

PROCEEDINGS OF THE

First Hindu Kush Himalaya Science-Policy Forum

Actions to sustain a global asset

13–14 November 2018

ICIMOD, Kathmandu, Nepal



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Rapporteurs

Avash Pandey, Nuvodita Singh, Karishma Khadka, Abid Hussain, and Philippus Wester

Report drafting and coordination by

Udayan Mishra

Production team

Shradha Ghale (Consultant editor)

Samuel Thomas (Senior editor)

Rachana Chettri (Editor)

Sudip K Maharjan (Graphic designer)

Cover photo: Jitendra Raj Bajracharya

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Executive summary

The first Hindu Kush Himalaya Science-Policy Forum ([HKH-SPF](#)) with the theme ‘Actions to Sustain a Global Asset’ was held from 13–14 November at the ICIMOD headquarters in Kathmandu, Nepal. The event, which was organized by the Ministry of Forests and Environment, Government of Nepal, and ICIMOD, brought together more than 125 participants from the region and beyond. During the forum, representatives of think-tanks, senior experts and high-level decision makers discussed the key findings of the first comprehensive assessment of the Hindu Kush Himalaya region ([HKH Assessment](#)), debated and contributed to the assessment’s ‘HKH Call to Action’, and charted a way forward for strengthening regional cooperation. The outcomes of the forum are expected to contribute to a future in which the region’s people and communities are prosperous, healthy, peaceful, and poverty free; food, energy, environment, and water secure; and climate and disaster resilient.

The event focused on three key questions: how to substantially increase investments to realize the SDGs in the mountains; immediate global, regional and national action to limit global warming to 1.5 degrees by year 2100; and strengthening regional collaboration and cooperation on HKH related issues.

The key findings and messages of the HKH Assessment were shared with a larger audience with the aim of building momentum for more robust regional cooperation for mountains, environments and livelihoods, and a roadmap for implementing nine mountain priorities that align with the SDGs.

Specifically, the objectives of the forum were to:

- Share key findings of the HKH Assessment and share a summary report for decision makers and solicit its validation for the HKH Call to Action
- Build agreement/consensus on the road map for urgent actions
- Build agreement on establishing the forum as a regular annual feature for dialogue on regional cooperation

Government representatives, policymakers and scientists from the eight Hindu Kush Himalayan (HKH) countries responded to the findings of the HKH Assessment Report by committing to greater regional cooperation to tackle climate change and the risks it poses to mountain environments and people. Stressing the urgency of preventing further degradation of the Hindu Kush Himalaya, representatives of the eight HKH countries (Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal and Pakistan) made a resounding call for an alliance and greater transboundary cooperation to work on HKH related issues collectively.

Why the HKH Science-Policy Forum?

The future of the HKH matters to over two billion people

The Hindu Kush Himalaya (HKH) is one of the greatest mountain systems in the world, extending 3,500 km over eight countries, from Afghanistan in the west to Myanmar in the east. Home to the world's highest peaks, unique cultures, diverse flora and fauna, and a vast reserve of natural resources, the HKH supports the lives and livelihoods of over 240 million people living in the hills and mountains of the region. This region also provides numerous benefits to people living downstream. As the source of 10 major Asian rivers, the HKH provides essential resources, especially water and biodiversity, to nearly two billion people in Asia.

The HKH is undergoing rapid change, driven by forces such as climate change, disasters, economic growth, globalization, infrastructure development, land use change, migration, and urbanization. Changes on the rooftop of the world are having and will have major consequences, not only for people living in the region but globally. Actions at national, regional, and international scales are urgently needed to sustain this global asset. Such actions should focus on increasing investments and forging a robust regional cooperation to sustain mountains, environments and livelihoods in the HKH, and to limit global temperature increase to 1.5 degrees by year 2100.

HIMAP and the HKH Science-Policy Forum

The Hindu Kush Himalayan Monitoring and Assessment Programme (HIMAP) is a long-term, integrated science-policy initiative coordinated by ICIMOD. It aims to support enabling policies

and sustainable solutions, and promote regional cooperation to address some of the region's most immediate challenges by:

- Comprehensively assessing the current state of knowledge of the HKH region, including thematic assessments, sub-regional assessments, and topical outlooks
- Increasing the understanding of various drivers of change and their impacts
- Developing evidence-based policy solutions and recommendations
- Engaging decision makers across sectors and institutions through a series of HKH science-policy forums

HIMAP is a platform for long-term collaboration and coordination among a diverse group of 400+ leading researchers, practitioners and policy specialists working in the HKH. Under HIMAP, experts from the region have come together to develop a [Comprehensive Assessment of the HKH](#), the first in a series of monitoring and assessment reports. It deals with major issues such as climate change, biodiversity, energy, cryosphere (frozen water), water, food security, air pollution, disaster and resilience, poverty, adaptation, gender, and migration.

The assessment report consists of 16 chapters, which comprehensively assess the current state of knowledge of the HKH region, increase understanding of various drivers of change and their impacts, address critical data gaps, and develop a set of evidence-based and actionable policy solutions and recommendations. 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 well-being. To provide a roadmap for action, HIMAP has developed nine mountain priorities consistent with the Sustainable Development Goals (SDGs), to contribute to achieving these goals for mountain communities.

Day I

Opening session of the first Hindu Kush Himalaya Science-Policy Forum

Shakti Bahadur Basnet, Minister of Forests and Environment, Government of Nepal, formally inaugurated the first HKH-SPF by lighting the *panas*.

In his welcome remarks, David Molden, Director General, ICIMOD, shared key findings of the Hindu Kush Himalayan Assessment Report, and highlighted the importance of the forum. He said decisions about mountain resources are made outside of the mountains even though what happens in the mountains affect one-fourth of the world's population. Even 1.5 degree Celsius is too hot for the HKH region, which will warm more compared to the global mean temperature due to elevation-dependent warming.

He presented the following future scenarios for the HKH, which will depend on what actions are (or are not) taken:

Three directions for environmental, social and economic futures in the HKH: run downhill, business as usual, and advance toward prosperity

Three factors that pose the greatest threats to prosperity in the region: disasters, climate change, and poor governance

Two pathways for achieving prosperity in 2080: large-scale investment with regional cooperation, and bottom-up investment with local and national cooperation

Concluding his remarks, he said that the knowledge we have gathered so far provides a sufficient basis for taking action, but better data and knowledge and better communication will mean better action.

On behalf of the Government of Nepal, Bishwa Nath Oli, Secretary, Ministry of Forests and Environment, delivered the welcome address and thanked ICIMOD for bringing experts, scientists and policymakers under one roof. He noted that mountain communities are contributing the least to climate change but suffering the most. As the adaptive capacity of mountain communities is decreasing, the countries of our region need additional support to cope with the impacts of climate change. He also stressed that the Government of Nepal has embraced

climate-smart development approaches with put sound frameworks in place, and shared his confidence that the forum would help participants learn from each other and work collectively to address the impact of climate change.

Martin Ledolter, Managing Director, Austrian Development Agency (ADA), gave an introduction of the Renewable Energy and Energy Efficiency Capacity for the Himalayas (REEECH) programme being initiated at ICIMOD with support from Austria. Highlighting the importance of this new initiative focused on energy, he stressed that sustainable energy will play a role in resilience building and addressing poverty in the mountains. He also added that Austria wishes to reiterate its commitment to supporting this initiative.

Opening remarks by high-level dignitaries from ICIMOD regional member countries: Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan

All the high-level delegates representing eight ICIMOD regional member countries gave their opening remarks. Their key messages are provided below:

Hashmatullah Ghafoori, Deputy Minister, Ministry of Agriculture, Irrigation and Livestock, Government of Afghanistan

“Mountains play an important role in providing ecosystem services and are home to a diversity of ecosystem and water resources. They are highly sensitive to impacts of climate change including melting of snow, which leads to flooding, and drought, which affects herders as well as the agriculture sector. Climate change does not recognize boundaries. There is a need to build partnership among the countries of this region, and this platform is providing an opportunity to discuss the approaches for strengthening cooperation and collaboration.”

Manik Lal Banik, Additional Secretary, Ministry of Chittagong Hill Tracts (CHT) Affairs, Government of Bangladesh

“The Government of Bangladesh appreciates ICIMOD's effort in bringing the HKH Assessment report. The connection of Bangladesh to mountains is through the Chittagong Hill Tracts, which has a low population density. Bangladesh has identified the vulnerabilities induced by climate change and the need to increase resilience. The Government of Bangladesh is

committed to ensuring peace and prosperity in CHT to bring communities in the mainstream, and has formulated its 7th Five-Year Plan in line with the SDGs. Bangladesh wishes for this forum to continue in future as well.”

Dasho Tenzin Dhendup, His Majesty’s Secretariat, Tashichho Dzong Gardens, Government of Bhutan

“I extend my gratitude to ICIMOD for inviting us to this important event, and also bring warm greetings from His Majesty’s Government and the people of Bhutan. ICIMOD’s effort to come out with the first ever assessment of the HKH region is commendable. Bhutan’s development philosophy of Gross National Happiness (GNH) is in synergy with the SDGs, and we hope that this forum shall also trigger public discourse for policy makers and scientists to work together to ensure context-specific regional cooperation.”

Yanfen Wang, Vice President, University of Chinese Academy of Sciences, Government of China

“We are excited about the release of the comprehensive assessment of the HKH region coordinated by HIMAP. HIMAP deals with four key areas: mountain, climate change, sustainability and people. The Tibetan plateau of China is home to over 2 million people, and the Chinese government has launched different projects and provided policy support to enhance the livelihood of these people. HIMAP will provide direction for finding better solutions to the impacts of climate change on mountains.”

V K Saraswat, Member, National Institute for Transforming India (NITI) Aayog, Government of India

“Mountains have always shaped our civilization and culture. The HKH region has great sociocultural, ecological, spiritual and hydrological significance. However, uncontrolled demand for ecosystem services has created various problems in the region. The government of India through NITI Aayog recently released five thematic reports on the Indian Himalayas. We must explore institutional spaces for coordinated efforts as the mountains of the HKH are our shared asset.”

San Oo, Deputy Director General, Environmental Conservation Department, Ministry of Natural Resources and Environmental Conservation, Government of Myanmar

“About seventy percent of the population in

Myanmar’s rural areas are dependent on agriculture, and are very vulnerable to climate change. The Government of Myanmar is committed to achieving a right balance between economic development and social sustainability while also considering the safety and security of poor people. We are striving to overcome the rural-urban divide through soft and hard connectivity. We are vulnerable to impacts of climate change such as coastal storms, floods and droughts, and we hope this forum will help us formulate policies to build resilience and gain momentum for strengthening regional cooperation.”

Mohammad Shahid, Chairperson, Community of Evaluators, Pakistan

“In Pakistan, we are dependent on mountain resources for food security and tourism. We all must come together to tackle the impacts of climate change. Mountain people are already very resilient, but their resilience needs further strengthening. Pakistan is very much aware of the existing challenges in the region, for which we all need to formulate relevant strategies.”

Briefing on ‘HKH Call to Action’

Eklabya Sharma, Deputy Director General, ICIMOD, briefed the delegates and participants on the ‘HKH Call to Action’ – a document that proposes ways to sustain mountain environments and livelihoods, based on the HKH Assessment Report that was produced under the coordination of HIMAP. He said that the HIMAP is a long-term initiative coordinated by ICIMOD and it seeks to enable policies and promote sustainable solutions and regional cooperation to address challenges faced by the region. He mentioned that ICIMOD was now following a consultative process, which included the forum, where the draft of the HKH Call to Action was being shared and discussed with relevant stakeholders in the region. He concluded by saying that the Call to Action revolves around nine mountain priorities consistent with the SDGs, and six urgent actions that have been identified. These would be discussed and further contributions would be gathered on the second day of the forum.

Presentation of chapter briefs of the HKH Assessment Report

As the final published version of the HKH Assessment Report was not ready yet, Philippus Wester, Regional Programme Manager, Mountain Knowledge and Action Networks, ICIMOD,

presented the sixteen chapter briefs summarizing the key findings from the sixteen chapters of the HKH Assessment Report. The chapter briefs were distributed to all the participants of the forum and were also made available online. Wester mentioned that the report was being published by Springer Nature and would become available online by the end of 2018.

Address by Shakti Bahadur Basnet, Minister of Forests and Environment, Government of Nepal

In his address to the delegates and participants of the forum, Shakti Bahadur Basnet said he was happy that all the eight HKH countries had come together at such an important event. He said his ministry was honoured to be jointly organizing the first HKH Science-Policy Forum at ICIMOD in Nepal. Providing some context to the event, Minister Basnet said the impacts of climate change in the region are quite visible in the form of glacier and snow melt, increased risk and vulnerability, and change in the ecosystems. Despite the HKH being a global asset hosting 36 global biodiversity hotspots, natural benefits are not sufficiently utilized to improve the livelihood of mountain people. Acknowledging the leadership that ICIMOD is taking in building cooperation and collaboration among all stakeholders, he added that the mountains are home to local marginalized communities, and that these efforts need to be continued to reduce poverty in the mountains.

He added that climate resilient development pathways are important to strengthen people's resilience, and to chart out future pathways for robust cooperation. While commending ICIMOD for publishing the report with Springer Nature, he stressed that scientific findings need to be translated into action on the ground.

On behalf of ICIMOD, Basanta Shrestha, Director of Strategic Cooperation, ICIMOD, offered a vote of thanks to all participants and mentioned that we are in the process of building a vision for regional alliance in the HKH.

Poster exhibit of HKH Assessment chapters

The first day of the forum concluded with participants and delegates watching and reflecting on the poster exhibition of HKH Assessment chapters.

Day II

SESSION 1

Key findings of the HKH Assessment

Philippus Wester started the second day of the forum by presenting key findings of the HKH Assessment report. Styled after the Intergovernmental Panel on Climate Change (IPCC) reports, the *Hindu Kush Himalaya Assessment* report is the first and most authoritative study of its kind to provide an assessment of one of the world's most significant, yet often overlooked, mountain regions. Key findings of the report are summarized below, with full details available [here](#).

- Unprecedented socioeconomic change in the HKH has exacerbated long-standing challenges and created new ones for sustainability and livelihoods. Challenges for sustainability are related to over-exploitation of natural resources, environmental degradation, unregulated and rapid urbanization, weak governance, and loss of traditional culture.
- Drivers of environmental, sociocultural and economic change in the HKH are interconnected and increasingly influenced by regional and global developments. Among the most significant drivers of change are current governance systems, climate change, demographic changes, demand for and use of natural resources, economic growth, and poverty and context-specific vulnerability to change.
- Mountains are a hotspot of climate change in part because temperature changes caused by greenhouse gas emissions are amplified with elevation. Thus, when global temperatures rise, temperatures across the HKH will rise at a higher rate. With current emission trends, average temperatures in the HKH are expected to rise by about 5°C by 2100. Higher rates of warming in the mountains will effect changes in upstream water resources such as increased glacial melt and decrease in ice reserves.
- Mountain ecosystems of the HKH are a global asset with rich biodiversity (+15,000 endemic species) and varied ecosystem services. About

60–80% of the rural population in the HKH directly or indirectly depend on biodiversity for subsistence.

- Glaciers have thinned, retreated, and lost mass since the 1970s, except for anomalies in parts of the Karakoram, eastern Pamir, and western Kunlun mountain ranges. Trends of increased glacial mass loss are projected to continue in most regions, and there are likely to be large consequences for the timing and magnitude of glacier melt runoff and glacial lake expansion. Projections of glacial volume loss are both alarming and highly credible – optimistically, there could be 36% loss in a 1.5 degree world, but if current emission trends continue, the projected loss of glacier volume by 2100 could be as high as 69%.
- Snow covered areas and snow volume will decrease and snowline elevations will rise. Snowmelt-induced run-off peak will be stronger and occur earlier in the year. Since glacier and snowmelt are important components of overall stream-flow in the region, changes in this stream-flow will affect around 2 billion people in terms of water for food (especially irrigation), water for energy (hydropower), and water for ecosystem services (riparian habitats, environmental flows, and rich and diverse cultural values).
- More than 80% of the rural population in HKH countries – a large part of whom live in hill and mountain areas – rely on traditional biomass fuels for cooking and about 400 million still lack basic access to electricity. Although there is great capacity for hydropower as a potential source of renewable energy across the HKH, it remains underdeveloped.
- Mountain and downstream communities in the HKH live in a multi-hazard environment. Disaster events are increasing both in frequency and intensity, and they affect women and children more than men. The region is especially prone to floods, flash floods, avalanches, and landslides, as well as droughts and earthquakes, sometimes resulting in cascading disasters with upstream-downstream linkages and transboundary impacts.
- Air pollution in the HKH is pervasive and regional air quality has worsened in the past two decades. Air pollutants originating

within and near the HKH add to the effects of greenhouse gases and affect the cryosphere, the circulation of monsoons, and the distribution of rainfall over Asia, in addition to their negative impact on human health and agriculture.

- Food and nutritional insecurity remains a serious challenge in the HKH; more than 30% of the population suffers from food insecurity and around 50% face some form of malnutrition, with women and children particularly vulnerable. The causes of food and nutrition insecurity in the HKH are multifaceted and complex, and influenced by a range of factors including high poverty, natural resource degradation, climate change, low level of market development, food insecurity, and inadequate policy and institutional support.
- Poverty rates in the mountains and hills (31%) exceed national averages (26%) across each of the HKH countries. Country-level poverty statistics mask significant inequities between mountainous and non-mountainous regions, as well as within mountainous areas. While poverty in mountain areas also reflects the region-wide major determinants of poverty and vulnerability including socioeconomic inequities, conflicts, gender inequities and caste/ethnicity-based discrimination, it is compounded by mountain specificities such as remoteness, poor accessibility, and high dependence on natural resources.
- Climate change adaptation responses by governments in the HKH are largely incremental and not well integrated with development plans and programmes despite the urgency for the HKH. In spite of these challenges, opportunities exist for scaled up, inclusive, and more comprehensive climate change adaptation responses in the region. Bolstering climate change adaptation in the region will require substantial increases in funding than is currently available.
- Policies and responses in the HKH countries neither comprehend the multiple forms of oppression and exclusion faced by women nor do they recognize the multiple ways in which women negotiate their roles in households, communities, and the market. Despite shouldering productive and reproductive workloads and responsibilities, women throughout the HKH do not have

corresponding decision-making rights or control over resources.

- Migration drives a broad range of economic, social and political changes throughout the HKH, and decisions to migrate are influenced by multiple factors. While remittances can promote resilience to climate change, investment in agriculture or climate adaptation is rarely the first priority of migrant households in mountain areas.
- Policies and processes for environmental governance in the HKH are rarely articulated at the regional level, most are national and subnational. HKH countries lack institutions to link upstream and downstream communities in river basins and mountain landscapes. Transboundary cooperation is crucial for improving environmental governance in the HKH.

Wester's presentation was followed by in-depth interactions on the HKH Assessment chapter posters with respective chapter coordinators.

SESSION 2

The HKH Call to Action: Achieving the nine mountain priorities

This session facilitated by Philippus Wester was aimed at sharing the nine mountain priorities consistent with the SDGs, followed by a facilitated group discussion on each of the priorities.

Arabinda Mishra, Theme Leader for Livelihoods, ICIMOD, presented the first three priorities. Aditi Mukherji, Theme Leader for Water and Air, ICIMOD, presented the next three, followed by the presentation of the last three priorities by Arun B. Shrestha, Regional Programme Manager, River Basins and Cryosphere, ICIMOD.

The chapters and key messages of the HKH Assessment were drafted in line with the UN SDGs. 'Priorities for Mountains and People of the HKH' reflect the ideals of the SDGs. The nine mountain priorities presented were:

- **End poverty** in all its forms everywhere in the mountains and ensure that women, men, and children of the HKH region lead healthy lives in an inclusive and equitable environment.
- **Build resilient, equitable, and inclusive mountain communities** empowered by

economic opportunity and investment in mountain infrastructure and connectivity.

- **Achieve gender and social equity** through inclusive and transformative change in the mountains.
- **Promote sustainable production systems** to ensure food security, nutrition security, and income for mountain people, with particular attention to the changing roles of women in agriculture.
- **Ensure universal access to clean energy** in the mountains from sources that are affordable, reliable, and sustainable.
- **Ensure year-round secure water supply** in the mountains with universal and affordable access to safe drinking water, sanitation, and water for productive purposes.
- **Halt biodiversity loss** and land degradation and sustainably manage forests and other ecosystems in the mountains to enhance ecosystem resilience for sustained flow of services.
- **Ensure integration** of adaptation to climate change, disaster risk reduction, and sustainable development for the mountains through evidence-based decision making.
- **Promote a mountain-specific agenda for achieving the SDGs** through increased regional cooperation among and between mountain regions and nations.

Key points from the presentation of the nine mountain priorities are summarised below.

Food and nutrition insecurity remains a huge challenge in the HKH. Over 30% of the population suffers from food insecurity and around 50% face some form of malnutrition, with women and children suffering the most. Causes of food and nutrition insecurity are multifaceted and complex, and influenced by a range of factors including high poverty, natural resource degradation, climate change, low market development, and inadequate policy and institutional support.

Traditional mountain food systems are threatened by rapid socioeconomic and environmental changes. Poverty rates in the mountains and hills exceed the national average in each of the HKH countries. Country-level poverty statistics mask the significant inequities between mountainous and non-

mountainous regions, as well as within mountainous areas. While poverty in mountain areas also reflects the region-wide major determinants of poverty and vulnerability, including socioeconomic inequities, conflicts, gender inequities and caste/ethnicity-based discrimination, it is compounded by mountain specificities such as remoteness, poor accessibility, and high dependence on natural resources. From a policy standpoint, reducing poverty and achieving food, water, energy, and livelihood security in the region is essential and will require exploring various scenarios so that the scientific community, policymakers, 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.

The SDGs provide a set of significant markers and commitments that lead toward a possible future prosperous HKH region, but achieving prosperity and achieving the SDGs, especially in mountain areas, requires getting out of “business as usual” thinking and action. SDG 10 (reducing inequality within and among countries) provides an entry point for recognizing the significant differences among the mountainous areas of HKH countries. The SDG agenda affords a globally recognized frame of inclusiveness, and along with its sustainability principles and integrated approach, provides an important opportunity for mountain environments and mountain people to gain necessary recognition in global agendas. The SDGs cannot be achieved without mountain people on board.

Group discussion on the nine mountain priorities and plenary

Participants at the forum worked in separate groups representing the nine mountain priorities and came up with the following recommendations:

MOUNTAIN PRIORITY 1 END POVERTY

- The lack of mountain poverty data shouldn't be an excuse for not coming up with poverty reduction strategies.
- There is a further need to develop concrete indicators and targets

MOUNTAIN PRIORITY 2 BUILD RESILIENT, EQUITABLE, AND INCLUSIVE MOUNTAIN COMMUNITIES

- It is important to come up with carefully

worded targets because these are the indicators against which the performance will be compared. The first target mentions developing ‘urban systems’, but mountains are dominated by rural systems. Thus it is recommended that the phrase ‘urban systems’ be changed to ‘mountain systems’ or the target include ‘rural systems’ as well.

- Need to diversify sectors – go beyond sustainable mountain tourism
- Way forward: diversify livelihood options and income opportunities, new ways of engaging with mountain communities in infrastructure development and investments
- Mountain specific policies should be sensitive to different limitations and constraints of mountains. Aiming for a 7% economic growth in the mountain regions is too ambitious and unrealistic given that mountains have specific constraints and limitations.
- Mountains' potential is not limited to mountain tourism. Mountain-specific policies should be aimed at diversifying opportunities rather than solely focusing on tourism.

MOUNTAIN PRIORITY 3 ACHIEVE GENDER AND SOCIAL EQUITY

- Ensure equal proportion of men and women in all sectors and branches.
- Gender budgeting – allocate financial resources for engaging female researchers and female community members.
- Promote female role models to encourage women and change patriarchal mindsets.

MOUNTAIN PRIORITY 4 PROMOTE SUSTAINABLE PRODUCTION SYSTEMS FOR FOOD, NUTRITION, AND INCOME SECURITY

- Regional cooperation for food and nutrition security is of the utmost importance.
- Upstream-downstream connection for food nutrition should be understood.

MOUNTAIN PRIORITY 5 UNIVERSAL ACCESS TO CLEAN ENERGY

- Data on mountains is needed to better establish mountain-specific targets.
- More evidence-based research is needed.

- REEECH Initiative (Renewable Energy and Energy Efficiency Capability for the Hindu Kush Himalaya) can play an important role in establishing a foundation for clean energy and off-grid electricity.
- The Bangladesh, Bhutan, India, Nepal (BBIN) Initiative could play a major role in promoting regional cooperation in trade.

MOUNTAIN PRIORITY 6 ENSURE YEAR-ROUND SECURE WATER SUPPLY

- There is a need to broaden people's understanding of the links between climate change and water. Outside of the scientific community, these links are not so clear – need to target investors, private sector.
- Develop more widespread understanding of the fact that river basins don't correspond to country boundaries. That should be the main focus.
- Look for solutions outside the water sector e.g., energy for regional cooperation.

MOUNTAIN PRIORITY 7 HALT BIODIVERSITY LOSS, LAND DEGRADATION, AND SUSTAINABLY MANAGE FORESTS

- Upward: Communicate the importance of biodiversity through global platforms and discussions
- Downward: Establish the sustainable management of biodiversity as a national priority activity for a country
- Backward: learn from past best practices
- Forward: invest resources in conservation taking socio-ecological resilience into consideration

MOUNTAIN PRIORITY 8 ENSURE INTEGRATION OF ADAPTATION, DRR, AND SUSTAINABLE DEVELOPMENT

- Most policies and plans in the countries are generic, not mountain specific.
- The community needs to be placed at the centre of each plan.
- Vertical and horizontal integration within the country – regional cooperation is key.
- Country-specific DRR plans need to integrate

emergency management (both pre and post disaster) and sustainable development.

MOUNTAIN PRIORITY 9 PROMOTE A MOUNTAIN SPECIFIC AGENDA FOR ACHIEVING SDGS THROUGH REGIONAL COOPERATION

- Need to provide an enabling governance framework.
- Global mountain convention – world mountain forum, initiatives to make the national agenda into a global agenda.
- National-level mountain initiatives should be carried out in all HKH countries.
- There is a need to engage with three sets of key stakeholders – state, market, and community.

SESSION 3

The HKH Call to Action: Six key actions

Participants of the first HKH Science-Policy Forum stressed the need for urgent action to sustain the mountain environments and livelihoods of the HKH region. To effectively respond to the complex challenges facing the HKH, multiple actors must take collective action for sustainable development that is mountain specific, environmentally sustainable and focused on improving people's well-being and prosperity. More data, information and communication will certainly improve decision-making, but the knowledge we currently have provides enough basis for urgent action.

Each of the six urgent actions is supported by a set of targets. A complete list of targets is provided in the annex.

Participants brainstormed on the six urgent actions and came up with the following recommendations:

URGENT ACTION 1

Cooperate at all levels across the HKH region and take actions at national, regional, and international scales

Walking through the key action: the cost of non-cooperation will be extremely high; learning from the Arctic and Alps; learning from the cryosphere in other parts of the world; forming an HKH task force

based on exchange visits would be a good initial step; a formal multilateral approach might be difficult to implement in the HKH.

- For regional level: multilateral channel from government to government, civil to civil, business to business could be thought of.
- The driving question will be – ‘What’s in it for me?’ Start business to business collaboration mechanism to identify products marketed in the region. Explore products and services in different countries in the region; then approach the government to build cooperation; focus on economic opportunities, identify commonalities and approach decision makers; form a group to take the lead.
- Shifting cultivation: people of hills and mountains; sacred landscape; ecotourism to be considered.
- Mountain environment and livelihood as a rallying point; use simple language for all to understand.
- Voluntary non-binding agreement; pro-people, pro-economy, pro-ecosystem; regional cooperation on soft issues like economic opportunities and health, with clear language, and including transboundary environmental issues

1 Cooperate at all levels across the HKH region for sustainable and mutual benefits

2 Recognize and prioritize the uniqueness of the HKH mountain people

3 Take concerted climate action at all levels to keep global warming to 1.5°C by 2100



4 Take accelerated actions to achieve the SDGs and the nine mountain priorities

5 Enhance ecosystem resilience and halt biodiversity loss and land degradation

6 Regional data and information sharing and science and knowledge cooperation

URGENT ACTION 2

Recognize and prioritize the uniqueness of HKH mountain people

- It is recommended that the term ‘uniqueness’ be changed to ‘unique values in the HKH’.
- Detailed discussion on mountains must take place at the global and national level.
- Many HKH countries are not entirely mountainous countries, e.g., India. Are mountains being reflected in national and global agendas? We need to articulate our unique values at these levels.
- Downstream areas need to recognize these values. Downstream perspective of upstream needs to be informed.
- ICIMOD has created this platform and this needs to continue.
- There is a clear need to define and design HKH calling 2030

URGENT ACTION 3

Take concerted action to keep global warming to 1.5 degrees by 2100

- Suggestion for rephrasing the headline action: Take regional, national and local concerted actions to help limit global warming to 1.5 degrees by 2100.
- High-level action at the regional level: To form a regional alliance to pressure the international community to keep 1.5 degree as the target, as this is key to the long-term well-being of mountains.
- Undertake adaptation and mitigation actions to achieve the SDGs
- Take action to achieve carbon neutral societies by strengthening and implementing the Nationally Determined Contributions (NDCs), addressing short-lived climate pollutants (SCLPs), and deepening the engagement with existing programmes such as REDD+.
- Research and monitoring of climate in the HKH region is not sufficient, so better monitoring infrastructure is needed.
- Use both North-to-South and South-to-South cooperation to carry out concerted action for the HKH region.

URGENT ACTION 4

Take accelerated actions to achieve the Sustainable Development Goals in the HKH

- Ensure that things are happening on the ground:
 - Countries start coming together for joint action on the ground
 - Data sharing
 - Knowledge technology and experience sharing
 - Bilateral and multilateral cooperation – demonstrated actions on the ground
- Work on building cooperation and strengthening civil society networks, not only within the HKH but also outside the region.
- Regional cooperation involves sensitizing national actors so that national-level actions are aligned with regional and global actions.
- Achieving SDGs: there has to be a clear pathway for achieving the SDGs, e.g., a five-year timeframe.
- Action at the regional level cannot move forward without political will. Parliamentarians need to be sensitized. The region’s stakeholders need to be made aware of the costs and consequences of non-cooperation.

URGENT ACTION 5

Take decisive action to enhance ecosystem resilience for sustained flow of services by halting biodiversity loss and land degradation

- There is a need to add landscape integration, ecosystem assessment framework and culture, heritage and traditional knowledge in the framing of this action.
- Countries that use evidence-based national and subnational policies should add social and environmental impact assessment.
- There is a need to promote sustainable use of mountain resources.
- Establish regional level institutional mechanisms. In line with Action 1, establish community based organizations in keeping with GESI principles.

URGENT ACTION 6

Regional data and information sharing and science and knowledge cooperation

- There is a need to set a clearly defined higher goal.
- Governments should consider mountains in national representative surveys.
- Promote databases like ICIMOD's Regional Database System and regional platforms like SAARC.
- Promote new technologies like machine learning for regional and global data sharing.

SESSION 4

A roadmap for robust regional cooperation to sustain mountain environments and livelihoods in the Hindu Kush Himalaya

Brij Rathore, Chief Policy Advisor, ICIMOD, facilitated this session, which started with two presentations from the Alpine Convention and the Arctic Council.

Learning from other regions: Presentations on the Alpine Convention and the Arctic Council

The objective of this session was to learn from HIMAP-like platforms in other regions about modalities for establishing a convention or council dedicated to the HKH region.

ALPINE CONVENTION

Silvia Jost, Head of International Cooperation, Swiss Federal Office for Spatial Development, Switzerland, gave a brief introduction to the Alpine Convention.

Like the HKH region, the Alpine Convention works for the eight alpine countries namely Austria, France, Germany, Italy, Liechtenstein, Monaco, Slovenia and Switzerland. The framework for the convention was signed on 7 November 1991, and entered into force in 1995. The convention furthered the recognition of specific characteristics of the Alps, going beyond national boundaries and seeking international action. It receives support from the environment ministries of the signatory countries, non-governmental organizations (NGOs) and representatives from the scientific community.

The thematic conventions or protocols under the main convention include nature protection and landscape

conservation, mountain farming, spatial planning and sustainable development, mountain forests, tourism, energy, soil conservation, and transport.

The organizational structure of the convention follows the principle of rotating presidency, with its permanent secretariat based in Innsbruck, Austria. The convention organizes the Alpine Conference every two years, and its permanent and verification committee meets two to three times a year. It also produces a report on the state of the Alps every two years.

The convention builds synergies amongst the alpine countries by organizing outreach and networking activities to promote the Alpine identity.

More information available at: www.alpconv.org/en/home

ARCTIC COUNCIL

Lars-Otto Reiersen, Senior Advisor to the Rector of the University of Tromsø, the Arctic University of Norway and Former Executive Director, Arctic Monitoring and Assessment Programme (AMAP), gave a brief historical overview of the AMAP programme.

The AMAP is one of the Working Groups of the Arctic Council, which is a leading intergovernmental forum promoting cooperation in the eight Arctic states, namely Canada, the Kingdom of Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden and the United States. The Council consists of six Working Groups, six Permanent Participants, and 38 Observers, with expert groups and task forces carrying out additional work.

The AMAP monitors climate change and pollution around the Arctic, and conducts scientific assessments.

For the overall coordination of the work of the Arctic Council, the eight Arctic states take turns acting as chair of the council for a two-year period. A meeting of the ministers takes place at the end of each chairmanship.

More information available at: www.arctic-council.org/en/

PANEL DISCUSSION ON A ROAD MAP FOR MORE ROBUST REGIONAL COOPERATION

David Molden moderated this panel discussion with experts from the HKH. He said each country in the region should take ownership of the HKH Assessment Report and address its findings to

strengthen regional cooperation. Key points from their presentations are provided below:

Senator Nisar A Memon, Chairman, Water Environment Forum, Pakistan

“A big congratulations to ICIMOD and team for the successful completion of the HKH Assessment Report. The findings of the 16 chapters of the report show that our discussion should always be people centric. People from the region should take ownership of the report and governments could act as facilitators. The findings of the report should be disseminated in local languages for local people, and media and technology can act as binding and enabling factors.”

Prof Wu Ning, Director General, Chengdu Institute of Botany, Chinese Academy of Sciences, China

“The HIMAP report has created a roadmap for all stakeholders to take actions in the HKH. We need to work closely with global organizations such as the IPCC, to include key messages from HIMAP in their regular assessment reports. This is a new step towards strengthening our relationship, and we should provide necessary information to policy makers of the region. Our priorities for the region need to align with the SDGs, and the mountain agenda needs to be promoted on global platforms.”

Kunzang Lhamu, National Commission on Women, Bhutan

“Just because we discuss gender equality in big forums doesn't mean that there is no gender discrimination. Data needs to be disaggregated by gender. In our region, since men migrate to other countries for jobs, women in the mountains have to do agricultural work and household chores. We need to create an enabling environment in the community for women to realize their full potential. Women have very little representation at the decision-making level, so just including some women in selected forums and activities is not enough. We need to come up with equity measures so women can take full advantage of available opportunities. And forums like this can bring out women's voices and enable women to shape decision making.”

Mohammad Rafi Qazizada, Director General, Natural Resource Management, Ministry of Agriculture, Irrigation and Livestock, Afghanistan

“Transboundary cooperation in the HKH is lacking because the focus has only been on political and

economic issues rather than on social and ecological issues. The cost of non-cooperation in the HKH will be unacceptable, especially since it will be borne primarily by the poor and vulnerable communities. There is a need to raise awareness at the highest political level in our region. Data sharing agreements and standards in the region are of high importance. We should have an agreement on the types of data that could be shared to ensure transboundary cooperation. A clear mechanism to support agencies that lack data is needed. ICIMOD can play an instrumental role in disseminating the findings of these assessments to the public. HKH countries should also consider aligning mountain priorities in their national plans like they are now doing with the SDGs.”

Debra Tan, Director, China Water Risk, China

“We talk about climate impacts on water, but impacts on the economy are not being communicated. The links between water and economic development should be recognized. We need to protect the economic values of these river basins. We should also think of having a business forum in relation to the work of HIMAP. With respect to HIMAP's work, we should try to establish a business forum through which we could try to attract the business sector. We could start by mapping assets beyond the HKH region, like in deltas where economic activities are taking place. We need to map these out and force investment in this region. Water risks are going to affect the power sector as well, so we need to figure out how to address this.”

VK Saraswat, Member, National Institute for Transforming India (NITI) Aayog, India

“There is a need to apprise everyone of what the scenario is going to be if no action is taken today. NITI Aayog of India has set SDG goals for every state and has tried to form an Indian Himalayan Region (IHR) council, which involves chief secretaries and scientists in laying down a framework for the formation of the IHR council. Managing water, biodiversity, and clean energy resources as public goods is important for improving environmental governance and driving a green economy. We need to involve local communities and conduct a full evaluation of goods and services obtained from this ecosystem. Implementation mechanisms are not very strong, so there is a need to incentivize sustainable use of resources at every level. The idea of a HKH business council is much appreciated. Unless we bring science and business together, we are not going to make desired progress. There

is scope for huge partnerships between private-public and government sectors. Diverse funding mechanisms need to be consolidated as they are not directed well currently. Existing institutions need to be strengthened and there needs to be upstream-downstream economic and knowledge exchange. Council-council linkages will strengthen cooperation and aid environmental governance. We should envision a framework that is apolitical and initially non-legal and that can eventually develop into a binding council that pays attention to economic and technology transfer in the HKH. Science, technology and innovation are very important for the region. Private participation geared only towards profiteering is not going to work, so it is important to push this document to the governments of the region. Communication is the key, and it's very important to carry out consultations with individual countries – wherein heads of states are told about the real needs. The findings of the report and the importance of the mountains should also be communicated through popular media, as well as by making interesting documentaries like those on Discovery Channel.”

Concluding session: Closing remarks by high-level dignitaries from ICIMOD's Regional Member Countries

In this session chaired by Margaret Catley-Carlson, Chair, ICIMOD Programme Advisory Committee, high-level dignitaries from ICIMOD's Regional Member Countries offered their views on a possible roadmap for more robust regional cooperation.

Mohammad Rafi Qazizada, Director General, Natural Resource Management; Ministry of Agriculture, Irrigation & Livestock, Government of Afghanistan:

“HIMAP represents a step forward in sustaining mountain environment for future generations. This assessment provides enough evidence and information and calls for urgent action. This Science-Policy Forum (SPF) is not an end but a beginning in terms of identifying common challenges and finding adequate solutions. Mountains in the HKH have a key role in protecting cultures and biodiversity. HIMAP has created a platform to facilitate scientific discussions on climate change and related problems in the HKH mountains. In the next step, we need to find country-specific solutions. Afghanistan is committed to taking actions based on HIMAP. It is suggested that Afghanistan specific findings be shared and an Afghanistan-focused forum be organized to share the findings.”

Mashfee Binte Shams, Ambassador, Embassy of Bangladesh in Nepal, Government of Bangladesh

“There is need for collaboration between upstream and downstream countries – for example, in the case of water management and to tackle water related risks. Regional cooperation is a must for development, and addressing mountain issues beyond national boundaries is very important for the sustainability of mountain ecosystems. For Bangladesh, regional cooperation is a fundamental pillar of its foreign policy. Bangladesh is a strong promoter of regional forums, i.e. BIMSTEC, SAARC and ICIMOD, and we will continue our support. Connectivity and collectivity are key features of regional development. Connectivity across HKH countries may be ensured through telecommunications, data/knowledge/ideas sharing, power trade, and collective natural hazards management. ICIMOD can play a vital role in providing a platform for regional connectivity. While discussing the challenges, we should also highlight the rich cultural heritage and biodiversity of the HKH. Key messages of the HIMAP assessment should be communicated to policy makers immediately.”

Dasho Tenzin Dendup, His Majesty's Secretariat, Tashichho Dzong Gardens, Government of Bhutan

“The HKH-SPF provided an opportunity for participants from the RMCs to take note of serious challenges and stresses in the region. The forum allowed the RMCs to deliberate on six key actions. I reiterate, on behalf of the government of Bhutan, the results of the HIMAP assessment. The assessment is highly valuable for our five-year development plan that will be finalized in the next few months. Given that Bhutan is a very small country, our isolated efforts may not make a significant contribution. Therefore, I call on all member countries to collaborate and take collective action for greater impact in and beyond the region. I would like to urge that the HKH-SPF be held each year as an annual event. I also call on global development partners to support the HKH region.”

Yanfen Wang, Vice President, University of Chinese Academy of Sciences, China

“I am providing my remarks based on my personal opinions and experience as a contributor of HIMAP. I noticed that three of the six actions are long-term actions (e.g., regional cooperation, data and knowledge sharing, and global warming goal of 1.5 degree Celsius for the next 80 years). We also need to focus on immediate actions. I urge the authors to

continue working on future assessments to further strengthen the knowledge base.”

RS Rawal, Director, GB Pant National Institute of Himalayan Environment and Sustainable Development, India

“HIMAP has given us enough evidence and now we need to take action. The message is loud and clear, so none of us can afford to say we have not heard it. But we also need to make sure that this message reaches people on the ground. For this we need to carry out awareness raising campaigns through strategic communications and outreach. Actions that transcend national borders are necessary for sustaining global assets. One major action could involve an awareness campaign on HIMAP findings at the local, national and regional level. ICIMOD RMCs have already built regional cooperation, but it needs to be made more robust. We are happy to support efforts that seek to strengthen regional cooperation.”

San Oo, Deputy Director General, Environmental Conservation Department, Ministry of Environmental Conservation and Forestry, Government of Myanmar

“[Our] development planning processes need to take into account both mitigation and adaptation approaches. The Government of Myanmar is ready to support regional cooperation for sustainable regional development.”

Ijaz Shafi Gilani, Chairman, Gallup, Pakistan

“In some ways, the HIMAP report already reflects a regional and global alliance, in that its contributors are from different countries and regions. We could say the 350 people who came together to produce this work over three years created an alliance in the process. The contributors should continue this alliance in the future. There seems to be a slight imbalance between scientific work (physical sciences) and the social aspects (social sciences). The physical side has received more focus in the assessment title and content. More in-depth ethnographic studies on mountain communities should be conducted in addition to surveys. Scientific research should speak to the lived experience of people on the ground.”

Closing remarks

Peter Budd, Ambassador, Embassy of Australia in Nepal, Government of Australia, and Chair ICIMOD Support Group

“The Australian government is supporting ICIMOD’s

critical work on mountain environments. Australia supports food, water, energy and environment security in the HKH. On behalf of our government, I would like to appreciate the efforts made by ICIMOD and this assessment. The SPF could become a Science Policy Business Forum in the future. We recognize ICIMOD’s role in strengthening regional cooperation and building a vision for an inclusive HKH. HIMAP is a call for future generations of the HKH to protect this global asset and ensure its long-term sustainability.”

Shakti Bahadur Basnet, Ministry of Forest and Environment, Government of Nepal

“On behalf of the Government of Nepal, I would like to congratulate ICIMOD on coming up with the important assessment of the region and for facilitating this HKH forum. The HKH region is more vulnerable to impacts of climate change due to increasing climatic and socioeconomic challenges. The region has become more interconnected and inter-dependent in terms of both challenges and opportunities. The SDG targets are to be achieved by 2030 and these ambitious targets need collective efforts by regional member countries. To address challenges, HIMAP will play a vital role. We need to make collective effort to mainstream suggested actions in policies in the RMCs. There is scope for South-South and North-South collaboration for sustainable development in the region. The Government of Nepal will be happy to take the lead role in forging a regional alliance of the HKH countries to initiate political dialogue for greater recognition of the vulnerabilities of mountain communities and to raise mountain voices and agendas at the regional and international level.”

David Molden, Director General, ICIMOD

“Many thanks to honourable minister and the government of Nepal for their support to ICIMOD. ICIMOD should serve as a platform for bringing people together to build solidarity and alliance for immediate actions. The next step will be to finalize the HKH Call to Actions in the mountains. A better title may be ‘HKH Agenda for Actions’. Any comments on the report will be highly appreciated. In coming months, conversion of the assessment’s key messages into simple messages for politicians, media and people would be a good strategy. There is a need to communicate messages to local people in simple and understandable language. We will be continuing this forum and will be including other business communities in it. Let us start a big journey together. We need immediate actions.”

Annex

Six urgent actions and associated targets

URGENT ACTION 1

Cooperate at all levels across the HKH region for sustainable and mutual benefits

TARGETS

- Take actions at national, regional and international scales to sustain the Hindu Kush Himalaya as a global asset
- Build momentum for more robust regional cooperation and substantially increased investments for sustaining mountain environments and improving livelihoods in the HKH
- Nurture and strengthen people to people, business to business and government to government cooperation and trust building in the region
- Promote the HKH Science-Policy-Business Forum as a platform for science-policy-business dialogue, knowledge exchange, stakeholder engagement and regional cooperation

URGENT ACTION 2

Recognize and prioritize the uniqueness of HKH mountain people

TARGETS

- Value and respect the diversity of people and cultures in the HKH, wherein lies the strength of the mountains
- Collectively define the HKH mountain agenda with inputs from all stakeholders from the eight HKH countries

- Strengthen the national, regional and global voice for the HKH region and its people, including indigenous groups
- Promote actions that lead to gender equality and inclusive development
- Promote the resilience of mountain communities by supporting the diversity of cultures, situations and systems
- Support “The HKH Calling” for cooperation on mountain issues and solutions, sharing evidence, communicating findings and fostering collaborative actions
- Promote mountain champions and leaderships, and encourage networks and alliances

URGENT ACTION 3

Take concerted climate action at all levels to keep global warming to 1.5°C by 2100

TARGETS

- Promote global recognition of the HKH as a hotspot of climate change and sustainable development
- The challenges faced by the HKH due to the impacts of climate change are urgent and need to drive mitigation efforts globally and adaptation regionally
- Take concerted action at the regional, national and local level to sharply reduce short-lived climate pollutants (SLCPs), reducing biomass burning and promoting clean energy solutions
- Achieve carbon neutral societies in the mountains and hills of the HKH region by 2035 by providing opportunities, incentives and compensation mechanisms
- Use both North to South and South to South cooperation to develop concerted climate action for the HKH region

URGENT ACTION 4

Take accelerated actions to achieve the SDGs and thenine mountain priorities

TARGETS

- Mainstream the nine mountain priorities consistent with the SDGs in each of the eight countries of the HKH
- Promote the use of multi-dimensional and mountain specific poverty measures by governments in the HKH region
- Enable mountain specific policies and development pathways that are pro-poor, and gender and socially inclusive
- Prioritize adaptation to climate change as it is consistent with multiple SDGs, and mobilize substantially more investments for adaptation in the HKH
- Labour migration within (rural-urban) and from the HKH is a huge phenomenon and needs to be mainstreamed into development and adaptation

URGENT ACTION 5

Enhance ecosystem resilience; halt biodiversity loss and land degradation

TARGETS

- Promote incentives and means for mountain communities to conserve and manage ecosystems for improving their livelihoods
- Sustainably manage forests, rangelands and other ecosystems in the HKH through promoting transboundary cooperation for landscapes and river basins in the context of climate change
- Build biodiversity information systems for better planning; adopt approaches for the conservation and wise use of biodiversity including development of highly remunerative biodiversity products; address illegal trade
- Implement programmes on freshwater ecosystems including the cryosphere, watersheds and springsheds by adopting the river basin management approach, including at a transboundary scale

URGENT ACTION 6

Regional data and information sharing and science and knowledge cooperation

TARGETS

- iFill data gaps and develop actionable knowledge that is mountain focused and HKH specific
- Foster cooperation and capacity building on data generation methodologies for consistent, disaggregated, timely and quality data on a range of issues
- Urgently improve data generation and sharing on climate variables, air pollution, water, energy, food security, and biodiversity
- Proactively promote HKH-wide cooperation in open data sharing for public goods and services
- Promote and make use of ICIMOD's Regional Database System

Additional event information and materials are available at:

<https://www.icimod.org/event/first-hindu-kush-himalaya-science-policy-forum-actions-to-sustain-a-global-asset/>

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