

INSTITUTIONAL MECHANISMS FOR INCREASING THE EFFICIENCY OF LAND RESOURCE USE

G'ulomjonov Azizbek Muhammadjon o'g'li

2nd year master's student at the National Research University "Tashkent Institute of Irrigation and Agricultural Mechanization Engineers",
majoring in Land Resources and Cadastre,
Land Resources Use and Management.
<https://doi.org/10.5281/zenodo.20429136>

Abstract: This article analyzes institutional mechanisms for increasing the efficiency of land resource use. The role of legal, economic and organizational mechanisms in land resource management is highlighted, and the importance of modern digital technologies, land monitoring and state control systems is considered. Also, the reforms being implemented in Uzbekistan to improve land relations and priority areas for rational use of land resources are analyzed. The study substantiates that effective land resource management is an important factor in increasing economic stability, environmental safety and agricultural efficiency.

Keywords: Land resources, land relations, institutional mechanisms, land management, land policy, land cadastre, digital cadastre, geographic information systems (GIS), land monitoring, state control, land fund, land fertility, land degradation, land reclamation, salinization, erosion, environmental sustainability, agricultural land, land market development, electronic auction, investments, land taxes, economic incentives, legal mechanisms, land reforms, land protection, rational use of resources, agrarian policy, innovative technologies, water-saving technologies, digitalization, remote sensing, environmental monitoring, sustainable development, territorial management, land ownership, land lease, public administration, agrotechnologies.

INTRODUCTION:

Rational and effective use of land resources is important for ensuring the economic stability, food security and ecological balance of the state. Therefore, improving institutional mechanisms regulating land relations is an urgent issue. Institutional mechanisms are a set of state bodies, legal norms, economic instruments and management systems that regulate the management, control and use of land resources.

Public administration plays an important role in the effective use of land resources. The following areas serve as the main institutional mechanisms:

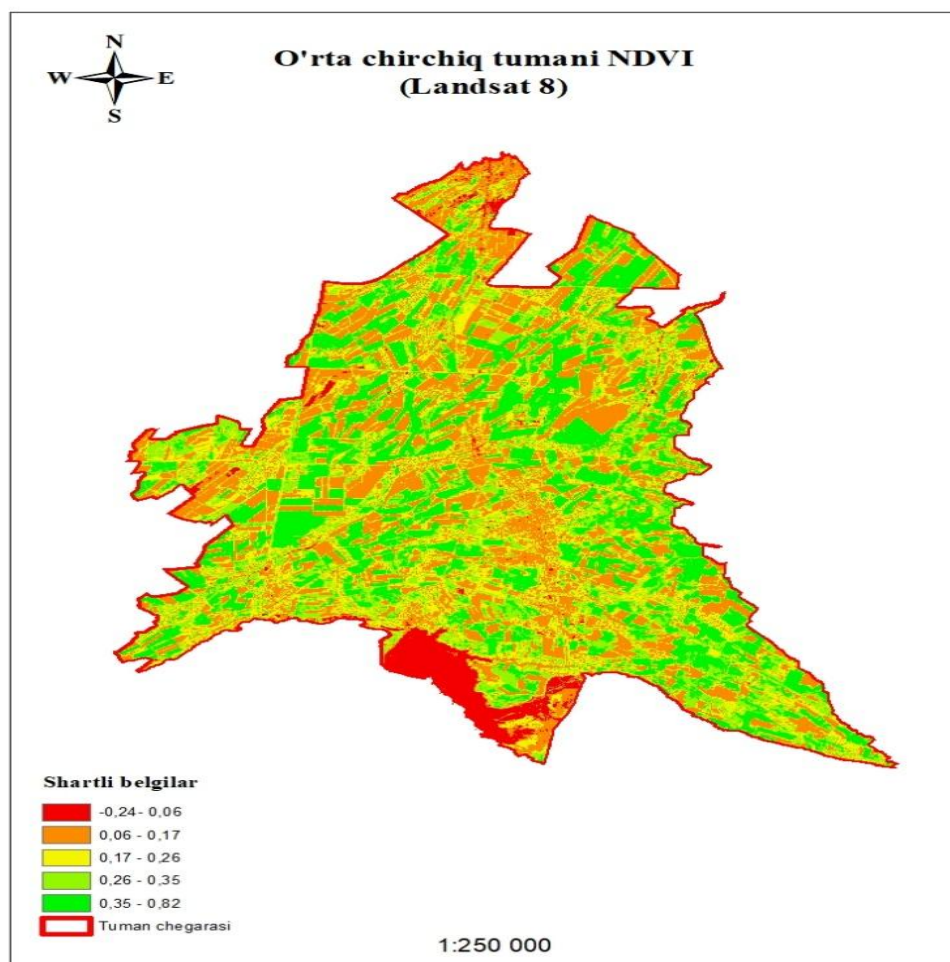
- digitization of the land cadastre system;
- introduction of geographic information systems (GIS);
- strengthen land monitoring;
- Establishing a unified electronic information exchange between government agencies.

Digital governance increases the accuracy and transparency of land information and reduces illegal use.

The process of rational use and protection of land resources is complex and requires the introduction of strong institutional mechanisms to increase efficiency. Institutional mechanisms are understood as a set of legal norms regulating land relations, the activities of state administration bodies, forms of ownership, adopted programs on land use and protection, and systems ensuring their implementation. The analysis conducted on the example of the Ortachirchik district (Chapter 2.3) showed that in order to increase the efficiency of land use, it is necessary to further improve the existing institutional framework. First of all, it is necessary to strengthen institutional mechanisms that ensure transparency and openness in the processes of allocating land plots, using them, and formalizing property rights. In this regard, expanding the



capabilities of the "E-IJRO AUCTION" electronic trading platform and fully digitizing the processes of allocating land plots within it are important. For example, maintaining a single electronic register in the allocation of non-agricultural land in the district, creating the opportunity to track all stages online will help prevent corruption and ensure justice in land relations. This will increase investor confidence and encourage the effective use of land resources. Secondly, it is necessary to clarify the powers of local government bodies in land resource management and increase their responsibility. Currently, there is partial duplication or ambiguity of the powers of various agencies in land resource management. It is advisable for local authorities in the Ortachirchik district to set clear indicators (KPIs) for assessing the effectiveness of land use and increasing it. For example, it is important to identify unused or inefficiently used land plots in each mahalla and strengthen the role of local councils in re-circulating them. In this process, institutional mechanisms aimed at increasing the legal knowledge of the population regarding land relations, including the organization of training courses and seminars, will also be effective. Third, it is necessary to strengthen the institutional framework by strengthening the legal protection of land users and clearly defining their obligations. Improving the terms of land lease agreements for farms and other land users, encouraging long-term lease relationships, and further simplifying the system of registration of land rights will form a responsible attitude towards land. Also, strengthening the mechanisms of accountability for inefficient land use and introducing public control in this process will serve to preserve land resources. These measures will create the basis for the full realization of the agrarian potential of the Ortachirchik district.



As part of the study, a vegetation (NDVI) map of the Middle Chirchik district was



developed based on data from the visible red and near-infrared (NIR) spectral channels of the Landsat 8 satellite, and the area was categorized by spectral values from -0.24 to +0.82 according to the density of vegetation cover. According to the results obtained, the main part of the district is made up of healthy and medium-density agricultural fields (green and dark green, i.e. areas in the NDVI range of 0.26–0.82), which indicates the high agricultural potential of the district; however, a sharp decrease in the NDVI index in the southern part of the district (from -0.24 to 0.06, in red) clearly indicates water bodies and bare soils devoid of vegetation. From the perspective of protecting land resources and organizing their rational use, the results of this mapping serve as a strategic basis for monitoring the actual contours of fertile arable land in the district, preventing land degradation in areas with sparse vegetation cover, and targeted planning of agrotechnical measures.

Conclusion. Increasing the efficiency of land resource use is currently one of the most important factors in ensuring economic stability, strengthening food security, and maintaining ecological balance. The study analyzed the content of institutional mechanisms regulating land relations, their practical significance, and their role in land resource management. The results showed that the harmonious functioning of legal, economic, organizational, and digital management mechanisms is of great importance in organizing the rational use of land resources.

The article analyzes the situation of land resource use in the Ortachirchik district and justifies the need to improve the existing institutional system. In particular, it was found that the full digitalization of the processes of land allocation and management, the widespread introduction of electronic auction systems, the creation of an integrated information exchange system between state bodies, and the strengthening of the powers and responsibilities of local authorities will significantly increase the efficiency of land resource use.

It was also found that the NDVI map, developed based on Landsat 8 satellite data, has important scientific and practical significance in assessing the state of vegetation in the district, identifying areas subject to land degradation, and planning agrotechnical measures across regions. This confirms the effectiveness of remote sensing and geographic information systems technologies in land monitoring.

The study concluded that the following priority areas need to be implemented for effective land resource management:

- full digitalization of land cadastre and monitoring systems;
- ensuring transparency and openness in land relations;
- strengthening legal protection mechanisms for land;
- widespread introduction of agrotechnologies aimed at environmental sustainability;
- increasing the role of public oversight and local governance institutions.

In general, improving institutional mechanisms for increasing the efficiency of land resource use is one of the important strategic directions in ensuring the agrarian development, environmental safety, and sustainable territorial development of Uzbekistan.

REFERENCES

1. Land Code of the Republic of Uzbekistan. – Tashkent: Adolat, 2023. – 128 p.
2. Law of the Republic of Uzbekistan “On the State Land Cadastre” // National Database of Legislative Information. – Tashkent, 2024.
3. Decree of the President of the Republic of Uzbekistan No. PF–6243 dated June 8, 2021 “On measures to ensure equality and transparency in land relations, reliable protection of land rights and their transformation into a market asset” // National Database of Legislative Information. – 2021.
4. Decree of the President of the Republic of Uzbekistan No. PF–6061 dated September 7, 2020 “On measures to radically improve the system of land accounting and state cadastres” // National database of legislative information. – 2020.



5. Resolutions of the Cabinet of Ministers of the Republic of Uzbekistan on land monitoring and state cadastre. – Tashkent, 2020–2024.
6. Mirzayev S., Abdurakhmonov K. Management and effective use of land resources. – Tashkent: Fan, 2021. – 256 p.
7. Rasulov A. Ways to increase the efficiency of agricultural land use. – Tashkent: Economics, 2022. – 198 p.

