

**ICIMOD's initiatives in adaptation related to water
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Climate Change Impacts on the Water Resources of the Indus Basin: Capacity Building, Monitoring and Assessment for Adaptation

Description:

The Indus basin initiative has been developed to help provide the basic information needed to support wise decision-making and planning to ensure water availability. In the long-term, the initiative aims to contribute to a safe environment and reliable access to water for household consumption, food production, power generation and other sectoral usages in the Indus Basin. The immediate aim is to support detailed monitoring of snow, ice and water resources in the region through capacity building and establishment of appropriate hydrometeorological systems for monitoring. The information gathered is intended to help inform policy and decision makers, as well as scientists, and the public at large, in the region and beyond.

Results achieved:

The initiative is ongoing and its first phase will last until June 2011.

Challenges and Lessons Learned: regional partnership, information sharing

Local Responses to Too Much and Too Little Water in the Greater Himalayan Region

Description:

The aim of this study was to document and assess the strategies that mountain people use to cope with and adapt to variations in available water resources induced by climate change. The results were based on the findings from five case studies undertaken in four countries in the greater Himalayan region (China, India, Nepal, and Pakistan). The case studies identified and documented local responses to flood hazards and water stress as part of the projects, 'Too much water, too little water – adaptation strategies to climate-induced water stress and hazards in the greater Himalayan region' and 'Himalayan climate change impact and adaptation assessment (HICIA)'.

Results Achieved:

- A book titled "Local Responses to Too Much and Too Little Water in the Greater Himalayan Region" documenting the results of this study Published in 2009 by ICIMOD.
- A scoping study completed to form a strong basis for the next phase of the HICIA project

Challenges:

Scaling up of the case studies

Linking bottom-up (community based study) with top down (policy review) approaches

Lessons Learned:

- Livelihood diversification emerges as a central adaptation strategy but support through institutions and policy is needed for long-term sustainability.
- Social networks and local institutions play a vital role in enhancing adaptive capacity
- Cultural norms affect people's adaptive behavior; despite being deeply rooted, they can shift over time in response to the needs.

- With good governance and planning that takes into account climate risk, infrastructure development can contribute to enhancing water security and flood management.
- Factors enabling adaptation may also be constraining factors.
- Adaptation requires striking a balance between short-term priorities and long-term gains.
- National institutions and policies strongly affect people's ability to adapt at the local level, but the national level is rarely informed by adaptation concerns and priorities.

Mountain Initiative for Climate Change

Description:

The Mountain Initiative for Climate Change Adaptation in Mountain Regions was initiated by the Government of Nepal after the Prime Minister made a proposal to this effect on the sideline of the Copenhagen conference. ICIMOD has been providing technical support and backstopping. The initiative intends to provide a framework within which mountain countries in collaboration with mountain specialized global and regional agencies can work together to understand better the changes occurring in mountains and comprehend the challenges they face as a result of climate and global changes. The Mountain Initiative will also advocate for better attention and action in order to reduce the risk and build resilient mountain communities, while maintaining the vital mountain-based ecosystem services for the welfare of the billions of people living downstream.

Results Achieved:

- On 23 - 24 September 2010, the "International Expert Consultation Meeting: Mountain Initiative on Climate Change" was organized jointly by the Ministry of Environment, Govt. of Nepal (MOE/GON) and ICIMOD in Kathmandu, Nepal. It was attended by high level policy and decision makers, national experts from 15 countries involved in the UNFCCC process, and representatives from academia, international organizations, and development partners. The purpose of this meeting was to identify strategic issues and topics that are of significant importance to the global mountain community in the context of climate and global change.
- In December 2010, published "Mountain Initiative Status paper: Preparing for the United Nations Framework Convention on Climate Change (UNFCCC) and Rio+20 processes". This document identifies strategic issues and topics that are of significant importance to the global mountain community in the context of climate and global change.
- In September 2010, a framework paper for the Mountain Initiative of the Government of Nepal titled "Mountains of the World – Ecosystem Services in a Time of Global and Climate Change: Seizing Opportunities – Meeting Challenges" was prepared by ICIMOD and the Government of Nepal, Ministry of Environment. This paper provides background information and a framework for discussing mountain issues in the context of the current climate change dialogue.

Challenges: Adaptation Options for the Mountains:

- The five significant topics for climate change adaptation in mountainous regions are: Adaptation programs in the mountains, Global and regional responsibility for black carbon, Maintenance of forests, agriculture, and rangelands, Payment for environmental services (PES) and Country positions on the Mountain Agenda.
- The five strategic issues to set the stage for discussing the five significant topics mentioned above are: Revisiting the Mountain Agenda from a climate change perspective, Research related to the cryosphere is of global importance, Adaptation to climate change requires regional transboundary answers, The call for additionality of adaptation measures

requires careful, country-wise analysis and proposals and Funding instruments need a more specific mountain focus.

Future Research Plans:

ICIMOD plans to orient its research programme to identify 'low or no-regret actions' and climate resilient response measures to adapt to certain and high confidence climate change impacts especially on the vulnerable communities and areas in the HKH Mountains. Based on the quantitative and qualitative assessment, it will describe various possible adaptation options and strategies to change the currently prevailing coping strategy, autonomous or local level adaptation at community level to more landscape-based and river-basin based transboundary adaptation measures with a clear consideration of mountain perspective framework defined by fragility, marginality, multi-level vulnerability and inaccessibility. It will also discuss the suitability of mitigation measures such as REDD+ which have an adaptation co-benefit. The research will elaborate on suitable strategies and opportunities for embarking on climate resilient development strategies and options specific to the region with policy and governance implications. For example, closer integration of satellite-derived precipitation and snow-covered products with hydrological modeling to improve the accuracy and lead time of flood forecasts in transboundary river systems and improved co-operation in water resources management in a transboundary framework will be studied as some example of viable options. Regional climatic implications of mitigating region's black carbon inputs with, research-based solutions, policy measures and community-based programming solutions will also be included in our research and outreach programme.