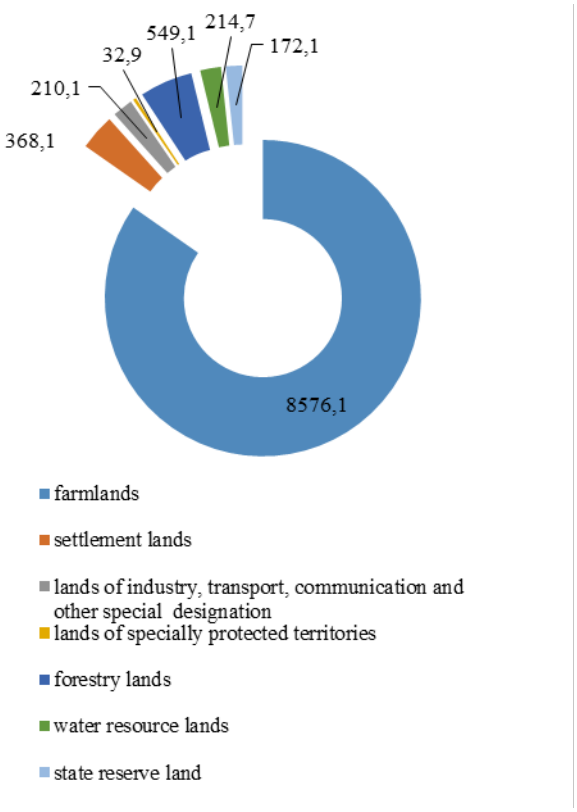


Fig. 1: Distribution of the land resources of the Saratov region, thousand hectares

Farmlands cover the most part of the land resources of the Saratov region. Agricultural areas, that are used directly for agricultural crops sowing and for raising farm livestock, cover 385,401 ha (Fig. 2) out of all the agricultural land categories. One of the indicators of the farmland use is capability of the agricultural crops. The Saratov region takes the second place in croppage of such cultures as sorghum (30.9 % of the all-Russian harvest of sorghum), millet (19.2 %), lentil (21.6 %); the third place in croppage of sunflower seeds (10.8 %), orange agaric seeds (9.5 %), melons and gourds (11.5%); the forth place in croppage of mustard seeds (7.5 %); the fifth place in croppage of rye (4.6 %). Besides, the region is one of the first ten regions giving rich harvest of buckwheat (1.8 %) and vegetables from outdoor and protected gardening (5.1 %) [8, 9].

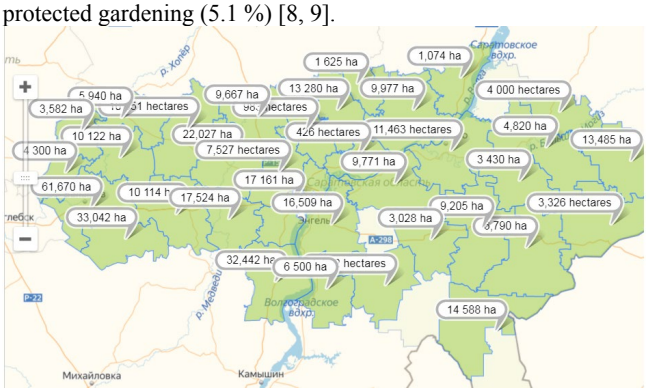


Fig. 2: The arable areas of the administrative districts of the Saratov region (according to the data of SelkhozPortal), hectares

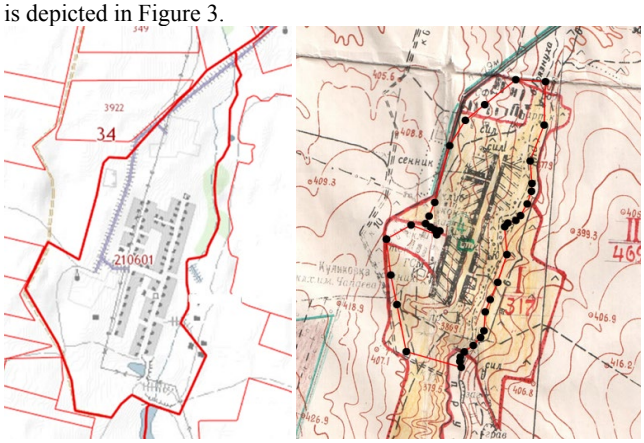
In the Saratov region, there are 18 cities, 30 settlements of urban type, 614 rural administrations, 1,752 rural settlement in all, of which 55 are abandoned.
The total population of the region is equal to 2,668,310 people, including 1,963,858 people of urban population and 704,452 people of rural population.
Analysis of the statistical data, concerning the number of settlements and the quantity of the population living there, reveals that it is a burning issue and it requires complex solutions.

However, the primary task is to determine particular borders of the land plots, of the settlements and municipalities in general. This will help to distinguish authoritative power of local government bodies of particular rural territories. Similar problems can be observed in a number of other countries. The scientists of Institute of Geography, Universidad Nacional Autonoma de Mexico (UNAM),
Mexico, describe a similar problem in their research paper. The territories of settlements grow and the interests of adjacent territories are not taken into consideration: Mexico City's land-use policy has been reactive and internally inconsistent, failing to take informal settlements into account, has not offered the poor access to housing with adequate services and greater security in terms of land tenure, and lacks the necessary financial resources and institutional capabilities for providing solutions to these problems [11].
In order to be effective, modern conception of rural territories development should be revised. Complex approach to this development is necessary, as well as control, correction (at each stage of planning) and organization of land management of the territories. Some of the top-priority tasks here are right, reliable and timely data collection about the land (territories and their boundaries), competitive growth of agricultural production, and reduction of production expenses. Competitiveness of the agricultural production will make the position of Russian producers stronger, and this will contribute to the growth of their production potential at the internal and external markets.
Furthermore, it is necessary to state the fact that from the point of view of economics of different kinds of business activities abroad the issue of competitiveness is one of the most important. In addition, it should be said that in the Saratov region sustainable development of rural territories implies providing conditions for effective farmland use, development of amelioration and recultivation. The right organization of prognostication and planning of usage of the land resources of the territory facilitate this process [12].
It is necessary to pay attention to the fact that rural areas develop more slowly than cities, and they have specific problems of ecological, social and economic elements of the territorial development. This peculiarity is characteristic of many countries and is considered a global problem, which should be solved by means of the system of sustainable development management.
Sustainable development – harmonious (even, balanced) development – is a process of changes. In this process exploitation of natural resources, investment patterns, scientific and technical development orientation, personal development and institutional changes all harmonize with each other and increase the present and future potential for satisfaction of human needs and desires. Sustainable development presupposes integration of economic, ecological and social issues and is aimed at the solution of problems in four directions simultaneously: providing economical growth; social development; intensification of the environmental protection; rational use and restoration of natural resources [13].
Development of rural territories is always based on the data on land resources, which must be taken into account in the system of real estate cadastre in order to create investment prospects of rural areas. Some papers of European scientists are devoted to this complex approach to territorial development. For example, the authors of the work "From 'Land Grabbing' to Sustainable Investments in Land: Potential Contributions by Land Change Science" present their view on the problem in the following way: Despite obvious commonalities, such as a problem-oriented and interdisciplinary research approach to land use change, there seems to be little overlap. Adopting a sustainability research perspective — which is an important feature of land change science – we reviewed research questions regarding large-scale land acquisition that are currently being addressed, and defined additional questions for further inquiry [14].
At present, there are a number of questions to be solved in connection with the necessity to determine the peculiarities of planning of urban and, most significantly, of rural areas. Modern planning and prognostication of the measures in the context of effective monitoring work in land and cadastre relations are directly connected with the development of modern methods of area planning. This idea is supported by scientists from all over the world [15].

3. Research Results and Discussions

Today, on the territory of the Russian Federation, a full-scale project is being carried out. The project is aimed at establishment of boundaries of municipalities and boundaries of settlements, as well as establishment of borders of territorial (functional) zones. This task is no less topical for the Saratov region. Only 30 % of all the boundaries of settlements are registered. This leads to a burning problem of demarcation of the lands of settlements and inter-settlement territories which together form, as it has been mentioned above, unified and interconnected rural territories.
Let us consider the order according to which the boundaries of rural settlements are formed. Since 2005 important amendments have been introduced into the Urban Development Code of the Russian Federation. In accordance with the Code local self-government bodies are granted the authority in the sphere of city-planning policy, including: 1) preparation and adoption of the documents for the territorial planning of settlements; 2) adoption of local standards of settlement city-planning; 3) adoption of rules of land tenure and settlement building development; 4) adoption of documents on the territory planning; 5) building licensing, commissioning certification in the case of building, reconstructing, and capital repair of the capital construction projects situated on the settlement area; 6) making decisions about developing built-up areas; 7) making inspections of the buildings and constructions with respect to their engineering status, proper technical maintenance, etc.; 8) development and adoption of programmes of complex development of the systems of the settlement's communal infrastructure, programmes of complex development of the settlement's transport infrastructure, programmes of complex development of the settlement's social infrastructure; 9) conclusion of contracts of complex development of the area and (or) the real estate objects situated on the land on the initiative of the land owners; 10) making decisions about complex development of the area on the initiative of the local government body.
But the work, aimed at the development of documents on the territorial planning, has not completely been finishes due to the Federal Law "On the General Principles of the Organization of Local Self-Government in the Russian Federation" dated by 06.10.2003 No 131-FZ. The Law says [16]: "Local representative body of a rural settlement has the right to make a decision about lack of necessity to prepare the settlement development plan and to introduce the land use rules in the following cases:
1) no changes of the present land use of the settlement territory are expected and there is no adopted programme of the settlement complex social and economic development;
2) according to the documents on territorial planning of the Russian Federation, according to the documents on territorial planning of the constituent entity of the Russian Federation, and according to the documents on territorial planning of the municipal districts allocation of units of the federal importance, units of the regional importance and units of the local importance of the municipal districts is not provided on the territory of the settlement". Consequently, the perspective territory development plans for a settlement area were not affirmed for the most part of small rural settlements.
Accordingly, as a result, there is no reason for cadastral registration of the settlement boundaries, since the registration of land plots on its territories took place both within the borders of the settlement and on the inter-settlement areas. All this resulted in mismatch between the real location of land plots on the inter-

settlement areas and the boundaries of settlements. This situation is depicted in Figure 3.



a) b)

Fig. 3: The border of a settlement in the Tatischev district of the Saratov region: a) after geodesic surveying, b) according to the data of the Public Cadastre Map (the border of the cadaster unit)

As a result of our research, we revealed several problems connected with geodetic description of boundaries and later on with the cadastral registration of the settlement boundaries. It is necessary to point out that such problems are not unique and often appear in the case of cadastral registration of the boundaries of other settlements of the Saratov region as well as of the Russian Federation in general. Hence, it is important to work out the solutions to the problems described and to offer recommendations that will help to improve the registration of settlement borders.

Within the framework of the commercial contract with the municipal district of the Saratov region we carried out research, experimental-design and technological works on the theme: "Research work on land-use planning with respect to the boundaries of settlements". The substantiation of such work is predetermined by the necessity to establish the boundaries of settlements and to register them in the Unified State Register of Immovable Property, which will reduce the expenses of land-use planning work and will contribute to effective and rational use of rural territories. The principal aim of the work was to study planning and use of land resources on the territory of the municipal district as exemplified by rural settlements in municipal structures of the Saratov region.

Performing the work, we revealed several problems in formation and conducting geodetic measurements and in introducing the boundaries of a settlement into the cadastre data:

1. Administrative borders of a settlement and the boundaries of the area should not cross the boundaries of land lots. In the State Cadastre of Real Estate there are many real estate items, including land plots, which are considered to have been registered before, that is, they do not have definite boundaries on the area. It is not clear what to do with such land plots when establishing the settlement borders, because the boundaries of the plots can cross the boundaries of the settlement.
2. In the process of cadastre registration of the settlement boundaries there is also a problem of intersection with multiloop land plots. These plots consist of several small plots, which have different borders on the area, but legally are one single lot. For example, we can name land plots under electricity supply network facilities, gas pipeline, etc. Such intersections with a single land lot do not make it possible to register the settlement boundaries in the Cadastre.
3. When we establish the settlement borders, there are no definite rules or requirements in respect to the registration of the boundaries of cadastral division units. Very often the boundaries of the cadastral division do not coincide with the settlement boundaries. Therefore, if the borders do not coincide, it is not clear how to register the land plots in the Cadastre, what is going to be the allowed use of the real estate units, etc.
4. Quite a number of questions arise if there are rural forests within the boundaries of the settlement, for forests refer to the forestry fund. The law is violated if forests are included into the boundaries of settlements illegitimately, when there is no provided by the law endorsement of the Federal Forestry Agency and timberlands are included into the territory of the settlement when deciding on the plot plan approval and confirmation of the settlement boundaries. Such decisions are not valid.

Thus, formulation of the documents on settlement boundaries and their cadastral registration is connected with unsolved problems. The urban development documentation (The General Development Plan and Land use and Development Regulations) prepared and approved before, which concerns the territory of the settlement and has no geodetic base, cannot serve as a document for proper land-use planning and development of rural territories. Besides, it complicates the work of local self-governing bodies in terms of rural territories management.

Cadastral registration of immovable property today must be based on a scientific approach and must make a systematized database of the cadastral registration units under research. Herein, we should take into account all the peculiarities of the scientific and methodological process of the unit analysis with due regard to its spatial and historical development. When we consider the legal base of the cadastral registration of the settlement boundaries, we attach special importance to improvement of land management and planning.

Nowadays, the Russian Federation has a task of creating and implementation of conceptions of territorial development. It should be presented in different federal target programmes. This task requires effective cadastral works based on innovations. Cadastral works performed in respect to settlement boundaries help to receive necessary information. Not the least of the factors is the right monitoring management when gathering data with the help of GIS. We have illustrated this idea in our previous studies (2015 & 2016), the results of which are presented in the papers: "Suggestions on the Improvement of Monitoring System in the Sphere of Land-Cadastre Relations", "Monitoring System in the Sphere of Land-Cadastre Relations" and "Actual Aspects of Cadastre Relations in the Monitoring System of Land and Rural Areas". As for the advantages of geoinformation systems, principles of their functioning and usage, Mihael N. De Mers presented them with many details in his book "Fundamentals of geographic information systems" [17].

Moreover, it is important to mention some research works on restructuring rural settlements in the central part of China, which reflect the problems of population of rural territories of Russia: «Subjective well-being (SWB) has long been neglected in the process of rural settlements restructuring. In order to explore the possibility of integrating SWB in rural settlements restructuring, this paper verifies two hypotheses. The first hypothesis postulates that SWB is positively correlated with accessibility to facilities and services at a village scale. The second one suggests that SWB is positively related to the personal satisfaction level of demands in daily life at an individual scale. Verification of these hypotheses indicates the application of SWB into rural settlements restructuring and planning» [18].

4. Conclusion

Despite considerable limitations in the sphere of land-use planning, we can still observe positive dynamics in the development of the legal and regulatory framework on the territory of the Russian Federation within the last year. Thus, they passed the Federal Law dated by 31.12.2017 No 507-FZ "On amendments to the Urban Development Code of the Russian Federation and to separate legal acts of the Russian Federation". This Law says [19]: "The state governing institutions and the local self-governing bodies, which have prepared and approved the documents on the land-use planning and regulations of land-use

and development, must prepare the information about settlement boundaries and about the boundaries of territories according to Articles 19, 23 and 30 of the Urban Development Code of the Russian Federation until the 1 of June, 2020".

This legal norm should lead to a positive tendency in connection with the demarcation of settlement lands by means of establishing their boundaries. This, in its turn, will contribute not only to the right planning and use of territories, but also to economic growth in the field of economic and cadastre relations. And it will reduce the number of mistakes in management decisions which governing bodies of all the levels can make [12].

Besides, the Urban Development Code [20] points to the following: "A normative annex to the General Development Plan is information about the boundaries of settlements (including the boundaries of the settlements that are being formed), which are parts of settlement areas and municipal districts. This information must include graphic description of the location of the boundaries of settlements, enumeration of coordinates of characteristic points of these boundaries in the coordinate system, used for the Unified State Register of Real Estate".

The laws and regulations described above will stimulate identification of the settlement boundaries, boundaries of land plots, which are situated on inter-settlement territories, but have the address reference of the settlement; and vice versa, the boundaries of a settlement may include land lots, which are situated on the lands of other categories. It is a difficult process of ordering in the cadastral registration of settlement boundaries, which is a basic and principal issue for documents on strategic planning of the development of municipalities and, in general, of the further effective development of rural areas.

The Strategy of Sustainable Development of Rural Territories of the Russian Federation for the period until 2030 [3] determines a number of aims and goals to be achieved by 2030. The principal targets are:

- stabilization of the rural population size at the level of 35 million people;
- growth of the lifetime of the rural population up to 75.6 years of age;
- reduction of migration outflow of the rural population up to 74.1 thousand people;
- ensuring the average annual tempo of gain in agricultural production equal to 5.5 %;
- growth of the employment level of the rural population up to 65.5 %;
- expansion of the network of rural health posts and (or) offices of general practitioners in the countryside up to 1.7 thousand units;
- increasing of the number of rural inhabitants who systematically do exercises and sports up to 37.3 %;
- rise of the proportion of settlements that are connected with others by means of hard-surface roads and motor-roads networks up to 80 %.

When we improve the work on delimitation of settlement boundaries, we will be able to solve the tasks connected with the development of rural territories on the basis of on land-use planning and cadastral data.

In order to develop rural areas it is necessary to pay more attention to measurement cadastral data and the territorial cadastral information received both form the owners of the real estate items and from the local self-governing bodies. Besides, it is important to take into account authenticity and timeliness of such information and to keep qualitative registering of the rational use of lands [21]. The formation of the cadastral data is provided by means of topographic-geodesic, airspace, cartographic and cadastral works, edaphic and geobotanical surveying and searching, land monitoring, quantitative and qualitative land registration, preparation of the cadastre case for a particular object, making territorial cadastral maps and identification documents.

It is vital to determine the strategic direction of regional development. This will precondition renewal of the territorial development in general and of the agricultural sector particularly. An important role in this process is attached to research work aimed at the creation of methodological fundamentals in the sphere of territorial, economical and cadastral relations in respect to the development of rural territories [12].

All the measures mentioned above and their analysis will, certainly, affect investment prospects of rural territories, although there is a constraint factor for investment strategies of rural areas. This factor is depletion of humus (which negatively influences agrochemical, physical and chemical properties and biological activity of soil, deteriorates its water-air, warmth and pabular regimes, as well as its capability to resist such negative phenomena as acidulation and salinization). Nevertheless, delimitation of land plots, establishment of boundaries of settlements, determination of the legal status of lands will have an impact on the investment policy, which contributes to social and economic development of territories, to the development of agricultural businesses, thus attracting labour resources and raising the social standard of living of rural population. Consequently, it will lead to sustainable development of rural territories of the Russian Federation.

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