Water and the cryosphere

The cryosphere in Central Asia

Melt water from snow and glaciers runs hydropower turbines ... ... contributes to crop irrigation ... ... and the supply of drinking water

Energy Irrigation Cities Ecosystems

Danger from glacial lakes, avalanches Home to flagship species

The seasonal melting of the cryosphere contributes to peak flow in summer

Energy Irrigation

Contribution of glacial melt water to upstream river flow

Excessive water supply due to intense melting Lack of water supply in summer

Project partners and funders

Participating countries

1800 km²

15500 km²

Syr Darya

Amu Darya

Tien Shan

The Pamirs

Today

The future

Change in precipitation from snow to rain

Degradation of mountain permafrost

Shift of snow and glaciers to higher elevations

Melting starts earlier and faster

1970 2020

Reduction in glacier area and volume -30%

What is the cryosphere?

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Participating countries
Gaps in knowledge and monitoring of the cryosphere

Key elements of cryospheric monitoring

Beneficiaries

Project partners and funders

Participating countries
The project in a nutshell

**Duration**
2022–2026 (planned)

**Budget:**
- GEF budget: $6 million
- Co-financing: $13 million

**5 countries**

**25 project partners**

**EXPECTED RESULTS**

- Better knowledge of the climate’s trends and impact on the cryosphere
- Improved science and policy links and cooperation
- Regular glacier monitoring and regional exchange
- Adaptation to climate change in glacier-dependent areas
- Public and political interest in glaciers

**Project activities and outcomes**

1. **Knowledge and information database**
   - Diagnostic analysis (DA): changes in the cryosphere
   - National databases on the cryosphere
   - Glacier vulnerability and hazards
   - Climate, glacial and water scenarios

2. **National and regional cooperation and centres**
   - National action plans (NAPs)
   - Regional Strategic action program (SAP)
   - Inter-agency cooperation
   - National and regional centers and forums

3. **Capacity for cryospheric monitoring**
   - The regional glacier monitoring protocol
   - Regional knowledge exchange and training
   - National cryospheric monitoring programs
   - Assessment and forecasting of the climate’s impact on the cryosphere

4. **Training and demonstrating adaptation to climate change**
   - Trainings
   - Projects in 5 countries

5. **Public awareness and engagement**
   - Virtual reality tours of glaciers
   - The project website, linked to IW:LEARN
   - Events and conferences
   - Stakeholder engagement

**Project partners and funders**

- UNESCO
- Global Environment Facility

**Participating countries**

- Kazakhstan
- Kyrgyzstan
- Tajikistan
- Turkmenistan
- Uzbekistan

(Planned)
Two glacier projects, many synergies

Focus on climate-sensitive mountain environments
Climate change as a key threat
Implemented by UNESCO
Supported by science
Targeting vulnerable communities

Cryosphere

Glacier science and monitoring capacity
Impacts of climate change, strategic and local measures

Glacial Lake Outburst Floods

Adaptation Fund
Early warning and risk reduction

Cooperation and engagement of different science and policy actors and communities

Consideration of the cryosphere and glacial hazards in policy, international investment and global science

High level statements and initiatives
International investments and connectivity
Global climate and glacier science

Project partners and funders
United Nations Development Programme
Global Environment Facility
ADAPTATION FUND

Participating countries
Kazakhstan
Kyrgyzstan
Tajikistan
Turkmenistan
Uzbekistan