

## **A snapshot of national and regional glacier monitoring**

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Glacier observation data from major mountain regions of the world are key to improving our knowledge of glacier changes: they deliver fundamental baseline information for the understanding of climatological and hydrological processes, and related hazard assessments. In many mountain ecosystems as well as in the adjacent lowlands, glaciers play a crucial role in freshwater provision and regulation. Glacier monitoring enhances the awareness of the populations that depend on water resources from glacierized mountains or that are affected by hazards related to glacier changes. It has therefore been suggested that glacier monitoring be included in the development of sustainable adaptation strategies in regions with glaciated mountains.

In this study, we present a standardized assessment of the glacier monitoring status of all glacierized countries, with the aim to evaluate the national implementation of the international monitoring strategy (Global Hierarchical Observing Strategy; GHOST) in the respective country. The GHOST strategy is given in the framework of the Global Climate Observing System (GCOS) on behalf of the United Nations Framework on Climate Change Convention (UNFCCC). This assessment is expected to increase the visibility of ongoing monitoring activities, to define potential deficiencies and needs for sustainable (long-term) glacier monitoring, and to elaborate tailored recommendations under special consideration of possible future impacts of glacier changes. Related issues such as hydrological or ecological measures might also profit from the assessment.

The country profiles (= factsheets) were established based on common dataset versions, datasets that are freely available from the Global Terrestrial Network for Glaciers (GTN-G). They include glacier fluctuations series (front variation observations, glaciological and geodetic mass-balance measurements) as well as glacier inventory data (glacier outlines/areas). The factsheets show for each country the present glacier monitoring state and future potential/needs, with respect to the international, tiered monitoring strategy and including country-specific recommendations.

These country profiles shall serve as improved basis for effective planning and implementation of future glacier monitoring activities. The assessment has already been used for consulting national, regional and local institutions in the Caucasus region and in Central Asia, Mongolia, and Afghanistan. The country profiles have been elaborated within the programme on Sustainable Mountain Development for Global Change (SMD4GC) that was initiated to support mountain populations to increase their resilience in the context of global climate change. The overall aim is to enhance and promote sustainable mountain development by launching policy instruments at various levels and by implementing knowledge-based activities.

The assessment procedures as well as selected national and regional examples will be presented on the poster.