



# ADAPTATION AT ALTITUDE

.....  
Taking Action in the Mountains

## Inter- and transdisciplinary mountain data across Central Asia: Identifying user requirements and access preferences

*A joint workshop coordinated by GEO Mountains*



**University of  
Reading**



**INSTITUTE OF GEOGRAPHY**

Science Committee of the



**AND WATER SECURITY**

Ministry of Education of the RK

**Supported by:**



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

**Swiss Agency for Development  
and Cooperation SDC**

**Organizers:** James Thornton, Mountain Research Initiative & GEO Mountains  
([james.thornton@unibe.ch](mailto:james.thornton@unibe.ch))

Carolina Adler, Mountain Research Initiative & GEO Mountains  
([carolina.adler@unibe.ch](mailto:carolina.adler@unibe.ch))

Maria Shahgedanova, University of Reading & Lead of the MRI's  
Mountain Observatories Working Group  
([m.shahgedanova@reading.ac.uk](mailto:m.shahgedanova@reading.ac.uk))

Igor Severskiy, Institute of Geography and Water Security, Republic of  
Kazakhstan & Central Asian Regional Glaciological Centre under the  
auspices of UNESCO (CARGC)  
([iseverskiy@gmail.com](mailto:iseverskiy@gmail.com))

Alexander Yegorov, Institute of Geography and Water Security, Republic of  
Kazakhstan  
([yegorov.alexandr@mail.ru](mailto:yegorov.alexandr@mail.ru))

**Date:** 28 October 2021

**Location:** Remote, via Zoom

**Duration:** 2.5 hours

**Language:** English, Russian

**Key Words:** *mountain observations and data; interdisciplinary, in situ; remote sensing; GEO Mountains; information gaps*

**Abstract:**

The discoverability, accessibility, and usability of a wide range of environmental and socio-economic data are crucial prerequisites to both the advancement of science and a range of more practical applications related to sustainable development, climate change adaptation, and natural hazard mitigation in the world's mountainous regions.

By drawing upon the contributions of regional experts including research scientists, practitioners, local and regional authorities, and other stakeholders, and acknowledging all previous and ongoing efforts and initiatives in the region, this workshop sought to develop a broad, interdisciplinary, and systematic understanding of the current "data situation" across a range of relevant disciplines in the Central Asian region. It was co-convened by the Mountain Research Initiative (MRI), GEO Mountains, the University of Reading, and several local partner organisations under the umbrella of the Swiss Agency for Development and Cooperation's Adaptation at Altitude Programme (<https://adaptationaltitude.org/adaptation-at-altitude>).

Following two introductory presentations, the principal objective of the workshop was addressed initially via open discussion. The following questions are of particular interest:

1. What requirements do users of mountain data have with respect to online database(s)/portal(s) through which mountain data is made searchable and downloadable?
2. Which organizations and institutions are major providers of relevant data in the region?
3. What disciplines / regions currently benefit from a good or satisfactory coverage and availability of data (i.e. examples of good practice)?
4. What are the major gaps in terms of data discoverability, accessibility, and usability that are currently experienced by data users?

Thereafter, attendees were invited to complete a survey to allow information to be captured in a more systematic fashion. Since this workshop is one of a series that GEO Mountains is conducting across the world's mountains in conjunction with regional partners, the survey element specifically intends to ensure that comparisons can be made between these regions. This should ultimately enable us to target our subsequent efforts to improve the situation most appropriately, i.e. by focussing on disciplines / regions where critical information is most lacking.

More generally, through this dialogue, crucial data-dependent applications and efforts were identified and strengthened. For instance, we expanded our data and resource inventories (currently under development) with contributions from the region and identified opportunities collaborations and exchanges that support the overlapping objectives of local stakeholders, the MRI, GEO Mountains, and local partner organisations.

#### Agenda:

<i>Welcome, introductions &amp; workshop aims</i>	MRI & GEO Mountains
<i>Monitoring mountains in Central Asia: The current state of knowledge</i>	Maria Shahgedanova, University of Reading
<i>The GEO Mountains data inventories</i>	James Thornton, MRI & GEO Mountains
<i>Mountain Observatories: The concept and examples from Central Asia</i>	Maria Shahgedanova (MRI Mountain Observatories Working Group Lead)
<i>Open discussion of the questions</i>	All
<i>Begin the survey</i>	All
<i>Summary and identification of next steps</i>	All

#### Registrants: 57

<b>First Name</b>	<b>Last Name</b>	<b>Institution</b>	<b>Country</b>
Asel	Abdullayeva	KazNU named by al-Farabi	Kazakhstan
Orif	Amirzoda	Institute of water problems, hudropower	Таджикистан
Desale Kidane	Asmamaw	Ghent University	Belgium
Abdul Haseeb	Azizi	Bonn University, ZEF	Afganistan
Martina	Barandun	Institute for Earth Observation, EURAC research	Italien
Giacomo	Butte	ICRC	Switzerland
Kevin	Casey	DAI	United States
Jess	Delves	Global Mountain Safeguard Research (GLOMOS) - UNU-EHS/Eurac Research	Italy
TANMAY	DHAR	Uttaranchal University	India
Andrei	Dörre	Freie Universität Berlin	Germany
Stefan	Fugger	WSL	Switzerland

Martin	Hoelzle	University of Fribourg, Department of Geosciences	Switzerland
Christian	Huggel	Univ of Zurich	Switzerland
Joeri	Jacobs	Court of Audit	Netherlands
Nidhi	Kalyani	National Institute of Hydrology	India
Abdulhamid	Kayumov	State Scientific Institution «Center for Research of Glaciers of the National Academy of Sciences of the Tajikistan»	Tajikistan
Kabutov	Khusrav	Центр изучения ледников НАНТ	Tajikistan
Azamat	Madibekov	Institute of Geography and water security	Казахстан
Ahmad	Mahdavi	University of Tehran/ and Sustainable agriculture and environment	Iran
Tamara	Mathys	Universität Fribourg	Schweiz
Enrico	Mattea	University of Fribourg	Switzerland
Ana	Mellado	University of Granada	España
Evan	Miles	Swiss Federal Research Institute WSL	Switzerland
Bolot	Moldobekov	Central-Asian Institute for Applied Geosciences	Kyrgyz Republic
Ainur	Mussina	Al-Farabi KazNU	Kazakhstan
Sergey	Myagkov	Hydrometeorological Research Institute	Uzbekistan
Hofiz	Navruzshoev	Центр изучения ледников Национальной академии наук Таджикистана	Таджикистан
Laura	Niggli	University of Zürich	Switzerland
Pimankina	Nina	Central Asian Regional Glaciological Center	Kazakhstan
Azamat	Osmonov	CAIAG	Kyrgyzstan
Barsha	Parajuli	Environment and Household Energy Services	Nepal
Zhanar	Raimbekova	Al-Farabi Kazakh National University	Kazakhstan
Timur	Sabitov	National University of Uzbekistan	Uzbekistan
Zarina	Saidaliyeva	University of Reading	Kazakhstan
Rysbek	Satylkanov	Tien Shan High Mountain Research Center under the Institute of Water Problems and Hydro Power of the National Academy of Science Kyrgyz Republic	Киргизия
Eleonora	Semakova	Ulugh Beg Astronomical Institute of the Uzbekistan Academy of Sciences	Uzbekistan
Maria	Shahgedanova	University of Reading	United Kingdom
Ted	Shepherd	University of Reading	UK
Dhanendra	Singh	HNB Garhwal university	India
Turebek	Tokmagambetov	Central Asian Regional Glaciological Centre as a category 2 Centre under the auspices of UNESCO	Kazakhstan
Atabek	Umirbekov	Leibniz Institute of Agricultural Development in Transition Economies (IAMO)	Germany
Atabek	Umirbekov	Leibniz Institute of Agricultural Development in Transition Economies	Germany
Gulomjon	Umirzakov	National University of Uzbekistan	Узбекистан
Alexandr	Yegorov	Central Asian Regional Glaciological Centre as a Category 2 Centre under the auspices of UNESCO	Kazakhstan
Абрахамн	Ажикеев	КыргызГидромет	Кыргызстан
Абдрахман	Ажикеев	Кыргызгидромет	Кыргызстан
Фахриддин	Акбаров	Центр гляциальной геологии Института геологии и геофизики им. Х.М. Абдуллаева	Узбекистан
Виктор	Благовещенский	Институт географии и водной безопасности, Министерство образования и науки	Казахстан
Лидия	Карандаева	Научно-исследовательский гидрометеорологический институт (НИГМИ) Узгидромета	Узбекистан

Лариса	Когутенко	Казахстанско-Немецкий Университет	Казахстан
Петров	Максим	Институт Геологии и Геофизики при ГОСКОМГЕОЛОГИИ РУз, Центр	Узбекистан
Петров	Максим	Институт Геологии и Геофизики при ГОСКОМГЕОЛОГИИ РУз, Центр	Узбекистан
Халимжон	Мамиров	Центр Гляциальной геологии Институт Геологии и геофизики им. Х.М.Абдуллаева	Узбекистан
Сергей	Мягков	НИГМИ	Узбекистан
Игорь	Северский	Central Asian Regional Glaciological Centre Under the Auspice of UNESCO	Казахстан
Жасулан	Такибаев	Центральноазиатский региональный гляциологический центр под эгидой ЮНЕСКО (CARGC)	Казахстан
Рыскул	Усубалиев	Центрально-Азиатский институт прикладных исследований Земли	Кыргызская Республика

### Key points from discussion:

- The region has good data coverage for glaciology, hydrology, and meteorology, but lacks socio-economic, ecological, and biological data.
- Despite extensive monitoring in the 1950s-1980s, much historical data has yet to be digitized.
- The 1990s-2000s suffered from interruptions in data collection.
- In terms of mountain ranges, the Northern and Central Tien Shan have better data coverage than that of the Pamir and Pamir-Alay.
- Sharing data among researchers, institutions, state agencies, and local governments is challenging.
- It is important to connect short-term research projects to long-term monitoring programs and find funding mechanisms to enable such transitions.
- Users may struggle to discover available data due to paywalls, language barriers, or lack of standardization.

### Outputs:

Participants responded to the question “What do you consider to be the main barrier(s) to the wider generating, sharing, and re-use of interdisciplinary data across the mountains of Central Asia?” [interactively](#).

Data collection for the regional data needs survey, [Inter- and transdisciplinary mountain data across Central Asia: Identifying user requirements and access preferences](#), is ongoing. Survey results will be appended in due course.

News articles on the GEO Mountains and MRI websites describe the workshop in greater detail.

A recording of the workshop is available on request. Please contact [geomountains@mountainresearchinitiative.org](mailto:geomountains@mountainresearchinitiative.org).