



CAPACITY BUILDING FOR MONITORING AND MANAGEMENT OF GROUNDWATERS AND GEOHAZARDS

GEOLOGICAL SURVEY OF FINLAND

- 🌐 Founded in 1885, GTK is an internationally oriented geoscience research agency operating under the Ministry of Economic Affairs and Employment.
- 🌐 We are a leading European competence center on the assessment and sustainable use of geological resources.
- 🌐 For our customers and partners we provide geological expertise to create solutions to accelerate the transition to sustainable and carbon-neutral world.
- 🌐 We offer diverse expert and research services, continuously developing digital services and a broad range of laboratory services.
- 🌐 www.gtk.fi



GTK'S MFA PROJECTS IN CENTRAL ASIA

- **2009-2011, Preparatory Phase**
Kazakstan, Kyrgyzstan, Uzbekistan, Tajikistan and Turkmenistan
- **2011-2014**
Development of Geoinformation management infrastructure
Kazakstan, Kyrgyzstan, and Tajikistan
- **2014-2019**
Strengthening the mastering of natural resources for national welfare in the Kyrgyz Republic / in Tajikistan
Separate projects in Kyrgyzstan and Tajikistan
 - WP1: Climate change and modern techniques
 - WP2: Strengthening of geoinformation chain and distribution
 - WP3: Regional aspects and administration



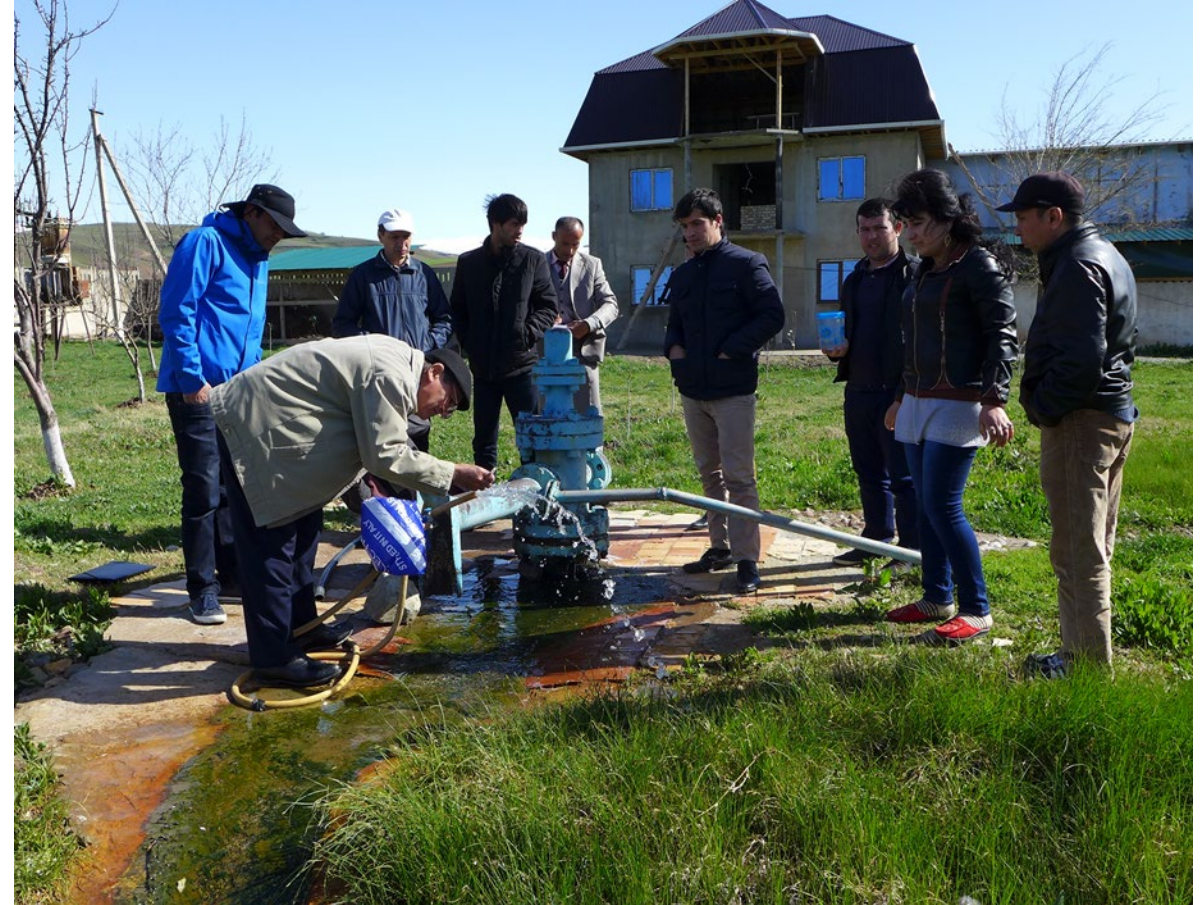
ROLE OF GEO-SECTOR

- Management of Natural Resources (Minerals, Soil and Groundwater)
- Infrastructure planning
- Monitoring of Groundwater, Geohazards and Environment
- Protection and improving living conditions for citizens



STRENGTHENING THE MASTERING OF NATURAL RESOURCES FOR NATIONAL WELFARE IN

- **the Kyrgyz Republic, Phase II**
1.7.2020-31.12.2022
Department of Geology and Subsoil Use under the Ministry of Mineral Resources, Ecology and Technical Supervision of the Kyrgyz Republic.
- **Uzbekistan**
17.2.2022 -31.12.2024
State Committee of the Republic of Uzbekistan on Geology and Mineral Resources
- **Tajikistan, Phase II**
Main Department of Geology under the Republic of Tajikistan



GEOINFORMATION

- Digitalization and storage
 - Data management
 - Digitizing and databases: Hydrogeological and geohazard maps
 - *Countrywide Digital Geological Map*
- Distribution
 - *Central Asian Geoportal*



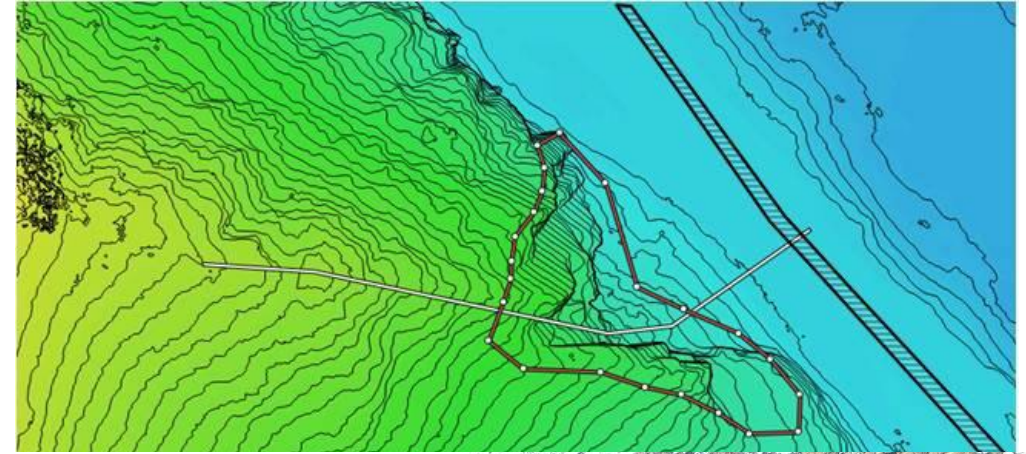
GROUNDWATER

- Monitoring groundwater wells
- Pilot area:
 - Aquifer monitoring
 - Modelling
 - Geophysical measurements
- *Sampling techniques*
- *Target areas (water sampling+ comparison analyses)*
- *Isotope analyses (monitoring groundwater/surface waters)*
- Database: Groundwater wells
- Digitizing: Hydrogeological maps



GEOHAZARDS

- Interpretation of satellite images, remote sensing
- Target areas: monitoring and follow-up by drone
- Databases
- Digitizing of geohazard maps
- Interpretation of mass movements
- Strengthen early warning of geohazards



MODELL OF IMPLEMENTATION

- “On-the-job” training by GTK experts
=> all work done by local staff
 - New working processes
 - New expert groups
 - Team work between groups & experts
- Regional cooperation





Thank you !