

## **Mountains and Water Security in the Asia-Pacific Region**

### **Background and challenges**

Mountains are the Earth's natural freshwater reservoirs. They store an immense amount of water and gradually release it to support lives and livelihoods downstream. More than half of humanity relies on freshwater from mountains to grow food, produce electricity, sustain biological diversity and provide drinking water. Glaciers, ice fields, and snow packs provide important water storage facilities.

According to the report of the UN Secretary-General prepared for the sixty-eighth session of the UN General Assembly in September 2013, there is a need to ensure the ecological health and the economic and social improvement of mountain areas, both for the sake of mountain inhabitants and for population in lowland areas. Despite increased recognition of mountain issues, significant constraints remain to attaining sustainable development in mountain regions, exacerbated by climate change and increase in urbanization and migration.

The UN Conference on Sustainable Development (Rio+20) in 2012 was also an important opportunity for Sustainable Mountain Development to feature prominently on the global agenda. Three paragraphs on mountains were included in 'The Future We Want' inviting States to strengthen cooperative action by building up on existing arrangements, agreements and centers of excellence.

In this context, ICIMOD would like to propose an initiative on Mountains and Water Security at the Asia-Pacific Water Forum.

We are convinced that mountain people and downstream populations in the Asia-Pacific countries are highly vulnerable to climate change threats, and thus the climate change impacts in the mountains need attention in the APWF agenda. For example, the magnitude and scope of the problems related to climate change and water resources in the Hindu Kush-Himalayan region may have a catastrophic impact on the livelihoods of the more than 1.3 billion people living in the ten river basins in the region—problems both in terms of water stress and water-related hazards, the frequency and intensity of which are expected to increase as a result of climate change. While the water availability per person in two of the HKH countries, India and Pakistan is already below the critical water stress level of 1,700 cum, it is quickly approaching that level in a third one, Afghanistan and, further west in Tajikistan, in the Central Asian region as well.

The problem is further exacerbated because the HKH countries are less resilient compared to other Asia-Pacific countries. According to AWDO 2013, while Bangladesh ranks eleventh among the Asia-Pacific countries for potential flood-related hazards, after accounting for vulnerability—mathematically interpreted as the reciprocal of resilience—it ranks fourth for flood-related risks, reflecting to its low resilience to floods. While Pakistan ranks fifth for potential hazards due to meteorological droughts, it ranks first for drought-related risks, again reflecting its low resilience to droughts.

## **Topics to be covered under the initiative**

ICIMOD would like to cover three topics under its proposed initiative on Mountains and Water Security:

- Climate change and water availability: The important question is how much water is going to be available in the future, and what adaptation measures can be taken to reduce water stress in lean seasons.
- Climate change and water-related hazards: The important question is how emerging technologies and strengthened regional information systems could be utilized for enhanced community resilience and adaptation.
- Upstream-downstream benefit sharing: The important question is how institutional mechanisms can be developed for sharing benefits of water management initiatives, for example, water storage capacity development, between the mountain people living upstream and the beneficiaries downstream.