

The Hindu Kush Himalayan Monitoring and Assessment Programme: Action to Sustain a Global Asset

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The Hindu Kush Himalayan Monitoring and Assessment Programme: Action to Sustain a Global Asset

ICIMOD

The International Centre for Integrated Mountain Development is coordinating the Hindu Kush Himalayan Monitoring and Assessment Programme, which will be carried out with partners and individual experts. The assessment addresses the social, economic, and environmental pillars of sustainable mountain development and will serve as a basis for evidence-based decision-making to safeguard the environment and advance people's wellbeing. It is not a one-off assessment but will be an ongoing process. A 2017 publication is planned as the first of a series of monitoring and assessment reports.

A global asset

The Hindu Kush–Himalayan (HKH) region is one of the greatest mountain systems in the world, encompassing more than 4.3 million km². It contains the largest area of permanent ice cover outside of the North and South Poles (which is why it is sometimes called the Third Pole) and the sources of 10 major river systems (Figure 1), 4 global biodiversity hotspots, 330 important bird areas, and hundreds of mountain peaks of more than 6000 m. The region provides ecosystem services including water, food, and energy that sustain the livelihoods of 210 million people directly. An additional 1.3 billion people living downstream benefit indirectly from its resources and services, and more than 3 billion people rely on food produced in its river basins. The region is also home to some of the most diverse cultures, languages, religions, and traditional knowledge systems in the world. Therefore, it is clearly a major global asset and critical to the planet as a whole.

The HKH is undergoing rapid change driven by forces and stressors such as climate change, disasters, economic growth, globalization, infrastructure development, migration, and urbanization. The interplay of these complex drivers of change is challenging to predict but will have major consequences, not just in the region but globally. There is a critical need to assess these drivers' potential cost to the HKH environment and human wellbeing, as well as the opportunities they may present. From a policy standpoint, achieving food, water, energy, and livelihood security in the region will require exploring scenarios based on different assumptions so that the scientific community, policy-makers, the private sector, and community stakeholders can come together and make optimal governance decisions to sustain this global asset. It will also require country-specific recommendations to guide national-level policy-making.

Rationale for the assessment

In 2007, the Intergovernmental Panel on Climate Change's (IPCC's) fourth assessment report (Pachauri and Reisinger 2007) predicted that climate change will be the most prominent driver of global change in the 21st century and pointed to the lack of consistent long-term monitoring in the HKH region. The report called for national, regional, and global efforts to fill this data gap. Little progress was made in the HKH region by the time of the IPCC's fifth assessment report (Pachauri and Meyer 2014). While universities, nongovernmental organizations, and scientific organizations have made

progress in assembling and consolidating existing data, the information remains too fragmented and incomplete to derive meaningful conclusions about trends and scenarios.

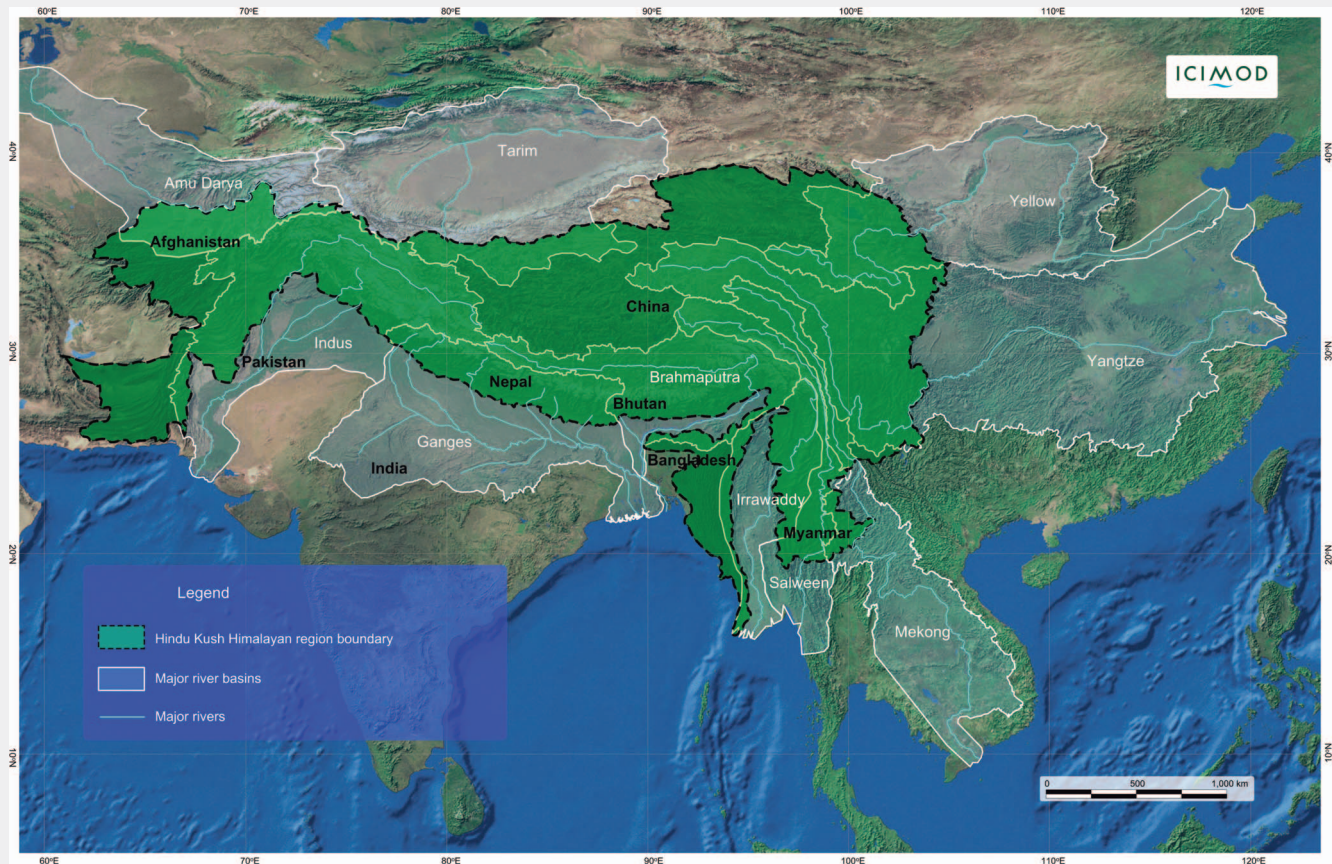
The Hindu Kush Himalayan Monitoring and Assessment Programme (HIMAP), which brings together hundreds of scientists and policy experts from the region and around the world, aims to address these gaps and chart a way forward. A comprehensive assessment that goes beyond climate change, it is expected to greatly assist efforts to address threats, act on opportunities, and scale cutting-edge approaches. HIMAP derives inspiration from the Arctic Monitoring and Assessment Programme, which has systematically generated meaningful data and analysis about key trends and future scenarios, helping countries in the Arctic to meet the challenges of climate change.

Key questions

HIMAP is considering many critical questions that will be defined by chapter teams and working groups, including the following:

- 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?
- 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 outscaled, and what are their impacts?

FIGURE 1 The HKH region and 10 major river basins. (Map by ICIMOD)



- How do gender-equitable and inclusive approaches support sustainable mountain development, and how can these be realized?
- What migration trends exist in the region, and what are their present impacts on livelihoods and the environment? What are the options for addressing migration and the likely consequences of those options?
- What is the current condition of the cryosphere? What changes are likely, and what are the potential impacts of those changes?
- What are the current and likely future quantity, variability, and quality of the water in the 10 major river basins of the HKH? What are the potential impacts of change, and how can negative impacts be mitigated?
- What are the best means of reducing the risk of floods and droughts, and how can they be introduced at various scales, including on transboundary rivers?
- 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 hydropower best be sustainably developed in the region?
- How can ecosystems be managed to support both biodiversity conservation and improved livelihoods in the various contexts found in the HKH region?
- What ecosystem services are provided by mountains, and how can management and supply of these services be compensated?
- What watershed-, landscape-, and forestry-based approaches will best support ecosystem services, food and water security, and community resilience?
- How can the HKH region develop a green economy? What

technologies (modern, traditional, and indigenous) and approaches are best suited for sustainable mountain development in the region, and how can they be outscaled?

Assessment process

The International Centre for Integrated Mountain Development (ICIMOD) is coordinating HIMAP, with the engagement of more than 300 researchers, practitioners, experts, and policy-makers and guided by a steering committee at the strategic level. The publication of the first *Comprehensive Assessment of the HKH Region* in 2017 is planned as a wide-ranging, innovative evaluation of the current state of knowledge in the region and of various drivers of change and their impacts, as well as a set of practically oriented policy recommendations. The process is following these steps:

BOX 1: Assessment chapters

- | | |
|---|---|
| <ul style="list-style-type: none"> • Summary for decision-makers • Introduction: Setting the scene for the HKH region • State of knowledge and trends • HKH drivers of change: Local, regional, and global • Climate change in the HKH • Future scenarios • Sustaining HKH biodiversity and ecosystem services • Meeting future energy needs • Status and change in the cryosphere • Water availability and use | <ul style="list-style-type: none"> • Food and nutrition security • Air pollution • Disaster risk reduction and increasing resilience • Mountain poverty, vulnerability, and livelihoods • Adaptation strategies • Gender and inclusive development • Migration • Governance and institutions • Country-specific implications of sustainable development • Recommendations |
|---|---|

- **Framing of the assessment:** A framing workshop and consultations with various experts were held to define the structure and process of the assessment (Box 1).
- **Drafting of chapters:** Based on the experience of other assessments, a network of people with in-depth knowledge of the region is drafting the chapters (Figure 2).
- **Peer review:** Chapter drafts will be rigorously reviewed, both by peers and via open review.
- **Dissemination:** Using multiple channels, the assessment will be communicated to a range of audiences.
- **Engagement with policy-makers:** The assessment will be shared with policy-makers in the region through various processes.
- **Development of a summary document:** A summary for decision-makers will be prepared based on the results of the process.
- **Publication and launch:** Publication of the first edition of the assessment is set for 2017.

Structure and target audience

An assessment, as distinct from a review, critically evaluates knowledge to develop policy-

oriented solutions and aims to inform decision-makers rather than scientists. It is structured to address specific social problems rather than general scientific curiosity, and through the assessment process, it aims to be salient, legitimate, and credible (Clark et al 2006). The target audience for this assessment is the people who make decisions on investment in and management of mountain development—natural resource managers, private-sector investors, policy-makers, and civil-society members. In addition, the assessment aims to inform the public about important mountain issues so that everyone can help to make better decisions through political processes in the HKH countries.

The assessment aims to (1) establish the global significance of the HKH region; (2) reduce scientific uncertainty on various issues; (3) lay out practical and up-to-date solutions and offer new insights for development of this region in a changing world; (4) value and conserve existing ecosystems, cultures, societies, knowledge, and distinctive HKH solutions that are important to the rest of the world;

and (5) influence policy processes with robust evidence for sustainable mountain development.

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FIGURE 2 Members of the HIMAP coordinating team and steering committee, coordinating lead authors, and ICIMOD chapter anchors, January 2016; photo taken in front of ICIMOD, Kathmandu, Nepal. (Photo by ICIMOD)



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FURTHER READING

HIMAP. www.hi-map.org/; accessed on 10 March 2016.

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