



ICIMOD

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FOR MOUNTAINS AND PEOPLE

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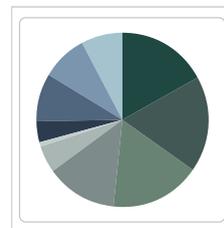
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Taking ICIMOD's Knowledge into Action

Generating and sharing knowledge provides a critical pathway to sustainable and resilient mountain development. ICIMOD and its partners are building a broad knowledge base on the region's changing ecosystems, livelihoods, food, water, energy, glaciers and more that provide clear evidence of the challenges mountain people are facing, and also the opportunities that unfold with change. But our role does not stop there. We have to move that knowledge into action. Only then will we be able to play our part in safeguarding mountain environments and improving the quality of life for mountain communities.

With the Centre entering the final year of its third medium-term action plan (in 2017), we are working from a solid foundation of experience across a diverse set of activities in our eight regional member countries that are helping transform our knowledge into action. We are developing solutions and making efforts to bridge science with policy and practice. This has helped set the stage for more positive results in the years to come.

One of ICIMOD's greatest strengths is its ability to bring people together to tackle the region's shared challenges. We have many examples of how we have brought practitioners, mountain communities, and policy makers together. One clear example

of this in 2016 was the collaboration between more than 300 researchers, policy makers, and practitioners to move forward on the development of the first comprehensive assessment of the state of the region's social, economic, and environmental conditions and challenges. This collaboration will also help to take the message of the mountains to the global community.

We continually measure our success against six strategic goals set out in our Strategy and Results Framework. The goals cover our work in innovation, capacity building, knowledge generation and use, policy engagement, regional cooperation, and engagement with the global community. This Annual Report broadly presents examples that demonstrate our progress toward these goals, documenting our experience over the last year in moving toward action. This report also shows how the Centre is working with a multitude of partners – including governments, research and development organizations, civil society, the private sector, and communities on the ground – to increase the impact of our work.

None of this would be possible without the support of our partners and supporters like you, and I would like to thank you for joining us on ICIMOD's mission to create safer, healthier lives for mountains and people in the HKH.



Only when we put our knowledge to use will we be able to play our part in safeguarding mountain environments and improving the quality of life for mountain communities.

David Molden, Director General, ICIMOD



MOUNTAIN INNOVATIONS AND COMMUNITY PRACTICES

Promoting and supporting
innovative approaches to address
change and build resilience





Common brand unites producers across borders

Now communities in the Kailash Sacred Landscape producing allo, chuyra honey and honey by-products, and other agricultural products are connected under a common brand: 'Kailash: Truly Sacred'. Jointly owned by private sector partners in India and Nepal, the brand links rural producers with markets, and provides expertise on business development and value addition to further enhance their livelihoods. The brand was successfully launched at trade fairs in both India and Nepal in the past year.

The Kailash Sacred Landscape Conservation and Development Initiative has been working with the private sector and local communities in Uttarakhand, India and western Nepal to further improve production, marketing, and business planning, especially among women, through a series of trainings and exposure visits in 2016.



Eight-step springshed approach offers solutions to water stress in the HKH

Across the Himalayan midhills, spring water sources are drying up, leading to acute water stress in communities that depend on springs for drinking, irrigation, domestic, and religious purposes. Recognizing this problem, ICIMOD and Advanced Centre for Water Resources Development and Management developed a spring revival approach for the HKH. The eight-step method integrates knowledge on the hydrogeology of springs with demand and supply patterns and local management practices to better understand why springs are drying. The information generated helps provide local practitioners with a formula to revive, restore, and better manage springs to mitigate water scarcity. ICIMOD and its partners are testing the method in locations in India and Nepal, and expect to extend this work across the HKH over the next five years.



Testing a new approach to mountain water management in the Upper Indus

The upper reaches of the Indus Basin are an essential, though often neglected, source of water for the plains of Pakistan. Together with national partners and local government authorities, ICIMOD's Indus Basin Programme assessed the emerging challenges as water sources respond to changes in the climate, including new challenges for traditional irrigation systems dependent on glacier meltwater.

To address these challenges, ICIMOD tailored solar irrigation systems to the mountain environment – a first for the region. The pumps were complemented with efficient drip irrigation systems and high-value, water-stress tolerant crops like apple cherry. The system has provided an innovative solution for managing water in mountain areas, with local government agencies and the Pakistan Council of Research in Water Resources taking the idea forward for broader use in the upper basin.



PROMOTING CLIMATE RESILIENT VALUE CHAINS

Drawing from over a decade of experience across the region in promoting and developing the value chains for mountain niche products in the HKH, ICIMOD has developed a framework to help guide pro-poor and climate resilient value chain development. This approach – based on key principles of sustainability, equitability, do-no-harm, and traditional knowledge – enables farmers and development workers to understand the entire market system and identify points along the chain that offer opportunities for farmers to improve market linkages and increase their share of benefits and income. In addition to improved competitiveness and income distribution, the framework suggests tools and processes to customize the value chain for the mountain context, and adopt gender inclusive and climate change perspectives to achieve a balance between pro-poor and pro-growth goals.

This approach is being applied across initiatives at ICIMOD on a wide variety of mountain products, from yak in Pakistan and goat in Bhutan, to allo fiber and chyura soap in India and Nepal, to tourism, honey, and a range of non-timber forest products across the HKH.



CUSTOMIZING TRADITIONAL SKILLS FOR TODAY'S MARKETS

The craftsmanship of HKH communities contributes to the region's rich cultural diversity, but in many areas, these traditional skills are at risk of being lost. Through its Rural Livelihoods and Climate Change Adaptation (Himalica) initiative, ICIMOD is working with local partners and groups in Bangladesh and Myanmar to combine traditional practices with innovative designs to create new opportunities for artisans to generate additional income while preserving local traditions.

In Shan State, Myanmar, rural producers from Inlay Lake toured Yangon to learn more about the bamboo value chain, including different methods of cultivating and processing bamboo and marketing new products for tourists such as serving bowls, plates, and cutting boards. In the Bandarban of Bangladesh, local artisans also learned how to customize their handloom products according to new

ICIMOD is supporting the exchange of knowledge between countries and communities to build sustainable livelihood options for HKH communities

designs. They are now developing new products, such as table runners, laptop bags, and mufflers. In Taplejung, Nepal, cardamom farmers learned how to multiply the uses of their large cardamom plants beyond the high value spice, including using fibre from the cardamom plant to make woven bags and wallets. Connections with the private sector and the development of a unique Himalica brand is helping to better position the products of mountain people in the marketplace.

BRINGING VALUE CHAINS CLOSER TO RURAL PRODUCERS

ICIMOD is helping rural producers in the HKH take a more active role in product value chains by bringing the processing and marketing of their goods closer to home.

In Myanmar, ICIMOD has linked ginger producers in three villages to a single trader through the development of community collection centres. During ginger harvesting season, over 300 farmers deliver ginger produce to a trader at the local collection centre each week, saving them the time and money needed to haul produce to the local market. This also helps farmers fetch a higher price through bulk sales and builds trust with the trader. Based on this experience, discussions are underway to expand the agreement to other agricultural products, and the trader has agreed to provide seeds, fertilizer, and a guaranteed market for the farmers' products.

In Bangladesh, groups of traditional weavers in Bandarban use yarn banks to produce more consistently quality garments. Managed locally by an elected committee, the yarn bank uses its collective resources to demand and purchase better quality yarn from the market. The purchased yarn is stored at the bank, ensuring that local weavers have access to the quality and style of yarn they need for higher quality products.

These simple changes give rural producers a competitive advantage and greater control over the production and sale of their products, increasing income and opening up new opportunities.



PROMOTING A HIMALAYAN 'SUPER FOOD'

Across much of the HKH, a common household seasoning may be the world's next 'super food'. High in vitamins and heart-healthy omega-3, perilla, a hearty and easy to maintain herb, is also a possible source of income for women in rural villages, many of whom are already stressed for time and taking on new responsibilities as an increasing number of men migrate for work.

To help transform this common household crop into a competitive mountain niche product, ICIMOD, through its AdaptHimal initiative, is helping to develop the perilla value chain. Five varieties of the crop have been identified and tested for omega-3 content. The top two varieties were used in pilot sites in Uttarakhand, India. From the pilot study, a package of practices to aid local farmers has been developed for the cultivation of perilla and market linkages are being established.



ENGAGING POLICY MAKERS

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





Indian national think tank invites ICIMOD as knowledge provider

NITI Aayog – a premier think tank of the Government of India – has reached out to ICIMOD in a plan to use the Centre’s research to inform Indian ministries and departments.

ICIMOD began its relationship with NITI Aayog in June 2016, sharing sustainable mountain development ideas for the Indian Himalaya. Since then, NITI Aayog has invited the Centre to join consultations on a variety of topics, including the UN Sustainable Development Goals, sustainable tourism, spring revival, the transformation of shifting cultivation, skill and entrepreneurship development, and the development of a comprehensive pan-Himalayan database.



Local governments commit to equitable local water use master plans

A bottom-up approach to village water management is gaining support from local authorities in several pilot sites in Nepal’s Koshi Basin. The approach builds on community-based water use master planning, first introduced by Helvetas 15 years ago. This approach is being expanded to the catchment scale to ensure that both hydrological and local administrative boundaries are considered equally in the planning process. And more precise water measurements are being taken to understand the water flow between different areas of the catchment. The project also focuses on gender and social inclusion and provides additional training to locals on the use of GIS, gender inclusion, and other priority areas to enrich the water planning process in the future. The project also fosters linkages between local communities and district and national stakeholders, which will be an important source of support for local communities to implement long-term water management projects.



National guidelines for sustainable yarshagumba harvesting in Nepal

ICIMOD has contributed to the development of national guidelines on yarshagumba management in Nepal. Once launched, the guidelines will help ensure that yarshagumba – a rare caterpillar-fungus known for its medicinal and high market value – is harvested sustainably in the nation’s protected areas. The national guidelines were based on local principles prepared and tested through a participatory process for the Api Nampa Conservation Area under ICIMOD’s Kailash Sacred Landscape Conservation and Development Initiative. The guidelines also incorporated lessons from ICIMOD partners in yarshagumba producing regions of Bhutan and China.

Through the initiative, these sustainable harvesting practices are now also being replicated in India.



RESILIENT MOUNTAIN SOLUTIONS APPROACH TAKES ROOT

Governments and partners are taking forward an ICIMOD approach using simple practices to improve the long-term resilience of mountain communities



An approach to rural farming that integrates a range of climate smart practices is taking root across the HKH. The Resilient Mountain Solutions approach – introduced in 2014 by the Himalayan Climate Change Adaptation Programme (HICAP) – has been extended to numerous districts in Nepal and other countries in the region.

The government of Nepal has initiated their own climate smart villages project, which, with technical support from ICIMOD, will put the Resilient Mountain Solutions approach into use in 14 districts of Nepal. And in Pakistan, women are learning about the approach, particularly the production of biobriquettes as an alternative source of heating and cooking fuel. These ideas were adopted through the Benazir Income Support Programme after the organization's chairperson saw this technology demonstrated by ICIMOD in Nepal.

This mountain-specific approach to building resilience and preparedness in rural communities integrates economic, social, and environmental dimensions of sustainable development with climate change adaptation and preparedness for future risks.

The Resilient Mountain Solutions approach has also been adapted and taken forward by ICIMOD partners – with additional activities in Bangladesh, Bhutan, and Myanmar. Packages of climate resilient practices are helping rural communities deal with challenges through simple, low-cost, and locally-appropriate technologies. Work on these packages of practices by partners under the Rural Livelihoods and Climate Change Adaptation initiative have included peer learning visits by farmers to the original Resilient Mountain Villages in Nepal, and has since expanded into packages of practices on the production of cardamom, off-season



vegetables, ginger, yak, seabuckthorn, and other products. The success of this approach to date has demonstrated the potential for a combination of simple, low cost, and locally appropriate solutions to help communities improve their resilience in the face of the multitude of changes sweeping across the HKH.

CREATING INCENTIVES FOR UPSTREAM RESOURCE STEWARDS

Results from research and pilots on incentives for ecosystem services in four HKH countries are informing national policies and local level action



Results from research and pilots in eight sites in China, India, Nepal, and Pakistan are informing the development of mechanisms to create incentives for communities to better manage natural resources and sustain ecosystem services on which downstream communities depend. The results highlight the important role that upstream communities play in ensuring the sustainability of ecosystem services – like water and biodiversity – to users downstream, as well as the need for mechanisms and investment to conserve upstream ecosystems.

The research also found that downstream communities are willing to incentivize upstream resource stewards for helping ensure the flow of these services. Based on these findings, the research teams explored the possibilities of creating incentive-based financial mechanisms to support improved cooperation for overall ecosystem management.

Unique challenges arise when creating mechanisms that focus on financial incentives in the HKH because of the region's geography, land tenure systems, varied income levels, and social structures. For these reasons, additional focus on other types of incentives, such as subsidies on development projects or in-kind support, may be more appropriate.

The knowledge generated through this initiative is providing important insights for designing mechanisms and policies that build connections between upstream and downstream communities to sustain ecosystem services. In Nepal, ICIMOD and its partners are part of a taskforce to develop a policy on payment for ecosystem services, and findings from research conducted in Pakistan with WWF-Pakistan have been incorporated in the provincial policy guidelines of Gilgit-Baltistan.

LESSONS FROM DHANKUTA

In Dhankuta, Nepal, a tripartite agreement was reached for an incentive-based payment for ecosystem services mechanism between communities at the source of the Tankhuwa and Nibuwa watersheds, a downstream community in Dhankuta town, and the Dhankuta municipality. Through this mechanism, households in Dhankuta contribute NPR 15 (USD 0.15) per water tap each month to a water supply management fund, which is administered by an elected committee. The funds are being disbursed to upstream communities to carry out activities to improve water conservation and management at the water source as well as other community development activities.



BUILDING THE CAPACITY FOR SUSTAINABLE MOUNTAIN DEVELOPMENT

Amplifying positive change
through improved human and
institutional capacity





Working with university students to advance regional knowledge

As a network for capacity building among higher education institutions in the region, the Himalayan University Consortium (HUC) with support from the Centre's Atmosphere Initiative hosted its first year-long PhD fellowship programme. Under the fellowship, PhD researchers have been paired with atmospheric scientists from ICIMOD, who serve as advisors and mentors. Together they are exploring a range of topics from the impacts of black carbon on glaciers in Nepal and Pakistan to the effects of agricultural crop residue burning. HUC has also joined hands with the Himalayan Adaptation Water and Resilience (HI-AWARE) initiative to expand the scope of the HI-AWARE academy, which aims to strengthen the expertise of project researchers and advanced university students for conducting transdisciplinary research on vulnerability, resilience, and adaptation. The academy was expanded at the end of 2016 to include a longer-term training programme for doctoral students, which will run through 2018.



Managing the transformation of shifting cultivation

Under its AdaptHimal initiative, ICIMOD studied 16 villages in Chin State, Myanmar to identify barriers to farmers as they move away from shifting cultivation, their major source of food and income, to settled agriculture. The initiative brought together farmers and officials from state departments to discuss good practices in shifting cultivation and to identify major challenges in shifting to settled agriculture: the loss of food diversity and loss of soil fertility.

In response, the initiative developed a training module on good soil, water, and crop management practices, which has been scaled out by the project's local partner to 600 farmers and may become a useful tool to manage the transformation of shifting cultivation across the eastern Himalaya in coming years.



Addressing human-wildlife conflict in the Kangchenjunga Landscape

Human-wildlife conflict is a persistent challenge for farmers across the HKH. In the expansive Kangchenjunga Landscape along the India-Nepal border, wild elephants destroy crops and threaten livelihoods of local farmers. ICIMOD addressed this issue by mapping hotspots in the area for human-wildlife conflict and offering farmers income-generating alternatives that also deter the wild elephants.

Trainings on ecotourism and efforts to promote rural tourism have been offered with intensive plantation of lemon trees – which are unpalatable to elephants, but profitable for farmers. This pilot activity is one among several initiated last year as a part of the first implementation phase of the Kangchenjunga Landscape Conservation and Development Initiative.

BUILDING REGIONAL EXPERTISE TO MONITOR THE CRYOSPHERE

Improved capacity in the region for cryospheric research is supporting long-term monitoring and deepening the knowledge base needed to advocate for mountains in national and international agenda



Long-term monitoring is needed to build a better understanding of what changes are taking place in the snow, ice and glaciers of the HKH. For this reason, ICIMOD has been working to build the capacity of institutions and individuals in the region to conduct long-term cryospheric research for the purpose of generating data to support climate change science, decision making, and the formulation of environmental policy.

Trainings follow ICIMOD's three-prong approach to cryosphere research – modeling, field measurements, and regular monitoring using geospatial technologies. In 2016 alone, more than 20 Myanmar government officials learned how to use satellite data to monitor glaciers, 17 representatives from national hydrometeorology institutions in Afghanistan, Bhutan, and Nepal participated in field

training, and the post-graduate glaciology programme started by ICIMOD at Kathmandu University in 2011 continues to grow.

Through this work, ICIMOD has paid particular attention to bring women into cryosphere research – a field dominated by men. In 2016, nearly 40% of the participants in the Cryosphere Monitoring Programme were women.

These regular trainings – on everything from basic mountaineering and health and safety to a range of methods of collecting data to measure and analyze glacier change – are helping to build capacity within the region to monitor snow and ice within the HKH, and to develop a base of knowledge needed to advocate for the mountains in both national and international agenda.

+650 participants trained through the Cryosphere Monitoring Programme since 2011

93 women trained on research approaches and data collection techniques since 2013

5 women graduates of the glaciology master's programme started with ICIMOD support in 2011



SUPPORTING WHEAT MONITORING IN AFGHANISTAN

Geospatial tools are being developed to help organizations in Afghanistan better monitor wheat cultivation to support food security



In Afghanistan, the productivity of wheat – the nation’s largest staple – is hampered by a range of social and environmental changes, including climate change. Combining Sentinel-2 satellite data with land cover and crop calendar data from the government, ICIMOD’s SERVIR-HKH initiative is developing a system to help the nation monitor this important crop, including yield estimation at national, provincial, and district levels.

To help improve water security – which is essential to food production in the country’s largely arid landscapes – ICIMOD has used GIS tools to support the development of a catalogue of irrigation infrastructure in the form of a multi-scale data management system. When finished, the platform will serve as a single gateway for the information



required for irrigation planning and monitoring. Together, these powerful, cost-effective tools can be used to help planners make informed decisions to support national food security.



KNOWLEDGE GENERATION AND USE

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





Tailoring innovative cryosphere research methods to the HKH

Seasonal snow cover plays an important role in water for consumption, irrigation, and hydropower, but little is known about snow and snowmelt processes in the HKH, including their contribution to river runoff. To address this, ICIMOD, the Norwegian Water Resources and Energy Directorate, Nepal's Department of Hydrology and Meteorology, and Kathmandu University and Tribhuvan University developed the SnowAMP project, which monitors snow in the Langtang catchment of Nepal. After the four-year project completes in 2017, the analysis will combine ground-based weather and snow measurements with data from satellite images and other sources to develop and test a model to estimate the amount of snow in a catchment. The SnowAMP project is an adaptation of a successful programme in Norway, and the first of its kind in the HKH. This is just one of many innovative methods the Cryosphere Monitoring Project has tailored to the region in order to improve our understanding of its dynamic cryosphere.



Framework outlined for putting research to use

To increase the uptake of ICIMOD knowledge, the Himalayan Adaptation Water and Resilience Initiative uses a systematic process to understand who uses ICIMOD research and how to serve their needs. The approach is based on several key principles – engagement, communication, demonstration, strategic partnership, and monitoring and feedback – and stresses the need for structured stakeholder engagement throughout the research process. This process helps ensure that research is responsive, demand-driven, and relevant to end users. Emphasis is placed on building the capacity of stakeholders to put the generated research to use through trainings and certificate programmes.

HI-AWARE has demonstrated the strength of this approach in the Gandaki Basin of Nepal, where regular stakeholder engagement has helped identify both research needs and gaps in capacity to help ensure its research outputs will be used to enhance adaptation in the basin.



Assessing climate change risks to hydropower development

The water resources and topography of the HKH hold immense hydropower potential, nearly 500 GW. However, there is growing uncertainty about how climate change will affect hydropower development. Together with Statkraft, the largest generator of renewable energy in Europe, ICIMOD undertook research to explore this issue, focusing on the current state of knowledge of climate change in the HKH, including projected changes in precipitation, monsoon dynamics, and glacier mass and volume.

The resulting report provides important insight for both hydropower investors and governments in the HKH to assess the short, medium, and long-term impacts, risks, and opportunities of hydropower in the face of change to ensure the region's water resources can be managed productively, yet sustainably.



FRAMEWORK FOR BUILDING RESILIENCE IN THE HKH

As with most disasters in the developing world, the recovery of different groups varied widely after the 2015 Gorkha earthquake, with some bouncing back more quickly than others. ICIMOD undertook research to identify what factors contribute to this kind of resilience, particularly among mountain communities exposed to natural hazards.

ICIMOD looked at 77 communities across the HKH, including those recovering from the earthquake in Nepal, as well as communities exposed to other hazards like landslides and flash floods in Myanmar and riverine floods in Bangladesh. Across the study, they found no single factor that led

to increased resilience. Rather, communities that possessed a combination of key factors – ranging from access to natural resources, level of entrepreneurship, and connectivity – had a distinctly higher capacity to rebound in the event of a shock.

The results of the research will help project planners and government authorities identify which factors should be nurtured and where investment should be targeted to build the resilience of communities to respond to shock events, even before they occur.

Identifying key factors that contribute to recovery will help guide investment and planning to support resilience in the future



AIR QUALITY MONITORING STATIONS FILLING CRITICAL GAPS

A network of air quality monitoring stations is improving understanding of the region's air pollution for informed action

Air pollution has become a persistent problem in major mountain cities of the HKH, with related effects on the region's environment, human health, and economies. The first step in addressing air pollution and its health, environmental, and economic impacts is understanding where it comes from and what substances make up its composition. For this reason, ICIMOD has been working with governments and partners in the region to establish long-term air quality monitoring sites in the middle hills of the central and eastern Himalaya of Bhutan and Nepal.

Ten monitoring stations have been established – seven in Nepal and three in Bhutan – with more planned in the coming years. The data from these stations is already helping fill critical knowledge gaps on the quantity, composition, and source of emissions, which will support the design of better strategies to address the issue. ICIMOD has also been working with partners to enhance their technical expertise on the operation and maintenance of state-of-the-art air quality monitoring instruments.



TURNING KNOWLEDGE INTO ACTION

Tackling the region's air quality issues can seem like a Herculean task. But ICIMOD, through its Atmosphere Initiative, has begun taking significant steps in providing data that can valuably inform workable mitigation measures that individuals, organizations, and governments can implement. For example, a study on motorcycles in Kathmandu – which make up 80% of the city's vehicle fleet – can inform regulations to help curb total vehicular emissions by targeting high-emitting two-wheelers. Findings from another study, on trash burning, could be used to design more efficient waste collection programmes – thus eliminating the need to burn garbage.



All of ICIMOD's air quality efforts are developed with an outreach strategy designed to put research on the atmosphere to use. In the past year, we organized a workshop that brought together academics, health experts, and representatives from the private sector and the government to build Nepal's air quality public information system, and provided grants given to journalists from the HKH to bring wider awareness about air quality issues and generate possible solutions.



FACILITATING REGIONAL COOPERATION

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





HIMAP comprehensive regional assessment takes shape

A broad group of more than 300 people – including researchers, policy makers, and practitioners – from across the region and around the globe are contributing to the development of the first comprehensive assessment of the HKH. This assessment will be the flagship publication of ICIMOD's Hindu Kush Himalayan Monitoring and Assessment Programme (HIMAP).

HIMAP's first comprehensive assessment (forthcoming in 2017) addresses the social, economic, and environmental pillars of sustainable mountain development in the HKH. It provides an evaluation of the current state of knowledge on various drivers of change and their impacts and provides a set of practical policy recommendations that will serve as a valuable resource for decision and policy makers on key issues of mountain development.



Himalayan University Consortium gains momentum

Members of the Himalayan University Consortium – a network of member universities in the HKH and associate universities from around the world – shifted into action in 2016, with growing ownership by its members and increasing interest to join from universities across the region.

At the consortium's annual meeting, university authorities from across the region discussed priority activities for consortium members, which included promoting networking among smaller groups of members with similar areas of interest. From this, a Mountain Agriculture Working Group was formed, with 40 universities interested in bringing greater focus on mountain agriculture into their curriculum actively participating and sharing experiences through the platform established by the consortium.



Cryosphere Initiative expands regular field operations to Bhutan

For more than half a decade, the Cryosphere Initiative has been working to improve snow and ice monitoring in the HKH through a combination of research and capacity building. The generation and sharing of knowledge and data on changes in the cryosphere among different countries is essential to understand what's happening to water resources across the HKH.

The initiative recently expanded field operations to Bhutan where, working with national partners, the project has installed automatic weather and water level monitoring stations on Thana Glacier. These stations will help ensure that long-term data is collected on mass balance and ground surface temperature. Through these field trips, the ICIMOD team was able to provide on-site training to staff from Bhutan's national hydromet service on snow profiling and sampling, glacier mass balance, geomorphological surveys, and other important tools for monitoring the region's cryosphere.



GETTING READY FOR REDD+ IN THE HKH

ICIMOD partners in five countries are working together to design tailored approaches to support the smooth implementation of REDD+ in the region



ICIMOD has become a platform for collaboration and knowledge sharing as countries of the HKH prepare to implement Reducing Emissions from Deforestation and Forest Degradation (REDD+), a global environmental programme created by the UN. Through its Regional REDD+ Initiative, ICIMOD is bringing together partners from Bhutan, India, Myanmar, Nepal, and Pakistan through a South-South learning platform to share experiences and design tailored approaches for the region to assist the countries in their REDD+ readiness phase.

As part of the work, ICIMOD's Regional REDD+ Initiative is partnering with global and regional partners to develop protocols for monitoring, reporting and verification based on UNFCCC requirements for REDD+, and working with partners to test, customize,

and apply these protocols in HKH countries. For example, through testing scenarios in protected areas of Nepal, ICIMOD is working diligently to insure that REDD+ activities do not have a negative impact on biodiversity. Our success in these tests will be customized for other countries. And these efforts have been combined with the development of common understanding on REDD+ safeguards, gender mainstreaming, and good governance.

By facilitating broad stakeholder consultation and capacity building, ICIMOD is also supporting the development of national REDD+ strategies, with initiative partners in India and Nepal playing a lead role in drafting each nation's strategy, which are now awaiting government endorsement. Sub-national REDD+ action plans tested by ICIMOD in one district in Nepal are

already being taken up by partners in India, and scaled out to 12 more districts in Nepal by REDD Implementation Center and WWF-Nepal.

Combined, these efforts are developing the tools and capacity required for the smooth implementation of REDD+ throughout the HKH.

ECOLOGISTS START SPEAKING THE SAME LANGUAGE

A common classification system for vegetation of the HKH will help coordinate research and improve efforts to monitor change



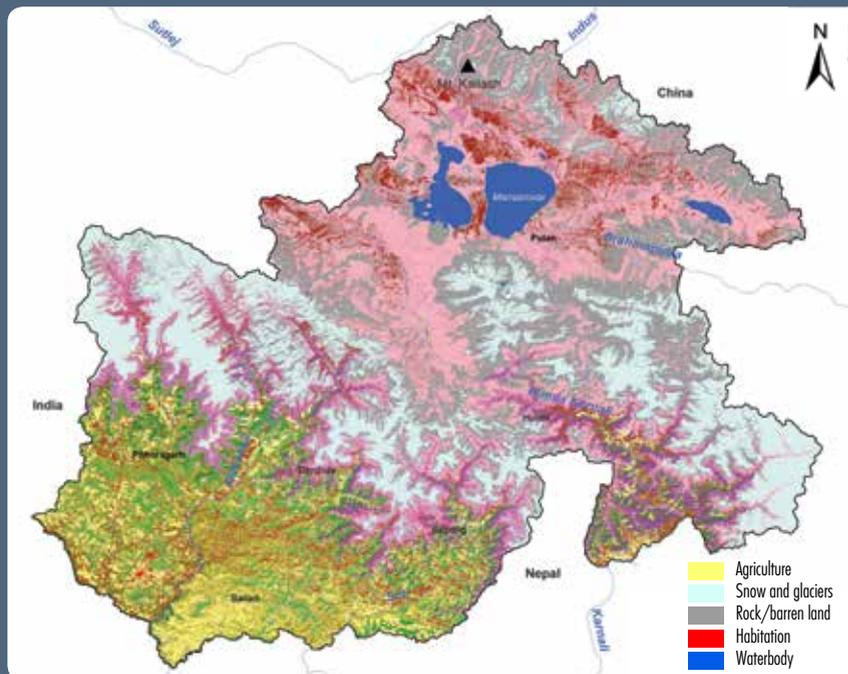
For years, the terminology used to describe vegetation in the HKH has evolved into a mix of global vocabulary, which doesn't always recognize the local complexities of the region's diverse landscapes, and the legacy of local naming used by smaller subsets of scientists. ICIMOD recognized that to effectively monitor the transboundary landscapes of the HKH, researchers working in different countries must start speaking the same language.

Over a two-year period, ICIMOD and its partners conducted extensive field work and a number of expert consultations with ecologists from China, India, and Nepal working in the

Kailash Sacred Landscape to standardize the terms used to describe different types of Himalayan vegetation. This common classification system will help researchers and planners across borders develop a more holistic view of the status of transboundary ecosystems, and will improve efforts to monitor changes in the future. As this effort expands to other landscapes in the region, future knowledge shared between researchers, policy makers, and practitioners will be more coordinated, leading to conservation and development plans that consider the unique and connected nature of Himalayan landscapes.

Harmonized Vegetation Terms and Map of Kailash Sacred Landscape

- Tropical broadleaved forest
- Subtropical broadleaved forest
- Subtropical needleleaved forest
- Montane broadleaved evergreen forest
- Montane broadleaved deciduous forest
- Montane needleleaved forest
- Secondary scrub
- Montane grassland
- Subalpine forest
- Subalpine scrub
- Alpine moist scrub
- Alpine dry scrub
- Alpine moist meadows
- Alpine steppe





REGIONAL AND GLOBAL OUTREACH

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





Efforts to build greener brick kilns draw regional and global attention

ICIMOD's efforts to promote a more efficient brick kiln design gained traction after the 2015 Gorkha earthquake damaged 95% of brick kilns in the Kathmandu Valley. These designs are reaching a broad audience through strategic partnerships with international networks like the Climate and Clean Air Coalition (CCAC). Initial results from the reconstructed brick kilns – prepared with the Nepal Federation of Brick Industries, Minergy, local engineers and Nepali brick kiln entrepreneurs with support from CCAC and Climate and Health Research Network – are already showing positive environmental and economic impacts. Today, all of brick kilns in the Kathmandu Valley have adopted some of the non-structural features of the design, and the number kiln owners rebuilding chimneys according to the new design increasing across the country. The experience in Nepal has helped draw the interest of brick entrepreneurs in Bangladesh and Pakistan, global development partners, and regional and international media.



Working with policy champions to profile ICIMOD research

Over five years of climate change research in the HKH, important policy recommendations have emerged from the Himalayan Climate Change Adaptation Programme (HICAP). To help identify opportunities to put this research to use in policy making, HICAP has identified 'policy champions' to help shepherd important findings and recommendations into the hands of people making decisions that affect the lives of rural mountain communities.

These policy champions work in close coordination with ICIMOD researchers and provide a bridge to better communicate with decision makers in government. They also share their knowledge on policy information needs in governments, which in turn helps ICIMOD decide appropriate policy messaging.



Mbale call: Don't leave the mountains behind

Over 250 representatives from around the world met at the World Mountain Forum – co-organized by ICIMOD in Mbale, Uganda – to discuss sustainable mountain development in the context of the Paris Agreement and Sustainable Development Goals (SDGs). The various discussions on climate change, livelihoods, and ecosystems led to the Mbale Call: Don't Leave the Mountains Behind. The declaration calls on governments, politicians, decision makers, development agencies, financing institutes, and mountain stakeholders to form policy, gather knowledge, and take action to reach global development and climate change goals with specific attention on mountain regions. Specifically, this attention should include increased recognition of upstream and downstream linkages, especially with regard to mountain ecosystems, and the inclusion of mountains in international processes and negotiations.



BRINGING POLICY FOCUS TO WORLD WATER WEEK

A session on the future of mountain water resources drew attention to policy-relevant mountain issues like hydropower and benefit sharing

During a session at World Water Week in 2016, ICIMOD and partners highlighted the need for greater interaction between the science of climate change and policy action to address emerging challenges. The seminar brought together 70 scientists, government officials, and representatives from intergovernmental agencies and the private sector to discuss the future of mountain water resources. Beyond sharing the latest research from three mountain areas, the discussions focused on linking emerging scientific evidence to a policy-relevant narrative of sustainable growth from the perspective of hydropower development.

Scientists from Future Water, Statkraft, and ICIMOD highlighted cutting-edge research from the Alps, the Andes, and the Himalaya on the impacts of climate change on glaciers and rivers. The seminar also looked at climate change impacts on the hydropower sector, particularly in the HKH where hydropower potential is estimated at 500 GW.



YOUTH, MOUNTAINS, AND THE SUSTAINABLE DEVELOPMENT GOALS

163 youth have participated in ICIMOD youth forums since 2013, with:

23 countries represented



Young people are agents of change in local communities. They can effectively engage people at the grassroots level and play an instrumental role in communicating Sustainable Development Goals (SDGs) to the wider public. Recognizing this, ICIMOD organized the 2016 Asia Pacific Youth Forum with a focus on mountains, youth, and the SDGs.

The event brought 34 participants – researchers, early career professionals, young activists, and youth initiative leaders – from 16 Asia Pacific countries to Kathmandu, Nepal, to discuss climate change adaptation and sustainable development in the mountains, and to learn about links between these issues and the SDGs. During the session, participants took part in field visits, leadership exercises, and technical sessions led by ICIMOD researchers. Most important, they began forming strong networks that will be essential as they advocate for the mountain agenda in the future.

MONITORING HKH PROGRESS TOWARD UN DEVELOPMENT GOALS

With input from a wide range of scholars and field experts, ICIMOD has led the initiative to develop HKH priorities in line with the UN Sustainable Development Goals (SDGs). These priorities provide objectives and broad vision for developing mountain communities with a focus on ending poverty, protecting the planet, and ensuring prosperity for all. These priorities will be listed in the

forthcoming Himalayan Monitoring and Assessment Project (HIMAP) and each priority will be linked to specific SDGs, and their corresponding targets and indicators. With these priorities in place, we have a clearer path to track progress in the HKH. Through HIMAP, ICIMOD will work with HKH countries to report on mountain priorities in the SDGs in the future.



BUILDING THE HKH PARTNERSHIP

Ministers and high-level government representatives from Afghanistan, Bangladesh, Bhutan, Myanmar, Nepal, and Pakistan endorsed a declaration entitled 'Healthy Mountains, Healthy Planet: The HKH Partnership for Sustainable Mountain Development' at the 2016 United Nations Environment Assembly. The HKH Partnership will help forge stronger alliances between mountain countries to promote the mountain agenda in global climate and sustainable development deliberations.

The declaration drew attention to the HKH's unique challenges and its importance to more than one-fifth of the global population. By working together, HKH countries can find lasting solutions to these challenges. Through this new alliance, HKH countries can also form a collective voice to mobilize emerging financing instruments and opportunities for mountain areas.

HKH PRIORITIES CONTRIBUTING TO THE SUSTAINABLE DEVELOPMENT GOALS

- End poverty in all its forms everywhere in the mountains and ensure that women, men and children of the HKH lead healthy lives in an inclusive and equitable environment
- 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
- Achieve gender and social equity through inclusive and transformative change in the mountains
- 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
- Universal access to clean energy in the mountains from sources that are affordable, reliable, and sustainable
- Halt biodiversity loss, land degradation and sustainably manage forests and ecosystems in the mountains to enhance ecosystem resilience for sustained flow of services
- Ensure sustainable adaptation to climate change and disaster risk reduction for the mountains through evidence-based decision making
- Build resilient, equitable and inclusive mountain communities empowered by economic opportunity and investment in mountain infrastructure
- Promote a mountain-specific agenda for achieving the SDGs through increased regional cooperation among and between mountain regions and nations



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National Environmental Protection Agency

Afghanistan Meteorological Department

Aga Khan Assistance for Habitats (formerly known as Focus Humanitarian Assistance)

Aga Khan Foundation

Eshraq Institute of Higher Education

Kabul University

Ministry of Energy and Water

Wildlife Conservation Society

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Arannayk Foundation

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Bangladesh Agriculture Research Council

Bangladesh Centre for Advanced Studies

Bangladesh Meteorological Department

Bangladesh Space Research and Remote Sensing Organization

Bangladesh University of Engineering and Technology

Bangladesh Water Development Board

Center for Environmental and Geographic Information Services

Centre on Integrated Rural Development for Asia the Pacific

Ethnic Community Development Organization

Institute of Water Modelling

University of Chittagong

University of Dhaka

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Gross National Happiness Commission

Bhutan Centre for Environment and Development

Bhutan Chamber of Commerce and Industry

Bhutan Media and Communications Institute

Center for Climate Change and Spatial Infrastructure, Sherubtse College

College of Natural Resources

Department of Research and External Relations

National Center for Hydrology and Meteorology (formerly known as Department of Hydro-met Services)

National Environment Commission

National Land Commission

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Royal Thimphu College

Royal University of Bhutan

Taranayan Foundation

The Council for Renewable Natural Resources Research of Bhutan, Ministry of Agriculture and Forests

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Sustainable Development Policy Institute
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World Wildlife Fund

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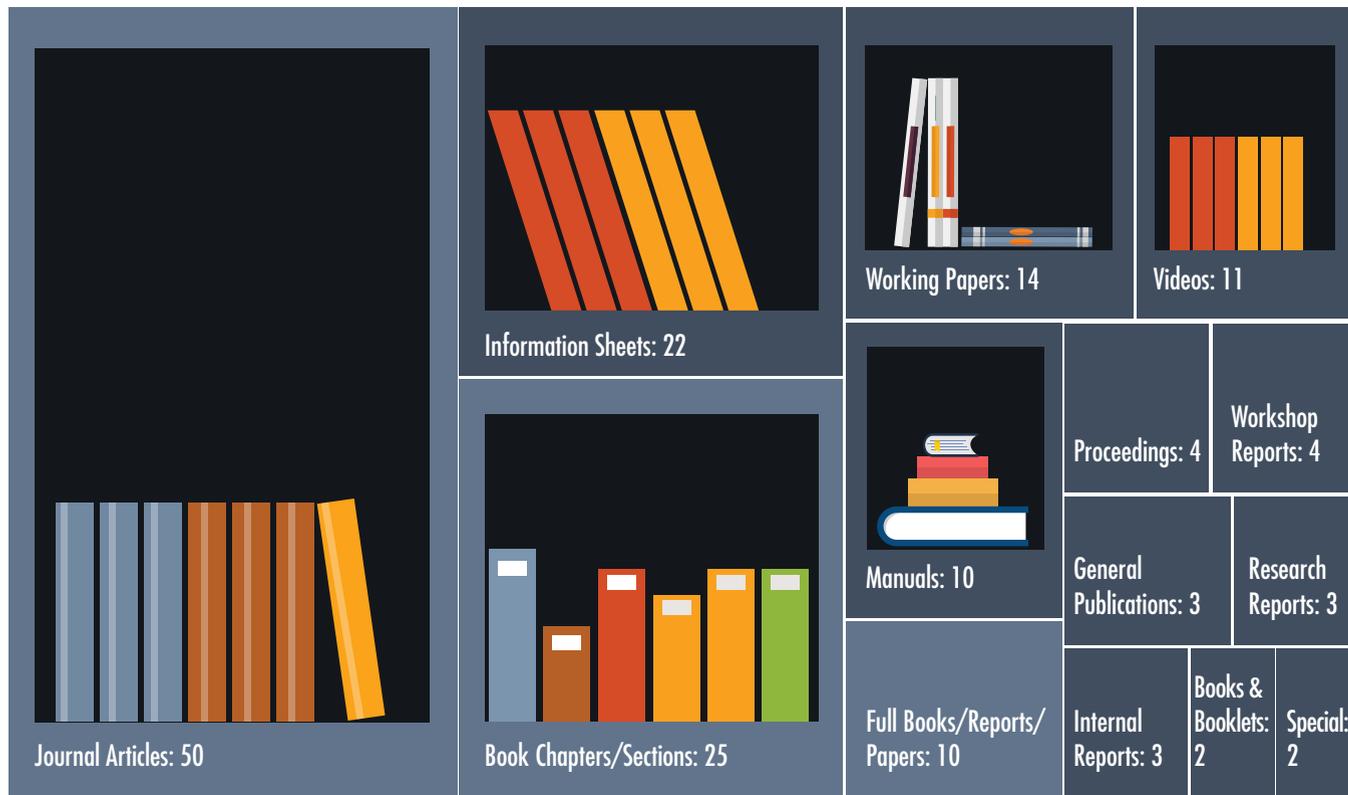
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ICIMOD disseminates much of the information gathered during programme activities in the form of printed and electronic publications targeted at policy makers, development workers, government experts and decision makers, students, and the interested 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 Hindu Kush Himalaya. A link to the full collection of publications from 2016 can be found at: www.icimod.org/AR2016.



ICIMOD publications

ICIMOD researchers in external publications

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‡ Chair, Programme Advisory Committee, and Vice Chair, Board of Governors

*HE Raz Mohammad Raz served from June 2010 to July 2016

**Dasho Tenzin Dhendup served from July 2014 to October 2016

***Ashok Lavasa served from September 2014 to April 2016

****Dr Yuba Raj Khatriwada served from November 2015 to August 2016

*****Seegat Ashgar served from June 2013 to February 2016



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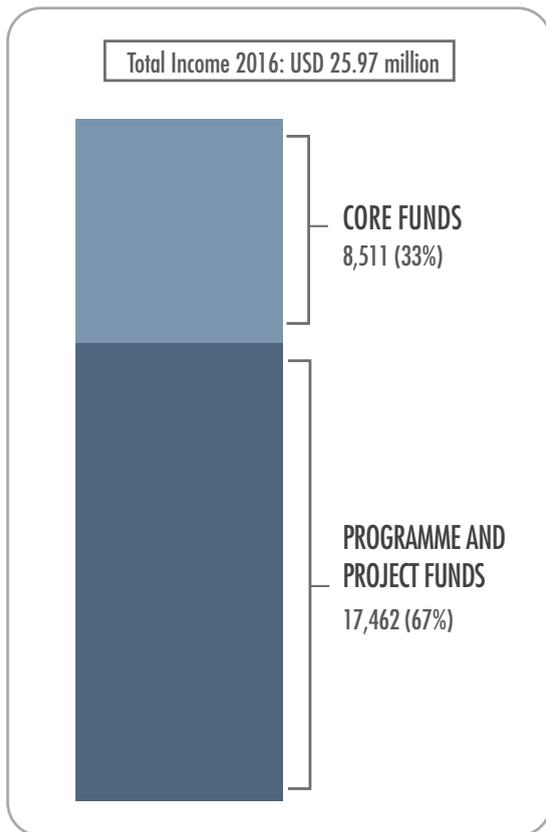
Somanathan, E.
Joshi, Malvika
Kafle, Anuradha
Lohano, Heman Das
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Pradhan, Neesha

FINANCIAL REPORTS

The Centre receives funds in the following broad categories: a) core funds from regional member countries and non-regional countries, and b) programme and project funds. The actual income received in 2016 is presented in the chart below (left) and the breakdown of expenses by function is presented in the chart below (right). A total income of USD 25.97 million was realized during the year, and an expenditure of USD 27.78 million was made. This expenditure comes to 92% of the Board of Governors approved plan of USD 30.33 million. The difference in the actual income realized and expenditure made was covered by the opening balance of funds available at the beginning of the year.

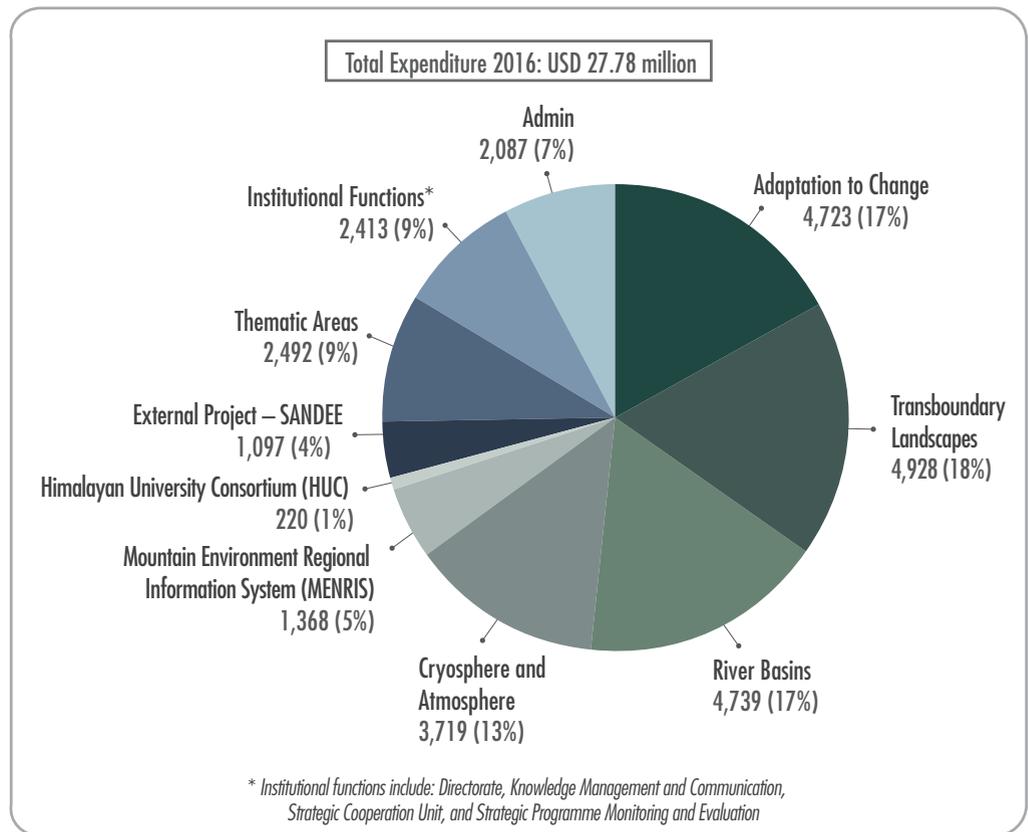
INCOME BY SOURCE 2016

Figures in thousand US dollars



EXPENSES BY FUNCTION 2016

Figures in thousand US dollars



International Centre for Integrated Mountain Development
Statement of Assets, Liabilities, Loan and Fund Balances as of 31 December 2016

All amounts in US dollars



Schedule	As at 31 December, 2016	As at 31 December, 2015
Fund Balances		
General Reserve	4,650,815	4,688,569
Operational Reserve	8,330,266	6,780,100
Exchange Equalisation Reserve	503,696	503,606
Restricted Programmes Support Fund Balance (net) [Note 3(f) of Schedule 13]		
Government of Germany	(481,209)	(184,893)
Austrian Development Agency	109,933	-
Restricted Core Programme Support Fund Balance (net) [Note 3(g) of Schedule 13]		
Department of Foreign Affairs and Trade (DFAT), Australia	838,635	855,192
Department for International Development (DFID), UK	-	1,527,474
Special Projects Fund Balance (net)	3,684,886	6,440,065
Amounts to be incurred on projects	(1,563,732)	(2,298,665)
Amounts to be recovered	2,121,154	4,141,400
Total Sources of Funds	16,973,200	18,311,448
Assets and Liabilities		
Fixed Assets	3,028,118	3,355,758
Capital Work-in-Progress	467,744	78,510
Current Assets, Loans and Advances:		
Cash and Bank Balances	14,341,628	16,707,625
Loans and Advances	2,791,516	3,589,219
	17,133,144	20,296,844
Less: Current Liabilities and Provisions	(4,555,806)	(5,419,664)
Net Current Assets	12,577,338	14,877,180
Total Application of Funds	16,973,200	18,311,448

Notes forming part of the financial statements 13

Schedules referred to above form an integral part of the Statement of Assets, Liabilities and Fund Balances

In terms of our report attached

For Deloitte Haskins & Sells LLP
Chartered Accountants



Alia Chadha
Alia Chadha
Partner

David James Moulden
David James Moulden
Director General

Shekhar Chinnire
Shekhar Chinnire
Director Administration and Finance

Rajendra Prakash Mall
Rajendra Prakash Mall
Budget & Finance Officer

Place: Gurgaon, India
Date: 31 March 2017

Place: Kathmandu, Nepal
Date: 31 March 2017

International Centre for Integrated Mountain Development Operating Statement for the Year Ended as of 31 December 2016

All amounts in US dollars

	Schedule	Year ended 31 December, 2016	Year ended 31 December, 2015
INCOME			
Contribution from Donors			
Restricted Programme Support	6A	1,223,965	1,119,190
Restricted Core Programme Support	6B	1,657,960	3,256,022
Core and Other Programmes Support	6C	4,394,279	4,062,140
Special Projects	6D	16,238,439	13,183,493
Other Income	7	2,459,354	2,194,446
	(A)	<u>25,973,997</u>	<u>23,815,291</u>
EXPENDITURE			
Programme Cost			
Restricted	8	1,410,348	1,724,262
Restricted Core	9A	3,201,991	2,868,281
Core and Others	9B	1,533,030	1,068,056
Special Project Cost	10	18,258,685	19,364,885
Core Support Cost			
Discretionary Cost	11	1,295,300	1,161,841
Administrative Support Cost	12	1,141,102	1,030,128
Depreciation [Note 3(o)(iii) of Schedule 13]		191,488	157,337
Foreign Exchange (Gain)/ Loss (net)		755,006	764,282
	(B)	<u>27,786,950</u>	<u>28,139,072</u>
Surplus/ (Deficit) of Income over Expenditure	(A-B)	(1,812,953)	(4,323,781)
Less: Surplus/ (Deficit) of Special Projects' income over expenditure transferred to Special Project Fund Balances (net)		(2,020,246)	(6,181,392)
Less: Surplus/ (Deficit) of Restricted Programme Support's income over expenditure transferred to Restricted Programme Support Fund Balances (net)		(186,383)	(605,072)
Less: Surplus/ (Deficit) of Restricted Core Programme Support's income over expenditure transferred to Restricted Core Programme Support Fund Balances (net)		(1,544,031)	387,741
Net Surplus of Operational Reserve before appropriation		<u>1,937,707</u>	<u>2,074,942</u>
Transfer to General reserve (Refer Note 3(b) of Schedule 13)		387,541	414,989
Net Surplus adjusted to Operational Reserve		<u>1,550,166</u>	<u>1,659,953</u>

Notes forming part of the financial statements: 13

Schedules referred to above form an integral part of the Operating Statement

In terms of our report attached

For Deloitte Haskins & Sells LLP
Chartered Accountants



Alta Chadha
Alta Chadha
Partner

For International Centre for Integrated Mountain Development

David James Molden
David James Molden
Director General

Shekhar Chimire
Shekhar Chimire
Director, Administration and Finance

Rajendra Prakash Mall
Rajendra Prakash Mall
Budget & Finance Officer

Place: Gurgaon, India
Date: 31 March 2017

Place: Kathmandu, Nepal
Date: 31 March, 2017



ICIMOD MEMBERS, SPONSORS, AND FUNDING PARTNERS

CORE FUNDING

Regional member countries

- Afghanistan
- Bangladesh
- Bhutan
- China
- India
- Myanmar
- Nepal
- Pakistan

Non-regional countries

- Australia, Department of Foreign Affairs and Trade (DFAT)
- Austria, Austrian Development Agency (ADA)
- Norway, Ministry of Foreign Affairs
- Switzerland, Swiss Agency for Development and Cooperation (SDC)
- United Kingdom, Department for International Development (DFID)

PROGRAMMATIC FUNDING

- Austrian Development Agency (ADA)
- Bundesministerium für Wirtschaftliche Zusammenarbeit (BMZ), Germany
- Department for International Development (DFID), United Kingdom
- European Union (EU)
- Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), Germany
- Government of Sweden (Swedish International Development Cooperation Agency [Sida])
- International Development Research Centre, Canada (IDRC)
- International Fund for Agricultural Development (IFAD)
- Norwegian Ministry of Foreign Affairs, Royal Norwegian Embassy, Kathmandu
- United States Agency for International Development (USAID)

STRATEGIC AND PROJECT FUNDING

- Climate Research Fund (CRF)
- DANIDA Fellowship Centre (DFC)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- Food and Agriculture Organization of the United Nations (FAO)
- Institute for Global Environment Strategies (IGES)
- Institute for Advanced Sustainable Studies (IASS), Germany
- International Glaciological Society
- International Water Management Institute (IWMI)
- Secure World Foundation (SWF)
- SVP Industrial Development – Statkraft AS
- Swiss Agency for Development and Cooperation (SDC)
- The Arizona Board of Regents, University of Arizona
- United Nations Environment Programme (UNEP)
- University Corporation for Atmospheric Research (UCAR)
- Universiteit Utrecht
- USAID – SERVIR Demand Activity
- Wageningen University





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. Globalization 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.



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