

POLICY BRIEF:
**ADDRESSING CLIMATE CHANGE ADAPTATION NEEDS
IN THE HINDU KUSH HIMALAYAS**



UNDERSTANDING ADAPTATION NEEDS

In the Hindu Kush-Himalayan (HKH) region identifying climate change adaptation needs of the population requires focus on water, ecosystems and livelihoods as interactive systems. The majority of populations in the region and its downstream areas depend on water supply and ecosystem services that the mountains provide. Both livelihoods and agriculture production are at risk from climate change. Recent years' changes in climate, land use, and population dynamics¹ have exacerbated people and ecosystem vulnerability that needs to be assessed and policies proposed to minimise them. A global climate change vulnerability survey undertaken by Mapplecroft has identified the high vulnerability of the HKH countries (fig 1).

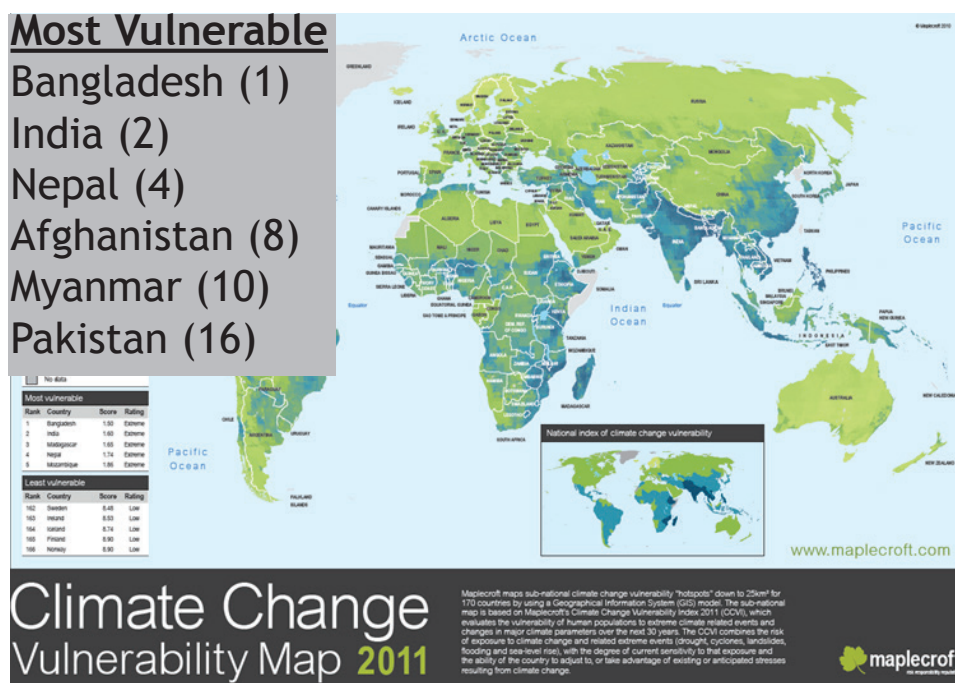


Figure 1: A maplecroft published climate change vulnerability map of 2011 shows the high vulnerability of Himalayan region requiring immediate action (www.maplecroft.com).

¹ Jodha, 2008.

CORE ISSUES AND CHALLENGES

The adaptation needs revolve around the issues of knowledge about scale of climate change vulnerability of mountain ecosystems, policy, institutions and finance. Meeting adaptation needs require meeting a range of challenges. They include:

- i) Generating and dissemination of knowledge specific at individual household, community and national levels;
- ii) Engaging policy makers, managers and vulnerable community;
- iii) Mainstreaming adaptation into development sector (e.g agriculture), and disaster risk management, and,
- iv) Strengthening institutions.

Enhanced capacity institutions must oversee the tasks of prioritising, implementing and monitoring of adaptation activities.

URGENCY OF TACKLING ADAPTATION NEEDS

Adaptation needs arise from the urgency to address the impacts of climate change on an individual or system. In recent years, the growing volumes of research on climate change impacts in the HKH helps identify and, to some extent, quantify climate change vulnerability of the people and their livelihoods. Places with high vulnerability underscore the need to pursue strategies for adaptation urgently. The trend of climate change is higher in the mountains of the HKH region than in plains. In the HKH region 'net' or 'residual' impact from climate change is higher given region's higher poverty level than the plains². Climate change has exacerbated risks of already vulnerable ecosystems, water, environment that threatens livelihoods of millions of populations still reeling poverty. Adaptation thus emerges as an urgent strategy.

The NAPA was formulated for prioritizing urgent and immediate adaptation needs. However, equal importance should be given to long term adaptation needs that go beyond NAPA. For this, one approach would be regional level cooperation in adaptation e.g. 2011 Bhutan Climate Summit, Mountain alliance initiative, and Himalayan climate adaptation programme (HICAP initiative) of ICIMOD.

APPROACH TO ADDRESS ADAPTATION NEEDS

A simple and practical tool for identifying and prioritising adaptation needs should focus on the elements of resilience, adaptive capacity and vulnerability; within the two main pillars of disaster risk management and environmental

²Hunzai, K; Gerlitz, JY; Hoermann, B (2011): *Understanding Mountain Poverty in the Hindu Kush Himalayas - Regional Report for Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal and Pakistan*. ICIMOD, Kathmandu; &

Macchi, M; Gurung, AM; Hoermann, B; Choudhary, D (2011) *Climate variability and change in the Himalayas: Community perceptions and responses*. Kathmandu: ICIMOD.

changes. The overlapping circles (in the figure below) can help conceptualise

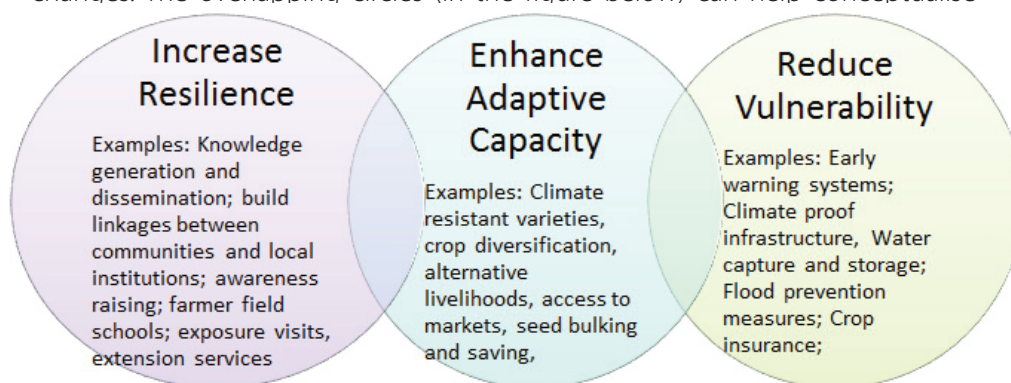


Figure 2: A three-way approach to address adaptation needs in HKH context³

MAJOR GAPS IN RESPONDING TO ADAPTATIONS NEEDS

1. Inadequate efforts to create synergies among institutional stakeholders:

Given the cross-cutting nature of climate change adaptation issues, there is a clear need of constructive engagements of stakeholders of diverse sectors from the HKH region and beyond. They are crucial for creating synergies to address adaptation needs through sharing of knowledge, transferring technologies, filling data gaps and prioritising adaptation needs at different levels.

2. Private sector not yet fully on board: Similar to development, addressing adaptation issues need to engage all actors including government, private sector, civil society and local communities. In the present context, active roles of private sector seems missing from the current adaptation discourse. The roles of private sector are particularly important in promoting insurance policies and addressing issues of losses and damages.

3. Poor support to local institutions: Climate change adaptation needs are the primary concerns of local communities as they bear larger stakes. Building adaptive capacity and meeting adaptation needs, therefore, can be addressed only through their active participation and allowing their institutions to play lead roles so that they have easy access. This is possible only through strengthening local institutions through knowledge, technologies and finances. A sustained support mechanism to the local institutions is the answer.

4. Persistent knowledge gap: There has been a marked improvement in knowledge and information productions; yet validating, updating and sharing of knowledge on climate change in the HKH region is still a gap. Poor understanding limits responses. Impacts on natural resources and ecosystem services are issues linked with biodiversity losses, and forest degradation. Difficulty in sharing the existing data and information, and disseminating

³Adapted from Macchi, M; Gurung, AM; Hoermann, B; Choudhary, D (2011) *Climate variability and change in the Himalayas: Community perceptions and responses*. Kathmandu: ICIMOD

knowledge are highlighted as major issues. Implications of rapid temperature rise and changes in precipitations at micro level to future hydrologic patterns remain uncertain. This has jeopardized efforts to plan and implement adaptation schemes specifically at local level where adaptation needs are more urgent. Unmonitored flows of rivers and streams in mountains not only pose risks of water hazards, but also constrain planning adaptation measures. The flash flood that occurred in spring 2012 along the Seti River of Kaski District in Nepal is an example of how limited knowledge exists with the society to remain prepared to the surprising nature of hazards that pose a major hindrance for addressing risks.

BARRIERS AND ACTION PLANS

The barriers and action plans listed below are drawn mainly from an online survey as action plans to remove the barriers and are categorised under four themes—knowledge, policy, institutions and finance. These thematic categories, however, are not exclusive and only for clarity purposes. Efforts are made to cover the issues and action points as suggestions based on contemporary review of literatures and public discourses. Underlying issues and suggested activities are of cross-cutting nature.

GENERATING STRATEGIC KNOWLEDGE

Barriers	Examples of actions to remove barriers
<ul style="list-style-type: none"> • Limited scientific understanding of the transboundary impacts of climate change (e.g. combined downstream impact of glacier melt and change in rainfall pattern). • Uncertainties on climate risks, projections, and impacts are still too high. • Specific roles and origins of black carbon and other climate forcers in HKH region yet to be known. • Knowledge on vulnerability of mountain micro systems still eluding. • Lack of clear understanding on adaptation needs and planning tools. 	<ul style="list-style-type: none"> • Facilitate exchanging information and knowledge aimed at strengthening informed decision making, particularly at the local governance level, to reduce climate change vulnerability, enhance adaptive capacities and resilience. • Refine and downscale climate models to capture scenarios at regional scales; • Develop climate database to strengthen community based facilities for monitoring hazards • Design innovative tools and guidelines for monitoring compliances on adaptation • Establish knowledge sharing platforms in the forms of networks, symposiums, workshops and writeshops • Support operating learning forums and resource pools • Encourage young graduates to conduct scientific research • Develop tools and educational materials on adaptation options.

HARMONIZING POLICIES

Barriers	Examples of actions to remove barriers
<ul style="list-style-type: none"> Limited experiences with implementation of joint adaptation projects (e.g. community-based integrated water resource management) Knowledge gaps lead to institutional overlaps and fragmentation. Multiple and disjointed policies and processes (e.g. national vs local, region wise vs sector wise, adaptation vs resilience building, and ecosystem vs community focus). 	<ul style="list-style-type: none"> Define and mainstream adaptation needs Develop adaptation guidelines for compliance policy. Refine vulnerability assessment tools and methodologies for specific sector, region, community, and infrastructure (link future climate change with current climate risks and other change drivers). Engage stakeholders to identify adaptation needs at households, community and watershed levels. Promote good practices by building on existing knowledge and practices. Sensitise policy planners with adaptation planning tools Use planned adaptation strategies to enable autonomous adaptations

STRENGTHENING INSTITUTIONAL LINKAGES

Barriers	Examples of actions to remove barriers
<ul style="list-style-type: none"> Limited institutional arrangements for convergence of relevant policies and programmes (e.g. disaster risk pooling) Limited adaptation capacity of local institutions e.g. knowledge, mandates, resources at micro and meso levels Poor vertical and horizontal linkages of institutions create hindrances to enhance adaptive capacity. No conducive environment for creating synergies 	<ul style="list-style-type: none"> Build strategies to enhance capacity and accountability of local and sub-national level institutions to create synergies with ongoing research and development initiatives. Identify points of leverage to build synergies on existing initiatives such as India's National Mission on Sustaining the Himalayan Ecosystem (NMSHE), Nepal's LAPA, ICIMOD's HICAP, and Bangladesh's early warning systems and disaster risks management strategies. Draw lessons from the past to mainstream adaptations into development. Example includes the experiences on application of climate change adaptation tool in national development plan by of National Planning Commission of Nepal. Facilitate regional cooperation and knowledge platforms on climate adaptation issues

MOBILIZING FINANCES

Barriers	Examples of actions to remove barriers
<ul style="list-style-type: none"> • Lack of sustainable sources for climate financing at local level. • Inadequate mobilizations of local resources to reduce climate risks • Roles of private sectors' not recognised adequately. • Climate funds not reaching to the community levels. • International commitments to offer climate funds to developing countries remained unfulfilled. 	<ul style="list-style-type: none"> • Enhance efforts to create mechanisms for sustainable climate financing to vulnerable groups or systems at micro-meso scales. • Develop policy to mainstream adaptation activities into development programmes. • Strategise tracking international climate finance negotiations • Bring the private sectors on board to engage them play their roles through market based mechanisms. • Identify and promote innovative actions for financing climate resilience socio-economic systems at different scales.

WAY FORWARD

1. Think of sustained systemic approach to respond to adaptation needs:

It is well established by now, that the people of the HKH region are among the first to experience adverse impacts of climate change of high intensity. The emerging impacts on mountains resources and people's livelihoods are clear indications for taking forward the adaptation policy with an urgent priority at local, national and regional levels among the HKH countries. Sustained systemic and phased approaches are essential to address the diverse yet urgent concerns amid unfolding climate uncertainties. Strengthening of support services, particularly in regard to technical outreach and extension services, input sourcing and markets to enhance adaptive capacities and long-term resilience is equally essential.

2. Make community institutions entry points: It is crucially important to address adaptation needs at local level. With this, the focus goes on reducing vulnerability and strengthening local level adaptations through community-led processes, assimilating new knowledge, and promoting local innovations, and practices. Roles of development and research agencies are vital to bring in smart and efficient technologies, tools and methodologies in support of building adaptive capacity of the local institutions.

3. Invest on building human capacity: Mountain communities can benefit from modern day mitigation measures and adaptation options which are integrated holistically with local innovations. Researchers and policy makers in the region need to learn more about the different environmental disciplines and technologies and converting this knowledge to make it useful for local actions.

4. Develop knowledge platforms: Collaborations at regional, national and sub-national levels can offer practical solutions to address knowledge gaps and efficiently mobilise the limited resources in the HKH region. The Himalayan University Consortium may serve an example of a learning platform for exchange among universities and the development of curricula on mountain-specific topics

and climate-change vulnerability. SAARC and ICIMOD could be appropriate platforms for mobilizing stakeholders at various scales not only to generate and share knowledge but also to create common understanding among the mountain countries to respond climate change issues more collectively.

5. Develop linkages between adaptation and mitigation: An important part of addressing climate change is dealing with its root causes by reducing greenhouse gas emissions from human activities. Forests and other vegetation have the capacity to absorb carbon dioxide and store it for decades. Furthermore, they also help replace oil and other fossil fuels with wood as biomass energy can reduce emissions of carbon dioxide. Likewise, biochar applications are also reported to be an effective approach to adaptation and mitigation in agricultural fields.

6. Monitor climate negotiations on financing issues: Climate finance has become a crucial issue particularly after the funds pledged by industrial countries in international climate forum rarely received to the climate affected people of developing countries. Further, efforts are underway to find a common view of mountain countries led by Nepal under Mountain Initiative. Likewise the issue of 'loss and damage' was taken up by initiative of Bangladesh under some climate vulnerable countries at the recent Doha Conference. Without a sustained efforts and collaborations of HKH countries, crucial issues such as climate financing are unlikely to get through the steady and cumbersome climate negotiation processes.

7. Strengthen good practice initiatives: A number of successful initiatives in the region are known for bringing a positive impact at a relatively smaller scale or piloting phase. They include among others the Nepal REDD research, Ecosystem based adaptation, Surya project of India, Early warning system of Bangladesh, GLOF mitigation in Bhutan, and ICIMOD's Kailash and Himalayan Climate Adaptation Programme. Though these types of initiatives have successfully established new approaches and contributed in generating relevant knowledge, and, learning for further interventions, their replications and learning are rarely applied in wider scales. Enhancing incomes by diversifying income generation opportunities and encouraging risk management mechanisms to enhance short-term and long-term adaptive capacities are essential for helping out the vulnerable people to get benefits of such practices.

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