

Modern State and Tendencies in Agricultural Land Use

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Abstract

The article offers methodological methods for diagnosing the state of agricultural land use in the Russian Federation; involving the identification of factors affecting land use. Factors aimed at improving the efficiency and rationality of land use; the main development trends, characterized by the use of a dynamic approach and allowing to get an objective idea of the situation with the composition, structure and quality of land, which can become the basis for developing practical recommendations for improving the organization of land use are considered.

Keywords: Agricultural Land; Factors Affecting Land Use; Land Use Efficiency; Rational Land Use.

Introduction

During the period of land reform in Russia, there have been significant changes in land ownership and land use. They were the result of the social production reorganization and the emergence of a variety of management forms. In consequence of the land relations reforms, new phenomena and processes in the use of land have appeared.

In recent years, problems related to the use of land in Russia have led to the degradation of the soil cover and a decrease in the level of fertility; disturbance and contamination of land as a result of physical and chemical effects on the soil; the disposal of land and their rezoning to industrial and urban planning needs.

The Russian Federation for the reforms and formation period in 1991-2020 reduced the sown area of agricultural crops by 33%, the gross yield of the main agricultural crops decreased by 48%. At the same time, over the last five years, the agro-

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industrial complex of the Russian Federation has demonstrated positive growth in agricultural production in all major areas-in crop production, animal husbandry, food and processing industries, but the indicators of previous years have still not been achieved.

Thus, finding the most rational, cost-effective, but at the same time sparing ways of using agricultural land becomes especially relevant.

The Degree of Study of The Problem

Theoretical and practical aspects of the organizing land use have always been important. Various problems in its use have been deeply studied in the works of many scientists such as L. I. Abalkin, I.N. Buzdalov, A.A. Varlamov, S.N.Volkov, E.F. Zavorotin, N.G. Konokotin, V.V. Kosinsky, L.A. Kranets, N.V. Komov, G.S. Lisichkina, P.E. Loiko, V.V. Miloserdov, A.S. Mindrin, K.I. Pankovoi, A.Z. Rodina, A.E. Sagaidak, K.S. Ternov, A.V. Ulezko, V.N. Ushacheva, V. N. Khlystun, N. I. Shagaida, A.M. Yugai and many others.

The purpose of the study is to analyze the current state of agricultural land resources of the Russian Federation.

The object of the study was the land relations and forms of organization of land use that develop between users of agricultural land.

The subject of the study is the regularities of the organization of land use by agricultural enterprises in the region in the interconnection of technological, organizational, socio-economic relations that arise in the new economic conditions of land ownership and land use.

The theoretical, methodological and empirical basis of the scientific research was the fundamental research and conceptual developments of domestic and foreign scientists on the organization of the use of land resources, the definition of the main targets of land reform.

In the process of a comprehensive study of agricultural policy, *general scientific research methods* such as monographic, computational and constructive, statistical and economic, abstract-logical, dialectical, scientific abstraction, system analysis, program-target method, etc. were used. Modern methods of processing economic information (comparison, grouping, relative and average values, tabular and graphical representation of analytical data) were applied as well.

The information base of the research is made up of information from Russian Federal State Statistics Service (Rosstat) at the federal and regional levels, the Accounts Chamber of the Russian Federation, the Ministry of Agriculture of the Russian Federation, Russian State Register, data from the state land cadastre on the composition, structure and distribution of land. Existing scientific developments in the field of forecasting the use of land resources; legislative acts on the protection and use of land, special resources, developments of research institutions, data on the implementation of targeted federal and regional programs in the field of agricultural development, information resources of the Internet, information obtained during the author's personal observations are relied on.

The scientific novelty of the study is as follows in the fact that the study offers methodological methods for diagnosing the state of agricultural land use in the Russian Federation. They involve the identification of factors affecting land use, as well as factors aimed at improving the efficiency and rationality of land use; revealing the main development trends, characterized by the use of a dynamic approach, allowing to get an objective idea of the situation with the composition, structure and quality of land. These factors can become the basis for developing practical recommendations for improving the organization of land use.

The theoretical and practical significance of the conducted research involves substantiating theoretical and methodological approaches to the analysis of the organization of the agricultural land use. It made possible to assess the changes that have occurred in the composition and structure of the agricultural land fund, to identify the main problems of land use and factors affecting the efficiency of agricultural land use.

Discussion And Results

The Land Code of the Russian Federation, namely Article 77, defines that agricultural land is recognized the land provided for the needs of agriculture and located outside the borders of settlements. In addition, these lands include territories intended for agricultural purposes.

In the work of D.A.Shishov and E.V. Kozyreva (2016) the concept of land law defines agricultural land as the main means of production in the agro-industrial complex, thereby a special legal regime of exploitation is applied to them against the

background of mandatory forms of special protection. The exploitation of their productive potential fully depends on their area preservation, increasing soil fertility and preventing the development of negative soil and geobotanical processes.

According to V.V. Garmanov, V.L. Bogdanov (2015) the lands of the specified category are mainly used for agricultural production, educational, scientific, research and other purposes related to agricultural production, as well as for the development of fisheries and aquaculture, based on the fundamental principle of paid land use.

On January 1, 2020, Russian State Register published the following data: the total land area of the Russian Federation was 1712.5 million hectares, of which agricultural land comprised 381.7 million hectares or 22.3%.

The total area of agricultural land as part of agricultural land is 197.8 million hectares (197780.2 thousand hectares), including the total area of arable land that comprises 116.21 million hectares (58.8 %), pastures - 57.23 million hectares (28.9%), hayfields - 18.72 million hectares (9.5%), deposits - 4.37 million hectares (2.2%), perennial plantations - 1.24 million hectares (0.6%).

Figure 1 shows the change in the two largest categories of land i.g. agricultural land and forestland. During the analysis, it was concluded that in the period from 1993 to 2020, agricultural land decreased by 38.47% or by 238.6 million hectares, and there was a reduction in reserve land by 25% or by 29.5 million hectares. During the same period, there was an increase in the forest fund lands by 28.27% or 248.3 million hectares.

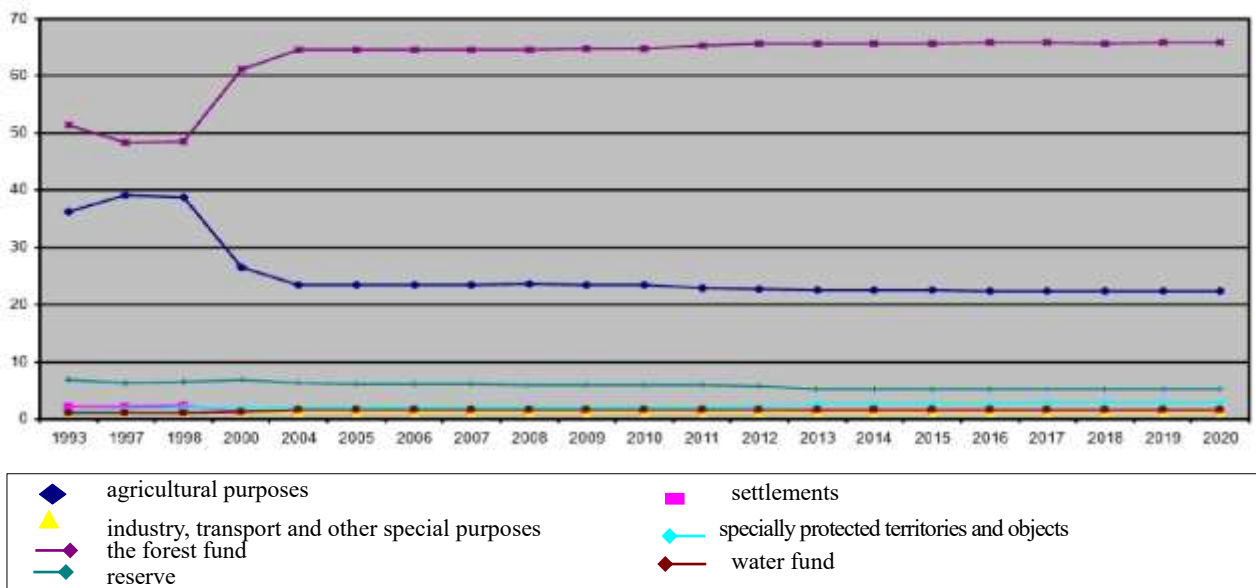


Fig. 1 - Distribution diagram of the land fund of the Russian Federation by category (period 1993-2020, %)*
 * Compiled by the authors based on the materials of Russian State Register (2020).

During the study, the following trends were revealed:

- the lands of settlements have increased due to the area of agricultural land, which is caused by the processes of privatization, the growth of household plots, dacha and housing construction and gardening;
- the reserve lands have undergone a minimal reduction (by 3 million ha), which is caused by the rezoning of these lands to the redistribution fund;
- the lands of industry, transport and communications for special purposes, specially protected territories and objects, as well as the lands of the forest fund have not changed, which indicates the potential use of this category.

During the study period, there was a decrease in agricultural land by 19.1 million hectares (Fig. 2). As for the productive potential of the lands of the Russian Federation, it has been reduced by more than 41% over the past 35 years. It should be noted that in the period from 2005 to 2019, there was an insignificant increase in the area of agricultural land as part of agricultural land by 3.3 million hectares or by 1.7%, due to the rezoning forest areas (Fig. 3).

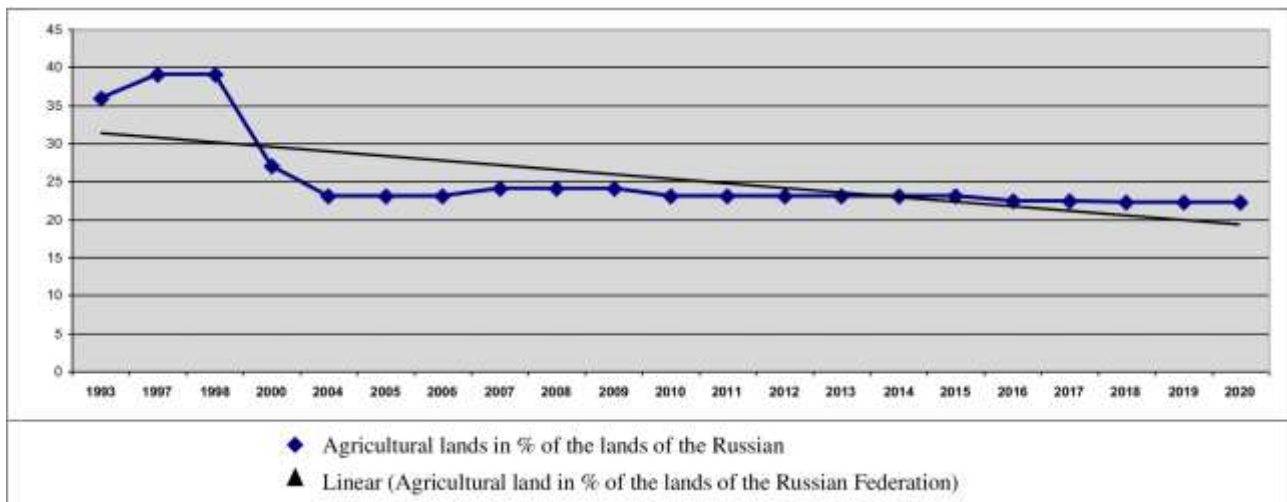


Fig. 2 - Dynamics of the agricultural land area in the total land area of the Russian Federation (1993-2020, million hectares (%))

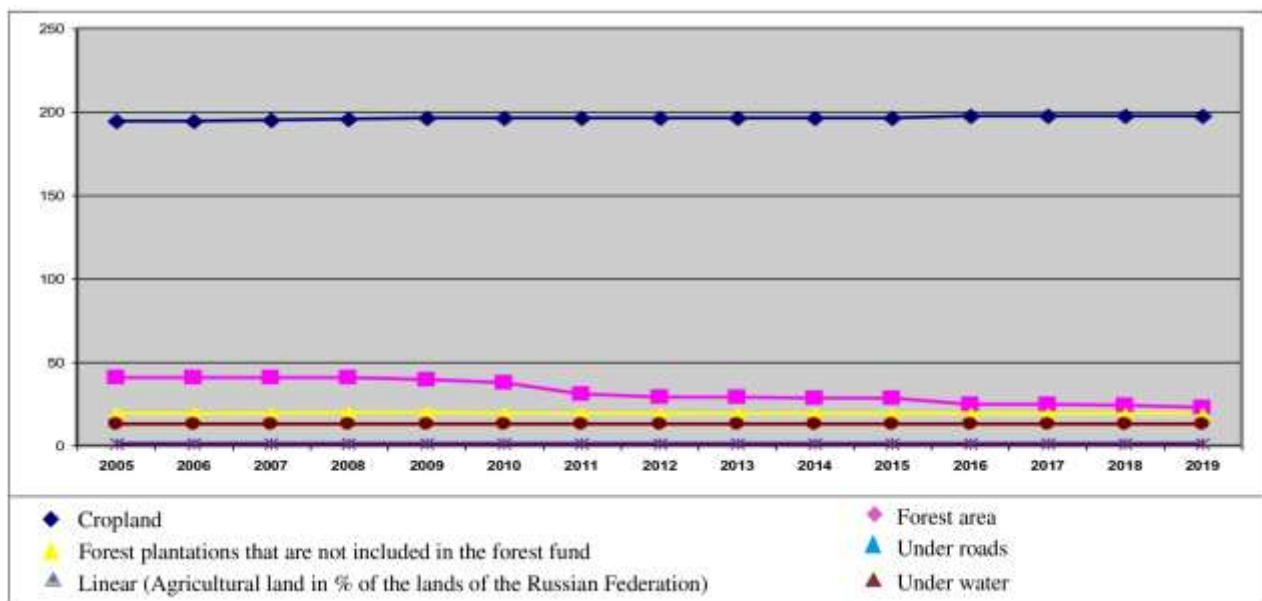


Fig. 3 - Distribution dynamics of agricultural land by farm land (period of 2005-2019, million hectares)*
** Compiled by the authors based on the materials of Russian State Register (2020).*

Since 2016, there has been an increase in the area of agricultural land by 1792.5 thousand hectares, which is explained by the incorporating of the Republic of Crimea to the territory of the Russian Federation.

The general analysis of agricultural lands in all categories reveals the negative dynamics of their condition, which once again emphasizes the negative trends in the preservation of their qualitative and quantitative characteristics.

A more detailed analysis of the dynamics of the area of agricultural land shows that by 2019, compared with 1991, agricultural land decreased by 16 million hectares, including arable land — by 15.6, forage land - by 22.9 million hectares. At the same time, the area of the deposit increased almost 15 times, the uncultivated area of arable land amounted to 22% of its total area, or increased from 300 thousand hectares to 25.4 million hectares.

According to Russian State Register (2020), in the period from 2010 to 2019, the total area of agricultural land in the Russian Federation decreased by 18.3 million hectares, i.e. by more than 4%. However, it should be taken into account that the process of zoning land plots from one category to another, on the one hand, leads to a decrease in the area of agricultural land due to the zoning these lands to other categories for certain needs. On the other hand, the area of agricultural land increases due to the zoning from other categories of land.

The dynamics of the area and structure of agricultural land for the period 1991-2019 is presented in Table 1.

Table 1 - The dynamics of the area of agricultural land (at the beginning of the year), million hectares*

Type of land	1991	2000	2004.	2005	2006	2007	2008	2009	2010
Agricultural land, total**			393,2	401,6	402,5	403,2	402,3	400,0	393,4
Cropland, total**	213,8	197,6	193,8	194,4	195,1	195,5	196,0	196,1	196,1
Including arable land	131,8	120,9	117,5	115,4	115,2	115,2	115,3	115,3	115,1
Forage lands	80,1	72,6	71,5	55,6	56,1	56,5	56,6	56,8	56,8
Perennial plantings	1,6	1,8	1,8	1,2	1,2	1,1	1,1	1,2	1,2
Deposits	0,3	2,3	3,0	3,9	4,2	4,2	4,2	4,2	4,4
Hayfields				18,4	18,5	18,5	18,5	18,6	18,6
The specific weight of unused arable land to the entire arable land, %	0,2	14,5	19,4	20,4	10,9	22,0			
Type of land	2011	2012	2013	2014	2015	2016	2017	2018	2019
Agricultural land, total**	389,0	386,1	386,5	385,5	383,7	383,6	383,2	382,5	381,7
Cropland, total**	196,6	196,2	196,2	196,2	197,7	197,7	197,8	197,7	197,8
Including arable land	115,1	115,1	115,1	115,1	116,3	116,2	116,2	116,2	116,2
Forage lands	56,8	56,9	56,9	56,9	57,2	57,2	57,3	57,2	57,2
Perennial plantings	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2
Deposits	4,4	4,4	4,4	4,4	4,3	4,4	4,3	4,3	4,4
Hayfields	18,6	18,6	18,6	18,6	18,7	18,7	18,7	18,7	18,7

* Russian Statistical Yearbook for 2006, 2008.

** State (national) report on the state and use of the lands of the Russian Federation in 2006-2019.

The study revealed the main factors affecting the distribution of unused agricultural land in the Russian Federation (Fig. 6).

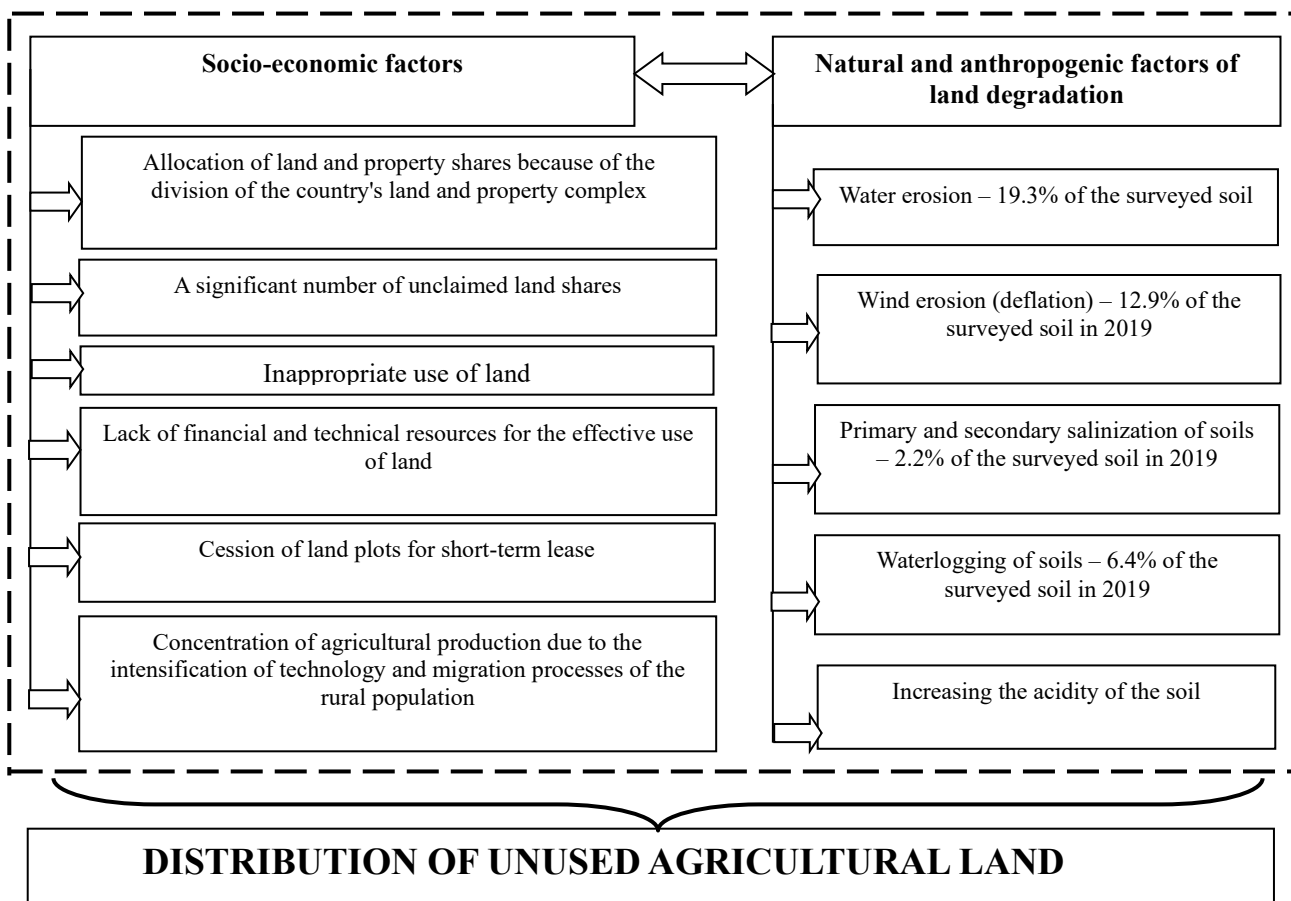


Fig. 6 - Factors affecting the distribution of unused agricultural land in the Russian Federation

In the work of N.N. Korneva (2010) an analysis of the reasons for the withdrawal of land from agricultural production indicates that it often occurs due to a lack of material and technical resources for their processing and recent market situation. These forces agricultural producers to spontaneously reduce the acreage, expand the fallow areas, disrupt crop rotations, use simplified technologies, concentrate the production of products in market demand on the most fertile lands, exclude unproductive lands from use.

According to D.A. Shishov and E.V. Kozyreva (2016) nowadays the target purpose system of land in the Russian Federation is a fundamental component of the entire system of use and protection of land resources. The principle of dividing all lands on the territory of Russia into categories in accordance with their target purpose has been the main industry principle underlying the organization of land use for the last hundred years.

The fundamental factor that influenced the quantitative increase in unused agricultural land was the division of land resources into land and property shares, because of which there was a large number of unclaimed land shares that were eliminated from agricultural production. The paper analyzed the areas of unused agricultural land for 2015-2019. In 2019, the number of unclaimed land shares amounted to 1.5 million units with a total area of 14.2 million hectares, which is 31.6% of the total area of unused agricultural land in the Russian Federation or 43.4% of unused agricultural land.

On January 1, 2020, the area of unused agricultural land in the Russian Federation amounted to 32.68 million hectares, which was 16.5% of the total area of agricultural land and 72.7% of the area of unused agricultural land. The analysis of this category of land in the period from 2015 to 2019 showed that during this period their area changed insignificantly, which indicates the need to intensify work to improve the efficiency of agricultural land use, especially in matters of involving retired agricultural land in circulation (Table 2).

Table 2 - Areas of unused agricultural land, cropland and arable land in comparison with their total areas in 2015-2019

	Years														
	2015			2016			2017			2018			2019		
	Total area, million ha	Unused area, million ha	%	Total area, million ha	Unused area, million ha	%	Total area, million ha	Unused area, million ha	%	Total area, million ha	Unused area, million ha	%	Total area, million ha	Unused area, million ha	%
Agricultural land	379,2	9,4	0,4	83,6	1,8	3,6	83,2	6,4	2,1	86,4	3,9	1,4	79,4	4,9	1,8
Cropland	97,7	2,4	6,4	97,7	2,5	5,9	97,8	2,7	6,5	98,5	3,0	6,7	97,8	2,6	6,5
Arable land	16,5	8,5	6,0	15,5	9,4	6,8	16,2	9,0	6,4	16,5	9,5	6,8	16,3	9,3	6,6

The priority task of the development of the agro-industrial complex IN the country in the near future is to identify unused land and involve them in agricultural production. It should be noted that significant areas of agricultural land in the Russian Federation are not used due to various natural, economic and social reasons, usually related to each other.

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The analysis of the dynamics of unused agricultural land, agricultural land and arable land in the period from 2015 to 2019 showed that during this period their area changed insignificantly, which indicates the need to intensify work to improve the efficiency of agricultural land use, especially in matters of involving eliminated farmland in rotation (Report on the state and use of agricultural lands of the Russian Federation in 2019).

Conclusion

Based on the analysis, it can be concluded that the priority task of the development of the agro-industrial complex of the country in the near future is to identify unused land and involve them in agricultural production. It should be noted that significant areas of agricultural land in the Russian Federation are not used due to various natural, economic and social reasons, usually related to each other.

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