Regional features of especially productive agricultural land allocation

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Abstract. One of the urgent issues of modern land matters in the Russian Federation is the allocation of especially valuable productive agricultural lands. This process is aimed at lands’ protection and efficient use and is regulated by the legislation of the Russian Federation. Regional legislation is in charge of the lands’ selection and itemizing. The article presents the results on assessing the dynamics of the allocation of especially valuable productive agricultural lands in the regions of the country and establishes the features of itemizing especially valuable productive agricultural lands. The evaluation criterion for classifying land plots as especially valuable in the regions is mainly the deviation of the cadastral value from the average district values for the municipality, which does not appropriately reflect the land fertility. The use of soil fertility coefficient, grain coefficient, bonitet score for classifying agricultural lands according to suitability for use in agriculture is justified. Analysis of the registers of especially valuable lands in the constituent entities revealed a variety of information on a land plot classified as a particularly valuable agricultural land. Measures for the allocation of valuable land should be based on land management, which includes a set of measures for lands assessment, classification, territory zoning and establishment of land boundaries. Registers of especially valuable productive agricultural land should have a unified pattern with a maximum of information about the land plot: its location, permitted use, area, basis for inclusion in the register, date, name of the farm and municipality, etc.

1. Introduction
The present stage of land matters development in the country is characterized by an acute issue of allocation of especially valuable productive agricultural lands regulated by para. 4 of Art. 79 of the Land Code of the Russian Federation, which charges the constituent entities of the Russian Federation with the responsibility for assigning lands to especially valuable productive agricultural land [1]. Thus, the decision on the valuable lands allocation and itemizing is made with regards to the specifics of regional legislation, the presence and condition of agricultural land in a particular republic, territory, region.

2. Materials and methods
According to the Ministry of Agriculture of Russia, as of January 1, 2019, 53 constituent entities of the Russian Federation approved the lists of especially valuable productive agricultural lands. Since 2013, the Ministry of Agriculture of Russia has been reporting on the opening of the registers of especially valuable productive lands in the constituent entities of the country. Their total area as of January 1,
2019 amounted to 8,090.6 thousand hectares (4.09% of the total area of agricultural land in Russian Federation). The dynamics of these lands area is shown in table 1. As can be seen from the table, starting from 2013, the area of allocated especially valuable productive agricultural land is gradually increasing, the list of regions is expanding from 32 to 53 (Fig. 1) [2]. However, 4.1% of the total area of agricultural land in the Russian Federation is extremely low for particularly valuable land. The reason for this is both procedural issues of such lands allocation, and the existing criteria for assessing the classification of agricultural lands as especially valuable agricultural lands in the regions.

**Table 1.** Especially valuable productive agricultural land (according to constituent entities of the Russian Federation)

| Year | Number of subjects of the Russian Federation that have allocated especially valuable productive agricultural land | Agricultural land area (thousand hectares) | Area of especially valuable productive agricultural land (thousand hectares) | Proportion of especially valuable productive agricultural land to the total area of agricultural land (%) |
|------|-------------------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 2013 | 32                                                                                             | 196,129.70                               | 4,359.70                                                                          | 2.22                                                                                             |
| 2014 | 33                                                                                             | 196,237.60                               | 4,872.20                                                                          | 2.48                                                                                             |
| 2015 | 33                                                                                             | 197,749.10                               | 3,660.00                                                                          | 1.85                                                                                             |
| 2016 | 45                                                                                             | 197,739.30                               | 4,914.80                                                                          | 2.49                                                                                             |
| 2017 | 49                                                                                             | 197,785.10                               | 7,840.00                                                                          | 3.96                                                                                             |
| 2018 | 53                                                                                             | 197,720.70                               | 8,090.60                                                                          | 4.09                                                                                             |
Figure 1. Constituent entities of the Russian Federation having established lists of especially valuable productive agricultural land (a – 2014, b – 2018)

3. Research results

The results of the study showed that the process of allocation of especially valuable productive agricultural land most commonly implies five stages: Stage I is devoted to the improvement or adoption of the law on land (land matters, etc.) at the regional level. A resolution on the rules for itemizing especially valuable productive agricultural land is adopted on the basis of the regional law. Stage II aims to itemize land plots based on accepting applications from landowners (land users) and identifying such lands by the authorized bodies of the region with regard to the adopted criteria. Stage III implies taking measures to establish (describe) the boundary layout of especially valuable productive agricultural land. As a result, a register of especially valuable productive agricultural land is formed (stage IV). Information concerning these lands must be entered into the unified national register of rights (Stage V) [3].

The indicator of the cadastral value deviation from the average level for the municipal district is used as a criterion in most regions of the country (Fig. 2). At the same time, in a number of regions, the constituent entities introduced additional criteria. For example, the Irkutsk region introduced an indicator of the productivity score (bonitet), which should be more than 20% higher than the average regional indicator [4]. The following indicators have been introduced in the Komi Republic: acidity of pH > 5.5; the content of phosphorus mobile forms (P_2 O_5) > 100 mg/kg of soil; the content of exchangeable potassium (K_2O) > 120 mg/kg of soil; organic matter in the soil > 6% [5].

Lists of especially valuable productive agricultural land provide rather miscellaneous information. For example, in the Bryansk region, the register includes such information as: address data, copyright holder, cadastral number and cadastral value, as well as the basis for being entered into the register. Slightly different information is given in the register of the Voronezh region, where information on the permitted use and the right holder of the land plot are added to the area and cadastral number. However, due to the fact that most of the agricultural land on the cadastral register are indicated as “previously recorded” and are in “zero quarter”, the location of especially valuable productive agricultural land is descriptive. An example is the list of the Ivanovo region. On the geo-information portal of the Kaluga region, a geoservice “Especially valuable agricultural land on the territory of the Kaluga region”, which provides the most complete information about the land plot along with a visualization of their location, is published.
Figure 2. Scheme of the constituent entities of the Russian Federation, where the indicator of cadastral value deviation from the average level for the municipal district is used as a criterion for classifying land as especially valuable productive agricultural land

4. Conclusion
In our opinion, the allocation of especially valuable productive agricultural land should be based on a wider range of criteria, specifically: bonitet score, soil fertility coefficient, grain equivalent. Each of the listed criteria has its drawbacks. However, they better reflect the land fertility than the deviation indicator of the cadastral value from the average regional values [6].

The process of allocating especially valuable productive agricultural land must take the form of land management activities. The algorithm of land surveying work can be represented via a diagram (Fig. 3). As a result, registers of especially valuable productive agricultural land should be compiled in a unified format and include comprehensive information about the land plot being location, cadastral number, cadastral value, permitted use, area, basis for inclusion in the register, date, name of the farm and municipality, etc.

The described experience of pilot design in a number of constituent entities of the Russian Federation proves the feasibility of the proposed procedure for allocating especially valuable productive agricultural land (Fig. 4).
Figure 3. Algorithm for identifying especially valuable productive agricultural land

Figure 4. Examples of pilot projects for the allocation of especially valuable productive agricultural land in the Belgorod region: a) rural settlement “Kazatskoye” of the Yakovlevsky district; b) rural settlement “Annovskoe” of the Korochansky district
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