



Cryospheric Observation and Modelling for improved Adaptation in Central Asia (CROMO-ADAPT)



Block glacier in Koxu valley, Kyrgyzstan. ©Martin Hoelzle

Country/Region

Central Asia:
Kyrgyzstan (KG),
Tajikistan (TJ),
Kazakhstan (KZ),
Uzbekistan (UZ)

The CROMO-ADAPT project uses high-quality cryospheric data (including glaciers, snow, and permafrost) to provide information for policy-making, planning, and implementation of adaptation measures in the areas of water and risk management in Central Asia to increase the resilience of local populations to climate change. Climate change in Central Asia mountain regions will have significant impacts on water availability and occurrence of natural hazards. Water release by snow and glaciers is

fundamental in many Central Asian watersheds to maintain sufficient runoff during dry summer months, while retreating glaciers and melting permafrost will increase the risks of natural hazards. Sound climate observations and reliable climate information services are fundamental to anticipate further developments and plan adaptation measures. Currently, large gaps exist in the climate observation system in Central Asia, particularly in high mountain environments.



Climate resilient development

Phase Duration

01.04.2021 – 31.12.2025 (Phase 1)

Financial contribution of SDC

CHF 2'960'000

Target groups

The direct beneficiaries are i) national hydro-meteorological services through the expansion of their monitoring network and the development of specific climate information services; ii) the scientific community through development of individual and institutional capacity; iii) national policy makers, through support in planning and decision making on water resources management and disaster risk reduction.

Achievements so far

CROMO-ADAPT builds on a previous SDC supported project on glacier monitoring in Central Asia that has, among others, contributed to:

- Establishment of glacier monitoring systems in KG, TJ, KZ and UZ which are managed by national partners
- Training of more than 100 local scientists and 10 MSc. and PhD students
- Two important studies on future water availability and the formation of new potentially dangerous glacier lakes

Project Objectives

- Set up locally managed and sustained cryospheric monitoring networks in Central Asia that provide steady and reliable data to national, regional and global databases.
- Strengthen national institutions in KG, TJ and KZ to be able to provide user-oriented cryospheric climate information services to basin planning and disaster risk management authorities as a means to create awareness and inform policy and planning on medium and long-term consequences of climate change.
- Capacitate national and sub-national basin planning and disaster management authorities in KG and TJ to plan adaptation measures and facilitate investment in the water and disaster risk reduction sectors that respond to long-term cryospheric changes.

Expected results for 2021–2025

- Establish state-of-the-art cryospheric monitoring systems in KG, KZ and TJ
- Train local scientists from KG, KZ, TJ and UZ (with a strong focus on women) in data generation and processing
- Develop climate information services for medium and long-term prediction of water availability and hazards with local partners

- Capacitate local implementing partners to inform policy makers through national and regional science-policy dialogues on climate impacts in the cryosphere and the consequences on water and disaster management
- Conceptualize adaptation measures in four catchments in KG and TJ together with national basin planning and disaster management authorities

How this will be achieved

The project builds strongly on Swiss expertise in cryosphere monitoring and corresponding adaptation approaches in mountain areas. It is contributing to the Global Cryosphere Watch Programme of the World Meteorological Organisation. Installed infrastructure for systematic observations will be embedded in the networks of the national partners to ensure sustainable and continuous operation and maintenance. Emphasis will be given to open access and sharing of data on the national level, and their embedding in national, regional and global data platforms. The main emphasis of data generation is to put the information into use through the development of climate information services, e.g., for run-off predictions and natural hazards risk analysis. An in-depth analysis of the consequences for cryospheric changes in 4 selected areas (2 in TJ and 2 in KG) will provide the basis to conceptualize potential adaptation and management measures, in close cooperation with national and sub-national basin planning and disaster management authorities.

Additional information

- The Climate-Cryosphere Water Nexus in Central Asia <https://www.weadapt.org/knowledge-base/sdc-climate-change-environment-network/the-climate-cryosphere-water-nexus-in-central-asia>
- CROMO-ADAPT project website of University of Fribourg <https://www.unifr.ch/geo/cryosphere/en/projects/smd4gc/cromo-adapt.html>

Partners

The main contract partner is the University of Fribourg, which will enter into a sub-contract with the WSL Institute for Snow and Avalanche Research (SLF).

Contact

gpcce@eda.admin.ch

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