Management of land relations and their impact on production in agriculture of the Kyrgyz Republic

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Abstract. The modern development of land and production relations in agriculture are becoming a priority, since the agricultural sector can take a leading position in transforming the country's economy. The study is aimed at clarifying the problems of theoretical and practically oriented foundations for the formation of land relations management and their impact on the production component of the industry. Theoretical positions and conclusions are formulated within the framework of the concept of sustainable development of the country's economy, which determines the further direction of the formation and management of land relations that actively influence agricultural production. This study showed the possibilities of managing the main resource of agricultural production and its role in the further distribution by categories of farms, thereby highlighting peasant (farm) farms as the main farms in the creation of gross agricultural output. Based on the study, it is recommended to improve the system of managing land relations, including strengthening the legislative framework, creating a unified agricultural information system for monitoring land, developing a program for the use and management of land areas that, for one reason or another, are not used in crop rotation and tend to decline.

1 Introduction

Issues of development and management of agriculture, including land relations and agricultural production in the Kyrgyz Republic (hereinafter - KR) are the most relevant and are of great importance for the country's economy, since the industry is one of the main budget-forming sectors of the economy [1]. In recent years, the world agricultural system has seen a decrease in the area of arable land per capita, which is associated with population growth. Over the years of independence in the Kyrgyz Republic, the number of land users has increased, which has led to a decrease in the size of sown areas per farm. The country has undergone a process of redistribution within the very structure of agricultural producers, since land relations in the Kyrgyz Republic began after the land reform of the

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90s [2]. During the economic transformations carried out, the reform implied a change in attitudes towards property, which was expressed in the denationalization of agricultural enterprises, collective farms and state farms, which included the privatization of collective and state farms, the distribution of land and property. The main measures were the elimination of the monopoly of state ownership of land (with the transition of land relations from the public sector to the private sector), permission for legal entities and citizens to carry out market transactions with land, and the introduction of land use fees [3]. It was assumed that the main goal of land and agrarian reform should be the fair distribution of land among rural residents, while creating equal favorable conditions for the development of all types of farms and providing the population of the Kyrgyz Republic with agricultural products [4].

Currently, it is particularly relevant to form new generations of land users who are engaged in cultivating the land, where they use modern agricultural business technologies aimed at the need to preserve and increase soil fertility, ensuring the growth of agricultural production. Of paramount importance is the management and development of new areas of activity in rural areas, which helps solve the main problem of agriculture - the lack of land and water resources for farmers [5]. The Food and Agriculture Organization of the United Nations estimates that developing countries will have to double their agricultural production by 2050 to meet food demand. Global value added from agriculture, forestry and fisheries grew by 78% in real terms between 2000 and 2020 to reach $3.6 trillion. dollars 2020 This represents an increase of 1.6 trillion. dollars in comparison with 2000. Agriculture will be limited in the use of water and land resources, since fresh water reserves are not endless, and the possibilities for expanding arable land will also be limited. Water resource shortages already affect over 40% of the world's population, and global warming and a number of climatic factors only aggravate problems in agriculture and increase competition for water and land resources. New challenges led to the choice as the goal of the study to study the features of the development of land relations in order to develop recommendations for improving public administration in the agricultural sector. The set goal predetermined the need to solve the following problems:

- substantiate the theoretical and legal foundations of agricultural sector management;
- develop recommendations and methods for improving management in the agricultural sector of the economy;
- propose promising directions for the development of public administration in the conditions of new land relations of the republic.

2 Materials and methods

The study used methods of statistical analysis, legal analysis, and the dynamics of systems of basic indicators of the agricultural sector of the Kyrgyz Republic.

Used sources:

1. National Kyrgyz Republic program until 2026.
2. Action plan of the Cabinet of Ministers for the implementation of the National. KR programs.
3. Agriculture of the Kyrgyz Republic. National Statistics Committee of the Kyrgyz Republic.
4. Stat. directory "Kyrgyzstan". National Statistics Committee of the Kyrgyz Republic.
5. National strategy for sustainable development of the Kyrgyz Republic for the period 2018-2040.

3 Results

Land relations in the field of agriculture of the Kyrgyz Republic during the acquisition of independence of the country became managed and regulated by the state and acquired the status of normative legal acts (hereinafter referred to as normative legal acts), which are developed and improved:

1. Land Code of the Kyrgyz Republic, which introduces a certain procedure for the allocation and management of such lands:

- up to 5 hectares of land are not divisible (if there were no government needs for the implementation of transport, energy projects and infrastructure, including in the form of international treaties);
- over 5 hectares are divisible, with the possibility of forming independent plots (subject to the absence of state needs), but with the obligatory fixation of a land plot of at least 5 hectares.

It is determined that agricultural lands are used by subjects of law (individuals and legal entities) for seed production, breeding, commercial agricultural production, protective afforestation, horticulture, market gardening, summer cottage construction, research and experimental work.

2. The Law of the Kyrgyz Republic "On the Management of Agricultural Lands" establishes a general procedure for managing this category of land, which states that the right of ownership to agricultural lands belongs to: the state, citizens of the Kyrgyz Republic, cooperatives, and legal entities that are engaged in the cultivation and/or processing of agricultural products.

3. The Civil Code of the Kyrgyz Republic establishes that agricultural lands can be the objects of civil transactions, which can be concluded on the basis of various agreements, such as a purchase and sale agreement, a lease agreement, an exchange agreement, a pledge agreement, etc. An important component of transactions with real estate (land plot) must be state registration in accordance with the Law of the Kyrgyz Republic "On State Registration of Rights to Real Estate and Transactions with It"; if this does not happen, then such a transaction is considered invalid.

4. The regulation on the procedure for the purchase and sale of agricultural land participants establishes the procedure and conditions for the sale of such state-owned plots, except for the lands of the Fund for the Redistribution of Agricultural Land and Pastures. Citizens of the Kyrgyz Republic who live on the territory of the aiyl kenesh (representative body of local self-government) in which the land transaction will be carried out or who have land plots (irrigated arable land) of less than 0.10 hectares per family member and who live in high mountain areas have a priority right to purchase agricultural land. and remote areas.

5. National development strategy of the Kyrgyz Republic for 2018-2040. establishes a priority for the development of the agro-industrial complex and cooperation, where the state focuses on improving the quality of agricultural land, which can improve the processing sector of the national economy, which should ultimately lead to increased food security in the Kyrgyz Republic.

6. Regulations on the procedure for conducting a land amnesty, according to which the state secures the legal status (ownership) of an object subject to the land amnesty. Therefore, in order to avoid agricultural land falling under this reform, on the basis of this provision, a commission is created from various representatives (local state administrations, authorized government agencies, public organizations, etc.), who make a conclusion about the impossibility of the intended use of such a land plot, due to with the absence of irrigation facilities, crop rotation, etc.

Responsible decision-making, improved land management policies and practices, and changes in society, with widespread implementation of legal measures, can help reduce alarming trends in land conditions [6]. Land operates as private property and the government still controls vast tracts of land, although the most productive ones have been redistributed or sold as private property to individuals and corporations [7].

At the current time, regulations do not fully take into account the changing structure of agriculture, where certain tasks arise and which must be solved today, in particular:

- it is necessary to adopt an Agricultural Development Strategy, which could shape the development of the industry direction in the Kyrgyz Republic, but there is only a draft strategy, according to which the authors had previously outlined proposals for its improvement, including in the field of digitalization, the development of a service model, etc. [8];

- there is no unified information system for land monitoring, which reduces the efficiency of land use. The relevant state body, the Ministry of Agriculture of the Kyrgyz Republic, has, by its position, the task of rational use of land resources, and has sectoral functions for the development of sectoral policies, including monitoring functions for the provision of consulting and information services, which require the existence of a unified information data system about the status of lands. But such a unified information system has not been created; informatization has taken on the character of unstable development, where large agricultural producers create their own information systems, while others are forced to acquire completely different subsystems that are not interconnected either informationally or functionally [9]. Earlier in 1999, the Regulations on the monitoring of agricultural lands of the Kyrgyz Republic were adopted, where systems of operational, periodic and basic observations should be introduced, allowing for systematic monitoring and obtaining qualitative indicators of land quality. Also, the authorized state body is obliged to carry out cartographic work on an ongoing basis, provide information support, where consumers will be provided with reliable information about the condition and use of lands. Why not return to previous experience and, with the help of new technologies, develop a system for monitoring agricultural land in order to obtain real and timely data on the ground. Moreover, interested subjects of law have a need for such data and can obtain it using the Internet or by contacting the regional departments of agrarian development (RUAD) in the regions.

Analyzing land relations and methods of managing production in agriculture, it can be noted that as a result of the land reform, the number of independent land users conducting economic activities has increased. In 1993, out of 10,634.4 thousand hectares of farmland, 80.3% were used by collective farms and state farms. The land redistribution fund contained 296.6 thousand hectares of arable land. Over the course of a number of years, there has been a reduction in these lands in the republic, so in 2010 they amounted to 228.9 thousand hectares, and by 2020 already 168.4 thousand hectares, that is, there is a reduction of 60.5 thousand hectares. Perestroika gave rise to the development of family farms (peasant (farm) farms - peasant farms) in order to support the population of rural areas during the period of restructuring of economic relations in the country. Farmers and land managers often require incentives to ensure the provision of goods and services associated with their lands [10].

Currently, there is no unified agrarian economy in the Kyrgyz Republic; it consists of the economy of legal and physical agricultural entities, including private farms, which differ significantly in the size of the sown areas used and the level of marketability [11]. In the Kyrgyz Republic, the structure of production by category of farms has changed, so if in 1990 in the structure of agricultural production the share of collective and state enterprises occupied 62.1%, then in 2000 it was 9.7%, in 2010 2.4%, in 2015 1.8%, 2020 1.5%. Accordingly, over these years, production in peasant farms amounted to 0.0%, 42.7%,

61.6%, 61.9%, 62.1% (Table 1), therefore the number of peasant farms and individual entrepreneurs employed in agriculture grew, but at the same time farm parameters decreased.

Table 1. Structure of gross agricultural output by farm category, in 2020 prices.

Years	Volume of agricultural production (million soms)	By farm category					
		State and collective farms		Peasant (farm) farms		Personal subsidiary plots	
		million soms	в in percentages %	million soms	in percentages %	million soms	в in percentages %
1990	170969.0	106171.7	62.1	0.0	0.0	66797.3	37.9
1995	105142.3	23246.6	22.1	16528.4	15.7	65367.3	62.2
2000	155378.1	14985.7	9.7	66410.2	42.7	73982.2	47.6
2005	177377.9	12950.9	7.3	88870.3	50.1	75556.7	42.6
2010	192349.0	4709.6	2.4	118391.8	61.6	69257.6	36.0
2015	215470.9	3999.0	1.8	133342.9	61.9	78129.0	36.3
2020	242095.3	3631.4	1.5	150341.23	62.1	88122.7	36.4

Note. Compiled by the authors based on data from the National Statistical Committee of the Kyrgyz Republic.

Over the entire period of the country's development, a multi-structure economy has developed in the agriculture of the Kyrgyz Republic. Thus, the structure of production by category of farms since 1992, when the land and agrarian reform began, gave impetus to the formation of peasant farms, where since 2002 a production level has been formed, which has reached the level of 1990. In 2010, the number of collective farms was 331 thousand units, and in 2020 there are already 462 thousand units, which becomes the basis of agricultural production in the country, since over the entire period of the country's independence, land has been the main resource in agriculture was redistributed.

The government of the Kyrgyz Republic, in order to encourage people wishing to run a peasant farm, allowed to issue up to 50 hectares of land, therefore, at the first stage (1992-2000), the average size of cultivated arable land per farm was 11-12 hectares. Further, to create equal conditions, the issuance of a land share was based on the average size per rural resident, which reduced the average size of land cultivation per farm to 3 hectares in 2010, in 2015 this figure was 2.6 hectares. Every year there is a reduction in the acreage used for sowing crops per peasant farm. During the period the country gained independence, if in 1992 one farm had 12.3 hectares of arable land, then in 2020 it was 2.3 hectares. Agricultural farms are becoming small and low-commodity, there is a shortage of land for peasant farms, therefore the production and sale of products is aimed at ensuring the well-being of the families of farmers who are actively involved in processing agricultural products. If there is a significant number of peasant farms, the overall potential of processing enterprises has the opportunity to develop, and the expansion of the sector of processed products will be possible due to the increase in the number of solvent food consumers, which can have a positive impact on the creation of new and additional jobs. This workforce potential is capable of ensuring domestic processing of agricultural products and creating large domestic added value, which will subsequently affect GDP growth [12].

The development of agriculture in the Kyrgyz Republic is determined by the economic indicators of peasant farms, where their rights are secured. The government of the Kyrgyz Republic provides financial support to peasant farms to carry out effective economic activities in a competitive environment; they are also guaranteed ownership of the means of production, land and agricultural products. The peasant farm is endowed with an independent management function and conducts free entrepreneurial activities for its own

economic benefit and independence. The increase in the number of peasant farms occurred due to their disaggregation, the withdrawal of individuals from collective and state farms, for independent activities with their own land share. The number of state and collective farms tends to decrease, which is explained by the formal creation of collective cooperative farms according to the requirements of the country's leadership in plans for the development of the cooperative movement in agriculture.

For objective reasons, world prices for agricultural products are constantly growing, therefore, in market conditions, the real growth rate is determined by the index of physical volume of production, i.e. bringing the value of the current year to the previous year. At the beginning of the reform in 1992, agricultural production per peasant farm amounted to 351 thousand soms, later it began to grow and by 2000 reached 933.2 thousand soms. Subsequently, agricultural production tended to decrease, so in 2020 it decreased to 325.7 thousand soms. These data indicate that peasant farms are becoming smaller, and collective and state farms are becoming less powerful, so it can be stated that since 2010, the volume of agricultural production per peasant farm has remained stable within 340 thousand soms. If we consider peasant farms in 2020 and with the beginning of the reform in 1992, the growth is almost 53 times. The increase in the number of farms is accompanied by a division of property, including the area of agricultural land used. Within the framework of a peasant farm, its members pool their property and take part in its activities through personal labor [13]. The ultimate goal of users is to achieve maximum production per unit of land, so over the past 10 years the number of peasant farms has increased from 331 thousand units. in 2010 to 461 thousand units. in 2020. The number of state and collective farms has tended to decrease since 2000; agricultural production in these categories of farms has increased in comparison with 2020 to 1992 (Table 2). The Land Resources Service under the Ministry of Agriculture of the Kyrgyz Republic reported that the area of arable land in the republic within the boundaries of use at the beginning of 2022 amounted to 1287 thousand hectares. The bulk of the arable land fell on peasant farms - 928.7 thousand hectares (72.2%) of the total area of arable land in the republic, state and collective farms - 50.3 thousand hectares (3.8%).

Table 2. Number of economic entities and production of gross agricultural products in the Kyrgyz Republic, in 2020 prices.

Years	By farm category			
	Peasant (farm) farms		State and collective farms	
	Number of farms (units)	Gross output produced (million soms)	Number of farms (units)	Gross output produced (million soms)
1992	8700	3053.6	437	83174.0
1995	23180	16528.4	1002	23246.6
2000	71163	66410.2	634	14985.7
2005	300162	88870.3	1235	12950.9
2010	331059	118381.8	573	4709.6
2015	400794	133342.9	556	3999.0
2020	461581	150341.2	548	3631.4
2020/1992	53 times	49 times	125.4%	4.4%

Note. Compiled by the authors based on data from the National Statistical Committee of the Kyrgyz Republic.

The sown area has not undergone significant changes, so the total sown area in the Kyrgyz Republic occupied by agricultural crops in all categories of farms (Table 3) in 2022 amounted to 1228.8 thousand hectares, which is 2.5 thousand hectares (0.2%) more than in 2021. The sown area of winter crops amounted to 141.6 thousand hectares, which is 4.0

thousand hectares (2.8%) less than the previous year; the sown area of spring crops amounted to 747.4 thousand hectares, which is 6.1 thousand hectares. (0.8%) more than in 2021.

Table 3. Cultivated areas of agricultural crops in the Kyrgyz Republic 2021-2022 (thousand ha)

Regions of the republic	Cultivated area (thousand ha)		Area Index 2022/2021		Cultivated area in %
	2021	2022	in percentages %	Deviation (+,-)	
Kyrgyz Republic	1226.3	1228.8	100.2	2.5	100
Chui	419.5	416.7	99.3	- 2.9	33.9
Issyk-Kyli	184.1	183.7	99.8	- 0.4	15.0
Osh	180.1	180.7	100.3	0.6	14.7
Jalal-Abad	156.7	159.0	101.5	2.3	12.9
Naryn	110.0	111.9	101.8	1.9	9.1
Talas	107.1	107.4	100.3	0.3	8.7
Batken	65.4	66.3	101.3	0.9	5.4
Osh city	3.0	2.8	94.3	- 0.2	0.2
Bishkek city	0.24	0.23	97.5	- 0.0	0.0

Note. Compiled by the authors based on data from the National Statistical Committee of the Kyrgyz Republic.

The sown area of perennial grasses has remained almost unchanged in recent years and amounts to 339.8 thousand hectares. The area sown with grain crops amounted to 579.9 thousand hectares, almost unchanged compared to previous years. Wheat was sown on an area of 233.7 thousand hectares, which is 16.9 thousand hectares (6.7%) less; barley was sown on an area of 237.6 thousand hectares, which is 15.8 thousand hectares (7.1%). %) more. Along with this, there is a decrease in the area sown with sugar beets by 1.2 thousand hectares (11.3%), rice by 0.8 thousand hectares (6.2%), potatoes by 0.7 thousand hectares (0. 9%), melons on 0.3 thousand hectares (2.7%).

Cultivated areas have reasons for the incomplete use of the land territories of the republic, including these reasons for non-use are the economic inexpediency of using some lands, which amounts to 22 thousand hectares or 44.4% of all areas of unused arable land. Further highlights: - remoteness and rocky areas of 7.2 thousand hectares (14.6%), malfunction of irrigation networks 7.4 thousand hectares (14.9%), expansion of settlements beyond the boundaries of territories 4 thousand hectares (8, 2%), lack of seed material 2.7 thousand hectares (5.5%), salinization and swampiness of the land 1.7 thousand hectares (3.5%), lands prone to natural disasters 0.7 thousand hectares (1, 3%), other reasons 3.7 thousand hectares (7.6%). The development of a program for the use of unused arable land and the elimination of problematic issues in land use will bring into circulation a number of areas suitable for land use in the districts and regions of the country. Based on the results of the analysis, it is necessary:

Firstly, finalize and adopt the Agricultural Development Strategy of the Kyrgyz Republic for the next period of the country's development.

Secondly, it is necessary to develop and implement a unified information system for land monitoring on the basis of the Ministry of Agriculture of the Kyrgyz Republic. If there are not enough legal instruments for monitoring land in the republic, then it will be possible to develop a Regulation on the monitoring of agricultural lands of the Kyrgyz Republic, using the 1999 Regulation as a model.

Thirdly, it is necessary to develop a program for the use of arable land, since some lands could participate in crop rotation by eliminating the objective reasons for the reduction of arable land.

4 Conclusion

The reduction of arable land per capita is a natural process associated with the growth of the country's population, but it should not occur at the expense of reduction and withdrawal of land from agricultural use for biased reasons. In this regard, the Kyrgyz Republic must protect arable land and effectively use it as a national value. To preserve and effectively use all land resources, certain laws must be adopted that provide for the responsibility of land users, government departments and bodies responsible for the use of the country's land resources. Land relations should be based on the ownership of land by owners and their use [14]. Land ownership by property rights is not an object of appropriation, but acts as a condition for economic management, therefore, the attitude towards land resources must be controlled and managed, since the volume of growth in agricultural products directly depends on the quality and quantity of land resources in the country [15]. Ownership and use of land together constitute the basis of agricultural production, regardless of the form of land ownership, which gives government agencies the right to determine land policy.

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