

THE ROLE OF CLUSTERS IN ORGANIZING AND IMPROVING THE EFFICIENCY OF IRRIGATED LAND USE

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Abstract. *The article theoretically shows the place and role of clusters with great economic potential in the improvement of the efficiency of the use of irrigated agricultural lands of the country, in the return of lands left out of agricultural circulation due to various reasons, using the methods of statistical, calculation, scientific observation, analysis and conclusions; based on the normative documents adopted by the leadership of the republic and the legal side on the organization and development of agroclusters in various directions, the successful operation of such structures on the ground is not recognized, relying on specific sources; the concrete results of the measures implemented in the following years to return the agricultural lands that have been left out of agricultural circulation by the cotton-textile clusters operating in the areas, using their economic and financial capabilities, are highlighted; The problems of further development of such a system in the country and the need to eliminate them are shown on the basis of specific sources.*

Keywords. *Cluster, agriculture, land area, productivity, cropland, legal status, land allocation, economics, land use, finance.*

1 Introduction

Irrigated lands occupy a special place in the development of the country's economy, especially agriculture, in accordance with today's market relations, and in ensuring food security. According to the accounting books of economists[14], the value of agricultural products obtained from 1 hectare of irrigated cropland is equal to the value of the product obtained from 7.0-8.0 hectares of irrigated (dryland) cropland or 25.0-30.0 hectares of pastures. Therefore, the rational organization of the use of such arable land is one of the main problems of today. According to official data [15] as of January 1, 2022, the area of irrigated cropland in the republic is 3247.4 thousand hectares, and it has decreased by 132.8 thousand hectares in the next 30 years (1993-2022). It is true that a part of this decrease occurred due to the allocation of agricultural land for various non-agricultural purposes, but most of the cultivated land was removed from the agricultural cycle due to reasons such as the destruction of water networks, filling with soil, lack of irrigation water supply to the fields due to lack of cleaning, deterioration of land reclamation. gone Returning such lands to agriculture and increasing their efficiency is recognized as one of the main directions of the country's agricultural development in the near future. First of all, it is becoming very

important to carry out scientific research on revealing the place and role of agricultural clusters, which are becoming an economically and financially powerful entity in the coming years.

2 Methodology of scientific research

The term "cluster" is derived from the English word and means to collect, collect, unite [7,8,12]. Clusters of different specializations, which are being established and developed in the agricultural sector of the republic, are performing their activities on the basis of the integration and gathering of agriculture and industry, service sectors. Economic, statistical, computational scientific observation, analysis and conclusion methods are used in the search for ways to determine their economic opportunities and to direct these opportunities to increase the efficiency of irrigated cropland in agriculture. At the same time, in scientific research, published scientific works of Uzbek scientists and foreign scientists are also used.

3 Research results and scientific discussion

The importance of the state in the development of clusters that are organized and operating in agriculture, especially agroclusters, is considered important, because the country's economy relies on the strengths of clusters [4]. In particular, the Cabinet of Ministers of the Republic of Uzbekistan No. 253 of March 31, 2018 "On the following measures to organize the activities of cotton-textile productions and clusters" and No. 733 of December 4, 2021 "On the procedure for organizing the activities of cotton-textile clusters" "On the approval of the regulation" and a number of other adopted normative legal documents, it is recognized that the organization and development of such agroclusters, along with other areas of the economy, is one of the important organizational and economic mechanisms of fundamentally increasing the efficiency of agricultural land use [1,2]. At the same time, the order of the President of the Republic of Uzbekistan No. PF-14 of November 16, 2021 "On measures to regulate the activities of cotton-textile clusters" specifically noted the need to eliminate emerging systemic problems and develop such enterprises [3]. In fact, an agro-industrial cluster is one or several groups of legal entities and individuals that use modern technologies to create an added value chain for the cultivation, processing, storage, production and sale of agricultural products on the basis of scientific and innovative methods. is a form of activity[6,9]. The goal of forming such agroclusters and their comprehensive development is to unite enterprises of various fields located and operating on the border of the district and region, as well as certain scientific, engineering consulting, standardization, certification and other services that are in a single technological chain with them. The most important thing is that these processes are of great importance in increasing the level of employment of the population, sharply reducing various transport costs and wastage of raw materials, and radically increasing the efficiency of using irrigated agricultural land [5,11,13].

Organization of agroclusters of various specializations, development of their activities, first of all, is inextricably linked with the creation of the above-mentioned legislative foundation for the sector. It is on this basis that a favorable agribusiness environment has been created in Kashkadarya region, which is one of the main regions of the republic,

focused on research, and the rights and interests of employees of various enterprises are fully guaranteed. As a result, the creation of agroclusters in various directions and the organization of temporary activities are gaining a certain economic and social importance in this region. In particular, according to the data obtained during the research, a total of 46 clusters are operating in the field of agriculture in the region today. 17 of them are cotton-textile clusters, 21 are grain clusters, and 8 are fruit-vegetable clusters. In the region, 135.9 thousand hectares of cotton fields, 140.0 thousand hectares of irrigated grain fields, as well as 15.9 thousand hectares of fruit and vegetable fields were attracted to agricultural production by agroclusters. As a result of the reorganization of agriculture in the form of such a cluster, the yield of cotton increased from 26.0 to 29.0 centners per hectare, the yield of wheat increased from 53.0 centners to 59.0 centners, and the yield of fruit increased from 88.0 centners to 96.0 centners. As a result, the level of their processing has also increased. In particular, the level of cotton fiber processing increased by 4.4 times, cotton production by 6 times, finished products by 3.5 times, and as a result, the export of finished products increased by 110,000 dollars.

In addition, 1840 agricultural machines of 14 types were purchased by the cotton growing clusters in the following years. 556 units of agricultural machinery (57 units of combine harvesters, 66 units of driving tractors, 33 units of seed drills) were purchased by 21 operating grain-growing clusters. In addition to the above, Qamashi, Nishon, Chirakchi, Shahrisabz, Yakkabog districts of the region are specialized in fruit and vegetable growing, and 8 fruit and vegetable clusters have been established in these districts. and 23.0 percent (3629.0 ha) of the total fruit and vegetable areas are attached to these clusters.

It can be seen from the above information that the organization of agroclusters of various specializations, giving them social and organizational economic freedom quickly ensures the economic and financial stability of such clusters and enables the implementation of various projects. Therefore, these agroclusters in the regional districts have the necessary opportunities for the implementation of projects on the return of arable land that had previously gone out of agricultural circulation on the basis of initiative. Using these opportunities, it is proposed to return arable land for agriculture and involve clusters in the development of new land.

As the total cultivation of cotton and grain crops in the province is carried out by agroclusters, it would be appropriate if the agroclusters in their regions put unused cropland into use again. Certain experiences have been gathered in the region regarding such activities. In particular, in cooperation with the specialist employees of the relevant organizations, land development projects for the restoration and return to agriculture of abandoned agricultural land in Kashkadarya region were developed and implemented.

For example, within the framework of these works, after the announcement of the project of land areas to be rehabilitated and put into use in the territory of Guzor district, the Uzbek-Canadian joint enterprise "CANADAN SOY INTEGRATED PRODUCTION" with the participation of foreign investment expressed interest in this project, and the joint enterprise expressed interest in this project. 1085 hectares of land to be restored are planned to be planted with soybeans.

For information, soybeans belong to the group of extremely valuable plants because they contain up to 50% protein and 28% oil. Today, more than 400 different products necessary for the national economy are produced from soybeans. Currently, 35% of the vegetable oil consumed by humans and containing no harmful substances is obtained from soybeans, 100 kg of grain contains 138 nutritional units, this indicator is lower than that of soybeans in corn, alfalfa and other crops. Dry stalks of soybeans contain 52 nutritional units per 100 kg. In terms of nutritional content of soybeans, no feed crop can dominate. In animal husbandry, soybean products are considered the best quality and nutritious feed, and according to its protein content, 100 kg of soybean grain contains 134.8 nutritional units [10]. According to calculations, 3.5 tons of soybeans are obtained from 1 hectare of land, 6.7 million soums are spent on 1 hectare of land, considering that 1 ton of soybeans costs 4.0 million soums (\$400) on the world market, 1 hectare 14.0 million soums (3.5x400=1400 dollars) are earned from the land, 7.3 million soums are earned from 1 hectare of land. The rate of return will increase by 110.9 percent. In 2022, 6,211.0 hectares of the total 13,540.0 hectares of land in the region, which are planned to be put back into use, have been returned. For this, a number of practical works have been carried out by clusters and initiators. This can be clearly seen from the data in Table 1 below.

Table 1

Work carried out by agroclusters in 2022 to return land left out of agricultural circulation*

| No | Districts | To the plan for reclamation of abandoned lands | The area that has been put back into use in practice, ha | Actions taken | | | | | |
|--------------|-----------|--|--|---|--------------------------|---|---------------------|-------------------------------------|---|
| | | | | Construction of irrigation networks, km | Repair of collectors, km | Construction of vertical irrigation wells | Pump building grain | Construction of electrical networks | Introduction of water-saving technology |
| 1 | Guzor | 7085 | 1085 | 11.2 | | | 4 | | |
| 2 | Karshi | 1720 | 1019 | | | | | | 220 |
| 3 | Koson | 1748 | | | | 14 | | | |
| 4 | Kamashi | 1015 | 779 | | | 12 | | | |
| 5 | Mirishkor | 1684 | 592 | 4 | | | | | 415 |
| 6 | Muborak | 1967 | 255 | 2.2 | | | | | |
| 7 | Kasbi | 488 | 488 | | | 10 | 8 | 3.1 | |
| 8 | Nishon | 2380 | 2380 | 26.3 | | 1 | 8 | 1.0 | |
| 9 | Chirokchi | 1310 | 250 | | | 16 | | | |
| 10 | Yakkabog | 448 | 448 | 14 | 3.6 | | | | |
| Total | | 13540 | 7296 | 57.7 | 3.6 | 53 | 20 | 4.1 | 635 |

****Acquired from Provincial Department of Agriculture***

As shown in Table 1, 7,296.0 hectares of the planned 13,540.0 hectares of reclaimed land in 2022 have been reclaimed. In order to bring these 7,296.0 hectares of arable land back to agriculture, 46.5 km of irrigation canals were built by clusters and other initiatives, 3.6 km of collector-pumps were repaired, 53 vertical wells and 16 pumping units, as well as 4.1 km of electrical networks were built, 635.0 hectares of land were transferred to drip irrigation technology to save irrigation water.

particular, 238.0 hectares of agricultural land in the Nishon district of the region was re-entered into agricultural production in 2022 by the Indorama enterprise. For this purpose, the enterprise carried out earthworks in the amount of 26370 cubic meters, installed 10 floodgates, built 9 waste water ponds, installed 575 meters of waste water pipes, the enterprise spent about 2900.0 million soums in total. incurred expenses.

The following agricultural crops were planted in the areas that were again involved in agriculture (Table 2). It can be seen from this table that in 2022, 2061 hectares of the 6211 hectares of land returned to agricultural circulation will be planted with cotton, 206 hectares with vegetables,

126 hectares of rice, 750 hectares of soybeans, 3129 hectares of fodder crops were planted, 405.0 hectares of new gardens and 324 hectares of new vineyards were established.

It can be seen from the above mentioned information that the plan for 2022 for the return of agricultural land that has been left out of agricultural circulation in the region has been fulfilled by 51.7%. This continuation of the situation will have a negative impact on the implementation of the plan in the following years. In order to overcome this, we believe that it would be appropriate to strongly involve the local cotton-textile and grain agroclusters in the work of returning their land to agriculture by providing them with appropriate incentives, as they all have modern equipment and technologies, and have the appropriate material and financial resources. Therefore, it would be correct to entrust the local agroclusters with the task of returning the lands left out of agricultural circulation and returning them to agriculture, because these areas of land left out of agricultural circulation are located in the territory of the respective agroclusters.

Table 2

Crops planted in 2022 on arable land returned to agricultural rotation by district of the province*

| No | Districts | In 2021, the land that was actually re-entered into agriculture, ha | Placed agricultural crops | | | | | | | |
|----|-----------|---|---------------------------|-------|-----------|--------|------|------|--------|--------|
| | | | Cotton | Grain | Vegetable | Police | Oily | Food | garden | neyard |
| 1 | Guzor | 1085 | | | | | 1085 | | | |
| 2 | Karshi | 1019 | 440 | | | | | | 300 | 279 |
| 3 | Koson | | | | | | | | | |

| | | | | | | | | | | |
|--------------|-----------|-------------|-------------|-----|------------|------------|-------------|-------------|------------|------------|
| 4 | Kamashi | 779 | 779 | | | | | | | |
| 5 | Mirishkor | 592 | 592 | | | | | | | |
| 6 | Muborak | 255 | | | | | 255 | | | |
| 7 | Kasbi | 488 | | 26 | 126 | | 256 | 35 | 45 | |
| 8 | Nishon | 2380 | | | | | 2350 | 30 | | |
| 9 | Chirokchi | 250 | 250 | | | | | | | |
| 10 | Yakkabog | 448 | | 180 | | | 268 | 40 | | |
| Total | | 7296 | 2061 | | 206 | 126 | 1085 | 3129 | 405 | 324 |

****Provincial Department of Agriculture information***

Taking this into account and giving these agroclusters tax and necessary credit benefits, it is necessary to reintroduce agricultural land and re-cultivate agricultural products on these lands.

All of them today have modern equipment and technologies, and have appropriate material and financial resources. Therefore, it would be correct to entrust the local agroclusters with the task of returning the lands left out of agricultural circulation and returning them to agriculture, because on the other hand, the land areas left out of agricultural circulation are located in the territory of the respective agroclusters.

Of course, the agricultural land areas that are involved in the agricultural cycle again can be found in all regions of the region. In order to return these lands, it is necessary to carry out sufficient measures, including the construction of new irrigation canals, the repair of collectors and reservoirs, the implementation of various cultural and technical activities on the land areas, and the installation of pumping units. It is recommended to develop specific land development projects for each agrocluster in order to determine the types of these works in advance, determine their volume, and calculate the costs for them. In order to develop it, it is necessary to carry out appropriate preparatory work, in the course of this work, land areas to be returned to agricultural circulation should be thoroughly studied by land surveyors, soil scientists, hydrotechnicians, land reclamationists and other specialists, the scope of work necessary for returning to agriculture should be correctly and completely determined, and these works should be carried out. It is necessary to define the order of execution correctly. It is necessary to organize the main content of the project of internal economic land formation, which will be developed according to agroclusters.

In general, the role of agroclusters in the return of lands left out of agricultural circulation is great, but for this, it is necessary to radically increase the responsibilities of these agroclusters in the organization of land use. In our opinion, a number of problems regarding the legal aspects of the organization of agroclusters remain to this day. In particular:

- the legal status of agroclusters has not yet been determined;
- there is no single approach to the organization of agroclusters;
- relations between agroclusters and the state are not legally regulated;

-allocation of land plots to agro-industry clusters and legal relations to land plots are not clear;

- administrative intervention in the activities of agroclusters and farms inside or outside them is not completely limited, etc. The above undoubtedly has a negative impact on the activity of agroclusters. As it is noted that the cluster system is the perspective of the agricultural sector, it is becoming a clear necessity to develop its legal basis in perfect detail. Therefore, it is necessary to develop and adopt a law on agroclusters. In this regard, it is necessary to resolve all relations, including legal relations to the land areas allocated to them by law. In fact, the legal regulation of agroclusters' activity based on the above law will be of great importance in positively solving the researched problem.

4Conclusions

Thus, on the basis of the scientific research carried out above, it can be briefly concluded that the organization of clusters in agriculture and the full regulation of their legal status, the return of arable lands that have fallen out of agricultural circulation, increase their efficiency and, as a result, improve the system of the use of existing labor and land resources in the regions, agriculture will be an important direction in increasing the amount of agricultural products

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