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Research Article

THE MAIN CAUSES OF FALLOW LAND ON AGRICULTURAL LAND AND SUGGESTIONS AND RECOMMENDATIONS FOR THEIR PREVENTION

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ABSTRACT

Uzbekistan, which has a rich agricultural history, faces the problem of abandoned arable land - a valuable resource awaiting restoration. This article examines the specific causes of loss of arable land in Uzbekistan and offers individual strategies and recommendations for returning these lands to productive use.

KEYWORDS

Agriculture, arable land, Kashkadarya region, Nishon district, environment, land formation, land monitoring, effective use of land.

INTRODUCTION

The world land fund is 13.2 billion. hectares, of which the agricultural land is about 4.7 billion hectares, of which about 1.6 billion. hectare (12.0%) is agricultural arable land. According to the official data of the International Food Security Organization of the UN, approximately 88% of the food products needed by the

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world's population are grown on agricultural land. The amount and quality of land suitable for agriculture has decreased due to various natural and anthropogenic influences. Therefore, improving the efficiency of land use in various regions of the world, which has deteriorated and left the agricultural cycle, is one of the urgent issues [1].

RESEARCH OBJECT AND METHODS

Agricultural land in Nishon district of Kashkadarya region was selected as a research object. The method of research is based on generally accepted methods in practice. These studies were carried out by the Uzdavyerloyiha State Scientific Design Institute.

In recent years, the great attention to environmental protection has increased the need to study the effective use of existing land in the world, and to create a large-scale database for protection. The increase in demand for natural resources leads to their decrease year by year. This situation showed the need to systematize and manage the volume of data.

RESEARCH RESULTS AND THEIR DISCUSSION

In our republic, rational and effective use of land resources, in particular agricultural land, regulation of land relations, proper organization of land construction and land monitoring, maintenance and increase of soil fertility, as well as distribution and redistribution of land resources, among them, especially in the agrarian sector, creating a single, modern system that ensures correct and purposeful use and constantly improving it is one of the most important tasks that determine the development of the economy, especially within the framework of the requirements for the development and liberalization of today's economy [7].

It is necessary to analyze the areas of irrigated cropland or agricultural land types in general that have fallen out of agricultural use, to study the reasons for the fall out of agricultural use, and to eliminate such reasons as much as possible.

Today, the use of electronic digital maps of agriculture in the Republic of Uzbekistan has been transferred to the authority of the Ministry of Agriculture, and in this regard, the State Scientific and Design Institute "Uzdavierloyiha" and regional land surveyors in the regions and districts under the jurisdiction of the Ministry of Agriculture is monitored.

In our republic, systematic measures have been implemented in connection with the rational and effective use of land resources, the proper organization of land management and land monitoring, in particular, the digitization of the total information collected on the basis of land monitoring, the development of the agricultural land control system, certain results are being achieved based on this. Decree of the President of the Republic of Uzbekistan dated January 28, 2022 No. PD-60 "On the development strategy of the new Uzbekistan for 2022-2026". Important tasks for "...development of an electronic database for inventory and monitoring of their implementation" have been defined [2].

In recent years, special attention has been paid to increasing the efficiency of agricultural land in our country, including using water-saving technologies. Due to the fact that the mechanisms of state support are being adapted to the requirements of the times, water-saving technologies were introduced in 433 thousand hectares in 2021 alone, and their total figure was 17% of the irrigated areas. However, shortcomings in the production, supply, procurement, on-site design and installation of water-saving irrigation systems, as well as the lack of skills of some agricultural producers

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in this regard, are the reasons for the late introduction of these technologies is happening [3].

In addition, due to improper use of irrigated cropland in agriculture, it is transferred to other types of land, allocated to domestic constructions, irrigation water does not reach the fields, and irrigation networks do not work well. The area of arable land is decreasing (Table 1).

1- table

Earth type	1990 year	2001 year	2011 year	2023 year	in 2023	
					compared to 1990 +,-	compared to 2023 +,-
Total cultivated land	4176,5	4056,2	4064,7	4028,5	-148,0	-27,7
It is watered from it	3407,3	3309,4	3307,3	3242,1	-165,2	-67,3

Note:* – compiled by the author based on the data of the State Cadastre Chamber of the Cadastre Agency.

It can be clearly seen from Table 1 that during the next years there will be a decrease in arable land, especially irrigated arable land. If during this period, i.e., during the last 33 years, the reduction of cultivated land amounted to 148,000 hectares, of which 165,200 hectares were irrigated cultivated land. Therefore, 4.5 thousand hectares of arable land and 5.0 thousand hectares of irrigated arable land are reduced every year in our republic.

According to official data, as of January 1, 2023, the area of agricultural land in the republic is 26,232.3 thousand hectares, of which irrigated land is 3,693.6 thousand hectares. The area of Jaligi land types is 21,206.0 thousand hectares. 58.4% of the territory of our republic is occupied by agricultural land, which is considered the main means of agricultural production. The change of irrigated agricultural land types by republic is shown in Fig. 1 [4].

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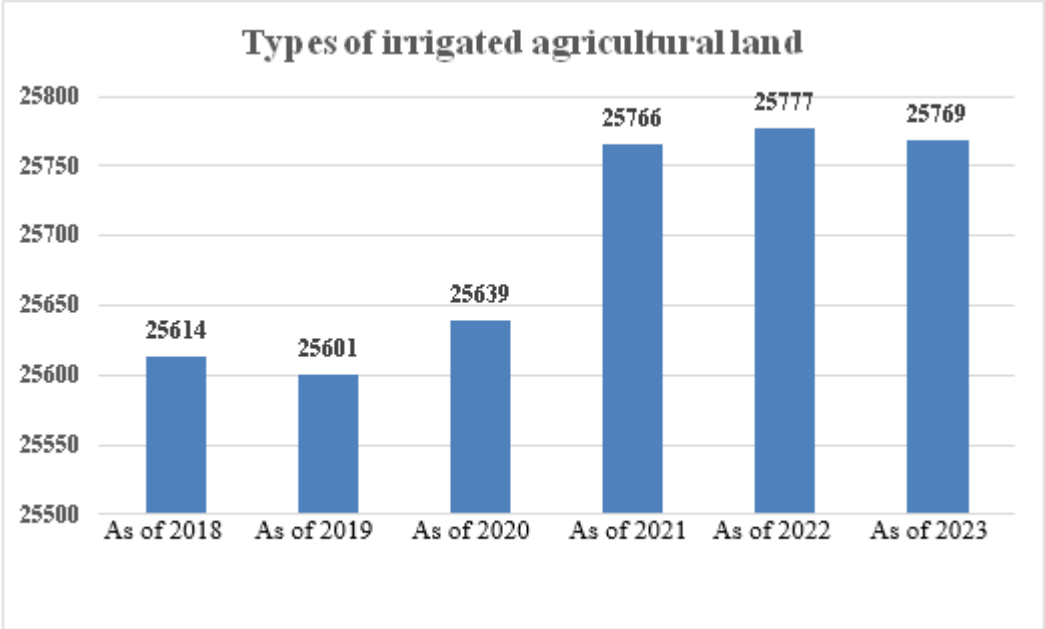

Figure 1. *Changes in the types of agricultural land in the republic from January 1, 2018 to January 1, 2023*

Cropland is the backbone of agricultural systems and serves as the basis for global food production. As the world's population increases and pressure on agricultural resources increases, it is crucial to optimize the efficiency of arable land to meet current and future demands. This paper explores theoretical and methodological principles that can be applied to improve cropland productivity and sustainability (Figure 2)[3]

Figure 2. *Theoretical and methodological principles that can be applied to increase the productivity and sustainability of cropland areas*

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One of the important issues facing the country's agriculture today is the return of arable land that has gone out of agricultural use, and its rapid involvement in the cultivation of agricultural products. The reason is that the return of such land to agriculture requires 3-4 times less costs than the costs of developing new land and adding it to cultivated land. The development of schemes for the return of agricultural land by administrative districts until 2030 and the implementation of all works based on this scheme will have a great positive effect [5].

Agriculture involves the use of advanced technology, information and management practices to optimize the use of resources and thereby increase productivity. Techniques such as remote sensing, geographic information systems (GIS), and global positioning systems (GPS) allow farmers to accurately monitor and manage their fields, water, fertilizers, and pesticides (toxic chemicals) in real time. can apply and analyze data in a targeted manner. This allows precise application of fertilizers, water and pesticides based on the specific needs of each area, reducing waste and maximizing yields.

Integrating trees into agricultural systems through agroforestry practices can increase cropland productivity and sustainability. This approach improves soil fertility, protects from shade and wind, sequesters carbon and increases biodiversity. Conservation agriculture techniques, including minimum tillage and retention of crop residues on the soil surface, help reduce soil erosion and improve moisture retention, further increasing land productivity.

Decree of the President of the Republic of Uzbekistan "On measures for effective use of land and water resources in agriculture"

Decree No. PD-5742 and the "Concept of efficient use of land and water resources in agriculture" adopted pursuant to this decree will be of great practical importance [6]. One of the main directions of this concept is the use of agricultural land and the expansion of its area. It is planned to develop land, to include 50,000 hectares of dry arable land in the type of irrigated arable land. In addition, 7.8 thousand km. irrigation networks and 8.6 thousand km. 147.4 thousand hectares of land are planned to be developed based on the construction, repair and restoration of reclamation networks (Table 2) [8].

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Table 2

Decree of the President of the Republic of Uzbekistan No. PD-5742 of June 17, 2019

APPENDIX 3

Measures to be implemented to improve the efficiency of agricultural land use in 2020-2030

FORECAST INDICATORS

Name of the area	Total	Including						
		Due to the use of unused irrigated land in agriculture	From this, irrigation-melioration measures		Due to the use of underground water	At the expense of other water sources	Due to the placement of crops that do not require water on dry land, pastures and other lands	Due to the use of forest land
			Stage 1 2019 — 2021 years	Stage 2 2022 — 2024 years				
Kashkadarya region								
Guzar	34 467	7 600	5 470	2 130	2 690		24 077	100
Dehkanabad	40 248	452	100	352		1 600	37 396	800
Qamashi	32 946	4 075	1 965	2 110	3 190		24 181	1 500
Karshi	9 468	5 427	2 800	2 627	1 070		2 821	150
Koson	28 838	14 383	4 370	10 013	1 980		12 425	50
Kasbi	2 638	2 638	688	1 950				
Kitob	10 497	574	574		1 380		7 543	1 000
Mirishkor	8 863	6 960	3 725	3 235			1 873	30
Muborak	13 947	11 767	4 917	6 850			1 980	200

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Nishon	9 760	9 710	5 949	3 761				50
Chiroqchi	78 065	3 730	1 797	1 933	19 408	4 900	49 627	400
Shahrisabz	5 287				2 284		2 603	400
Yakkabog‘	14 349	2 180	1 120	1 060	6 930	400	4 539	300
Total	**289 373**	**69 496**	**33 475**	**36 021**	**38 932**	**6 900**	**169 065**	**4 980**

This article examines the theoretical and methodological principles aimed at increasing the efficiency of cultivated land areas. By applying scientific knowledge, innovative technologies and sustainable practices, we can help to protect the environment and socio-economic development while solving the complex challenges facing modern agriculture.

CONCLUSION, SUGGESTIONS AND RECOMMENDATIONS

1) Today, not only on a global scale, but also by our government, a lot of attention is paid to scientific and practical research on the ways of effective use of agricultural land.

2) In the effective use of digital maps for the placement of agricultural crops, it is possible to use up-to-date information through mobile devices.

3) in the monitoring of degraded or eroded agricultural land, by conducting continuous monitoring of areas with different degrees of erosion, to organize 1:10,000 scale land development projects, including reclamations.

4) The reasons for the unusable condition of agricultural land are mainly the lack of water supply, extreme rockiness and the proximity of the gypsum layer to the ground level, as a result of monographic field research.

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