

## LAND CADASTRE IN THE RUSSIAN FEDERATION: LEGAL FRAMEWORK AND DIGITIZATION PROCESS

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**Abstract.** *This article provides a scientific analysis of the formation, legal foundations, institutional structure, and modern development trends of the land cadastre system in the Russian Federation. The study examines the centralized management model of the Russian land cadastre, the implementation of the Unified State Register of Real Estate (EGRN), digitization processes, and the use of geographic information systems (GIS). Additionally, the existing problems in the system and future development directions are identified.*

**Keywords:** *land cadastre, Russian Federation, Rosreestr, EGRN, digitization, GIS, 3D cadastre, land resource management.*

### Introduction

Land cadastre is an important tool in any country for the rational use of land resources, the registration of real estate objects, and the legal protection of property rights. In the Russian Federation, the land cadastre system was fundamentally reformed during the transition to a market economy and transformed into a modern digital management system. Today, this system plays a crucial role in regulating land relations and planning regional development.

#### Legal Bases of Land Cadastre in the Russian Federation

In the Russian Federation, the legal basis for the land cadastre system is established by the Land Code of the Russian Federation and the Federal Law "On State Registration of Real Estate."

These regulatory legal documents regulate the state registration of land plots and real estate objects, determine their legal status, and establish mechanisms for protecting property rights.

The primary authority for managing the land cadastre is vested in the Federal State Registration, Cadastral and Cartography Service – Rosreestr. This agency is responsible for defining the boundaries of land plots, updating cadastral data, and ensuring their public availability.

#### Unified State Real Estate Register (EGRN)

One of the important milestones in the development of land cadastre in the Russian Federation is the introduction of the Unified State Register of Real Estate (EGRN). The EGRN consolidates information on land plots, buildings, structures, and the rights to them into a single information database. This system has increased the accuracy and reliability of data by integrating cadastral and legal registration processes.

Through EGRN, citizens and legal entities gained the ability to obtain information about real estate objects in electronic form, which increased the quality and transparency of government services.

#### Digitization and modern technologies

In recent years, significant attention has been paid to digitizing the land cadastre system in the Russian Federation.

Most cadastre data are maintained in electronic form, and government services are provided through specialized online platforms. Geographic Information Systems (GIS), satellite imagery, and remote sensing technologies are widely used in the processes of determining and updating land parcel boundaries.

At the same time, scientific research and pilot projects for the introduction of a three-dimensional (3D) cadastre are being carried out in Russia. However, the lack of full legal regulation of the 3D cadastral system is hindering its widespread implementation.

#### **Problems and Development Trends**

Although the land cadastre system in the Russian Federation is significantly developed, certain problems persist. In particular, there is a lack of accuracy in boundary data formed based on historical documents, discrepancies between old and new geodetic measurements, and in some areas, data has not been fully updated.

The main directions for the future development of the land cadastre system are defined as improving data quality, legally strengthening 3D cadastre, and integrating spatial data with regional planning and land resource management systems.

#### **Conclusion**

In summary, the land cadastre system in the Russian Federation is characterized by centralized management, a strong legal foundation, and a high degree of digitization. The centralized management of information on land and real estate objects through Rosreestr and the EGRN is of great importance for regulating land relations. At the same time, the introduction of 3D cadastral data and improving data quality are emerging as future priority tasks.

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