

## ANALYSIS OF THE QUALITATIVE STATE OF THE LAND FUND OF THE REPUBLIC OF UZBEKISTAN

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### ABSTRACT

Centuries-old practice shows that the main sources of viability and prosperity of any state are its land resources and the population living on them. Land resources - the earth's surface, suitable for human habitation and for any kind of economic activity. Land resources are characterized by the size of the territory and its quality: relief, soil cover and a complex of other natural conditions.

**Keywords:** land resources, land categories, land fund, soil fertility, technogenic load, irrigated land, land degradation.

### INTRODUCTION

Currently, the area of land resources in the world is about 13392 million hectares; agricultural land accounts for 4055 million hectares, i.e. slightly less than 1/3. Cultivated lands (arable lands, orchards, plantations) occupy 1507 million hectares or 11.2% of the total land fund, the rest of the agricultural land is occupied by meadows and pastures.

The land resources of the world suitable for agriculture are limited, and there are practically no vacant lands suitable for development. The areas where the bulk of food is produced (arable land, orchards and plantations, meadows, pastures) make up only 9% of the world's land resources (i.e., on average, a little less than 1 ha per 1 inhabitant). They are different in natural properties and in their potential. The arable land resources of the world are mainly concentrated in the steppe and forest-steppe regions. Arable land and perennial plantations in the composition of the world's agricultural land resources occupy about 1.5 billion hectares (11% of the entire land surface), hayfields and pastures - 3.7 billion hectares (23% of the land surface).

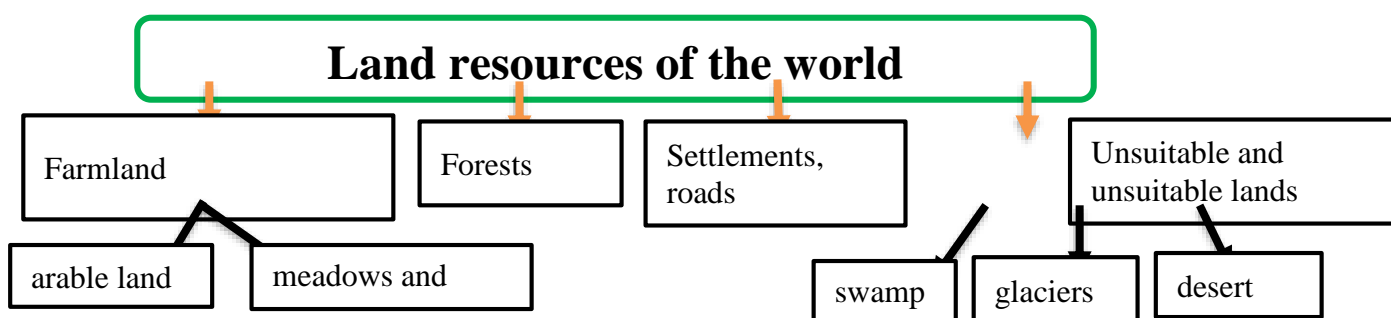


Fig.1. Land resources of the world.

Currently, about half of these lands have been plowed up, which indicates the significant potential of the planet's soil cover. However, it is necessary to take into account the fact that all the best highly productive lands have already been completely plowed up, and, although arable, there remain lands of poorer quality, unproductive, requiring large investments for their introduction into circulation and reclamation. At the same time, it was noted that the area of arable land in the world is constantly decreasing by about 0.5 million hectares per year. And this process continues, and at an accelerated pace, and characterizes the decrease in the productive land resources of the planet. The process of progressive loss of productive land resources is typical for almost all countries of the world, both developing and developed. However, the structure of losses in different countries is different. If developing countries and countries with vast land resources are characterized by the transfer of agricultural land into waste, destroyed, devastated, then in developed countries with limited land resources, their transfer to land for other use is more typical.

All lands of the Republic of Uzbekistan are divided into 8 categories. The land category is a part of the land fund allocated for the main purpose and having a certain legal regime of use and protection (Table 1).

Table number 1. The land fund of the Republic of Uzbekistan by land category as of 01.01.2021.

	Categories of land fund	The Republic of Uzbekistan	
		Thousand ha	Specific weight, %
1	Agricultural land	24 057,1	53,59
2	Lands of settlements	223,5	0,50
3	Lands of industry, transport, communications, defense and other purposes	876,3	1,95
4	Lands for nature protection, health improvement, recreation purposes	728,4	1,62
5	Lands of historical and cultural purpose	14,7	0,03
6	Lands of the Forest Fund	12 024,4	26,78
7	Lands of the water fund	827	1,84
8	Reserve lands	6144	13,69
	Total area	<b>44 892,4</b>	<b>100</b>

Land availability in the Republic of Uzbekistan (area per inhabitant) is small and amounts to 1.33 hectares per person (as of October 1, 2019), the population growth rate is much faster than the rate of increase in the area of irrigated land, while in Russia it is 11.6 ha / person, in Australia the land availability is 45.1 ha / person, in Canada 37.4 ha / person.

53.59% of the territory of the Republic of Uzbekistan is occupied by agricultural land and is the main means of agricultural production. The distribution of agricultural land in the republic is determined by natural and climatic factors.

The most important feature of soil is its fertility. The fertility of each soil is directly related to the process of its formation, and in the process of development and development of the soil, the degree of fertility changes. Especially its change occurs faster under the influence of human activity.

The soil-climatic, geomorphological and geographical conditions of the Republic are of a specific nature, that is, the fertility of our soils largely depends on human activities, as well as natural factors. These processes have regional properties, that is, if the processes of secondary salinization in areas where the natural flow of Sizot water is limited are the main negative factor, then the processes of slope water erosion over large areas have a strong impact on soil fertility. At the same time, on all irrigated lands there are other factors that have their negative impact.

Failure to comply with soil and climatic conditions, irrigation norms and terms in accordance with the needs of plants also leads to a number of negative consequences.

Currently, work is underway in the republic to improve the reclamation state of irrigated soils and increase their productivity. Considering the climatic conditions of the Bundy soil, it is important to apply a set of agro-reclamation, agrotechnical and agrochemical measures for the stratification and placement of crops, taking into account soil and climatic conditions.

Despite the fact that the irrigated soils of our republic are less humus in nature, their importance in soil fertility is very high. The main way to enrich soils with humus and nutrients is the application of organic and mineral fertilizers, taking into account soil conditions and the need for crops.

In the conditions of irrigated agriculture, the price of soils in terms of quality is constantly changing. Under the influence of human economic activity, the Earth can also be increased by improving the ameliorative state of lands, their fertility and quality. In this case, it is only necessary to take into account the stable and non-destructive properties of soils. Stable properties (mechanical composition, humus content, etc.) as a result of irrigation, the effect can change over a long time. But, non-destructive properties (salinity, availability of nutrients, etc.) under the influence of human economic activity can change rapidly.

At present, the area of saline irrigated lands in the Republic of Uzbekistan is about 52% of the total irrigated area, including 18% of medium and highly saline lands. The soil is most saline in Karakalpakstan (90–95%), Bukhara (96%), Khorezm oasis (95–100%). Particularly unfavorable conditions for soil salinization have developed in Karakalpakstan, where the most significant decrease in productivity is noted. The increase in the areas of saline lands is generally associated with the low efficiency of irrigation systems in Central Asia. To reduce the level of soil salinity, operational and capital leaching is carried out. [6]

According to the UN data, 1% of the total area of soils in the world is in the extreme degree, 15% in the strong degree, 46% in the medium degree and 35% in the weak degree of degradation (Table 2).

Table number 2 Processes and causes of soil degradation

Degradation processes	Contribution	Causes of degradation	Contribution
water erosion	10	Pasture animal husbandry	27
wind erosion	28	Deforestation and degradation of forests	9
Chemical degradation	58	Agricultural activity	35
physical degradation	4	over farming	27
Degradation processes		Other	2

Improper operation of irrigation networks leads to an increase in the area of secondary saline soils. The main reason leading to secondary salinization is the lag of drainage construction behind irrigation rates.

The highest level of technogenic load is experienced by the lands of settlements. The main source of toxic substances entering the soil from industrial enterprises is the deposition of gas and dust emissions from the atmosphere.

In the context of the transition to market land relations, negative trends in the state of the land fund of the Republic of Uzbekistan are aggravated. The implementation of the land reform at the initial stage had a negative impact on the condition of the land due to various abuses, such as abandonment of land, pollution and predatory use, violation of soil cultivation technology, misuse, etc.

The lack of a legal framework for regulating the environmentally safe use of land of various categories, the lack of a mechanism to stimulate rational land use, poor information provision of governments at all levels, legal entities and individuals with information about land resources necessary for making adequate decisions contribute to the deepening of the process of soil depletion, the irretrievable loss of valuable land development of erosion, desertification and other phenomena, the totality of which at the present stage is considered as a threat to the national security of the Republic of Uzbekistan.

The condition of the lands in the sphere of economic activity is unsatisfactory and continues to deteriorate.

Irrational nature management with a significant reduction in measures to protect land resources leads to land degradation on such a scale that can be considered a threat to national security.

One of the factors of land degradation is their pollution. Emissions from industrial enterprises and vehicles into the atmosphere, the use of polluted water for irrigation, violation of technological requirements in the extraction, processing and use of minerals, accidents at oil pipelines lead to the accumulation of harmful substances over large areas that worsen the physical, chemical and physical properties of soils.

The problems of land degradation are formed in general terms from two conceptual aspects: its wide prevalence; great natural, economic and social damage to the national economy.

Soil degradation is directly related to the loss of 40–50% of humus reserves as a result of cotton monoculture, low rates of organic fertilizer application, reduction of crop rotation cycles, acreage of alfalfa and other grasses, toxic effect of residual reserves of nitrate nitrogen in the entire thickness of soils and groundwater ( after their excessive application during periods of intensification of agricultural production).

Another important factor of soil degradation and deterioration of living conditions of the population is land pollution with chemicals. Emissions into the atmosphere of industrial enterprises (annually about 22.0 million tons of harmful substances) and vehicles (about 17.0 million tons), use of polluted water for irrigation.

In the current situation, the public faces the tasks of protecting the environment: to systematically control the processes of soil salinization; state of water quality, water and irrigation erosion, deflation of sandy lands; taking drastic measures to eliminate them.

Conclusion



In our opinion, in order to ensure the sustainable development of agriculture in the Republic of Uzbekistan, it would be advisable to carry out the following measures to clean up contaminated soils:

1. It is necessary to soften, irrigate, fertilize and fertilize these soils in order to reduce the content of heavy metals in TALCO man-made soils, especially in areas contaminated with fluorine and aluminum. The amount of mineral fertilizers should be N200, P150, K100-120, preferring nitrogen fertilizers in the form of urea.
2. Organic fertilizers (manure) should be given 15-20 t/ha before the main dew in autumn. It is recommended to use fertilizers not from local cattle manure, but from areas not affected by degradation.
3. The toxic impact of heavy metals on soils, as well as their migration to water and their movement along the chain, can be reduced through the supply of organic fertilizers, but the amount of fertilizer provided must be strictly determined due to the high content of organic matter.
4. When cleaning polluted soils, it is best to plant a mixture of barley and hay, as well as natural natural plants, which can absorb a large amount of fluorine and aluminum.
5. It is necessary to increase the efficiency of the treatment facilities and protective fences installed at the Complex, as well as to control the production technology using independent monitors;
6. Equipment is required to create an automated system for monitoring the presence of hydrogen fluoride and other pollutants in the environment, including alkali compounds, benzopyrene and heavy metals.

In conclusion, it should be noted that land degradation in the Republic of Uzbekistan has led to a decrease in the production of crops and livestock, a decrease in areas suitable for the production of grain and cotton. This is due to the low technological level of agriculture, lack of fresh water for irrigation, reduced use of mineral fertilizers, falling humus content in soils, slow development of new agricultural technologies, shortcomings in the selection of high-yielding varieties and deep environmental deformation (pollution, soil salinization, climatic pollution and etc.).

From the above reasons, it follows that an increase in the production of cotton fiber, cereals and other crops is possible with an integrated approach to research throughout the region, as well as with land degradation prevention mechanisms supported by current legislation.

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