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## Environmental Management in Agriculture: Problems and Solutions.

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### ABSTRACT

Environmental problems had been arising in the end of XX - beginning of XXI centuries inflict large-scale damage to the global, national, regional systems of environment and natural resources, threaten the well-being of the population, and reduce the efficiency of the economy. Agriculture largely focused on the use of natural-resource potential, the main element of which is land. The share of agricultural land in Russia for more than 23% of the territory, so agriculture can be describe as one of the main land users of the country. The increase in agricultural production, improving its quality, demand from the agricultural production growth rate, application of mineral fertilizers and pesticides, ameliorative interventions. This causes an increase in the anthropogenic impact on the environment, pollution of soil, air and water. Exceeding the criteria of self-restoration of ecosystems leads to increased degradation processes of natural objects and, especially, agricultural lands. Therefore, to ensure sound environmental management, use of land, protection of the environment are the most important areas of activity of the state for the purpose of preservation, reproduction of natural resources and ecological balance. In view of this, the role of directed research, creating the basis for the development of effective public policies and decision based on it justified, from an environmental point of view, the state administrative decisions.

**Keywords:** agriculture, farmland, natural resources, environmental management

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## MATERIALS AND METHODS

The state policy of natural resources in Russia forms a system of federal documents of different status: The Land Code defining the ground the most important part of nature, used as the main means of production in agriculture and protected by the state [1, 13, 14], Federal Law [2, 18] The State Program [4, 17]. The federal target program [5, 16]. Land Code establishes the priority of land protection as an essential component of the environment. Land Fund in Russia exceeds 1,700 million. Ha. Its structure in the context of land user categories presented in Figure 1.

From this, it follows that the Russian forest fund occupies more than 65% of its territory. In second place is agricultural land, occupying nearly a quarter. From this area of agricultural land directly used in production, took slightly more than half (Table 1).

The data in Table 1 suggest the dynamics, structure and intensity of use of agricultural land. Mostly arable land, more than a quarter of the area is grassland, the most extensive form of land. Perennials: orchards, vineyards, berry, occupy only 1.2 million ha. This is woefully inadequate to ensure the needs of the population in fruits and grapes. Presented structure of agricultural land at the same time indicates the presence of reserves for the commercialization of the nearly 200 million. Ha and increase their usage. However, keep in mind that nearly two-thirds of the country are located in the climatic conditions, unfavorable for the conduct of agricultural production. The statistical analysis shows that water erosion exposed to almost 18% of the total area of farmland, more than 8% - wind erosion, wetlands and wetlands occupy 12%, the share of saline and alkaline soils account for one-fifth of agricultural land. As a result of desertification of arid areas, located mainly in the south and east of the country, natural pasture, an area of more than 56 million hectares. Lose their productivity.

The concept of sustainable development of rural territories of the Russian Federation noted that most of the rural areas there was an alarming ecological situation, aided by the natural-resource orientation of the economy, its low technological level, the shortcomings of environmental education and immigration processes. Each year, as a result of non-agricultural activities destroyed about 50 thousand. Hectares of land, their magnitude exceeding re-soil. Runoff livestock farms, irrigation systems and surface runoff from fields pollute water resources [3, 15, 19, 22].

The natural resource, used or intended for use in business and other activities as a source of energy production and of consumption [2, 12, 20] , is harmed. Reduced and efficiency of natural resources, increasing environmental costs. This not only reduces the level of economic use of farmland, but also increases the costs of agricultural production, leading to a decrease in its competitiveness.

Due to the fact that the land as part of the natural environment, to a greater extent experiencing the harmful effects of these circumstances, the condition of the soil in the plow layer of the earth is getting worse under the influence of pollution of industrial toxins, agricultural, transport, domestic origin. Often they are presented with salts of heavy metals, mineral oil, sulfates, nitrates and other harmful substances, polluting both air and water sources.

However, the lack of application of mineral fertilizers in comparison with the developed countries of the world, limited use of pesticides and herbicides, along with a relatively low yield of crops resulted in the preservation of ecological well-being here. According to the Ministry of Agriculture of Russia exceed 1 MAC (130 mg / kg) of nitrate in the soil is not established. Moreover, in recent years there was a trend to reduce them. We believe that the domestic and global agricultural market is a significant advantage, suggesting receive certain preferences.

As a result of the cumulative negative impact of climatic factors and anthropogenic influence annual growth area of disturbed lands. This leads to the acceleration of the development of processes of erosion, salinization, waterlogging, flooding, desertification, leading to a decrease in soil fertility, and the conclusion of their agricultural use. According with department of supervision of environmental management, re-soil each year is less than half of disturbed lands, that is, growing ecological trouble of different types of land. About the situation in Russia with land reclamation, according to the data in Table 2.

They imply that there was a decline in the dynamics of space reclamation, that is, the return of disturbed land into economic circulation. The exception is arable land reclamation area that has doubled relative to 2012, and the area occupied by bodies of water, where it tripled. However, the need to strengthen the country's food security requires a change in agricultural management practices and environmental management. To do this, the country embarked on the widespread use of program-target method. The provisions of the federal acts mentioned above led to the adoption in 2015 of large-scale measures to increase the rate of introduction of unused land into economic circulation, increase in farming intensity and livestock. This makes it possible simultaneously to solve several problems: to improve the food security of the population, the number of jobs, increase the intensity of agriculture.

### RESULTS AND DISCUSSION

The problems addressed in this article attracted the attention of many researchers: technologists, environmentalists, economists, including teachers of the Stavropol State Agrarian University. The article «Cprehensive socio-ecological and economic assessment of the status and development of Southern Russia agricultural regions», prepared by authors Trukhachev V.I., Kostyukova E.I., Gromov E.I., Gerasimov A.N. the issues of complex socio-ecological and economic assessment of the status and development of agricultural regions of the South of Russia. [10] Article Enhancement of land tenure relations as a factor of sustainable agricultural development: Case of Stavropol Krai, Russia, prepared by a team of authors composed Trukhachev V., Ivolga A., Lescheva M. addressed the problems of improvement of land relations as a factor of sustainable agriculture [11]. Article Tarasenko N.V., Kriulinoy E.N. "Ensuring environmental management in the agricultural area" devoted to the peculiarities of nature in the Stavropol region and its improvement [7]. N.V. Tarasenko in the article "Efficient use of natural resources as a factor of sustainable development of agriculture in the region" is defined the need for a modern scientific and methodological approaches to environmental management organizations [8, 21].

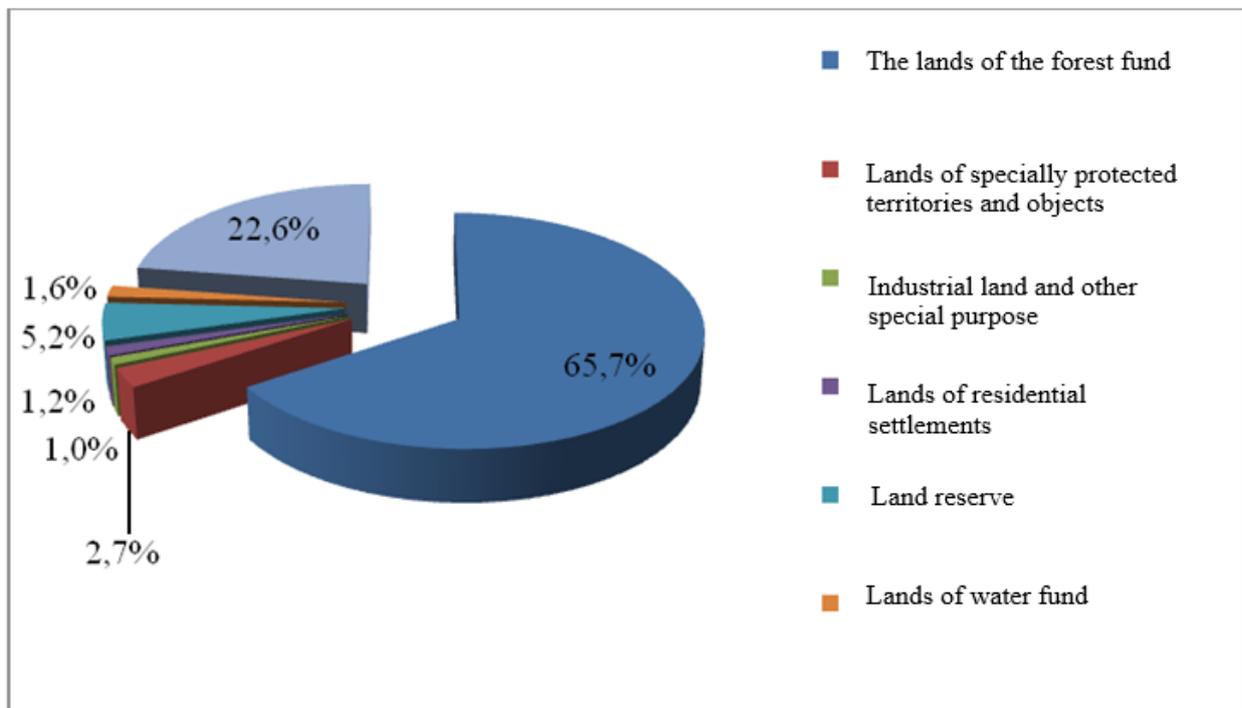


Figure 1: The structure of the land fund Russian Federation by land categories

**Table 1: The structure of agricultural land at 1 January**

Types of land	2010		2012		2014	
	million hectares	%	million hectares	%	million hectares	%
Agricultural lands	400,0	100	389,0	100	386,5	100
Including: farmland	196,1	49,0	196,2	50,5	196,2	50,8
of which: arableland	115,3	58,8	115,1	58,7	115,1	58,7
perennials	1,2	0,6	1,2	0,6	1,2	0,6
pastures	56,8	29,0	56,9	29,0	56,8	29,0

**Table 2: Resoil**

Years	The area of reclaimed land, thousands of hectares				
	Total	including:			
		for arable land	for other land	for forest plantations	for the waters
2012	75,6	6,3	9,3	56,7	3,3
2013	74,6	12,5	9,4	41,9	10,8

**CONCLUSION**

We believe that the use of the proposals of scientists in developing legal documents, a critical analysis of the situation, to make informed decisions regarding the state of agricultural development, environmental management and protection of the natural environment will provide unconditional achievement indicators identified in the documents of the corresponding federal orientation.

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