CREATING MAPS OF AGRICULTURAL CROPS USING MODERN GIS PROGRAMS

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Annotation: In this article, we explore new approaches to calculating and improving the efficiency of Geographic Information System (GIS) applications and resource management. It aims to identify solutions for addressing challenges related to GIS utilization, finding their solutions through GIS tools, and defining the existing opportunities and prospects in this field. The article specifically discusses creating electronic maps for rural areas.

Key words : GIS, ARCGIS, ESRI, ArcView, ArcEditor, ArcInfo, ArcMap, ArcCatalog, ArcToolbox .

Annotatsiya: Ushbu qamolada GIS dasturlari va yer resurslarini hisobga olishning yangi uslublarini joriy etish va yerlardan foydalanish samaradorligini oshirish muammolarini aniqlash, ularning yechimini topishda GIS dasturlaridan foydalanish, ushbu yo'nalishdagi mavjud imkoniyatlar va istiqbollarni belgilab olish bugungi kunning dolzarb vazifasidir. Ushbu maqola qishloq xo'jaligi yerlarining elektron xaritasini yaratish haqida.

Kalit so'zlar: GIS, ARCGIS, ESRI, ArcView, ArcEditor, ArcInfo, ArcMap,ArcCatalo, ArcToolbox.

"Today in our republic, information technology has significantly developed in all areas, including residential areas and agricultural enterprises where the population resides. These developments include advancements in cadastral work, as well as the use of digital maps and modern tools to enhance their effectiveness. One such tool is ArcGIS, developed by ESRI, which allows working with digital maps and improving their efficiency.

To meet the current demands for organizing the cadastre services in our country, substantial funds are allocated from the state budget each year. These funds are used to digitize land plots and agricultural fields, automate the processing of agricultural data, and improve the efficiency of cadastral work. The automated system for handling agricultural data is continually evolving to better serve the state's objectives. ArcGIS products, created using cutting-edge computer technology, adhere to open standards and provide a wide range of applications across various practical fields and tasks.

The ArcGIS family, including individual products like ArcView, ArcEditor, and ArcInfo, integrates general architecture and interface-based programs such as ArcMap (for cartographic tasks), ArcCatalog (for accessing and managing spatial data), and

ArcToolbox (for geospatial analysis). These tools differ in their functionality and the number of geospatial and analytical tools they offer.

In summary, ArcGIS plays a crucial role in various tasks related to land management, creating a unified state cadastral system, and seamlessly integrating electronic digital maps into the ArcGIS software. Recently, electronic digital maps have been transferred to the ArcGIS program for several districts in the Qarshi region, as well as other districts in different regions of our country.
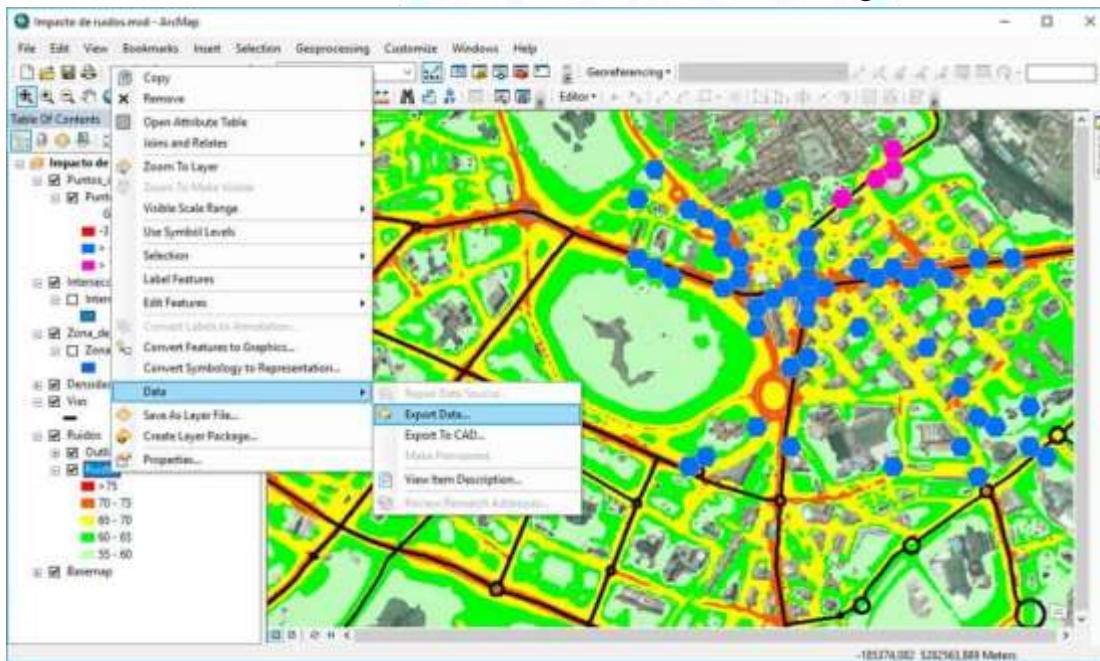
The primary purpose of creating digital maps in ArcGIS for land surveying and state cadastral purposes is to achieve high accuracy. ArcGIS offers several advantages:

• Creating accurate maps and plans for cadastral purposes, including land registration and building cadastres.

• Providing landowners, users, and tenants with precise digital maps at different scales.

• Streamlining the map creation process compared to other software.

• Enabling data comparison and analysis.

• Establishing centralized geospatial databases.

• Editing digital maps remotely (via the internet) and directly delivering maps to GPS and electronic theodolites.

Additionally, the OAZIS and PANORAMA software contains electronic digital maps for various districts. These maps, created using specialized tools, are converted to the Sheyp format. Thematic layers are separated using specific classifiers. For further updates, aerial and space imagery is used to create photomaps related to specific technologies.

In terms of the areas covered, maps are prepared at scales of 1:10,000 for urban regions and 1:25,000 or 1:50,000 for rural areas (depending on the size of the agricultural land). In the ArcGIS software, digital maps of the regions are created in the MDB format. Using the capabilities of ArcGIS, the land areas for rural settlements and the areas used for various purposes are identified.

- ArcGIS allows users to create.Tools for proximity analysis, overlay analysis, and surface analysis enable users to derive meaningful insights from spatial data.ArcGIS supports the integration and management of diverse datasets, including raster, vector, and tabular data. Automated workflows and geoprocessing tools streamline complex spatial analyses.ArcGIS is widely used across different sectors. Some notable applications include:ArcGIS Urban is used for assessing zoning and comprehensive plans, as demonstrated in a study on the City of Arlington, Texas. GIS technology is employed to monitor and manage natural resources, such as revitalizing imperiled bird habitats at the Salton Sea.ArcGIS integrates with data science tools to perform spatial analysis and visualize results, enhancing decision-making processes.

Geographic Information Systems (GIS) have transformed the way we analyze and visualize spatial data. ArcMap, a key component of Esri's ArcGIS Desktop, provides a comprehensive set of tools for creating, editing, and analyzing geospatial data. This article examines the capabilities of ArcMap and its applications in different scientific
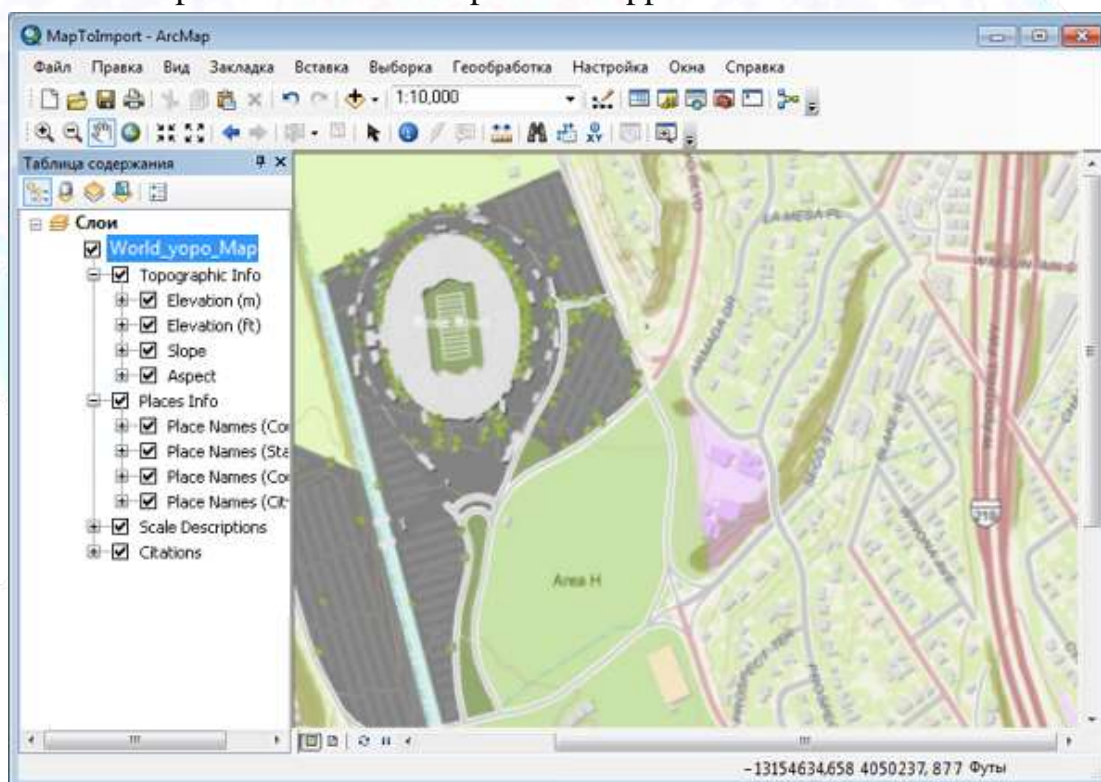
disciplines.

Capabilities of ArcMap: ArcMap offers a wide range of functionalities for geospatial analysis and mapping. Key features include:

- Data Visualization: ArcMap allows users to create detailed maps with various layers, symbols, and annotations.

- Spatial Analysis: Tools for proximity analysis, overlay analysis, and surface analysis enable users to derive meaningful insights from spatial data.
- Data Management: ArcMap supports the integration and management of diverse datasets, including raster, vector, and tabular data.
- Geoprocessing: Automated workflows and geoprocessing tools streamline complex spatial analyses.

Applications of ArcMap: ArcMap is widely used across different sectors. Some notable applications include:

A study on the use of ArcMap in environmental management highlights its application in monitoring land use changes. The software was used to analyze satellite imagery and track changes in vegetation cover over time. The study demonstrated how ArcMap can help environmental scientists monitor and manage natural resources effectively.

Conclusion: it should be noted that using the ArcGIS program to create high-precision digital maps saves the user's time and facilitates ongoing work. Implementing these digital maps in production is of great importance in increasing work efficiency.

Foydalanilgan adabiyotlar.

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