

**The HKH Call
to Action to
sustain mountain
environments and
improve livelihoods
in the Hindu Kush
Himalaya**



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SECTION 1

HKH Call to Action: Executive summary

This HKH Call to Action is based on [the Hindu Kush Himalaya Assessment: Mountains, Climate Change, Sustainability and People](#), which assesses the state of the Hindu Kush Himalaya (HKH) region and considers its future prospects. The *HKH Assessment* presents a comprehensive understanding of the region's unique mountains, environment, and livelihoods, in terms of past trends, current situation, and future scenarios. The report, published open access by Springer in early 2019, contains a wide-ranging, innovative evaluation of the current state of knowledge about the region, of the various drivers of change and their impacts, and a set of practical policy recommendations.

Extending 3,500 km over eight countries, from Afghanistan in the west to Myanmar in the east and crossing Pakistan, India, China, Nepal, Bhutan, and Bangladesh, the HKH is one of the world's greatest mountain systems: home to the world's highest peaks, unique cultures, diverse flora and fauna, and a vast reserve of natural resources. It supports the lives and livelihoods of over 240 million people living in its hills and mountains, and it yields many benefits to the 1.65 billion people living downstream. As the source of 10 major Asian rivers, the HKH provides essential resources, especially water, to 1.9 billion people, and nourishes the grain baskets of Asia. The HKH is a global asset with unique sociocultural, economic, and environmental values for both mountain and downstream people.

The assessment report underscores the significance of the HKH as a vital regional lifeline, but human drivers and climate change pose immediate threats to the region's livelihoods, biodiversity, and ultimately, sustainability. Among the most significant of these drivers are climate change, demographic changes, demand for natural resources, economic growth, unregulated and rapid urbanization, current governance systems, and poverty in the mountainous region. Food and nutritional insecurity remains a serious challenge in the HKH region; more than 30% of the population suffers from food insecurity and around 50% face some form of malnutrition, with women and children particularly vulnerable.

A shared vision for the future of the HKH region is one in which its societies and its people—children, women, and men—are prosperous, healthy, peaceful, and resilient in a healthy environment. To realize this vision, this HKH Call to Action elaborates six urgent actions, including: 1) promote and strengthen regional cooperation at all levels to sustain mountain environment and livelihoods; 2) recognize and prioritize the uniqueness of the HKH mountain people; 3) take concerted climate actions; 4) take accelerated actions to achieve the SDGs, consistent with the nine mountain priorities; 5) take decisive actions to enhance ecosystem resilience; and 6) promote regional data and information sharing.

The key findings from the *HKH Assessment* and the draft HKH Call to Action were shared with multiple stakeholders during consultative workshops facilitated by ICIMOD's nodal ministries in each of the eight HKH countries in 2019. The consultative processes were aimed at jointly identifying and developing the road map for this HKH Call to Action. Country-specific actions and solutions were identified during the consultations and the six urgent actions were tailored at the local, national, and regional levels, generating a roadmap for collective ownership by the eight countries and actions at multiple scales.

During the country consultations, there was a strong consensus that the *HKH Assessment* and HKH Call to Action need attention at national, regional, and global scales to significantly enhance cooperation in the region. There was agreement that it provides an opportunity for many new and innovative projects to leverage more resources, bigger investments, and technical support, coming both from South–South and North–South engagement for a prosperous HKH.

The COVID-19 pandemic has disrupted this path to prosperity in the HKH and undermined the efforts that were being made to rally countries around the HKH Call to Action. The recently published policy paper “[COVID-19 impact and policy responses in the Hindu Kush Himalaya](#)” outlines the challenges in this changed scenario and the policy responses that are needed. It is imperative that the HKH Call to Action also focuses on resilient recovery from COVID-19 and ICIMOD is uniquely placed to work closely with the HKH countries to collectively take forward the mountain agenda at national, regional, and global platforms.

The HKH: A vastly diverse region of great value—in itself, for its people, and for the world

The Hindu Kush Himalaya is one of the greatest, youngest, and most fragile mountain systems in the world, with hundreds of mountain peaks over 6,000 masl. Covering more than 4.2 million km², providing water to 10 major river basins, and home to four global biodiversity hotspots, the HKH is a critically important global asset. With the Tien Shan mountains, it forms the largest area of permanent ice cover outside the North and South Poles; for this reason, the HKH is also called the “Third Pole”.

The HKH is a vastly diverse region. Between the Hindu Kush in Afghanistan to the west, and the hills and mountains of Myanmar to the east, lie many regions that are ecologically and culturally heterogeneous. There are the arid and semi-arid Pamir and Karakoram mountains; the high Himalaya of Bhutan, India, Nepal, and Pakistan; the Tibetan Plateau of China; the three parallel rivers of the Salween, Mekong, and Yangtze in the far-eastern region, stretching to the Yunnan Province of China; and the hills of North East India and the Chittagong Hill Tracts of Bangladesh. This heterogeneity makes for vast diversities of ecosystems, plant and animal genetics, and cultures and peoples, while also supporting livelihood diversity and a great variety in landscapes and precipitation patterns.

It supports the lives and livelihoods of over 240 million people living in its hills and mountains, and it yields many benefits to the 1.65 billion people living downstream. As the source of 10 major Asian rivers, the HKH provides essential resources, especially water, to 1.9 billion people, and nourishes the grain baskets of Asia. The HKH is a global asset and home to some of the world’s most diverse cultures, languages, religions, and traditional knowledge systems.



**Protect
the pulse.**

SECTION 2

The Hindu Kush Himalaya is the pulse of the planet

Since what happens in the HKH can be felt across the planet, the HKH is like the pulse of the planet. When the pulse is healthy, the planet is healthy. But since the pulse is not currently healthy, there is widespread consensus that urgent actions are required to ensure the health of this global asset and the well-being of the people who live here. The HKH mountain people are unique and they should be recognized and their needs prioritized; the ecosystems here need to be restored; implementing the SDGs here needs to be a global top priority; and efforts to keep global warming below the ambitious 1.5°C is especially urgent here. To achieve all this, there is a need for more sharing of information and knowledge and more robust regional cooperation.

This HKH Call to Action is based on the [HKH Assessment](#), which was drafted in response to requests from governments in the region, meeting a demand for a comprehensive assessment of the region’s mountains, environments, and livelihoods. Published open access by Springer in early 2019, this publication contains a wide-ranging, innovative assessment of the current state of knowledge about the region, of the various drivers of change and their impacts, and a set of practical policy recommendations. While more information and data will lead to better decision-making, the *HKH Assessment* concludes that we know enough to take action and its key findings (detailed in Annex 1) show that action is urgently needed now to sustain mountain environments and improve livelihoods in the HKH.

The HKH is a vital regional lifeline and a global asset—but human drivers and climate change pose immediate threats to the well-being of the mountain communities and to environmental sustainability. Changes on the roof of the world are having and will continue to have major consequences, not only for the region but globally. National, regional, and global action is urgently required to sustain this global asset, focusing on substantially increased investments for achieving the SDGs in the mountains, strengthening regional cooperation, and ambitious climate action to keep global warming below 1.5°C.

Global policy discussions and agreements reflect increasing awareness of climate change impacts on mountain ecosystems and communities. Despite this growing awareness, mountain perspectives such as that of the HKH deserve more attention in global discussions on sustainable development and climate change. New policy discussions on the HKH and global mountain areas should not only highlight the vulnerabilities and fragilities inherent in mountain locations but also emphasize the resilience and strength that mountain people and communities bring to these challenges. Specifically, they must also bring new global, regional, and national attention to the mountains and the people of the HKH.

The critical nature of issues highlighted throughout the *HKH Assessment* process and the actions outlined within this HKH Call to Action have become even more pressing in light of the recent global COVID-19 pandemic which has hit mountain regions hard with a depth and breadth of impacts. This range of impacts and proposed policy responses are discussed in detail in the policy paper [“COVID-19 impact and policy responses in the Hindu Kush Himalaya”](#), which should be taken as a companion to this document as both are directed towards promoting a prosperous HKH region.

SECTION 3

A vision for a prosperous Hindu Kush Himalaya in the 2030s

This HKH Call to Action envisions a future of the HKH region in which its societies and its people—children, women, and men—are:

Prosperous, healthy, peaceful, and poverty-free

- Living healthy and productive lives, with dignity and equitable access to social capital, and a quality of life that ensures well-being
- Pursuing diversified livelihoods that integrate cultural identities with the maintenance of vibrant ecosystem services
- Breathing clean air, with sharply reduced pollution, and conserving a healthy natural resource base including biodiversity and genetic diversity
- Enjoying equal opportunities and equal access to benefits from resources—regardless of gender, social class, or other historical drivers of socio-economic inequity

Food, energy, water, and environmentally secure with universal and affordable access to:

- High-quality, nutritious food in adequate quantities
- Reliable, renewable, sustainable, and clean energy

- Clean drinking water and sufficient water for productive uses
- A vibrant and sustainable environment
- Climate and disaster resilient, assured of:
 - Long-term stabilization of global warming, with global commitments and arrangements in place ensuring that global temperature rise is kept well within 1.5°C degrees by 2100
 - Minimization of loss of lives and livelihoods from disasters, with protection from and better resilience to extreme events (such as floods and droughts), and reduction of disaster risks
 - Minimal loss of biodiversity, ecosystems and their value, including due to climate change, and reduced risk of other anthropogenic drivers of change
 - Access to adequate means of mitigation and long-term adaptation, including finance and technology, with the knowledge, capacity, and skills needed to use them

The visioning exercise also articulated two potential pathways to advance towards a prosperous HKH: large-scale investments in sustainable development with regional cooperation, and bottom-up investment with local and national cooperation—which both involve substantial collaboration at regional, national, or subnational levels. These two pathways need to be designed and implemented together to foster sustainable, resilient, and prosperous development and must include institutional mechanisms that address the main challenges and resolve conflicts at various levels, and among various social groups.

Picture taking a time machine and flying over the HKH mountains in 2035. The landscape is full of healthy forests, snow-capped peaks, patches of villages and farmland, and scattered small towns and cities connected by well-constructed green roads and providing sustainable and climate-neutral habitats to healthy and prosperous people. Due to heavy outmigration in earlier years, some areas do not support the same population as 20 years ago, and forests and ecosystems have recovered. Remarkable is the widespread use of clean energy in all sectors and the concomitant lack of air pollution, a result of strong policies and programmes backed by citizens aimed to reduce dirty emissions.

If we could drop into a village, we would find women, men, children, and the elderly engaged in a range of agricultural and non-agricultural activities. A diversity of high-value mountain products would be on sale, both online and in the village, and people engaged in creating value added products in villages and towns. There is a high appreciation of local culture, and both traditional and modern knowledge are employed for various activities. Water and forest management is widely discussed, and communities plan and manage a variety of natural resources to meet their domestic and agricultural needs.

Dispersed vibrant small towns serve as hubs of activity with health services, schools, and business centres. These towns are well connected to energy grids, internet, and transportation. Local people are involved in key decisions about infrastructure, and the benefits of development are equitably shared. Instead of moving to big cities or moving out of mountains, many migrants, both from the hills and returning from other countries, choose to settle in these clean and green small towns because of economic opportunities. Women have a prominent role in politics and business and there is much more inclusive and integrated development taking place. In many villages and towns, tourism plays an important role in income generation, but host communities have learnt how to manage the large tourist influx, including managing waste and water supplies. Plastic litter and water pollution are minimized as both tourists and local communities value the clean landscape.

Stepping into a few houses we would see signs of traditional culture mixed with modern life, local languages spoken, and a high value placed on education of all children. We hear the voice of women and men running domestic affairs. People are optimistic about opportunities for their children, they enjoy nature, and feel a sense of well-being within their mountain environment.

SECTION 4

This HKH Call to Action and its six urgent actions

Urgent action is needed to sustain the mountain environments and improve livelihoods in the HKH region. Charting out an effective and compelling response to the complex challenges facing the HKH, this HKH Call to Action provides a rallying call from where multiple actors can take action on a collective agenda for the region's sustainable development that is mountain specific, environmentally sustainable, and focused on improving people's well-being and prosperity. While more data, information, and communication will lead to better decision-making, the *HKH Assessment* concludes that there is sufficient information and knowledge to take action, and its findings show that urgent action needs to be taken now. This HKH Call to Action outlines six urgent actions

which, jointly implemented by the eight HKH countries, will lead to a prosperous HKH.

All six urgent actions will require regional cooperation, as well as mountain-specific policies at the local, national, and regional levels. To draft this HKH Call to Action, a series of country consultations were held in the eight HKH countries in 2019, led by ICIMOD's nodal ministry or agency in each country. The key findings of the *HKH Assessment* were shared with a larger audience to jointly identify and develop the road map for this HKH Call to Action to promote the mountain agenda. During these consultations think tanks, senior experts, researchers, and high-level decision makers discussed the key findings of the *HKH Assessment*, debated and enriched the HKH Call to Action with country-specific actions, and charted a way forward for more robust regional cooperation to sustain this globally critical region. Country-specific actions and solutions were identified and the six urgent actions were tailored at the local, national, and regional levels, generating collective ownership of the eight countries for actions at multiple scales. The country consultation reports, including a summary of the HKH country actions, are provided in Annex 2.

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

ACTION 1

Promote and strengthen regional cooperation at all levels across the HKH region and take actions at national, regional, and global scales to improve mountain livelihoods and sustain the HKH as a regional and global asset

Build momentum for more robust regional cooperation and substantially increase investments for sustaining mountain environments and improving livelihoods

Create an inclusive financial landscape to promote investment in sustainable and resilient development

Strengthen regional labour markets to safeguard the interests of migrant labourers, create sustainable employment opportunities, and enable safe labour mobility and transfer of remittances

Nurture and strengthen people-to-people, business-to-business, and government-to-government cooperation and trust building in the region

Strengthen regional connectivity and trade through transport, communication, and market links

Promote the HKH Science–Policy Forum as a platform for science–policy–business dialogue, knowledge exchange, stakeholder engagement, and regional cooperation

Regional cooperation among the HKH countries focusing on mountain environments, livelihoods, and climate change is essential for translating

conservation and development challenges into sustainable development opportunities, as many of the HKH ecosystems are transboundary in nature and development and conservation challenges are shared. The cost of non-cooperation will be unacceptably high, with the heaviest burden borne by the poor and the marginalized. Just as the region is linked physically through mountains and rivers, the region is also linked socially, culturally, and economically. Therefore, cooperation at various levels is a must if the region is to prosper and thrive.

A range of opportunities lies in improved connectivity that includes transport and communication, which increases access to information, partnerships, and markets. New global and regional financing mechanisms for climate change mitigation, adaptation, and resilience building, and for climate-resilient infrastructure development offer valuable opportunities for increased investments in the mountain regions. National governments must seize these opportunities, with the aim of creating enabling environments and institutions that empower mountain people to share in the regional and global achievements as well as in the benefits of inclusive growth and sustainable development.

Much action on adaptation, natural resource management, and disaster risk reduction (DRR) is already taking place at local levels, such as springshed restoration and flood early warning systems. People-to-people and business-to-business cooperation must be nurtured and strengthened so that it can contribute to building trust and confidence among the countries and peoples of the region. Regional cooperation is vital for safe labour mobility and remittance transfer, and for this, governments need to develop a common approach to labour migration, including internal migration.

Annual HKH mountain summits, combined with HKH science–policy forums can facilitate the active participation of all the HKH countries in knowledge exchange, stakeholder engagement, regional cooperation, and science–policy engagement. The formation of an intergovernmental HKH task force to recommend mechanisms for more robust regional cooperation, based on exchange visits and learning from similar regional configurations in the Arctic, Alps, Carpathians, and Andes, could facilitate this process. Existing sub-regional fora, such as the Upper Indus Basin Network (UIBN) and transboundary landscape networks need to be further strengthened and promoted.

There is a large potential for government-to-government cooperation on multiple issues. A priority and urgent need for cooperation at all levels of government among riparian countries is to share data and end-to-end information more easily and

coordinate their disaster risk reduction programmes. Regional dialogues can promote action on ecosystem management in transboundary landscapes and transboundary river basin management, especially under a common disaster risk reduction (DRR) framework.

The common HKH country actions related to regional cooperation that found resonance during the country consultations (see Annex 2) are the following:

Organize HKH science–policy forums for sharing common concerns and exchanging knowledge for evidence-based policymaking in the HKH region. The science–policy forum should evolve as a regional platform for South–South and North–South learning, drawing scientists, policymakers, business, and community representatives from the eight HKH countries and elsewhere. Such a regional forum would greatly strengthen regional cooperation among the HKH countries. ICIMOD could host such fora on a biennial basis.

Explore options for setting up a regional institutional mechanism that provides evidence-based policies and practice in the HKH countries. Learning from similar regional groupings and initiatives would be useful in setting up an institutional platform such as an HKH Council, somewhat akin to the Arctic Council, which would bring together policymakers at the highest level from the eight HKH countries for agreed actions around scientific assessments. An intergovernmental task force could be set up by the HKH countries to examine and recommend the best possible mechanism for the HKH region. This regional institutional mechanism should cater to three levels: ministerial, official, and multi-stakeholder.

Strengthen evidence-based regional networks: Networks like the UIBN can play a major role in supporting regional/riparian country collaboration among organizations and researchers active in the river basins. The UIBN is building improved understanding about present and future water availability under complex scenarios of climate change, growing demand, and hazards, and developing relevant solutions for various stakeholders at local, national, and regional levels. The thematic working groups within the network can generate useful research information to feed into the decision-making processes. Similar networks in other river basins would be quite useful.

Promote the HKH mountain agenda on global platforms: The HKH countries are uniquely placed to lend their leadership for the mountain agenda, both in global and regional fora. The consultation process brought unequivocal support from the eight HKH countries to promote the mountain agenda on global platforms like the United Nations Framework

Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD), the High-level Political Forum on Sustainable Development, and others. The *HKH Assessment* and Call to Action would be useful to draw global attention, enable global partnerships, and strengthen South–South cooperation around the 2030 Agenda.

ACTION 2

Recognize and prioritize the uniqueness of the HKH mountain people in national, regional, and global decision-making institutions and processes

Value and respect the diversity of people and the richness of 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 communities and youth

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” campaign for cooperation on mountain issues and solutions, sharing evidence, communicating findings, and fostering collaborative actions

Promote mountain champions and leadership, and encourage networks and alliances

To advance toward a prosperous HKH, it is paramount to strengthen the national, regional, and global voices of the HKH region and its people, including women, indigenous communities and youth, and ensure representation of the diversity of HKH stakeholders and mountain people. It is crucial that all stakeholders are fully represented and can take part in decision-making at various levels in order to share first-hand knowledge and input into policies and actions that address their challenges. These efforts can be supported through concerted action to promote mountain champions and mountain leadership networks and encouraging the formation of alliances of mountain communities where youth, women, and indigenous groups lead and prepare for leadership. It will be necessary to go beyond the HKH to promote the agenda and the needs of mountain societies, and use global, regional, and national windows of opportunity for better outcomes for the mountain people and their environments.

It is also important to launch an HKH-wide awareness-to-action campaign, for example “The HKH Calling”. This campaign would focus on listening to the mountains, its people, and the downstream populations to bring larger societal awareness for actions. The HKH Calling would be about drawing on the empirical evidence and scientific findings emanating from research assessments and pilot actions and communicating the findings in a creative and stakeholder-specific manner so that the stakeholders concerned can easily relate and plan informed actions. It would also involve fostering collaborative actions to sustain the uniqueness of the HKH, cutting across sectors and actors, as well as across different scales from local to global. The actions in this HKH Call to Action will be an integral part of the campaign. The aspiration is that this would evolve as a people’s movement to foster resilience building throughout the HKH. Using innovative processes and tools such as TEDx mountain talks, landscape journeys, social media platforms, and mobile exhibitions, the HKH Calling would be a collective endeavour of multiple stakeholders including government, civil society, youth, academia, research and training institutions, schools, colleges, universities, people’s representatives, community leaders, interested supporters from the private sector, media, and regional and donor organizations.

The common HKH country actions related to the uniqueness of the HKH mountain people that found

resonance during the country consultations (see Annex 2) are the following:

Develop mountain-specific policies and programmes:

Seek and ensure greater recognition of the mountain people, the mountainous regions, and mountain specificities in national policies. Mountains are part of larger geographies reaching to the plains areas. However, being relatively less populated, they lack political clout and voice in decision making. To bring larger policy and programmatic focus on the mountains and people, it would be beneficial, for example, to set up a dedicated National Mission for the HKH in Pamir and Karakoram in Pakistan, and a similar Mission/Council in Afghanistan.

Launch “HKH Calling” as an awareness to action campaign to take forward the HKH Call to Action and to highlight the uniqueness of the mountains, their rich bio-cultural diversity, the success stories, and challenges both climatic and non-climatic. Individual country consultations suggested potentials such as Noshaq Calling in Afghanistan, CHT Calling in the Chittagong Hill Tracts of Bangladesh, Himalaya Calling in India, Hkakabo Razi Calling in Myanmar, and Mountains Calling in Pakistan;. These could be replicated in other HKH countries using iconic peaks as a rallying point. An important potential arena for formulating such a campaign in Nepal is the Sagarmatha Sambaad platform, which aims to draw global attention to the critical issues of the mountains by engaging heads of state and government, environment ministers, policymakers, development practitioners, businesses, academicians, communities, civil society, media, youth, and the general public.

Identify and promote mountain champions:

Champions from within mountain communities and other stakeholders can amplify attention around the uniqueness of mountain people. A coalition or set of networks of such champions and change-makers would strengthen the mountain voice and open spaces for mountain representatives in significant national, regional and global events and fora.

ACTION 3

Take concerted climate action to keep global warming to 1.5 °C by 2100, with regional, national, and local actions on sharply reducing short-lived climate pollutants (SLCPs) and achieving carbon-neutral societies in the HKH by 2035

Promote global recognition of the HKH as a hotspot of climate change and its implications for conservation and sustainable development

Acknowledge that the challenges faced by the HKH due to the impacts of climate change are urgent and need to drive mitigation efforts globally and adaptation measures regionally

Sharply reduce SLCPs from all sources, including agriculture residue and biomass burning, and promote 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 along the lines of a Green New Deal for the HKH

Use both North–South and South–South cooperation to develop concerted climate actions for the HKH region

A Green New Deal for the HKH should aim to achieve carbon neutrality in the HKH mountains and hills by 2035, with appropriate incentives and compensation mechanisms. The policies should focus on reducing SLCPs and greenhouse gas emissions, which holds great opportunities to curb warming in the short term and yield multiple co-benefits such as improved local air quality, agriculture productivity, health-related improvements, energy efficiency, and reduced fuel costs.

The common HKH country actions related to climate action that found resonance during the country consultations (see Annex 2) are the following:

Reduce biomass burning: Biomass burning is a major issue which contributes to atmospheric pollution, and its severity can be gauged from the fact that major cities often have to declare health emergencies during periods of extremely poor air quality. Atmospheric pollution is a regional phenomenon and needs regional cooperation and a regional road map for effective and timely mitigation. The HKH countries are open to sharing research findings and transfer of technology for reduction in biomass burning to reduce atmospheric pollution, including black carbon.

Adopt nature-based solutions and green infrastructure, including eco-friendly road construction using bioengineering, and green building construction. Green energy such as solar can complement national and local electricity grids and allow for the required reach to all parts of the HKH mountains. Large investments in solar energy are required now to achieve SDG7.

Embed disaster resilience in development plans: With warming in the mountain regions, extreme events such as glacial lake outburst floods and flash floods are increasing in frequency, posing a threat to people and ecosystems in the region. Building disaster resilience is of critical importance across the mountain regions and downstream in the HKH. Embedding disaster resilience measures in all development plans will help to address risks from floods, droughts, and earthquakes, as will putting in place disaster risk financing and risk transfer mechanisms based on comprehensive disaster mapping systems developed by national agencies in the HKH countries. Regional flood outlook and transboundary community-based flood early warning systems, which can help mitigate risks, are important and require collaboration and timely data sharing among the basin countries and other stakeholders.

Implement National Adaptation Plan of Action (NAPA) and Local Adaptation Plan of Action (LAPA). The HKH countries have developed national and local adaptation plans of action and these are at varying degree of implementation. Bhutan has committed to maintain 65% of its area under forest cover and remain carbon neutral for all time to come. At the national level, the funds for these plans are expected to come from government budgetary outlays. Carbon tax and trading based on the “polluters pay” principle could be useful fiscal instruments to raise additional money nationally. The national adaptation fund in some HKH countries could be significantly boosted by tapping international climate finance such as the Adaptation Fund (AF), the Global Environment Facility (GEF), and the Green Climate Fund (GCF).

ACTION 4

Take accelerated actions to achieve the Sustainable Development Goals in the HKH based on the nine mountain priorities, focusing on transformative adaptation, tackling poverty and inequality, inclusive development, and leaving no one behind

Mainstream the nine mountain priorities consistent with the SDGs (see Annex 3 for details) in each of the eight countries' SDG actions and reporting, and develop a common framework to monitor the SDGs in the mountains

Promote the use of multidimensional and mountain-specific poverty measures by governments

Enable mountain-specific policies and development pathways that are pro-poor, and gender and socially inclusive

Prioritize adaptation to climate change as it is cross-cutting with multiple SDGs and mobilize substantially more investments for adaptation

Improve migration governance by mainstreaming labour migration within and from the HKH into development and adaptation processes and plans

As poverty is generally higher in the mountains of the HKH than in the plains, eradicating poverty by 2030 will require mountain-specific poverty reduction policies and measures. National governments in the HKH need to promote the use of multidimensional poverty measures that address multiple forms of deprivation, and adopt a higher benchmark for assessing income poverty to account for the higher cost of living of the mountain people. National governments also need to increase the real income of the people in the mountains through strategies such as livelihood diversification, supporting investment of remittances in economic activities, and promotion of sustainable

tourism. National governments need to recognize the multi-local livelihoods that increase community members' resilience to external shocks. Thus, labour migration needs to be mainstreamed into development, adaptation, and DRR processes. For this, migration governance by national and subnational agencies in the region must improve urgently.

Global, regional, and national institutions need to allocate significantly greater resources for investments in the mountains and hills of the HKH and for achieving the SDGs. Special attention is needed for mountain-specific poverty reduction and social protection programmes focusing more on indigenous peoples, women, the differentially abled, and other marginalized social groups, among whom the incidence of poverty is most severe, and who are expected to be the most adversely affected by climate change. To enable mountain-specific policies and mountain development pathways that are pro-poor and gender inclusive, both public and private agencies need to allocate increased resources to mountain-specific data gathering, with a focus on poverty and vulnerability, to inform evidence-based policies and interventions.

Along with a focus on inclusive economic development, climate change adaptation policies and practices must intensify in the HKH. Adaptation to climate change cuts across multiple SDGs and is a necessary condition for socio-ecological resilience. Bolstering climate change adaptation in the HKH region will require radical increases in funding and will require ensuring inclusivity and gender sensitivity. National and subnational governments need to get into the mode of piloting, adopting, and scaling up transformative adaptation measures. The private sector can be a partner in adaptation financing with appropriate policy incentives. Media, schools, and universities are potential allies in promoting climate literacy and building public awareness that can drive political leadership on climate action.

- Meeting the SDGs and ensuring sustainable mountain development in the HKH requires all actors to accelerate gender and socially transformative change, which can be assisted by:
- Identifying mountain gender champions and supporting global and regional organizations for promoting gender equity in the HKH
- Commitment by governmental and non-governmental institutional actors to ensuring gender parity in decision-making positions across all levels
- Introducing curricula in schools and universities, and actions by educational authorities at all levels of education that promote transformation not

only in gender roles but in gender relations in the mountain context

- Providing livelihood diversification opportunities by gender budgeting and identifying emerging priorities of mountain women in terms of skills, access to market, and entrepreneurship
- Strong and effective advocacy by knowledge and civil society organizations to address the massive need of basic services in the HKH region to reach out to women, especially in socially restrictive communities, including agriculture extension and research
- Supporting mountain women farmers by promoting low-cost, women-friendly technologies and services geared towards reducing time and labour drudgery with the assistance of research and extension agencies
- Including the opportunity costs associated with unpaid workers time as productive work in public policy and accounting and promote women's active participation in the public sphere

Besides gender, national policies must consider other factors of diversity, including ethnicity and geography, and provide social protection for other vulnerable groups, including the marginalized, the elderly, children, and differentially abled people in mountain societies. Urban challenges in hills and mountains are growing and consideration for the urban poor need addressing. DRR and resilience building in the hill and mountain towns will benefit from public-private partnerships on resource mobilization and implementation, evidence gathering by knowledge organizations, and community participation in ownership, management, and monitoring. The mountain areas in the HKH are weak on life-saving infrastructure and this needs to be addressed by national governments on a priority basis.

The common HKH country actions related to the SDGs that found resonance during the country consultations (see Annex 2) are the following:

Leverage larger investment of funds and innovative technologies from the global community, including multilateral funding sources, to move towards the vision of a prosperous HKH. The global community needs to join hands in cooperation and share responsibilities to take forward the mountain agenda. Towards this, mechanisms at regional, sub-regional, and global levels need to be explored. For example, the South Asian Association for Regional Cooperation (SAARC) development fund (3 countries to come together, with 50% country contribution) merits consideration. Similarly, climate finance mechanisms like the GCF and the AF need to step up investment in climate actions in

the HKH. The Strategy 2030 of the Asian Development Bank (ADB) focuses on seven operational priorities and all of them are covered in the *HKH Assessment* and could be a starting point for collaboration.

Dovetail nine mountain priorities consistent with the SDGs in national targets: Poverty is higher in the HKH mountains than in the plains and therefore eradicating poverty by 2030 will require higher investments for adaptation measures and better targeting. The mountainous regions also have high levels of food insecurity and malnutrition, with about 30% experiencing food insecurity and up to 50% suffering some form of malnutrition. To address these types of mountain-specificities, the nine mountain priorities (see Annex 3), consistent with the SDGs identified by stakeholders through the *HKH Assessment* process should be mainstreamed into national targets by each HKH country. There are lessons from innovative programmes like Bhutan for Life on implementing livelihood diversification programmes.

Significantly strengthen skill and entrepreneurship development for youth in government programmes and in partnership with business. Reconfigure investment to support small mountain enterprises to create goods and services that deliver resilient economic benefits at scale, alongside environmental and social benefits. One such example is an upcoming Start-Up Centre in Bhutan for resilient enterprise development. Micro-, small- and medium-sized enterprises (MSMEs), based on end-to-end value chains of niche mountain agricultural produce, including organic agriculture, community-based ecotourism, highland livestock enterprise, non-timber forest products (NTFPs) and medicinal plants, as well as renewable energy solutions should be prioritized.

Include e-commerce and e-businesses to enable small farmers to connect to innovative technologies. Business and technology should go hand-in-hand to reach remote areas to bridge barriers and connect communities to markets. For example Shokay, a social enterprise promoting yak wool products, uses 80% of the wool produced from yaks in China. Additionally, gender sensitivity and a focus on engaging women to bring about transformative change at the grassroots would require linking mountain women more effectively to business opportunities and technology.

Address migration vulnerability by integrating migration as a key development strategy in the HKH mountains and improve migration governance by closely working with multiple agencies and stakeholders within the country and overseas. Comprehensive strategies need to be developed for urban to rural migration within countries and the sub-region, as well as for reintegration of returnee migrants.

ACTION 5

Take decisive action to enhance ecosystem resilience by halting biodiversity loss and land degradation, and sustainably managing forests, rangelands, and other ecosystems in the HKH through promoting transboundary cooperation for landscapes and river basins

Promote incentives and means for mountain communities to conserve and manage biodiversity and ecosystems for improving their livelihoods

Sustainably manage forests, rangelands, and other ecosystems in the HKH by promoting transboundary cooperation for landscapes and river basins in the context of climate change

Build biodiversity information systems for better planning; adopt approaches to conserve and make wise use of biodiversity, including the development of highly remunerative biodiversity products; and address illegal trade

Implement programmes on freshwater ecosystems, including the cryosphere, watersheds, and springsheds, by adopting the river basin management approach, including at transboundary scales.

Biodiversity and ecosystem services loss is increasing in the region. Addressing this requires integrated and transboundary ecosystem approaches encompassing socio-ecological systems at the landscape scale for conservation and sustainable development.

At the landscape scale, HKH countries should promote ecosystem management programmes that encompass ecosystem-based and community-engaged adaptation, and the use of nature-based resilience building

solutions that enhance environmental security and ensure sustained livelihoods in the region.

In national programmes, HKH countries need to integrate frameworks such as long-term environmental and socio-ecological monitoring, integrated ecosystem management and enterprise development, ecosystem assessment framework for development projects, cultural services assessment for promoting nature-based and heritage tourism, and integrated river basin management approaches for enhancing the HKH ecosystem services and environmental flows.

The HKH countries need to implement programmes on freshwater ecosystems, including the cryosphere, watersheds, and springsheds, that will sustain water quality and flows in the rivers of the HKH region by adopting river-basin management at the transboundary scale.

The HKH countries will also need to integrate freshwater and aquatic ecosystems into national and subnational policies and strategies, especially for environmental and social impact assessments in development projects such as hydropower, dams, and roads and incentivize payments for ecosystem services for people who protect catchment areas of hydropower stations, and for drinking water supply and tourism.

Governments should also implement programmes to mitigate the impacts of climate change and local anthropogenic activities on ecosystems to regulate the hydrological cycle in river basins, including the transboundary ones.

The common HKH country actions related to ecosystem resilience and biodiversity that found resonance during the country consultations (see Annex 2) are the following:

Revamp and strengthen transboundary cooperation mechanisms in the bordering HKH countries to support the conservation of biodiversity and integrated river basin management in contiguous landscapes and riverscapes. Transboundary mechanisms such as memorandums of understanding, treaties, and conventions between and among countries, covering joint research, information sharing, planning, and monitoring of species and habitats are critical for conservation of flora and fauna and to address issues related to human-wildlife interface including zoonotic diseases, human-wildlife conflict, and the illegal trade in wildlife in transnational landscapes.

Commission the valuation of ecosystem services and provide incentive-based mechanisms in policy, planning, and practices. Greater incentives need to be set for the conservation of biodiversity and ecosystem services in the HKH countries. In India, the 14th Finance Commission mandated that forest cover

will be considered a criteria given 7.5 % weightage when deciding the distribution of central taxes to states, effectively incentivizing Himalayan states for conservation of biodiversity and other ecosystem services. Greater incentives are needed for the conservation of biodiversity and ecosystem services in the Himalaya. The 15th Finance Commission needs to make available specific grants for incentivized ecosystem services, in addition to the weightage given to the extent and quality of forest cover for overall devolution of taxes to states.

Urgently implement springshed management programmes to protect and revive springs and ensure water security for the dependent populations. Springs mapping and rejuvenation across the HKH countries – particularly in the mid hills – is of critical importance. For example, there is a severe water crisis in the Chittagong Hill Tracts with many of the water sources such as streams and springs drying up.

ACTION 6

Promote regional data and information sharing and science and knowledge cooperation to fill data gaps and develop actionable knowledge that is mountain focused and HKH specific

Conduct research, fill data gaps, and develop actionable knowledge that is mountain focused and HKH specific

Foster – structurally and financially – regional science and knowledge cooperation through exchange of best research practices, information and expertise, and promote capacity building, including on data generation methodologies, to generate consistent, disaggregated (social and gender), timely, and quality data on a range of issues

Urgently improve data generation and sharing on climate variables, air pollution, water, energy and food security, biodiversity, mountain poverty, migration, and other key social, physical and biological variables

Proactively promote HKH-wide cooperation in open data sharing for public goods and services

Promote and make use of ICIMOD's Regional Database System

Effective cooperation in science, data generation, and data sharing underpin all aspects of water, energy and food security, and biodiversity conservation. The success of the above urgent actions depends on the availability of disaggregated, comparable, timely, and quality data at all appropriate levels. There is inherent variation in science and data generation capacity among the eight countries in the HKH and hence, there is a strong case for cooperation, capacity building, and transfer of mountain-specific knowledge.

The first step towards better data sharing is data generation. This is the responsibility of various national agencies, and the capacity of these agencies needs to be developed through knowledge transfer among the HKH countries. Regional agencies like ICIMOD can play an important role in identifying data gaps and curating best practices in data collection and management. While many countries in the region do have good national statistical agencies, mountain-specific disaggregated data is often not collected systematically.

Proactive HKH-wide cooperation in open data sharing is needed, supported by investment of funds for generating and exchanging knowledge, enhancing public awareness, and stimulating action. Dissemination of data – especially environmental data – to the general public can be a very effective way of raising public awareness and creating pressure groups for better policymaking and action. A case in point is India's composite Air Quality Index (AQI) which is made publicly available on a real-time basis. This has created awareness about the perils of air pollution and leads to better policies and actions.

The common HKH country actions related to science and knowledge cooperation and information sharing that found resonance during the country consultations (see Annex 2) are the following:

Build institutional capacities in collaboration with ICIMOD, through initiatives like Himalaya University

Consortium (HUC) and others. The *HKH Assessment* can be introduced into curricula in universities through the HUC in addition to training and capacity building interventions on various mountain issues.

Promote open data sharing for public goods and services across the HKH. Put in place mechanisms to enhance and promote open access data repositories in the HKH countries including ICIMOD's Regional Database System which can help to address current data gaps faced by different HKH countries. Comprehensive databases need to be developed on issues critical to the HKH, including on the cryosphere, air pollution, water, energy and food security, and biodiversity. There is a need to address these gaps and improve consistency in data generation methodologies across the HKH countries, adopt global best practices and standards in data management and data use, and make data available and affordable. Establishment of a Central Data Management Agency (CDMA) for the mountainous regions and downstream areas, backed by adequate research funds, could be a useful step to augment issue-based research and data generation. This will also require investment in capacity building of some HKH countries in order to generate quality data that is consistent and disaggregated as per the requirements of mountain-consistent SDGs, particularly gender- and age-disaggregated data.

ANNEX 1

Key findings of the HKH Assessment

- Unprecedented socio-economic changes in the HKH has both exacerbated long-standing challenges and created new challenges for sustainability and livelihoods in the HKH. Challenges for sustainability are related to the overexploitation of natural resources, environmental degradation, unregulated and rapid urbanization, weak governance, and the erosion and loss of traditional cultures.
- The drivers of environmental, sociocultural, and economic change in the HKH are interconnected and are inextricably linked 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, as well as contextually-specific vulnerability to changes.
- Mountains are a hotspot of climate change in part because the temperature changes caused by greenhouse gas (GHG) emissions amplify with elevation. Thus, when global temperatures rise, the temperatures across the HKH will rise at a higher rate. At current emission trends, the 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 in the form of increased glacial melt and decrease in ice reserves.
- The 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, with exceptions in parts of the Karakoram, eastern Pamir, and the western Kunlun mountain ranges. Trends of increased glacier 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 run-off and glacial lake expansion. Projections of glacier volume loss vary; optimistically, there could be 36% loss, but if the current emission rates continue, the projected loss of glacier volume by 2100 could be as high as 69%.
- Snow-covered areas and snow volume will decrease and snow-line 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 the overall stream-flow in the region, changes in this stream-flow will affect around two billion people in terms of water for food (especially irrigation), water for energy (hydropower), and water for ecosystem services (riparian habitats, as well as environmental flows).
- More than 80% of the rural population in the 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 the regional air quality has worsened in the past two decades. Air pollutants originating within and near the HKH add to the effects of GHGs 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 region; more than 30% of the population suffer 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, uncertain food support, and inadequate policy and institutional support.
- Poverty rates in the mountains and hills exceed national averages 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 the mountain areas also reflect the region-wide major determinants of poverty and vulnerability, including socio-economic 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.
- Adaptation responses by governments in the HKH are largely incremental and not well integrated with development plans and programmes despite their urgency for the HKH. In spite of these challenges, opportunities do exist for scaled-up, inclusive, and more comprehensive climate change adaptation responses in the region. Bolstering climate change adaptation in the region will require radical 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 the mountain areas.
- Policies and processes for environmental governance in the HKH are rarely articulated at the regional level; they mostly are voiced at the national and subnational levels. The 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 region.

ANNEX 2

HKH country actions at national, regional, and global levels to promote the HKH Call to Action



Afghanistan HKH actions

The “Afghanistan Consultation—HKH Call to Action” was jointly organized by the Ministry of Agriculture, Irrigation and Livestock (MAIL), Government of the Islamic Republic of Afghanistan, and ICIMOD on 21 November 2019 at Dubai. Appreciating the *HKH Assessment* and its usefulness to the HKH region, Mr Mohammad Rafi Qazizada, Director General, Natural Resource Management, MAIL, observed that the *HKH Assessment* has set a precedent and that through the HKH Call to Action, the responsibility now lies with the HKH countries, including Afghanistan, to take concrete actions to respond to the challenges and make use of the opportunities.

The summary of the key actions at the regional, national, and global scales, suggested during the consultation are shared below, with details provided in the Afghanistan country consultation report. The suggestions are in addition to the overall endorsement of the sub-actions suggested under the 6 urgent actions in the HKH Call to Action.

Regional actions

- Glacial melt, snow melt, and changes in permafrost and precipitation have implications for the hydrology of the Western Himalayas. Afghanistan depends hugely on glacier and snowmelt-fed river systems. The path to prosperity for the HKH, therefore, requires unprecedented regional collaboration to address both climatic and non-climatic challenges.
- Cooperation across riparian countries is required to foster sustainable development of the region. Scientists must come together to generate good scientific evidence in transboundary areas, for instance by working together on cryosphere issues. Science-to-science collaboration in the region and sub-region therefore becomes important and scientists in the region must come forward to collaborate.
- Science-based regional platforms and networks like the UIBN have an important role in supporting regional, riparian country collaboration and addressing the challenges and opportunities in the region. The six working groups of the network can generate very useful research information to feed into the decision-making processes, and share experiences, knowledge, and understanding to be able to effectively deal with the effects of climate change on water resources as well as on upstream–downstream linkages.
- The gap between policymakers, scientists, and business needs to be bridged to achieve the desired outcomes. The decision makers in the political arena need to see the clear benefits of the proposed actions. The idea of a regional science–policy–business forum is therefore of critical importance and needs to be pursued at the highest level. Multiple sectors should be included in the forum to discuss commitments and actions.

- The HUC should also be part of such a regional forum and the collaborations between sciences can be nurtured and strengthened through joint fellowships, exposure visits, higher education scholarships, studies, and research.
 - Biomass burning is a major issue during winters which creates atmospheric pollution. As atmospheric pollution is a regional phenomenon, there is a strong need for regional cooperation and a regional road map for effective and timely mitigation.
 - Business-to-business cooperation and trust building have to be cultivated across countries to foster the development of mountain agriculture, highlight the uniqueness of the people, respond to mountain challenges, and to establish market linkages for the niche products and services of mountains, such as ecotourism, micro-hydropower, and legal trade in medicinal and aromatic plants.
 - Transboundary collaboration among governments has to be forged for sustaining transnational landscapes and mountain environment by conserving the resources and services of these landscapes. Water resources and protected areas management, along with wildlife conservation, can be the major points and concerns for Afghanistan; this requires transboundary collaboration.
 - National and regional level actions are needed to check illegal trade in wildlife and wildlife parts. Transboundary mechanisms need to be strengthened for conservation of flora and fauna in shared landscapes and for bringing illegal trade under control.
- emissions by 13.5%. Achieving the target is however contingent on the availability of the required financial resources.
- Use ICIMOD initiatives like Strengthening Water Resources Management in Afghanistan (SWaRMA) and SERVIR-HKH, which have developed nationwide comprehensive data and information services on land-cover dynamics, rangelands, glaciers and glacial lakes, as well as the ICIMOD-coordinated *HKH Assessment*, to generate good data sets and information. This will help in developing good projects and programmes for funding support to address climate change. Similarly, REEECH, a new ICIMOD initiative, can help to effectively use biomass energy sources, finance green technologies, and promote start-up enterprises for alternative energy solutions.
 - Address data gaps for informed decision-making. Focus should be on collecting more ground-level, disaggregated data, along with the use of satellite data, on different issues such as climate change, SDGs, community uniqueness, vulnerabilities, natural resources, and ecologic calendars. Regional collaboration can further strengthen the process.
 - Address the issue of limited hydro and weather monitoring stations in the mountains of Afghanistan.
 - Peace and security are of paramount importance to achieving many of the goals and targets. Good governance is crucial to our collective march towards prosperity.
 - Introduce new technologies and electronic business models to local farmers and people to reduce the distance between producers and markets. Micro-hydropower systems, off-line market information systems, and community-based early warning systems can be examples of connecting technology to business.
 - Set up institutions similar to the Himalaya Council in India to focus policy attention on the mountain regions and people in Afghanistan.
 - Place communities at the centre stage to share their uniqueness. Their participation in the HKH Call to Action needs to be given high priority. Clear mechanisms and frameworks are also needed for community-level cooperation and actions on mountain issues; for example, community-to-community (upstream and downstream) arrangements and other grassroots structures are required to apply the findings of the *HKH Assessment* in practice. Besides, there should be

National actions

- Awareness and updates about the issues of the HKH and climate change are needed for decision makers and local communities.
- Launch a major awareness to action campaign on the lines of Himalaya Calling, as is being launched in India. This could be termed as “Noshaq Calling” after the iconic mountain peak in Afghanistan.
- Reduce emissions in conformity with the Nationally Determined Contributions (NDC) under the Paris Agreement. Afghanistan has negligible contributions to global emissions, although it is being severely impacted. The Government of Afghanistan has initiated many actions towards meeting its obligations its NDC target to reduce

effective changes at the local, regional, national, and international levels, while the decision-making should be bottom-up rather than top-down.

- Emphasize social inclusion and gender equality in all planning and action processes in order to reduce gender and social gaps in all six urgent actions and interventions in the mountains.
- Develop an ecotourism master plan. Ecotourism is expanding into many areas in Afghanistan, but communities have limited awareness, resources, and expertise. This is a good income-generating alternative for rural communities.
- Establish real-time carbon monitoring systems. Improve human and institutional capacities to sustainably monitor carbon and make effective decisions for adaptation and mitigation purposes.
- Regenerate natural ecosystems through forest and rangeland conservation and restoration; treat soil erosion; control desertification; protect biodiversity; promote climate-resilient agriculture and food systems; and effectively manage the protected areas.
- Introduce alternative technologies for brick factories, as these factories are the main air pollutants in Afghanistan. This will also help with the process of reducing greenhouse gas emissions.
- Develop a REDD+ readiness road map and strategy to enhance the resilience of local and rural communities against climate change hazards and risks; this can also support aspects of institutional capacity building under the HKH Call to Action.
- Develop land use and land-use change detection mechanisms for Afghanistan for the sustainable use of natural products and services.
- Address the living conditions, especially high levels of poverty (54.5%), food insecurity (44.6%), and unemployment (23.9%), in the country. This requires urgent action, including addressing the economic value chain. The poverty in the mountains needs to be seen through multidimensional poverty indices.
- Enrich policies and regulatory frameworks for addressing SDGs and executing development interventions in mountain areas to reduce poverty and vulnerabilities among communities.
- Prioritize water-related problems and hazards, and address disaster risk as an urgent priority. There are poverty issues related to water management challenges which need special attention.

- Address migration vulnerability in an integrated manner, with due focus on regional planning, while providing alternative options for people living in areas where the migration rate is high. Mechanisms and relevant strategies need to be developed for the reintegration of the migrants, as uncontrolled reintegration will also lead to unsustainable use of resources, which, in turn, will lead to the degradation of the resources.
- Establish a National Natural Resource Management Centre of Excellence. The major objective of this centre should be to bring policymakers, scientists, and relevant practitioners together in order to address gaps in knowledge and information management, scientific and applied research, and capacity development; it could also play the role of a coordinator in all capacity building interventions in the natural resource management sector. The Centre of Excellence would also develop data-sharing policies and platforms at the local, national, and regional levels. Thus, the centre can be promoted and supported by the HUC and the HKH Call to Action.

Global actions

- The mountainous eastern regions of Afghanistan suffer from much higher incidence of poverty and stunted growth among children compared to the national average. This calls for accelerated implementation of the SDGs in mountain areas, which depends upon leveraging financial resources and in-country capacity. Therefore, regional and international mechanisms for enhanced fiscal support and capacities need urgent attention.
- Climate change is an environmental, social, and economic concern for all countries. Thus, sharing knowledge and experiences, and developing the human and institutional capacity of the member countries are crucial to access and manage the available climate finances/funds such as the GEF, GCF, and AF in Afghanistan. Rangeland and forest management and desertification control are the focus of Afghanistan. In terms of ecological restoration, protective and conservation measures need to be respected. And all along, adaptive measures ought to be in place to address the negative impacts of climate change.
- Scientists need to focus on collaborative projects that encourage collection and sharing of data. International collaboration with academia such as the University of Bristol (for glaciers) and the University of Reed has been useful in

this direction. More such collaborative projects would help in data generation in thematic areas of national importance. The focal ministry concerned could also come up with data and information on glacial retreat.

- The scope and paths for private-sector intervention need to be defined, which include deliberations on the carbon market and climate-financing mechanisms.

Afghanistan consultation on the HKH Call to Action

During the “Afghanistan Consultation—HKH Call to Action” on 21 November 2019, Mr Mohammad Rafi Qazizada of MAIL appreciated the *HKH Assessment* and its usefulness to the HKH region in his inaugural remarks. He emphasized that the report has set a precedent and that the responsibility now lies with the HKH countries to take things forward, including Afghanistan. He said that there are challenges on account of land-use change, glacial melt, weather unpredictability, and extreme events like droughts. The future of mountain agriculture, he said, has to be calibrated in the new context. He stated that there’s stress on sources of energy, water, and food due to climatic uncertainties. In such a context, he said the countries have to quickly define the kind of roles they will be playing.

Key messages from throughout the consultation are summarized here:

A. HKH Assessment

The *HKH Assessment* is timely and is the outcome of the hard work of more than 350 scientists over 5 years. The report will go a long way in bridging the data gaps as indicated in the past global reports of the Intergovernmental Panel on Climate Change (IPCC). The report brings to the fore the uniqueness and vulnerability of the mountain people and mountain ecosystems. It addresses the key drivers of change, the challenges they pose, and the opportunities that lie therein. Even if the warming is limited to 1.5oC as outlined in the Paris Agreement, the HKH region will still warm by more than 2oC due to elevation-dependent warming, and with the current emission rates, it may go beyond 5oC. This will have major implications for mountain hydrology due to higher variability and extremes. Then there are the challenges to food and nutritional security, as well as energy and water security in a context where disaster risks are increasing at an alarming rate. So, going forward, if the mode adopted

is going to be business as usual, the loss of biodiversity could be phenomenal. Similar is the case with glacier mass loss.

The report concludes that enough is known to take action; nevertheless, better data, knowledge, cooperation, and communication will yield better results. The HKH Call to Action therefore becomes an important process for actions and engaging policymakers, practitioners, scientists, business and diplomatic communities, civil society, and the people at large for taking actions towards the vision for a prosperous HKH 2030. The importance of the HKH mountains needs to be communicated to the national, regional, and global communities. The mountain communities are on the front line—they face the toughest challenges on account of both climate change and other drivers of change. The HKH Call to Action, therefore, needs to outline actions at multiple scales and by multiple stakeholders.

B. HKH Call to Action

HKH urgent action 1: Promote and strengthen regional cooperation at all levels across the HKH region

Regional cooperation across HKH countries focusing on mountain environments, climate change, and livelihoods at multiple scales engaging multiple stakeholders is needed for benefits to all the HKH countries. South–South cooperation and putting up a united front has great value. While endorsing urgent action 1, the following suggestions were made:

- Cooperation across boundaries and riparian countries is required to foster sustainable development in the region. Scientists must come together to generate good scientific evidence in transboundary and riparian areas across topics such as cryosphere issues and to foster science-to-science collaboration in the region and sub-region.
- Science-based regional platforms and networks like the UIBN will play an important role in supporting regional and riparian country collaboration, based on an understanding of the challenges and opportunities in the region. The six working groups of the UIBN can generate very useful research information to feed into decision-making processes, and to share experiences, knowledge and understanding to be able to effectively deal with the effects of climate change on water resources as well as upstream–downstream linkages.
- The distance between policymakers, scientists, and business needs to be bridged to achieve the

desired outcomes. The decision makers in the political arena need to see the clear benefits of the proposed actions. The idea of a regional science–policy–business forum is therefore of critical importance and needs to be pursued at the highest level. Multiple sectors should be included in this regional forum to discuss commitments and action plans, including academia, civil society, businesses and the private sector, community representatives, the media and the Himalayan University Consortium (HUC).

- Business-to-business cooperation and trust building across countries have to be cultivated to foster the development of mountain agriculture, highlight the uniqueness of the mountain people, respond to mountain challenges, and to establish market linkages for the niche products and services of mountains, such as ecotourism, micro-hydropower, legal trade in medicinal and aromatic plants. New technologies and electronic business models need to be introduced to local farmers and people to reduce the distance between producers and markets. Micro-hydropower systems, off-line market information systems, community-based early warning systems can be examples of connecting technology to business.
- Transboundary collaboration among governments has to be forged for sustaining transnational landscapes and mountain environment by conserving the resources and services of these landscapes. Water resources and protected areas management, along with wildlife conservation, can be the major points and concerns for Afghanistan; this requires transboundary collaboration.
- For transboundary intergovernmental cooperation, appropriate and clear mechanisms need to be developed in order to understand the extent and scale of possibilities. Clear mechanisms and frameworks are also needed for community-level cooperation and actions on mountain issues; for example, community-to-community (upstream and downstream) arrangements and other grassroots structures are required to apply the findings of the *HKH Assessment* in practice. Besides, there should be effective changes at the local, regional, national, and international levels, while the decision-making should be bottom-up rather than top-down.
- Cooperation at all levels should be more oriented towards addressing the SDGs and the priorities of the Government of Afghanistan on development, economic growth, and job creation. Afghanistan is entering a new era and the shock of transition is giving way to a visionary and forward-looking

strategy for self-reliance; this demands discipline, focus, realism, and a pragmatic approach to solving problems and achieving the SDGs. Taking stock of the knowledge base, stakeholders, resources, technologies, and ideas to create a common platform can be addressed under the HKH Call to Action.

- Like the Himalaya Council in India that focuses its work on mountain regions and people, there is a need to have something similar for the Hindu Kush mountains of Afghanistan.

HKH URGENT ACTION 2

RECOGNIZE AND PRIORITIZE THE UNIQUENESS OF THE HKH MOUNTAIN PEOPLE

- The value of the HKH mountains in Afghanistan can be seen through its unique culture manifested in its ethnic and linguistic diversity which includes 30 living languages, biophysical landscapes, traditional knowledge and practices – including agricultural practices – and ethno-biological knowledge. In addition to the actions suggested under urgent action 2, the following could be considered:
- The need to bring in communities to share their uniqueness. Their participation in the HKH Call to Action needs to be given high priority.
- The need to conduct holistic social studies in order to identify indigenous cultures and traditions, mountain cuisine and costumes, archeological heritage, and the uniqueness and diversity of indigenous communities for example, among the indigenous communities in the Bamyan province. There is also a need to understand social challenges and opportunities in order to build on and strengthen key positive cultural and traditional practices and to convert their uniqueness into a source of local economic growth and development.
- Studies and research for better planning and utilization of resources and ecological services. Awareness and updates about the issues of HKH and climate change are needed for decision makers and local communities.
- Launching an HKH Calling major awareness action campaign on the lines of Himalaya Calling in India. This could be termed as “Noshaq Calling” after the iconic mountain peak in Afghanistan. The initiative would solicit the engagement of multiple stakeholders in campaign mode for sharing scientific evidence and traditional wisdom and would promote mountain champions to share their stories. Using creative communication, it

would engage people's representatives, decision makers, communities, business, academia and various government line agencies—thus bridging the science, policy, and practice divide towards generation of a shared vision for definitive actions.

- Emphasizing social inclusion and gender equality in all planning and action processes in order to reduce social gaps in all six urgent actions and interventions in the mountains.
- Capacity building of the people and agencies to promote resilience and preserve the uniqueness of the people in the mountains.
- Developing an ecotourism master plan. Ecotourism is making its way into many areas in Afghanistan, but communities don't have much awareness, resources, and expertise to invest in this sector. This will also be one of the best income-generating initiatives for the rural communities.
- Using evidence from studies, preparing strategies and plans to conserve unique cultures and traditions; address mountain challenges; and improve mountain livelihoods, socio-economic resilience, and capacities to establish quality mountain settlements.

HKH URGENT ACTION 3

TAKE CONCERTED CLIMATE ACTION TO KEEP GLOBAL WARMING TO 1.5°C BY 2100

Afghanistan is highly vulnerable to climate change. Though the country has negligible contribution to global emissions, it is being severely impacted. As different sectors are impacted on account of climate change, important climate actions need to inform and be mainstreamed into government strategies and priorities. In detail under urgent action 3, the following points need consideration:

- The Government of Afghanistan has initiated many actions towards its commitment under the Paris Agreement to reduce emissions by 13.5%. Achieving the NDC target is however contingent on the availability of the required financial resources. Afghanistan has developed a National Adaptation Programme of Action (NAPA) as well as a Local Adaptation Plan of Action (LAPA) and all development projects are required to undergo environmental impact assessment.
- Sharing knowledge and experiences, and developing the human and institutional capacity of the HKH countries are crucial to access and manage the available climate finances and funds such as the GEF, GCF, and AF.

- To reduce atmospheric pollution issues, address biomass burning and air pollution through regional cooperation and a regional road map for effective and timely mitigation; address chlorofluorocarbon through good governance measures; increase research to understand black carbon emissions implications for Afghanistan; establish real-time carbon monitoring systems; and build human and institutional capacities to sustainably monitor carbon and make effective decisions for adaptation and mitigation purposes.
- Leverage ICIMOD initiatives like REEECH, SWaRMA and SERVIR-HKH as well as the ICIMOD-coordinated *HKH Assessment*, to generate quality data sets and information and to help in developing projects and programmes for funding support to address climate change and promoting clean energy.
- Regenerating ecosystems through forest and rangeland conservation and restoration, checking soil erosion, preventing desertification, protection of biodiversity, climate resilient agriculture and food systems, and protected areas management.
- Introducing alternative technologies for brick and briquette factories, as these factories are the main contributors to air pollution in Afghanistan. This can also help reduce overall greenhouse gas emissions.
- Conducting specific studies on desertification, land degradation and sand dune in Afghanistan for preparing long term coping strategies and action plans for soil conservation and treatment, improvement of soils, and retaining more organic carbon and moisture in soils.
- Transferring alternative and renewable energy technologies such as solar power, wind power, and micro-hydropower, which have been implemented successfully in HKH countries.
- Afghanistan is in the process of developing a REDD+ readiness roadmap and strategy to enhance the resilience of local and rural communities against climate change hazards and risks. This can support the HKH Call to Action in some aspects of institutional capacity building.
- Define the scope and paths for private sector intervention, including deliberations on the carbon market and climate financing mechanisms.
- Develop land use and land change monitoring mechanisms for more effective promotion of sustainable land use.

**HKH URGENT ACTION 4:
TAKE ACCELERATED ACTION TO ACHIEVE THE SDGs AND 9
MOUNTAIN PRIORITIES IN THE HKH**

Given the mountain specificities, there is urgency for accelerating the achievement of the SDGs in the mountainous regions. The following could supplement the urgent action 4:

- Improve job creation and food security. There are good prospects for restoring agricultural potential and export-oriented commodity processing.
- Fully involve academic and research institutions to support development goals and targets such as those in the implementation of Afghanistan National Peace and Development Framework (ANPDF) and other long-term development strategies which have targeted SDGs in Afghanistan.
- Recognize that the 9 mountain priorities consistent with SDGs are very critical to the Afghanistan context given the high poverty and vulnerability rates in Afghanistan.
- Address economic value chains and assess poverty through multi-dimensional poverty indices.
- Reduce poverty and vulnerabilities of communities in mountain areas through supportive policies and regulatory frameworks for addressing SDGs and targeted implementation of development interventions.
- Explore fiscal support to accelerate achievement of the SDGs within budgets and through regional and international mechanisms.
- Promote good governance in the collective march towards prosperity since peace and security are of paramount importance to achieve many of the development goals and targets.
- Highlight water-related problems and hazards and reduce disaster risks while giving special attention to poverty issues related to water management.
- Address internal rural-urban and external migration in an integrated manner, with due focus on regional planning and providing alternative options in areas from where people are migrating. Develop mechanisms and strategies for reintegration of migrants, as uncontrolled reintegration could lead to unsustainable use and resource degradation.
- Promote learning from other HKH countries in terms of best practices in SDG achievement since Afghanistan is in the early phase of SDG implementation.

- Orient cooperation at all levels towards addressing SDGs and the priorities of the Government of Afghanistan vis-à-vis development, economic growth and job creation and promote greater South-South and North-South cooperation.

**HKH URGENT ACTION 5
TAKE DECISIVE ACTION TO ENHANCE ECOSYSTEM RESILIENCE**

Afghanistan is projected to remain highly vulnerable – #8 among 170 countries – to climate impacts on population, ecosystems, and businesses over the next 30 years. This is not surprising, because retrospectively Afghanistan has been very vulnerable to these impacts over the last two decades. In Afghanistan, most wetlands are seriously undermined and some of them have already disappeared due to water scarcity on account of erratic and inadequate precipitation. Land use and land cover change have further contributed to the loss of wetlands.

Afghanistan's biodiversity index is -0.296 indicating that it is somewhat lower than the median. As a broad generalization, biodiversity appears to be declining at an accelerating rate throughout Afghanistan. Satellite image analysis and assessment of commercial wood volumes show that forests, both closed forest and open woodlands, are rapidly disappearing. Overgrazing and shrub collection for fuel is markedly reducing plant biomass and altering plant communities.

Diversion of water and increasingly frequent drought is drying wetlands and rivers with unknown effects on aquatic biodiversity. The ubiquity of weapons following years of war is leading to the loss of large mammals throughout much of the country. Footprint analysis shows that Afghanistan's per capita bio-capacity is declining. Large scale remote sensing analysis suggests that nearly 8,000 km² of land was degraded between 1981 and 2003.

Afghanistan's extremely varied mountain and desert topography result in numerous habitat types. Temperature and precipitation change dramatically with elevation, resulting in a variety of habitats and differing suites of species adapted to them. The mountains also act as a barrier to precipitation, resulting in higher moisture in the eastern part of the country, considerable snow at higher elevations, and a rain shadow to the north and west. The result is a variety of species adapted to the entire gamut of moisture regimes, ranging from desert to monsoon forest.

The following would further support urgent action 5:

- Undertake national level interventions for comprehensive assessments and inventories of natural resources and biodiversity to identify

hotspots vulnerable to natural disasters and climate change with valuation of ecosystem services. This will validate and support forest and rangeland conservation practices and set conservation priorities.

- Develop a national biodiversity information management system to regularly monitor the status of Afghanistan's biodiversity, which could also strengthen regional cooperation.
- Share best practices on integrated landscape or watershed management since Afghanistan has positive examples including national level actions like watershed management which have led to improvement of agriculture and livelihoods and the taking up at scale of construction of check dams and improvement of watersheds.
- Ensure that the HKH Call to Action focuses on landscape and participatory approaches in implementing national programmes on natural resources management. Rangelands and forests are important ecosystems in Afghanistan and cover approximately 50% of the total land surface of the country. They support the economy by providing essential resources – forage, water, fuel, timber, and non-timber forest products. Rangelands supply 75-80% of animal fodder for majority of the country's livestock. They also moderate surface water flows; it is estimated that rangelands nourish nearly 4 million ha of irrigated lands in Afghanistan.
- Introduce and implement payment for ecosystem service (PES) models to improve people's participation in ecosystem conservation, management and sustainability. This will provide incentives for securing critical ecosystem services. Ecotourism, green enterprises, and cash for work are good examples for securing community participation.
- Further promote Afghanistan's National Biodiversity Strategy and Action Plan (NBSAP) and National System Plan for Protected Areas Management through implementation of national programmes under the HKH Call to Action.
- Address the transboundary issue of illegal wildlife trade through transboundary mechanisms for conservation of flora and fauna in shared landscapes and strengthening the control of illegal trade.
- Support research and innovative solutions for the sustainable and participatory management of forests and rangelands and the ecosystem services they provide, including challenges related

to rotational land use and management of user rights.

HKH URGENT ACTION 6

PROMOTE REGIONAL DATA AND INFORMATION SHARING AND SCIENCE AND KNOWLEDGE COOPERATION

Data generation has improved over the years with the advancement in technology. However, there are still data gaps in Afghanistan so more focus should be given to collecting ground level data complemented with the use of satellite data. Regional collaboration can further strengthen the process. Some actions to address data issues include:

- The focus of scientists on collaborative projects that encourage collection and sharing of data and increasing collaborative projects in data generation in thematic areas of national importance.
- Transfer knowledge, best practices, lessons learnt, and science and technology to the local community in the mountain region and across the HKH region.
- Add additional hydromet and weather monitoring stations to collect important data and generate better understanding of the changes in the mountains.
- Create a national database system including data sharing protocols and promote ICIMOD's Regional Database System in order to share data in the region.
- Assess capacity needs in mountain regions of Afghanistan to better understand the situation and fill in the gaps.
- Conduct inventories and surveys on natural resources and establish information stations to collect information and monitor precipitation, water resources, cryosphere, natural disasters, particularly floods and GLOFs, and air pollution.
- Leverage the Himalayan University Consortium in sharing of science, introducing new technologies, conducting scientific research and providing long-term fellowships for Afghanistan.
- Support and promote the process of establishing of a National Natural Resource Management Center of Excellence to bridge policy, science and practice including its efforts to develop data sharing policies and platforms at the local, national and regional level.
- Prepare platforms and principles for data sharing.



Bangladesh HKH actions

The “Bangladesh Consultation - HKH Call to Action” was organized in Dhaka on 24 October 2019. The Honourable Minister, Ministry of Chittagong Hill Tracts Affairs (MoCHTA), Mr. Bir Bahadur Ushe Sing welcomed the *HKH Assessment* and stressed that the region is the grain and rice basket of Asia. He stressed that what happens in the HKH has implications for Bangladesh as accelerated glacier melt and change in precipitation would contribute to flooding of three major rivers in the short- to medium-term and water scarcity in the long term. He noted that since Bangladesh is gearing up to move to the status of a middle income country by 2021, it is critical that adaptation and resilience building is given the highest priority. He also underscored the role of renewable energy in the country’s energy security and noted that afforestation and eco-restoration is needed for both material benefit as well as for mental health while also stressing the need to factor in environmental concerns in all development plans and actions. The summary of key actions at regional and national scale follows below:

Regional actions

One metre of sea level rise, as predicted under current emission trends, will inundate most of the southern part of Bangladesh. The HKH extends to the Chittagong Hill Tracts (CHT) through the contiguous landforms of northeastern India, through the hill ranges of Tripura and Sylhet. Therefore, regional cooperation across HKH countries focusing on mountain environments, climate change and livelihoods at multiple scales and engaging multiple stakeholders is needed for benefits to all HKH countries. The establishment of a regional forum at ministerial, official and multi-stakeholder levels would be a step in the right direction. A common investment platform or institution like a regional investment bank could contribute to the sustainable development of the HKH region.

It is crucial to strengthen transboundary and sub-regional cooperation for conservation of biodiversity in CHT and contiguous areas in the states of Tripura, Mizoram and Meghalaya in India. This could also address mountain and hill agriculture problems, including securing market linkages for niche mountain products and research collaboration on specific crops.

National actions

- Commission a comprehensive assessment of the CHT on climate, culture, heritage, and socioeconomic conditions. Explore and document baseline data on cultural and religious heritage, indigenous knowledge and biodiversity. Develop and implement programmes and investment on conservation of nature, culture and heritage resources.
- Launch a major awareness to action campaign on the lines of Himalaya Calling in India which could be termed “CHT Calling” to bridge the science, policy and practice divide and engage multiple stakeholders around key thematic action areas.
- Reduce greenhouse gas emissions by 10% by leveraging donor support to augment the Paris Agreement Nationally Determined Contribution by the Government of Bangladesh to reduce emission by 5%. Bangladesh has developed National Adaptation Program of Action (NAPA) as well as Local Adaptation Plan of Action (LAPA).
- Consider carbon tax and trading based on the polluters pay principle.
- Adopt mountain and hill focused policies to support the accelerated implementation of programmes to achieve the SDGs in the CHT.
- Incorporate skill and entrepreneurship development for CHT youth in government programmes, including Asian Development Bank supported programmes already in place. Promote community-based, pro-poor ecotourism building on examples like the Monlai village community. Promote high-value hill products such as coffee.
- Urgently implement springshed and watershed management programmes to protect and revive springs and ensure safe drinking water for all as well as for agricultural production to address the severe water crisis in the CHT.
- Adopt nature-based and green infrastructure development in the CHT
- Enhance digital connectivity in many parts of the CHT.
- Embed disaster resilience measures to address floods, droughts and earthquakes in all development plans.
- Carry out comprehensive inventory and valuation studies of forests to provide the basis for conserving and protecting forests from deforestation and degradation including ensuring

protection of Village Common Forests (VCF) through a people-centric approach.

- Develop a national data infrastructure and national data repository and create a Central Data Management Agency (CDMA) for CHT and the country to ensure data quality and consistency and share data in line with regulations on data sharing including data submissions prior to project closures.

Bangladesh consultation on the HKH Call to Action

During the “Bangladesh Consultation - HKH Call to Action” on 24 October 2019, Mr. Mesbahul Islam, Secretary MoCHTA, and Mr. Naba Bikram Kishore Tripura, Chairman Chittagong Hill Tract Board spoke on the *HKH Assessment* and its implications for Bangladesh. Dr Eklabya Sharma, DDG ICIMOD presented key findings of *HKH Assessment* report. Honourable Minister MoCHTA, Mr. Bir Bahadur Ushe Sing delivered the keynote address.

A. Key messages and follow-up actions

The dignitaries including the Honourable Minister, Secretary MoCHTA and Chairman CHT Board welcomed the *HKH Assessment*, noted that it will go a long way in bridging the data gaps as indicated in past IPCC global reports and that it brings to the fore the uniqueness and vulnerability of mountain people and mountain ecosystems. They also noted that the HKH Call to Action is an important process for taking actions achieving the vision of a prosperous HKH by 2030.

B. Inputs to the urgent HKH actions

HKH URGENT ACTION 1 PROMOTE AND STRENGTHEN REGIONAL COOPERATION AT ALL LEVELS ACROSS THE HKH REGION

The HKH is connected to the Chittagong Hill Tracts through the contiguous landforms of northeastern India, through the hill ranges of Tripura and Sylhet and regional cooperation focusing on mountain environments, climate change and livelihoods at multiple scales, and engaging multiple stakeholders, is needed for the mutual benefit of HKH countries. The following actions are suggested under urgent action 1:

- Establishment of a regional common forum at three levels: the first at the ministerial level to ensure political commitment; the second at the secretary level for policy actions; and the third at the multi sectoral level involving academia, civil

society, business, and community representatives to discuss action plans.

- Establishment of a regional common investment platform or institution across the HKH countries like a regional investment bank for sustainable development of the region.
- Transboundary cooperation to foster development of mountain and hill agriculture, to address agriculture problems, including securing market linkages for niche mountain products, and for research collaboration on specific crops.

HKH URGENT ACTION 2 RECOGNIZE AND PRIORITIZE THE UNIQUENESS OF THE HKH MOUNTAIN PEOPLE

The value of the Chittagong Hill Tracts in the context of Bangladesh could be seen through its unique culture, manifested in the ethnic and linguistic diversity, physical landscape of the hills, rich flora and fauna, the traditional knowledge and practices including agricultural practices and ethno-biological knowledge. The CHT thus has very high tourism potential. The major actions to be taken to recognize and conserve this uniqueness include:

- Undertake a comprehensive assessment of CHT in terms of climate, culture, heritage, and socioeconomic conditions. Explore and document baseline data on cultural and religious heritage, indigenous knowledge, and biodiversity
- Develop and implement programmes and investments for the conservation of culture and heritage resources
- Enhance ecotourism and heritage tourism by engaging local communities
- Formulate policies and programmes for mainstreaming gender in the CHT
- Launch a major awareness to action campaign which could be called “CHT Calling”

HKH URGENT ACTION 3 TAKE CONCERTED CLIMATE ACTION TO KEEP GLOBAL WARMING TO 1.5 ° C BY 2100

Bangladesh is highly vulnerable to climate change. Its impacts are already evident with saltwater intrusion, inundation of large areas in the coastal region, and climate induced migration. Sea level rise has also been observed by successive studies and an assessment has been made on the impact of Sea Level Rise (SLR) on coastal communities. Too much water during the monsoon and scarcity during other times, particularly

in the CHT, has often hampered agricultural development.

- Even though Bangladesh' global share of emissions is just 0.1%, it has committed to reduce emissions by 5% through government initiatives alone under the Paris Agreement Nationally Determined Contributions. However, emissions could be reduced by up to 10% if donor support is in place. Bangladesh has developed National Adaptation Programme of Action (NAPA) as well as Local Adaptation Plan of Action (LAPA) and has several examples of adaptation measures like development of floating agriculture.
- Actions to limit global warming that could be considered include carbon tax and carbon trading based on the polluters pay principle complemented by strict implementation of the green building code, multi-purpose use of buildings and encouragement of harnessing of abundant solar energy .
- Awareness building on climate impacts and required actions for various stakeholders is urgently needed.

HKH URGENT ACTION 4 TAKE ACCELERATED ACTION TO ACHIEVE THE SDGs AND 9 MOUNTAIN PRIORITIES IN THE HKH

CHT is remote and hard to reach, lacking many government facilities, and reports a much higher incidence of poverty (around 48%) compared to the national average (21%), with high levels of stunting in children (55%). This underlines the urgency of accelerating the achievement of the SDGs in the CHT and ensuring a mountain and hill focus in policies. What works in the plains may not work in the hilly region because of physical, cultural and demographic uniqueness. The following actions could help in achieving SDGs for the CHT:

- Livelihood enhancement strategies – including ecotourism and promotion of high-value mountain products – focusing on skill and entrepreneurship development for CHT youth. This must find strong resonance in government programmes, including those already in place.
- Develop and implement programmes on sustainable agricultural practices
- More schools within the CHT with residential facilities to provide education and skill building opportunities
- Protect and revive springs and ensure appropriate springshed and watershed management for safe drinking water, water for agriculture, and to

address the severe water crisis in the CHT caused by many of the water sources such as streams and springs drying up or becoming seasonal

- CHT infrastructure development through green technologies, investments in solar energy, and extension of the digital telecommunication network
- Embed disaster preparedness in all development plans and build disaster resilience by addressing the risks from floods, droughts and earthquakes
- Consolidate gains while making further improvement in CHT governance to ensure peace and tranquility in the society and to enable achievement of the SDGs, building on the gains made over the years.
- Involve academic and research organizations in undertaking research to support the development goals and targets.

HKH URGENT ACTION 5 TAKE DECISIVE ACTION TO ENHANCE ECOSYSTEM RESILIENCE

An estimated 16% of the total geographical area of the country is under forest cover, of which about half lies in the CHT. However, there are challenges of deforestation and forest degradation on account of multiple drivers that need to be squarely addressed to ensure ecosystem resilience. At the same time, movement of elephants, Asiatic black bear, gaur and even tigers have been observed across the international boundary covering 4-5 districts in Bangladesh, including the CHT, and contiguous areas in the states of Tripura, Mizoram, and Meghalaya in India. Some suggested actions towards enhance ecosystems services include:

- Conduct a comprehensive assessment of biodiversity in CHT as well as valuation of ecosystem services to provide a strong rationale for conservation of forests and to help in setting up incentive or compensation mechanisms
- Issue a moratorium on tree felling of any kind for a period of 5 years, following which sustainable forestry practices could help in restoring ecosystem resilience and provide sustained benefits to people. Explore and promote alternatives to fuelwood burning and alternative livelihood options which can help in reducing unsustainable resource use practices and conserve Village Common Forests (VCF) using a people-centric approach.
- Invest in springshed and watershed conservation across the CHT landscape to rejuvenate dying springs and ensure lean season flows.

- Build a mass awareness to action campaign involving multiple stakeholders around the biodiversity of CHT and the benefits from its conservation and sustainable use.
- Promote transboundary cooperation to ensure conservation of ecosystems and corridors in the contiguous landscape stretching from Cherrapunjee in Meghalaya via Sylhet to CHT.

HKH URGENT ACTION 6
PROMOTE REGIONAL DATA AND INFORMATION SHARING AND SCIENCE AND KNOWLEDGE COOPERATION

While data generation has improved over the years and national agencies have been generating data on a number of thematic areas, regional collaboration can further strengthen the process. Some specific challenges include serious limitations in terms of data archiving and preservation and retrieval of data and the lack of time series data needed for decision making. Some of the actions to address data issues include:

- Develop national data infrastructure and a national data repository including the creation of a Central Data Management Agency (CDMA) for CHT and the country.
- Ensure that various projects operating across the country share the data generated with the national repository.
- Once the national level data infrastructure is in place, it will be easy to share the data regionally as well. Meta data can be published and shared on the regional platforms.



Bhutan HKH actions

The “Bhutan Consultation - HKH Call to Action” was jointly organized by the Ministry of Agriculture and Forests (MOAF), Royal Government of Bhutan and ICIMOD on 29 May 2019 in Thimphu. Lyonpo Yeshey Penjor, Minister of Agriculture and Forests welcomed the publication of the very comprehensive and timely *HKH Assessment*. Bhutan is already witnessing disturbing trends due to shifting monsoon patterns and high weather variability leading to loss of revenue from hydropower. Spring sources are also being impacted and disaster risks are increasing at an alarming rate. The key messages from the deliberation are summarized below:

Regional actions

Higher investment in the mountains is crucial to take forward the HKH Call to Action. This calls for exploring regional and global mechanisms, such as the South Asia Association for Regional Cooperation (SAARC) Development Fund which brings together three countries with 50% country contribution. Similarly, the SAARC Agricultural Ministers’ Forum could provide much needed impetus to regional cooperation and investments in the agriculture sector.

A regional science–policy forum for sharing common concerns and exchanging knowledge to improve policy making will be useful and the business community could also be engaged in the forum. ICIMOD could facilitate such a process, but the larger ownership has to be with the regional member countries. Learning from the Arctic Council and similar regional initiatives and configurations could be useful. The science–policy forum should evolve as regional institution for South-South and North-South learning.

NDC reviews by the regional member countries need to ensure that there are strong monitoring mechanisms to guarantee that targets are being achieved. Regional sharing of such robust NDC mechanisms and revisiting of the targets could be considered.

On account of climate change, there is an observed shift in the range and habitat of various species such as royal Bengal tiger and elephant. Range expansion and habitat suitability for species at their northern distribution limits is being increasingly recorded. There is need to harmonize monitoring and sharing of such information on species habitat suitability across the HKH.

Bhutan in its 12th five-year plan (FYP) has committed to become a fully organic country. Similar initiatives are being reported from mountain states in other HKH

countries and could inspire all countries and mountain states of the HKH to adopt organic farming.

Gross National Happiness (GNH) is the development paradigm in Bhutan. The 17 Key Result Areas in the 12th FYP are guided by the nine domains of gross national happiness. The 9 domains of GNH and 9 HKH mountain-consistent SDG priorities have much in common. Therefore, the 9 GNH domains defining wellbeing and happiness could contribute to SDGs consistent mountain priorities in other HKH countries.

Open data sharing for public good services across the HKH needs to be promoted in the national data sharing policies. Consistency in data generation methodologies across HKH countries will need investment in capacity building to have quality data that is consistent and disaggregated as per the requirements of mountain-consistent SDGs, particularly gender and age disaggregated data. Promotion and use of ICIMOD's regional data system would be useful for all HKH countries.

National actions

- Adopting “HKH Calling” as an awareness to action campaign, engaging multiple stakeholders including mountain women, mountain champions, youth groups and others would go a long way in showcasing uniqueness of mountains, the challenges thereof and the stories of success. This will assist in collectively defining of the mountain agenda. Developing it as a truly people's movement would be crucial. In Bhutan, local government (Dzongkhags) could lead the process at the local level. The campaign should reach out and engage mountain champions and foster coalitions and networks. Highland cultures and festivals should be used as platforms for sharing across the HKH.
- Leverage funding from Bhutan Climate Fund, Bhutan for Life, and REDD+ for spearheading actions on adaptation and mitigation. Bhutan has resolved that it will maintain 60% forest cover for all time to come. The forest cover in the country sequesters 8.71 million tons of CO₂ equivalent while emissions from all sources is 2.2 million tons of CO₂ equivalent, making it a carbon negative country.
- Address pockets of high incidence of poverty during the 12th FYP. Bhutan is committed to the SDGs and the country is all set to graduate from the list of LDCs by 2023. The 12th FYP fully takes on board the SDGs and aligns it with 17 National Key Result Areas. Overall, about 8% of the population lives below the poverty line, although

in some pockets in the country this is as high as 30%.

- Support Bhutan for Life to implement livelihood improvement programmes through ecotourism and green enterprises, which will be a good action point across the HKH region. Urban planning and infrastructure need to be integrated into the Call for Action.
- A national research fund and a central agency for priority research could be a useful step to augment issue-based research and data generation in Bhutan.

Global actions

Bhutan is uniquely placed to lend its leadership in both global and regional fora. As Chair of the Least Developed Countries (LDC) Group on climate change in UNFCCC processes and one of the most vulnerable countries in the HKH, Bhutan will lend its leadership in the UN Climate Summit and UNFCCC Conference of the Parties and other global platforms.

Bhutan consultation on the HKH Call to Action

The “Bhutan Consultation - HKH Call to Action” on 29 May 2019 was preceded by meetings and discussions with key dignitaries/officials on 28 May, including with Lyonpo Yeshey Penjor, Minister, MoAF; Dasho Rinzin Dorji, Secretary MoAF; Dasho Sonam Tshong, Secretary Ministry of Foreign Affairs; and Dasho Thinley Namgyel, Secretary, GNH Commission. The key messages summed up here include workshop deliberations as well as significant points from the meetings held on 28 May.

A. HKH Assessment and Call to Action

Bhutan welcomes the very timely *HKH Assessment* report on the HKH region. It is also important for the reason that there was no comprehensive regional assessment in the past. Bhutan has already seen disturbing trends due to shifting monsoon patterns and high weather variability leading to loss of revenue from hydropower. Spring sources are also being impacted, water resources storage being lost and GLOF events are on increase. We need to adapt. We must make people aware of the risks that we face and methods we can adopt. Building capacity of youth to understand environment, health and climate change vulnerability is very important.

The *HKH Assessment* and Call to Action could be used to take informed policy actions based on good scientific evidence; to generate larger support for mountains in various fora at national, regional and global scale; and to leverage funding for projects or programmes that support the HKH Call to Action. Bhutan is uniquely placed to lend its leadership on the HKH Call to Action since its emphasis on GNH in its 12th plan period resonate well with many ideas in the Call to Action.

B. Key messages on the HKH Call to Action

The following messages are based on the discussions around the six key urgent actions, detailed in the draft HKH Call to Action. The messages have national, sub-regional, regional and global dimensions.

HKH URGENT ACTION 1 PROMOTE AND STRENGTHEN REGIONAL COOPERATION AT ALL LEVELS ACROSS THE HKH REGION

Bhutan is uniquely placed to lend its leadership in regional and global fora. As the chair of the Least Developed Countries (LDC) Group under the United Nations Framework Convention on Climate Change (UNFCCC), and as one of the countries most vulnerable to climate change in the HKH, Bhutan can provide leadership at UN Climate Summits and UNFCCC Conferences of Parties. The *HKH Assessment* will be quite handy in strengthening arguments for greater attention and support from the global community.

- Explore regional and global mechanisms such as the SAARC Development Fund and the SAARC Agricultural Ministers' Forum, as well as the GCF and the AF. ICIMOD could play a key role in building capacities in accessing the GCF and the AF.
- Promote organic farming across all HKH countries, which Bhutan is keen to pursue and lead.
- Share knowledge and best practices through both sub-regional and regional platforms and fora.
- Implement a regular schedule for a regional science-policy forum for sharing common concerns and exchanging knowledge to improve policy making which should be owned by the regional members countries and could evolve into a regional institution for South-South and North-South learning, allow for engagement with the business community and for learning from the Arctic Council and other such regional configurations.

HKH URGENT ACTION 2 RECOGNIZE AND PRIORITIZE THE UNIQUENESS OF THE HKH MOUNTAIN PEOPLE

- An “HKH Calling” as an awareness to action campaign could be lead at the local level in Bhutan by farmer groups and cooperatives in the districts.
- Amplify mountain voices, generate gender disaggregated data, provide more clear and targeted gender interventions in both policies and plans, mainstream gender in all six urgent actions and use highland cultures and festivals as platforms for sharing across the HKH.
- Future HIMAP assessments should consider how to stem outmigration from rural and mountain areas and how to make mountain businesses and agriculture more profitable.

HKH URGENT ACTION 3 TAKE CONCERTED CLIMATE ACTION TO KEEP GLOBAL WARMING TO 1.5 ° C BY 2100

Bhutan has resolved that it will maintain 60% forest cover for all time to come. The forests in Bhutan sequester 8.71 million tons of CO₂ equivalent while the emissions from all sources is 2.2 million tons of CO₂ equivalent. Thus Bhutan is carbon negative. Bhutan's development strategy with low carbon emissions can be shared across HKH countries.

In addition to clean energy from hydropower as a most promising strategy for Bhutan, the country will benefit from off-grid solar energy in the remote mountainous areas where population density is very low. Bhutan should accelerate its work on sustainable land management, an important element of climate action. Bhutan Climate Fund for securing carbon credits is being worked out as warehouse offsets, till these are transferred to buyers. Bhutan Climate Fund, Bhutan for Life and its REDD+ strategy are critical areas for action on adaptation and mitigation.

NDC reviews by the regional member countries need to ensure that there is a strong monitoring mechanism to ensure that targets are being achieved. Regional sharing of such robust NDC mechanisms and revisiting the targets could be considered.

HKH URGENT ACTION 4 TAKE ACCELERATED ACTION TO ACHIEVE THE SDGs AND 9 MOUNTAIN PRIORITIES IN THE HKH

Bhutan is fully committed to the SDGs and is all set to graduate from the list of LDCs by 2023. The 12th Five Year Plan (FYP) will be Bhutan's last 5-year plan as LDC. Developed through extensive stakeholder consultations, the Plan fully takes on board the SDGs and aligns it with 17 National Key Result Areas.

Gross National Happiness (GNH) is the development paradigm in Bhutan. The 17 Key Result Areas in the 12th plan are guided by the nine domains of GNH, which have much in common with the nine HKH SDG-consistent mountain priorities. The nine GNH domains defining wellbeing and happiness could therefore contribute to the nine mountain priorities in other HKH countries.

In its 12th plan, Bhutan has committed to go fully organic. Similar initiatives are being reported from some states in larger countries of HKH. This could inspire other mountain states and countries in the HKH.

Technology for sustainable production systems is key, therefore there is a need for greater focus and investments in technology for sustainable production systems. Educational institutions need to align their curriculum with skill building for these sustainable production system technologies, which could open up new job avenues for youth.

Poverty in the mountains needs to be seen through multi-dimensional poverty indices. While overall about 8% of the population live under the poverty line in Bhutan, this is as high as 30% in some pockets. The 12th FYP will have a key focus to address this.

Migration vulnerability is very high in the mountains. In addition to high outmigration from the mountains to the plains, internal migration from rural to urban areas is also very high but often overlooked. This needs to be addressed in an integrated manner, with due focus on regional planning.

Bhutan's policy has always been to become self-sufficient in food production but it is still dependent on food imports. This dimension should be built into the HKH Call to Action.

HKH URGENT ACTION 5 TAKE DECISIVE ACTION TO ENHANCE ECOSYSTEM RESILIENCE

On account of climate change, a shift in the range and habitat of various species is being observed for some time. Range expansion and habitat suitability for species at the northern distribution limits is being increasingly recorded. There is need to harmonize monitoring and sharing of information on such shifts in species habitat suitability across the HKH. For example, impacts of climate change on caterpillar fungus (*Ophiocordyceps sinensis*) needs to be seen across the HKH countries where it is distributed.

Payment/Incentives for Ecosystem Services (PES) need to be assessed in each of the HKH countries and best practices showcased to help other countries build good incentive mechanisms for securing critical ecosystem

services. Bhutan for Life focuses on improving livelihoods through ecotourism and green enterprises, which is a good model for the region.

Urban planning and infrastructure need to be integrated into the Call for Action while discussing the biodiversity and habitat issues.

Water is one of the critical ecosystem services. Quality of water has seldom received the attention that it deserves. There is need to commission a HKH-wide assessment of water in terms of its quality and the status of springs and watersheds.

There is need to synchronize and integrate information and package it well. An integrated portal on biodiversity information systems could strengthen regional cooperation. Citizen science programmes need to be integrated with formal scientific research. Similarly, traditional knowledge systems should be documented and used in the sustainable development plans and implementation. Environmental leadership should be encouraged to preserve the HKH.

HKH urgent action 6: Promote regional data and information sharing and science and knowledge cooperation

Open data sharing for public good services across HKH needs to be promoted in the national data sharing policies. ICIMOD's regional data system could be a useful platform for sharing information for all HKH countries.

Consistency is needed in data generation methodologies across HKH countries. This will need investment in capacity building to have quality data that is consistent and disaggregated as per the requirements of mountain consistent SDGs, particularly gender and age disaggregated data.

New data need to be generated to understand climate impacts across an altitudinal gradient. Consistent and comparable data across HKH on climate variables, air pollution, water, energy, food security, and biodiversity will be needed to inform policy processes and actions.

Enhanced investment is needed on issue-based research in HKH countries. A national research fund and a central agency for priority research could be a useful step to augment issue-based research and data generation in Bhutan. This would also help in overcoming the gaps between policy and research. HUC could play a useful role in this direction.



China HKH Actions

Consultations were held in Beijing and Chengdu on the HKH Call to Action on 20 and 23 August respectively. Dr. Li Ying, Director General of the Bureau of International Cooperation, CAS, complimented ICIMOD for a very comprehensive and important assessment report for the HKH region. He observed that ICIMOD has been in existence for 36 years but it is time the global community knows about ICIMOD's work and joins efforts with the HKH countries to maximize the global impact of the results. The key messages from the deliberations are presented below:

Regional actions

One potential entry point for collaboration exists in the overlap of the *HKH Assessment* and HKH Call to Action with the Belt and Road Initiative (BRI) and with multi-lateral institutions such as the ADB, whose Strategy 2030 focuses on seven operational priorities also covered in the *HKH Assessment*. It was suggested that the ADB Office in China can work jointly with ICIMOD to develop knowledge products.

Currently, China is co-leading the Nature-based Solutions (NbS) coalition with New Zealand. Among the priority areas of the NbS, many areas have overlap with the key issues in the HKH region. These define the new areas for cooperation between China and the other countries of the HKH.

Within the framework of South-South Cooperation in the 2030 Agenda, China is interested to promote cooperation in the HKH region for sustainable development. Chinese institutions are open to share research findings required by the HKH countries. Specific topics of interest are reduction in biomass burning to reduce black carbon and the use of solar power energy technology as a renewable energy solution. Use of technologies in the Tibetan plateau can be transferred to other HKH countries.

Scientists are important for research, but for policy uptake there is a need for greater dialogue between scientists and policy makers from the eight countries. There is a need to support forums and institutions for such processes. Similarly, regional science organizations need to work closely with business forums for problem solving research.

National actions

- Control temperature rise and its impacts on natural ecosystems. For the Government of

China, controlling temperature rise is important and so is the green economic model and this is a national priority. The Ministry of Ecology and Environment and the Ministry of Natural Resources (including the State Administration of Forestry and Grasslands) are responsible for these activities. In China, there are four major natural systems – forests, grasslands, wetlands and deserts – and there is work ongoing in all of these areas to tackle climate change. As the source of six major rivers in China, the Tibetan Plateau is a focus area and there is an increase in the number of monitoring sites for ecological restoration. Protection of forests area is also important for China. Conservation of forest habitats, biodiversity and wildlife are all challenges that need to be addressed.

- Carry out focused research on climate induced disasters, social economic resilience, socio economic changes, livelihood resilience, and urban resilience. Important research topics with solutions to be considered for China include management of grasslands ecosystem and herders' issues, mountain products and value chains e.g. yak products. Here, it is important for the youth to be engaged as scholars.
- Broaden stakeholder engagement. There is a need to reach out to more people to share the findings of the *HKH Assessment* and more rigorous sharing and exchange of information on improving life in mountain areas and practical solutions to adapt to climate change. There should be strong community-to-community interactions and grassroots level actions. Businesses should be brought in more actively in the discussions on sustainable mountains and people. Success stories and lessons learnt need to be developed and shared with mountain communities.
- Include e-commerce and e-businesses to enable small farmers to connect to the innovative technologies. Business and technology should go hand-in-hand to reach the remote areas for bridging barriers and connecting communities to markets.
- Refine policies and adopt nature-based solutions as keys to sustainable mountain development. There should be policy changes for implementation of development projects under the umbrella of the BRI for better life, happy people and reduction in poverty.
- Address water related problems and hazards on a priority basis. Flood risks should be addressed as an urgent action. There are poverty issues related

to water management challenges which need special attention.

- China will go forward with its climate change efforts and will use the BRI to boost cooperation. It is through the BRI that the 2030 Agenda for Sustainable Development will be carried out too. China has achieved important progress in the Agenda 2030's early phase in many fields such as poverty eradication. The top priorities for China are innovation, problem orientation, multi-stakeholder participation, and open sharing.
- Put in place a mechanism to share the regional database system of ICIMOD and the HKH countries sustainably. Refer to global best practices on data management and data use in order to set standards and make data available and affordable. Principles to share the data need to be discussed. There could be different layers of users so that data can be made available in different languages and for different uses.
- Establish a close working partnership between the National Natural Science Foundation of China (NSFC) and ICIMOD in the Six Action Areas under the BRI. NSFC will follow up with ICIMOD to discuss the mechanism and provide clarity on the areas of transboundary cooperation.

Global actions

The *HKH Assessment* and HKH Call to Action need global attention for global partnerships. The Chinese government supports ICIMOD and the HKH Call to Action. This is not the end but the start of many new innovative projects.

China consultation on the HKH Call to Action

Two consultations were held in China.

1) High-Level Policy Dialogue on the *HKH Assessment* hosted by the University of Chinese Academy of Sciences, Beijing, China on 20 August 2019

The "High-Level Policy Dialogue on the *HKH Assessment*" was targeted at high-level officials from key departments of the Government of China. The half-day event focused on sharing the findings of the report and soliciting inputs from key decision makers to chart out a roadmap for regional cooperation and enhance integration, especially in relation to the UN SDGs and the Paris Agreement. Dr. Li Ying, Director General of

the Bureau of International Cooperation, CAS noted that the Chinese government supports ICIMOD and that ICIMOD works on global challenges and its work and global contribution has been underestimated. Noting that ICIMOD has been in existence for 36 years, he mentioned that it is time the global community knows more about ICIMOD's work and joins efforts with the HKH countries to maximize the global impact of the results. It is a global platform and global attention is needed for global partnerships. The launch of a flagship programme in collaboration with scientists across China, the HKH region and globally is also needed. He also noted that the *HKH Assessment* is very comprehensive and important for the region which should be highlighted and the HKH Call to Action needs to go global. He also mentioned that there should be a clear strategy for each of the HKH countries with an attractive slogan.

2) "HKH Call to Action Dissemination Workshop for Partner Organisations" hosted by the Institute of Mountain Hazards and Environment, Chengdu, China on 23 August 2019

The "HKH Call to Action Dissemination Workshop for Partner Organisations" was targeted at representatives of the partner organisations of ICIMOD, businesses and various key stakeholders in Sichuan Province and other parts of China. The event focused on sharing the *HKH Assessment* with a larger audience in order to receive inputs on the six Urgent Actions and for integration of the national priorities of China.

The key messages summarized below are from the two consultations held on 20 August in Beijing and 23 August in Chengdu.

HKH URGENT ACTION 1 **COOPERATE AT ALL LEVELS ACROSS THE HKH**

- Reducing climate change impacts and keeping temperature rise to less than 2 degrees should be a concern for all. Climate change is not only a topic of environmental concern but also a topic of social and economic impact. Thus, regional collaboration at all levels is very important.
- For the Government of China, controlling temperature rise is important and so is the green economic model, which is a national priority. The Ministry of Ecology and Environment as well as the Ministry of Natural Resources (including the State Administration of Forestry and Grasslands) is responsible for these activities.

- There is a need to use local resources, as well as combine resources, strengths and research expertise for impactful results.
- In China, there are four major natural systems – forests, grasslands, wetlands and deserts – and there is work ongoing in all these areas to tackle climate change.
- HKH is the source of the six major rivers in China and there has been much work focused on ecological conservation, environmental technology, ecological development and scientific research in the third pole areas.
- Regarding mountain regions, the Tibetan plateau is a focus for China and there is an increase in the number of monitoring sites for ecological restoration.
- Natural sciences and research areas are linked in the process of sustainable mountain development. However, there is a need to engage other stakeholders like engineers in this process of discussion and collaboration. Disciplines like engineering and business federations can help address aspects related to infrastructure and water resources management. Integration with such stakeholders is important.
- There should be a strong community-to-community connection and grassroots level actions.
- The HKH mountains could be developed into a regional cooperation and integration region and presented to the multilateral development banks for significant funding and investments under their Multilateral Collaboration and Development Finance (MCDF) initiative.
- It is time to consider a HKH commission like the Greater Mekong Sub-region Commission to address shared concerns about the mountains.
- Businesses should be brought in more actively in the discussions on sustainable mountains and people, especially e-commerce and e-businesses that connect small farmers to innovative technologies. Business and technology should go hand-in-hand to reach the remote areas for bridging barriers and connecting communities to markets.
- Hydropower is important to consider and forging energy-to-energy connections is also important to include in the HKH Call to Action.
- The HKH Call to Action should go beyond the results of the assessment and highlight clear paths and actions that need to be undertaken including

how regional science and research organisations can work closely with business forums to address various issues.

HKH URGENT ACTION 2

RECOGNIZE AND PRIORITIZE THE UNIQUENESS OF THE HKH MOUNTAIN PEOPLE

The Third Pole has its own characteristics and the mountain communities living there need to know about the threats to the region. Apart from sharing knowledge, there is a need to work jointly with communities to identify important interventions and possible traditional solutions that can enhance their income and quality of life.

- There is a need to reach out to more people to share the findings of the *HKH Assessment* and more rigorous exchange of information and research on improving life in mountain areas and practical solutions to adapt to climate change. A top priority is generating good jobs and a better economy in the mountains.
- The focus on mountain people needs to further narrow down to the local people. How can knowledge be transferred to local communities in the mountain region? How can science and technology support these communities? Success stories and lessons learnt from the HKH region need to be developed and shared with mountain communities, under the slogan “Sharing mountain solutions for better mountain futures in the HKH”.
- The HKH region is important for Asia and the world. Specific research topics could be proposed to ICIMOD as the eight HKH countries are all unique in their own ways and have unique challenges with possible solutions. There are countries with different interests and economic situations – it is important to identify common interests and common programmes.
- To conduct further research, ICIMOD could fill in the knowledge gaps such as on water availability and compile existing research information.
- Future research could focus on monitoring the socio-economic changes in the HKH region. Other research topics could be on climate disasters, social economic resilience, livelihood resilience, urban resilience, and questions such as how to address and build resilience, how to manage grasslands ecosystems, how to better manage the challenges faced by the herders, how to manage and add value to mountain products, especially yak products, and seasonality of animal products, and how mountain communities will benefit from all these actions.

HKH URGENT ACTION 3

TAKE CONCERTED CLIMATE ACTION TO KEEP GLOBAL WARMING TO 1.5 °C BY 2100

- Climate change is a major global threat of great concern and the 1.5 degrees target should be a common effort for all of humanity. The Chinese government attaches high importance to this and is investing heavily in a green, low carbon economy. The aim is to reach GHG emissions peak no later than 2030 and reach zero emissions by 2050.
- Policy refinement and nature-based solutions are key to sustainable mountain development. There should be policy changes for implementation of development projects under the umbrella of the BRI for “better life, happy people and reduction in poverty”.
- Currently, China is co-leading the Nature-based Solutions (Nbs) coalition with New Zealand. Priority areas overlapping with the HKH region are: scaling up the preservation and restoration of forests; comprehensive treatment of soil erosion; prevention of desertification; climate resilient infrastructure and connectivity; eco-corridors and protection of biodiversity; climate compatible agriculture and food systems; and, setting up of nature reserves and national parks for protection of ecosystems. These could define the new areas for cooperation between ICIMOD and China.
- Chinese institutions are open to sharing information and research findings that are required by the HKH countries. In the mountain region of China, there are about eight project sites with ongoing research focusing on animal husbandry and the lives and livelihoods needs of herders.

HKH URGENT ACTION 4

TAKE ACCELERATED ACTION TO ACHIEVE THE SDGs AND 9 MOUNTAIN PRIORITIES IN THE HKH

China has achieved important progress in the Agenda 2030's early phase in many fields such as poverty eradication. The top priorities of China are innovation, problem orientation, multi-stakeholder participation, and open sharing. It is through the BRI that the 2030 Agenda for Sustainable Development will be carried out and it is integrated into the 13th Five-Year Plan for Economic and Social Development and other mid- and long-term development strategies. China would like to play an active role in the implementation of the 2030 Agenda for Sustainable Development. Within the framework of South-South Cooperation in the 2030 Agenda, China is interested in promoting cooperation in the HKH region for sustainable development of the economy, society and environment.

- There is a need to support niche mountain products to gain access to markets and strengthen their competitive advantage to benefit mountain people. While there are many good mountain products there is plenty of room to conduct research to upgrade these mountain goods and services. Traditional knowledge needs to be preserved and transformed where required and action should be taken to link local producers to local markets for more engagement and prosperity of the mountain people.
- Lack of adequate forage and incidences of livestock disease are problems in the mountain areas in the winter time. Some key concerns related to the grasslands are: How to manage the grasslands? How to retain youth as there are no job opportunities in the grasslands? How can the indigenous knowledge be passed down as the youth are not interested to take up jobs in the grasslands?
- Enhance the capacity of the mountain communities through diversification and product development. In the Tibetan plateau, each province has its own specific characteristics and they are complex and need attention. Communities as a module should be integrated in the development process. Most of the representatives in the HKH Call to Action consultations are academicians but the local communities need to be involved more in the process.
- Water related problems and hazards should be highlighted and flood risks addressed as an urgent action. There are poverty issues related to water management challenges which also needs special attention.
- China will go forward with its climate change efforts even after 2020 and will use the BRI to boost cooperation.

HKH URGENT ACTION 5

TAKE DECISIVE ACTION TO ENHANCE ECOSYSTEM RESILIENCE

China attaches importance to the conservation of its forest areas. Protection of forest habitats, biodiversity, and wildlife conservation are challenges. For the State Forestry and Grassland Administration (SFGA), conservation and restoration of ecosystems is paramount. The SFGA supports and promotes wise use of ecosystems, focuses attention on wetland conservation, including high altitude wetlands, wildlife protection, and establishment of long-term monitoring stations (SFGA has supported an additional monitoring station in wetland area).

- Scientists are important for research but dialogue between policy makers is important for consultation, cooperation and real actions at all levels in the eight countries.
- It is important for youth to be engaged in the sustainable mountain development process. We need more young researchers and scholars in this field.
- There is a need to generate data especially on ecosystem services and its relationship with land use and land cover change.

HKH URGENT ACTION 6 PROMOTE REGIONAL DATA AND INFORMATION SHARING AND SCIENCE AND KNOWLEDGE COOPERATION

- Each action contains scientific problems and if these problems can be discussed, it would be more beneficial to the larger community. Thus, there is a need to organise scientists to contribute to the findings and take the research further.
- The NSFC would like to work closely with ICIMOD in the Six Action Areas under the BRI activities. ICIMOD's regional database could share data on the HKH and there should be a mechanism in place on how to work sustainably. Refer to the best global practices on data management and data use in order to set standards and make data available and affordable.
- Principles to share the data need to be discussed. How to make use of the data and how can it be made available for different stakeholders in the region? There could be different layers of users so how can data be made available in different languages and for different uses.
- The findings of the *HKH Assessment* should be shared widely and more attention should be paid to voices from different countries and from different stakeholders.



India HKH actions

The “India Consultation on the HKH Call to Action” was jointly organized by the Ministry of Environment, Forest and Climate Change (MoEF&CC); ICIMOD; and GB Pant National Institute of Himalayan Environment and Sustainable Development (GBPNIHESD) on 25 April 2019 in New Delhi. During the event, the Secretary MoEF&CC observed that the *HKH Assessment* has come as a timely warning, since what happens in the HKH impacts and shapes the lives of millions of people in the mountains as well as downstream. He emphasized that the India consultation is an important step in engaging multiple stakeholders and sharing key findings of the *HKH Assessment* with them. The consultation also allows inputs from multiple stakeholders for integration with national, regional and global priorities and processes and joint identification and development of a roadmap for the HKH Call to Action. Key messages from the consultation are shared below:

Regional actions

Strengthening regional platforms should be seen as the long-term strategy for the HKH countries. An HKH Council could be established – similar to the Arctic Council, which brings scientists, policy makers, and community representatives from the eight HKH countries together for agreed actions around scientific assessments.

Of late there have been several useful assessment reports in India that address the data gaps in the Himalaya. The *HKH Assessment* report does so regionally. However, the data currently available on each of the HKH countries are fragmented. Knowledge needs to be consolidated and comprehensive databases need to be developed on issues critical to Himalayas. This collective information will then provide the avenue to draw plans for action by the key stakeholders. The primary step is to take stock of the knowledge, stakeholders, resources, technologies, and ideas to create a common platform. Working in tandem, ICIMOD is uniquely placed to lead the process for the HKH region, strengthening the regional data base. Similarly, GB Pant Institute of Himalayan Environment and Sustainable Development (GBPNIHESD) is taking the lead for the Indian Himalayan Region (IHR).

National actions

The magnitude of challenges calls for urgent, unprecedented collaboration among and between multiple stakeholders. Efforts should be made to use existing platforms at local, state, and national levels to

share key findings from the *HKH Assessment* and HKH Call to Action. The MoEF&CC, ICIMOD, GBPNIHESD (now NIHE), and other partners will have a key role to play in India.

The unique values of the Himalaya and its people need a different pathway of development that must inform political discourse and priorities. A concerted, collaborative effort from all stakeholders is needed to adequately address the challenges faced by Himalayan communities. Campaigns such as “Himalaya Calling” could catalyze such engagement by amalgamation of scientific evidence, local knowledge, and institutional capacities and bring about effective communication and outreach for larger societal awareness and action.

The MoEF&CC released a publication titled “India – Spearheading Climate Solutions” in early 2019. This document highlights the key actions taken by India towards combating and adapting to climate change. Relevant and common actions for the HKH Call to Action at national level could be identified from this publication. National actions would include:

- Map the institutions working on mountain issues. Strengthen the network of institutions, including a platform for community groups, to develop integrated priorities and effective interventions.
- Introduce the *HKH Assessment* into curricula in universities through the Himalayan University Consortium (HUC).
- Share available knowledge with local mountain communities and the private sector, particularly the Federation of Indian Chambers of Commerce and Industry (FICCI) and the Confederation of Indian Industry (CII) in order to build awareness for responsible business practices and sharing of resources. The scope for private-sector intervention needs to be defined, which includes deliberations on the carbon market and climate financing mechanisms.
- Promote mountain champions and identify the “unsung” champions of the mountain communities, as part of the “Himalaya Calling” campaign. The campaign should engage people’s representatives, including political champions, at different levels for greater visibility of the mountain agenda.
- Engage women to bring about a transformative change from the grassroots level, linking mountain women to technology.
- Dovetail the nine SDG-consistent mountain priorities identified by the *HKH Assessment* report into relevant national programmes and targets.

- Set a sustainable development strategy for economic products and activities in the mountains, such as the niche Himalayan products and services, with proper quality standards and access to markets and finance.
- Allocate sufficient financial resources for enhancing ecosystem resilience and reducing land degradation. Greater incentives are needed for the conservation of biodiversity and ecosystem services in the Himalaya. The 15th Finance Commission needs to make available specific grants for incentivized ecosystem services. This should be in addition to the 7.5% weightage given to the extent and quality of forest cover for overall devolution of taxes to states.

Global actions

The mountain agenda, particularly the need to build resilience, needs to be spotlighted at major global events, such as the High-level Political Forum on Sustainable Development and the UN Climate Change Summit and similar such events. ICIMOD should work with HKH countries to bring global attention to the importance, status, and future of the HKH. The Ministry of Environment, Forests and Climate Change is committed to lend its support for the mountain agenda at the global platforms.

Leveraging resources: Resources like funds, human capital, and innovative technologies need to be consolidated from across the world to address growing issues in the HKH because climate change impacts on the region resonate globally. The MoEF&CC has therefore emphasized that the global community needs to join hands in cooperation and share responsibilities to take the mountain agenda forward more meaningfully.

India consultation on the HKH Call to Action

The “India Consultation on the Hindu Kush Himalaya (HKH) Call to Action” held on 25 April 2019 in New Delhi, led to the following key issues and follow-up actions.

A. Key issues and follow-up actions

1) IMPORTANCE OF THE HKH AND THE HKH ASSESSMENT, AND RATIONALE FOR THE HKH CALL TO ACTION

The HKH region is uniquely rich in its environmental and cultural resources: it is the source of 10 large river systems, contains four biodiversity hotspots, and is a

spiritual hub for HKH countries. Around 240 million people inhabit the region and depend on its ecosystem services. Its river basins sustain about 1.65 billion people downstream.

Alarming, the HKH region is warming faster than the global average, with dramatic changes predicted in its climate scenarios. Even if we achieve the best-case scenario of limiting global temperature rise to 1.5 degrees (as per the Paris Agreement), some areas in the region will still warm by more than 2 degrees because of elevation-dependent warming. The *HKH Assessment* highlights that poverty and vulnerability in the mountain areas are higher than the national averages. There are greater challenges to food, nutrition, energy, and water security, and disaster risks are rapidly increasing. Loss of biodiversity and glacier mass could have severe impacts on important ecosystems.

The MoEF&CC observed that the Assessment has come as a timely warning and that the HKH Call to Action is an important step in engaging multiple stakeholders and sharing key findings of the *HKH Assessment* with them. The consultation also allows inputs from multiple stakeholders for integration with national regional and global priorities and joint identification and development of a roadmap for the HKH Call to Action, thereby promoting the mountain agenda at a global scale. Such consultations can help increase ownership of the HKH Call to Action among the HKH countries.

2) COOPERATION AT MULTIPLE SCALES TO PROMOTE THE MOUNTAIN AGENDA

The magnitude of challenges calls for urgent, unprecedented collaboration among and between multiple stakeholders (governments, policy makers, academia, civil society, development partners, private sector, and media) at multiple scales, including local, sub-national, national, regional, and global levels. Efforts should be made to make use of existing platforms at local, state, and national levels to share key findings from the report and Call to Action. The MoEF&CC, ICIMOD, GBPNIHESD, and other partners will have a key role to play in India and beyond.

Strengthening regional platforms should be seen as the long-term strategy for the HKH countries. An HKH Council could be established – similar to the Arctic Council, which brings scientists, policy makers, and community representatives from eight Arctic countries for agreed actions around scientific assessments. ICIMOD could facilitate the process of forming such a council. However, soliciting participation at the highest levels of decision making through regional science–policy–business dialogues is necessary to initiate this process.

The mountain agenda, particularly the need to build resilience, needs to be spotlighted at major global events, such as the High-level Political Forum on Sustainable Development and the UN Climate Change Summit. ICIMOD should work with HKH countries to bring global attention to the importance, state, and future of the HKH.

3) TOWARDS A NEW NARRATIVE FOR THE HIMALAYA: CENTER-STAGING PEOPLE

A concerted, collaborative effort from all stakeholders is needed to adequately address the challenges faced by Himalayan communities. Campaigns such as “HKH Calling” could catalyse such engagement, thereby initiating dialogue about mountain needs and including mountain communities in the conversation. An amalgam of scientific evidence, local knowledge, and institutional capacities can bring about effective communication and outreach for larger societal awareness and action. The MoEF&CC, ICIMOD, GBPNIHESD, and other partner institutions will have a key role in facilitating this process.

4) INFORMATION AND DATABASES

The *HKH Assessment*, the NITI Aayog reports on Sustainable Development in the IHR, and studies under the National Mission for Himalayan Studies, National Mission for Sustaining the Himalayan Ecosystem, and other government and research organizations provide a plethora of information and data sets. However, the data currently available on each of the HKH countries are fragmented. Knowledge needs to be consolidated and comprehensive databases need to be developed on issues critical to the HKH. This collective information will then provide the avenue to draw plans for action by the key stakeholders. Having taken stock of the knowledge, stakeholders, resources, technologies, and ideas to create a common platform, ICIMOD is uniquely placed to lead the development of a comprehensive database for the HKH region. GBPNIHESD is taking the lead for the Indian Himalayan Region.

5) LEVERAGING RESOURCES

There is an urgent need to draw and consolidate funds, human capital, and innovative technologies from across the world to address growing issues in the HKH because climate change impacts on the regional resonate globally. The MoEF&CC has therefore emphasized that the global community needs to join hands and share responsibilities to take the mountain agenda forward more meaningfully.

B. Inputs to the urgent HKH actions

HKH URGENT ACTION 1

PROMOTE AND STRENGTHEN REGIONAL COOPERATION AT ALL LEVELS ACROSS THE HKH REGION

GBPNIHESD deals with mountain issues in the IHR, and a collaborative effort with ICIMOD would be useful.

- Create national and regional platforms in each of the countries of the HKH region.
- Map the national institutions and connect with them to develop a road map and integrate mountain communities in the process.
- Community-based organizations working on mountain issues could be engaged in applying the findings of the *HKH Assessment*.
- Share available knowledge with local mountain communities and the private sector, particularly the Federation of Indian Chambers of Commerce and Industry (FICCI) and the Confederation of Indian Industry (CII), in order to build awareness for responsible business practices and sharing of resources.
- Engage women to bring about a transformative change from the grassroots level, linking mountain women to technology.
- Introduce the Assessment into curricula in universities through the Himalayan University Consortium (HUC).

HKH URGENT ACTION 2

RECOGNIZE AND PRIORITIZE THE UNIQUENESS OF THE HKH MOUNTAIN PEOPLE

The unique values of the Himalaya and its people need a different pathway of development that must inform the political discourse and setting of development priorities.

- Strengthen the network of institutions, including a platform for community groups, to develop integrated approaches, set priorities and make effective interventions.
- Promote mountain champions and identify the “unsung” champions of the mountain communities, as part of the “Himalaya Calling” campaign. The campaign should engage people’s representatives, including political champions, at different levels for greater visibility of the mountain agenda.
- Build the capacity of communities for improved adaptation, livelihoods, and self-sufficiency.

- Recognize and support the diversity of languages, traditional knowledge, and informal institutions in mountain communities.

HKH URGENT ACTION 3

TAKE CONCERTED CLIMATE ACTION TO KEEP GLOBAL WARMING TO 1.5° C BY 2100

The MoEF&CC released a publication titled “India – Spearheading Climate Solutions” in early 2019. This document highlights the key actions taken by India towards combating and adapting to climate change. Relevant and common actions could be identified from this publication.

- Initiatives that are addressing environmental degradation, such as ecotourism and REDD+, can play important roles in concerted climate action, and the integration of all relevant government agencies will be vital.
- Strengthening monitoring systems in mountain regions is a priority.
- The scope for private-sector intervention needs to be defined, which includes deliberations on the carbon market and climate financing mechanisms.
- Given the importance of soil organic carbon, we must focus on conserving soil and soil moisture to retain more carbon and address recurrent forest fires. It is necessary to increase investments in climate research, including R&D for sustainable alternatives.

HKH URGENT ACTION 4

TAKE ACCELERATED ACTION TO ACHIEVE THE SDGs AND 9 MOUNTAIN PRIORITIES IN THE HKH

The nine SDG-consistent mountain priorities identified by the *HKH Assessment* can be dovetailed in relevant national targets and programmes.

- Migration needs urgent, holistic attention and action in the mountain areas (where outmigration is relatively higher).
- A sustainable development strategy must be set for economic products and activities in the mountains, such as the niche Himalayan products and services, with proper quality standards, certification, and access to markets and finance.
- As an intergovernmental organization, ICIMOD can work closely with various government agencies to help frame relevant policies and address policy gaps. ICIMOD can also provide technical support with its regional experience.

HKH URGENT ACTION 5
TAKE DECISIVE ACTION TO ENHANCE ECOSYSTEM RESILIENCE

Interventions for biodiversity conservation in the mountains needs to be expedited and plans for the monitoring and evaluation of these activities are crucial. Sufficient financial resources are required for enhancing ecosystem resilience and reducing land degradation.

- Focus on agri-based activities and nature-based solutions is important from the conservation perspective as well as to protect traditional practices that have long-term benefits.
- Farmers need to be provided incentives for preserving crop and livestock genetic diversity.
- Improve both the extent of area under forest as well as quality of forest cover.
- Greater incentives need to be set for the conservation of biodiversity and ecosystem services in the Himalaya. The 15th Finance Commission needs to make available specific grants for incentivized ecosystem services. This should be in addition to the 7.5% weightage given to the extent and quality of forest cover for overall devolution of taxes to states.

HKH URGENT ACTION 6
PROMOTE REGIONAL DATA AND INFORMATION SHARING AND SCIENCE AND KNOWLEDGE COOPERATION

Data and information sharing and knowledge is essential for consistent policy making and action across the IHR and the State Data Centre in the Himalayan States would be a good source of information.

- Collaborate with relevant agencies to integrate space technologies and satellite data.
- Government agencies of all levels need to be involved in sharing information regarding well-tested solutions and nature-based products. There are several good examples of this in HKH countries that could be shared with India.
- It is important to connect science to policy and ICIMOD can help move this forward by facilitating greater regional cooperation and science-policy dialogue.



Myanmar HKH Actions

The “Myanmar Consultation on the Hindu Kush Himalaya (HKH) Call to Action” was jointly organized by the Ministry of Natural Resources and Environmental Conservation (MONREC) and ICIMOD on 8 August 2019 in Nay Pyi Taw and the “HKH Call to Action Dissemination Workshop for Partner Organizations” was held on 9 August 2019 in Yangon. HE U Ohn Win, Union Minister, Ministry of Natural Resources and Environmental Conservation (MoNREC) complimented ICIMOD’s efforts in coming up with a very timely *HKH Assessment*. Key points from the deliberations and the actions agreed at regional, national and global scale are summarized below:

Regional actions

Myanmar is uniquely placed as a link between the HKH and Mekong regions and the significance of HKH for the Mekong River basin needs to be brought out. By establishing this, the support of ASEAN countries could be solicited for HKH. This could also strengthen Myanmar’s case for larger support from ASEAN as well.

The idea of having regional science–policy forum for sharing common concerns and exchanging knowledge to improve policy making will be quite useful. ICIMOD could facilitate such a process, but the larger ownership has to be with the regional member countries. Learning from the Arctic Council and similar regional configurations and initiatives could help. The science–policy-business forum should evolve as regional institution for South-South and North-South learning.

Reduction of biomass burning is a high priority that should be addressed through sub-regional and transboundary approaches in the contiguous areas in Myanmar, India and Bangladesh.

Addressing the illegal trade in wildlife needs concerted efforts at national and regional levels as this is a transboundary issue. Transboundary mechanisms for conservation of flora and fauna and bringing the illegal trade under control need to be strengthened.

The transboundary landscapes across borders are rapidly developing, but at the same time they are losing agro biodiversity, with landraces and wild cultivars being lost rapidly. Transboundary conservation programmes should also consider conservation of cultivated landraces of crops and their wild cultivars.

ICIMOD maintains an open source regional database of which Myanmar would like to make greater use. Myanmar would also like to collaborate with ICIMOD for building capacities on data management.

National actions

It is important that issues like the uniqueness of the HKH, ethnic cultural diversity and gender equity are highlighted and mainstreamed in the educational curriculum. The following national actions are called for:

- Develop and launch an awareness to action campaign “Hkakabo Razi Calling” to showcase the uniqueness of Myanmar’s mountainous region, the challenges it faces, both climatic and non-climatic (based on good evidence) and the development agenda and actions that would be collectively pursued by multiple stakeholders including government agencies, civil society, community groups, academia and business. It should build on solution-based approaches, some of which are being tried out jointly in PaO Self Administered Zone (PaO SAZ) in Shan state jointly by ICIMOD and the Myanmar Forest Department.
- Carry forward Myanmar’s commitments in its NDCs to preserve 30% of its total land area under forest, with 10% of land area under the protected areas network.
- Work closely with ICIMOD through the REEECH initiative to finance green technologies and promote startup enterprises.
- Prioritise the conservation of floodplains, catchment areas of rivers, and springs to sustain the level of water flow in the lean season.
- Enhance collaboration among concerned agencies to develop national database architecture and data sharing protocols.
- Mobilize greater political support and policy buy in to ensure that mountain priorities are reflected in the larger planning processes in the country.

Global actions

Climate actions need sustainable finances from both international and regional agencies. GCF and other funding mechanisms must step up investment in climate actions in HKH countries.

Myanmar consultation on the HKH Call to Action

The “Myanmar Consultation on the Hindu Kush Himalaya (HKH) Call to Action” took place on 8 August 2019 in Nay Pyi Taw and the “HKH Call to Action Dissemination Workshop for Partner Organizations” on 9 August 2019 in Yangon. In his opening address at

the high-level policy dialogue, Honourable Minister HE U Ohn Win, Union Minister, Ministry of Natural Resources and Environmental Conservation (MoNREC) complimented ICIMOD on a very timely *HKH Assessment* report. He emphasized that the assessment will go a long way in bridging the data gaps in the HKH, including Myanmar’s northern mountainous region. Myanmar has recently released Climate Change Policy 2019, Myanmar Climate Change Strategy 2018–2030, and the National Environment Policy 2019, showing the country’s commitment to climate change issues. The vision statement of the 2019 Climate Change Policy strives to secure wellbeing of people including spiritual wellbeing by clearly laying a road map to addressing both climatic and non-climatic drivers of change.

Key messages and follow-up actions

Irrawaddy and Salween constitute two major river systems in Myanmar and cover as much as 78% area of the country. The northern mountains that are part of the HKH are critical for these river systems. What happens in the HKH therefore directly impacts other regions of the country. Myanmar welcomes this very timely and comprehensive regional assessment.

Myanmar supports all the actions drafted under the six broad categories, noting that institutional strengthening and capacity building of the HKH countries needs to be strongly articulated across all six actions and national actions need to be far more specific. Listed below are actions suggested during the two meetings at Nay Pyi Taw and Yangon. Further development of the HKH Call to Action at the country level can build on these broadly identified actions for further follow up, including additions and refinement.

HKH URGENT ACTION 1 PROMOTE AND STRENGTHEN REGIONAL COOPERATION AT ALL LEVELS ACROSS THE HKH REGION

The Assessment presents an alarming situation for the mountains and rightly so. The HKH play a huge role in sustainable development and climate change in mountain areas is a central issue that needs to be factored into decision making. This will require the highest level of cooperation among different stakeholders at multiple scales, including national, regional and international levels for reversing the trends and moving towards a happy and prosperous HKH.

- All the four targets listed in urgent action 1 are very useful and Myanmar supports these targets.
- Linkages between upland and lowland areas needs to be underscored in the context of Myanmar. Irrawaddy and Salween rivers originate and are

fed by glaciers and glacier melt in the upstream has implications for downstream areas.

- Myanmar is uniquely placed as a link of the HKH with the ASEAN region. Here, the significance of the HKH for the Mekong River basin needs to be brought out in order to solicit support of ASEAN for the HKH. This could also strengthen Myanmar's case for larger support from ASEAN as well.
- Cooperation amongst stakeholders needs to be seen at multiple scales. Both sub-regional and regional platforms and fora are important for sharing knowledge and best practices and for bringing together people and professionals from regional member countries. Transboundary, sub-regional and regional collaboration must be strengthened at community to community, business to business, and government to government levels, and among academic and research institutions. ICIMOD has been playing a key role in enabling this collaboration.
- The idea of having regional science-policy forum for sharing common concerns and exchanging knowledge to improve policy making is useful. This forum could also engage the business community. ICIMOD could facilitate such a process, but the larger ownership has to be with the regional member countries. Learning from the Arctic Council and similar such initiatives could be useful. The science-policy-business forum should evolve as regional institution for South-South and North-South learning.

HKH URGENT ACTION 2 RECOGNIZE AND PRIORITIZE THE UNIQUENESS OF THE HKH MOUNTAIN PEOPLE

The mountainous region of Myanmar is culturally very rich with eight major ethnic groups and 135 sub-groups. The area is also very rich in terms of flora and fauna, being at the junction of three biodiversity hotspots, and rich traditional knowledge associated with this diversity. Following actions are suggested to recognize the uniqueness and prioritize actions:

- There is need to recognize the traditional knowledge of the indigenous people that has been supporting conservation for so long. The Biodiversity Act and the Access and Benefit Sharing Law under the Nagoya Protocol are useful instruments in this direction.
- The national curriculum framework is being revised. It is important that issues like the uniqueness of HKH, ethnic cultural diversity and gender equity are mainstreamed in the

educational curriculum. Formal education is very important to bring about change and address these issues.

- While the role of various line ministries and departments of the government is critical, enhanced civil society involvement would further strengthen actions and ownership.
- Outreach is needed to multiple stakeholders including diverse ethnic groups to listen to them, understand their priorities, and develop partnerships.
- An awareness to action campaign, "Hkakabo Razi calling" should be built on solution-based approaches.

HKH URGENT ACTION 3 TAKE CONCERTED CLIMATE ACTION TO KEEP GLOBAL WARMING TO 1.5 °C BY 2100

Climate change issues, forest fires and natural disasters pose serious challenges for Myanmar. Increasing climate-induced hazards, and significant exposure and vulnerabilities to climate change, make adaptation and disaster risk reduction (DRR) a priority for the country. Myanmar is committed to its NDC, which includes preserving up to 30% of total land area under forests, with 10% of land area under the protected area network. Some of the key issues and actions are:

- Since all HKH countries are developing countries there is a need to address climate change together with an action plan that emphasizes adaptation and mitigation.
- Reduction of biomass burning. In northern Myanmar, where population densities are low, slash and burn shifting cultivation and forest fires are major sources of carbon emissions. Since this has direct link to livelihoods, there is a need for a transformational approach to address the issue of shifting cultivation. This would also require sub-regional and transboundary approaches since these are contiguous areas cutting across Myanmar, India and Bangladesh.
- Climate actions need sustainable finances from both international and regional agencies. GCF and other funding mechanisms must step up investment in climate actions. There is also a need for ecosystem services-based small grant investments which can be accessed by community groups. It is important that governments invest in climate change as a longer-term financing model.
- Since all sectors are impacted by climate change, important climate actions need to inform and be mainstreamed into government strategies and priorities.

- ICIMOD should work closely with Myanmar through the REEECH initiative to finance green technologies and promote startup enterprises.

**HKH URGENT ACTION 4
TAKE ACCELERATED ACTION TO ACHIEVE THE SDGs AND 9
MOUNTAIN PRIORITIES IN THE HKH**

The mountainous states in Myanmar face a paradoxical situation of poverty in a resource rich region. The nine SDG-consistent mountain priorities are therefore very critical to the country. Internal migration from rural to urban areas, climate change adaptation and poverty are major issues in the mountain states. Some of the suggested actions include:

- Livelihood planning for the mountain states must be made climate resilient. It should create minimum impacts on the mountain environment and should promote social equity.
- High value ecosystem services could form the key plank of development strategy.
- Greater political support and policy buy-in is very important to ensure that mountain priorities inform the larger planning process in the country.
- Strengthen governance for peace building using participatory processes.

**HKH URGENT ACTION 5
TAKE DECISIVE ACTION TO ENHANCE ECOSYSTEM RESILIENCE**

Water is one of the key ecosystem services in Myanmar. The headwaters of its two important rivers are fed by glaciers. The recharge in rivers is both from glaciers as well as monsoon precipitation. Climate change is impacting both. The duration as well as intensity of rainfall has changed over the years. Water catchment areas and the vegetation therein are experiencing far more erratic weather and rainfall. Though the country has 42% of its area under forest cover, there have been challenges on account of deforestation and degradation of forest ecosystems, many of these transboundary in nature. The following actions could enhance ecosystem resilience:

- Greater coordination and synergy among concerned agencies and investments for catchment treatment. Navigation in major rivers is challenged when water flows drop significantly in the lean season. For good river flow, more so during the lean season, the conservation of the floodplains, and effective conservation of catchment watersheds and springsheds is critical. Springs contribute to the base flow of rivers and healthy riparian ecosystems are equally important.

- Concerted efforts at national and regional levels to address the illegal trade in wildlife, including transboundary mechanisms for conservation of flora and fauna.
- Inclusion of cultivated landraces of crops and their wild cultivars in transboundary biodiversity conservation programmes to balance the rapid development of transboundary landscapes against agro biodiversity loss.
- There are many good practices related to community forestry across the HKH countries. These must be shared on a regular basis through regional platforms.
- Given its rich cultural heritage, the mountainous region has huge ecotourism potential. However, while developing this potential, it is important to emphasize equity in benefit sharing from ecotourism enterprises. In the past benefit flows have been quite uneven.
- Valuation of ecosystem services and incentives/ payments for conserving these services need to find wider expression in policy, planning and practice.
- Promoting more widespread buy in for the Nagoya Protocol on Access and Benefit Sharing.

**HKH URGENT ACTION 6
PROMOTE REGIONAL DATA AND INFORMATION SHARING AND
SCIENCE AND KNOWLEDGE COOPERATION**

There is a need for improved, reliable and consistent data generation on key environmental variables like water, energy, biodiversity, food security and air pollution. Capacity building in generating quality baseline data and data sharing within the country and regionally needs immediate attention. The following actions could be useful:

- Collaboration among concerned agencies to develop national database architecture and data sharing protocols.
- Capacity building on data management and Myanmar would like to make greater use of ICIMOD's regional open data repository.



Nepal HKH actions

A “High-level Policy Dialogue on the *HKH Assessment*” was hosted by the Ministry of Foreign Affairs of the Government of Nepal on 3 May 2019. The Honourable Foreign Minister of Nepal, Mr. Pradeep Kumar Gyawali congratulated ICIMOD on the landmark report and observed that for countries like Nepal, climate change is a great challenge since its adverse effects undermine the nation’s development efforts and impact citizens at large. The summary of actions at regional, national and global scale is below:

Regional actions

The HKH-Science-Policy-Business Forum is a good mechanism to bring the HKH countries together and bring scientific evidence to bear on policies and practice in the regional member countries. Nepal supports the setting up of such an institutional mechanism.

Accessing climate finance is important for Nepal. Through greater regional cooperation, Nepal can leverage finances and capacities for national climate actions.

Sharing key findings from the Assessment is a strategic step to create a multi-stakeholder platform, receive inputs from organisations in Nepal for integration with national and regional priorities, and to jointly identify and develop a roadmap for the HKH Call to Action to promote the mountain agenda. Nepal sees this as a great opportunity for synergizing activities with ICIMOD and the global community on reducing the impacts of climate change and intends to host a Ministerial Mountain Summit of the HKH countries to deepen commitment to the actions outlined in the HKH Call to Action.

National actions

Nepal has shown leadership in developing national and local adaptation plans and mainstreaming them into its development process. In 2012, Nepal organized a Mountain Summit which resulted in the Kathmandu Declaration. In 2018, the President of Nepal attended the UNFCCC global meeting. Nepal has joined the global community in its fight against climate change and supports the global objective of limiting temperature rise to 1.5 degrees.

The following will further bolster the national actions emanating from the HKH Call to Action:

- Share the report widely with multiple stakeholders in the country to solicit inputs and develop a roadmap for actions.
- Integrate key messages from the multi-stakeholders consultations with national and regional priorities and plans of action.
- Revisit the Climate Change Policy (2011), and update NDCs by 2020.
- Use the HKH Call to Action report to leverage financial and technical support for national climate actions.

Global actions

As a mountainous country, with 14 of the world’s heights peaks, Nepal has been expressing concerns over impacts of climate change on mountains and people at different international forums, including at the UN. With Bhutan chairing the LDC Group, there are opportunities to use this platform to advance the mountain agenda further.

In April 2019, the Government of Nepal underlined its commitment to flagging the mountain agenda in the global arena and reaching out to world leaders for unity on climate change when the Office of the Prime Minister announced the Sagarmatha Sambaad or Sagarmatha Dialogue. The aim is to create a platform to bring together various stakeholders to deliberate and create an enabling environment for international cooperation and partnership.

Nepal consultation on the HKH Call to Action

The “High-level Policy Dialogue on the *HKH Assessment*” was hosted by the Ministry of Foreign Affairs of the Government of Nepal on 3 May 2019 at which ICIMOD was invited to share key findings of the Assessment and solicit inputs on the HKH Call to Action for integration of national priorities of Nepal, especially in relation to the UN SDGs and Paris Climate Change accord. The event was attended by the Ministers of Foreign Affairs and Environment and Forests, members of the National Planning Commission, and Secretaries of various other ministries of the Government of Nepal and a Former Under Secretary General to the UN was also present. This high-level policy dialogue on the HKH Call to Action aimed to chart out a roadmap to forge cooperation among the mountain states to address climate change and promote the mountain agenda at the UN Climate Summit in September 2019.

Key messages: HKH Assessment and Call to Action

1) IMPORTANCE OF THE HKH CALL TO ACTION FOR NEPAL

The *HKH Assessment* resonates what is important to Nepal and how to combat the adverse effects of climate change. The Government of Nepal is grateful to ICIMOD and all those involved for coming up with a report that is very relevant to Nepal. Climate change is a great challenge and its adverse effects undermine the nation's development efforts and have extraordinary impacts on the citizens at large. It is very significant that the Assessment highlights the impacts of climate change at the national, regional and global levels too.

While the Assessment provides a clear path forward for highlighting vulnerabilities, leveraging increased international support for climate actions and advancing the climate advocacy agenda, the six urgent actions need to be more focused on national specifics and regional priorities.

2) SCOPE FOR REGIONAL COOPERATION TO PROMOTE THE MOUNTAIN AGENDA

The challenges faced by the Himalayan region may not be adequately addressed unless there is engagement of all sectors, including government agencies, peoples' representatives, mountain communities, civil society, academia, development actors, and the private sector. Thus, fostering regional collaboration is important not just for mainstreaming mountain priorities in the SDGs. The HKH-Science-Policy-Business Forum can bring the HKH countries together to promote the mountain agenda. The Belt and Road Initiative of China is another positive avenue for development cooperation in the Himalayan region. China has already committed support to Nepal in this regard.

With Bhutan chairing the Least Developed Countries Group at the UN, there is an opportunity to use this platform to advance the mountain agenda further.

Another crucial area is adaptation and mitigation and there is a need for greater regional cooperation and focus on these aspects, including for combining efforts and ideas and leveraging funds for climate action.

The Government of Nepal is doing its part including hosting a Ministerial Mountain Summit and these efforts can be combined with ICIMOD's convening role to bring the HKH governments and people together to address the mountain agenda.

3) HKH CALL TO ACTION – DEVELOPING A ROADMAP

As a landlocked and mountainous country, Nepal is highly vulnerable to the impacts of climate change. The Government of Nepal is fully committed to the Paris Agreement and its national priorities are aligned with global concerns. Climate finance mechanisms are important for Nepal. Through regional cooperation, Nepal can leverage these finances and capacities for climate action. Nepal is revising its Climate Change Policy (2011), updating its Nationally Determined Contributions (NDCs) by 2020, and developing a Mitigation Plan and a National Adaptation Plan.

Raising and promoting mountain issues needs a collective voice, multi-stakeholder partnerships and leadership at regional and global forums. Nepal is committed to creating a common platform for the HKH countries and forming a coalition with other mountain nations. With the *HKH Assessment*, it is now more crucial to sensitize the global community on the mountain agenda.

In this regard, Nepal invited ICIMOD to share the *HKH Assessment* results at a side event in the UN Climate Summit in New York. To accelerate actions to tackle climate change and to implement the Paris Agreement on Climate Change, the UN Climate Summit 2019 invited leaders from government, business and civil society to present plans to address the global climate emergency.



Pakistan HKH actions

The “High-level Policy Dialogue on the *HKH Assessment Report*” and the “Consultation on the HKH Call to Action” were held on 22 and 23 July 2019 respectively in Islamabad and saw high level inter-ministerial representation and multi-stakeholder engagement. The Ministry of National Food Security and Research (MoNFSR) – the nodal ministry of ICIMOD in Pakistan – acknowledged that the *HKH Assessment* report is timely. A summary of the key actions discussed during the meetings is presented below:

Regional actions

Pakistan is one of the top 10 countries most affected by climate change. Two priority issues – climate action and safety of people, and climate resilient sustainable development – are very salient for the mountainous region of the country, which is also a very data scarce region. There is limited data on areas above 5000 masl. One country alone cannot have a comprehensive assessment, so there is a need for regional collaboration and joint data collection on the status of glaciers in the region and the implications and risks for downstream communities.

Strengthening regional platforms should be seen as the long-term strategy for the HKH countries. An HKH Council could be established, similar to the Arctic Council, and soliciting participation at the highest levels of decision making through regional science–policy–business dialogues is necessary to initiate this process.

Financing for climate action and adaptation is a major challenge. It requires regional cooperation, and adequate back up by national actions including clear budget allocation for climate actions.

The Upper Indus Basin Network (UIBN) provides an opportunity to help achieve regional cooperation and should be further promoted.

There is a need to identify mountain champions from the region, and have regional sessions and dialogues to further disseminate the messages and the key findings of the *HKH Assessment* and to give impetus to strong regional cooperation around mountains.

National actions

Efforts should be made to use existing platforms at local, state, and national levels to share key findings from the Assessment and Call to Action. The MNFSR,

ICIMOD and other partners will have a key role to play in this regard in Pakistan.

Like the Himalaya Council in India that focuses its work on mountain regions and people, there is also a need to have something similar for Pakistan. A forum could be envisaged, where relevant ministries and organizations can come together and prioritize issues, convince the political leadership to convene an HKH Council and declare an HKH climate change emergency, just like the agriculture emergency recently declared in Pakistan. MNFSR, as a nodal ministry of ICIMOD, could take a lead role in facilitating this activity in Pakistan. This could also involve the Himalayan University Consortium (HUC) network.

Other national actions include:

- Seek and obtain greater recognition of mountain people and mountainous regions at the policy level in Pakistan, for example by establishing a national mission for the Hindu Kush, Pamir and Karakoram.
- Create awareness among people living downstream about the richness and uniqueness of the people and culture of the mountains. This could be achieved through a “Mountains Calling” campaign in Pakistan. This could also help in the popularization of indigenous food and ethnic cultures, with adequate links to business.
- Put in place disaster risk financing and risk transfer mechanisms based on the Comprehensive Disaster Mapping System developed by the National Disaster Management Authority (NDMA). This could prevent the loss of USD 1.2 to 2 billion each year due to disasters.
- Develop tools incorporating geospatial information technology for post-disaster rapid damage assessment.
- Encourage strong commitment for gender equality and social inclusion (GESI) in development planning. More women should be included in the planning and development activities with specific budgetary allocations for closing the gender gap in the mountains.
- Consider development of hydropower and regional grid system in the Gilgit-Baltistan area to combat global warming. Use of solar energy should be promoted, particularly in the remote areas, rather than focusing too much on hydropower infrastructure. The cascading impacts of hydropower projects needs to be considered.

- Urgently address the food security situation in Pakistan, including aspects of the economic value chain, to address the high levels of malnutrition in the country, which is as high as 50% in the mountains.
- Significantly increase the budgetary allocation for Gilgit-Baltistan and other mountain areas to achieve the SDGs in the mountains.
- Focus greater attention on responsible tourism, conservation of flora and fauna, rangeland management, and value addition and marketing of niche mountain products. Innovative livelihood enterprises like trout farming and ecotourism need better dissemination and investment.
- Expand and strengthen the ‘10 billion tree tsunami’ programme to the mountain areas. Pakistan is making a significant contribution to climate action through this programme.
- Engage in capacity development of the people and institutions in Pakistan in collaboration with ICIMOD, including through HUC, of which 10 Pakistani universities are already members.
- Evaluate the nature and extent of the cryosphere in Pakistan and carry out a ground-truthing exercise of the “Karakoram anomaly”. The lack of data has posed a challenge to institutions like the Global Change Impact Study Centre (GCISC) in Pakistan to provide required data to the government.

Global actions

The mountain agenda, particularly the need to build resilience, needs to be spotlighted at major global events, such as the High-Level Political Forum on Sustainable Development and the UN Climate Change Summit, UNFCCC and other such forums. ICIMOD should work with HKH countries to bring global attention to the importance, state, and future of the HKH.

Pakistan consultation on the HKH Call to Action

The “Pakistan High-level Policy Dialogue on the *HKH Assessment Report*” and the “Consultation on the Hindu Kush Himalaya (HKH) Call to Action” were jointly organized by the Ministry of National Food Security and Research (MNFSR), and ICIMOD on 22-23 July 2019 in Islamabad.

The high-level policy dialogue on the *HKH Assessment* was attended by high-level officials from key organizations in the Government of Pakistan, including the Ministry of National Food Security and

Research (MNFSR), the Ministry of Foreign Affairs, the Ministry of Climate Change, the Ministry of Planning, Development and Reforms, the Ministry of Water Resources, the Aviation Division, the Pakistan Meteorological Department (PMD), the National Disaster Management Authority (NDMA), and government representatives from the mountainous regions of Pakistan. The half-day event focused on sharing the findings of the *HKH Assessment* and solicited inputs from decision makers to chart out a roadmap to forge regional cooperation and enhance integration of national priorities and commitments, especially in relation to the SDGs and the Paris Agreement. A media interaction was also organized to share the key findings from the Assessment.

The Call to Action consultation involved representatives of ICIMOD’s partner organizations and various key stakeholders in Pakistan. The half-day event focused on sharing key findings from the *HKH Assessment* with a larger audience and receiving inputs on the six urgent actions for the HKH and integration of Pakistan’s national priorities. These events led to the following key messages and follow-up actions.

At the national level, the consultation was also aimed at raising mountain issues among the various departments and agencies of the Government of Pakistan. At the regional level, it is time to forge a robust regional alliance and translate the actions discussed into national, regional and global processes. The *HKH Assessment* had over 300 authors. It is hoped that the HKH Call to Action will have several thousand authors and champions.

A. Key messages and follow-up actions

The current leadership in Pakistan supports environmentally friendly growth. There is a need to focus adequate attention on the sustainable use of high value resources of Pakistan. The MNFSR – the nodal ministry of ICIMOD in Pakistan – noted that the Pakistan High-level Policy dialogue on the HKH Call to Action is an important step in engaging multiple stakeholders and sharing key findings of the *HKH Assessment* with them. The consultation also allowed inputs from multiple stakeholders for integration with national, regional and global priorities and joint identification and development of a roadmap for the HKH Call to Action. There is a need for tailored versions of the *HKH Assessment* based on the requirements of each region. The representatives of the mountainous regions may request the Federal Government to form a technical committee to collaborate with ICIMOD and relevant ministries in Pakistan on this effort.

With the warming temperature in the mountain regions of Pakistan, extreme events such as glacial lake

outburst floods (GLOFS) are increasing in frequency, posing threats to people and ecosystems. This is a problem common to mountain regions across the HKH. Therefore, there is a need for joint efforts on early warning systems, data sharing mechanisms, and risk financing.

There is also a need to join hands for cryosphere monitoring. There is a need for joint data collection to generate common information on the status of glaciers in the region, and to understand the risks and implications for downstream regions and communities.

The National Disaster Management Authority (NDMA), has developed a comprehensive disaster mapping system for Pakistan. The country is losing USD 1.2 to 2 billion each year due to disasters. There is now a need to consider disaster risk financing and innovative risk transfer mechanisms. There is also a need for tools incorporating geospatial information technology to undertake rapid post-disaster damage assessment.

The NDMA is also conducting multi-hazard risk assessment throughout the country, but there is a need for more on-the-ground verification, particularly with respect to the Karakoram anomaly. Many people are confused about this anomaly, so there is a need to clarify this in the public interest. A detailed study of this anomaly is expected from organizations like ICIMOD.

Pakistan is an associate member of the Scientific Committee on Antarctic Research (SCAR), and is a party to the Antarctic Treaty System, an arrangement made for the purpose of regulating relations among states in the Antarctic. The Government of Pakistan currently maintains two polar stations in that region, which are mandated to carry out relevant research activities. ICIMOD, the Government of Pakistan and the Antarctic Treaty System should find a way to work together. The Ministry of Foreign Affairs is the designated point for this, and would be eager to establish relevant connections between ICIMOD and SCAR.

B. Inputs to the six urgent actions for the HKH

The six urgent actions for the HKH identified by ICIMOD were presented briefly and discussed. The key inputs on each action from plenary discussions are summarized below.

HKH URGENT ACTION 1 PROMOTE AND STRENGTHEN REGIONAL COOPERATION AT ALL LEVELS ACROSS THE HKH REGION

Cooperation at all levels could be achieved only by following a holistic approach that ensures a regional debate at all levels.

- There is a need to identify mountain champions from the region, and have regional sessions/ dialogues to further disseminate the messages and key findings of the *HKH Assessment* and to give impetus to stronger regional cooperation around mountains.
- The UIBN provides a platform to help achieve the goals of regional cooperation for mutual benefit and should be further promoted.
- A forum could be envisaged, where relevant ministries and organizations come together to deliberate and prioritize actions. The forum could convince the political leadership to convene an HKH Council and declare an HKH climate emergency, just like the agriculture emergency recently declared in Pakistan. There is a need to ensure political commitment at all levels. MNFSR, as a nodal ministry of ICIMOD, could take a lead role in facilitating this activity in Pakistan, also involving the HUC network.
- There is a need for a council for mountain regions similar to the Himalaya Council in India that focuses its work on mountain regions and people. This council could focus on mountains and climate change and be nested as a unit with the Pakistan Climate Change Council.
- There is a need to ensure adequate budgetary allocations within the national budget for climate action. There is also a need to make a business case for these actions.

HKH URGENT ACTION 2 RECOGNIZE AND PRIORITIZE THE UNIQUENESS OF THE HKH MOUNTAIN PEOPLE

The actions identified in this report are important and correspond with major gaps that exist in the current plans and policies of the country.

- Forming an eminent persons group consisting of mountain champions who are neutral in their thinking could be a good strategy to create more awareness about the mountain regions and its challenges.
- There is a need to popularize the indigenous food and ethnic cultures of Pakistan through the promotion of mountain cuisine, which will create more business opportunities.
- A strong commitment is needed for GESI in development planning. More women should be involved in development planning and activities with specific budgetary allocations for closing the gender gap in the mountains.

- Ecotourism is increasing in many areas, but communities don't have resources and expertise to invest and manage this growth. An investment fund to promote ecotourism in the mountains is needed.
- People in the foothills and plains don't know much about the richness and uniqueness of the people, environments and cultures of the mountains. There is a need to create greater awareness through a "Mountains Calling" campaign in Pakistan.
- There is a need to develop proper marketing strategies and value chains for mountain specific products and services.
- There needs to be greater recognition of the mountains at the policy level in Pakistan, for example by establishing a national mission for the Hindu Kush, Pamir and Karakoram.

HKH URGENT ACTION 3

TAKE CONCERNED CLIMATE ACTION TO KEEP GLOBAL WARMING TO 1.5°C BY 2100

The governments of the mountainous regions of Pakistan attach great significance to the issues of climate change and environment. The northeastern region has placed special importance on climate change, and was the first region to produce a Climate Change Policy for the province, after the national Climate Change Policy. While these policies are in place, financing for climate action and adaptation remains a huge challenge. Regional cooperation is very important and needs impetus, but equally important are local actions. Climate change can't be seen in isolation from other issues and drivers of change, such as economy, migration, and gender. While the relevant ministries and agencies are aware of the impacts of global warming and climate change, there is a need for creating greater public awareness on climate change and its impacts, especially for the mountains of the HKH region.

Glaciers in most regions around the globe are retreating due to climate change. But glaciers in the Karakoram region of the Indus River basin have not seen any significant area or volume change in the past four decades. This phenomenon has been labelled the "Karakoram Anomaly". There is a need to evaluate the status of the cryosphere in Pakistan in general, and the ultimate fate of the Karakoram Anomaly in particular.

The Global Change Impact Study Centre (GCISC) is a dedicated research institute for climate change studies in Pakistan. The Centre is mandated for national level research and development efforts, capacity building, policy analysis, information dissemination, and

assistance to national planners and policymakers on issues related to past and projected climatic changes. The centre has shown interest in the findings of the *HKH Assessment*, and has identified two priority issues for the country including climate action and public safety and climate resilient sustainable development

- Real-time data monitoring is important for developing different climate scenarios.
- Development of hydropower and regional grid system should be considered in the Gilgit-Baltistan area to combat global warming. There is also a need to understand the scope and potential of hydropower and other renewable energy options.
- There is a need for countries with large carbon footprint to fund renewable energy projects in countries like Pakistan. This could include funding to retire coal-fired power plants.
- Promote solar energy rather than focusing too much on hydropower.
- Organizations like ICIMOD can provide different solutions to cut carbon emissions at the local level.
- ICIMOD can also help the mountainous regions in conducting climate change vulnerability studies and capacity building in the area of early warning systems.

HKH URGENT ACTION 4

TAKE ACCELERATED ACTION TO ACHIEVE THE SDGs AND 9 MOUNTAIN PRIORITIES IN THE HKH

- The budgetary allocation for Gilgit-Baltistan and other mountain areas needs to increase significantly to achieve the SDGs in the mountains.
- The food security situation in Pakistan is a reason for concern, especially the high levels of malnutrition in the mountains. This requires urgent action, including addressing aspects of the economic value chain.
- Migration issues can only be addressed if alternative livelihood options are provided for people living in areas with high rates of outmigration.
- There is a need for greater focus on responsible tourism, conservation of flora and fauna, rangeland management, value addition and marketing of mountain products, and quality education in the mountains.

HKH URGENT ACTION 5**TAKE DECISIVE ACTION TO ENHANCE ECOSYSTEM RESILIENCE**

- Pakistan is making a significant contributions to climate action through its 10 billion tree tsunami campaign. This needs to be extended to the mountain areas.
- Trout farming experience should be shared widely and other suitable locations should be explored.
- The cascading impacts of hydropower projects need to be considered while planning projects.
- There is need to enhance conservation of local biodiversity, including species with medicinal value.

HKH URGENT ACTION 6**PROMOTE REGIONAL DATA AND INFORMATION SHARING AND SCIENCE AND KNOWLEDGE COOPERATION**

- ICIMOD can play a very important role in capacity building of the people and institutions in Pakistan, including through the HUC in which 10 Pakistani universities are members.
- ICIMOD could play the role of a focal agency for data collection, compilation and sharing in the HKH.
- The UIBN needs to be strengthened, including the Pakistan country chapter. It could form a separate thematic working for data collection.
- The Regional Database System hosted by ICIMOD could serve as a platform for storing and sharing data from the region to address data gaps and access issues.

ANNEX 3

Nine mountain priorities for achieving the SDGs in the HKH

This Annex of the HKH Call to Action presents nine mountain priorities consistent with the SDGs identified through the *HKH Assessment* process. Linked to these nine mountain priorities are condensed summaries of the key science findings from the *HKH Assessment*. Achieving the SDG targets is particularly urgent for the HKH, which is home to 240 million people living in several least developed countries with shared natural resource systems. Yet the special forms of fragility, inaccessibility, and marginality found in the HKH also call for mountain-specific resilience building and mountain-specific solutions to socio-economic and environmental challenges.

The nine mountain priorities consistent with the SDGs are:

1. End poverty in all its form everywhere in the mountains and ensure that women, men and children of the HKH region lead prosperous and healthy lives in an inclusive and equitable environment.
2. Build resilient, equitable and inclusive mountain communities empowered by economic opportunity and investment in mountain infrastructure and connectivity.
3. Achieve gender and social equity through inclusive and transformative change in the mountains.
4. Promote sustainable production systems to assure food security, nutrition security, and income for mountain people, with particular attention to women's changing roles in agriculture.
5. Guarantee universal access to clean energy in the mountains from sources that are affordable, reliable, and sustainable.
6. Ensure a year-round secure water supply in the mountains with universal and affordable access to safe drinking water, sanitation, and water for productive purposes.
7. 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.
8. Ensure integration between adaptation to climate change, disaster risk reduction, and sustainable development for the mountains through evidence-based decision making.
9. Promote a mountain-specific agenda for achieving the SDGs through increased regional cooperation among and between mountain regions and nations.

Each mountain priority rests on extensive research into the state of the HKH, trends and prospects—and all nine priorities are informed by the critical findings on climate change. Summarized below are the Assessment's main findings that underlie each identified mountain priority, followed by challenges and a way forward for HKH and global decision makers (informed by the policy messages from the *HKH Assessment* chapter overviews).

MOUNTAIN PRIORITY 1

End poverty in all its form everywhere in the mountains and ensure that women, men and children of the HKH region lead healthy lives in an inclusive and equitable environment

HKH MOUNTAIN TARGETS TO ACHIEVE THE SDGs

- Reduce income poverty to zero in mountain areas by 2030
- Reduce non-income poverty including health, education, and other basic needs to zero in mountain areas by 2030
- Achieve universal health coverage, access to quality healthcare services and access to safe, effective, quality, and affordable essential medicines and vaccines for all people in the mountains
- Ensure free, equitable and quality primary and secondary education to all girls and boys in the mountains
- Facilitate orderly, safe, and responsible migration and mobility of people within and between mountainous and non-mountainous areas

STATUS, TRENDS AND CHALLENGES

Overall, in the mountains and hills of the HKH region, the poverty incidence is one-third compared to one-fourth at the national level. Country-level estimates mask significant inequities not only between mountainous and non-mountainous regions but also inequities within mountainous areas. The *HKH Assessment* shows that the mountain regions of the HKH have a higher incidence of both economic and multi-dimensional poverty than in the plains. Furthermore, there has been less poverty reduction in mountain areas, which has led to increased income inequality between regions and strong outmigration from mountains in many areas.

Cross-country assessments show similarities in the determinants and patterns of poverty and vulnerability in the HKH. The major determinants are remoteness, high natural resources dependence, socio-economic inequities, conflicts, gender inequities and caste/ethnicity-based discrimination. Poverty affects women, children and marginalized communities—ethnic and linguistic minorities—more severely than others. Nevertheless, policies and responses in HKH countries continue to overlook these multiple forms of exclusion.

Mountain specificities related to remoteness, fragility of ecosystems, and marginality in governance present the biggest challenge to development efforts in the HKH region. These mountain specificities lead to multiple deprivations in education, health, and living standards. Vulnerability – a pervasive aspect of livelihoods in the HKH – is intrinsic to mountain specificities.

Across the HKH inhabitants are experiencing increased vulnerability to climate and other drivers of change, such as haphazard urbanization, decrease in arable land, deforestation, destructive road and infrastructure building, and increasing social inequality. Livelihoods of mountain people are mainly dependent on the local natural resource base which is extremely vulnerable to climate change. Though mountain livelihoods are evolving and there is trend towards diversification, this alone does not adequately buffer mountain people and enable them to manage risks and cope with crises.

Globalization and market centric economic activities have further marginalized mountain regions. These changes are adding to mountain poverty in the absence of access to productive assets (especially land that is scarce in the mountains), formal property rights, and adequate social protection. The more severe impacts of this marginalization is on the status of mountain women, elders, indigenous and ethnic minorities, and marginalised caste groups. Often this forces mountain people to migrate to non-mountain areas or lead multi-local livelihoods to sustain their livelihoods.

WAY FORWARD

- There is an urgent need to address the acute shortage of poverty data in the mountain areas of the HKH. Availability of location-specific, socially and gender disaggregated data on the determinants of poverty, duration of poverty spells, and the causes of transient poverty can help in better designing and targeting of poverty reduction policies and programmes appropriate for the mountain people.
- Mountain people experience higher costs of living due to factors such as heating costs, food prices, and access to public services. The international benchmark for poverty in mountain areas needs to be higher than the globally accepted standard of USD 1.90 per capita per day. Countries must undertake cost of living surveys targeting mountain areas.
- Mountains provide development opportunities in the form of high value niche products, medicinal plants, tourism, hydropower, organic mountain agriculture, neglected and underutilized food crops or 'future smart foods'. There is a need

to identify all these opportunities and develop policies and institutional arrangements to reshape and revitalize local livelihoods that are adaptive to changes without damaging ecosystems. This will enhance the resilience of mountain people and local production systems and help reduce mountain poverty.

- Mountain specific poverty reduction programmes are required with sufficient budgetary resources to implement them. Targeted social safety nets and development schemes can focus on the socio-economic dimensions of mountain poverty such as education, health, living standards and accessibility. Improved technologies including ICT can play key role in addressing some of the constraints arising from mountain specificities.
- Financial and social remittances from labour outmigration have high potential for contributing to development and building of adaptive capacity. To realize this, migration governance, for both internal and international migration, ought to be improved so that the migrant-sending households are enabled to make productive use of remittances, the cost of remittance transfer is reduced, and there is social protection for the migrants.
- Concrete, measurable targets and indicators must be developed and progress monitored regularly with a mid-term assessment planned for 2025.

MOUNTAIN PRIORITY 2

Build resilient, equitable and inclusive mountain communities empowered by economic opportunity and investment in mountain infrastructure and connectivity

HKH MOUNTAIN TARGETS TO ACHIEVE THE SDGs

- Develop sustainable and resilient infrastructure and urban systems in the mountains to support economic development and human well-being
- Sustain per capita economic growth in the mountains and at least 7% annual GDP growth
- Devise and implement mountain specific policies to promote sustainable mountain tourism, which creates local jobs, promotes local culture and products
- Achieve access to full and productive employment and decent work for all women and men in the mountains, and equal pay for work of equal value.

- Protect labour rights and promote safe and secure working environments for all workers, including migrant workers from mountain areas, in particular women and those in precarious employment.

STATUS, TRENDS AND CHALLENGES

The multi-hazard environment is common to many countries of the HKH. Disaster events in the HKH are increasing each year—not only because of climatic change but also because of environmental degradation and the intersection of increasing vulnerability and exposure to hazards.

The high mountains are poorly served by life-saving and livelihood-supporting infrastructure. The challenge of connectivity and physical access can involve road and air travel as well as the reach of information and communications technology in sparsely-settled and often remote mountain areas. This very remoteness raises major challenges for governance. Access to climate information and support services is limited, as is the presence of government extension agencies. Weak institutional links hinder farmers from adopting technology that can contribute to adaptive capacity.

The urban population in the HKH has increased rapidly in the last three decades and it is expected that this trend will continue in the future. Urbanization processes have not only introduced a new pattern of spatial land use to the mountains, which have generated increased risks such as landslides and flooding, but also introduced the predominance of a market economy and powerful economic and social actors from outside. A growing network of local urban centres may support the transmission of new prosperity to rural populations, as the development of mountain towns and cities often can help – besides their economic power – to enhance the political influence of these regions within the national states.

In most areas of the HKH, rapid demographic and economic growth have increased the demand for natural resources leading in many instances to their overexploitation, significant land use and land cover change (LULCC), habitat fragmentation, and unsustainable socioeconomic activities. Tourism is growing in strength as a driver of economic growth in the mountains but at the same time has been contributing to environmental degradation. The annual rate of increase in internal migration in the countries of the HKH has been disturbingly high, with lack of access to basic services, low profitability of agriculture, and local environmental degradation as significant push factors in most cases.

The mountain specificities (inaccessibility, fragility, and marginality) demand high investments for building and maintenance of infrastructure (hard and soft including processing facilities). Policy frameworks and incentive systems continue to be weak for mountain people to gain from increased business competitiveness, innovations, and entrepreneurial skills and culture, along with decent working conditions and wages. Mountain resources – herbs, animals, plants, natural attractions – continue to be undervalued, inappropriately priced, positioned and branded in regional and global markets. Underdeveloped markets and processes with lesser participation of the mountain communities in market systems continues despite growing urbanization, trade, flow of foreign investments, advances in technology, business models and knowledge in the HKH.

A caution is warranted – while new economic opportunities exist in natural resources-based enterprise development in the mountains, this should not be at the cost of perpetuating the degradation of mountain socio-ecological systems. Balancing economic and socio-ecological benefits is a major policy challenge, as evidenced in the case of unplanned urbanization and unregulated tourism resulting in major consequences adverse to environment and society. The other priority challenge for HKH policymakers is how to retain youth in the mountain villages, ensure their safety in destination areas and productive use of remittances in rural areas.

WAY FORWARD

- All HKH countries need to significantly scale up investment for improving quality of mountain-friendly infrastructure in the hill and mountain regions. Public-private partnership for development of resilient infrastructure and value adding facilities can be promoted with appropriate policy and fiscal incentives.
- Assessing risk without considering the effects of climate change and haphazard urbanization is no longer an option in the mountainous areas. Risk-informed planning will help to create safer land use practices and hazard-proof infrastructure and housing. In addition, cross-border cooperation to share information, technology and best practices is necessary for early warning systems and other precautionary measures. With appropriate incentive mechanisms, private financing also can support adaptation and resilience building.
- Entrepreneurial acumen, skills and culture need to be nurtured among mountain people, especially the youth. For this there is need to develop mechanisms that facilitates (a)

exchange of ideas, knowledge and experiences among entrepreneurs, business to business, and government to government; (b) business embedded services including finance, insurance to make value chains and brands vibrant and resilient that survive in the market systems; and (c) valuation of mountain goods and services to provide adequate compensation. Enhanced policy support to social mobilization (with due consideration of gender and social inclusion) and skill development for natural resource-based enterprise development is the need of the hour for mountain regions in the HKH. HKH countries can promote sustainable ecotourism, sustainable production and sustainable consumption strategies with efficient and effective use of natural resources. Stronger transboundary collaboration is required for strengthening mountain value chains and brands.

- Given climate change impacts are likely to be substantial in the near future HKH countries will benefit from moving beyond incremental strategies and scale up transformative adaptation, integrating these with development planning and disaster risk reduction. Greater regional cooperation among HKH countries in information and knowledge sharing, particularly in areas such as disaster risk reduction, and food and water security are of critical importance. Engagement of the private sector in adaptation to climate change and resilience is a critical factor for successful action.
- Considering the wide prevalence of multi-local livelihoods in the mountain communities, that help households to spatially diversify their livelihood options and build resilience, it is imperative that the national governments plan for safe and regulated migration options for both internal and international migrants. Regional migration, migration within the RMCs, is very high and require cooperation among the countries to ensure protection of the migrants and welfare of migrant households.

MOUNTAIN PRIORITY 3

Achieve gender and social equity through inclusive and transformative change in the mountains

HKH MOUNTAIN TARGETS TO ACHIEVE THE SDGs

- Eliminate all forms of violence against all women and girls
- Ensure effective participation and equal opportunities for leadership for women and marginalized groups at all levels of decision-making in political, economic and public life
- Increase number of women in institutions by at least 100%, particularly at the decision-making levels
- Adopt and strengthen policies and legislation for the promotion of gender and social equality and the empowerment of women and girls at all levels, with a focus on mountains
- Eliminate gender disparities in education in the mountains
- Empower and promote the social, economic and political inclusion of all irrespective of age, sex, race, ethnicity, origin, religion or economic or other status

STATUS, TRENDS AND CHALLENGES

Women, children and marginalised communities are affected more severely than others by poverty, food insecurity, energy insecurity and migration. Because the HKH will face more frequent and intense disasters due to climate change impacts, there is concern for the further marginalization of the most vulnerable groups and emergence of new forms of exclusion. Policies and responses in HKH countries, however, continue to overlook differential vulnerabilities and the multiple forms of exclusion faced by women.

Women across different socioeconomic categories are disproportionately affected because of structural inequalities in the distribution of rights, assets, resources, and power. As a result, women are often poorer and less educated than men and excluded from political and household decision-making processes at various scales that affect their lives. Today's technocratic programs include women in economic development; while this can offer women economic opportunities, it does not fully address their unequal power relations with men, vis-à-vis equal wages for equal work, or the sharing of domestic work responsibilities.

Large-scale male outmigration from the mountain regions is leaving women to manage not just household work but also other work related to agriculture, natural resource management, and other roles in the community and public sphere, traditionally the role of men. Since women throughout the HKH do not have a corresponding decision-making rights or control over resources, there is undervaluation of their work in society and therefore not taken into account in most policy making processes and outcomes.

Notions of gender are simplified in policy making, and frequently reduced to the inclusion of some “poor women”. In fact, gender inequalities develop in an increasingly complex manner with contextual political and economic situations intersecting with class, caste, religion, age, and ethnicity. This simplistic and apolitical interpretation of gender and approach to integrating gender in climate interventions and policies poses a huge problem, namely the misleading assumption that engaging women in projects is sufficient to take care of women's needs and will lead to women's empowerment.

In most sectors, gender mainstreaming policies have applied this narrow understanding and concept of gender without further differentiation of these women's needs, interests, emotions, identities, and roles. Narrowly conceived gender mainstreaming policies produce technocratic quick fixes that place unrealistic burdens on women already in poverty. The domination of engineering and technical knowledge and the ‘masculinity’ of professional cultures in natural resources management is reason for great concern as it means that there is a structural mismatch between actual realities in the field and expectations and administrative realities at the policy level.

Too often, the available national empirical data on the impacts of climate change on women and men in HKH countries are presented in aggregate terms—reflecting an unfounded assumption that climate change affects people uniformly. Aggregated country data may not also empirically represent mountain areas, which (except in Bhutan and Nepal) form only a portion of HKH countries' national territories. These aggregate measurements do not reflect the diversity marked by multiple, coexisting identities that create overlapping, and often conflicting, relations of inequality and hierarchy, inclusion and exclusion.

WAY FORWARD

- Government authorities and humanitarian organizations need to have stronger collaboration to ensure gender responsiveness of disaster relief and recovery programmes. Both would need to identify vulnerable groups in terms of age, disabilities, and social and religious groups and

cater to their needs in disaster response to avoid further marginalisation in the process. I/NGOs can play a role to build the capacity of government, as well as communities, especially in gender-inclusive development.

- All levels of government must allocate resources — financial and human — for gender responsive interventions at scale and adopt clear accountability mechanisms, such as gender budgeting, to demonstrate their commitment to gender equality as indicated in the SDGs. Policy support is needed for mechanisms to collect disaggregated (sex and social) data, which can be shared and communicated effectively.
- Gender and socially-inclusive planning and implementation need to go beyond numbers and quotas to improve women's participation in decision making and climate governance, and create mechanisms that ensure empowerment and promote women's rights and agency. Women's engagement and participation in climate change policy, disaster risk management, and on-the-ground interventions should follow a logic that is empowering and promotes women's rights — not one that is dictated solely by efficiency. Programme implementation must create space for women and marginalized to participate in natural resources management and governance without further feminizing responsibilities in ways that will add to the environmental burdens for women.
- Experts must reflect on their knowledge and professional practises; they need to internalize a conviction that knowledge and development is never neutral and value-free, and can have unintended consequences. One promising way to achieve this is to integrate social sciences knowledge more firmly in engineering and technical education, and to ensure a more diverse representation among professionals themselves, in terms of social background (e.g., more women professionals, more experts of marginalized classes, castes, and ethnicities) and disciplinary education (hiring more sociologists in engineering departments, for instance).

MOUNTAIN PRIORITY 4

Promote sustainable production systems to assure food security, nutrition security, and income for mountain people, with particular attention to women's changing roles in agriculture

HKH MOUNTAIN TARGETS TO ACHIEVE THE SDGs

- End all forms of malnutrition in the mountains and improve food and nutrition security, particularly for women and girl children
- Increase investment in rural infrastructure, agricultural research, technology development, and plant and livestock gene banks in the mountains to improve agricultural productive capacity
- Enable higher incomes for small-scale farmers, including women farmers
- Achieve sustainable management and efficient use of natural resources

STATUS, TRENDS AND CHALLENGES

Mountain people of the HKH are food and nutrition insecure and the magnitude of this insecurity is in many instances higher than in the plains. For instance, mountain provinces of eastern Afghanistan, Meghalaya state of India, Chin and Rakhine States of Myanmar, the high mountains of Nepal, and Baluchistan province of Pakistan exhibit higher than national average food and nutrition insecurity. Roughly one-third of the mountain people of the HKH are food insecure and more than half of them face some form of malnutrition, while one fifth to half of all children below the age of five are stunted, underweight or wasted, and a significant percentage of women suffer from anaemia. Therefore, food and nutrition insecurity in the mountains has a distinct gender dimension. Food insecurity is also seasonal, with cold and snowy winters being the most food insecure season.

The causes of food and nutrition insecurity in the HKH are multiple and complex, influenced by a range of mountain specific factors such as remoteness, high poverty, natural resource degradation, demographic changes; abandonment of villages changing diets, climate change, and inadequate policy and institutional supports that takes into account specificities of mountain food security challenge

Neglected and underutilized food species (NUS)—crops and livestock—are more accustomed to mountain conditions and resilient to climate-induced stresses. The nutritional value of many NUS crops such as millet, sorghum, buckwheat is much higher than rice and wheat. In view of nutritional, environmental and economic benefits, recently NUS are relabelled as ‘future smart foods’. Yet, these food crops have been neglected due to national policies in many of the HKH countries that prioritize the production of rice, wheat and maize. Most of the NUS are not water intensive crops, and whatever supplemental irrigation may be needed, in view of climate change, can be easily provided by harnessing local water sources like streams and springs. Mountains do have centuries-old tradition of farmer-managed irrigation, which fell into disrepair in many countries when state-led irrigation intervention took over. Food security in the mountains is further exacerbated by low incomes and poor accessibility.

The overall challenge therefore is three-fold: revive traditional mountain food systems; make mountain agriculture more competitive and increase the purchasing power of mountain people. The following mountain solutions can help achieve this:

- Revive local food systems, including neglected and underutilized food species (NUS), native livestock in high mountain areas, and mountain niche products like tea, coffee, nuts and fruits. These have a huge potential to diversify food and micronutrient supply in the mountains, while enhancing farmers’ incomes and enabling them to access nutritious food from other sources. This can be accomplished through provision of forward and backward linkages of inputs and markets.
- Sustainably harness local resources like streams, springs, snow and glaciers in high mountain areas to increase agricultural production and diversify local food systems.
- Increase non-farm incomes by investing in growing opportunities in tourism, handicrafts, timber and non-timber forest products (NTFPs), medicinal and aromatic plants, varieties of plants and herbs including honeybees and food processing, and channel remittance incomes into such productive investments, which would increase incomes and, in turn, improve food and nutrition security in the mountains.

WAY FORWARD

- To address the unique challenges faced by mountain communities with regard to food, national governments need to pay special attention to integrating a mountain perspective

in national policies related to food and nutrition security, with special attention to women and children. The mountain perspective could take into account agro-ecological potentials, environmental conditions, institutional services and market access, and capitalise on mountain-specific niches and opportunities. As achieving food self-sufficiency in mountain areas will remain a difficult challenge, good infrastructure, policies and regional cooperation are crucial to ensure a smooth and uninterrupted food supply from downstream areas to mountain areas.

- Governments in the region can be more effective in addressing issues related to food security and nutrition security by adopting a holistic approach that includes revitalizing local food systems, strengthening social safety nets, enhancing knowledge and awareness about nutrition, as well as reducing physical and socio-economic vulnerabilities. Efforts are also needed to diversify livelihood options and develop non-farm sectors such as tourism and handicrafts for enhancing household’s food purchasing power. Focus also needs to be given to increase productivity of traditional crops and native livestock, non-timber forest products (NTFPs), medicinal and aromatic plants; and mountain niche cash crops.
- Increased investment in management of natural resources including soil, water and energy will be critical to increase agricultural production, diversify local food systems, and improve nutrition. Major investments are needed in soil and water management to revitalize springs, ponds and other water bodies, reduce disaster risks, and to develop resilient irrigation facilities in hill and mountain areas in an environmentally responsible manner as well as domestic water supply.

MOUNTAIN PRIORITY 5

Guarantee universal access to clean energy in the mountains from sources that are affordable, reliable, and sustainable

HKH MOUNTAIN TARGETS TO ACHIEVE THE SDGs

- Ensure universal access to clean and affordable energy by mountain people
- Increase electrification in rural areas
- Increase use of renewable energy and energy efficiency measures

- Decrease air pollution
- Increase access to clean energy sources for women to decrease their workload, time and drudgery, and empower them as energy entrepreneurs

STATUS, TRENDS AND CHALLENGES

The HKH region has one of the highest incidences of energy poverty with around 400 million people still lacking basic access to electricity. Despite having a huge hydropower potential of ~500 GW, the HKH remains energy poor and vulnerable. More than 80% of the rural population rely on traditional biomass fuels for cooking and heating, in poorly ventilated rooms, exposing themselves to severe health risks of indoor air pollution.

Achieving energy security underpins the achievement of most other SDGs – be it poverty alleviation, health or environmental sustainability. Measures to enhance energy supply in the HKH have had less than satisfactory results because of low prioritization and a failure to address challenges of remoteness and fragility. However, this is slowly changing, with an emphasis on innovative business models for remote off-grid areas including mountains.

Inadequate data and analyses are a major barrier to designing context-specific interventions. This weakness deters attention to special challenges faced by mountain communities: scale economics, access to infrastructure and resources, poverty levels and capability gaps, and also thwarts the large-scale replication of successful innovative demonstration/pilot projects that have been implemented in the region. Lack of awareness of cleaner energy solutions compels people to stick to traditional biomass fuels.

While the countries in the HKH need an optimal energy mix that is reliable, sustainable and clean, hydropower is of special importance because of the physiography of the mountains which provides the perfect setting for hydropower generation. This region has one of the highest hydropower potentials in the world; however, very little of that potential has been actually tapped. Among the many factors for slow hydropower development are environmental and social issues, and in more recent years, competition from cheaper sources of renewable energy like solar energy. This is making hydropower unviable in some countries of the HKH (e.g. India), although hydropower continues to be a large part of national investments plan in Nepal, Bhutan, Pakistan and Afghanistan.

- Given the impacts that hydropower has on local population, it is very important to share benefits of hydropower with the mountain people through appropriate and fair benefit sharing mechanisms.

Hydropower is an important part of the energy mix and can offer peaking power, provided it is backed by appropriate institutional, financial and social safeguard mechanisms.

- Mapping of existing clean energy challenges and their scope, and of available potentials and solutions is needed in order to establish a mountain-specific energy database and knowledge base. For this, it is recommended to establish a dedicated regional institution to effectively address existing barriers related to the policy and regulatory environment, knowledge and awareness, capacity, investment and business in the HKH region and implement holistic nexus solutions
- Remote mountain regions may be best reached through off-grid solutions such as solar and micro-hydel, but these solutions have to be tailor-made for the mountains, by ensuring that these are bottom-up, affordable and equitable.
- At the other end of off-grid, local solutions, but equally important, are the regional solutions of energy trade and cooperation.
- Create a supportive enabling environment to replicate and upscale successful and sustainable business models, enhance access to finance and mobilize investment

WAY FORWARD

- Promote mountain specific clean energy policies and programmes as an integral part of national energy development strategies. Ensure mechanisms for HKH mountain specific data generation and analyses of various aspects of energy access for evidence-based policy interventions to enable a rapid transition to sustainable energy solutions.
- Establish technology specific quantitative targets and quality standards for each energy end use and track progress towards their achievement periodically while strengthening institutional capacity to meet these targets underlying three interlinked pillars of energy access, renewable energy and energy efficiency for the HKH mountain context.
- Scale up the current investments several fold to accelerate the development of both grid and off-grid renewable energy potentials while strengthening capacity building at different levels and creating markets that are conducive to private sector participation.

- Accelerate the pace of regional energy trade and cooperation in the interest of sustainable development and climate protection by establishing a high-level, empowered, regional mechanism to implement agreed goals on regional energy trade and cooperation.
- A transition to a low-carbon and climate-resilient future requires speed and scale in action. Three pathways can promote energy-efficient uses of energy, improve electricity generation and distribution networks, and augment productive use of energy.
- Pathways to improve consumptive use of renewable energy: Transition up the energy ladder from traditional biomass and LPG to renewable energy. Switching to electric stoves will have a significant impact on health (particularly of women and young children) through reduced household air pollution. Appropriate policy frameworks, provision for technology and access to financial mechanisms should be made available to enable a transformation to an equilibrium, which uses largely renewable energy.
- Pathways to improve electricity generation and distribution: An optimal mix between on-grid and off-grid solutions can lead to good returns for people and the environment in the future: on-grid, off-grid, and distributed generation with grid connection. These mixes may depend largely on the type of terrain. For mountain regions, where grid connections are hard to establish, off-grid solutions with an appropriate mix of hydro and solar PV may be appropriate. For the hills, where grid connections are easier to establish, grid electricity could be supplemented by distributed generation solutions – hydro, solar PV, and biomass, which will also be connected to the centralized grid to feed surplus electricity when necessary. This will improve the quality and reliability of services in addition to building resilience to natural disasters, which may disrupt long-distance transmission networks. For the hills and plains, there is the possibility of net metering, in which households and businesses with solar PVs connect to the centralized grid for power exchange.
- Pathways to improve productive use of energy in mountain areas
 - Consider mountain specificities during policy formulation; integrate energy into cross-sector policy objectives and institutional mandates; support private sector investment in, and uptake of, renewable energy and energy efficient solutions; incentivize local resource use and ownership models to strengthen sustainability of energy investments; and invest in policy impact analysis tools to improve policy direction and implementation.
 - Promote approaches like participatory technology development, and build, operate, and transfer models to ensure technology meets the needs of end users and is sustainable over time; identify and commercialize technology options that are responsive to energy availability, accessibility, affordability, and demand; and promote renewable energy solutions coupled with storage facilities to deliver reliable energy in mountain areas.
 - Invest in evidence generation and training to create investor confidence in the viability of productive end use energy investments; develop and operationalize financial schemes like green lending to support investment in productive use of energy; develop and deploy innovative financial technology like big data, mobile money, and digital lending platforms to support financial decision making; and deliver financial services to unbanked populations.
 - Enable multi-stakeholder partnerships between government, private sector, financial institutions, and mountain entrepreneurs to develop, integrate, and scale up investment in productive use of energy.
 - Invest in applied incubation and innovation facilities to develop and deploy future-fit energy solutions for productive end use and invest in training programmes to strengthen the capacity of all the stakeholders involved in integrating sustainable energy solutions for productive end use

MOUNTAIN PRIORITY 6

Ensure a year-round secure water supply in the mountains with universal and affordable access to safe drinking water, sanitation, and water for productive purposes

HKH MOUNTAIN TARGETS TO ACHIEVE THE SDGs

- Achieve universal and equitable access to safe and affordable drinking water to all mountain people by 2030.
- Achieve access to adequate and equitable sanitation services and hygiene education for all in mountain regions.

- Reduce the workload and time spent by women and children in collecting water by 2030. Create secure water supply for key development sectors (agriculture, energy) that are viable year-round
- Build effective and efficient mechanisms to implement and monitor transboundary cooperation agreements.
- Support and strengthen the participation and decision making of mountain women and men communities in water management

STATUS, TRENDS AND CHALLENGES

The HKH provides nearly two billion people a vital regional lifeline via water for food (especially irrigation), water for energy (hydropower), and water for ecosystem services (riparian habitats, environmental flows, and rich and diverse cultural values). Glacier and snowmelt are important components of streamflow in the region; their relative contribution increases with altitude and proximity to glacier and snow reserves. Groundwater, from springs in the mid-hills of the HKH, is also an important contributor to river base flows, but the extent of this contribution is not known due to limited scientific studies.

Water governance in the HKH is characterized by hybrid formal-informal regimes with a prevalence of informal institutions at the local level and formal state institutions at national and regional levels. Synergy and support between state and informal water management institutions is often lacking. Gender, and often social, inequity is prevalent in both formal and informal institutions and translates into inequity in access to water. Positive discriminatory action needs to be taken on behalf of disadvantaged populations. Among these populations are ethnic, linguistic and religious minorities; women headed households; and marginalized communities.

Some of the challenges for water security in the HKH lie partly in our limited understanding of high-altitude environmental processes, particularly related to future water availability in view of climate change. However, even though we do not have sufficient, adequate data, we have enough information to understand which of the local water related adaptation works and how and hence more attention needs to be paid to local solutions like revival of springs, revitalisation of farmer managed irrigation systems and low external input nature-based solutions. However, heterogeneity in resource and policy conditions needs to be kept in mind while drafting appropriate local solutions.

At the regional level, data sharing and improved cooperation on water sharing is impeded by lack of trust. Data and information sharing are crucial steps for

transboundary disaster risk reduction such as GLOFs and river floods. This mistrust limits benefit sharing in water and its related services like irrigation, energy and navigation.

WAY FORWARD

- Developing mechanisms for shared water resources by linking opportunities like energy with flood risk reduction and navigation
- Fostering collaborative research for advancing knowledge on transboundary water resources management in context of upstream downstream relationships and climate change.
- Formulating demand management policies and plans while also considering water as a basic human right and ecosystem needs.
- Reforming higher educational curricula related to water sector while considering mountain specificities, interdisciplinary, field research, good governance and leadership aspects.

MOUNTAIN PRIORITY 7

Halt biodiversity loss, land degradation and sustainably manage forests and other ecosystems in the mountains to enhance ecosystem resilience for sustained flow of services

HKH MOUNTAIN TARGETS TO ACHIEVE THE SDGs

- Ensure the conservation of mountain ecosystems, biodiversity and habitats
- Take urgent action to minimise human wildlife conflict and end poaching and trafficking of protected species of flora and fauna in the mountains.
- Reduce ecosystem degradation by development projects by 50% and restore degraded ecosystems
- Include ecosystem values in national accounting system and practices
- Identify incentives for conserving benefits from mountain ecosystems
- Increase investment in biodiversity conservation, and ecosystem based adaptation and sustaining services by 50% by 2030
- Ensure 100% meaningful community participation in biodiversity programmes at the local level

- Increase women's representation and meaningful participation in decision making processes by 50% in natural resource access and benefit sharing programmes
- Establish a mountain specific database for species and ecosystem services

STATUS, TRENDS AND CHALLENGES

The ecological diversity of the HKH has long been modified by extraction, trade, culture, and increasing land use and land cover change resulting in environmental degradation and habitat loss. At the same time, new species are constantly being discovered, underlining the need for conservation research and action. Between 1998 and 2008, an average of 35 new species were discovered each year in the Eastern Himalaya alone. Of the region's population, 70–80 percent live in rural areas, while 60–85 percent subsist directly through ecosystem services. The burgeoning population and continuously growing demands on natural resources due to increasing pace of economic development is placing enormous strain on ecosystems and habitats. It is predicted that by the year 2100 the Indian Himalaya could see nearly a quarter of its endemic species wiped out.

Rapid development activities and expansion of infrastructure, urbanisation and industrialization is putting unprecedented pressure on ecosystems. For example, hydropower and dam construction have potential impacts that include forest loss, species extinction, habitat fragmentation, loss of ecosystems, loss of species diversity, and also change downstream ecological processes and set in motion complex chain reactions that transform floodplain vegetation dynamics. Road and railways network expansion are resulting in increasing incidents of wildlife killing and human-wildlife conflict. In addition to these drivers, climate change, cryosphere dynamics, air pollution and changes in the temporal and spatial dynamics of hydrological regimes are adding further stress to HKH ecosystems and species, including their distribution range, with risks to biodiversity and resilience.

However, there is cause for optimism too. The HKH has numerous examples of good practices in conservation and restoration of degraded habitats along with community development that have great potential for upscaling and outscaling. Several participatory and community-based approaches have had positive ecological, economic, and social impacts. Substantial degraded forest areas are regenerating, as decentralized practices reverse historical deforestation trends. Local communities have gained institutional space to decide for themselves on issues related to forests, income, inclusion, and social justice.

The vast HKH region, which is contiguous across political borders, is still poorly researched. For example, only around 2% of the research on the Kangchenjunga Landscape is at genetic level, compared to 20% at the ecosystem level and 78% at the species level. The identification and recording of species is still at an early stage, the necessary baseline data for identifying genetic diversity are not available, and constant long-term and joint monitoring is needed to examine population dynamics as a function of changing climate. Further, there is limited information about ecological status and human impacts in the region to enable prediction of the losses that will occur as a result of natural and human-induced disturbances. There is also a dearth of studies focused on upstream-downstream linkages and for monitoring the functional values of ecosystems.

The heterogeneity of the mountain terrain provides both biological refugia and natural dispersal corridors, but can also present a variety of challenges to the migration of species. Improving our understanding of the responses of the species found in the HKH is imperative if conservation strategies and policies are to be effective. This is equally true for maintaining agricultural production for food security and contributing to sustainable development in the HKH, particularly traditional mountain agricultural systems, which are generally highly adapted to specific climatic niches within the highly heterogeneous mountainous terrain.

The local communities in the HKH face uncertainties and challenges as they strive to use, nurture, and sustain the diverse ecosystems at landscape scale where they live and on which they depend. The most powerful contemporary forces that influence both biological and cultural diversity and livelihoods include government policies, expansion of regional and global markets, and climate change, among others. Many of the challenges transcend national boundaries and therefore regional cooperation in monitoring and assessment are necessary to address them.

WAY FORWARD

Ecosystem diversity, species diversity, genetic diversity, and functional diversity all play key roles in the ecosystem services that benefit people and communities. To achieve the sustainable development goals, particularly SDG number 15, the conservation of mountain ecosystems, including their biodiversity and habitats is of utmost importance. This can only be ensured by minimising human-wildlife conflict, including ending poaching and trafficking of protected species of flora and fauna. Further, ecosystem and habitat degradation have to be reduced substantially and degraded ecosystems should be restored. These can be only achieved by collective efforts of all

sectors- government, civil society, community and private sector. Valuation of ecosystem and private sector investment can ensure success in biodiversity conservation and ecosystem based adaptation. Some recommended actions are as follows:

- Understand the complexity of HKH ecosystems and their dynamics with long-term research and monitoring mechanism that can contribute to science-based decision making processes.
- Regional efforts are needed to enhance HKH ecosystems' resilience to various drivers of change. Countries should promote nature-based solutions through regional cooperation in conservation science, policy and economic development interventions by maximizing the shared resources.
- Ecological theory and practice must include sociocultural processes along with biological and geophysical aspects to address the causes and impacts of ecosystem change. This requires application of an integrated approach to conservation and development interventions that considers socioeconomic, ecological and environmental trade-offs and resilience.
- Investments in mountain ecosystems should be made where they are most needed, especially to conserve biodiversity, alleviate poverty, and enhance sustainable livelihoods. Investments should capitalize on natural resources of the HKH and promote mountain niche products that enhance the livelihoods of marginal communities.

MOUNTAIN PRIORITY 8

Ensure integration between adaptation to climate change, disaster risk reduction, and sustainable development for the mountains through evidence-based decision making

HKH MOUNTAIN TARGETS TO ACHIEVE THE SDGs

- Take concerted action to keep global warming to 1.5 degrees by 2100.
- Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in the mountains.
- Reduce mortality rates, especially for women and children due to extreme climate events
- Reduce economic losses due to extreme climate events

- Integrate mountain specific climate change measures into national policies, strategies and planning.

STATUS, TRENDS AND CHALLENGES

The HKH is both a climate change hotspot and a densely populated region, a factor contributing to the depletion and degradation of natural resources, and resulting in increased vulnerability.

Climate change adaptation is identified as a cross-cutting priority with clear linkages to disaster risk reduction (DRR), SDGs, and resilience building in most of the national policies and plans in the HKH, underlining the importance of greater integration of these aspects in adaptation planning. Those developing countries in the process of preparing NAPs and the countries that already have NAPA (like Nepal) have clearly indicated the need to link climate change adaptation with DRR and SDG priorities. In addition to the policies and plans, several adaptation initiatives in the region have piloted projects to facilitate the integration of climate change with DRR and SDGs.

Policy makers in the HKH countries are aware of the urgency to act on adaptation but face substantive challenges. Some of those challenges are a lack of adequate data (both in terms of quantity and quality, and especially at a localized scale) about climate change impacts, weak institutional capacity at various governance levels, social and economic barriers to intervention uptake, and poor infrastructure for development and adaptation purposes. The accuracy of existing technologies and systems to accurately predict the intensity or the epicentre of locally formed disasters is still poor. Therefore, institutions still take a conservative approach towards investing in pre-disaster mitigation.

Gaps in a country's adaptive capacity cannot be addressed until political leadership pushes for an intensified adaptation response within the larger development regime. It is also critical to enhance regional collaboration, and substantively increase adaptation finance, including mobilization of funds for greater social protection and risk insurance. The challenge is that capacities, resources, motivations and commitments of different countries are different to initiate a concerted effort. Moreover, not all countries are impacted by climate extremes similarly and hence their priorities may differ.

Engagement of the private sector in adaptation to climate change, DRR and resilience building is a critical factor for successful action. Although governmental agencies are mandated to lead DRR, their interactions with private, non-government, academic sectors, etc.

are unclearly defined that often leads to incoherence in problem framing as well as remedial action.

WAY FORWARD

- Overarching national policies and frameworks, which can translate the idea of integration of climate change adaptation, DRR, and SDG into action, need to be developed. This will allow the national HKH governments to strategically think of policy, legal, and financial instruments that can facilitate convergence of the three.
- Strong cooperation at all levels (regional, national and local) is an urgent necessity to reduce the vulnerability and exposure of mountain communities. By forging a shared commitment to disaster risk reduction, climate change adaptation strategies, and its integration into sustainable development, HKH countries can potentially pool knowledge, resources, and technology for bringing about a transformative change in the region.
- Evidence-based decision making on adaptation warrants greater efforts towards knowledge generation and communication through knowledge networks and knowledge management platforms. The opportunity lies in strengthening networks to exchange information, knowledge, and skills relevant to DRR, climate change risk identification, and adaptation. This has to be accompanied by sustained efforts to promote climate literacy among the general public, through massive awareness campaigns, incorporation of climate change issues into the educational curriculum, and active engagement of the media.
- Mechanisms for appropriate and timely risk communication and risk transfer is of critical importance to achieve effective adaptation and disaster risk management. There must be stronger integration of climate and hazard data, especially in case of early warning for slow onset hazards like droughts as well as sudden events like floods, flash floods, and GLOFs.

MOUNTAIN PRIORITY 9

Promote a mountain-specific agenda for achieving the SDGs through increased regional cooperation among and between mountain regions and nations

HKH MOUNTAIN TARGETS TO ACHIEVE THE SDGs

- Cooperate at all levels across the HKH region for sustainable and mutual benefits.
- Enhance regional and international cooperation and access to science, technology and innovation to achieve the SDGs in mountain areas
- In national, regional, and global decision-making institutions and processes, recognize and prioritize the uniqueness of the HKH and its people. Ensure representation in decision-making.
- Allocate significantly greater resources and identify incentives for conservation of benefits from mountain ecosystems.
- Enhance capacity-building support to HKH countries to increase significantly the availability of high quality, timely, reliable data that is specific to mountain regions, disaggregated by income, gender, age, race, ethnicity, migratory status and disability
- Equal protection of migrants under effective rule of law and good governance

STATUS, TRENDS AND CHALLENGES

Regional governments must combine and accelerate efforts to advance sustainable mountain development. There is significant scope for HKH countries to cooperate around the complete food–water–energy nexus. Yet there is persisting imbalance in sustainable natural resource and biodiversity management in the region because of the lack of regional policies and processes for environmental governance in the region.

Cross-border hydropower cooperation continues to be sub-optimal despite the universal acknowledgement that there are tremendous benefits to be derived from regional cooperation. The Climate Summit for a Living Himalaya held in Bhutan in 2011 produced a Regional Framework of Cooperation in which the agreed areas of cooperation included food security, natural freshwater systems, biodiversity, and energy security. However, there has been no follow-up action or movement since the summit.

Because natural hazards know no borders, disaster risk reduction in the HKH would benefit greatly from stronger regional cooperation. In the Asia Regional Plan for implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030, a two-year action plan for 2017 to 2018 seeks to strengthen existing regional mechanisms to reduce the risk of, and enhance early warning and preparedness for, transboundary disasters. A regional approach, with efforts in timely data sharing and modelling, should improve flood management and help mitigate adverse impacts in transboundary basins.

Regional cooperation is also key for tackling air pollution. The HKH is a hotspot of air pollution, with multiple negative effects on regional climate, health, and environment. The existing ministerial level agreement - The 'Malé Declaration on Control and Prevention of Air Pollution and its likely Transboundary Effects for South Asia' is dormant. As air does not respect national boundaries, regional cooperation in data sharing is necessary for designing and implementing effective mitigation and policy measures to reduce the emission of air pollutants.

Transboundary cooperation in the HKH is lacking mainly because the focus of intergovernmental initiatives has been on political and economic interests, rather than social and environmental wellbeing at

the regional scale. Progress on this front requires the establishment of formal, mutually agreed frameworks for cooperation on these aspects that can be translated into action.

WAY FORWARD

- Engagement of international organizations, civil societies, and academia in governance of shared resources can foster regional cooperation by building trust, facilitating negotiation and benefit sharing.
- Trans-boundary cooperation for disaster risk reduction, reduction of trans-boundary pollution and climate change adaptation can be multiple entry points for broader regional cooperation. HKH governments can take advantage of international commitments to promote regional policy actions that can start with the sharing of science, technologies and innovations.
- HKH countries should build on ongoing collaboration initiatives to build and expand regional cooperation on complex transboundary environmental issues such as river basin management, air quality, and food and energy security.

About ICIMOD

The International Centre for Integrated Mountain Development (ICIMOD), is a regional knowledge development and learning centre serving the eight regional member countries of the Hindu Kush Himalaya – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and based in Kathmandu, Nepal. Globalisation and climate change have an increasing influence on the stability of fragile mountain ecosystems and the livelihoods of mountain people. ICIMOD aims to assist mountain people to understand these changes, adapt to them, and make the most of new opportunities, while addressing upstream-downstream issues. We support regional transboundary programmes through partnership with regional partner institutions, facilitate the exchange of experience, and serve as a regional knowledge hub. We strengthen networking among regional and global centres of excellence. Overall, we are working to develop an economically and environmentally sound mountain ecosystem to improve the living standards of mountain populations and to sustain vital ecosystem services for the billions of people living downstream – now, and for the future.

HINDU KUSH HIMALAYA REGIONAL MEMBER COUNTRIES



AFGHANISTAN



BANGLADESH



BHUTAN



CHINA



INDIA



MYANMAR



NEPAL



PAKISTAN

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