

Modern Geographic Information Systems in Land Resource Management

J. J Pirimov¹

F. Sh. Khudoyberdiyev²

K. M. Muhamadov³

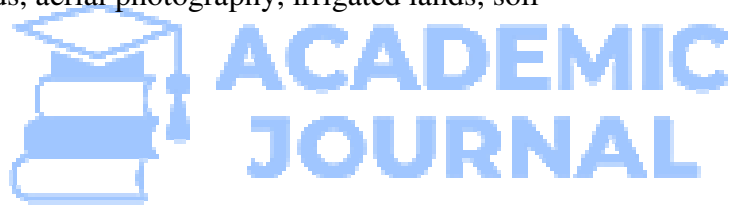
S. O` Bobojonov⁴

S. F. Axtamov⁵

Abstract

This article is devoted to creating a scientific basis for the use of land resources, its management and application of geographic information systems (Geoinformation systems).

Keywords: Land resources, land ownership, geoinformation systems, data bank, agricultural lands, aerial photography, irrigated lands, soil



¹ Bukhara Institute of Irrigation and Agricultural Mechanization Engineers Bukhara branch branch doctoral student

² teacher, Tashkent Institute of Irrigation and Agricultural Mechanization Engineers Bukhara Branch

³2nd year student of Bukhara branch of Tashkent Institute of Irrigation and Agricultural Mechanization Engineers

⁴2nd year student of the Bukhara branch of the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers

⁵The Master of Bukhara branch of the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers

We know that the Republic of Uzbekistan has a large amount of land resources. It constitutes the national wealth of the Uzbek people, as enshrined in the country's Constitution. The role of land resources in the life and development of society is enormous. Land is used as a means of production and as a latitude-operational basis in all sectors of the economy, in social and other spheres of human activity. One of the important land categories is agricultural land, including irrigated land. At present, more than 20 million hectares, including 3.2 million hectares of irrigated arable land, are used in agriculture to grow food products and raw materials for the economy. Agricultural lands belong to fertile lands and are the main means of ensuring national wealth, agricultural production and food security of the country.

The total area of agricultural lands is 20,236.3 thousand hectares, including arable lands - 3,988.5 thousand hectares, perennial forests - 383.1 thousand hectares, gray lands - 76,000 hectares, hayfields and pastures - 11,028.3 thousand hectares, other lands. 4,760.4 thousand hectares [2].

In recent years, the country has achieved high incomes due to the improvement of land and water relations, the optimization of agricultural land and the application of simplified procedures for their allocation, the introduction of modern market mechanisms in the use of land and water resources, innovative and resource-saving technologies. Systematic measures are being taken to grow export-oriented products.

At the same time, due to the rapid growth of the country's population, the transfer of agricultural land and the sharpening of the impact of global climate change, the amount of irrigated land per capita in the last 15 years increased by 24% (from 0.23 to 0.16 hectares). , the average annual water supply decreased from 3,048 cubic meters to 158.9 cubic meters [2].

As a result of irrational use of agricultural lands for many years, natural soil fertility and crop yields are declining, the quality of crops is deteriorating, and environmental pollution is increasing.

At the same time, due to the rapid growth of the country's population, the transfer of agricultural land and the sharpening of the impact of global climate change, the amount of irrigated land per capita in the last 15 years increased by 24% (from 0.23 to 0.16 hectares). , the average annual water supply decreased from 3,048 cubic meters to 158.9 cubic meters [2].

As a result of irrational use of agricultural lands for many years, natural soil fertility and crop yields are declining, the quality of crops is deteriorating, and environmental pollution is increasing..

The average annual water consumption in agriculture remains high, at 45,696 million cubic meters, or 90 percent of the water consumed in the economy.

In the context of increasingly scarce land and water resources, the volume of agricultural production remains low due to the lack of economic efficiency and market conditions in the placement of agricultural crops and the introduction of intensive agriculture.

In particular, developed countries produce 4-6 US dollars per cubic meter of water, while in our country this figure is 0.15 US dollars [2].

Irrigation and reclamation activities require large capital investments, limited budget funds allocated for these purposes, lack of attention to attracting direct investment, including on the basis of public-private partnership, decommissioning of agricultural lands, lack of resources and there are cases of irrational use of production potential, which in turn has a negative impact on

ensuring food security of the country and increasing the export potential of the sector

In order to increase the productivity of irrigated lands, improve the reclamation status and water supply, large-scale irrigation and reclamation measures are being implemented within the framework of state programs. The rational and efficient use of land resources is largely determined by the methods used to manage this important process. The system of land use management requires the creation of a system of land use that meets the needs of today's society for the production of a variety of material and other resources in a market economy [3].

In the process of production of material wealth, land participates as a basis and a means of production. The application of various forms of land ownership creates full conditions for the full, efficient use and protection of land resources available in the country. Land management is carried out in the sectors of the national economy and in specific agricultural enterprises, and plays an important role in the implementation of the agrarian policy of our government.

At present, in Bukhara region, great attention is paid to the cultivation and storage of agricultural products and their transportation throughout the country. The region is shifting to intensive farming in full compliance with high agro-technical rules in the cultivation of products by farms and private farms, which requires the development and implementation of a system of measures such as efficient use of land, constant improvement of its structure, protection.

From this point of view, the organization of all work in agriculture on a scientific basis, the continuous increase of soil fertility, the organization of all agricultural work on farms in accordance with agro-technical requirements, and the availability of a system of scientific developments guaranteeing high yields of all crops. life itself is forcing the creation of a database on The database on geographic information systems should be in the computer system of every farmer in the region, because all information, instructions, orders on land cadastre, economic assessment of land, valuation, agronomy, mechanization can be obtained simultaneously from the central database.

It is known that Bukhara region is one of the most advanced in the country.

It makes a worthy contribution to the socio-economic development of agriculture by effectively using advanced methods of farm management, choosing an intensive way of using and managing land resources.

Relevance of the topic. In Bukhara region, for many years, the use and management of land, land resources have developed extensively, and ultimately led to the destruction of the structure of lands. Extensive development in agriculture began only after independence, when the transition to intensive farming began, and the study of land resources began to be carried out on the basis of clear plans.

In particular, the relevance of the topic is the development and implementation of a system of possible measures to develop a scientific framework for the use and management of land resources in the region, based on an in-depth scientific analysis of the study of land use in the region and its importance.

The object of study of this work is the use and management of land resources of Bukhara region. The subject of research is the scientific analysis of research on land resources in Bukhara region, the importance of the scientific basis for the use and management of land resources in the region.

The main purpose of the work is to study the scientific basis of land use and management in Bukhara region and the practical analysis of their scientific results.

The scientific results of research on the use and management of land resources in Bukhara region and the importance of scientific ideas, directions and views put forward in them in the field of nature protection and use of natural land resources have not been fully studied in any scientific work. For Bukhara region, a complete database of the current state of land resources and the current geo-ecological status of land resources have not been described and evaluated.

To achieve this goal, the following tasks are planned:

- Identification and justification of the stages of land use in the region;
- Identify the conditions of origin of problems in the use and management of land resources in the region and scientifically substantiate the use of key concepts in their solution.
- Substantiate the use of Geoinformation systems in the use and management of land resources in the region.
- In conclusion, Geoinformation Systems will be needed to describe the process of studying the use and management of land resources in Bukhara region, to analyze these theoretical ideas and developments from a modern point of view and to determine its importance. In the process:
- Collects, organizes and summarizes the material on land resources and their use, management of the region;
- The main stages of use and management of land resources in the region are identified, the scientific results of research are summarized, the scientific and practical significance is revealed and evaluated;
- The sources of problems in the use and management of land resources in the region are identified, the dynamics of research on their solution is analyzed.

List of used literature:

1. The Constitution of the Republic of Uzbekistan. Tashkent "Uzbekistan" 2007
2. V.M. Biriksin Technology sozdaniya kompleksnogo banka dannyx distantsionnogo zondirovaniya «MAK-2008» / Barnaul: Izd-vo Alt. un-ta, 2008. - P. 40–41.
3. Chertovitskiy A.S., Bazarov A.K. Land use management. Study guide. Tashkent, TIMI.2009.
4. Q. R. Rakhmonov, Sh.K.Narbaev Textbook on the subject of land resources management.T .: TIMI, 2008.