

Cryospheric Observation and Modeling for Improved Adaptation in Central Asia (CROMO-ADAPT)

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ABSTRACT

Climate change is a challenge for humanity and the resulting global consequences will influence and endanger economies and livelihoods of coming generations. Strategies to improve climate resilience through adaptation must be based on sound baseline information, such as climate observations, especially on the Essential Climate Variables (ECVs) defined by the Global Climate Observing System (GCOS). Significant gaps exist however in the global climate observing system, particularly in High Mountain Asia. This data scarcity results in high uncertainties about the experienced as well as expected consequences of climate change, preventing sound anticipation of future developments and planning corresponding adaptation measures. A region where climate change is projected to have major impacts on water availability and occurrence of natural hazards is Central Asia's mountain regions.

A new project, named Cryospheric Observation and Modelling for improved Adaptation in Central Asia (CROMO-ADAPT), will address this gap by strengthening and (re-)establishing cryospheric (snow, glaciers, and permafrost) *in situ* monitoring systems in Central Asia. This project continues the improvements of glacier monitoring activities that have been ongoing for more than a decade by complementing it with snow and permafrost monitoring systems and corresponding capacity building in Central Asia. Ultimately, this project aims to develop climate resilience through climate information services and adaptation measures based on sound climate observations. Four watersheds, particularly in the headwater regions of Kyrgyzstan and Tajikistan are selected for a combined cryospheric observation strategy following the guidelines provided by the Global Cryosphere Watch (GCW) of the World Meteorological Organization (WMO) and the Global Framework for Climate Services (GFCS). This includes mainly the application of old and new *in situ* technology of snow, glacier, and permafrost long-term observations.

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