

# The Rational use of Agricultural Land in the Takhtamukaysky District, the Republic of Adygea



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**Abstract:** *The authors have conducted an analysis of agricultural land use in the Takhtamukaysky district by categories and types of land and ownership. The agricultural land distribution has been analyzed as well based on the types of use. The conducted analysis has revealed the following: a tendency towards a decrease in agricultural land by 1.2%; a tendency towards a slight decrease in water reserve and land occupied by bogs; a tendency towards a decrease in land owned by the state or municipal entities, peasant (farming) enterprises, citizens engaged in gardening, haymaking and cattle pasture; a tendency towards a decrease in the unused land redistribution reserve.*

**Index Terms:** *agricultural land, housing construction, land redistribution, settlements, Takhtamukaysky district.*

## I. INTRODUCTION

The sustainability of any system's development, including regional development, is achieved through the balanced functioning of the system's three components: economic, social and environmental. The efficiency of the use of land as the main agricultural resource and an object of ownership has an impact on the degree of social and economic development. At the same time, society is interested in preserving agricultural land, forests, parks and specially protected areas for the maintenance of the ecological balance. Thus, the rational use of land determines the possibility of sustainable regional development [1]-[6].

One of the objectives of the agrarian reform implemented in Russia in the 1990s was agricultural land privatization by means of provision of collective agricultural organizations'

workers, pensioners and social workers with land shares, which had not been allotted and had been included in the land of the collective share ownership [5]-[10].

At present, the form of shared ownership of agricultural land is prevailing: about 70% of the land belongs to this category. In other words, this very land is currently the basis of the production potential of the nation's agricultural sector [5], [11]. In organizational and economic terms, the said land is in a very unsettled condition. It is no secret, that plots of land owned jointly are often not allotted, which complicates their civil and economic turnover. The research objective is to analyze the efficiency of the use of unclaimed shares, as well as the problems of rational use of agricultural land in the Takhtamukaysky district, the Republic of Adygea.

## II. MATERIALS AND METHODS

The research object is unclaimed land shares in the Takhtamukaysky district, the Republic of Adygea. The research subject is a combination of managerial and economic relations, arising between economic entities and government bodies within the framework of the use of unclaimed shares of agricultural land in the Takhtamukaysky district. The theoretical and methodological basis of the research includes theoretical and practical provisions and scientific principles developed by both Russian and foreign experts in the sphere of regional economics, environmental economics, management theory, real estate economics and municipal law. For the achievement of the research objective, the following general scientific methods were used: analysis and synthesis, generalization and abstraction, comparison, categorization, as well as the statistical, economic and mathematical methods of correlation and regression analysis and econometric modeling.

The information, empirical and regulatory basis of the research includes statistical data of the Russian Federation Federal State Statistics Service, Federal State Statistics Service for the Republic of Adygea, expert opinions, social and economic development programs of the Republic of Adygea, calculation materials published in scientific literature, federal laws of the Russian Federation, decrees of the President of the Russian Federation, regulatory and legal acts issued by legislative and executive bodies of the Russian Federation, as well as state, regional and municipal environmental programs.

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III. RESULTS

The total area of land used in the Republic of Adygea amounts to 779.18 thousand ha. The land distribution by categories shows that the greater part of the territory of the Republic of Adygea is occupied by agricultural land (44.2%) and forest land (30.5%) (Table I).

**Table I. Agricultural land distribution among municipal entities in the Republic of Adygea (as of January 1, 2018).**

Municipal entities	Total land area, %	Agricultural land, %
Giaginsky district	10.2	89.1
Koshekhabsky district	7.8	81.8
Krasnogvardeysky district	9.3	62.1
Maykopsky district	47.1	13.1
Takhtamukaysky district	5.9	60.9
Teuchezhsky district	9.0	57.3
Shovgenovskiy district	6.7	84.7
Maikop city	3.6	58.3
Adygeysk city	0.4	61.5
Total	100	44.2

In accordance with the Land Code of the Russian Federation, a land redistribution reserve in the composition of agricultural land was created in the Takhtamukaysky district. Its share amounts to 16.7%. The reserve is formed of plots of agricultural land not encumbered by rights of legal entities and natural persons for the purpose of land redistribution for agricultural production, foundation and expansion of peasant (farming) enterprises, personal subsidiary plots, gardening, animal husbandry, horticulture, haymaking and cattle pastures. All land within the district boundaries constitutes land reserves of the Takhtamukaysky district. Its area amounts to 46.36 thousand ha.

In 1991, agricultural land of the Takhtamukaysky district amounted to 60.3 thousand ha (i.e. 0.06% of all agricultural land of the Russian Federation). This includes the following: arable land – 45.3 thousand ha, hayfields – 1.9 thousand ha and grazing land – 14.1 thousand ha. In 1993, there were five collective farms, four state-owned farms, three joint-stock companies and peasant farm associations and more than 1,000 independent peasant (farming) enterprises in the district [5].

Thus, collective farms occupied an area of 27.6 thousand ha, state-owned farms – 12.4 thousand ha, joint-stock companies and peasant farm associations – 16.3 thousand ha and peasant (farming) enterprises – 7.4 thousand ha. On average, the following areas of agricultural land were accounted for one entity: for a collective farm – 2.2 thousand ha of arable land, for a state-owned farm – 1.1 thousand ha, for a joint-stock company – 4.9 thousand ha, for a peasant (farming) enterprise – about 8 ha [5]. The land reform certainly affected the land reserves of the Takhtamukaysky district. The reform had both positive and negative aspects. At present, there are seven agricultural enterprises engaged in the production and economic activity and 18 peasant (farming) enterprises in the Takhtamukaysky district. The arable land area of the municipal entity "Takhtamukaysky district" amounts to 18,404 ha. In 2016, crop sowing areas amounted to 15,404 ha and the rest of the area was used for crop rotation. The gross winter crop yield amounted to 16,403.5 ton, the spring crop yield – to 33,686 ton. The total crop yield

amounted to 51,078 ton of grain. The material and technical resources of agricultural producers have significantly improved: combine harvesters have been purchased, new warehouses have been constructed. All the above contributed to an increase in tax revenues paid by the district farmers to the budget in 2018 to up to RUR 5.95 mln, which is by RUR 2.14 mln more than in 2015. An analysis of the distribution of the land reserves in the Takhtamukaysky district by types of land use for the period from 1991 to 2018 was carried out based on the form 22-2 "Information on land availability and distribution by categories and types of agricultural land use".

In 1991, the agricultural land amounted to 23,291 ha, including arable land – 21,207 ha, grazing land – 2,084 ha. In 2000, the agricultural land increased by 5,176 ha and its total area amounted to 28,467 ha, including arable land – 21,519 ha, perennial plantings – 569 ha, hayfields – 32 ha, grazing land – 6,347 ha. In 2018, the agricultural land decreased and amounted to 27,069 ha, including arable land – 20,953 ha, perennial plantings – 1,193 ha, hayfields – 32 ha, grazing land – 4,891 ha. The global waterlogging, soil loss and other reasons for soil degradation cause a decrease in the intensive agricultural land types: arable land and perennial plantings (Table II).

**Table II. Distribution of the land reserves of the Takhtamukaysky district by types of agricultural land use, ha.**

Land	As of the beginning of the year		
	1992	2001	2018
Perennial plantings	-	569	1,193
Hayfields	-	32	32
Grazing land	2,084	6,347	4,891
Abandoned fields	-	-	-
Total agricultural land	21,207	21,519	20,953
Total land in the district	46,650	46,360	46,360

As of the beginning of 2018, the largest part of the district land reserve was owned by the state and municipal entities (25,145 ha), which is by 5,043 ha less than in 2000. In 2000, citizens owned 15,692 ha; by 2017, the area of land owned by citizens increased and amounted to 17,934 ha. The area of land owned by legal entities amounted to 480 ha in 2000 and increased and reached 3,281 ha in 2017. The increase in land owned by citizens and legal entities and the decrease in land owned by the state and municipal entities for the period from 2000 to 2017 testify to the intensive entrepreneurial activities taking place in the district and the interest of business entities, applying for transfer of land plots from one land category to another. The tendency towards reduction of agricultural land can be observed (Table III).

**Table III. Distribution of the land reserve in the Takhtamukaysky district by types of ownership, ha**

Type of ownership	As of the beginning of the year	
	2001	2018
Owned by citizens	15,692	17,934
Owned by legal entities	480	3,281
Owned by the state or municipal entities	30,188	25,145
Total land in the district	46,360	46,360



A significant amount of agricultural land – arable and grazing land of the Takhtamukaysky district (82 ha) – is included in settlement land area and is granted for the construction of apartment houses and cottages. The proximity of the city of Krasnodar to the Takhtamukaysky district is associated with the development of employment and social infrastructure leading to the growth of housing demand. Therefore, the fertile land transfer and exclusion from agricultural use are economically feasible. Due to the fact that the Takhtamukaysky district is located within the territory of the Krasnodar region, which is located at the intersection of vital land, naval and air communications, has a well-developed transport infrastructure and a multisectoral economic complex, the Republic of Adygea has a high potential for strengthening its economy by means of organization of a transit passage of international transportation flows through its territory, as well as activation of other foreign economic activity forms. All these peculiarities lead to an active land transfer both from one business entity to another and from one type of use to another. Despite the fact, that the Takhtamukaysky district is an industrial and agrarian district with land resources of unique fertility, currently, the urbanization process and the transfer of agricultural land to non-agricultural categories are observed.

Agricultural land referred to such categories as forest land and water and land reserve is not involved in agricultural production for various reasons: due to the difficult situation in the agricultural sector, as well as the inaccessibility of forage land located high in the mountains, the lack of a transport network and unprofitability of some lands. Due to the developing urbanization processes, agricultural land is reduced annually due to the increase in the housing construction land with the use of agricultural land.

The total area of the housing construction land as of the beginning of 2018 amounted to 2,574 ha. The housing construction land increased by means of the category transfer of 256 ha of agricultural land and 1 ha of other lands, which changed their type of use under orders issued by the Cabinet of Ministers of the Republic of Adygea. Land of the environmental type is not referred to as a separate category in the district. Together with the change of the land types forms, different types of legal entities have appeared: joint-stock companies (JSC), agricultural production cooperatives (APC), limited liability partnerships (LLP), peasant farm enterprises (PFE) and others. Collective farms and state-owned farms have almost disappeared; they have been reorganized and changed their forms of legal entity's incorporation for JSC and APC. All the aforementioned have caused significant changes in the structure of allocation of agricultural land of the Takhtamukaysky district to landowners and land users. The general analysis of the use of land in the Takhtamukaysky district by categories, types of land and ownership, as well as the analysis of the agricultural land distribution by types of use, have revealed the following: a tendency towards a decrease in agricultural land by 1.2%; a tendency towards a slight decrease in water reserves and land occupied by bogs; a tendency towards a decrease in land owned by the state or municipal entities, peasant (farming) enterprises, citizens engaged in gardening, haymaking and cattle pasture; a tendency towards a decrease in unused land

redistribution reserves [5]. Despite the decrease in the agricultural land, several companies and citizens, desiring to engage in agricultural production, increases. Consequently, the agro-industrial complex of the district grows. Recently, more and more peasant (farming) enterprises have been founded in the Takhtamukaysky district. Due to a significant share of agricultural land in the land reserve of the district and its serious degradation, it is required to carry out a soil examination of agricultural land for the purpose of elaboration of measures to be taken for the land protection from harmful effects of economic activities and for creation of environmentally sustainable conditions for the agricultural sector's development. This approach should be initiated both by the entity and the district.

#### IV. CONCLUSION

Considering the aforementioned, one can note the following. For the period from 1991 to 2018, a significant decrease in agricultural land and an increase in settlement land can be observed. For other categories, a reduction is typical, which is clearly expressed in the land reserve. Forest land area remained unchanged and water reserve significantly increased. The largest part of agricultural land is used for agricultural purposes.

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