CARIAA
Collaborative Adaptation Research Initiative in Africa and Asia

HI-AWARE

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Enduring Vulnerabilities Limit Adaptation

Major climatic and socioeconomic drivers in the HKH Region

About HI-AWARE

HI-AWARE aims to enhance the adaptive capacities and climate resilience of the poor and vulnerable women, men, and children living in the mountains and flood plains of the Indus, Ganges, and Brahmaputra river basins. It seeks to do this through the development of robust evidence to inform people-centred and gender-inclusive climate change adaptation policies and practices for improving livelihoods.

The HI-AWARE consortium is led by the International Centre for Integrated Mountain Development (ICIMOD). The other consortium members are the Bangladesh Centre for Advanced Studies (BCAS), The Energy and Resources Institute (TERI), the Climate Change, Alternative Energy, and Water Resources Institute of the Pakistan Agricultural Research Council (CAEWRI-PARC) and Wageningen Environmental Research (Alterra). For more details see www.hi-aware.org.

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Key Message

Vulnerabilities are shaped by the interaction of both climatic stresses and socio-economic drivers and conditions in the local context. They vary across geographical locations, socio-economic conditions, livelihood patterns and governance structures.

- Poor, socially excluded and marginalized groups are the most vulnerable

Relevant policies, strategies and plans should address differential vulnerabilities

- Greater resources allocations are to be made for the climate affected HKH region and the most vulnerable communities and groups

Introduction

Vulnerability is a set of conditions of people who are at risks created by environmental stresses and socioeconomic drivers of change. Understanding vulnerabilities is a priority of HI-AWARE research. It was done by taking into consideration the perspectives of vulnerable communities, actors and evidences from four river basins: the Indus, Upper Ganga, Gandaki and Teesta. Using the IPCC's framework of vulnerability, capacity and resilience, the study considered the magnitude and frequency of potential climate hazards along with the social drivers in the local contexts to understand levels of vulnerability. Further, it explored the differences in vulnerability and exposure arising from many non-climatic factors facing the poor who are socially, economically, culturally excluded and politically marginalized.

The participatory assessment of vulnerability was conducted in the twelve HI-AWARE study areas covering the four HI-AWARE study basins (the Indus, Upper Ganga, Gandaki and Teesta). The study covered upstream, midstream and downstream sections of each of the river basins. The study teams used a number of tools and techniques of participatory research (PR) considering country contexts and experience of the partners. The main PR tools that were used to engage the communities are: village profile, ethnography, social ranking, social stressor analysis, stakeholder mapping, focus group discussions, case study, and life stories. The experiential knowledge and insights of vulnerable communities were valued in the analysis of drivers, contexts and levels of vulnerability of the people.

Major Findings

There are common macro-climatic factors and stresses such as temperature rise and heat stress, erratic rainfall, drought and changes in seasonal patterns, but the micro-climatic factors and disaster matrix differ across the basins and their upstream, midstream and downstream sections. Heavy rainfall-induced floods, landslides and erosion are common natural hazards in all the river basins. Decreasing snowfall and low rainfall in winter were reported in all the upstream and midstream areas. Communities downstream are facing frequent floods, flash floods, river bank erosion, drought, and drawdown of groundwater. These were particularly reported the downstream part of the Gandaki basin in Nepal and Bihar in India as well as in the lower Teesta basin in Bangladesh.

There are common and location-specific social divers and conditions across the river basins and the study sites. Remoteness and bad communication, concentration of poverty, marginalization and social exclusion, market barriers, lack of access to institutional support and services, poor education and low level of awareness are the major social conditions and drivers of vulnerability in the upstream areas of all the river basins. Caste-based discrimination and social exclusion limit livelihoods options, skill development and access to government resources and services, and thus reduce the adaptive capacity leading to greater vulnerability of the poor in the in the upstream and midstream areas of the Upper Ganga and Gandaki basins. Concentration of poverty, remoteness, lack of livelihood options, food insecurity, water stress, marginalization and social exclusion are the major social drivers in the midstream and downstream areas of all the river basins. Caste-based discrimination and deprivations of indigenous communities were reported in the midstream areas of the Gandaki and Teesta basins. For example, tea workers, pastoral communities and wage earners are suffering from economic crisis and social discrimination in the Teesta valley, which limits their adaptive capacity and resilience to externalities, including climate change impacts.

Combined Effects of Climate Stress and Social Drivers

The combined effects of social drivers (which limit the adaptive capacity of communities) and climate stresses (which are external to the locality and people) affect all sections of society, but the study found that a few social categories and specific groups are most vulnerable across the river basins. In many cases, poor and marginalized groups cannot take up adequate preparedness and adaptive measures due to lack of resources, awareness, knowledge, skills, access to institutions and lack of social mobility and empowerment. Diagram 1 shows the multiple drivers and interactions that lead to differentiated vulnerabilities.

Poor farmers, wage earners, fishers and women-headed households in the floodplains and chars in lower Teesta in Bangladesh suffer from lack of employment, inadequate income, crop loss, food insecurity, and lack of access to water, sanitation and energy, particularly during monsoon floods. Very often, the male members and younger people migrate to the cities for temporary employment and income leaving the women, children and elderly, who suffer the most from both climate stress and social drivers.

Women in general and poor women in particular face inequity and deprivations in family and society due to their weak position, lack of social mobility, greater engagement in reproductive activities, lack of land rights, and poor recognition of their contribution. Further, the gender-based division of labour, wage inequity, cultural and social norms limit their capacity for adaptation and increase their vulnerability.

Conditions leading towards differential vulnerabilities among different social groups (Insights from Teesta Basin)

Policy Actions

The countries in the HKH region have prepared their climate change strategies and action plans. They are in the process of formulating National Adaptation Plans (NAPs). The countries in the region also have policies and strategies for poverty alleviation, social protection and safety nets in line with their commitments to the Sustainable Development Goals. But achievements in poverty alleviation and social development could be undermined by the impacts of climate change. Therefore, it is high time that the NAP process and relevant country strategies consider the climate stresses and social drivers that are increasing vulnerability of the poor, women and marginalized groups living in the river basins.

- Remoteness, high levels of poverty, marginalization, inequality, caste and gender discrimination, and lack of access of the poor and women to resources and services are the major factors for differential vulnerability in the HKH region
- Social protection measures, pro-poor and gender responsive adaptation measures, enhancement of human capital and livelihood diversification are needed for reducing the differentiated vulnerability
- Root causes of poverty and inequity (social exclusion, caste based discrimination and poor governance) and vulnerability are to be addressed by policy and institutional measures, including greater allocation of resources for climate affected regions of the HKH and the most vulnerable communities, and improvement of physical connectivity, infrastructure and market linkages.
- Inter-country cooperation in the context of upstream and downstream linkages to be enhanced for building resilience, addressing disaster impacts and reducing vulnerability.

Conclusion

Communities and vulnerable groups are undertaking coping and adaptation measures with their limited resources and knowledge. They need more resources, motivation, social organization, capacity and technological support for effective adaptation and for reducing vulnerabilities that are always changing due to social drivers. Improved governance and institutional responsiveness to the needs of poorest, women and marginalized groups is required to address the complex situation.

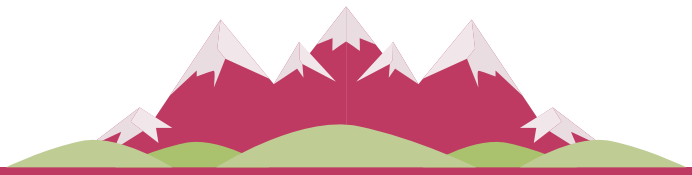
This brief is based on the following HI-AWARE publications:

Dilshad T., et al (2018): *Growing Social Vulnerability in HKH Region* (Forthcoming)

Syed, A., Haq, A., Uzzaman, A., Goodrich, C.G., Mallick, D., Mini, G., Sharma, G., Nyima, K., Mamnun, N., Varma, N.,Singh, P., Ghate, R., Triwedi, S., Sen, S., Bhadwal, S., Hassan, T., Dilshad, T., Gulati, V., Naznin, Z., (2017) *The Teesta Basin: Enough Water for Power and Agriculture for all?*. HI-AWARE Working Paper 12. Kathmandu: HI-AWARE.

Additional supporting references:

IPCC, 2014: *Climate Change 2014: Impacts, Adaptation, and Vulnerability;* Cambridge University Press, Cambridge, United Kingdom



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