

Transboundary adaptation in mountain ecosystems

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Greetings from the Rocky Mountains, Colorado, USA



- Climate hazards and impacts in mountain ecosystems
- Examples of transboundary capacity building for adaptation in mountain ecosystems:
 - USAID Climate Change Resilient Development High Mountain Adaptation Partnership
 - USAID Smart Waters Project
- Conservation is adaptation

Climate hazards and impacts in mountain ecosystems

- Mountain ecosystems are exposed to climate hazards that can create multiple impacts
 - Extreme precipitation (rain and snow)
 - Landslides
 - Avalanches
 - Floods
 - Increasing average temperatures
 - Earlier snowmelt
 - Changes in timing and volume of streamflow
 - Glacial lake outburst floods (GLOFs)
 - Drought
 - Wildfires
 - And others

Climate hazards and impacts in mountain ecosystems



1. Coal Creek Canyon FPD; 2. CODOT.gov; 3. courtesy photo

Climate hazards and impacts in mountain ecosystems



1. Glacial lake outburst flood, Bhutan: weADAPT; 2. Avalanche slide path, Colorado: courtesy photo



Climate hazards and impacts in mountain ecosystems



Flood impacts on infrastructure. Kyrgyzstan (Photo: UNDP)

USAID High Mountains Adaptation Partnership (HiMAP)

- USAID Climate Change Resilient Development (CCRD) Project (2011-2015)
- HiMAP built capacity for managing climate impacts in high mountain communities
 - Exchange between Nepal's practitioners, policymakers, donors, and Peru's engineers to build knowledge about managing risks of GLOFs
 - Writing workshops to develop ideas for additional research
 - Small grants for scientists to study high mountain ecosystem climate risks and adaptation needs
 - Glacial lake assessments
 - Capacity building and support for Local Adaptation Plans of Action (LAPAs)

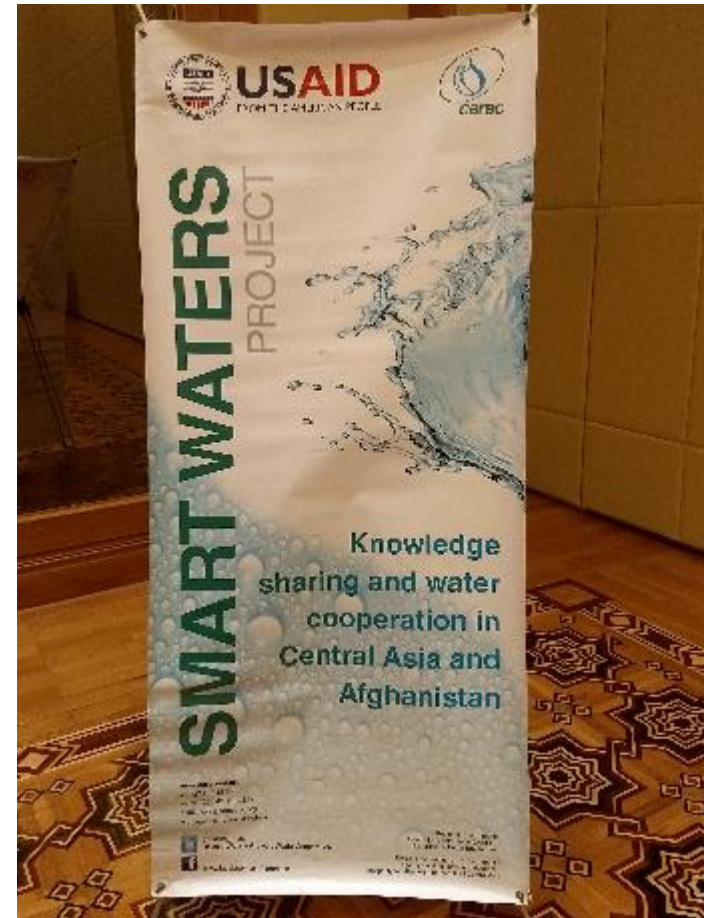
USAID High Mountains Adaptation Partnership (HiMAP)



Photos: USAID CCRD Compendium

USAID Smart Waters Project

- Since fall of Soviet Union, more than 200 rivers divided by international borders
 - Conflicts between upstream and downstream countries
- Smart Waters implemented by Central Asia Regional Environmental Center (CAREC) (2015-2020)



USAID Smart Waters Project

- Transboundary water management in five Central Asia Republics and Afghanistan
 - Training and capacity building for water managers
 - Dialogue among water organizations and academia
 - Scholarships for Central Asia master's students in Integrated Water Resources Management (IWRM)



Smart Waters scholarship IWRM students. (Photo: USAID)

Conservation is adaptation



1. Agroforestry in Nepal (World Agroforestry); 2. River ecosystem (WWF); 3. Rainwater harvesting, Peru (Inter Press Service); 4. Rangeland conservation Central Asia (FAO)