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PROBLEMS AND SOLUTIONS IN PROVIDING GEOINFORMATION OF THE STATE LAND CADASTRE.

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Annotation: This article is devoted to the existing problems in the provision of the state land cadastre with geoinformation technologies and the issues of offering solutions to them. The article analyzes modern approaches to effective management of land resources through the digitization of the land Cadastre and the introduction of geoinformation systems. It also shows the importance of updating the technological infrastructure of the cadastral system, training of personnel, and public-private sector cooperation. The results and recommendations of the study determine the main directions for improving the effectiveness of land resource management in the country and the transition to a digital economy.
Keywords: land cadastre, geoinformation technologies, digitization, Cadastral system, land resource management.

1. Introduction

Land resources are an important component of State Economic Policy, and their effective management is necessary for the quality of life of the population, economic growth and environmental sustainability. In this regard, the state land cadastre is the main instrument in ensuring state control over land resources. Through the land cadastre, complete and reliable information about the legal status, territorial location and use of land plots is formed. But the support of this process with modern geoinformation technologies poses urgent problems for developing countries such as Uzbekistan.

The relevance of the study – by providing the Earth's cadastre with geoinformation technologies, the possibility of obtaining accurate, reliable and up-to-date information about Earth's resources increases. At the same time, as a result of digitization and automation, the processes of updating Cadastral data are significantly relieved. But there are problems such as data innovation, infrastructure, and personnel shortages in the provision of the state land cadastre with geoinformation. Overcoming these problems is of great help not only to public authorities, but also to other organizations that work with land resources.

The purpose of the study is to identify problems in the provision of the state land cadastre with geoinformation and propose solutions to solve them. The focus of this study is on the issues of proper and up-to-date storage of data, improvement of technological infrastructure and elimination of shortage of specialists [1-5].

Scientific innovation and practical significance – research creates the scientific basis for the provision of geoexcitation of the state land cadastre by applying new methods. In practical

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terms, Cadastral data management has great economic and environmental benefits for the state and society by improving efficiency.
Research methodology-this study used literature analysis, statistical methods and interviews with experts in the field. Through statistical methods, the level of accuracy and accuracy of cadastral data is studied and the scale of problems is determined. In particular, statistical analysis of the update frequency of data on the regions, the availability of technological infrastructure and the training of specialists will be presented.

2. Materials and methods

This study used several methodological approaches to identify and propose solutions to problems in geoinformation the public land cadastre.
Through the analysis of literature, the experience of managing the Earth's cadastre with the help of geoinformation technologies was studied on a global scale. The study analyzed scientific articles and research work on the cadastral systems of developed countries such as the United States, Germany, Japan. These states have had great success in ensuring data accuracy and improving efficiency by supporting the land cadastre with geoinformation systems.
Through the method of statistical analysis, the state of the geoinformation supply of the Earth's cadastre in Uzbekistan was studied. Factors such as the frequency of updates in the cadastral database, the level of development of the technological infrastructure and the shortage of specialists were analyzed. For example, according to a 2023 report by the Uzbek Cadastral agency, more than 20% of cadastral data requires updating, which can lead to uncertainties in land resource management.
In the course of the study, forecasting methods were used how to improve the efficiency of the management of the Earth's cadastre through the introduction of future geoinformation technologies. Based on the opinions of Statistics and industry experts, forecasts for the development indicators of the state land cadastre system for a 5-year period were introduced. Based on these forecasts, management efficiency is expected to increase by 30-40% by the complete digitization of the cadastral system [6-10].

3. Results

A number of significant results have been identified by research into the provision of geoinformation technologies to the public land cadastre. During the study, it was proven that the accuracy, relevance and accessibility of cadastral data can be significantly increased as a result of the use of geoinformation systems in the public land cadastre. Below, the results of the study will be covered in detail.
According to the results of statistical analysis, a large part of cadastral data in Uzbekistan requires updating. For example, according to data from 2023, more than 20% of the total Cadastral data is outdated, which causes significant problems in the correct and effective management of land resources. As a reason, manual updating of cadastral data and deficiencies in technological infrastructure were cited. This situation is leading to uncertainties in the management of land resources.
The level of inclusion and use of geoinformation technologies is developing slowly, causing a shortage of high-tech opportunities and specialists. According to the experience of developed countries, the complete digitization and automation of the state land cadastre with

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geoinformation technologies will increase the accuracy of data by 30-40%. But the lack of technological infrastructure in Uzbekistan, especially due to the limited availability of specialized software and high-precision technical equipment, makes it difficult to achieve these results.

During the study, a number of forecasts were introduced on the development prospects of the Earth cadastre. Based on data analysis, the effectiveness of ground Cadastral management will increase by 30-40% in the next 5 years, if the process of introducing geoinformation Technologies is carried out intensively. This allows public authorities in land resource management to provide accurate and complete information. In addition, efficiency is expected to increase up to 20% in the management of Agriculture and Land shares through a digitized Cadastral system.

Analysis suggests that by implementing geoinformation technologies, existing problems in the public land cadastre can be effectively solved. The cadastral system, provided with modern technologies, reduces the level of illegal use of land areas and increases the possibility of their rational use. The full implementation of these technologies will create sustainable growth opportunities for the future state economy [11-16].

4. Discussion

Through a deeper analysis of the problems and their solutions identified in the process of providing the state land cadastre with geoinformation, it is necessary to offer innovative solutions suitable for existing conditions. In this section, the current problems of the Earth's cadastre are analyzed in detail on the basis of international experience and scientific literature. Ensuring the relevance of information in the state land cadastre system is most important in public administration. According to current statistics, more than 20% of cadastral data is outdated, which does not allow public authorities to effectively manage land resources. For example, in EU countries, Cadastral systems are fully digitized and automated, with more than 90% being updated in real-time. The ability to such an update increases the effective use of resources, ensuring that cadastral data is up to date.

In Uzbekistan, manual updating of current data in the cadastral system reduces the efficiency of the system. To overcome these problems, it is necessary to implement automation and real-time updating technologies. As a result, the constant updating of information helps to provide accurate and high-quality information to landowners, government agencies and entrepreneurs. This leads to more effective management of land resources and their rational use.

It is necessary to strengthen the technological infrastructure in order to provide the state land cadastre with geoinformation technologies. The existing infrastructure in our country does not adequately meet the requirements of rapidly developing geoinformation technologies. The results of the study show that in developed countries, investments in geo-information technologies and technical equipment have increased the efficiency of public administration by 30-40%. For example, in countries such as the USA and Canada, accurate and continuous updating of cadastral data has been achieved as a result of automation of cadastral systems.

To achieve such results in the conditions of Uzbekistan, it is important to introduce modern equipment and high-precision technologies in the cadastral system. Also, through the development of cadastral infrastructure in cooperation of the public and private sectors, it is possible to achieve the updating of technological equipment, acceleration and automation of

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the data collection process. The participation of the private sector here plays an important role in the importation of new technologies and the recruitment of highly qualified specialists.
There is a great opportunity to achieve economic efficiency by introducing geoinformation technologies into the state land cadastre. In addition to improving the efficiency of resource use through a digitized and automated Cadastral system, savings are also provided for the state budget. Based on the results of the study, the automation of the cadastral system and the transition to modern technologies provide an opportunity to save from 20% to 25% financially in the management of land resources. At the same time, agricultural land management has a positive effect on the country's economy as a result of improved efficiency [16-21].

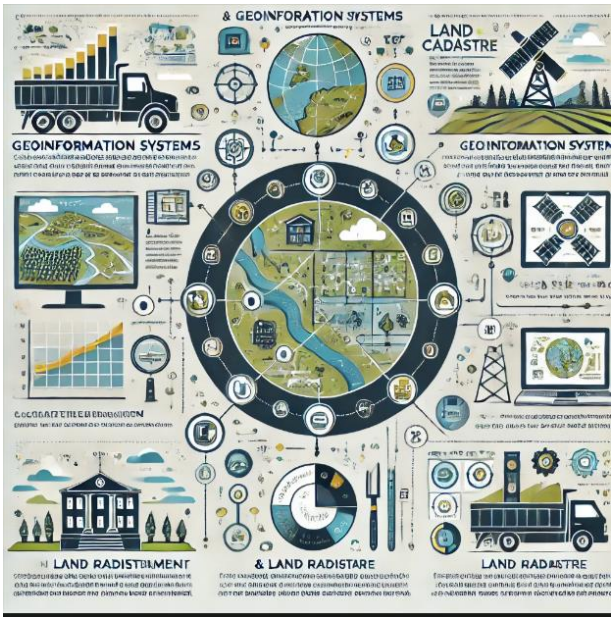

Figure 1. Describes geoinformation systems and land cadastral processes, including the importance of land registration and geospatial data management.

Forecasting results suggest that social stability can also be increased by reducing future terrain conflict with an automated Cadastral system and providing more accurate data to landowners. Environmental aspects must also be taken into account here, as digitized Cadastral systems allow for environmental safety and control over the efficient use of Natural Resources.

Scientific and practical recommendations.

Based on the obtained results and analysis, the following scientific and practical proposals are put forward to increase the efficiency of providing the state land cadastre with geoinformation technologies:

Introduction of automated technologies that provide the opportunity to update cadastral data in real time.

Introducing the use of modern technical equipment and special software for the cadastral system.

Involve the private sector in the process of providing geoinformation technologies and implementing innovations.

These recommendations are important practical measures to support and improve the state land cadastre with geoinformation technologies. Based on the experience of developed countries,

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these measures provide an opportunity to develop the cadastral system, ensure rational use of land resources, and achieve efficiency in public administration.

Conclusion

The process of providing the state land cadastre with geoinformation technologies is important for effective management of state land resources. However, for the development of the system, it is necessary to update the information, modernize the technological infrastructure and increase the qualification of personnel. The automation of the cadastral system and the widespread introduction of geoinformation technologies will ensure effective management of land resources and contribute to environmental and economic stability. The cadastral system can be further improved through cooperation with the private sector, personnel training and infrastructure modernization. These factors become the main elements of the development of the country's digital economy and the rational management of land resources.

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