Unused agricultural land: problems and solutions

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Abstract. Unused agricultural land is one of the modern problems of land relations in Russia. According to the Ministry of Agriculture of Russia, its area is more than 40 million hectares. Identification of unused lands, their composition, area, territorial distribution and properties helps identify causes of their non-use which can be systematized in the following groups: economic, environmental, legal, spatial (remoteness, low profile, strip), organizational and economic (land shares, land redistribution fund). An analysis of causes of non-use allows us to solve this problem: improving the legislation and the land management system, taxation of rural producers, land management for the territorial development of agricultural production, technological equipment for development processes.

1. Introduction
An analysis of the current state of the Russian land fund allowed us to conclude that the area of agricultural land is being reduced. For the period from 1990 to 2017, the area of agricultural land decreased 1.7 times, while in 1990 it amounted to 37.4% of the land area, in 2017, it was 22.4% [1]. The withdrawal of agricultural land is due to the transfer it to the land redistribution fund.

The decrease in the area of agricultural land is explained by the expansion and construction of settlements; the allocation for the construction of new industrial, transport, and telecommunication enterprises and expansion of the territory of the existing ones; the increase in the area of enterprises and organizations involved in environmental protection; conveying it to forestry enterprises for afforestation; and the difficult economic situation in the country that has affected many land users (landowners) involved in production of agricultural products.

A study identified a decrease in quality, environmental status, and non-use of agricultural land. Along with a decrease in the quality of agricultural land, negative processes continue to develop. These are a decrease in the area of irrigated and drained lands; worsening of their reclamation state and economic use; soil pollution with heavy metals, radionuclides [2].

The purpose of the study is to identify causes of non-use of agricultural land and determine ways to solve this problem in modern land relations.

2. Materials and methods
There are natural and anthropogenic causes of non-use of agricultural land. The basis of natural causes is land degradation as a result of water and wind erosion, waterlogging, and salinization. Along with these factors, the following negative processes continue to develop: a decrease in the area of irrigated and drained lands, deterioration of its reclamation state and economic use; soil pollution with heavy metals, radionuclides [3].

Along with the problem of disturbed, polluted and reclaimed land, there is a problem of unused land.
The issue of land use is of great socio-economic importance.

In 2017, assessment of the situation with unused agricultural land, agricultural land and arable land was carried out by the analytical center of the Ministry of Agriculture of the Russian Federation on the basis of data provided by executive authorities of the regions of the Russian Federation.

According to the Ministry of Agriculture of the Russian Federation, on January 1, 2018, the area of unused agricultural land was 46.42 million hectares, or 12.05% of the total area of agricultural land. The distribution of unused land by federal districts is shown in Figure 1.

Figure 1. Distribution of unused agricultural land plots by federal districts of the Russian Federation (as of 01.01.2018), million hectares

One of the causes is the presence of unclaimed land shares that do not allow the active introduction of agricultural land into circulation. According to the Ministry of Agriculture, in 2018, the area of unclaimed land shares was 16 955.443 ha [4].

3. Results

To identify the causes of non-use, the factors contributing to the development of degradation processes were studied. These are natural-historical (physical-geographical) or natural, socio-economic (anthropogenic) factors. Natural factors include: climate, topography, soil and geology, vegetation. Anthropogenic factors include the negative impact of human actions in the process of irrational use of land.

An analysis showed that the presence of unused land is due to various natural, social, and economic factors: negative natural and anthropogenic processes deteriorating land fertility; lack of financial and technical capabilities to maintain and restore soil fertility; division of the unified land and property complex into land and property shares as a result of the reorganization of collective farms, cessation of activities of agricultural enterprises and transfer of land to the redistribution fund; unclaimed land shares; short-term leases that do not stimulate the tenant to take measures to improve soil fertility; littering, pollution and other destructive processes; migration of the rural population increasing the number of abandoned rural settlements and land overgrowth with trees and shrubs; concentration of production due to the intensification of technology and natural disposal of unproductive land.

The causes of non-use of agricultural land make it possible to classify land plots by signs of unsuitability (Figure 2).
4. Conclusion
The problem of using unsuitable land for agricultural production is becoming ever more acute every year. This problem must be solved in a complex, while the work is divided into several stages and (or) directions.

First, clearly classify land unsuitable for agricultural production.

Secondly, it is necessary to develop and, most importantly, implement a system of measures aimed at localizing and preventing degradation processes.

Thirdly, to determine a strategy for the use of land retired and being retired from the active economic, especially agricultural, turnover. This strategy should be based on the principles of determining the suitability of land for a particular type of permitted use.

When determining the suitability of unused land for agricultural production, it is necessary to be guided by the following principles: economic efficiency; environmental safety; social orientation; clean title.

The causes of non-use and signs of unsuitability of land allow us to determine measures aimed at improving the rational use of land (Figure 3).

The main areas are as follows:
1. Legislative support for the development of land and property relations [5].
2. Improvement of government structures for land management.
3. Improvement of taxation of rural producers.
4. Land management support for the territorial development of production using agricultural lands.
5. Resource and technological support of unsuitable land use [6].
Figure 3. Federal measures for developing agriculture and improving the use of agricultural land

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