

Concept for:

A Comprehensive Assessment of the Hindu Kush Himalayas: Action to Sustain the Global Asset

Rationale:

Mountains occupy 24% of the global land surface area and are home to 12% of the world's population. They provide 40% of global goods and services in the form of water, hydroelectricity, timber, biodiversity and niche products, mineral resources, recreation, and flood control. The Hindu Kush Himalayan (HKH) region is one of the greatest mountain systems of the world that spans over 4.3 million km² covering Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal and Pakistan. The ice reserve of the HKH region is the largest besides the North and South Pole therefore it truly is called the 'Third Pole' of the earth. As the source of ten large Asian river systems, the HKH provide water, ecosystem services, and the basis of livelihoods for a population of more than 210 million people living in the HKH; endowed with rich natural resources, cultural heritage and four global biodiversity hotspots, the region provides indirect benefits to more than 1.3 billion people living downstream; and nearly 3 billion people benefit from the food and energy produced in the river basins that find their source in the HKH. The HKH region is truly a global resource.

In 2007, the Intergovernmental Panel on Climate Change (IPCC) Assessment Report-4 has shown that the climate change is the most prominent force for global change and the HKH region is seen as a 'data gap region' that lacks consistent, long-term data, calling for global, regional, and national attention to fill this gap. During recent years, rapid population growth, urbanization, degradation of natural resources, increased disasters, migration, economic development, and climate change have begun to pose new challenges to traditional livelihood strategies and coping mechanisms in the HKH region. Once self-sufficient people now face dire economic poverty. Mountain populations are, on the whole, poorer than the national average in the HKH region.

After 2007 IPCC AR4 report, International Centre for Integrated Mountain Development (ICIMOD) has started to focus on filling the data gap in the HKH region. Since then, some progress has been made to prepare the HKH level studies specifically relating to biodiversity, cryosphere and climate change. Since 2008 publication on protected areas, policy and practices on biodiversity conservation, glacier and snow cover, eastern

Himalaya climate change synthesis, state of art report on climate change and impacts are available. Although some progress has been made on regional knowledge generation there are significant limitations in the amount of information and evidence to inform policy and practice. Wide-ranging consolidated knowledge is required. A comprehensive assessment of the HKH region is desired which would be used as reference document for baseline, future scenarios, informed policy planning and regional cooperation. This is the genesis and rationale of this proposed comprehensive assessment book on HKH.

Design of the Comprehensive Assessment:

ICIMOD is planning to coordinate the publication of the 'Comprehensive Assessment of the HKH Region: Action to sustain Global Asset' which will be a critical evaluation of the current state of knowledge, understanding the various drivers of change and their impacts, analyses of problems and their solutions, and policy and governance implications. It will be multi-institutional process aimed at generating stimulating ideas on how to manage mountain ecosystems for sustained services for the well being of both mountain and downstream people; to help reduce poverty and food insecurity, reduce disasters, enhance resilience and adaptation, and promote environmental friendly infrastructure development. The knowledge generated will be contributing to the socio-economic prosperity and environmental sustainability. The findings will enable better investment and management decisions for the mountains especially the HKH region in the near future.

The assessment is envisaged to have a broad and diverse partnership of researchers, academicians, practitioners and policymakers using a process that engages networks of partners to produce and synthesize knowledge and elaborate on innovative methods and responses. An assessment, as distinct from a review, will be undertaken for decisionmakers rather than scientists, is driven by specific problem rather than more general scientific curiosity, and requires a clear judgment as well as objective analysis. The target audience of this assessment will be the people who make the investment and management decisions in mountain development, natural resource managers, private sector investors, policymakers and civil societies. In addition, the assessment should aim to inform the general public about important mountain issues so that everyone can help to make better decisions through the political processes in the HKH countries.

The purpose of the assessment is to prepare information and knowledge on (1) global significance of the HKH region, (2) reducing scientific uncertainty on various issues, (3) laying out practical and latest solutions, (4) provide new insights for development of this

region in the changing world, (5) value and conserve already existing ecosystems, cultures, societies, knowledge and distinctively the HKH solutions that are of importance to the rest of the world, and (6) influence policy processes with evidences for sustainable development of the mountains.

The 12 questions defined in 2012 by the core team who envisioned the Comprehensive Assessment presented below. A set of framing questions will be further identified and discussed with policy makers.

1. What are the most important drivers of change in the HKH region; and what are their potential impacts on biodiversity, ecosystem services, livelihoods and water resources?
2. What are the most important strategies, policies and governance arrangements for enhancing community adaptation to drivers of change, including climate change; how can they be out-scaled; and what are their impacts?
3. How do gender equitable and inclusive approaches support sustainable mountain development, and how can these be realized?
4. What is the status and trend of migration across the region; what are their present impacts on livelihood and environment; and what are the possible options and their consequences for addressing immigration?
5. What is the state and fate of cryosphere, and what are the potential impacts of possible change?
6. How much water will there be, in terms of quantity, variability and quality, in the 10 major river basins of the HKH; and what are the potential impacts of change, and how can the negative impacts be mitigated?
7. What are the best means of reducing the risk of floods and droughts, and how can they be introduced at various scales including transboundary Rivers?
8. What are the energy needs and possibilities for the people of the HKH; what are the positive and negative impacts of hydropower development, and how can they be best sustainably developed in the region?

9. How can ecosystems be managed to align objectives of biodiversity conservation and improved livelihoods be aligned to a number of contexts found in the HKH region?
10. What is the value of ecosystem services provided by mountains, and how can management and supply of these services be compensated (like REDD+, PES)?
11. What approaches (watershed, landscape and forestry) support ecosystem services, food and water security, and community resilience?
12. Can the HKH region develop and be a green economy? What technologies (modern, traditional, and indigenous) and approaches will lead, and how can they be out-scaled?

Process and Coordination:

The process used will draw from the experience of other assessments, engaging a network of people with in depth knowledge of the region. The assessment will have a link to policy makers in the region through various processes through a policy reference group (to be identified). This policy reference group will also be involved in framing the overall assessment, and in communication of results.

ICIMOD will coordinate the overall assessment process over the next three years aiming to produce the publication by middle of 2016. The process will include a framing of the assessment, engagement with policy makers, an active communication program, drafting of chapters, extensive review, and development of a summary document.

The following functional roles are identified: overall coordinator (ICIMOD), chapter lead authors and chapter authors, review editors and reviewers, and a team to develop the summary and recommendations. The process will strive for a diverse group coming from different countries in the region and outside, from different backgrounds (physical and social sciences), women and men. It will encourage scientific discussion and debate around topics relevant to sustainable development in the HKH region, and be a means to foster scientific collaboration.

Chapter coordinating lead authors will work with the authors for designing and developing the contents. Reviews for each of the chapters will be done in coordination with review editors and overall coordinators. All contributors will be recognized for their role in the publication.

A Steering Committee will be formed to oversee the process, with day to day coordination from ICIMOD.

A Draft Outline of the Assessment

An initial framing workshop and consultation with policy makers will define the frame of the assessment. As a zero draft, a core team has identified four sections of the assessment, namely: (1) Current State of Knowledge, (2) Trends and Drivers of Change and Their Impacts, (3) Potential Solutions and (4) Policy and Governance Issues Including the Way Forward. A Summary for Decision Makers will be prepared based on the results of the process.

Zero Draft Outline:

SECTION I – CURRENT STATE OF KNOWLEDGE

- Chapter 1: The HKH Environment
- Chapter 2: Ecosystem Services
- Chapter 3: Biodiversity
- Chapter 4: Cryosphere System
- Chapter 5: Water Resources
- Chapter 6: Pollution
- Chapter 7: Livelihood Systems, Economy, Gender, Poverty and Vulnerability
- Chapter 8: People, Culture and Society
- Chapter 9: Policy, Institutions and Governance for Hilly and Mountain Areas

SECTION II - TRENDS AND DRIVERS OF CHANGE AND THEIR IMPACTS

- Chapter 10: Climate Change
- Chapter 11: Demographic Changes including Migration and Mountain Urban Centers
- Chapter 12: Land Use and Land Cover Changes
- Chapter 13: Globalization Related Changes including Economic Growth and Tourism

SECTION III – ADDRESSING MAJOR ISSUES

Chapter 13: How to address human poverty, vulnerability and enhance livelihood security in ways that are locally appropriate in rapidly changing contexts?

Remittance; Ecotourism; High value natural products; Rural and urban linkages (Strengthening) centers; Adaptation to climatic and non-climatic changes; and Non-farm sector development.

Chapter 14: How to sustain the HKH environments for global assets and value?

Reverse degradation, Biodiversity conservation, with focus on Carbon sequestration and carbon management (REDD), Connecting Himalayan communities to global program, Valuing of ecosystem services and payments – recognition of Himalayas as an ecosystem service providing region of global significance.

Chapter 15: How to sustainably manage future energy needs?

Hydropower and dams; Biomass; Alternative and clean energy.

Chapter 16: What is best sustainable use of water for livelihoods in mountains and downstream (means of reducing floods and risks)?

Water for food; Energy; Ecosystem; Small scale irrigation; and Farm and household use.

Chapter 17: How can Food Security be improved and strategies to deal with food deficiencies in mountains?

Food security situation on ecological zonation basis; Transportation, accessibility and distribution of food; Strategies for food security in mountains; Kind of crops, increased production to increase food security; Market factors; Wildlife crop depredation, compensation, crop insurance; Natural calamities: floods, hail storms, drought, snow storms; Agro-biodiversity and gene pool (seeds) conservation.

SECTION IV – POLICY, GOVERNANCE AND WAY FORWARD

Chapter 18: Governance in Mountain Development

Chapter 19: Incentive Mechanisms for Provision of Mountain Resources

Chapter 20: Gender and Inclusive Development

Chapter 21: Outscaling and Upscaling Opportunities

Chapter 22: Regional Resources and Fostering Transboundary Cooperation

Chapter 23: Knowledge and Research Gaps