PRODUCTION POTENTIAL OF LANDSCAPES AND THEIR EFFICIENT USE (ON THE EXAMPLE OF BUKHARA REGION)

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Annotation: This article studies the natural geographical features of the landscapes of the Bukhara region, their productions potential and the possibilities of their effective use. The significance of the landscapes of the region in the development of agriculture and other economic sectors is assessed. Also, geoecological problems arising in the process of using natural resources, problems related to the use of land and water resources are analyzed, and scientific and practical recommendations for their rational use are developed.

Keywords: landscape, agriculture, soil fertility, natural resource, oasis, sustainable development, land reclamation, water resources, desert, irrigation system, salinity, drainage flow, monitoring, erosion, desertification, geosystem, ecosystem, ecological culture.

INTRODUCTION. Food security, which is considered one of the world's problems today, and to achieve it, first of all, in our country, as well as in the Bukhara region, requires reforming the agricultural sector. As a result, urgent tasks such as modernization of agriculture, creation of crop varieties suitable for the natural climatic conditions of each region, increasing soil fertility, introduction of modern agrotechnologies that save water and energy resources, and ultimately achieving high economic efficiency in agriculture are being taken under state control.

Extensive research is being conducted on the leading role of several factors in the emergence, formation and development of landscapes, their geographical changes in space and time. Many CIS scientists, including V.B. Sochava, V.S. Preobrazhensky, A.G.Isachenko, F.N.Milkov, V.A.Nikolaev, G.N.Goluboyev and others, have conducted scientific research on geoecological problems arising from human impact on the environment and their impact on human health. In the Republic of Uzbekistan, landscapes and their protection were studied by L.N. Babushkin, N.A.Kogay, N.D.Dolimov, O.Yu.Poslavskaya, P.Gulomov, M. Umarov, Yu.Sultanov, A.Saidov, S.Nishonov, A.Abdulqosimov, L.Alibekov, T. Allaberganov, T.Jumaboyev, M.Koziboyev, Sh.Ergeshov, Sh.Zokirov, H.

Vahobov, I.Hasanov, S.Abdullayev, Yu.Sultanov, A.B.Abbasov, A. Zaynutdinov, I.Abduganiyev, I.Nazarov, N.I.Sabitova, A.A.Rafikov, P.Baratov, A.N. Nigmatov, I.Q.Nazarov, X.R.Toshov, Sh.Sharipov, A.M.Mavlonov and others. In this research, the regions, especially landscapes, their ecological situation, landscape dynamics, factors that aggravate the situations in cultural landscapes, soil, water, atmospheric air pollution were studied.

ANALYSIS AND METHODS. Agriculture is one of the leading sectors in the economy of the Bukhara region. In particular, volume of products grown in agriculture is large. In particular, an average of more than 300-350 thousand tons of raw cotton, more than 160 thousand tons of grain, 150 thousand tons of potatoes, 500 thousand tons of vegetables, 100 thousand tons of melons, 200 thousand tons of fruits, 150 thousand tons of grapes are grown annually. The region has natural, economic and social opportunities to further increase the volume and quality of these products.

In particular, the factors contributing to the economic development of the region are:

• the experience of our ancestors in agriculture accumulated over the centuries;

• By the 21st century, the successes achieved in the agricultural sectors have taken a significant place in the local, regional and global geopolitics of our country

• the convenience of the agroclimatic potential of the regions for growing food and technical crops;

• the large annual amount of solar radiation, which is considered a source of heat (150-160 kcal. The annual sum of active temperature (>10°) is about 4550-5000°);

• the productivity of land resources;

• the importance attached to mutual cooperation in the fields of science and production at the state level , etc. are examples.

The effective use of the above natural, economic and social opportunities in agriculture is negatively affected by such factors as the location of the territory in the desert zone, catastrophic frosts, floods, hail, strong winds, mudslides, the proximity of the groundwater level to the surface, salinity, and very low natural moisture (precipitation is around 90-150 mm, and the possible annual evaporation is 2000 mm). In particular, the lack of water resources during the growing season of agricultural crop leads to a 6-7-fold decrease in productivity. Therefore, the initial work on the modernization of the agricultural

sector of the Bukhara region is focused on the directions and methods of effective use of water resources [1,2,3,4].

Based on the above, the directions for the effective use of water resources in the context of the modernization of the agricultural sector of the Bukhara region are as follows:

1. Providing large pumping stations with new energy-saving equipment;
2. Reconstruction of canal networks;
3. Fully providing the sectors working in the irrigation system with qualified personnel, and initiating work on their professional development;
4. Improving irrigation methods, switching to modern water-saving method;
5. Implementing new investment and innovative projects in the modernization of agricultural sectors.

In order to positively address the above, ensure sustainable production in agriculture and uninterrupted water supply for irrigation of lands in the Bukhara and Navoi regions, in accordance with the resolutions of the President of the Republic of Uzbekistan No. PQ-2156 dated March 28, 2014 and No. PQ-2396 dated August 25, 2015, the project “Restoration of the Amu-Bukhara irrigation systems” was approved.

The following is among the anthropogenic factors that cause deterioration of the ecological state of the regional landscape: Mining, population growth, uncontrolled livestock grazing, modern urban development, the growth of cars, the development of industry, waste, burning of coal and other fuels, clearing of saxaul forests for firewood, etc.

In recent years, due to the constant depletion of water resources and their deterioration, economic and ecological difficulties during the transition to market relations, the deterioration of the quality of water used for irrigation, the deterioration of the technical condition of drainage systems in the region (the failure of vertical drainage wells in many places, closed horizontal drainages, a decrease in the efficiency of collector drainage channels, etc.), and the lack of constant monitoring of salinity of irrigated lands, the process of secondary salinization of the region's soils has been accelerating. The reason for this is the increase in groundwater levels across the region, especially in irrigated areas, compared to the 1960s. For example, in the floodplains of the Zarafshan River, 50% of the areas with groundwater at a depth of 1.5 m below the surface are covered, and on the right bank of the Amu Darya this figure is 70% [5].

RESULTS AND DISCUSSION. Today, in order to mitigate and combat desertification processes, it is necessary to improve measures to combat soil

erosion, improve the quality of land, and improve the quality of settlements located in desert areas, taking into account local natural conditions, and increase measures aimed at raising the ecological culture of the general public, especially users.

Currently, all people living on the Earth, including those living in the Bukhara region, live in a period of increasing and developing ecological crisis. The protection of the landscapes of the Bukhara region, the development of a scientifically based program of measures, the organization and management of a mechanism for its consistent application in practice are of great positive importance in increasing the productivity of irrigated agrogeocomplexes.

However, the increasing negative processes that lead to a decrease in the productivity of irrigated agro-landscapes require the rational organization of the use of such geocomplexes in the production of agricultural products on a scientific basis and the identification and implementation of measures that have both ecological and economic efficiency for the protection of land and water resources. The solution to geo-ecological problems associated with the landscapes of the Bukhara region should be focused on radically improving nature conservation and land reclamation work aimed at optimizing the use of nature [6,7]. The landscapes of the Bukhara region are a specific component of the natural the world, and their protection, preservation of their productivity, preservation for future generations in the interests of humanity and their rational use are one of the most urgent problems of our time. Oasis landscapes serve as the main source of satisfying the material and spiritual needs of humanity. Therefore, from the time of its emergence until now, man has had both positive and negative effects on nature, using it for various purposes. The degree of impact of human economic activity on nature is increasing in direct connection with the growth of the population on a regional and global scale, the development of industrial enterprises, and the progress of science and technology.

SUMMARY. Nature protection in the Bukhara region is a broad concept, consisting of a complex system of measures. This complex system consists of a set of measures such as preserving nature for the benefit of humanity for present and future generations, consciously and purposefully changing it, recultivating unusable lands, rationally using natural resources, preventing pollution of atmospheric air, groundwater and surface waters, restoring the ecological balance of the environment, maintaining and increasing the productivity of agro-landscapes, preventing the contamination of cultivated areas with nitrates,

pesticides and herbicides, optimizing the degradation process of geosystems and ecosystems, combating soil erosion and soil salinization in irrigated lands, and rationally using geosystems taking into account the laws of nature.

In order to produce ecologically clean agricultural products that do not harm human health in the geosystem of the Bukhara region's oases, it is necessary to protect the soil from contamination with pesticides, herbicides and other chemicals, develop a mechanism for this, and prohibit the use of toxic substances in excess of the norm on cultivated areas. In conclusion, it should be noted that in the context of the modernization of the agricultural sector of the Bukhara region, the implementation of directions and methods for the effective use of water resources will become a foundation for saving labor and water resources in water-intensive agriculture, increasing production efficiency, and improving the culture of water use.

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