ADB-LX
Corp Joint Workshop

National Spatial Data Infrastructure in the Republic of Tajikistan. Current status.

Seoul, South Korea
2024

STATE COMMITTEE FOR LAND MANAGEMENT AND GEODESY OF THE REPUBLIC OF TAJIKISTAN

IN ORDER TO CREATE FAVORABLE CONDITIONS FOR THE IMPLEMENTATION OF STATE POLICY IN THE FIELD OF GEODESY AND CARTOGRAPHY IN THE MEDIUM TERM, THE STATE COMMITTEE ON LAND MANAGEMENT AND GEODESY OF THE REPUBLIC OF TAJIKISTAN IS SUCCESSFULLY IMPLEMENTING THE PROGRAM FOR THE DEVELOPMENT OF GEODESY AND CARTOGRAPHY IN THE REPUBLIC OF TAJIKISTAN FOR 2022-2026, AS WELL AS THE PROGRAM FOR THE DEVELOPMENT OF THE SECTOR OF STATE REGISTRATION OF REAL ESTATE PROPERTY AND RIGHTS TO IT.

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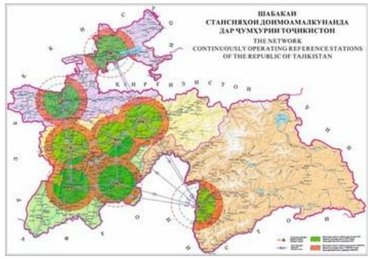
- IMPLEMENTATION OF INNOVATIVE TECHNOLOGIES IN LAND MANAGEMENT, GEODESY AND
- CARTOGRAPHY; IMPLEMENTATION OF
- MONITORING TECHNOLOGIES BASED ON SPACE IMAGES FOR VARIOUS INDUSTRIES; ORGANIZATION OF ADVANCED TRAINING COURSES IN THE USE OF MODERN SPACE AND GIS TECHNOLOGIES.



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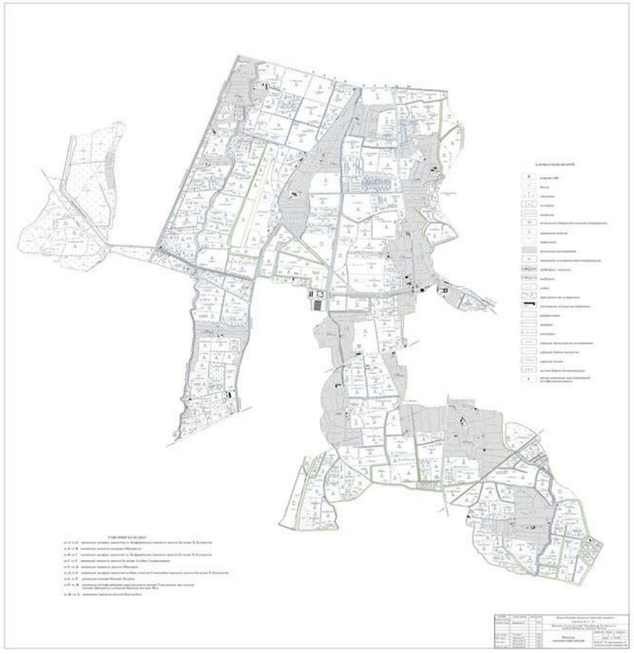
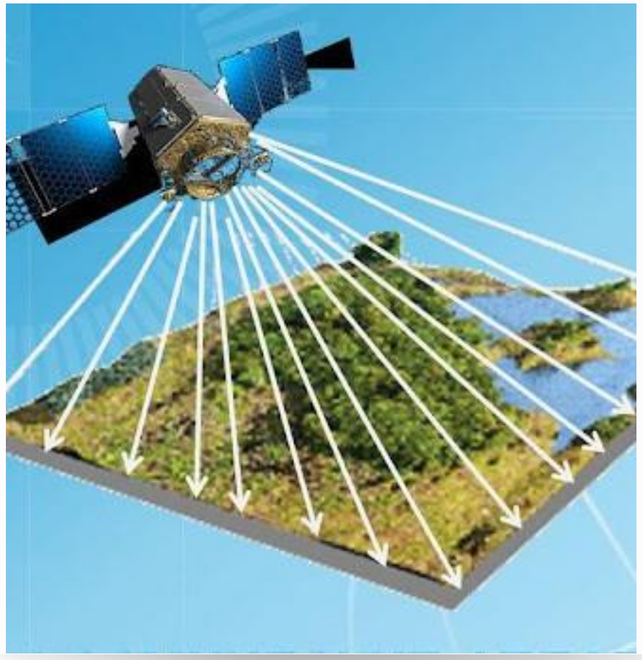
State land registration

State Land Registration Plan





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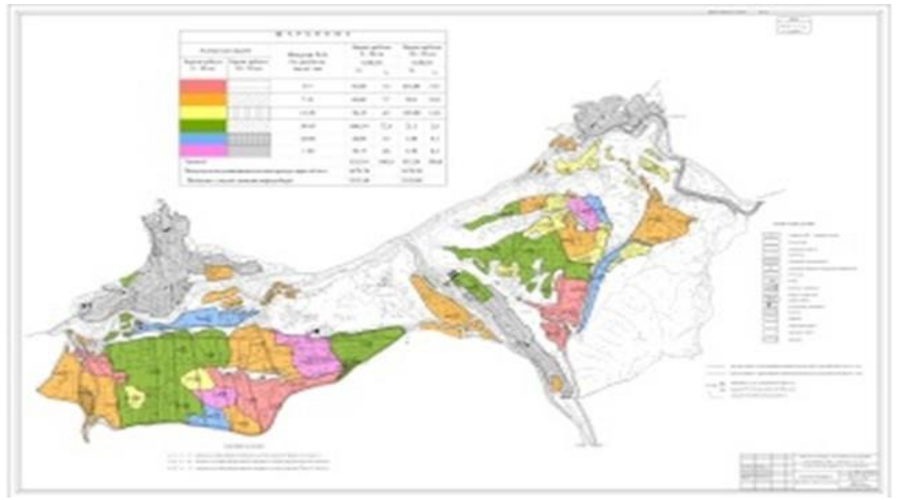
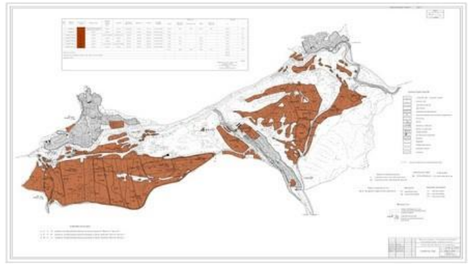
LARGE-SCALE AND AGROCHEMICAL SOIL SURVEY

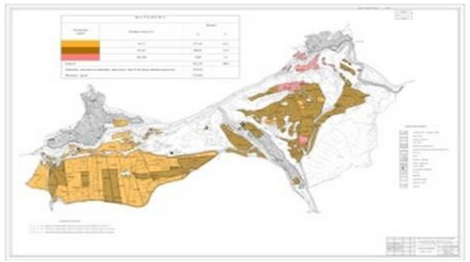
The main purpose of conducting a soil survey is to determine the quality of soils, develop the necessary measures to protect lands, determine the rate of secondary salinization of lands, changes in the structure and quality of soils, based on the availability of information on soil salinization and the chemical state of soils for planning the volume of work and the timing of timely leaching of saline lands.



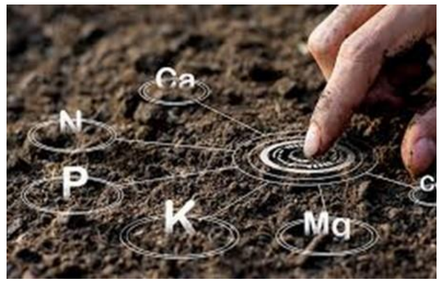
Cartogram of mobile phosphorus



Humus cartogram



Soil map



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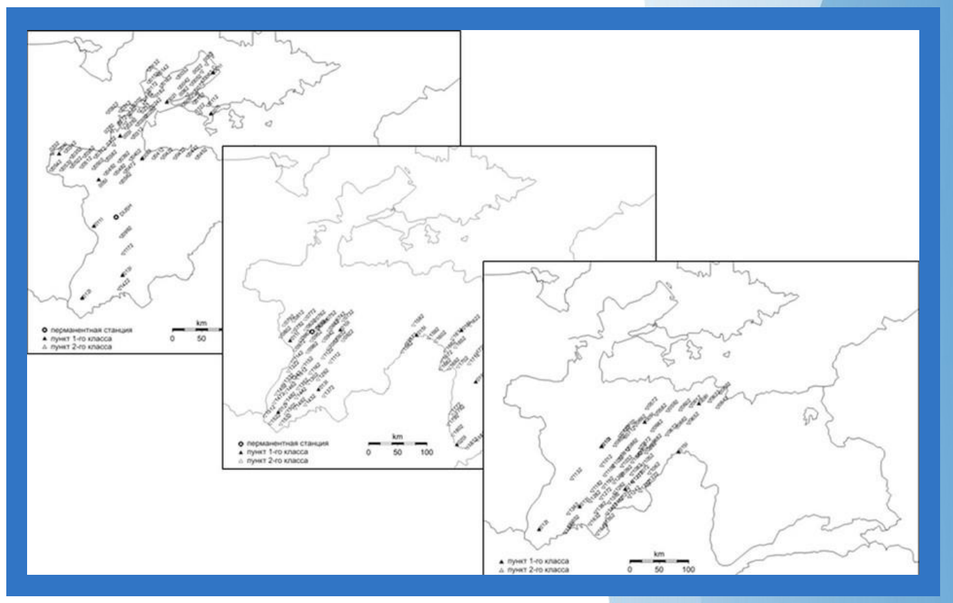
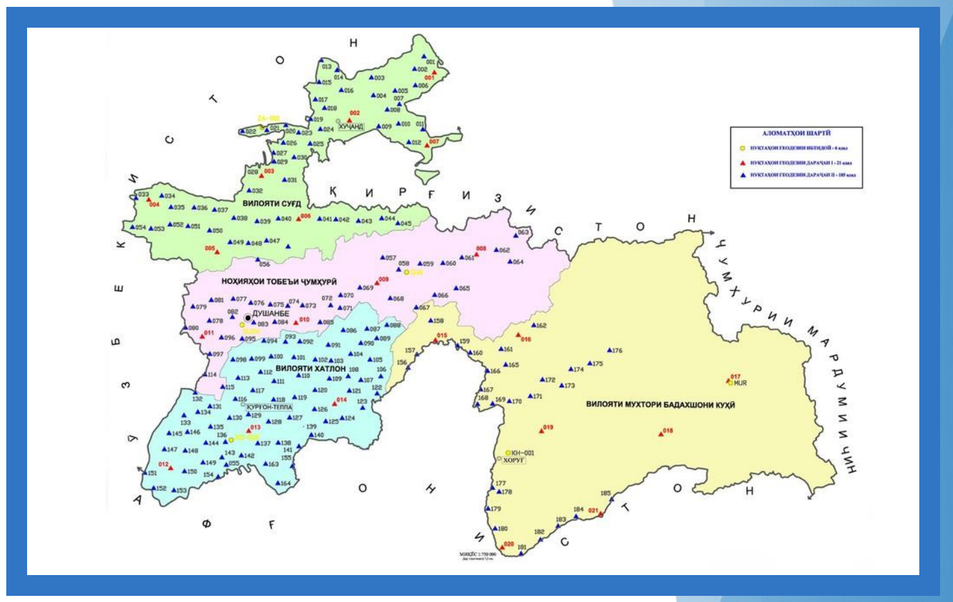
SATELLITE GEODETIC NETWORK IN THE REPUBLIC OF TAJIKISTAN



For the purposes of cadastral mapping, a satellite geodetic network was created throughout the territory of the Republic

- **ITRF2005 as coordinate systems;**
- **UTM in 6° degree zones as geodetic projections; EGM96 as a reference**
- **surface for orthometric heights.**



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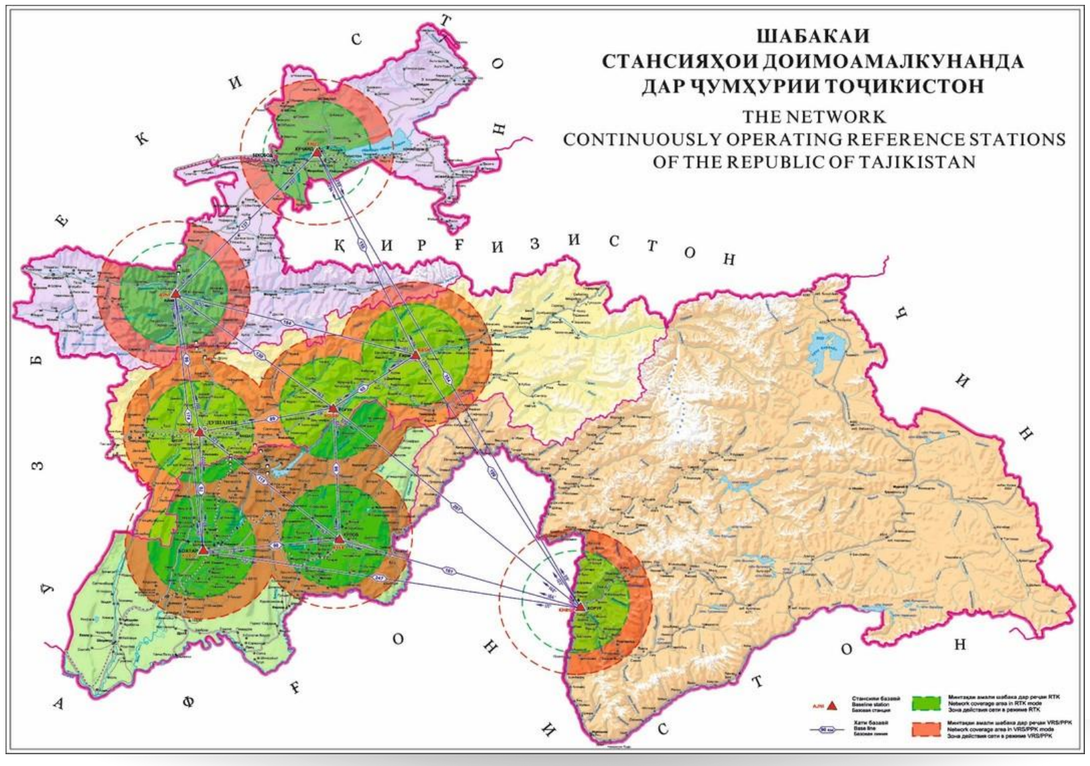
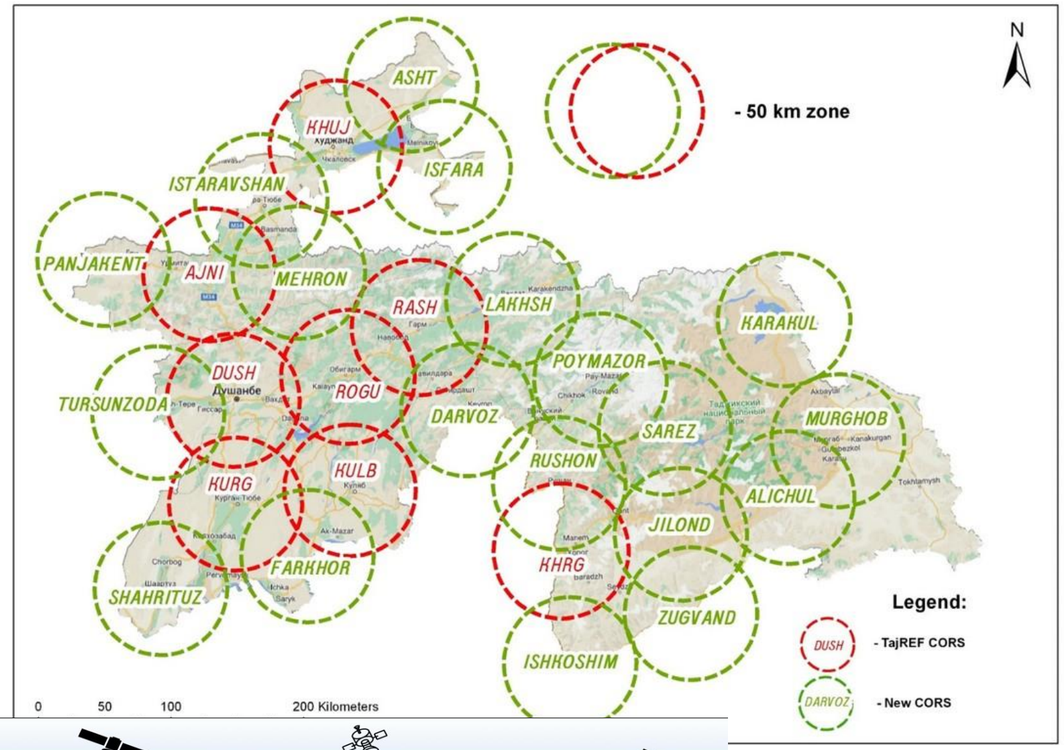
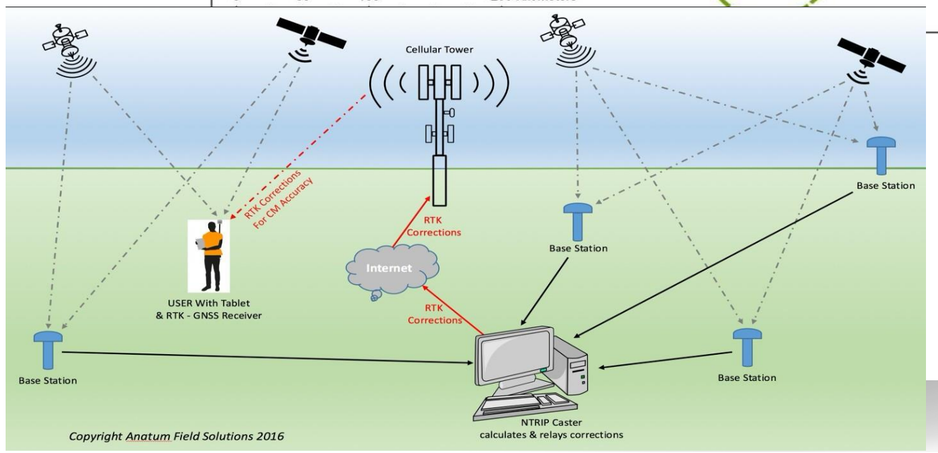
Network of permanently operating stations (CORS)

Existing stations



Future development of the network





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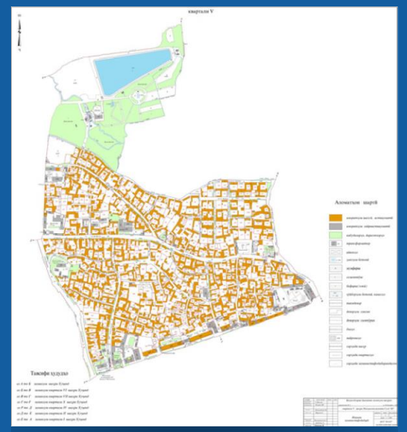
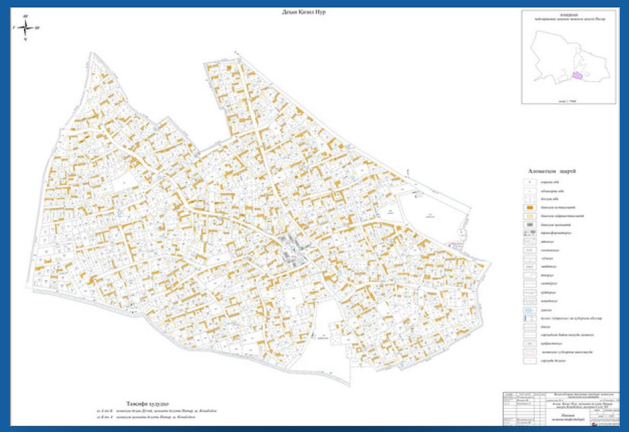
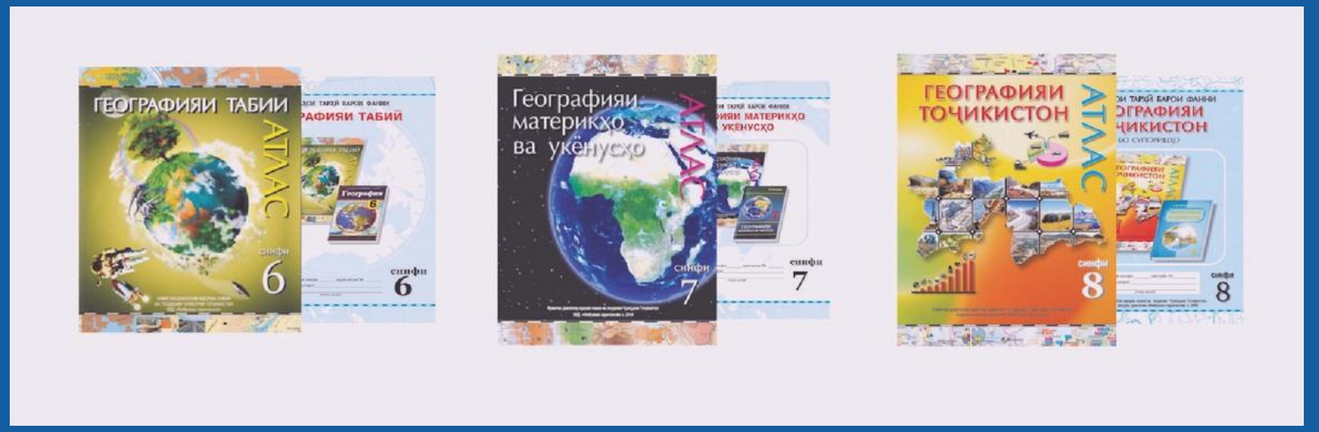
CREATION OF DIGITAL THEMATIC MAPS







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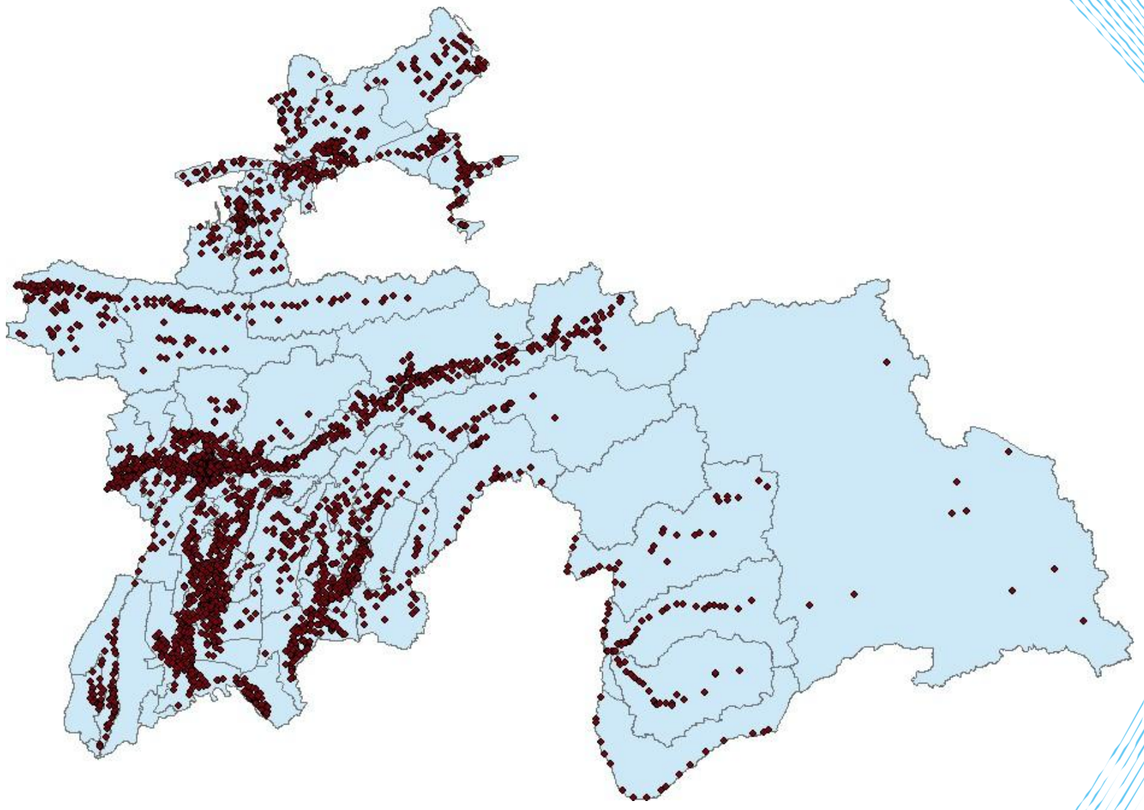
UNIFIED CATALOGUE OF GEOGRAPHICAL NAMES

In order to organize the names of administrative units of cities, districts, towns, jamoats and villages of Tajikistan, we have compiled a “Unified Catalogue of Names of Administrative Units and Settlements of Tajikistan” taking into account previous and new names.



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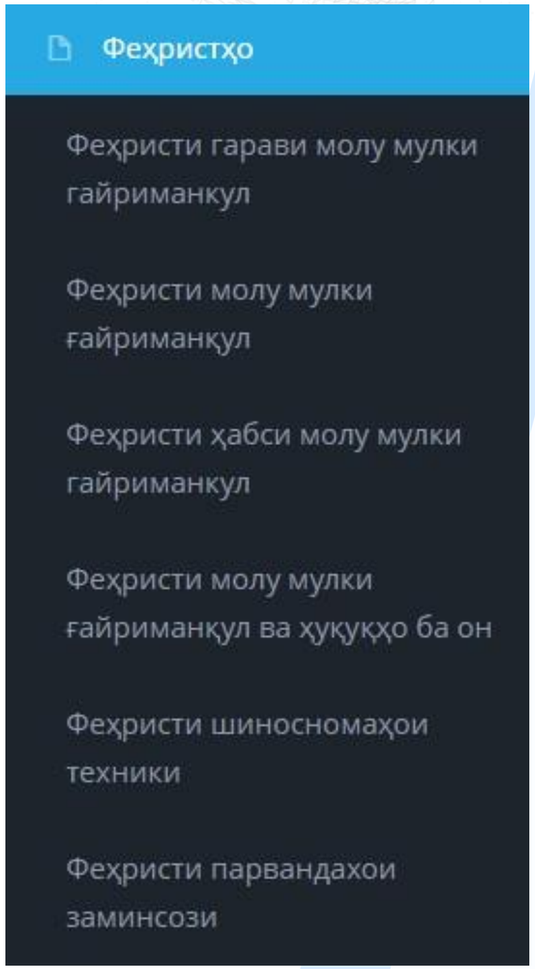
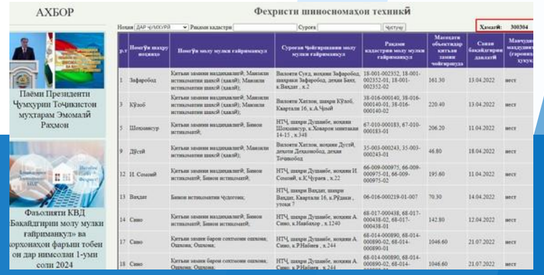
AUTOMATED SYSTEM OF REAL ESTATE REGISTRATION

The ASRT program was launched in April 2018, and all registration operations are carried out in 62 regional registration enterprises exclusively under this program. The program consists of the following sections:

a) Home;
b) Applications;
c) Journals;
d) Information search;
e) Reports;
f) Data management;
g) Administration





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Digitalization

Tajikistan is at the initial stage of the digitalization process. In December 2019, the Government adopted the concept of the "Digital Economy in the Republic of Tajikistan". In order to specify the provisions of the concept, on October 26, 2021, the Program for the Medium-Term Development of the Digital Economy in the Republic of Tajikistan for 2021-2025 was adopted.

In order to unify, develop and maintain spatial data in an up-to-date state, the state geodetic support system will be modernized, a unified coordinate system will be established, and open-use maps will be created using unified formats and data structures using distributed ledger technologies.

Concept of digital economy of the Republic of Tajikistan

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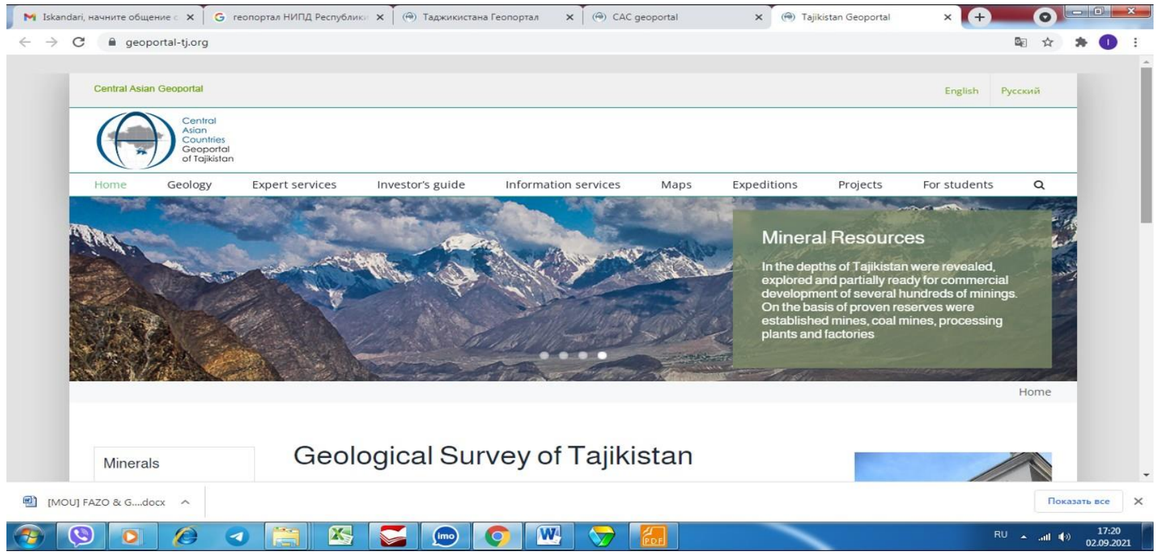
Current situation

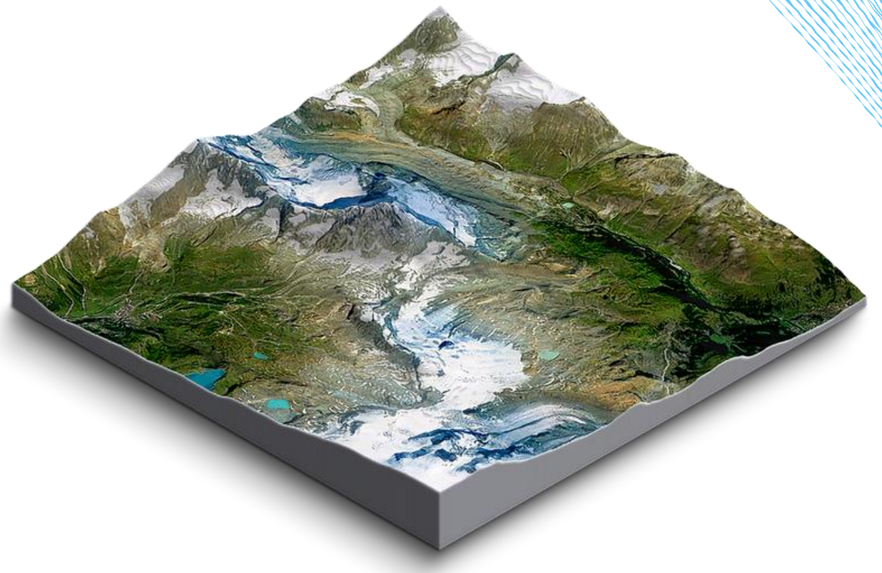


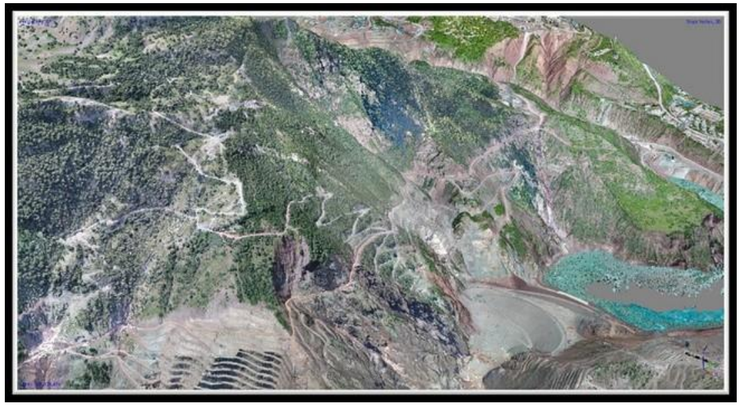
Information systems for healthcare, emergency situations, geology, water information system, and transport of the Republic of Tajikistan have been created. Preparatory work is underway to create other industry information systems.

STATE COMMITTEE FOR LAND MANAGEMENT AND GEODESY OF THE REPUBLIC OF TAJIKISTAN

NSDI TAJIKISTAN

The State Committee for Land Management and Geodesy of the Republic of Tajikistan is working on the Land Information System and the creation of a Spatial Data Infrastructure; in particular, drafts of some regulatory and legal documents have been developed.





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NSDI TAJIKISTAN

In March of this year, at the request of the Asian Development Bank, a feasibility study was completed for the creation of a Land Information System or National Spatial Data Infrastructure in the Republic of Tajikistan.

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Further plans and steps that will contribute to the development of LIS and NSDI

Cadastral Map Enhancement

1.Cadastral Maps Standardization: Employ modern surveying technology (LiDAR, UAVs) to create precise and up-to-date cadastral maps.

2.Automated LIS System: Implement a system for regular automatic updates of cadastral information based on real-time data collection.

Digital Map

1.Comprehensive GIS Mapping: Develop detailed GIS-based maps that include soil types, irrigation channels, and crop patterns.

2. Real-time Data Integration in LIS: Integrate these maps with real-time data from IoT devices in the field for ongoing updates.

Map Standardization

1.GIS Data Standardization Protocol: Establish and enforce data standards across all sectors.

2.Centralized Geospatial Data Repository: Develop a central repository for all geospatial data.

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Further plans and steps that will contribute to the development of LIS and NSDI

Address System and Base Map Standardization

1.National Address Database: Create a comprehensive, standardized national address database accessible to all service providers.
2.Address Geocoding System in LIS: Implement a system for converting addresses into geocode for easy integration into digital maps in LIS.
3.National Base Map Development: Develop high-resolution base maps that cover all geographical and man-made features.
4.Continuous Updating Mechanism: Establish mechanisms for the continuous updating of base maps using satellite imagery and ground surveys

Education and Environmental Maps

1.Atlas Map Creation for Schools: Develop atlas maps that are specifically designed for educational purposes, highlighting geographic, political, and environmental aspects.
2.Interactive Educational Geoportal: Create an interactive geoportal for schools that includes educational resources and map-based learning tools

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THANK YOU FOR YOUR ATTENTION!