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Written and compiled by

Amy Sellmyer, Laurie Vasily, Samuel Thomas

Production team

Editors: Laurie Vasily, Samuel Thomas, Rachana Chettri, Kundan Shrestha

Design: Mohd Abdul Fahad

Photos

Alex Treadway: Cover, pp 1, 3, 5, 6–7, 10, 21(1), 24–25, 25, 44–45, 46–47, 56–57, 58–59, 59, 60–61, 71, 72–73, 91; **Karen Conniff:** p 2; **Bandana Shakya:** pp 8–9, 9; **Abhimanyu Pandey:** p 12; **Jitendra Bajracharya:** pp 12–13, 15, 18–19, 21(2), 23, 27, 28–29, 31, 32–33, 36, 40, 49, 51, 53, 54–55, 62, 63, 65, 66–67, 67, 76, 77(1 & 2), 78, 84, 85, 86–87, 88–89, 94, 95; **Nabin Baral:** pp 14–15; **Ram Kumar Tamang:** p 16; **Govinda Joshi:** p 17; **Nakul Chettri:** p 79; **Rajendra K Shakya:** p 20; **Suman Adhikari:** p 30; **Mahboob Shah Rahimi:** pp 34–35; **Megh Pyne Abhiyan:** pp 38–39, 39; **Sajid Iqbal:** pp 11, 42-43, 43; **Kabir Uddin:** pp 50–51; **Santosh Raj Pathak:** p 74; **Arnico Pandey:** pp 70–71; **ANSO:** pp 90; **Susheel K Shrestha:** pp 92–93; **SK Ghimire:** p 29; **ICIMOD photo archive:** pp 37, 68–69, 82–83; **Zhang Tao:** pp 80–81.

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Taking ICIMOD to the centre stage

There are a few moments that stand out in one's life as those against which one can mark a before and an after. The 4th of February 2019 provided one of those moments when a headline in the Guardian read "A third of Himalayan ice cap doomed, finds report". That particular news article about the *Hindu Kush Himalaya Assessment* report marked a breakthrough for ICIMOD in the international media. This was accompanied by 300 other news articles about the report, published across the world, which together form in my mind a clear invitation for ICIMOD to occupy the global centre stage with our sustainable mountain development agenda. We've taken up that invitation and are committed to ensuring that the mountain agenda becomes a global agenda.

To that end, the near future is filled with significantly important global events and ICIMOD is engaged strategically to fortify our position in advocating the mountain agenda. With our government partners, we'll be participating in UN-sponsored events including those related to the United Nations Framework Convention on Climate Change, the High Level Political Forum to review progress towards the Sustainable Development Goals, and the Secretary General's Climate Action Summit. It's critically important that our mountains are recognized in these events and that the global discourse emerging from these significant meetings acknowledges the significance of the mountains and includes clear actions promoting sustainable mountain development. That can only happen if there is a clear, resonating call from mountain countries and that too is something we're seeking to support through a campaign we call the "HKH Call to Action".

I've been thrilled thus far with the response to this HKH Call to Action which at its heart asks that we all do everything we can to build a prosperous Hindu Kush Himalaya (HKH). This includes taking the science forward among fellow scientists; ensuring that policy makers understand the implications of the science for policy and vice versa; and ensuring that the public understand dynamics of climate change and biodiversity loss, of over-consumption and overuse of non-renewable energy sources, and of the very special contributions that mountains and mountain people make to our planet. We can only address the very serious challenges ahead if we work together across our individual differences and across boundaries. Addressing the challenges will require much more cooperation among the countries sharing the HKH region to manage these globally vital resources. Facilitating this kind of regional cooperation is something that ICIMOD is perfectly positioned to do.

I feel confident that we can do it because I've seen some incredibly inspiring results already. In fact, the *HKH Assessment* report is a wonderful example of cooperation. I think of it as a microcosm of what we have pursued through over 35 years of work here at ICIMOD – it contains the most up-to-date, state-of-the-art science; it focuses on issues most critically important for mountain areas while also considering the impacts on downstream communities; it brings both the hard natural science focusing on water, air, biodiversity, and ecosystems together with the important social science issues that impact people such as poverty, nutrition security, and livelihoods; it includes inputs from over 350 policy makers, scientists, and other experts; and it was based on a need identified through broad consultation across all of the eight ICIMOD regional member countries.

I am so proud of this effort and the teams that did so much work to put it together, but I also don't want this flagship publication and all of the attention it's garnered to overshadow all of the other important work that we do here at ICIMOD. I am proud that we were able to achieve such vast media coverage of the *HKH Assessment* report, but I know that it is our ongoing work and the credibility of all that we have built over these 35 years that will keep us there on the global centre stage.

ICIMOD is an organization like no other since our work spans from the globally to the locally significant. Although there are so many stories I could tell about this significance, we've picked a few illustrative ones here to focus on the ways in which we produced results this year. Whether those results are grassroots-level mountain innovations like the solar-power water-lifting pump that complements the ancient irrigation systems in high mountain areas of Pakistan, or the person-to-person and institution-to-institution capacity building for improved water resources management that we've been doing with partners in Afghanistan, or ensuring that we address gendered and structural barriers to market access by supporting women entrepreneurs in rural Nepal, we keep our focus clearly on the people and the realities in the mountains. Our efforts to influence policy are focused on promoting the mountain agenda. We have been undertaking various activities such as assisting the development of the Indian Himalayan Council; promoting community-based eco-tourism development in Bhutan; generating new data and knowledge through biodiversity monitoring, which led to the discovery of new species; and collaborating with the National Science Foundation of China.

Vast oceans have long been considered the heart of this planet, and the Amazon has often been described as the lungs. The HKH? This is the pulse. Being at the top of the world, changes happen here before they happen anywhere else and what happens here is felt everywhere. Whether you are in Nepal or Nebraska, the HKH impacts the world around us, and we are here to protect it.

I'd like to thank all of you who have supported ICIMOD's vision and mission and I invite you to answer the HKH Call to Action. Together, we can protect the pulse.

David Molden
Director General, ICIMOD

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CHAPTER 1

Mountain innovations and community practices

Promoting and supporting innovative approaches to address change and build resilience

Communities for conservation

Improving adaptation and tackling conservation threats in rural Myanmar

A community information resource centre (CIRC) is bringing communities and government bodies in rural Myanmar together to tackle conservation threats, improve adaptation, and facilitate tourism. The newly established centre – which sits on the outskirts of the Hponkanrazi Wildlife Sanctuary in an extremely remote part of Kachin State – brings much-needed attention to the role of local institutions and communities in safeguarding biodiversity and socio-cultural values.

Discussions around the CIRC have already prompted a shift in focus – from one that prioritizes conservation at the cost of local development needs, to one in which local communities play a more active role in conservation efforts. The CIRC will enable communities to have a larger role in conservation, increase local livelihood options through ecotourism, and promote climate-smart solutions to strengthen resilience.

Strengthening the link between biodiversity conservation and livelihoods, Wa Sang Dam village in Putao district of Kachin State, Myanmar is host to a community information resource centre which serves as a platform for the government, communities, and other landscape partners to work together in participatory natural resource management, a first of its kind for the area.

Irrigating high-elevation fields

Solar-powered water-lifting pumps are transforming agriculture in Gilgit-Baltistan

The use of solar water-lifting pumps and drip irrigation in Pakistan's Khyber, Passu, Hussaini, and Morkhoon regions has shown promising results. This success has prompted ICIMOD's Indus Basin Initiative and its local and national partners in Pakistan to collaborate with WWF-Pakistan to scale out this agricultural water management package to other locations in the country.

Ten solar water-lifting pumps with drip irrigation mechanisms have been installed in the adjoining valleys of Central Karakoram National Park and Deosai National Park. Each system has benefited 30–40 households in each intervention site. WWF-Pakistan plans to install hydraulic ram pumps in 20 additional locations in Gilgit-Baltistan to pump water from the Hunza, Shyok, and Indus rivers to irrigate orchards, vegetable farms, and fodder fields located at higher elevations.

The arable land in Gilgit-Baltistan is spread along river banks but their waters have traditionally not been used for irrigation as the rivers are incised and their currents strong. The Indus Basin Initiative has had success with direct current pumps capable of lifting water to high-elevation fields. Once pumped upstream, the water is distributed through a highly efficient drip irrigation system.

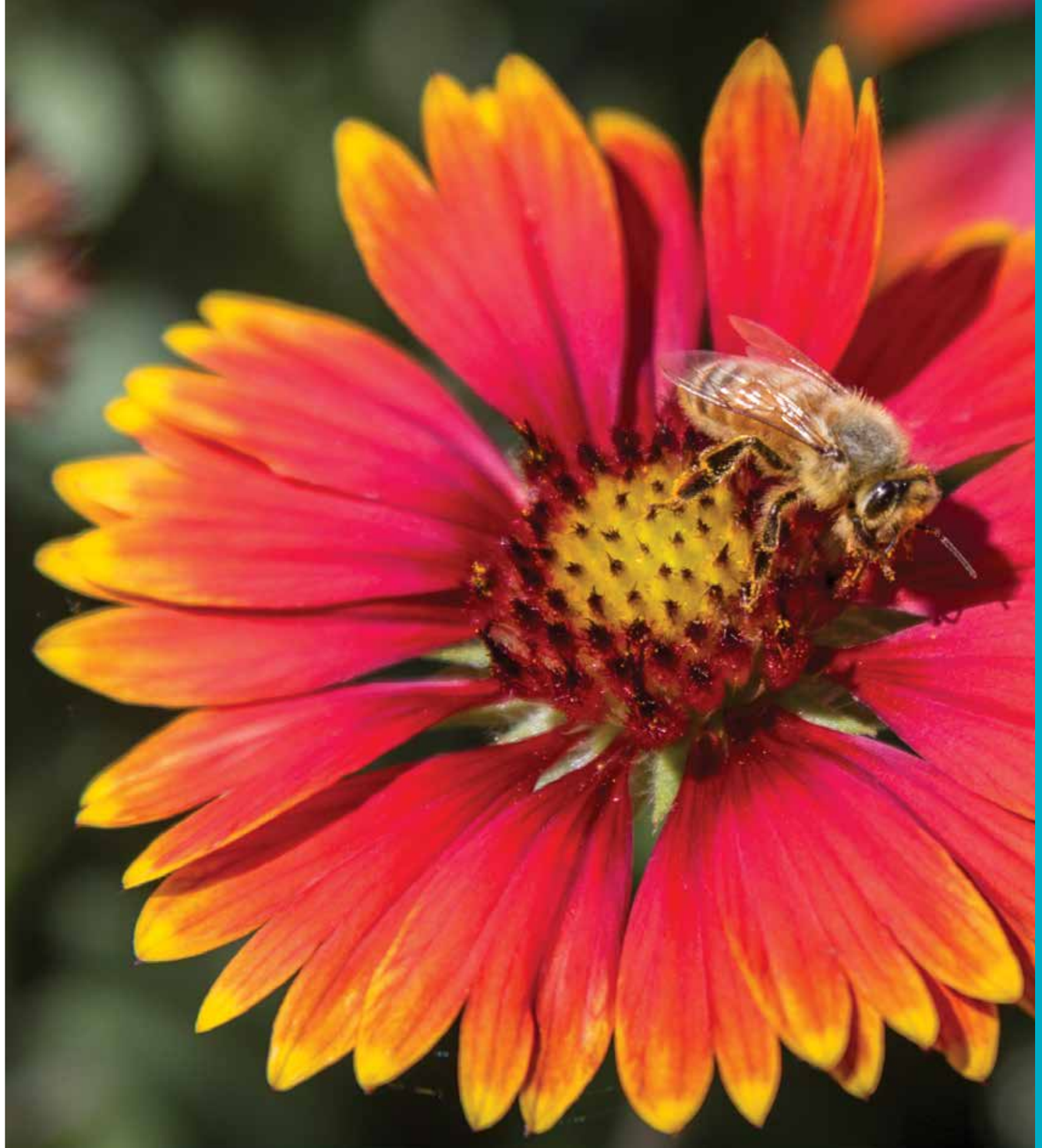
Buzzing with potential

Bangladesh farmers take up beekeeping for pollination and honey

Farmers in the Chittagong Hill Tracts of Bangladesh have found a new livelihood option: beekeeping. After receiving training from ICIMOD, many have started taking advantage of the region's rich flora, often looking at returns beyond honey.

With more beekeepers come more bee colonies. The presence of more pollinators is expected to lead to higher yields from horticultural crops. Plants like coffee, cashew nuts, litchi, mango, jamun, jujube, olive, tamarind, sesame, and a range of wild plants that grow abundantly in the area are set to benefit from the work of beekeepers and the bees they raise. Other small enterprises are also emerging, including carpenters who are able to supply beehives and other implements.

This work builds on decades of experience and research at ICIMOD on sustainable beekeeping practices in the HKH, and the benefits that these important pollinators provide to mountain farms and local producers.



The Asiatic honeybee *Apis cerana* is found in the forests of all three of Bangladesh's Chittagong Hill Tracts districts: Khagrachari, Rangamati, and Bandarban. In addition to providing pollination services to mountain farms, beekeeping present a viable livelihood opportunity for communities.

Mainstreaming spring management

Springs drying up or becoming seasonal is a growing concern for spring water users across the HKH

Springs play a vital role in ensuring water security for rural mid-hill communities across the HKH region. In recent years, many perennial springs have become seasonal or dried up altogether, impacting household water security and minor irrigation. ICIMOD has successfully tested and implemented a spring revival and springshed management protocol in Bhutan, India, and Nepal.

In Bhutan, the activity was piloted in Paro and the programme is in the process of being scaled up to four additional districts. Most importantly, the spring revival programme has been integrated in the country's 12th Five-Year Plan. Similarly, in India, NITI Aayog, a policy think tank for the Government of India, has formed a working group for springshed management and recommended short-, medium-, and long-term actions to the National Programme on Regeneration of Springs in the Himalayan Region.

Further, ICIMOD has trained over 100 professionals in spring revival protocols and conducted scientific hydrogeological studies to develop "A Stepwise Protocol for Reviving Springs in the Hindu Kush Himalaya". This protocol forms the basis for spring revival programmes implemented in Bhutan, India, and Nepal.

Understanding the importance of springs for the sustenance of people across the HKH, policy reforms are being enacted in Bhutan, India, and Nepal for spring revival and management.

Built back better

Integrated approach to post-earthquake rebuilding in Nepal helps strengthen resilience

ICIMOD worked with locals in Dhungentar, a settlement in Nuwakot district, central Nepal, to rebuild homes and communities after the 2015 Nepal earthquake.

Local and national authorities, development partners, community members, and the private sector came together to help ICIMOD develop and test an integrated approach to rebuilding in an effort to strengthen Dhungentar's resilience to future shocks and disasters. The focus of the reconstruction project was mobilizing the community to focus on key areas such as infrastructure, community mobilization and capacity building, livelihood and enterprise development, and access to services.

Four years after the earthquake, which destroyed all but one house in the village, Dhungentar has 90 new disaster-resilient homes, which were built using locally produced, eco-friendly compressed stabilized soil blocks. The community infrastructure was greatly strengthened: The village now has a community centre and health post, and the road network has been improved and lined with solar-powered streetlights.

Community members underwent income-generation trainings, and their access to neighbouring villages and markets was improved. The village also has a model farm where one farming family has implemented innovative, low-cost technologies to increase agricultural yield, attracting the attentions of neighbouring villagers and municipal authorities.

Businesses play critical role in reconstruction efforts

Businesses can play a transformative role in helping development projects build resilience among vulnerable communities. ICIMOD's work with the private sector on its reconstruction project in Dhungentar presents a replicable model for the mobilization of private sector support in development projects. ICIMOD invited more than 25 companies to Dhungentar to explore how they could contribute to the Resilient Mountain Village project in post-earthquake Nepal. The results so far have been encouraging. Private sector engagement supported the construction and outfitting of a community centre, the plantation of trees to reinforce a landslide-prone hillside, and the training and employment of local women to provide digital payment services to the entire community. Support from companies ranging from banks and financial institutions to natural healthcare providers has played a crucial role in helping Dhungentar bounce back from disaster a stronger, more resilient community.

CHAPTER 2

Knowledge generation and use

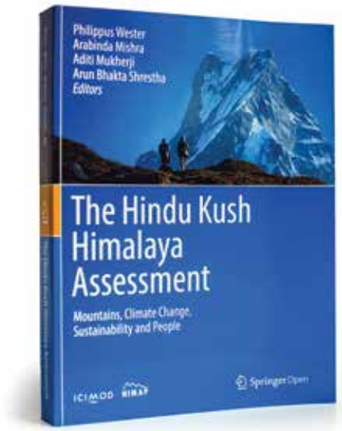
Filling knowledge gaps and ensuring communities, government agencies, practitioners, and scientists use new data to drive positive change

The first *HKH Assessment* report

A significant advance in collating, analyzing, and assessing data and knowledge on the region

The *Hindu Kush Himalaya Assessment: Mountains, Climate Change, Sustainability and People,* completed in 2018 and published by Springer Nature in early 2019, represents five years of research, review, and analysis by more than 350 researchers and policy experts from 22 countries and 185 organizations. With 210 authors (80% from the HKH region, 30% women), 20 review editors, and 125 external reviewers, the *HKH Assessment* has set a new standard in environmental assessments in the region, meeting the demand for a comprehensive assessment of the mountains, environments, and livelihoods of the HKH.

The report addresses the social, economic, and environmental pillars of sustainable mountain development and will serve as a basis for evidence-based decision making to safeguard the environment and advance people's wellbeing in the HKH.



This assessment report establishes the value of the HKH for the 240 million hill and mountain people across the eight countries sharing the region, for the 1.65 billion people in the river basins downstream, and ultimately for the world.

Community forestry research

Understanding the socioeconomic impacts of community forestry programmes on forest cover change in Nepal

A seven-member team of researchers from Belgium, France, Nepal, and the USA are working on a collaborative project to study the various impacts of community forestry programmes in Nepal. Initiated in 2018, the study looks at the socioeconomic impacts of community forestry programmes as well as their impacts on forest cover change. It also looks at how people managing community forestry programmes are influencing Nepal's local and national politics.

Three of the researchers involved in this initiative are alumni of capacity-building events organized by the South Asian Network for Development and Environmental Economics (SANDEE). The overall goal is to inform the Government of Nepal of the impacts of community forestry programmes and help its Department of Forest build a database for future use.

How do community forestry programmes impact forest cover change? SANDEE alumni are among a group of researchers exploring this question.

Collaborating to strengthen research

The National Natural Science Foundation of China and ICIMOD are supporting high-calibre research on critical issues in the region

Collaboration between the National Natural Science Foundation of China (NSFC) and ICIMOD enables Chinese institutions to work with ICIMOD and its network of partners to improve understanding of critical issues in the region through basic research on ecology, natural disasters, geography, forestry, rangelands, water, and the social sciences.

Since 2016, the NSFC has awarded grants to 20 projects in the HKH amounting to an estimated USD 6 million. These studies cover a broad range of topics that complement ICIMOD's overall programme – from investigating how Himalayan tree lines are changing in response to climate change, to glacier change in Hunza Valley, water cooperation in the Mekong River basin, earthquake and rainfall induced landslides in Nepal, and the impacts of climate change on the habitat and migration patterns of the iconic Marco Polo sheep. The research design of many of these projects spans national boundaries and their implementation is fostering cooperation.

The studies cover a broad range of topics – from climate change impacts on Himalayan forests to the impacts on habitats and migration patterns of wildlife – and span national boundaries.

Putting air pollution research to use

Expanding research on air pollution in the HKH will have massive implications for the region's response to atmospheric issues

Rapid increases in air pollution in the HKH have far-reaching and hazardous consequences on environmental and human health. The accelerated melting of glaciers and snowfields adversely affects communities, and changing atmospheric circulation patterns and cloud microphysics affect monsoon patterns. Thick haze and increased winter fog over the plains south of the HKH reduce visibility and ground-level sunlight, affecting aviation, mountain tourism, agriculture, and the livelihoods of the poorest.

ICIMOD is committed to addressing key research questions along these lines at local and regional levels, generating highly technical air pollution-related data in a historically data-scarce region. Fifteen peer-reviewed articles are currently in progress on a wide range of atmospheric issues with broad scientific and policy implications in the HKH. For example, one study on the air quality trends in the Kathmandu Valley involves satellite observations and modelling. It reports the first observations of increasing trends of background pollution on the basis of the valley's columnar aerosol loading trends. Another study characterizes emissions from agricultural diesel irrigation pumps in Nepal's Terai region, presenting estimates for such pumps as an under-represented source of ambient air pollution. Such impactful studies will help develop better emission inventories and allow informed policy making.

ICIMOD produces air pollution-related data in a historically data-scarce region. Such impactful studies will help develop better emission inventories and allow informed policy making.

New plant species discovered

Exciting finds from long-term monitoring in the Kailash Sacred Landscape

Two plant species were discovered in the Kailash Sacred Landscape in 2018. One is a species new to science from the Aster family – *Saussurea ramchaudharyi* – and the other an orchid – *Cephalanthera erecta var. oblanceolata* – previously reported only from Bhutan and Korea. Both specimens were found in plots established by ICIMOD and its partners to monitor long-term environmental change in the landscape.

Although the discovery of these new species is an achievement outside of the overall goal of long-term monitoring, it is clear that there is still a lot we have to learn and the value of these efforts cannot be understated. When it comes to sound policies for natural resources management, facts and data matter. Conservation management of biodiversity requires up-to-date information, which can provide a basis for planning conservation management activities and assessing their efficiency.

Saussurea ramchaudharyi Ghimire & Rana (Asteraceae)

By establishing long-term monitoring sites and harmonizing approaches so data will be comparable, better decisions can be made about the future of fragile mountain ecosystems.

Bridging knowledge gaps

Koshi DRR Knowledge Hub engages with partners in China, India, and Nepal

Extreme weather events and water-induced hazards are common in the Koshi basin. ICIMOD's Koshi Basin Initiative is working with several partners across the region to understand disasters and enhance resilience.

The Koshi Disaster Risk Reduction Knowledge Hub (KDKH) has been envisioned as a member-led and driven platform to strengthen resilience. Several leading institutions working in the basin from China, India, and Nepal have come together to form the hub. They include the Institute of Disaster Management and Reconstruction (IDMR), Sichuan University, China; the State Disaster Management Authority of Bihar, India; and nodal agencies in Nepal.

Having diverse organizations from member countries helps bridge critical knowledge gaps concerning biophysical and socioeconomic issues. This is particularly pertinent for areas of the Koshi basin located in China, where numerous such gaps currently exist.

Hazards in upstream regions of the Koshi basin lead to disasters in downstream areas as well, affecting the lives and livelihoods of millions of people in China, Nepal, and India. Disaster risk can be reduced by sharing knowledge and fostering practices that address the transboundary scale of disasters.

CHAPTER 3

Gender and social inclusion

Ensuring transformational change benefits the most marginalized people

Fostering transformational change

Gender and social inclusion are integral to all of ICIMOD's work

ICIMOD has long been committed to transformational change related to gender and social inclusion since these issues are relevant in all of the work undertaken with partners and for the institution as a workplace. Enabling transformational change that fosters more equity and equality requires a multi-pronged approach that infuses through the institutional culture so that issues of gender and social inclusion are an inherent aspect of all of the work both internally and externally.

To this end, a 2012 gender audit exercise helped provide a reflective structure and practical recommendations on changing the organizational culture towards greater gender sensitivity. ICIMOD encourages authorship focused on gender and social inclusion issues and also women's authorship. This has resulted in 12 peer-reviewed journal articles on gender and social inclusion by ICIMOD staff and a total of 27 peer-reviewed journal publications with women staff as first authors over the past five years.

Since 2015, all new staff have to attend a mandatory one-day gender sensitization workshop to raise awareness about the diverse opinions, concerns, needs, and priorities of the women and men who work at ICIMOD and to promote a deeper understanding of gender issues.

ICIMOD's commitment to strengthening gender integration in partner organizations is explicitly stressed in planning documents and in action. This year, there were two trainings for partner organizations focused on helping them build an enabling environment to support gender-integration and on methods and tools for gender analysis and gender-integrated planning. On-demand training workshops were also organized on gender-integrated planning for water resources management in Afghanistan, and on integrating gender into the 12th Five-Year Plan and programmes for the Ministry of Agriculture and Forests in Bhutan.

Efforts have intensified across the institution and with partners to identify and take action to change behaviour and practices that undermine gender equality.

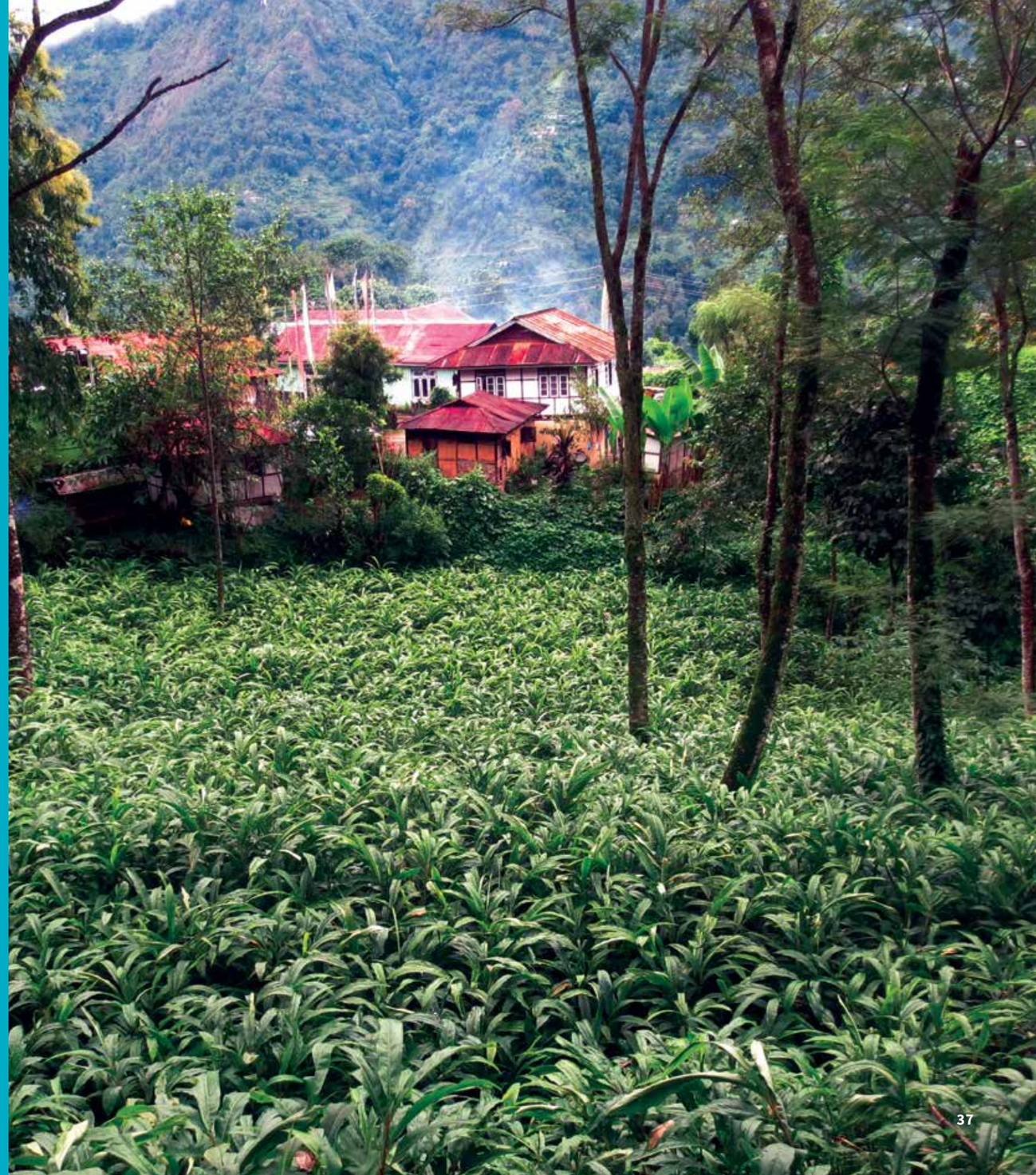
Supporting women entrepreneurs for economic empowerment

KHAI is committed to helping women entrepreneurs in the Kangchenjunga Landscape run sustainable local businesses

ICIMOD's Himalica Initiative worked on empowering local communities, particularly women, to diversify their income sources by forming the Kangchenjunga Himalica Agriculture Industry (KHAI), a community enterprise. Thirteen farmer members, including 10 women, from Taplejung, Nepal, were supported in producing, processing, and marketing vegetables and cardamom-based products.

In 2018, KHAI generated USD 12,000 in revenue, 40% of which was invested in a common facility centre to develop women entrepreneurs and incubate women-run enterprises. SABAH Nepal successfully trained over 30 women entrepreneurs to take calculated risks, identify areas of investment, and develop commercially viable businesses around 20 different products, which are sold through outlets set up by KHAI and other organizations. There is an opportunity to scale up this pilot business model in Nepal, Bhutan, and Northeast India through ICIMOD's Resilient Mountain Solutions and Kangchenjunga Landscape Initiatives.

Following a community enterprise model, KHAI focuses on the unique needs and capabilities of women in business. With 10 women farmers as members, KHAI has helped kickstart viable businesses selling around 20 different locally sourced products.



Above the flood line

Eco-San toilets provide a safe and secure option for flood-affected women

When families must evacuate their homes during flood events – whether those happening as predictably as they have been forever or those which happen unexpectedly because of an increase in extreme weather events brought on by climate change – women face special difficulties in finding privacy in toilet access. This is a widespread problem in flood-prone Bihar, India. Seventy-six percent of the population in North Bihar is particularly vulnerable to floods since seven tributaries of the Ganga flow through the area.

To address this particular gendered vulnerability, ICIMOD and Megh Pyne Abhiyan (MPA) under the HI-AWARE Initiative piloted flood-resilient sanitation in the form of an Eco-San toilet (*phaydemand sauchalaya*). The toilet is built on a raised platform and ensures a safe and secure sanitation option for flood-affected women.

Recognizing the feasibility of the Eco-San toilet, MPA mobilized women community members to create awareness of the need to construct such toilets. Women and children worked together in speaking to community members on the decision to have these toilets built in their homes. The toilet is now also being promoted by state authorities in Bihar along with UNICEF Bihar as safe sanitation technology.

Eco-San toilets ensure access even during flood conditions and prevent contamination of water, offering a solution to the gendered vulnerability that arises during floods.

Forest ecosystem management

Award-winning forest ecosystem management model scaled out

Birdlife International recognized the contributions of the Dumrithumka Adarsha Women Community Forest User Group (DAWCFUG) to restoring a degraded forest ecosystem in Rauta village in Udaypur, Nepal, by conferring to them Birdlife Nature's Hero Award in 2017.

The award-winning forest ecosystem management model was part of ICIMOD's Himalica action research, and DAWCFUG was recognized for raising awareness about the importance of ecosystem services, and mobilizing women from marginalized communities to plan and implement interventions such as the rehabilitation of landslide-eroded landscape, zero grazing,
and the adoption of improved cook stoves and home gardening.

Two community forestry user groups in neighbouring villages have replicated the model. In 2018, exchange visits were organized to disseminate information on the model and related success stories to Taplejung, Nepal, and Sikkim, India, for uptake across the Kangchenjunga Landscape.

Supported by ICIMOD's Himalica Initiative, Dumrithumka CFUG implemented sustainable land use management practices that have led to an increase in vegetation cover and reduced erosion. Two community forest user groups in neighbouring villages have replicated the model.

Breaking new ground in Khyber

Empowering women to lead innovative agricultural practices in Pakistan

An intervention aimed at improving farm productivity and livelihoods has empowered the women of Khyber. The village, located 167 km from Gilgit, relies on a traditional irrigation system fed by glacial meltwater. Receding glaciers and conversion of land for other purposes had resulted in water shortage and limited land for farming. ICIMOD's intervention aimed to increase arable land, reduce dependence on glacier melt, and introduce new farming technologies.

But there was a challenge. The new lands that were developed for farming were located above the Hunza River and could not be watered by the traditional irrigation system. Water had to be lifted from the river below.

ICIMOD's Indus Basin Initiative introduced the hydraulic ram pump, which costs around USD 1,700, operates on zero energy, and is very user friendly, to lift river water to heights of up to 140 feet. The gender focus of the intervention meant that women were trained alongside men in all technical aspects, from the operation and maintenance of pumps to horticulture techniques, alley cropping, low-cost greenhouses, and drip irrigation. At the end of the training, the community decided that the new lands would be managed by the women's group, which would decide what to grow, where to sell, and how to use the proceeds.

The women's group decided to cultivate seasonal vegetables and raise fruit trees. Local entrepreneurs have shown interest in marketing their produce. The success of this intervention has attracted the attention of other development agencies such as UNDP who have funded WWF-Pakistan to scale up the package to 10 other districts in Gilgit-Baltistan.

Women in Khyber, trained in all technical aspects of hydraulic ram pump operation and maintenance, now manage irrigated lands, make market decisions, and have greater financial decision-making power.

CHAPTER 4

Building capacity for sustainable mountain development

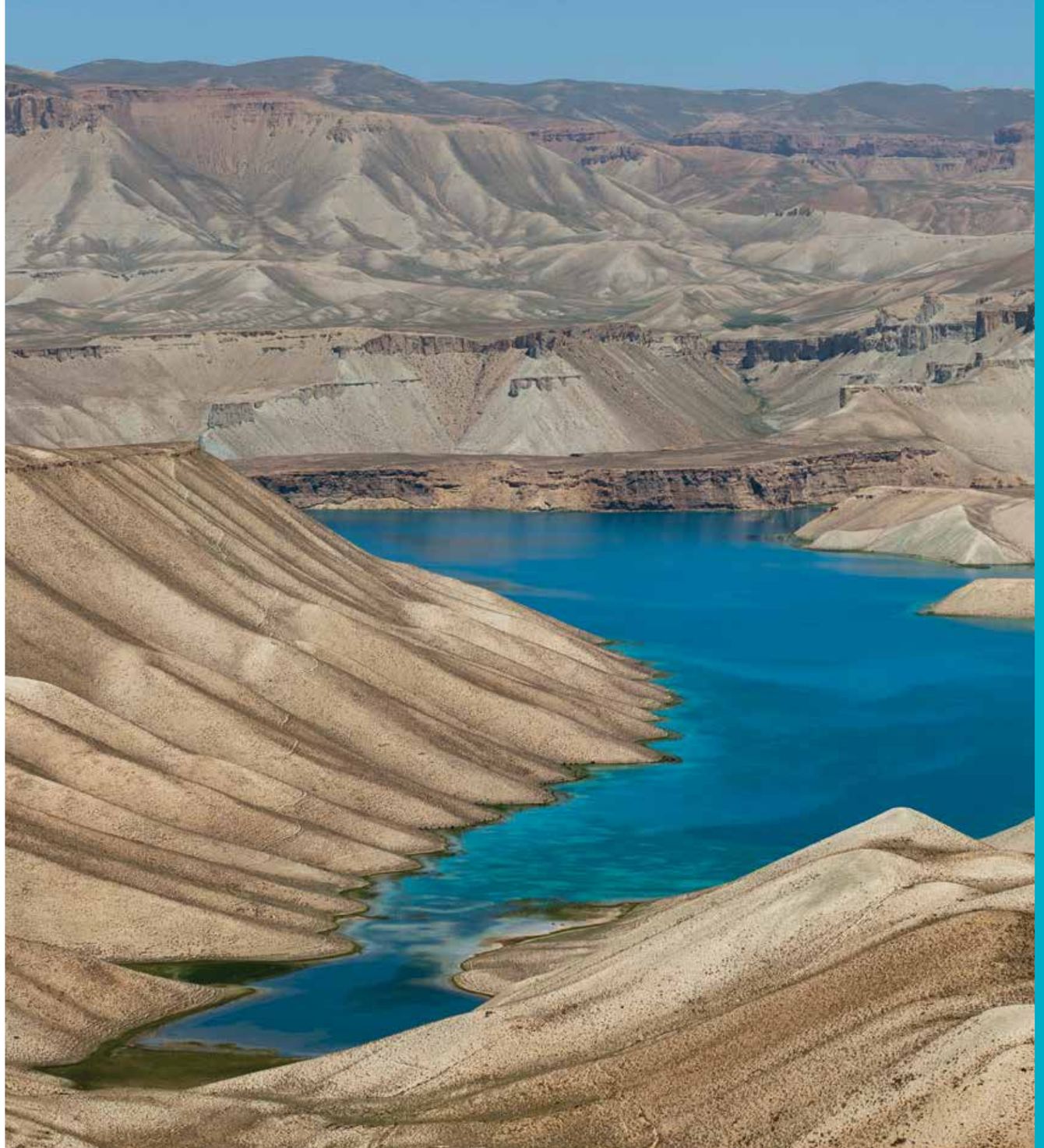
Amplifying positive change through improved human and institutional capacity

Water resources management in Afghanistan

Sharing knowledge with water professionals to strengthen partner capacity

The Strengthening Water Resources Management in Afghanistan (SWaRMA) Initiative has partnered with government bodies to increase the capacities of Afghan ministries in the water resources sector. This engagement is strategically important for several reasons – it improves our understanding of the Kabul River basin, furthers regional engagement, and helps countries in the upper Indus basin strengthen regional linkages.

SWaRMA's focus is on the co-creation of knowledge. In 2018, a two-week intensive training course saw Afghan professionals from nodal agencies travelling to Kathmandu to strengthen their expertise in river basin management. The training was designed around a rigorous curriculum that focused on aspects of hydrological modelling, field demonstrations of hazards and adaptive practices, and a study of socioeconomic factors comprising gender and water-related policies.



With a focus on co-creating knowledge, ICIMOD's SWaRMA Initiative is working with government bodies in Afghanistan to strengthen capacity in water resources management.

Geospatial technology for water resources management

Building capacity in Afghanistan through SERVIR–HKH

SERVIR–Hindu Kush Himalaya (SERVIR-HKH) is working with agencies in Afghanistan to build their capacities in the application of Earth observation (EO) and geospatial information technology (GIT) for water resources management.

The Ministry of Energy and Water and ICIMOD carried out a rapid assessment of the 2018 flood in Panjshir province and concluded that the disaster was a glacial lake outburst flood event. Many MEW staff have attended multiple on-the-job trainings at ICIMOD, and the two partners are currently working collaboratively to identify potentially dangerous glacial lakes in Afghanistan.

ICIMOD has also strengthened the Geosciences faculty at Kabul University through structured trainings on EO/GIT and training of trainers workshops for the faculty. Such capacity-building measures have meant that the faculty is now organizing trainings on its own. ICIMOD is currently supporting the university as it develops formal curricula for EO/GIT courses.

The development of integrated portals for sharing data on hydrometeorology, irrigation, and water resources has enhanced access to data in Afghanistan. With help from SERVIR-HKH, decision support tools that analyse, visualize, and disseminate information to targeted stakeholders have been developed.

Strengthening flood forecasting in Bangladesh

ICIMOD-supported mobile application to provide better streamflow forecasts

The Flood Forecasting and Warning Centre (FFWC) in Bangladesh is working with ICIMOD to develop a customized application to provide better stream flow forecasts at 17 boundary locations along the India–Bangladesh border.

The flood forecasting capability of the FFWC currently allows for 3–4 days of lead time as 92% of Bangladesh's watershed areas lie outside its borders. The new inputs being fed into the FFWC's flood forecasting model will allow engineers to have a better understanding of stream flow in upstream rivers, which will significantly improve their capacity to deliver better and effective flood warnings. The FFWC is currently calibrating and validating model outputs with observed data from the 2018 floods. Once the new inputs are operationalized, their flood forecasts can provide 15 days of lead time, which would be instrumental in saving lives and property.

The FFWC also has an ICIMOD-supported mobile application which enables flood warning information to be disseminated among a much wider audience – field-level managers and vulnerable communities during flooding season.

Transboundary data sharing between India and Bangladesh significantly improves lead time for flood response.

Supporting the next generation of scientists to fill critical data gaps

Young researchers are taking the lead in producing influential research and shaping policies and development in the HKH

ICIMOD supports new generations of young scientists, providing opportunities for them to produce highly technical data to influence policy and development in the HKH. Young postgraduate or PhD students in the fields of atmospheric and cryospheric sciences are encouraged to establish local expertise and respond to key research questions for national and regional development. ICIMOD's Himalayan University Consortium (HUC) fosters an effective and sustainable network of universities through its fellows programme, contributing to producing next-generation leaders.

Since 2013, ICIMOD has supported 45 young scientists, including 13 women, to develop expertise in air pollution- and cryosphere-related issues as fundamental topics for future research. Altogether, they have published 27 peer-reviewed articles on a wide range of issues with scientific and policy implications. These scientists are addressing the data gap in their countries; are involved in teaching and supervising students in their universities; and are providing technical inputs to regional and global efforts. The young scientists provide evidence to support long-term action in agriculture, industry, urban planning, water resources management, and disaster risk reduction, among other areas. Through the HUC Academy – a flagship annual event – ICIMOD has engaged with 60 early and mid-career researchers.

HUC's network of universities helps young postgraduate or PhD students from the HKH region develop their own expertise to conduct atmospheric and cryospheric research that informs national policies.

SANDEE expanding its influence

SANDEE is expanding its reach in the generation and dissemination of knowledge on environmental economics

Understanding the economics of environmental change and development is key for a sustainable South Asia and HKH. In 2017, ICIMOD integrated the South Asian Network for Development and Environmental Economics (SANDEE) into its roster of research and knowledge-generation services. SANDEE focuses on research capacity building in environmental economics and has provided over 170 research grants, supported over 40 PhD researchers, and trained over 1,500 researchers from the region in the last two decades.

These researchers are now teaching environmental economics in several universities using home-grown literature as course materials and have published over 200 peer-reviewed articles in renowned journals. More than 15 events have been organized by SANDEE alumni, introducing environmental economics courses in various universities in South Asia.

Some countries now have a critical mass of SANDEE-trained researchers who are providing professional services. The Indian Society for Ecological Economics (INSEE) launched a new journal – *Ecology, Economy and Society* – when it was led by a former SANDEE alumnus. SANDEE alumni have contributed to around half the articles in a book titled *Ecology, Economy and Society* published by Springer Nature. INSEE has also started organizing trainings on research methods in environmental economics for PhD students in India, with SANDEE alumni comprising most of the instructors.

SANDEE focuses on research capacity building in environmental economics, and its alumni are advancing their learnings across South Asia by contributing to the literature, conducting trainings, teaching courses, and providing professional services.

CHAPTER 5

Engaging policy makers

Enhancing the science-policy interface for evidence-based decision making

Rural communities at the helm

Building local capacity to mainstream community-based tourism in Bhutan

Community-based ecotourism is gaining ground in Bhutan's Haa Valley, which opened up to tourists in 2002. The Haa District Administration, with support from ICIMOD and local partners, has made investments in building local capacity to provide tourism services.

The Government of Bhutan has developed a destination management plan – the first in the country to envisage tourism management for an entire district – to guide tourism development in Haa, which remains largely untouched by tourism. The government has also allocated resources at the national level to ensure the effective implementation of Haa's destination management plan.

Bhutanese agencies are already learning from the approach used in Haa. Training on ecotourism for protected area managers and sustained interest in replicating the approach in other parts of the country will help meet the ecotourism targets outlined in the country's 12th Five-Year Plan.

ICIMOD is working with the Haa District Administration and its partners in Bhutan to help local community members ensure that the Haa destination management plan, Destination Haa – Tourism Action Plan (2018–2023), is successfully implemented. At the core of this plan lies the belief that economic interests should support sociocultural and environmental considerations rather than take precedence over them.

Clearing the air

Kathmandu municipalities commit to clean valley air

With Kathmandu's newly formed municipalities under pressure to address growing air pollution, a Mayors' Summit organized in the Nepali capital sensitized authorities to current scientific understanding regarding air pollution, potential solutions for municipalities, and possible guiding regulatory frameworks. The Ambassador of Mexico to Nepal shared relevant experiences from Mexico City, which has overcome severe air pollution. Similarities between Mexico City and Kathmandu – both national capitals surrounded by hills – make Mexico City's experience particularly relevant.

Representatives from Kathmandu's 18 municipalities pledged to coordinate with central and provincial governments to clean the air and address related issues. An integrated coordination council of these municipalities will also collaborate on air quality management in the Valley. The mayors have pledged to initiate dialogue around seven priority points, and to develop them into an action-oriented declaration for clean air for all concerned municipalities to act upon.

Kathmandu ranks 261 among the world's 3,000 most polluted cities. Vehicular emissions contribute 34% and dust, the burning of rubbish, and industrial smoke contribute 28%, 23%, and 15%, respectively to the total air pollution figures. Mayors and municipal representatives have pledged to collaborate on air quality management in the Valley.

Enhancing resilience

ICIMOD partners with Government of Nepal to promote the RMS approach to building resilience

ICIMOD has piloted the Resilient Mountain Solutions (RMS) approach in eight villages in Kavre, Nepal, to enhance the climate, socioeconomic, and future resilience of vulnerable communities. Taking heed, the Government of Nepal has rolled out the Climate Smart Village programme based on the RMS approach in 41 municipalities across seven provinces.

ICIMOD has joined hands with the Department of Environment, Government of Nepal, to provide technical and capacity-building support to the municipalities concerned, including helping develop their long-term plans upon request. ICIMOD will continue to support the provincial governments in developing policies and programmes on resilience building, and the GoN in mainstreaming the RMS approach in its sectoral plans and programmes.

Efforts are underway to develop resilience hubs in Kavre and the provinces to promote the nation-wide uptake of the RMS approach.

Resilient Mountain Solutions, an ICIMOD initiative, contributes to the global sustainable development and climate agenda, including poverty reduction. It serves as a regional voice for advocating resilient mountain development.

Charting a path for REDD+ implementation

Using innovative approaches for REDD+ plans and action across the HKH region

As a global initiative promoting sustainable forest management to mitigate greenhouse gas emissions, REDD+ is making great strides in the HKH. With support from ICIMOD, India and Nepal have developed national REDD+ strategies and are formulating plans to make the initiative work at local, district, and state levels.

Building on ICIMOD's innovative approaches to implementing REDD+ in the hills of Ilam, Nepal, two Himalayan states in India have prepared state REDD+ action plans. After training from ICIMOD, the Myanmar government is also developing a plan for Shan State. The process of developing these sub-national action plans prioritizes local participation in identifying and prioritizing specific drivers of deforestation and forest degradation, as well as barriers to forest conservation and enhancement of forest carbon stocks in each state. With these priorities in mind, combined with remote sensing and geographic information system technology, activities are tailored to the local needs identified by communities, foresters, and policy makers.

As a platform for South–South exchange, ICIMOD's REDD+ Initiative has been able to share this generic, cost-effective approach and experiences across HKH countries. From the hills of Nepal to the mountains of Myanmar, this approach is quickly becoming a model for designing effective REDD+ plans across the HKH.

ICIMOD has supported the formulation of state and national REDD+ action plans in India, Myanmar, and Nepal that focus on addressing local needs. In Bhutan, the project supported the first comprehensive National Forest Inventory (NFI), which has now been published by the government.

Indian Himalayan Council

ICIMOD joins council for sustainable development in the Indian Himalaya

Recognizing the importance and unique needs of the Himalayan region, the Government of India constituted the Himalayan State Regional Council in 2018 and launched a new strategy for sustainable development in the Indian Himalayan Region.

The Council consists of chief secretaries of each of India's 12 Himalayan states; secretaries of various central ministries; Dr VK Saraswat, Member, NITI Aayog (Chair); Adviser, Rural Development Vertical, NITI Aayog (Convener); AK Jain, former adviser, NITI Aayog (Member); Joint Secretary (SC&DP), NITI Aayog (Member); Adviser, Agriculture, NITI Aayog (Member); and the Director General of ICIMOD as a special invitee.

The body is responsible for implementing action points related to five areas central to sustainable development in the Indian Himalaya: springs, sustainable mountain tourism, shifting cultivation, skills and entrepreneurship, and data for informed decision making. These action points emerged from in-depth investigations by working groups appointed by the NITI Aayog, the government's policy think tank.

Throughout this process, ICIMOD was able to incorporate knowledge from the recently published *HKH Assessment* report as well as the Centre's work across the HKH in a regional context. With a clear understanding of these critical issues and paths outlined to help address them, the new Indian Himalayan Council will guide future development in the Indian Himalaya.

Growing ownership of transboundary landscape concept in India

The Government of India has established a national coordination committee focused on transboundary landscape initiatives in the Indian Himalayan Region. Representatives from partner organizations, state governments, and a number of national agencies – with portfolios ranging from environment and climate change to tourism and skills development – make up the committee. It will help bring greater coherence among initiatives in the Kailash, Kangchenjunga, and Far-Eastern Himalayan landscapes and as other related government initiatives. As ICIMOD's transboundary landscapes programme continues to demonstrate the value of cross-border collaboration in landscape management, this new committee shows growing ownership of the transboundary landscape concept at the national level in India.

CHAPTER 6

Facilitating regional cooperation

Bringing countries together to address shared challenges as a platform for knowledge exchange and collaboration

Clean and fair bricks

South–South partnerships prioritizing workers' welfare for socially responsible and efficient brick production

Brick entrepreneurs in Nepal are gradually realizing that the social and gender aspects of production are as important as the adoption of efficient technologies. This awareness is a major breakthrough for ICIMOD since this has enabled collaborative gender and social action research interventions at brick factories, which is particularly important as women and men workers in brick kilns are vulnerable to various risks without any form of social security. To address these vulnerabilities, ICIMOD has partnered with the Federation of Nepal Brick Industries (FNBI) and local government bodies to conduct action research in three priority areas – workers' health, workplace safety, and education for workers' children – to demonstrate how improved working conditions can lead to enhanced productivity and enable mutual benefits for all. A productivity gains survey of 80 brick kilns across Nepal assessed comparative patterns between better working conditions and enhanced productivity. Financial literacy and occupational health and safety trainings subsequently organized for 140 workers and their spouses helped them better manage limited financial resources and adapt to uncertainty. Similarly, ICT-enabled facilities at a government school opened a world of opportunities for brick workers' children.

ICIMOD introduced the energy- and cost-efficient zig-zag brick production technology after the 2015 Nepal earthquake, and this alternative technology has subsequently been introduced in other HKH countries. Business-to-business and government-level collaboration between brick associations in Nepal and Pakistan are helping transform the sector through technical skills transfer for 1,500 brick kiln owners and workers and 250 engineers in Pakistan's brick industry, which is 20 times larger than Nepal's. The Government of Pakistan has announced a number of policy reforms aimed at reducing the environmental and public health impacts of brick kilns, and there has been increasing public interest in the value of the zig-zag technology for energy-efficient and cleaner brick production and its potential to alleviate winter haze.

The industrial sector contributes to 20% of total worldwide black carbon emissions, and brick production is a major industry in South Asia. By lowering emissions of black carbon and giving due consideration to the socioeconomic aspects of production, ICIMOD seeks to transform the brick industry into a healthier, socially responsible, and more profitable industry.

Brick kiln reforms through regional collaboration

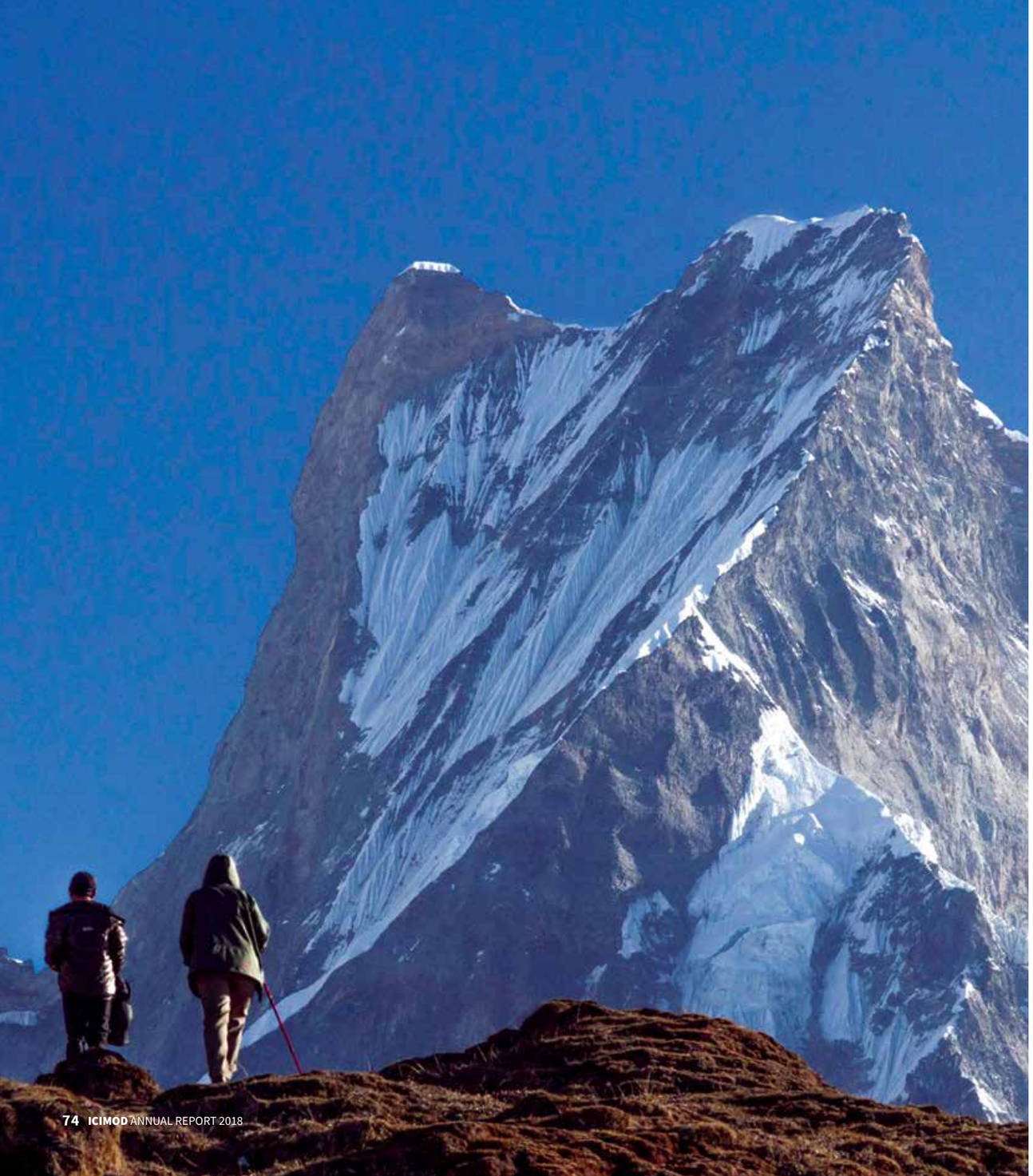
By bridging local and regional scenarios, ICIMOD pinpoints cost-effective options to address air pollution and related issues in key development and economic sectors and to build capacities to harness near-term climate, clean air, and other benefits. ICIMOD facilitated the formation of the Federation of South Asia Brick Kiln Association (FABKA), through which brick entrepreneurs in Bangladesh, India, Nepal, and Pakistan share best practices and lessons learnt. This association is already initiating in-country sectoral reforms in the technical and socioeconomic aspects of brick production, and also enabling cross-boundary exchange of knowledge. The formation of FABKA and its commitment to address environmental and health concerns associated with the brick industry represent ICIMOD's unique role in bringing together regional practitioners and scientists, building trust for cross-border collaborations, and sharing knowledge to reduce pollution from brick kilns.

Resonating a call for a mountain alliance

The first HKH Science–Policy Forum and the *HKH Assessment* report

The Hindu Kush Himalayan Monitoring and Assessment Programme (HIMAP) is a long-term, integrated science–policy initiative coordinated by ICIMOD that aims to enable policies supporting sustainable solutions and promote regional cooperation in the HKH to address some of the region's most immediate challenges.

Experts from the region came together under HIMAP to develop the first comprehensive assessment of the HKH – *The HKH Assessment* – which is to be the first in a series of monitoring and assessment reports from ICIMOD. Key findings of the *HKH Assessment* were shared among think tanks, senior experts, and high-level decision makers from the region during a Science–Policy Forum organized by the Centre from 13 to 14 November 2018 at its headquarters in Kathmandu, Nepal. The forum provided a platform to discuss the key findings, debate and validate the report's HKH Call to Action, and chart a way forward for more robust regional cooperation around mountains to sustain this globally critical region.



HKH Call to Action

Envisioning a more prosperous, secure, and resilient future

The HKH Call to Action was drafted and presented as a proposal to the representatives of the first HKH Science–Policy Forum in 2018. This call to action envisions a future for the HKH region in which its societies and its people – children, women, and men – are:

- Prosperous, healthy, peaceful and poverty-free
- Food, energy, water, and environment secure
- Climate and disaster resilient

To realize this vision, the Call to Action outlines six urgent actions:

Cooperate at all levels across the HKH

Recognize and prioritize the uniqueness of HKH mountain people

Achieve the SDGs in the HKH

Limit global warming to under 1.5 degrees

Enhance ecosystem resilience

Share information and knowledge

Nine mountain priorities

Considering the issues, questions, and vision as part of this assessment, the chapters and key messages are drafted in line with the UN Sustainable Development Goals (SDGs). The "Priorities for Mountains and People of the HKH" reflect the ideals of the SDGs.

The nine mountain priorities are:

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

Yartsa gunbu management

Communities across borders commit to better management of the highly valuable Himalayan fungus

Each year, an extremely valuable fungus draws tens of thousands of people to the Himalayan highlands – from Himachal Pradesh, India, in the west to Yunnan, China, in the east. For some collectors, yartsa gunbu (*Ophiocordyceps sinensis*) – a prized medicinal product formed when a fungus invades and kills a moth – can make up to 92% of their household income. However, despite its economic significance, the environmental damage caused by yartsa gunbu collection makes it one of the most unsustainably harvested natural resources in the region.

In the Indian and Nepali highlands of the Kailash Sacred Landscape, communities and local governments have jointly committed to coordinate harvesting schedules, improve campsite management, enhance patrolling, and use better harvesting techniques. This transboundary agreement builds on efforts by ICIMOD to develop policies and raise awareness on sustainable yartsa gunbu management, and will help ensure that this unique product continues to be a viable option into the future.

Although yartsa gunbu – the "caterpillar fungus" – is one of the most socioeconomically important species in the Kailash Sacred Landscape, the future viability of this high-value resource is being threatened by unsustainable practices.

Yak networks in the Kangchenjunga

There is much to be gained from sharing across borders

An iconic HKH livelihood practice – transboundary yak herding – is finding new life through the development of a transboundary yak network. Once a cornerstone of life in the highlands, yak herding is under increasing pressure. Restrictions on the movement of yak herds across borders and changing climate and environmental conditions have led to declines in productivity, and with few market opportunities, the younger generation is turning towards alternative livelihoods.

Given the challenges facing yak herding, there is much to be gained from sharing across borders. With this in mind, ICIMOD and its partners in the Kangchenjunga Landscape are building networks with yak herders and authorities in Bhutan, India, and Nepal. Regular transboundary yak fairs in each country have become an important platform for exchanging knowledge, raising awareness about common traditions, and collectively developing cross-border solutions. Herders are already using such networks to coordinate the exchange of yak breeds across borders, which will help reduce inbreeding and ensure the genetic health, quality, and productivity of yak into the future.

A traditional practice once common across the HKH, yak herding is on the decline. Deteriorating rangeland productivity has led to a fodder crisis, and inbreeding has led to a decline in overall yak health. ICIMOD is working to revive this important tradition by promoting cooperation across borders.

Bam-e-Dunya

A network for conservation and sustainable development

Six protected areas spread across four countries in the Hindu Kush Karakoram Pamir Landscape (HKPL) have become the focus of a collaborative effort to strengthen conservation and sustainable development in the region.

In 2018, representatives from Afghanistan, China, Pakistan, and Tajikistan got together to form the Bam-e-Dunya Network. A Persian term, "Bam-e-Dunya" translates to "roof of the world", and the network hopes to identify critical actions that need to be taken to protect the unique cultural and natural heritage of the remote mountain landscape of the HKPL as it undergoes rapid change.

So far, 12 international organizations and academic institutions have joined the network to support officials from the four member countries. In a joint declaration signed in September 2018, the partners committed to strengthening integrated landscape management and knowledge sharing for long-term conservation and sustainable development.

Initially, the network will function as a platform to exchange data, knowledge, best practices, and experiences, and to promote integrated landscape management in the six contiguous protected areas. It will also encourage partners to develop joint research projects, build lasting partnerships, and advocate investment in the landscape at strategic regional and international forums.

Through this network, ICIMOD is helping lay the foundation for broad, long-term collaboration and exchange to ensure that mountain communities and fragile ecosystems can adapt and thrive in the face of change.

The transboundary Bam-e-Dunya Network connects protected areas in four countries along the Silk Route. It represents the shared identity and heritage of people living in the Hindu Kush Karakoram Pamir Landscape, which spans Afghanistan, China, Pakistan, and Tajikistan.

Knowledge sharing and action through regional networks

Knowledge-sharing networks on Upper Indus and Koshi basin research taking shape

For the HKH, regional cooperation continues to be a promising and challenging area of engagement vis-à-vis collaborative research. In 2012, ICIMOD's Indus Basin Initiative formed the Upper Indus Basin Network (UIBN) – a collective of government, non-profit, and think tank organizations that have been working on climate change and development in the Indus basin. Calling on partners in Afghanistan, China, India, and Pakistan, the UIBN has recently formalized its country chapters, which will largely be responsible for research activities within the basin. The ultimate aim of the UIBN is to facilitate greater knowledge sharing and cooperation while addressing climate change impacts that affect millions who depend on the basin's resources.

A similar endeavor has been launched in the Koshi basin with a focus on building disaster risk resilience for hazards that impact communities within the basin. Most recently, the Koshi Basin Initiative called on the expertise of state authorities in Nepal and Bihar, India, and researchers in China to chart a way forward for the Koshi Disaster Knowledge Hub. A collaborative roadmap has been developed through numerous brainstorming sessions, and scientists and researchers from all three countries will continue their collaboration to disseminate knowledge on the basin.

The UIBN facilitates knowledge sharing and cooperation to address climate change impacts in the upper Indus River basin. A similar network has been launched in the Koshi basin to build the resilience of communities within the basin.

Fostering collaboration

Thematic Working Groups to strengthen ownership among Himalayan University Consortium members

Academic institutions in the HKH have come together to promote universities as centres of excellence that work to develop and strengthen mountain-specific education. ICIMOD's Himalayan University Consortium has 15 Thematic Working Groups (TWGs) that demonstrate how such efforts could help achieve the vision of ensuring enhanced regional cooperation while promoting mountain-focused, HKH-specific studies.

TWGs have been formed as clusters of institutions and researchers sharing common research interests. They operate on a member-led, resource-sharing basis. Five new TWGs were introduced in HUC in 2018. These groups cover a wide range of sustainable mountain development topics. The TWGs on Water and Disaster Risk Reduction and Resilience have made significant progress in establishing a governance mechanism and identified priority areas for action.

By bringing scholars and institutions with common research interests together, Thematic Working Groups promote regional-level, mountain-focused studies in the HKH.

CHAPTER 7

Regional and global outreach

Drawing global attention to the HKH to place mountains on regional and international agendas

Bridging boundaries

Coming together to support better management of natural resources

In November 2018, experts from around the world came together in Kathmandu, Nepal, to explore a new paradigm for managing natural resources in landscapes that are shared by multiple countries. One thing was made clear – this new approach must not only bridge national boundaries but also create better synergy between existing approaches to water and landscape management in order to ensure ecosystems are protected and communities in the region are water secure.

During discussions over the two-day event, policy makers, development practitioners, and experts in natural resource governance shared successful models of transboundary cooperation and deliberated on how to ensure this new approach is inclusive and rights-based. The strategic dialogue will feed into ICIMOD's ongoing work in transboundary landscape management and integrated river basin management.

Promoting green development in line with the SDGs

ICIMOD joins the Chinese Academy of Sciences and 40 other partners in the Alliance of International Scientific Organisations

The Chinese Academy of Sciences invited ICIMOD to become a founding member of the Alliance of International Scientific Organisations (ANSO) along with a consortium of 40 partners as a part of the Belt and Road Initiative (BRI).

There is growing interest within the BRI – a vast development and infrastructure project led by China – in exploring how this project can simultaneously promote green development in line with the United Nation's SDGs.

As a founding member of ANSO, ICIMOD will provide scientific evidence on the ecological and environmental dimensions of connectivity and infrastructure development in the HKH, including green technologies appropriate for mountain areas. ANSO also provides a platform through which ICIMOD can contribute its knowledge to other countries within and beyond the region.

ANSO plans to publish reports based on joint research projects that will provide the governments and policymakers of the countries within the Belt and Road Initiative with scientific guidance.

Expanding knowledge on droughts

Regional drought forum seeks to address drought impacts through monitoring and knowledge sharing

The increasing frequency and severity of droughts in South and Southeast Asia have affected agriculture, food security, and the livelihoods of millions of marginalized and vulnerable people in the region. In early October 2018, ICIMOD organized the Regional Knowledge Forum on Drought, bringing together the expertise of research institutions from the region and beyond to hold a seminal discourse on the impacts of climate-induced hazards on agriculture and food security. The three-day forum focused on droughts in particular – a topic often under-represented in discussions on climate-induced hazards.

The forum involved 100 participants – academics, policy practitioners, researchers, and media persons – affiliated to 50 institutions based in 14 countries in Asia and beyond. It led to the formation of expert working groups comprising institutions working on drought early warning systems and agriculture advisory services to foster regional cooperation on agricultural development and drought monitoring and management. The three working groups will work towards knowledge sharing and exchange of data resources as well as building institutional capacity needed to address drought monitoring and food security issues in the region.

The 2018 Regional Knowledge Forum on Drought spotlighted the impacts of climate-induced hazards, particularly droughts in South and Southeast Asia, on agriculture and food security. It has laid the foundation for collaborative research and action towards drought monitoring and improving food security in the region.

Global engagement

ICIMOD works with the IPCC, IPBES, and GBIF to highlight the mountain agenda

Through engagement with global science and policy bodies, ICIMOD is ensuring that knowledge about the mountains – and the HKH in particular – is reflected in global policy documents.

Ten ICIMOD researchers are now engaged in the development of the Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment Report, with one researcher serving as co-lead author on a cross-chapter paper on mountains as part of the report. Continued involvement with the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) – four ICIMOD scientists are currently authors – has led to the inclusion of a specific section on mountains, planned for the platform's upcoming global assessment of biodiversity.

ICIMOD also hosted the 2018 annual meeting of members of the Global Biodiversity Information Facility (GBIF), which was an opportunity to encourage governments and researchers across the region to make high-quality research on the HKH available to the global scientific community and decision makers for effective biodiversity conservation actions.

Global recognition

ICIMOD's Transboundary Landscapes Programme receives global award

The Renewable Natural Resources Foundation's prestigious Outstanding Achievement Award for 2018 recognized efforts by ICIMOD and its partners to build a platform to bring countries together to sustain vital natural resources, protect unique natural and cultural heritage, and improve the lives of people living in remote mountain landscapes of the HKH.

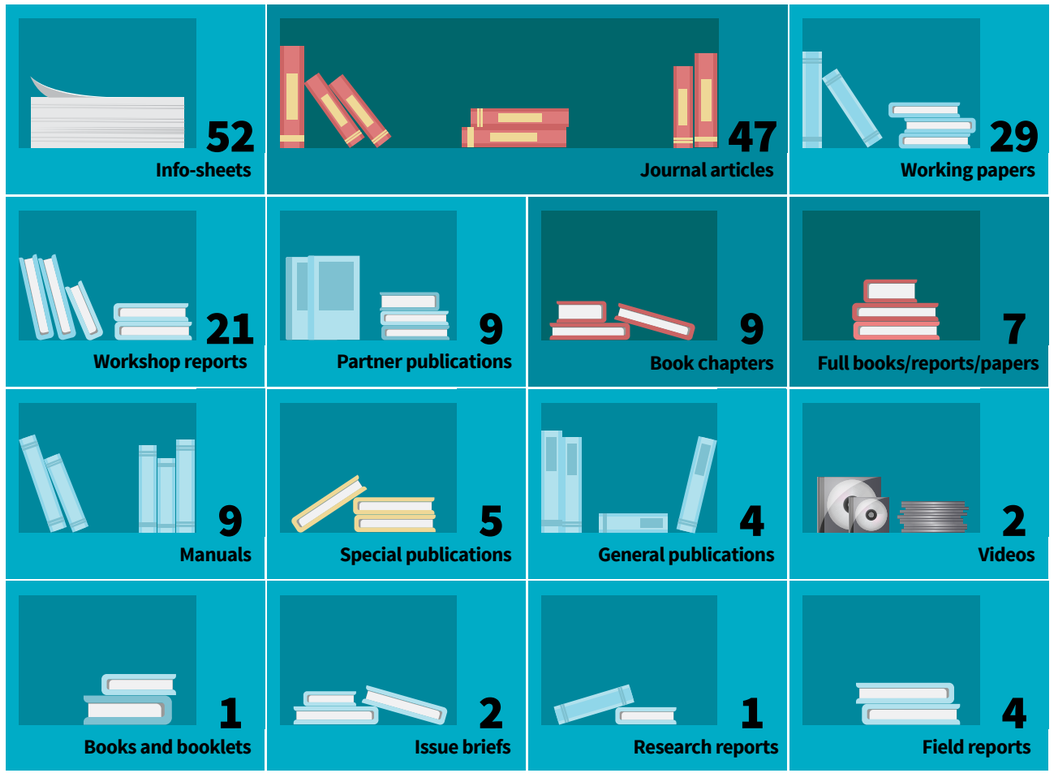
ICIMOD first introduced the transboundary landscapes approach to its work in 2009. In the last 10 years, the programme has demonstrated that inter-country frameworks on ecosystem and cultural services can be a bridge for collaboration between countries at various stages of development. Transboundary collaboration has helped bring coherence to policies across borders and promoted strategic partnerships to sustain mountain ecosystem services and ultimately provide benefits to local communities.

ICIMOD's innovative approach to managing landscapes shared by multiple countries has been recognized by the Renewable Natural Resources Foundation.

Publications

2018

ICIMOD disseminates much of the information gathered during programme activities in the form of printed and electronic publications targeted at policy makers, development workers, government experts and decision makers, students, and the interested public. All ICIMOD publications can be downloaded free of charge from www.icimod.org/himaldoc. Hard copies are provided free to institutions actively involved in sustainable development of the HKH. A link to the full collection of publications from 2018 can be found at: www.icimod.org/AR2018.



ICIMOD publications ICIMOD researchers in external publications

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*Mr Naba Bikram Kishore Tripura served from July 2011 till February 2018

**Dr Swarnim Wagle served from August 2017 till March 2018

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Ambassador

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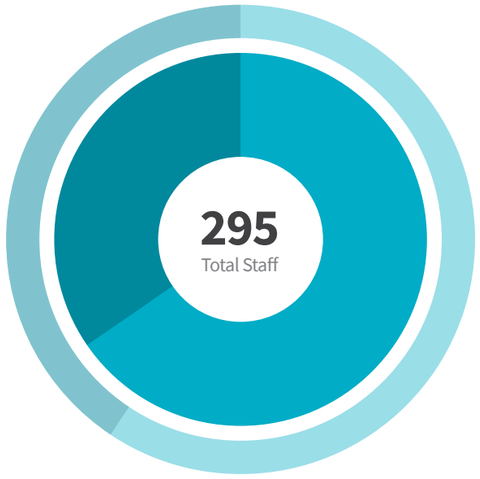
Staff

2018

ICIMOD is committed to, celebrates, and promotes equal opportunity and diversity in the workplace. We make efforts to ensure that all regional member countries (RMCs) are adequately represented in the workforce and have a Young ICIMOD Professionals Programme (YIPP) to encourage youth from under-represented RMCs and donor countries to apply. The majority of our staff are from the HKH. ICIMOD is also committed to gender and social diversity and encourages qualified women candidates and those from disadvantaged backgrounds to apply.



♀ **121**
41%

110 **91%** RMC
11 **9%** Non-RMC

♂ **174**
59%

169 **97%** RMC
5 **3%** Non-RMC

279 **96%** RMC
16 **4%** Non-RMC

102
Special Service Agreements

193
Employees

Financial reports

January 2018–December 2018

The Centre receives funds in the following broad categories: a) core funds from regional and non-regional countries and b) programme and project funds. From these funds, expenditure is made on the regional programmes and themes, institutional functions, and administration. In 2018, the total expenditure made by the Centre was USD 20.2 million. Of this, USD 16.83 million was spent on regional programmes and themes (83.3%), USD 1.55 million on institutional functions (7.7%), and USD 1.82 million on administration (9%). A detailed breakdown of the expenditure is presented in the chart below:

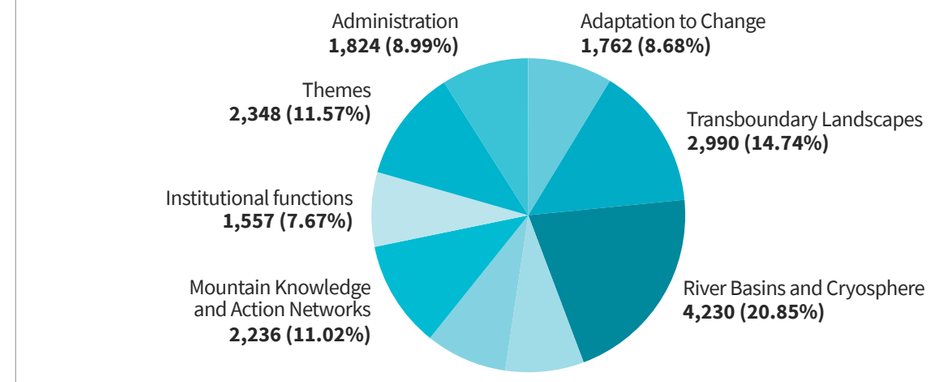
Income by source

TOTAL INCOME
USD 18.5 million

Project funds	Core funds
USD 6,200 (34%)	USD 12,300 (66%)

Note: Figures in thousands of US dollars

Expenses by function



TOTAL EXPENSES
USD 20.2 million

Note: Figures in thousands of US dollars

Statement of assets, liabilities, and fund balances as at 31 December 2018

All amounts in United States Dollars

		As at 31 December 2018		As at 31 December 2017
Fund Balances				
General Reserve		4,158,085		4,509,819
Operational Reserve		10,803,555		10,478,569
Exchange Equalisation Reserve		503,606		503,606
Restricted Programmes Support Fund Balances (net)				
Government of Germany (GIZ)	(326,799)		(326,799)	
Austrian Development Agency (ADA)	-	(326,799)	146,961	(179,838)
Core Programme Support Fund Balances (net)				
Department of Foreign Affairs and Trade (DFAT), Australia	759,875		972,414	
Swedish International Development Cooperation Agency, (SIDA), Sweden	1,522,187		2,225,010	
Norwegian Ministry of Foreign Affairs	799,439		-	
Swiss Agency for Development and Cooperation (SDC)	623,093	3,704,594	-	3,197,424
Special Projects Fund Balance (net)				
Amounts to be incurred on projects	988,495		3,351,991	
Amounts to be recovered	(1,984,474)	(995,979)	(1,371,818)	1,980,173
Total Sources of Funds		**17,847,062**		**20,489,753**
Assets and Liabilities				
Fixed Assets		3,962,869		2,337,273
Capital Work-in-Progress		-		1,674,236
Current Assets, Loans and Advances:				
Cash and Bank Balances		15,685,282		17,988,774
Loans, advances, and other current assets		1,783,983		2,403,790
		17,469,265		20,392,564
Less: Current Liabilities and Provisions		(3,585,072)		(3,914,320)
Net Current Assets		13,884,193		16,478,244
Total Application of Funds		**17,847,062**		**20,489,753**

Opening statement for the year ended 31 December 2018

All amounts in United States Dollars

INCOME		**Year ended 31 December 2018**	**Year ended 31 December 2017**
Contribution from Donors			
Restricted Programme Support		-	1,619,027
Core Programme Support		6,160,473	4,905,871
Core Support		4,676,900	4,436,663
Special Projects		6,197,757	13,517,611
Other Income		1,467,050	2,319,555
	(A)	**18,502,180**	**26,798,727**
EXPENDITURE			
Programme Expenses			
Restricted Programme Expenses		146,961	1,427,589
Core Programme Expenses		6,055,427	2,547,082
Core Expenses		2,474,716	2,768,525
Special Project Expenses		8,771,785	13,658,592
Core Support Expenses			
Directorate Expenses		1,018,190	1,281,156
Administrative Support Expenses		1,586,635	1,244,575
Depreciation		237,513	159,022
Foreign Exchange (Gain)/Loss (net)		420,664	(1,382,439)
	(B)	**20,711,891**	**21,704,102**
Surplus/(Deficit) of Income over Expenditure	**(A-B)**	**(2,209,711)**	**5,094,625**
Less: Surplus/(Deficit) of Special Projects		(2,574,028)	(140,981)
Less: Surplus/(Deficit) of Restricted Programme Support		(146,961)	191,438
Less: Surplus/(Deficit) of Core Programme Support		105,046	2,358,789
Net Surplus of Operational Reserve before appropriation		**406,232**	**2,685,379**
Transfer to General Reserve		**81,246**	**537,076**
Net Surplus transferred to Operational Reserve		**324,986**	**2,148,303**

Partners

AFGHANISTAN

Ministry of Agriculture, Irrigation and Livestock – Focal Agency
National Environmental Protection Agency (NEPA)
Ministry of Energy and Water (MEW)
Ministry of Foreign Affairs (MoFA)
Afghanistan Meteorological Department (AMD)
Afghanistan National Disaster Management Authority (ANDMA)
Aga Khan Agency for Habitat (AKAH)
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Kabul University (KU)
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Ministry of Water Resources (MoWR)
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Institute of Remote Sensing (IRS), Jahangirnagar University
Institute of Water Modelling (IWM)
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Government of Norway, Ministry of Foreign Affairs

Government of Sweden, Swedish International Development Cooperation Agency (Sida)

Government of Switzerland, Swiss Agency for Development and Cooperation (SDC)

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European Union (EU)

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International Development Research Centre (IDRC), Canada

Norwegian Ministry of Foreign Affairs, Royal Norwegian Embassy, Kathmandu

Swiss Agency for Development and Cooperation (SDC)

United States Agency for International Development (USAID)

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Global Biodiversity Information Facility (GBIF)

International Development Research Centre (IDRC)

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International Water Management Institute (IWMI)

Oxfam International

Swiss Agency for Development and Cooperation (SDC)

The World Bank

United Nations Development Programme (UNDP)

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International Centre for Integrated Mountain Development
GPO Box 3226, Kathmandu, Nepal
T +977 1 5275222 | **E** info@icimod.org | **www.icimod.org**

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