Designation and protection of especially valuable land

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Abstract. In recent years, there has been a more careful attitude to valuable agricultural land and, primarily, to sustainable use of especially valuable, most productive land. This land should be designated, delimited, sustainably and carefully managed, to ensure the production of organic agricultural food and raw materials, protected and preserved for the present and future generations. The paper analyzes past experiences in defining especially valuable land for further sustainable use and protection against land retirement. The authors clarify the concept of such land, which consists in its productivity and suitability for agricultural use. The paper proposes a criterion for classifying land as especially valuable as a land-use-capability class determined when classifying lands according to the methods approved. The special software developed by the authors and approved by the state registration authority provides automated processing of significant volumes of soil, agro-climatic and economic information. The land classification scales developed for the constituent entities of the Russian Federation provide a toolkit for determining land classes by soil varieties, with their value to be subsequently defined. Soil plans are designed to delimit land classes that include the corresponding soil varieties. Keeping account of the current negative properties of land makes it possible to differentiate soils more objectively: soil varieties with negative properties are not included in the array of especially valuable lands. The paper deals with approaches for designating especially valuable lands and presents data gathered by the authors on their areas in federal districts of the European part of the RF. It is proposed to include the information on the boundaries of especially valuable lands in the Unified State Land Register which would be the opportunity to endorse their special legal status. The results can be used by the constituent entities of the Russian Federation to support activities towards designation and protection of especially valuable land.

1. Introduction

Designating especially valuable land in order to protect agricultural land from taking out of production and support its sustainable use has been under active consideration in recent years. Yet, there is not any scheme available to protect the land from setting aside. As per a bill proposed, especially valuable agricultural land includes agricultural land that meets the criteria specified for especially valuable agricultural land [1].

Most often, Russian scientists and economists propose to use a specific indicator of cadastral values as a criterion for classifying lands as particularly valuable. The indicator was legally enshrined as a criterion in Article 79 of the Land Code of the Russian Federation [2]. Yet, it did not improve the situation. As of January 1, 2020, lists of especially valuable productive agricultural land were...
approved only in 57 constituent entities (67%), and they cover about 8 million hectares (4%) of the total area of agricultural land in the country [1]. This is explained by the following reasons:

- work on cadastral valuation is carried out on land plots occupying significant areas, which include significantly different land fertility;
- when aligning the value of land with the average district cadastral value in municipal regions that constitute the black soil zone and southern Russia boasting high soil productivity, almost half of the fertile land will not be included in especially valuable and not protected;
- cadastral valuation indicators are recalculated every 4 years. Therefore, the likelihood of a fairly frequent change in the area of especially valuable land is quite high.

Therefore, the Government of Russia adopted the Basic Principles of State Policy on the Use of the Land Available in the Russian Federation for 2012–2017. (Order of the Government of the Russian Federation dated March 3, 2012 No. 297-r (as amended by the order of the Government of the Russian Federation dated August, 28, 2014 No. 1652-r). They propose to define especially valuable agricultural land as a separate group with a set of criteria established for classifying such land and the procedure for specifying areas for protection [3]. Further, the Action Plan was adopted to improve the legal regulation of land relations (order of the Government of the Russian Federation dated November 8, 2018 No. 2413-r.), which indicates the need to develop a mechanism for the protection of agricultural land from retirement. A core link of this mechanism is proposed to consider “the designation of especially valuable agricultural land as a separate area with a set of criteria enabling to be classified as such land” [4].

In addition, the approved action plan indicates the need to delimit especially valuable land and include relevant information in the Unified State Land Register.

2. Results and Discussion

The ‘special value’ of land is thought as its profitability, suitability for use for arable land and fodder land, other than its market or cadastral value. The research object in the paper is agricultural land, varying in the level of productivity. The research subject is qualitative assessment that is accepted by the authors as a criterion for especially valuable land to be designated. Designating especially valuable agricultural land involves identifying such land, determining the localization of land on cartographic material of a set scale and calculating areas it takes, and at the final stage – confirming legally. The authors propose to consider the boundaries of especially valuable lands as those of soil varieties or groups of soils classified as especially valuable land.

An important step in establishing a framework for especially valuable land to be protected is a series of regulations towards its sustainable use, protection against transfer to other types of use, damage, pollution, erosion and other negative processes, which will ensure land conservation as a national wealth for the current and future generations of Russian citizens. Based on a scheme proposed to designate especially valuable agricultural land, it is listed as land that cannot be used, or is limited, for any other purposes, followed by activities to delimit such land and add relevant information in the Unified State Land Register. The authors propose to consider the class of productivity and suitability of agricultural land for use in agriculture as a criterion for classifying land as particularly valuable.

Land classification (arrangement of quality classes) is provided in accordance with the Guidelines for Land Quality Assurance and Classification based on its Agricultural Suitability [5] using special software approved by the state registration authority [6]. The authors propose to classify land lots of the following types of use as especially valuable land:

- agricultural land characterized by the greatest agricultural suitability (1 category of suitability – suitable for use for any agricultural land) and the highest productivity (1-4 classes of land quality);
- land lots used for breeding, seed production, variety testing, livestock breeding, aquaculture, placement of collections of plant genetic resources;
- agricultural land suitable for the production of organic produce;
- reclaimed agricultural land, as well as land lots with reclamation systems and single hydraulic structures;
- land lots used for research, experimental and educational purposes related to agricultural production;
- unique agricultural land exhibiting properties that correspond to the specific growing conditions that are required for certain types of agricultural crops, berries and so on (grapes, rice, tea, cotton, etc.) [7–10].

Being a part of the creative team, we calculated the areas of especially valuable land in more than 50 constituent entities of the RF, located in the Volga, Southern, Central, Northwestern and North Caucasian federal districts. Table 1 contains an outline of especially valuable land being distributed by federal districts.

**Table 1. Areas of especially valuable land in the subjects of federal districts of the European part of Russia**

| Federal district     | Number of subjects | Area, thousand hectares | % of agricultural land area |
|----------------------|--------------------|--------------------------|-----------------------------|
| Central              | 17                 | 19 345.5                 | 65.8                        |
| Southern             | 7                  | 12 272.6                 | 39.1                        |
| Volga                | 14                 | 28 152.0                 | 54.9                        |
| North Caucasian      | 7                  | 3 787.4                  | 33.3                        |
| Northwestern         | 8                  | 2 042.8                  | 36.9                        |
| **Total:**           | **53**             | **65 600.3**             | **50.9**                    |

The table is compiled based on the authors’ ratings.

Abiding by the bill and common sense, the RF constituent entities should be charged responsible for approving the list of especially valuable agricultural land, delimiting such land and putting respective information into the Unified State Land Register. Most importantly, it implies systematic and constant monitoring of compliance with the regulations for conservation of such special, in terms of value, land.

To ensure successful implementation of these activities, a regulatory and methodological base, as well as a system of land differentiation, have been developed with the involvement of the authors of the paper, namely:

1. Guidelines for the classification of land according to its agricultural suitability were developed and approved, providing a rationale for differentiating productive land into 9 classes ranging from the most suitable (1st class) to the least suitable (8th class) and a special 9th class designated as unique land.
2. Agroclimatic zoning of land in 76 constituent entities of the RF included in the agricultural area of the country was made, based on which zones and subzones with a homogeneous soil cover and similar agroclimatic characteristics were identified across the constituent entities, allowing the cultivation of certain zonal types of crops and the optimal scheme for cultivation.
3. Scales of land classification were developed and approved for the constituent entities of the RF. At the regional level, they allowed for grouping soil varieties (specifically in each subject) by land classes, in order to delimit and margin zones of localization of land classes on the ground based on soil maps.
4. Special software was developed for rating land classes, that process hundreds of soil varieties in relation to the suitability of cultivating dozens of agricultural crops throughout the country, and registered (Certificate of state registration of a computer program No. 2015660854 dated October 12, 2015).
5. Using the software, the areas of land classes were experimentally calculated for all subjects constituting the agricultural zone of Russia (within the 76 subjects of the RF).
6. Principles, methodological approaches and tools for identifying and classifying agricultural land as especially valuable lands were developed, suggesting the designation of especially valuable lands of federal significance (classes 1 and 2) and especially valuable lands of regional importance (classes 3 and 4). In regions where the areas of 1-to-4 class land are insignificant and make up less than 20-30\%, the authors propose to include here land of 5 class as well. The least productive lands of 6-8 suitability classes, as well as soils with negative properties (erosion, waterlogging, stoniness, etc.) are proposed to be excluded from the category of especially valuable land. In the same way, land lots with an inhomogeneous soil cover, which include unproductive soils on an area of 10-15\% or more, should not come under especially valuable land.

7. The areas of especially valuable land were experimentally calculated for all subjects of the European part of Russia (namely, 53 subjects). Based on these calculations, about half of the area of agricultural land is classified as especially valuable land, i.e. 10 times more than those insignificant areas (4.3\%) that have been designated to date (Table 1).

Delimiting especially valuable agricultural land is the most important condition for bringing unused agricultural land into the cropping plan. This may help determine the legal status of land lots as part of agricultural land while it is being formed or to clarify it, for example, following land management activities, based on the qualitative characteristics of the land to which such a lot falls into.

Putting information on the boundaries of especially valuable agricultural land into the Unified State Land Register will become a technical step to legally secure its status. This will create a legal basis for agricultural zoning of territories and ensure the determination of the legal status of land lots, including the types of permitted use in accordance with the zoning of territories and the category of land, which is determined by its targeted use. Moreover, it is important to develop and implement regulations for land conservation to monitor land use.

3. Conclusion

Basically, for the subjects of the federal districts under consideration, 65.6 million hectares of fertile land, or slightly more than 50\% of the area of all agricultural land located in the European part of Russia, were designated as especially valuable land based on the estimate through the approved land classification method and a registered software product. This proportion of the protected land is considered to be objective and most optimal.

Within the five federal districts under consideration (Table 1), the lowest share of especially valuable agricultural land (33.3\%) was in the North Caucasus, and the highest (65.8\%) – in the Central Federal Districts. The largest area of the most valuable land in the European part of Russia is concentrated in the Volga Federal District and amounts to 28.2 million hectares.

Preserving especially valuable land for present and future generations is the most important goal for economists, land surveyors and agrarians. It will save land lots used for breeding, seed growing, variety testing, livestock breeding, aquaculture, placement of collections of plant genetic resources, and, in a strategic perspective, ensure food independence and food security of the state taking into consideration growing global instability. It is advisable to consider recognizing depreciation allowances for soil fertility restoration of a gradually worn out means of production – an agricultural land lot, estimating depreciation costs and reimbursing them in the form of investments to maintain productive soil fertility.

V.V. Abramchenko, the Deputy Chairman of the Government of the Russian Federation for Agriculture, Ecology and Real Estate Turnover, said: “We did not inherit land from our ancestors, we borrowed it from our children.” Therefore, the current generation of Russian citizens is obliged to ensure a respectful attitude to land fertility, conduct sustainable land use, maintain the level of productivity of agricultural land, exploit with great care this unique property of productive land – its ability to produce a variety of high-quality agricultural products for centuries, conduct organic farming, ensuring the receipt of rental income, and as a result – to transfer the land to children and grandchildren in a form suitable for further effective use.
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