

**IMPROVING THE TECHNOLOGY FOR COMPILING STATE CADASTRE  
MAPS USING THE GEODATABASE OF THE REPUBLIC OF  
KARAKALPAKSTAN CREATED BASED ON ARCGIS SOFTWARE.**

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**Abstract:** *This article considers issues of improving the technology of generating cadastral maps during their creation using ArcGIS software.*

**Keywords:** *ArcGIS, GIS, land, cadastral data, maps.*

The Republic of Karakalpakstan, as a region located in Uzbekistan, faces various environmental, economic and social issues. In particular, improving the efficiency of land resource management, the cadastral system and land management activities is of great importance. The improvement of the land cadastral system in Uzbekistan and the introduction of information technologies are necessary for land management, accounting and support for socio-economic development. This article considers the issues of improving the technology for generating cadastral maps in the process of creating them using ArcGIS software.

*1. The importance of geoinformation systems:*

Geoinformation systems and cadastral systems are one of the most important tools in land resource management. Using GIS, geographic information about land and other natural resources is analyzed, which simplifies scientific and practical activities. ArcGIS is a widely used software worldwide and is an effective tool for managing land resources, integrating cadastral data, creating and analyzing geographic maps.

*2. Cadastral data of the Republic of Karakalpakstan and their role:*

The land resources management and cadastral system of the Republic of Karakalpakstan plays an important role in maintaining ecological balance, land distribution and implementing tax policy. The cadastral system in the studied area mainly includes the territorial division of land, the type of land use, its ownership status and other geoinformation indicators. The use of GIS technologies in creating cadastral maps

greatly facilitates data storage and analysis, as well as ensures the determination of the state of land resources and effective management.

### *3. The role of ArcGIS software in creating cadastral maps:*

ArcGIS software provides extensive opportunities for creating, updating and analyzing cadastral data. The following main capabilities of this system can be distinguished:

**Data collection and integration:** Using ArcGIS, it is possible to collect cadastral data from all sources and integrate them into a single database. This provides complete and accurate information about land resources.

**Cartographic visualization:** Using ArcGIS software, you can create interactive cadastral maps, which provides improved visibility and analysis in territorial management.

**Analysis and forecasting:** GIS allows you to use analytical tools for data analysis and resource management. As a result, it is possible to improve the state of land resources, effectively use resources, and support socio-economic development.

**Data update and storage:** Using ArcGIS, you can update cadastral data in real time, store information for many users in a single system. This helps to quickly reflect the state of land resources that have changed over time.

### *4. Improvement of the technology of creating cadastral maps.*

Full use of the capabilities of the ArcGIS program in creating cadastral maps serves to improve the technology. Improvements can be made in the following areas:

**Data accuracy and completeness:** Using the ArcGIS system, information about land resources is collected accurately and accurately. This ensures high quality of cadastral maps.

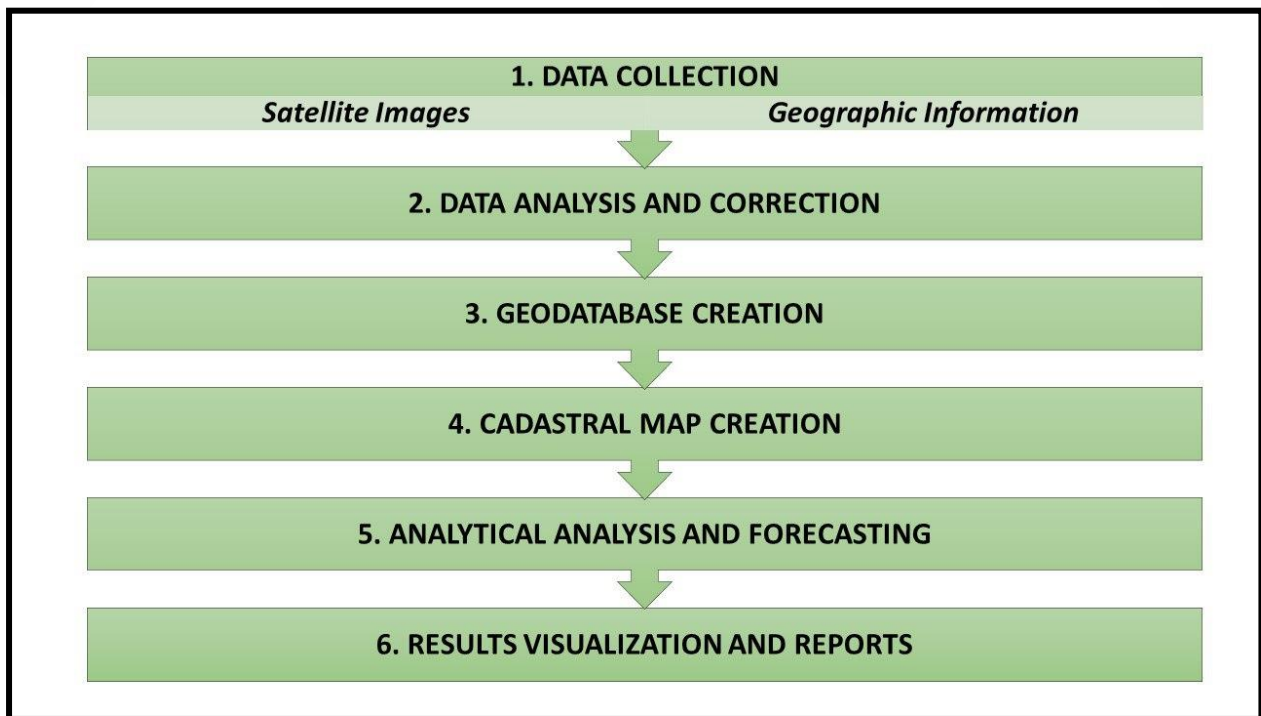
**Dynamic update:** With the help of geographic information systems, cadastral data can be updated and monitored in real time, which ensures fast and efficient management.

**Map display and forecasting:** With ArcGIS, it is possible to forecast the state of resources and future changes, which helps in making the necessary decisions in land resource management.

### *5. Results and Benefits.*

Improving the technology of creating cadastral maps using ArcGIS software will help optimize the management of land resources in the Republic of Karakalpakstan. As a result,:

- Effective management of land resources;
- Ensuring ecological balance;
- Achieving socio-economic stability;
- Improving the tax system;
- Increasing the possibilities of updating and analyzing the database.



**1-Image.** A scheme for creating a technology for creating state cadastral maps using a geodatabase has been created.

#### **Summary**

Improving the cadastral system of the Republic of Karakalpakstan using ArcGIS software will help achieve high efficiency in land resource management. This technology allows not only to accurately and quickly collect data, but also to analyze and forecast it. Improving the technology for creating cadastral maps provides the scientific and practical foundations necessary for the modernization and sustainable development of the state land resource management system.

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