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International Centre for Integrated Mountain Development
Kathmandu, Nepal

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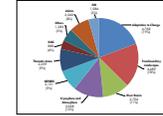
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Message from the Director General

The Hindu Kush Himalayan region is incredibly diverse and dynamic. From rangelands to wetlands to forests, the region's rich ecosystems provide a foundation for the lives and livelihoods of people across the region, and valuable natural resources, especially water, for those living downstream.

Communities in our eight member countries are experiencing myriad social, economic, and disaster-related impacts due to the global and regional effects of climate change. Along with this, the vulnerability of mountain ecosystems and communities is increasing, with the current rate of change outpacing the ability of these resilient communities to successfully adapt.

Disasters, like the earthquake that hit Nepal in April 2015, are not uncommon in the fragile mountains of the Hindu Kush Himalayas. The increasing frequency and magnitude of natural hazards, particularly climate-induced disasters like floods and

droughts, reiterate the need for countries to come together to share learning and to address issues that affect people across the region, from the plains up to the Himalayas.

Never before has there been a greater need for action to tackle these emerging challenges. ICIMOD plays an important role as a platform for dialogue, collaboration, and sharing of knowledge across borders. Through collaboration, along with efforts to bridge science, policy, and practice, ICIMOD is working to build more resilient communities and ecosystems across the Hindu Kush Himalayas.

We are all connected through the mountains that sustain us, and it will take a collective and collaborative effort to ensure we are all able to respond to the challenges presented before us.

Thank you all for your support of ICIMOD.



ICIMOD's Year in Brief

The Centre has developed its role as a platform for countries to come together to address issues that cross borders and can affect the entire region.

At the end of 2012, ICIMOD adopted a new strategic framework and ambitious five-year plan (2013-2017), designed in close consultation with its regional member countries. These guiding documents provided a vision for the Centre, with impact and integration outlined through a set of six transdisciplinary, long-term regional programmes and four thematic areas aimed at advancing knowledge and science by providing expertise on ecosystem services, livelihoods, water and air, and geospatial solutions. These are underpinned by robust knowledge management and communications activities.

This report presents the progress the Centre made in 2014 toward the goals outlined in the five-year plan as it entered the second year of the strategic results framework, the first year in which all regional programmes were in full implementation. It begins with institutional highlights over the year, and then moves into progress across broad areas – promoting the uptake of our research and innovations, developing both human and institutional capacities

in the region, putting science and data to use, influencing policy, fostering regional cooperation, and raising the Mountain Agenda at the regional and global levels.

ICIMOD has further grown into its regional niche and developed its role as a platform for countries to come together to address issues that cross borders. Through its regional programmes, ICIMOD addresses challenges that are shared across countries in the region, and where significant knowledge sharing can take place. These regional programmes are also able to address and respond to country-specific issues, with the added value of being able to create connections, regionally as well as internationally, to develop solutions.

The Adaptation to Change Regional Programme is the Centre's largest aimed at scaling out community-based impacts, and activities are well underway. One major success has been a pilot in Nepal that has demonstrated the potential for simple, 'climate smart' technologies to improve the resilience of communities in rural areas (p 13). Efforts have also been made to explore how ecosystems

and their services intersect with social vulnerability (p 29), which included the use of ecosystem services assessments by local governments (p 40). Efforts have also been made to support women in rural villages in improving their adaptive capacity (p 22) and financial literacy (p 19) so they are better able to respond to emerging challenges.

The Transboundary Landscapes Regional Programme is rapidly implementing the Kailash Sacred Landscape Programme, including work to promote responsible tourism (p 15) and the use of mobile technology to connect farmers to markets and information and improve the long-term sustainability of their livelihoods (p 10). Learning from Kailash has been applied across the regional programme, with progress also being made in three other transboundary landscapes (pp 46-47). The regional programme has also worked with partners to develop a framework to guide long-term monitoring and research, which will help experts across the region work toward a holistic understanding of mountain ecosystems that can guide decision making (p 44).

The River Basins Regional Programme has made large strides, led by a range of activities under the Koshi Basin Programme – from work to improve local water use planning (p 14) to encouraging regional science collaboration to tackle environmental challenges (p 39). Data from a regional flood information system, developed by ICIMOD and its partners, is being used to produce flood bulletins to share with government departments to reduce flood vulnerability (p 30). With the addition of the HI-AWARE Initiative, which will allow us to address adaptation approaches within the Indus, Ganges, and Brahmaputra rivers, the River Basins Regional Programme has been further strengthened.

The Cryosphere and Atmosphere Regional Programme is growing more robust, with preparation underway for more activities in Bhutan and Pakistan. ICIMOD's team of experts working on the cryosphere are developing the capacity, both in house and in the region, to monitor the snow and glaciers of the region with the latest technology to fill critical gaps in knowledge

(p 33). The Atmosphere Initiative has laid a strong foundation for producing evidence on black carbon and other pollutants (pp 31-32) and looking at the intersections between air quality and social factors.

The Mountain Environment Regional Information System (MENRIS) Regional Programme, through its SERVIR-Himalaya Initiative, is showing how products based on geospatial data can be put to use by countries to support informed decision making, including food security (p 12), disasters (p 15), and access to data (p 43). The Himalayan University Consortium made important progress this year in bringing universities across the region together, including through the development of a charter (p 25).

Significant efforts were made to boost the Centre's science output, while at the same time making sure that science can be put to use to develop solutions to regional issues and to support impact in our regional member countries. One example of this is a report on future water availability published in *Nature Climate Change*, which will be useful in developing

appropriate adaptation strategies (p 27). ICIMOD has also initiated a comprehensive regional assessment and wide-ranging evaluation of the current state of knowledge in the region (p 48).

Throughout 2014, ICIMOD placed more emphasis on policy influence and enhancing policy connections. From supporting the development of Pakistan's Agriculture and Food Security Policy (p 37), to the formulation of national tourism and ecotourism planning in Myanmar (p 38), ICIMOD has worked to ensure that mountain-specific issues are reflected within wider national efforts in its member countries. In 2014, ICIMOD also focused on strengthening partnerships, efforts which were bolstered by the development of partnership guidelines and the establishment of a new unit for strategic cooperation.

In the final section, the report provides information about new partnerships, new publications, the people working at the Centre, and a summary of ICIMOD's financial performance, including copies of the Centre's audited reports.





Uptake of Innovations

Community flood early warning system globally awarded and taken up in the region

As climate change leads to an increase in the frequency and magnitude of extreme weather events and natural disasters, ICIMOD is helping vulnerable mountain people respond to the risks with a mixture of technology and community preparation that has now received global attention.

ICIMOD worked with Aaranyak to create a community-based flood early warning system (CBFEWS), which uses a flood sensor to detect rising water levels and transmits a signal to a wireless receiver as water reaches a critical level. The warning is then disseminated via mobile phones to the district disaster management authority and vulnerable communities downstream.

The ICT-based system was tested in 2013 in two districts of Assam, India – Lakhimpur and Dhemaji – under the Himalayan Climate Change Adaptation Programme. During that time, 45 vulnerable communities benefited from the advanced flood warning, which allowed them to move to higher ground and to protect valuable property like livestock.

In 2014, United Nations Convention on Climate Change's Momentum for Change 2014 Lighthouse Activity Award recognized this initiative as an example of effective climate action. The CBFEWS approach piloted under HICAP is now being implemented in Afghanistan and Nepal together with FOCUS Afghanistan

and with from ICIMOD's core funds and Nepal's Department of Hydrology and Meteorology/Community Based Flood and Glacial Lake Outburst Risk Reduction Project supported by Koshi Basin Programme, respectively.

"These [Lighthouse] activities are assisting communities, cities, businesses, governments, and institutions to move towards a low-carbon, highly resilient future."

Christiana Figueres
UNFCCC Executive Secretary



Using space-based data for Nepal's food security bulletin

Food security is an issue for mountain people across the Hindu Kush Himalayas, and lack of information on crops and droughts makes it difficult for farmers to plan effectively and policy makers to make evidence-based decisions. A new application created by ICIMOD adds a tool to the repertoire of ways to monitor drought and crop conditions, taking a solid practical step towards the overall goal of improving

agricultural management and resilience to climate change.

ICIMOD has been working with the Department of Agricultural Development in Nepal to develop geospatial tools and techniques to streamline drought and crop monitoring across the country. Using satellite imagery and different parameters – including drought and rainfall conditions, how different crops

are affected, and the amount of the crop area affected – ICIMOD has created an application that analyses agricultural conditions.

The application and related data are being taken into in-season crop status assessment reports by the Ministry of Agricultural Development and the World Food Programme to generate Nepal food security bulletins that are published on a quarterly basis.



Satellites provide a high-tech eye in the sky for traditional farmers on the ground, helping them to improve farm management and enhance food security.

Building resilient villages through climate smart technologies

Four villages in Kavre moved towards becoming 'climate smart' in 2014, with more following in the future as ICIMOD tracks their progress. The idea behind 'climate smart' villages is to build resilience and adaptation to climate change, a concept that has been successfully implemented elsewhere in the world, including Africa and other parts of South Asia. In 2014 ICIMOD adapted the concept for mountain communities and piloted it at several elevations.

The communities are being helped to become 'climate smart' along several measurable parameters: nutrient smart, to shrink use of pesticides and chemical fertilizers; water smart, to conserve water resources through methods such as irrigation ponds; crop smart, to test different varieties of crops and cropping patterns; energy smart, through practices such as mulching and biogas; and ICT smart, to use technology to benefit farming.

The action research, with trainings and other interventions in both the pilot villages and expanded sites, includes

a baseline study and measurements over time to determine the impact environmentally and economically. So far there has been a marked reduction of pesticide and chemical fertilizer use around participating villages, a finding confirmed in part by tracking sales of chemical products, which have dropped as farmers have been using biologically friendly alternatives. That's just one of many elements being analysed, which range from changes in nitrogen and phosphorus balance in the soil to patterns of water use to crop pricing.

One thing that certainly needs to happen for lasting impact is the economic benefits to farmers. If farmers can see clear benefits financially from making climate-friendly changes – from growing organic vegetables to using plastic irrigation ponds and utilizing information technology – those changes are liable to become established and the villages will have the kind of long-term resilience that makes them truly 'climate smart'.

If farmers can see the benefits of making climate-friendly changes, they are likely to contribute to the kind of long-term resilience that makes these communities truly 'climate smart'.



Promoting upstream-downstream linkages: A winning ingredient for local water use planning

Communities in the middle hills of Nepal are facing severe water shortages. Springs and stone spouts are drying up, traditional water collection points are being abandoned, and fetching clean water has become a daily struggle, especially for women. These groundwater resources are primarily fed by monsoon rains and replenished by

winter westerlies; however, they are poorly understood, insufficiently mapped, and lie in a limbo in matters of administration and conservation.

A 2013 pilot to understand the nexus between spring water dynamics and local water management provided valuable lessons on the causes of water

vulnerability, which stems not only from resource stress, development pressure, and ecological insecurity, but also the lack of local water management structures. The pilot also highlighted the need for national policies and programmes to recognize the specific water-related vulnerabilities of women and socially marginalized groups.

In 2014, this learning was applied to start changing the perceptions of local communities in Kavre District of Nepal toward water conservation and management and to improve water supply to about 500 households. Through partnership with 12 vulnerable village development committees and HELVETAS, and using ICIMOD research on water availability, local water use management plans were developed following a bottom-up approach. These plans are the first in Nepal to recognize the upstream-downstream linkages in local water use plans, and have empowered the local community to make decisions on how they use their water while appreciating the need for basin-wide water resource management.



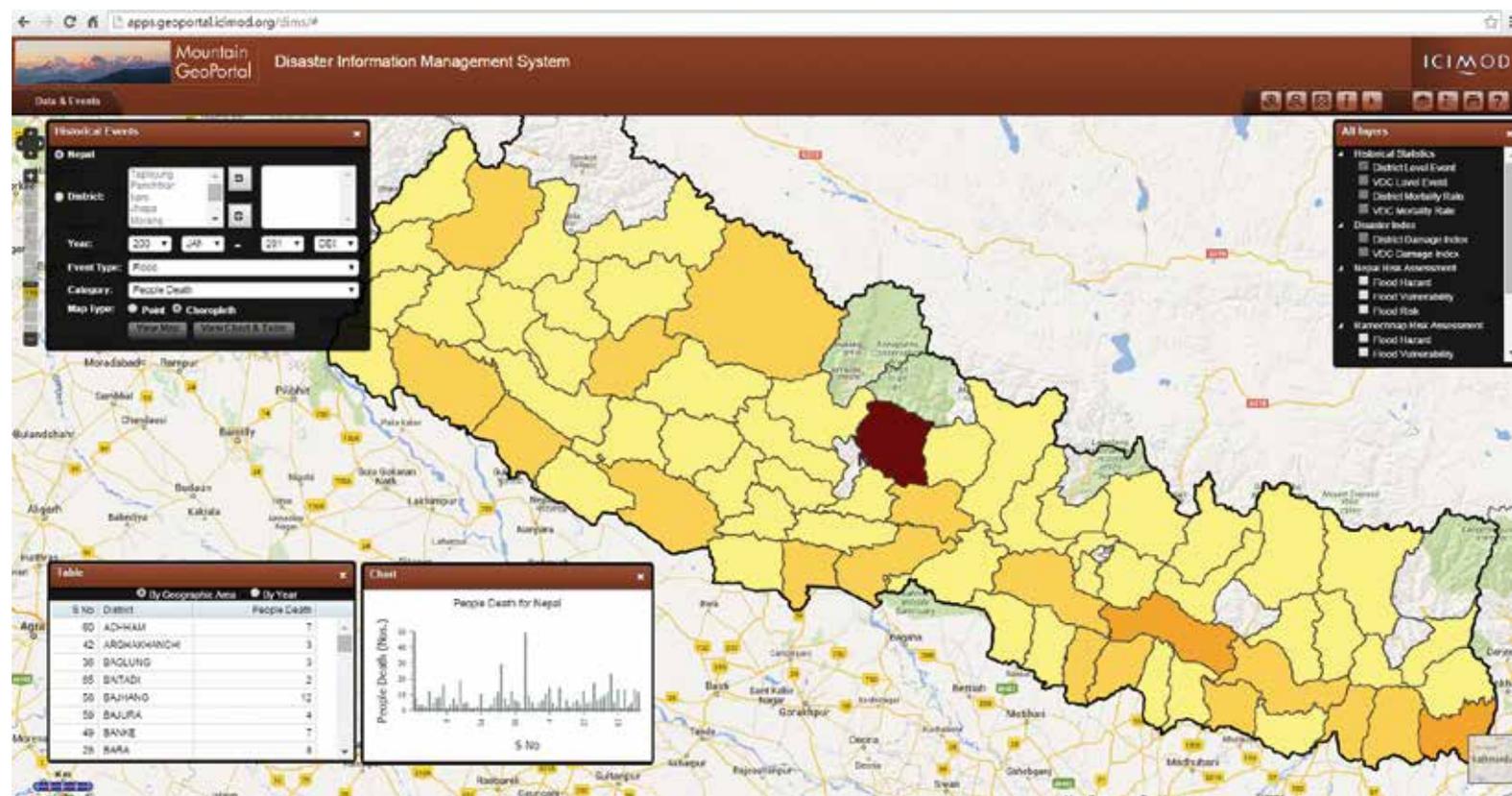
Red Cross and the Nepal Ministry of Home Affairs use disaster risk reduction platform

Whenever there's a disaster, Nepal's Ministry of Home Affairs collects the pertinent information: how many people were killed or injured, how many houses were damaged, the estimated economic losses, and other key data. But until now, this wealth of information has not been easily accessible to researchers or planners. There was no overall system to visualize the data in a map format and make it widely available.

Now there's a Disaster Management Information System (DIMS) developed with the ministry by ICIMOD that provides an online tool in the form of a multi-layered, data-rich map. It's an interactive way to access and view data on over a dozen types of events, such as droughts, floods and landslides, along with associated information such as fatalities and economic loss. Created under the framework of SERVIR-Himalaya, which aims to improve environmental decision making through technology and data dissemination, the interface lets users see historical disaster trends and access statistics, including a Disaster Damage Index.

Another web mapping application created and launched in 2014, the Multi-Level Flood Risk Assessment, displays the flood hazard, vulnerability, and risk for districts and village development committees. It's found on ICIMOD's Mountain GeoPortal website, along with the DIMS, which was also housed during 2014 on the website of the Ministry of Home Affairs.

This work is another step forward towards the overarching goal of integrating data for disaster management and risk reduction throughout the Hindu Kush Himalayas.



Using mobile technology to link farmers to markets

Weather reports, market rates, farming tips and news of government schemes have been coming to the mobile phones of 250 farmers from around 100 villages in Uttarakhand, India as part of a pilot to improve the livelihoods of marginal farmers by linking them more closely with value chains and information sources.

The weekly text updates are part of the Kailash Sacred Landscape Conservation and Development Initiative (KSLCDI). What's shared might be a report about heavy rainfall on the way, or suggestions to improve agricultural methods, or a notice on new government schemes with contacts and other practical information to help farmers utilize them. The current beneficiaries include farmers who are part of the initiative to grow and market

products from chyura, or Indian butter tree, a source for oil seeds, soap, honey, herbal lotions and other items. The State Government of Uttarakhand will be upscaling the pilot to further link farmers to markets.

Meanwhile in a related KSLCDI pilot in the Tibet Autonomous Region of China, local people are using a cell phone service to share information about opportunities in conservation and development. Using cell phones to improve access to information is turning out to be one practical way to bring marginalized farmers closer to markets and improve the long-term sustainability of livelihoods within the Kailash Sacred Landscape.

Cell phones are improving access to information on agriculture, markets, government schemes, and more for mountain farmers in rural parts of India.



Kiwi fruit takes root in Bhutan and Pakistan

Kiwis are a success story for ICIMOD in Nepal. Now they're on their way to farms in Bhutan and Pakistan, too. The sweet green fruit once known as the Chinese gooseberry grows wild in parts of the Hindu Kush Himalayas, but with its unusual fuzzy peel and specific cultivation methods, which require identifying male and female plants, grafting, and using a T-bar with a wire support structure, it was never very widely farmed or eaten.

But with its name changed to the more marketable 'kiwi', its popularity boomed in the West, and in 1999 ICIMOD began testing kiwi as a high value horticulture product at the Godavari Knowledge Park in Nepal. Success in testing was followed by promotion of the tasty and healthful fruit, and now kiwis are gaining popularity across much of Nepal's mid-hills, are found at many markets, and bring farmers NPR 400 to 600 (USD 4-6) a kilogramme.

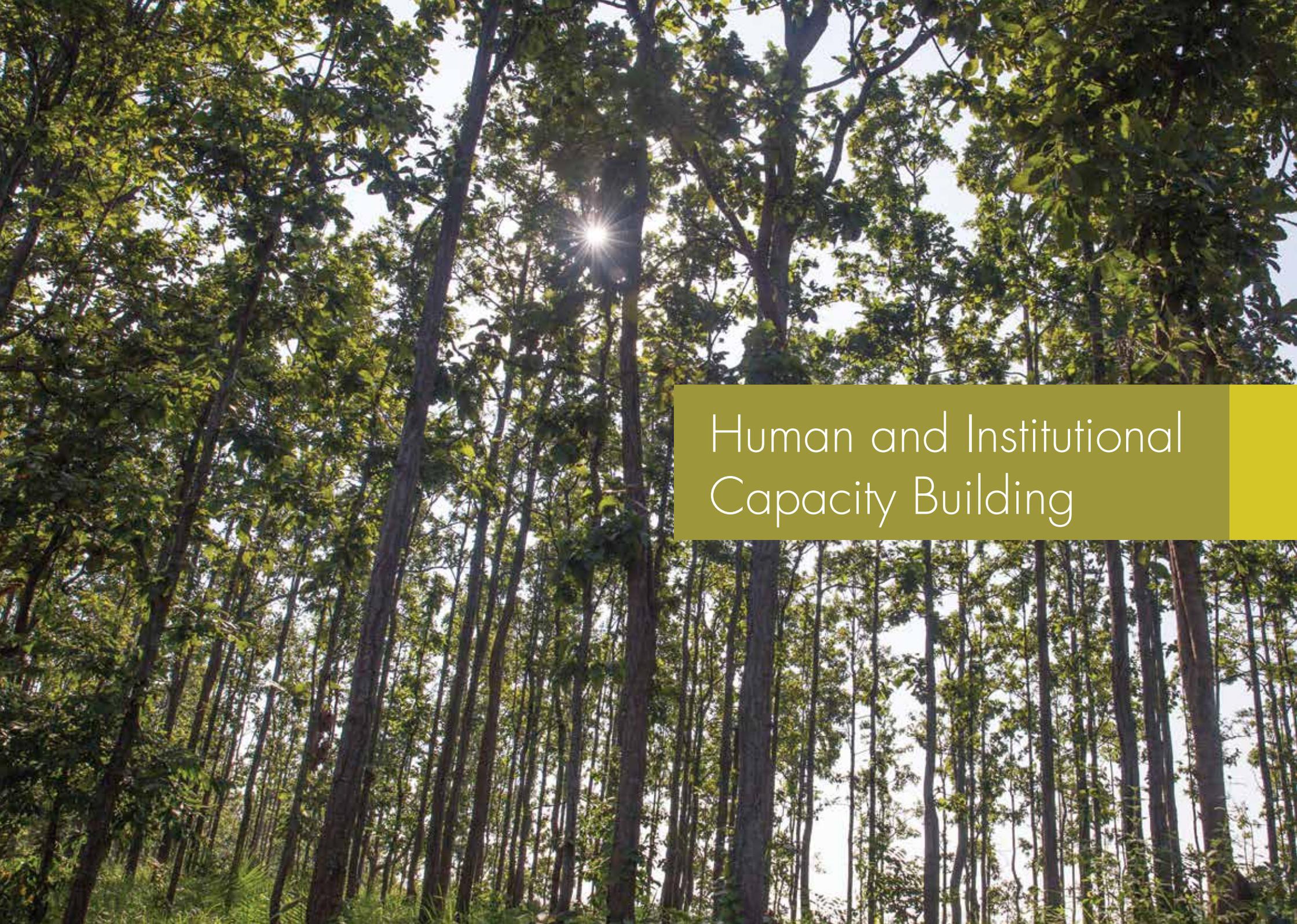
In other parts of the region, though, kiwis remained largely unknown. In 2014 the Government of Pakistan, seeing the potential for kiwi cultivation to improve

the livelihoods of mountain farmers, requested that ICIMOD train staff of the National Agricultural Research Centre (NARC) in Islamabad on kiwi cultivation, orchard establishment, and nursery propagation techniques. NARC was also provided with seeds and saplings and has begun tests at three sites in Pakistan with different conditions and elevations as a preparation for expanding cultivation.

Training on kiwi cultivation was also provided in Bhutan.

Soon the once-neglected wild fruit could be found on tables across the Hindu Kush Himalayas, and the sales of the high-value product can help farmers maintain a sustainable livelihood in the mountains.





Human and Institutional Capacity Building

Improving women's financial literacy for flood preparedness

In Lakhimpur District of Assam, India, as in much of the Hindu Kush Himalayan region, men increasingly leave the villages for work elsewhere. The women who remain on the farms are handling additional pressures and responsibilities – from disaster preparedness to food security to farm management – but are constrained by their lack of equal access to information, markets, extension services, and government programmes. Women need to acquire new skills, capacities, and knowledge as they step into leading roles in managing the challenges in their communities.

Gender-focused action research undertaken through the Himalayan Climate Change Adaptation Programme (HICAP), in partnership with the Institute of Integrated Resource Management (IIRM) and Swayam Sikshyan Prayog (SSP), helped to prepare women and their communities for challenges ranging from floods to personal finances. Two-hundred and forty women in eight villages of Assam's Lakhimpur District were trained in flood preparedness along with financial

literacy training that focused on how to effectively use remittance money to support flood preparedness and disaster risk reduction. The training also included valuable information on how to plan a monthly budget, save for the future, and use household income and remittances purposefully. Following the training, all of the participants opened personal

bank accounts in public banks with the objective of improving the management and effective use of their savings. Now their communities are better prepared for disaster and their families are better prepared for the future.



Considering gender to strengthen flood early warning systems

When flood waters rise, women in the Hindu Kush Himalayas are at greater risk of dying than men. Less access to information, resources, and training can combine with factors such as gender roles to increase the vulnerability of women during a disaster.

But as countries and communities employ flood early warning systems, are the

needs of women being addressed? How effective are these newly established systems at meeting the needs of both men and women? A 2014 study that assessed flood early warning systems in Nepal found that the tendency to treat disaster planning as “gender neutral” often means, in practice, that women’s perspectives are overlooked, making the system less effective than it could be.

An early warning system has four elements: risk knowledge, to ensure that people have concrete information about hazards; monitoring and warning services, such as operating equipment and monitoring hazards; communication and dissemination, including receiving the hazard warnings; and response capability, in terms of training on what to do.

The study, part of the HYCOS (Hydrological Cycle Observing System) Initiative to reduce flood vulnerability through a regional flood information system, looked at women’s inclusion on both national and local levels in all elements of the warning systems. On the national level, for instance at agencies

involved in risk reduction, women turned out to be involved in implementation – such as conducting training in the field – but not much yet in planning, designing, or monitoring.

Locally, women were often represented in committees, but participation in trainings and access to information remains a challenge. They still don’t engage much in monitoring activities, often don’t receive warnings as quickly as men, and may lack important risk information and response capabilities such as knowing safe places to run.

Flood early warning systems are saving lives, but integrating a gendered perspective could help them make an even bigger difference.



Promoting responsible tourism in the Kailash Sacred Landscape

For thousands of years, pilgrims from different faith traditions have made the journey to Mount Kailash to circumambulate the sacred mountain. In today's world, the route of the pilgrims, as well as tourists drawn by the ecological and cultural richness of the area, can involve three countries: China, whose Tibet Autonomous Region is the site of Mount Kailash, as well as adjacent districts in far-western Nepal and the northern Indian state of Uttarakhand.

Sustaining this landscape depends on the kind of regional cooperation embodied by the Kailash Sacred Landscape Conservation and Development Initiative (KSLCDI). Part of that involves the role played by visitors, who come from many countries and travel by the thousands through this fragile and unique landscape.

Responsible tourism guidelines, developed with the active participation of tour operators and other regional partners, began to be implemented in 2014. Disseminated partly through an illustrated booklet, the guidelines encourage the

responsible disposal of waste, help to keep streams free of pollutants, steer visitors away from bathing in Lake Manasarovar, protect artefacts such as yak horns and mani stones from the black market, and otherwise support tourism that is culturally and environmentally sensitive.

KSLCDI also contributed in India to a national dialogue on promoting

responsible tourism. The guidelines are being applied by regional tour operators, key points have been taken up by stakeholders, and documents have been shared with mountain states in India as the initiative moves forward to implement ecosystem-wide planning that can make an impact both within and across boundaries.



Supporting the adaptive capacity of women farmers

The fields are cracked and hardened, drying out faster than before, depleted of moisture and hard to break with only a plough. For rural women, it means longer hours of work and, with reduced or erratic rainfall, depleted water resources, and new pests that seem to come with the hotter summers, the end result of all that hard work is a less productive harvest. Even the development gains for women made in recent years seem to be eroding like the soil.

Women see the changes. They know that the spring water is drying, but what's happening? How can they conserve water? They see new pests, but how do they monitor them so that they can find practical interventions?

Ways need to be found to address the downward spiral that women are finding themselves in as a result of rapid environmental and socioeconomic change. ICIMOD recognizes that the women who live in the villages need to lead the process of finding answers, implementing solutions, and keeping it happening over the long run so that communities can adapt.

In-depth action research in partnership with the Center for International Climate and Environmental Research (CICERO) under the Himalayan Climate Change Adaptation Programme (HICAP) in Nepal's Kavre and Sindhuli districts pioneered a new methodology to enable local people to pinpoint gaps in their adaptive capacity and create micro-plans to address the problems in useful, actionable ways. It provides tools

that help women farmers ask targeted questions, find answers, and put the solutions into effect – in brief, to adapt to change.

They might, for instance, need to find ways for women to learn traditional knowledge that older male farmers once shared with their sons, who are now outside the village working as remittance labourers, but not with their daughter-in-laws, although it's the women who are now handling the farming. They might need to engage more with male-dominated local governance or institutional structures, such as agricultural extension services, and share knowledge with neighbouring villages.

At the end of the action research, community-level action plans were developed that led to successes in areas including veterinary services, water, and forest management. But perhaps most importantly, the skills gained in the process are strengthening the leadership and agency of local people, including women, as they prepare for a rapidly changing future.



Bhutan launches national geoportal with ICIMOD support

Data once buried in the files of more than a dozen agencies in Bhutan can now be shared and used easily from any computer thanks to the Bhutan Geospatial Portal, which was developed by ICIMOD and the Government of Bhutan and launched in October by Queen Jetsun Pema Wangchuk.

Do you need data on Bhutan's glaciers? What about forest fires, weather trends, land cover, the location of hydropower plants, or flood warning stations? A vast amount of data had been gathered by Bhutan's Center for GIS Coordination, a consortium of government agencies, but in the absence of an online data-sharing platform, it was hard to know what existed and who was producing it. Now it's all at the fingertips of government planners, researchers, and the public, who can use it for effective planning and to avoid duplication.

Even if data isn't online for instant downloading, information about the data (metadata) is available, along with contact information so that it can be requested. From wildlife corridors to

changes in the amount of land covered by grassland, conifers, or glaciers, data is either online for visualization or download or available by request.

In addition, online applications were added to help facilitate planning. For instance, a planner designing a farm road can now punch in a potential route into a mapping application and find out its slope and impact, such as how many properties it might go through.

The portal was developed by Bhutan's Center for GIS Coordination and National Land Commission under SERVIR-Himalaya, a collaboration between ICIMOD, NASA, and USAID. The portal is operated by the Government of Bhutan and will continue growing over time.

Next up: Nepal. ICIMOD is now bringing the user community together to incorporate data from Nepal into a similar geospatial portal.



ICIMOD kicks off ICT for Mountain Development Award

Information and communication technology (ICT) can play a crucial role in improving the lives and livelihoods of mountain communities. Recognizing this, ICIMOD organized the first ICT for Mountain Development award to bring attention to innovative uses of ICT to promote sustainable development in the Hindu Kush Himalayas. On International Mountain Day, 11 December 2014, four winners were announced: one from

India, two from Nepal, and one from Pakistan. Submissions were received under five categories – livelihoods, water, ecosystem services, geospatial solutions, and other – and came from individuals and organizations, including universities, INGOs, and projects funded by donors and governments.

In Pakistan, the impact of climate change on grazing communities was studied with GPS collars that function as data-loggers. The innovation, Geospatial Dataloggers for Monitoring Transhumance Grazing Patterns, provides a low-cost, power-optimized way to monitor seasonal herding movements in northern Pakistan. One model obtains geo-locations from GPS satellites and transmits it to a cell phone, while another saves information on removable cards. The idea came from a team at the Ghulam Ishaq Khan Institute of Engineering Sciences and Technology (GIKI).

The winner from India was The Inside Stories of Mountains, from Channel Mountain Communication (CMC), a development communication organization that generates and maintains digital

resources on the environment and development, cultural, and social issues and disseminates its work through television, radio, and social media.

In Nepal, a team of new engineering graduates created an SMS-based mobile system called ICT for Agriculture under the auspices of the Youth Council Civic Engagement Project to provide farmers with real-time information from fair market prices to traders' offers to weather and agricultural products.

Also in Nepal, a Web-based Inventory and Mapping of Irrigation Schemes provides detailed information on about 500 small farmer-managed irrigation schemes that have been built or rehabilitated as part of a project funded by the Swiss Agency for Development and Cooperation (SDC) and implemented by HELVETAS in collaboration with the Government of Nepal.

Stay tuned for the results of the next ICT Mountain Development Awards in 2015, when innovators will again be recognized by ICIMOD for their winning ideas.



ICIMOD celebrates partners and work in Bhutan, China, and Pakistan

ICIMOD Days in Bhutan, Pakistan and China gave national partners a chance to gather to share knowledge, strengthen their partnerships and discuss the alignment of sustainable development goals with national priority programmes.

By showcasing the partners' work, ICIMOD Days help to improve coordination, knowledge sharing, and visibility, setting the stage for greater impact. In each country, the events were attended by high-ranking government officials, donors, experts from local research institutions, ICIMOD Board Members, and representatives from ICIMOD's partners, who spoke about their ongoing activities, challenges and opportunities.

In Bhutan, participants shared information about rural livelihood and climate change adaptation, biodiversity conservation, establishing a climate observatory for air pollution monitoring and many other programmes.

In China, the first China-ICIMOD Day was expected to help expand the already

substantial number of partnerships between ICIMOD and national institutions. China is an active partner in various regional initiatives, including transboundary landscapes, river basin management, adaptation to change, rangeland resources management, air pollution and black carbon, geospatial solutions, livelihoods, and glacier monitoring.

"Bhutan's answer (to development challenges) is Gross National Happiness. The region's answer is ICIMOD. ICIMOD is important to the region, to our mountains, and to our people."

Prime Minister of Bhutan
Lyonchen Tshering Tobgay

In Pakistan, where ICIMOD has more than 25 partners, speakers stressed the importance of food and livelihood and mountain-specific development, saying that if the periphery mountain areas were strong, then the centre would be strong.

Himalayan University Consortium expands membership and drafts charter

At the annual meeting of the Himalayan University Consortium (HUC) in August 2014 in Lanzhou, China, discussion between representatives from member universities provided valuable insight on how to strengthen the consortium and widen the scientific academic network for sustainable mountain development. As a part of this discussion, the HUC Charter was developed and the consortium's first five-member interim steering committee was appointed,

including Prof. Long Ruijun of Lanzhou University, China; Dr Bahadar Nawab Khattak of COMSATS, Pakistan; and Prof. Ashok Gurung of the India-China Institute at the New School, USA. During the first meeting of the steering committee in November, the HUC Charter was finalized for signing by vice chancellors and heads of HUC member institutions and 13 new members joined the consortium.



Putting Science and Data to Use

Research provides insight on the future flow of Himalayan rivers

Despite retreating glaciers, the amount of water supplied by the Himalayas is likely to remain stable or increase in the coming decades, according to cutting-edge research from ICIMOD and partners at FutureWater and Utrecht University published in *Nature Climate Change*. The study used a new model to study the entire river basin of the Indus, Ganges, Brahmaputra, Salween, and Mekong rivers in unprecedented detail, and provided insight on how climate change will alter river flow in the next three decades.

Until at least 2050, the study found, higher temperatures will mean more meltwater in the Indus basin and increasing precipitation in other basins.

Undertaken under the Himalayan Climate Change Adaptation Programme (HICAP), the research has improved understanding of the future water supply and seasonal distribution of water in these rivers, and will be important in shaping climate change adaptation policy to protect people and their livelihoods in the countries surrounding these basins.

A new study provides insight on how climate change will alter the flow of the region's rivers, which will help shape climate change adaptation policy to protect people and their livelihoods.



Responding to disasters: Understanding the Jure landslide

When a roughly one-kilometre stretch of mud and rocks poured off a hillside in Nepal's Sindhupalchowk District in August 2014, the landslide left 156 people dead and blocked the Sunkoshi River, drowning the area overnight in a vast lake. The lake could easily burst its landslide dam at any time and send torrents of water rushing downstream to drown even more villages and people.

ICIMOD reacted by activating the International Charter on Space and Major Disasters, a mechanism through which to gain free access to satellite data, and quickly accessed high-resolution images that were used to create maps outlining the flooded areas. It also was able to access data from the network of hydrological monitoring stations upgraded by the Government of Nepal through the HKH-HYCOS Initiative to reduce flood vulnerability through a regional flood information system. The data told a perilous story. The newly formed lake was 3 km long, and the estimated 6 million cubic metres of material had formed a dam 409 metres long and 55 metres high that was impounding some 8 million cubic metres of water.

Immediately after the disaster, ICIMOD prepared a preliminary assessment of the situation based on satellite imagery and other secondary sources, which was widely disseminated through the website. The findings were shared with a wide user group – including Nepal's Ministry of Home Affairs, the Department of Water Induced Disaster Prevention, Save the

Children, and the national security forces – to expand situational awareness of the event and support their operations.

Experts from ICIMOD also went quickly to the landslide site to conduct a rapid assessment with other teams from the Disaster Preparedness Network-Nepal (DPNET), returning later for further assessment of the physical processes and socioeconomic dynamics. The research, informed by earlier photographs of the landslide site that indicated the coming danger, has led to articles for scientific and popular media. Most of the lake was eventually drained after more than a month of work by the Nepal Army to dig a controlled canal through the blockage.

When a massive landslide buried a community, dammed a river, and created a dangerous lake that could burst any time, ICIMOD had the scientific tools and expertise to help out.



Linking ecosystems and social vulnerability

How can the assessment of ecosystem services improve people's lives? In a community in Udayapur District, Nepal, it inspired local people to make a change that is already restoring ecosystem health.

The site was a village in a landslide-prone area with degraded forests, scanty groundcover, and a lot of cattle and goats nibbling the vegetation clean. Chosen for action research as a next step in ICIMOD's work in assessing ecosystem services, the community worked with ICIMOD and partners to identify key issues and propose ways to enhance the environment and minimize the social vulnerability that stems from loss of ecosystem services.

Some of the steps that residents determined would be helpful for future resilience included planting fodder vegetation to keep up with demand, expanding plantation in landslide-prone areas, minimizing the pressure on the forest for fuelwood by using improved cookstoves, and starting kitchen gardens for home consumption and cash. Working with government agencies, including

those overseeing forestry and agriculture, and learning about ecosystem restoration through exposure visits, the community members found ways to implement their envisioned changes.

The most dramatic transformation: the village decided to ban open grazing. When goats and cattle graze in the forest, new saplings and vegetation can be destroyed. With 35,705 saplings of 16 different species of fodder and tree species distributed by and planted in degraded forest areas, along river banks and in home gardens, the community decided to protect the investment in the future by controlling grazing.

Regeneration has begun coming in and newly planted areas are thriving. Meanwhile people are generating income through diversified vegetables, including profitable crops like garlic, and nourishing crops with vermicomposting, the use of worms to produce compost.

The changes are now visible in Rauta, Udayapur. Dependency on the forest is reduced, household earnings are

expanding, ecosystem health is improving – and along with that, a community's vulnerability to environmental and socioeconomic change has been reduced in ways that can serve as a model for others in the region.



Real-time data supports flood monitoring in the Koshi basin

Floods are already an all-too-common natural disaster that aggravates poverty in the Hindu Kush Himalayas, and their frequency and magnitude are likely to continue or worsen due to climate change.

The risk of floods is particularly acute in the Indus and Ganges-Brahmaputra-Meghna (GBM) basins, home to over 600 million people and almost half of

the world's poor. The need to understand and address flooding in this populous transboundary area reinforces the importance of regional cooperation and capacity development in flood forecasting and early warning systems.

The HKH-HYCOS Initiative has focused on the establishment of a regional flood information system and methodologies to obtain real-time hydrological and meteorological observations. Beginning in 2009, it has been implemented by ICIMOD jointly with the World Meteorological Organization (WMO) and partners from the regional member countries of Bangladesh, Bhutan, China, India, Nepal, and Pakistan.

During the 2014 monsoon season, a pilot Regional Flood Outlook was set up for the Ganges and Brahmaputra basins. A hydrologic and hydrodynamic model was developed, calibrated, and validated using Mike 11, a computer software for modelling complex river channel networks, including flood modelling.

The model produced three-day flood outlooks – at 24, 48 and 72 hours – for

21 sites in the Ganges and Brahmaputra basins. A flood situation was correctly estimated for the period of 14 to 16 August 2014 in various river basins, including the Koshi at Chatara, the Karnali at Chisapani, and the Narayani at Devghat in Nepal when intense rainfall occurred across the Himalayas. ICIMOD provided the flood outlook for various locations in Nepal to the Department of Hydrology and Meteorology (DHM).

Based on the flood outlook, DHM prepared a flood bulletin and disseminated warnings to the Ministry of Home Affairs in Nepal and issued a statement on its website. This allowed for the warnings to be widely disseminated for better flood preparedness when the water levels in the various rivers crossed the alert and danger levels and widespread flooding occurred. Based on its strong performance during the pilot phase, the regional flood outlook is being further improved to develop more reliable and accurate forecasts.



Understanding emissions sources

To reduce air pollution, we need to know what the emissions are, what's producing them, and where they originate. For instance, if we know how much of Kathmandu's air pollution consists of carbon monoxide emitted by motorcycles in Lalitpur District, or how much black carbon is pumped into the air of the Indian state of Bihar by brick kilns, then steps can be taken to reduce those pollutants.

Yet a systematic inventory of emissions doesn't yet exist for countries in the Hindu Kush Himalayas. One member country, China, recently had its government start tabulating emissions, while other countries in the region only have pieces of data collected by universities or research organizations or scattered among various government reports. But while the existing data may include a high level of detail about source activity, such as the truck loads of coal burned in brick kilns in the Kathmandu Valley, a key piece of information is often missing: The emission factor, which tells us how many grams of pollutants are burned per litre of fuel in the specific context of the region.

Without that information for local sources, emissions are often calculated by plugging in the best available emission factor from North America or Europe. Yet a motorcycle in Lalitpur or a diesel-powered groundwater pump in Bangladesh isn't necessarily emitting at the same rate per litre of fuel as a similar product elsewhere, where a different brand may be used under different conditions. There are also sources such as a garbage fires that aren't an issue in developed countries.

ICIMOD's Atmosphere Initiative has been addressing this data gap in collaboration with a team of scientists from five universities in the United States, co-funded by the US National Science Foundation and ICIMOD, which did extensive preparation in 2014 to take field measurements of emissions sources unique to the Hindu Kush Himalayas. The new emissions sources will feed into improved emissions inventories, which can be input into air quality models to simulate the effects of different controls on ambient air quality. Understanding the quantitative links between emission

sources and impacts will help to ensure that effective measures and policies can be adopted to reduce air pollution across the region.



Winter fog study initiated in Bangladesh, India, Nepal, and Pakistan

Fog is a natural phenomenon, but it typically clears when the sun comes up. In the last two decades, however, dense winter fog has begun to linger for days or weeks without a break across large regions of the Indo-Gangetic Plain, magnifying winter cold waves and leading to crop loss, road accidents, air traffic disruptions, illnesses, and deaths. The fog also stabilizes the lowest part of the atmosphere so there is less vertical mixing and air pollutants stay near the ground.

In 2014, scientists from five member countries – Bangladesh, Bhutan, India, Nepal, and Pakistan – developed a research plan and launched an intensive two-winter study of the science, impacts, and policy aspects of the phenomenon, with ICIMOD playing a coordinating role.

There is no scientific consensus on the cause of the increase, but there are a number of solid leads. Fields are being burned for clearing in new and different ways. Coal-fired power plants and brick kilns spew more pollution into the air. There has been an increase in the emission of particulates, including ones around which water vapour can condense into droplets. Meanwhile, an increase in winter irrigation could be leading to more moisture in the lower part of the atmosphere. There may also be subtle changes in the Western Disturbances, mid-latitude weather systems that carry water vapour from the Mediterranean and drop it over South Asia as winter precipitation. But what role do these factors and others play, and what is their interplay?

The 2014–2015 pilot study initiated research with activities with selected partners that will then be extended into a full-scale study in the winter of 2015–2016 involving ground-based observations at over 15 sites, satellite data analysis, meteorological models, community-based research, and a Winter Fog App being developed by the IT team at ICIMOD.

The persistent winter fog is a transboundary atmospheric issue that impacts the lives and livelihoods of hundreds of millions of people across the region. Physical and social scientists are working together to gain a better understanding of why it has increased, what its impacts are, and how changing pollution emissions and agricultural practices may be contributing to it.



Exploring new ways to monitor the snow and glaciers in the Hindu Kush Himalayas

When a layperson pictures the impact of climate change on glaciers, it might be a mass of ice that simply retreats, covering less and less ground. That sounds fairly simple to measure, but that's not how glaciers work. They're always gaining mass through snowfalls and avalanches, and always losing mass through melt.

To complicate matters, a glacier is constantly flowing downhill. That's the nature of gravity. When glacier melt rates are high, the terminus may retreat. But melt can also result in glacier thinning, which really only becomes obvious if changes in elevation can be observed. The type of glacier also matters. A debris-covered glacier, for instance, will lose mass irregularly. Ice cliffs form and collapse, surface lakes fill and drain, and the ice thins in unpredictable ways.

To capture those changes, scientists can employ increasingly sophisticated methods. ICIMOD is now building its in-house capability with geodetic techniques, which involve comparing highly detailed imagery from satellites and unmanned aerial vehicle (UAVs), creating elevation

models of a glacier for different points in time, and estimating the total surface lowering and volume change.

Global expert Tobias Bolch of the University of Zurich came to ICIMOD in January to provide training in geodetic mass balance techniques to scientists from ICIMOD's member countries, and the doctoral students who accompanied him stayed for an additional month to work intensely with ICIMOD staff. ICIMOD has now acquired high-resolution imagery to enable scientists to do geodetic mass balance analyses for Rikha Samba Glacier and the Hidden Valley, north of Dhaulagiri, in Nepal.

In 2014 ICIMOD also conducted the first ever application of UAV monitoring of glaciers in the Hindu Kush Himalayas, mapping the Lirung and Langtang glaciers to learn more about how debris-covered glaciers change and move. Langtang is the Langtang Valley's biggest glacier; Lirung is smaller but well studied, with significant data from earlier years for comparison. A paper has already been published in *Science* on the first results from the ongoing study.

As a general rule, it's known that glaciers in the region are retreating and shrinking. But the picture is complex, with more shrinkage in the east and more stability west and north in the Karakoram Range, where shrinkage may be offset to some extent by greater snowfall. A lot more needs to be known across the region, and UAV monitoring and geodetic mass balance techniques put new tools into ICIMOD's toolbox.



Supporting the development of a cleaner cookstove network in Nepal

The Government of Nepal has announced an ambitious goal. By 2017, all kitchens should be free of indoor air pollution. That goal has given an impetus to organizations to test and distribute a variety of cookstoves that are intended to be cleaner than traditional stoves.

But which stove designs are the best? At least 70% of Nepal's population cooks

with biomass such as fuelwood, and given the levels of poverty and lack of resources, that won't change any time soon. Simply replacing one type of biomass-burning stove with another won't necessarily solve the problem of smoky kitchens, which disproportionately impact women's health. Nor will the distribution of clean stoves help if they're not user-friendly enough to become popular or be used correctly.

In the past, the emphasis has been on designing stoves that burn less wood. But while that can help conserve forests and saves time for the women who collect fuelwood, those stoves don't always reduce indoor air pollutants, such as black carbon, a known carcinogen. Black carbon results from incomplete combustion, so part of the solution is to design stoves that burn fuel more completely, such as with a built-in fan. But for the goal of smoke-free kitchens to succeed, stoves need to be both technically and culturally appropriate.

ICIMOD is meeting the challenge by harnessing the creativity of eco-friendly innovators. A competition to design and develop economically and environmentally viable cookstoves using solid biomass fuel and suited to different regions of Nepal was jointly organized with the Government of Nepal's Alternative Energy Promotion Centre and drew about 40 entries. Twenty-three designs from the Biomass Cookstove Design Competition – the designs that tested well on black carbon emissions and met with approval from women users, who felt they could actually use them– were selected in 2014 for further testing and potential upscaling.



Generating evidence on migration and climate change to support effective policy

To what extent do the stresses of climate change add to the decision of so many young people to migrate as labourers, leaving mountain villages for years at a time? And when they return with remittance money or send it home to families, to what extent could that hard-earned cash be helping people and communities to adapt?

Migration is only now starting to be incorporated into the discussion on climate change. There is still a knowledge gap about the link between the issues, and also a policy gap on how, for instance, to channel remittances to support adaptation. Both of those elements are now being addressed by ICIMOD through high-level discussions and on-the-ground studies in five countries.

In 2014, when the Government of Nepal through the Ministry of Labour and Employment published its yearbook on migration, ICIMOD provided the text on migration and climate change. That led to more action, including a round table jointly organized by the Nepal

Planning Commission, ICIMOD and the International Organization for Migration (IOM) as a step towards a formal policy position.

But before policies can be crafted, there needs to be evidence of what's happening on the ground to determine what would be useful and workable. So 2014 found ICIMOD conducting studies in China and India and launching them in Nepal and Pakistan, with a smaller exploratory study in Bangladesh.

The aim is to learn how people are using or not using remittances and skills from migration to react to climate change stress; whether there are ways for households to leverage that money into adaptive practices; and how that can be linked both with government policies and programmes such as livelihood enhancement.

Work in China and India was part of HICAP (Himalayan Climate Change Adaptation Programme), while in Nepal, India and Bangladesh, it's under the auspices of Himalica. A complex regional

issue calls for cross-cutting programmes that can span boundaries and disciplinary areas to generate solid information for policy makers, and that's what's happening through ICIMOD's work on climate change and migration.



A shepherd wearing a red headscarf and a dark jacket stands on a grassy hillside, herding a large flock of sheep. The sheep are of various colors, including white, black, and brown. The background features a vast, rugged mountain range under a cloudy sky. A yellow rectangular overlay is positioned in the upper right corner of the image.

Policy Influence

Special attention on mountain food security in Pakistan policy

Mountain communities across the Hindu Kush Himalayas rely heavily on the local resource base for livelihoods and food security. But farmers who coax food from the mountains face a daunting mix of challenges: fragile environments, physical isolation, low productivity, limited access to markets, and high vulnerability to disasters and climate change. As a result, food insecurity is often more severe in the mountains than in other parts of countries in the region.

The mountains of Pakistan are no exception. Given the different nature of food production in the mountains compared to the plains – and the different causes of food insecurity – it's important to integrate a mountain perspective into national planning. ICIMOD provided key observations and recommendations into Pakistan's draft Agriculture and Food Security Policy. With ICIMOD's knowledge incorporated in the policy, it will make a stronger contribution to enhancing food security in Pakistan's mountain areas, stimulate discussion on food security issues in the mountains, and contribute to finding solutions that improve the lives and livelihoods of Pakistan's mountain farmers.

Food insecurity is often more severe in the mountain than in other parts of the region, so incorporating a mountain perspective into agriculture and food security policy is important for long-term resilience.



Destination Management Plan developed for Inlay Lake, Myanmar

Flat-ended canoes glide over the shimmering waters of Myanmar's upland Inlay Lake, the distinct one-legged paddling style of the local fishermen guiding them past a tranquil scene of Buddhist temples, stilt-perched homes, wildlife such as herons, and, increasingly, tourists who come to enjoy the enchanting blend of nature and culture. The rapid rise of tourism has created a need for improved tourism planning.

In 2014, ICIMOD provided support to the Ministry of Hotels and Tourism to develop a Destination Management Plan for the Inlay Region based on the results of action research on the involvement of hill communities in tourism. The Destination Management Plan (DMP) was officially launched at the national level by the Union Government of Myanmar in October 2014.

As the first DMP under Myanmar's Tourism Master Plan, it will serve as an example for other destinations in the country and across the region. Currently being implemented by Shan State authorities and civil society and development partners, it includes the establishment of a Destination Management Organization, which is setting up community-run homestays in nine villages along a trekking trail.

ICIMOD's involvement in developing sustainable tourism practices in Myanmar has been extended with a request by the Ministries of Hotels and Tourism and of Environmental Conservation and Forestry to support the development of a national Ecotourism Policy and Management Strategy for Protected Areas, which will complement the Myanmar Tourism Master Plan with approaches for tourism in protected areas. The work is strongly founded on action research and policy development support provided by ICIMOD's Himalica Initiative in collaboration with Myanmar partners and is being taken up in other countries in the region.



Supporting improved policies on non-timber forest products in Nepal

Non-timber forest products in the Hindu Kush Himalayas – like dyes, fibres, and medicinal and aromatic plants – are largely mountain-based and wild. In Nepal, they play an important role in the local and national economy.

Although a policy on non-timber forest products (NTFP) was developed in 2004 to recognize the importance of these products, there were gaps on how to commercialize them and link them to markets. In 2014, ICIMOD joined with the Department of Plant Resources and national partners to provide support to address these gaps by analysing current policy, identifying gaps, facilitating stakeholder engagement and cross learning, and supporting policy dialogue. Now the existing NTFP policy has been revised and submitted to the government for approval. ICIMOD is also supporting the development of other policy instruments in Nepal, including a management directive on the high-value caterpillar fungus yarshagumba (*Cordyceps sinensis*) and a national bill on access to genetic resources.

ICIMOD also joined hands with national partners to support the Ministry of Forests and Soil Conservation in formulating a national policy framework on payment for ecosystem services (PES) by supporting national dialogue and expert meetings. A draft PES policy document was prepared and submitted to the Ministry of Forests and Soil Conservation.

Mountain people gather many valuable products, from forests. Improved policies on non-timber forest products could help link rural communities to markets.



Ecosystem services assessments provide evidence for environmental action by local governments in Bhutan, Myanmar, and Nepal

If rural people had to buy the fuelwood they use, it would cost NPR 150 (about USD 1.50) for each headload. If annual household income is estimated at USD 1,100 and a household uses one headload a day, the forest ecosystem provides the equivalent of nearly half the family's annual income – and that's just from free fuelwood.

When translated into monetary terms, about 75% of household income in

parts of rural Nepal is coming from the ecosystem. That was part of the findings in the transdisciplinary assessment of the links between ecosystem services and livelihoods developed by ICIMOD and its partners, which is now being used by local governments in Bhutan, Myanmar, and Nepal.

The Ecosystem Services Assessment Framework looks at four values: social, to analyse the level of community

dependency; ecological, to see the broader picture of what is provided, from wildlife habitat to fresh air; cultural, to recognize the use of sacred plants, trees, groves and streams in daily cultural practice; and monetary, to grasp what all this means for people's incomes.

What is the current state of the ecosystem? How is it providing services, how is this changing and what are the consequences? The methodology devised and applied by ICIMOD and shared with experts, policy makers, and researchers addresses those key questions in a standardized way to allow an integrated picture to emerge that can inform management decisions on local, national, and regional levels.

It also provides a powerful evidence-based argument for environmental preservation. Presented with data that shows how much of household 'income' comes free from the ecosystem, it becomes clear that for many people, the ecosystem and its natural capital is a crucial piece of the economic machinery of daily life. To maintain it isn't a luxury. It's a practical matter of economic, community, and cultural survival.



Bhutan includes beekeeping in 11th Five Year Plan

Bhutan is a Buddhist country where many people are uncomfortable with traditional methods of beekeeping, which require taking the comb out and squeezing it to remove the honey, killing some of the bees and brood.

New management techniques, such as those shared by ICIMOD in 2014, can offer alternatives that help make beekeeping a viable livelihood option for mountain farmers while meeting the strong demand in Bhutan for honey, which isn't being fulfilled by traditional methods of beekeeping. Promotion of beekeeping is now included in Bhutan's Five Year Plan, its national economic plan, and the Minister of Agriculture invited ICIMOD to equip key extension officers as trainers in improved management methods for the country's indigenous honeybee, *Apis cerana*.

ICIMOD is helping to build capacity and resources for Bhutan's newly established National Centre for Small Ruminants and Apiculture by providing beekeeping equipment and training the officers in bee management, queen rearing,

management and control of bee diseases, pest and predators, and bee flora and pollination management. The trainers were also taken on exposure visits to bee farms and enterprises in Nepal. The programme drew the attention of His Royal Highness Prince Jigyel Wangchuck, who sent two candidates to the training, as did the Prime Minister of Bhutan.

The programme builds on ICIMOD's years of research and development in beekeeping across the Hindu Kush Himalayas, including pioneering work on indigenous mountain honeybees and pollination, and helps to disseminate scientific knowledge and locally tested experience more widely across the region for the benefit of mountain farmers.



Strategic partners and global science and development leaders visit ICIMOD

The president of the Chinese Academy of Sciences (CAS), the administrator of the US Agency for International Development (USAID), and the president of the Indian National Science Academy (INSA) were among the strategic partners and global science and development leaders who came to ICIMOD during the year to strengthen collaboration and discuss topics of shared concern for sustainable mountain development.

In February, USAID Administrator Dr Rajiv Shah came to ICIMOD to experience firsthand the dynamic interactive tools developed as part of the USAID-funded SERVIR Himalaya Initiative, which enables ICIMOD scientists to use NASA's satellite data to help monitor the environment and inform decision-making. Those tools include the Forest Fire Detection and Monitoring System for Nepal, which can be used to improve the ability to respond to forest fires; Agricultural Monitoring to Support Food Security in the Eastern Himalayas, which can estimate crop yields to enable countries to avoid famine; and the project on Glacier and Alpine Hazards to Development and Habitation in the Hindu Kush Himalayan Region, which identifies areas at risk for landslides, avalanches, rockfalls and glacial lake outburst floods.

In April, CAS President Prof. Bai Chunli and an eight-member Chinese delegation visited ICIMOD to formalize the ongoing cooperation between China's national academy for natural sciences and ICIMOD. A memorandum of understanding was signed to

work together to expand scientific understanding of climate change in the Hindu Kush Himalayas, including research on cryosphere and atmospheric monitoring; high-altitude wetland and river systems; climate change and anthropogenic impacts; ecological monitoring and assessment; and policy outreach and promotion of the Mountain Agenda at regional and global forums.

Also in April, a delegation led by INSA President Prof. Raghavendra Gadagkar came to ICIMOD for a guest lecture, 'War and Peace: Conflict and Cooperation in an Insect Society'. The specialist in animal behaviour, ecology, and evolution has published over 250 research articles and two books and has held a number of distinguished positions on national and international professional scientific bodies and government and non-government advisory committees.

The meetings and associated discussions and panels highlight ICIMOD's ongoing engagement with key international partners for research, knowledge sharing, and a better future for the Hindu Kush Himalayas.





Regional Cooperation

China, India, and Nepal come together to tackle erosion in the Koshi River basin

Each year in the Koshi River basin, the monsoon washes up to 135 million tonnes of sediment into the rivers and down to the Gangetic Plain, where it's deposited on the flat riverbeds. Over time, the riverbeds rise, which prompts them to divert and meander into new, easier paths, which can be dangerous for nearby communities. The Koshi River has moved around 115 kilometres westward in the past two centuries, eroding farmlands,

washing away crops and displacing many people in its wake.

A basin-wide study started in 2014 is looking at the causes of land degradation and impacts of erosion and sediment in relation to water-related hazards across the Koshi basin, bringing together cross-border expertise from the three Koshi basin countries of China, India, and Nepal.

The project will not only expand understanding of erosion and sedimentation in the basin, but sets an example of regional science collaboration on environmental challenges. Though the study will continue until 2017,

advances have already been made. Land use researchers have produced a paper and series of maps that detail soil loss over a 20-year span, and have marked out conservation priority areas for future management, mostly in Nepal and the Tibet Autonomous Region of China. Researchers involved have come from Nepal's Department of Hydrology and Meteorology, the Indian Institute of Technology (IIT)-Kanpur, and the Institute of Geographic Sciences and Natural Resources Research (IGSNRR) of the Chinese Academy of Sciences.

The project's goal is to create transboundary knowledge around erosion and sediment dynamics in the Koshi basin that will help in designing sustainable management and hazard mitigation plans in the future. Proper management requires an understanding of where sediment comes from and how it's distributed on a basin-wide level. This knowledge equips planners to design stable water channels and dams, promote smart soil conservation practices, and encourage irrigation schemes that lessen erosion and help the region to avoid future disasters.

The project expands understanding of erosion and sedimentation while setting an example of regional science collaboration on environmental challenges.



Research framework helps standardize long-term environmental and socioecological monitoring in the region

ICIMOD and its partners in the Hindu Kush Himalayan region have developed a research framework to guide and standardize long-term environmental and socioecological research. The framework will help improve understanding of changes to the biodiversity of the Hindu Kush Himalayas, the drivers of these changes, and the consequences of these changes on human wellbeing in the region.

By encouraging research institutions, organizations, and individual experts across disciplines to work together, it will support a more holistic understanding of the dynamic mountain ecosystems of the Hindu Kush Himalayas and provide support for evidence-based decision making in the region. The framework, developed in partnership with the United Nations Environment Programme's World Conservation Monitoring Centre (UNEP-WCMC), encourages experts in the Hindu Kush Himalayas to work on long-term collaborative assessment and monitoring programmes in line with rapidly growing international research networks such as Global Observation Research Initiative

in Alpine Environments (GLORIA), International Long Term Environmental Research (ILTER), and Global Earth Observation Biodiversity Observation Network (GEO-BON). The framework is already being put to use by ICIMOD's partners through its transboundary landscape initiatives.

The framework will improve understanding of changes to biodiversity and encourage research institutions, organizations and experts to work across disciplines for a holistic understanding of mountain ecosystems.



Moving toward implementation in the Kangchenjunga, Karakoram-Pamir, and Far-eastern Himalayan transboundary landscapes

An ecosystem doesn't necessarily follow national and administrative boundaries. Wildlife migrates without regard to borders. Plant species have niches that observe scientific rather than geopolitical outlines. People, too, may have cultures and ways of interacting with the environment that aren't captured by political maps.

All of that makes conservation of transboundary landscapes a challenge,

one that ICIMOD is addressing with three new initiatives modelled on the already established Kailash Sacred Landscape Conservation and Development Initiative (KSLCDI). These new initiatives made substantial progress in 2014 towards ultimate implementation.

At the eastern edge of the Hindu Kush Himalayas, the Landscape Initiative for Far-Eastern Himalayas – Hi-LIFE, formerly the Brahmaputra-Salween Landscape

Conservation and Development Initiative – covers an area where China, India, and Myanmar meet. The first phase of establishing a transboundary landscape is for each country to conduct its own feasibility study, and in 2014, Hi-LIFE took the next step by consolidating the three feasibility studies into one regional report, enabling the area of the zone to be finalized for conservation and development interventions. That was followed by preparation of the regional cooperation framework, strategies to enable conservation, development and monitoring, and a regional consultation to develop a five-year implementation plan.

The Kangchenjunga Landscape Initiative also made significant strides in 2014. This landscape spans parts of Bhutan, India, and Nepal around the southern flank of Mount Kangchenjunga, where tigers, snow leopards, red pandas, and Asian elephants roam through one of the world's most critical centres for biodiversity. It moved forward with the consolidation of the three country feasibility studies into a single regional report – the same process followed in



the other initiatives – and then, with all member countries on board, launched work and created final drafts on the conservation and development strategy, regional cooperation framework, and implementation plan.

Furthest to the west is the Karakoram-Pamir Landscape along the China-Pakistan border, where the old Silk Road winds through the Karakoram

and Pamir mountains. In 2014 ICIMOD supported the development of a rangeland policy for Gilgit-Baltistan, the Pakistani province that includes part of the landscape; produced a book, “Understanding the Karakoram Pamir Landscape”; worked on analysing macro-fauna and watershed health through activities such as a baseline study and inventory of key species and their use; and



facilitated documentation of regional flora, medicinal plant biodiversity and traditional knowledge. A major community-to-community exchange was also organized between Gilgit-Baltistan in Pakistan and the Taxkorgan Nature Reserve in China.

With significant parts of the groundwork laid for transboundary cooperation, the three initiatives – Hi-LIFE, Kangchenjunga, and Karakoram-Pamir – are moving steadily towards implementation, which will bring more effective protection to fragile and complex mountain landscapes that span borders.

ICIMOD initiates Himalayan Monitoring and Assessment Programme

The Hindu Kush Himalayas is a critical global asset where huge gaps remain in knowledge and data – or often, even where knowledge exists, in its wider availability.

In its continuing effort to identify and address critical data gaps, ICIMOD has launched a long-term project to coordinate the publication of a book to provide a thorough and wide-ranging

evaluation of the state of knowledge in the region, “Comprehensive Assessment of the HKH Region: Action to Sustain Global Asset”.

The Hindu Kush Monitoring and Assessment Programme (HIMAP), which will continue to conduct a series of assessments every few years after the initial publication, is designed to help fill a need for regional data identified by the Intergovernmental Panel on Climate Change (IPCC), the scientific intergovernmental body whose work supports the United Nations Framework Convention on Climate Change (UNFCCC).

The initial research, assessment and compilation project, slated for publication in 2016, will describe the drivers of change, discuss their impacts, and provide recommendations that help make data relevant to policy makers. Chapters will be reviewed by global experts, and key messages will be synthesized as separate publications, giving the information multiple channels for communication.

Facilitated by ICIMOD with support from the Skoll Global Threats Fund and the Climate Research Foundation, the regional initiative is modelled in many ways on the Arctic Monitoring and Assessment Programme (AMAP), which assesses pollution and climate change, documents trends, and produces documents to inform decision making and policies on the Arctic region.

The process of applying this extensive monitoring and assessment concept to the Hindu Kush Himalayas – where it will also engage with livelihood and other socioeconomic issues – moved ahead in 2014 with the formation of the steering committee, the organization of thematic workshops, and the identification of lead authors, contributors, coordinators and reviewers. The result will be a key contribution to generating regional knowledge and filling data gaps in the Hindu Kush Himalayas.



ICIMOD Regional Database System launched

ICIMOD and its partners collect enormous amounts of data in the process of implementing their initiatives and programmes. But where does the data go afterwards, and how can future researchers, whether in ICIMOD or the general public, have access to it to generate more knowledge?

ICIMOD's Regional Database System now makes this wealth of data available for download. It's a central repository for data developed by ICIMOD and its partners in the course of research for numerous initiatives, so the content ranges from GIS remote sensing data to biodiversity information to socioeconomic surveys to much more, and can be found in tabular or spatial forms. Much of it is easily downloadable, and if it's not, the metadata is listed so that users can see what data is available and find the contact information to request access to the data.

The Regional Database System, developed by ICIMOD's Mountain Environment Regional Information System (MENRIS) programme, was launched on 10 November by Kjell Tormod Pettersen,

Ambassador of Norway to Nepal. Even in its first 50 days of operation, the fledgling system had 512 data downloads. That's around one download for every hour of the working day. Data about the Hindu Kush Himalayas that could once have been found mainly in project files and library documents is now being put to work daily by researchers in the region and around the world.



“This system will help improve research, support policy, and, ultimately, benefit the people and environments of the Hindu Kush Himalayan region.”

Kjell Tormod Pettersen
Norwegian Ambassador to Nepal





Global Engagement

Adaptation needs highlighted at annual conference

Science and traditional knowledge must become better integrated to support mountain communities in adapting to change, global experts from a range of disciplines concluded during a November conference to map ways to improve adaptation in the mountain region.

Science, policy, and practice came together during the four-day conference, which brought together more than 300 experts, scientists, policy makers, government representatives, high-level dignitaries, journalists and practitioners from 22 countries. It was jointly organized by ICIMOD and Nepal's Ministry of Science, Technology and Environment.

The mountains were described as upstream early warning systems that raise the alarm about risks for downstream communities. The conference addressed the challenges of forging bridges between scientists, policy makers and practitioners, including rural communities with local knowledge.

Participants in the conference, 'Mountain People Adapting to Change: Solutions

Beyond Boundaries Bridging Science, Policy and Practice', developed a list of actions needed to support adaptation to change. Key messages and outcomes were taken forward by participants in regional adaptation efforts and global forums, including COP 20 in Lima, Peru in December 2014, and will inform adaptation actions around the world and in the Hindu Kush Himalayas.

"The region may be data deficient, but it's not knowledge deficient. We need to harness our own knowledge and transform this into action."

Conference participant Anil Sinha
Bihar State Disaster Management Authority



Raising the Mountain Agenda at the UNFCCC conference in Peru

ICIMOD helped to draw global attention to climate change in mountain areas at the 2014 United Nations Climate Change Conference in Lima, Peru.

Representatives from mountainous Least Developed Countries raised a common voice for the mountains and the need for an equitable share of global climate funds to address the impacts of climate change at COP 20, the 20th Conference

of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC).

ICIMOD also highlighted the issues with a high-level side event, 'Changing Climate in the Mountains: How Least Developed Countries are Coping and Planning Long-Term Responses', organized jointly with the Government of Nepal's Ministry of Science, Technology and Environment.

It brought together government delegates from Nepal, Bangladesh, Bhutan and Uganda, as well as representatives from the UNFCCC Secretariat, Swiss Agency for Development and Cooperation (SDC), and ICIMOD for a discussion on challenges, progress, needs and solutions.

Among the issues raised was the need for investment in mountain areas to foster livelihood-based adaptation strategies that increase the income and resilience of mountain people, as well as the need to expand disaster preparedness, support the knowledge base and build cross-border collaboration.



Transboundary landscape approach highlighted at CBD COP 12

The Convention on Biological Diversity (CBD) is a multilateral treaty to help develop national strategies for the conservation and sustainable use of diversity. Launched at the 1992 Rio Earth Summit, it has been signed and ratified by most of the world's countries, including ICIMOD's eight regional member countries, and these parties meet every two years to review progress and set new priorities.

At the twelfth meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP 12) in Pyeongchang, Republic of Korea, ICIMOD participated as an observer, as it has regularly since 2004, contributing expertise in mountain biodiversity through side events, meetings, interactions and delegation support.

Its contributions included a side event on 'Opportunities and Challenges in Conserving Transboundary Landscapes in the Hindu Kush Himalayas', exploring the implementation of CBD through initiatives such as the Kailash Sacred Landscape, Kanchenjunga Landscape, Karakoram-

Pamir Landscape, and Far-eastern Himalayan Landscape.

These initiatives connect closely to CBD through their priorities – the conservation of biodiversity, sustainable use of its components, and equitable sharing of benefits – as well as the use of an integrated ecosystem approach within a framework of regional and bilateral cooperation.

ICIMOD's work and expertise were also shared through a sideline meeting to share learning from the Hindu Kush Himalayan region and explore collaboration, an exhibition booth drawing 1,500 visitors, and support for the Nepal delegation in preparing Nepal's position on various agenda items related to mountain issues.





Special issue in Mountain Research and Development

A special ICIMOD-led issue of the international journal *Mountain Research and Development (MRD)* focused attention in 2014 on the relationship between gender and development in the Hindu Kush Himalayas and around the world.

“Gender and Sustainable Development in Mountains: Transformative Innovations, Tenacious Resistances” (Vol. 34, No. 3 Special Issue, August 2014) included papers, a book review and an editorial by ICIMOD staff, along with articles from researchers in other mountain ecosystems, including Europe and South America.

The papers from ICIMOD experts were “Business as Unusual: The Potential

for Gender Transformative Change in Development and Mountain Contexts”, “Gender Equality Challenges to the REDD+ Initiative in Nepal”, and “Gender Equality as a key strategy for Achieving Equitable and Sustainable Development in Mountains: The case of the Hindu Kush-Himalayas”; a review of a recently released book, *High Altitude Rangelands and Their Interfaces in the Hindu Kush Himalayas*; and an editorial, “Special Issue: Gender and Sustainable Development in Mountains-Transformative Innovations, Tenacious Resistances.”

MRD provides open access to its content to make research freely available to the public, especially to developing countries.

ICIMOD invited as lead author on Intergovernmental Platform on Biodiversity and Ecosystem Services

ICIMOD experts are playing a role in bringing scientifically credible and independent information on biodiversity to decision makers through the new intergovernmental body for assessing the planet’s biodiversity, the Intergovernmental Policy Platform on Biodiversity and Ecosystem Services (IPBES).

This platform for the international community is designed to support implementation of the Convention on Biological Diversity (CBD) in a way analogous to the work of the Intergovernmental Panel for Climate Change (IPCC), which provides science-based assessments to support the United Nations Framework Convention on Climate Change (UNFCCC). In the case of the IPBES, the charge is to assess biodiversity, ecosystems and ecosystem services. ICIMOD has been awarded observer status at IPBES, a status it also has at CBD.

There are numerous topics to be addressed in this vast project – from land degradation to invasive species,

from food production to methodological tools – and ICIMOD professionals have been selected for involvement with several aspects. That includes being part of the review process for pollination studies, contributing to capacity development modules and serving as lead author for a section on building capacity for developing, interpreting and using scenarios and models. ICIMOD’s expertise is helping to inform the international community’s dialogue – and ultimately its action – on biodiversity and ecosystem services.

ICIMOD’s expertise is helping to inform the international community’s dialogue – and ultimately its action – on biodiversity and ecosystem services.

Climate+Change gets moving

After the success of Climate+Change in Kathmandu, the exhibition opened in September 2014 for a year-long stay at the International Mountain Museum in Pokhara, Nepal. The exhibition, which was jointly organized by ICIMOD, GlacierWorks, and the International Mountain Museum with support from the US Embassy of Kathmandu covered the issues of air, water, and ice, and how the effects of climate change on these important resources affect communities across Nepal.

The exhibition was designed with photo. circle and Thinc Design, and featured imagery from GlacierWorks founder and renowned mountain filmmaker David Breashears, which was brought to life on an interactive touch screen developed by GlacierWorks and Microsoft Research. The first three months of the exhibit in Pokhara saw over 90,000 visitors. The exhibition was complemented by a targeted arts and education programme, which engaged school administrators and teachers and students of Class 7 in Kaski District to support the Nepal Government's initiative to introduce a

revised curriculum on climate change. It included exhibition tours, art workshops, teacher/student seminars, and two public art residencies, which produced a kinetic sculpture on upcycling and an illustrated children's book.

The next stop for Climate+Change is India, where it will travel across the Indian Himalayan Region, collecting stories and working with communities to share the challenges and opportunities they face in a rapidly changing environment, as well as highlighting local solutions. These stories will be showcased in various forms in communities across the Indian Himalayan region, as well as state capitals and in the national capital, Delhi.



ICIMOD knowledge at your finger tips

Updates on ICIMOD's current activities and its 30 years of knowledge documented as good practices, success stories, and appropriate technologies are now being made available in a convenient mobile application with features to comment or to give feedback and even to rate them.

Check upcoming events, read about recent field trips, and browse ICIMOD's newest research publications all with

the swipe of a finger. The application, which was launched in September 2014, is set to be developed over the coming year to further improve access to current knowledge on the Hindu Kush Himalayan region in the hopes that it can be put to use by researchers, policy makers, and practitioners in the region and around the globe. The application can be downloaded on both the Google Play and iTunes App stores.

ICIMOD Partners (in 2014)

Afghanistan

Ministry of Agriculture, Irrigation and Livestock (MAIL), Kabul (Focal Point)

Aga Khan Foundation, Kabul

Focus Humanitarian Assistance (FOCUS), Kabul

Kabul Polytechnic University, Kabul

Kabul University (KU), Kabul

Ministry of Energy and Water, Kabul

National Environmental Protection Agency (NEPA), Kabul

Wakhan Ulaswali, District Government (WU), Kabul

Wildlife Conservation Society (WCS), Kabul

Bangladesh

Ministry of Chittagong Hill Tracts Affairs, Dhaka (Focal Point)

Arannayk Foundation (AF), Dhaka

Bangladesh Agriculture Research Council, Dhaka

Bangladesh Centre for Advanced Studies (BCAS), Dhaka

Bangladesh Meteorological Department (BMD), Dhaka

Bangladesh Space Research and Remote Sensing Organization, Dhaka

Bangladesh University of Engineering and Technology (BUET), Dhaka

Bangladesh Water Development Board (BWDB), Dhaka

Center for Environmental and Geographic Information Services (CEGIS), Dhaka

Centre on Integrated Rural Development for Asia the Pacific (CIRDAP)

Coastal Forest Division, Dhaka

Ethnic Community Development Organization (Eco Development), Bandarban

Green Hill, Chittagong

Institute of Water Modelling (IWM), Dhaka

Local Government Engineering Department, Dhaka

Ministry of Disaster Management and Relief, Dhaka

Ministry of Environment and Forests (MoEF), Dhaka

Ministry of Water Resources (MoWR), Dhaka
Parbattya Jumia Rehabilitation and Environmental Conservation (PAJURECO), Khagrachari

Refugee and Migratory Movements Research Unit, Dhaka

Soil Resource Development Institute, Dhaka

University of Chittagong

University of Dhaka, Dhaka

Bhutan

Ministry of Agriculture and Forest, Royal Government of Bhutan (Focal Point)

Gross National Happiness Commission (GNHC), Thimpu

Bhutan Chamber of Commerce and Industry
Center for Bhutan Studies, Thimpu

Center for Climate Change and Spatial Infrastructure (CCCSI), Sherubtse College
Trashigang

Department of Disaster Management (DDM), Thimpu

Department of Energy, Thimpu

Department of Forests and Park Services, MAF, Thimpu

Department of Geology and Mines, Thimpu

Department of Hydro-met Services (DHMS), Ministry of Economic Affairs, Thimpu

Forest Resource Management Division, Thimpu

Ministry of Economic Affairs (MEA), Thimpu

National Environment Commission (NEC), Thimpu

National Statistical Bureau (NSB), Thimpu

Royal Society for the Protection of Nature (RSPN), Thimpu

Royal University of Bhutan (RUB), Thimpu

SAARC Forestry Centre, Taba, Thimpu

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

Thimphu IT Park / Data Center, Thimpu

Ugyen Wangchuk Institute for Conservation and Environment (UWICE), Thimpu

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Chinese Academy of Sciences (CAS), Beijing
(Focal Point)

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University (AIRC), Kunming

Chengdu Institute of Biology (CIB), CAS,
Chengdu

China Metrological Administration (CMA), Beijing

Chinese Academy of Sciences (CAS), Beijing -
Focal Agency

Cold & Arid Regions Environmental &
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CAS, Lanzhou

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Resources Research (IGSNRR), Beijing

Institute of Global Environmental Strategies
(IGES), Beijing

Institute of Mountain Hazards and Environment
(IMHE), Chengdu

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Chengdu

Sichuan University, Chengdu

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Tibet Academy of Agriculture and Animal
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Tibet Meteorological Bureau, Lhasa

UNIDO International Solar Energy Center for
Technology Promotion and Transfer

United Nations Office for Outer Space Affairs,
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Beijing

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(XIEG), Urumqi

Yunnan Academy of Forestry Sciences (YAFS),
Yunnan

Yunnan Academy of Social Sciences, Kunming

Yunnan Agriculture University

Yunnan Institute of Environmental Science,
Yunnan

Yunnan Normal University, Yunnan

Yunnan University, Yunnan

India

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AN Sinha Institute of Social Studies (ANSISS),
Bihar

Aajeevika, New Delhi

Aaranyak, Assam

Appropriate Technologies, Uttarakhand

Aryabhata Research Institute of Observational
Sciences (ARIES), Nainital



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 Department of Forest, Government of West Bengal
 Department of Forests, Government of Arunachal Pradesh
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 Himalayan Action Research Center (HARC), Dehradun
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 Indian Institute of Science (IISc), Bangalore
 Indian Institute of Science Education and Research (IISER), Mohali
 Indian Institute of Technology Kanpur (IIT), Kanpur

Indian Institute of Tropical Meteorology (IITM), Pune
 Indian Space Research Organization, Bangalore
 Institute of Economic Growth, University of Delhi Enclave (IEG), Delhi
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 National Institute of Disaster Management (NIDM), New Delhi
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 Swayam Shikshan Prayog, India
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 Uttarakhand Livelihood Improvement Project, Dehradun
 Uttarakhand Organic Commodity Board
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 Wildlife Institute of India (WII), Dehradun

Myanmar

Ministry of Environmental Conservation and Forestry, Yangon (Focal Point)
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 Department of Meteorology and Hydrology
 Ministry of Hotels and Tourism, Nya
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 Myanmar Survey Research (MSR), Yangon
 Relief and Resettlement Department, Nay Pi Taw
 University of Forestry, Yezin
 Wildlife Conservation Society (WCS), Nay Pi Taw
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 Bird Conservation Nepal (BCN), Kathmandu
 Center for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED)
 Central Bureau of Statistics (CBS), Kathmandu
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 Centre for the Study of Labour and Mobility (CESLAM), Kathmandu
 Climate Alliance for Himalayan Communities (CAHC), Kathmandu
 Dabur Nepal Pvt. Ltd, Kathmandu

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 Kathmandu
 Department of Forests, Kathmandu
 Department of Hydrology and Meteorology
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 Department of Irrigation (DOI), Kathmandu
 Department of Livestock Services, Kathmandu
 Department of National Parks and Wildlife
 Conservation (DNPWC), Kathmandu
 Department of Plant Resources, MFSC,
 Kathmandu
 Department of Water Induced Disaster
 Prevention (DWIDP), Kathmandu

Environment Division, MoFSC
 Environmental Camps for Conservation
 Awareness (ECCA), Kathmandu
 Environmental Resources Institute (ERI)
 Federation of Community Forestry Users Nepal
 (FECOFUN)
 Federation of Nepalese Chambers of
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 Forest Action, Kathmandu
 Forest Resource Assessment (FRA), Kathmandu
 HELVETAS Swiss Interco-operation Nepal
 (HELVETAS), Kathmandu
 Himalayan Cryosphere, Climate and Disaster
 Research Center (HiCCDRC), Kathmandu
 Himalayan Women Welfare Society,
 Kathmandu

Institute of Forestry (IOF), Kathmandu
 Integrated Development Society Nepal (IDS
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 Koshi Victims Society (KVS)
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 Ministry of Forests and Soil Conservation
 Ministry of Science, Technology and
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 Nabil Bank Private Limited, Kathmandu
 National Association of Village Development
 Committees in Nepal (NAVIN), Kathmandu
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 National Society for Earthquake Technology-
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 (SOHAM), Kathmandu
 South Asia Partnership International
 South Asian Network for Development and
 Environmental Economics, SANDEE,
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 Meteorology, Tribhuvan University (CDHM,
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 Water and Energy Commission Secretariat
 (WECS), Kathmandu
 Women Organization for Change in
 Agriculture and NRM (WOCAN),
 Kathmandu
 World Wildlife Fund (WWF), Kathmandu

Pakistan

Ministry of National Food Security and Research, Islamabad (Focal Point)

Aga Khan Rural Support programme (AKRSP),
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 Bio-inspired Simulation & Modeling of
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 Pakhtunkhwa Province
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 Pakistan National Planning Commission

Pakistan Space and Upper Atmosphere
 Research Commission (SUPARCO)
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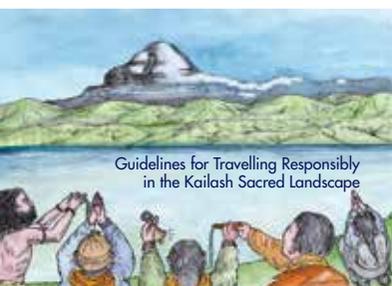
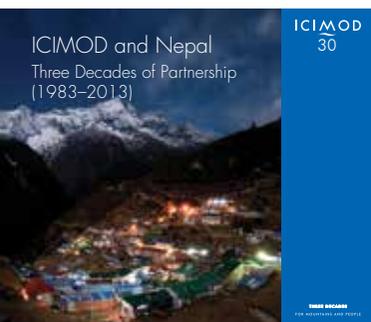
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 Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES)
 Regional Mountain Centre of Central Asia
 StatKraft, Norway
 SN Power, Norway
 Swedish International Development Cooperation Agency (SIDA)
 Swiss Agency for Development and Cooperation
 Swiss Federal Institute of Technology Zurich, (ETH), Switzerland
 The Consortium for the Sustainable Development of the Andean Ecoregion (CONDESAN), Peru
 The International Mountain Society (IMD), Switzerland
 The Stockholm International Water Institute, (SIWI), Sweden
 United Nations Environment Programme (UNEP)
 United Nations Environment Programme (UNEP)/GRID-ARENDAL, Norway
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 University of Washington, USA
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 USAID/Development Alternatives, Inc.
 USAID/ National Aeronautics and Space Administration
 Wageningen University (WU), the Netherlands
 World Conservation Monitoring Center, UK
 World Meteorological Organisation (WMO), Switzerland

ICIMOD Publications

From ICIMOD

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 Himalayan region.



Books and Booklets

Glacier status in Nepal and decadal change from 1980 to 2010 based on landsat data 100pp Bajracharya, SR; Maharjan, SB; Shrestha, F; Bajracharya, OR; Baidya, S ISBN 978 92 9115 311 4

Research insights on climate and water in the Hindu Kush Himalayas 180pp Vaidya, RA; Sharma, E (eds) ISBN 978 92 9115 296 4

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Special publication

ICIMOD and Nepal: Three Decades of Partnership (1983–2013) ISSN: 978 92 9115 309 1

ICIMOD working papers

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Research reports

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Electronic publications

Learning on reducing emissions from deforestation and forest degradation. Proceedings of the regional workshop held 24 to 27 July 2012 in Kathmandu 113pp Karki, S; Joshi, L; Karki, BS ISBN 978 92 9115 303 9

General publications

Annual Report 2013

Godavari Butterflies: A basic photo guide to identify butterflies found at ICIMOD Knowledge Park Godavari Butterflies photo guide

Godavari Dragonflies: A basic photo guide to identify dragonflies found at ICIMOD Knowledge Park Godavari Dragonflies

Guidelines for Travelling Responsibly in the Kailash Sacred Landscape

Himalica Annual Report 2013: Rural Livelihoods and Climate Change Adaptation in the Himalayas

Ecosystem Services Assessment: A Framework for Himalica

Information sheets/flyers

Forest Fire Detection and Monitoring System – Nepali

Regional Database System

ICIMOD Knowledge Park at Godavari

Opportunities and Challenges in Conserving Biodiversity in Transboundary Landscapes for Sustainable Development in the Hindu Kush Himalayas : COP 12 Side Event Side event flyer

Transboundary Cooperation in the Hindu Kush Himalayas: Integrating biodiversity management with holistic development

SERVIR-Himalaya: Connecting Space to Village

Mapping Land Cover Changes (updated)

Forest Fire Detection and Monitoring System (updated)

Geo-enabled Information for Disaster Risk Reduction (updated)

Operational Multi-Scale Forest Biomass Assessment Using Satellite Remote Sensing (updated)

Agricultural Monitoring to Support Food Security Decision Making in Nepal (updated)

Enhancing Resilience and Supporting Adaptation of Mountain People: ICIMOD's strategy for delivering impact

Community-Based Flood Risk Management: Himalayan Climate Change Adaptation Programme (HICAP) – Chinese Version

HICAP Flyer – Chinese Version

Koshi Basin Programme – Chinese Version

Atmosphere Initiative (updated)

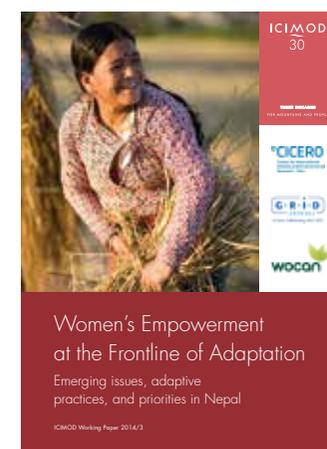
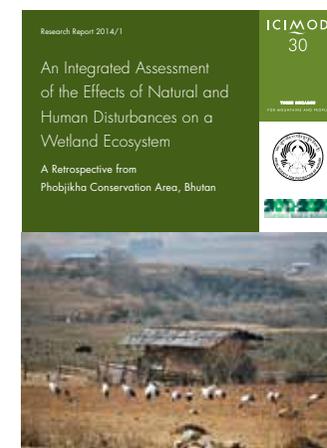
Mountain People Adapting to Change: Solutions Beyond Boundaries Bridging Science, Policy, and Practice - International Conference Kathmandu, Nepal 9–12 November 2014

Karakoram-Pamir Landscape Initiative: Promoting transboundary cooperation between China and Pakistan for the Karakoram-Pamir landscape

Himalayan Climate Change Adaptation Programme (HICAP): Emerging Evidence of Change for Policy and Action (updated)

Videos

Adaptation Learning Highways, Duration: 17.54 mins



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ICIMOD Board of Governors 2014

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Deputy Minister of Irrigation and Infrastructure, Ministry of Agriculture, Irrigation and Livestock

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Bhutan



Dasho Tenzin Dhendup
Secretary, Ministry of Agriculture and Forest

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Mr Ashok Lavasa
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Vice Chairman, National Planning Commission, Government of Nepal

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Ambassador Embassy of Switzerland

ICIMOD Support Group

The Director General of ICIMOD is a member of the ICIMOD Board of Governors Ex-officio

ICIMOD Staff 2014

Directorate

Molden, David
Sharma, Eklabya
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Shrestha-Rajbhandari, Ritu M

Strategic Planning, Monitoring and Evaluation

Ahmad, Farid
Basnyat, Ayushma RL
Kadel, Lalu Maya
Shah, Ghulam Muhammad

Strategic Cooperation

Pathak, Santosh Raj
Shakya, Naina Rana
Tandukar, Pramod
Thapa, Samjhana Rana

REGIONAL PROGRAMMES

Adaptation to Change

Choudhury, Dhrupad
Agrawal, Nand Kishor
Holmgren, Erling-Valdemar
Pradhan, Monika
Shrestha, Krishna
Syangden, Bhawana

Transboundary Landscapes

Kotru, Rajan
Chettri, Nakul
Ismail, Muhammad
Rai, Himaa
Rasaily, Rekha
Shakya, Bandana
Singh, Bhaskar

River Basins

Shrestha, Arun Bhakta
Bajracharya, Nani Keshari
Khadgi, Vijay
Prakash, Anjal
Shrestha, Govinda
Shrestha, Mandira Singh
Wahid, Shahriar

Cryosphere and Atmosphere

Ghale, Neetu
Manandhar, Liza
Mool, Pradeep K
Panday, Arnico K

MENRIS

Bajracharya, Birendra
Pradhan, Sudip
Shrestha, Anjeli

HUC

Gurung, Dipshikha

THEMATIC AREAS

Livelihoods

Rasul, Golam
Banerjee, Soumyadeep
Bisht, Suman
Dorji, Tashi
Ghate, Rucha
Gurung-Goodrich, Chanda
Gurung, Min Bahadur
Hussain, Abid
Joshi, Surendra Raj
Mahapatra, Bidhubhusan
Pant, Basant
Partap, Uma
Seddiqi, Omaid Najmuddin
Sharma, Bikash
Shrestha, Anu Joshi
Shrestha, Mamata
Subedi, Nani Ram
Tuladhar, Sabarnee
van Strien, Marjorie
Zhang, Jifei

Ecosystem Services

Wu, Ning
Aryal, Kamal Prasad
Bhatta, Laxmi Dutt
Bisht, Neha
Gentle, Popular
Gurung, Janita

Joshi Rijal, Srijana
Kandel, Pratikshya
Karki, Seema
Phuntsho, Karma
Pradhan, Nawraj
Rana, Pradyumna J.B.
Shrestha, Prabha
Soe, Paing
Sohail, Muhammad
Wang, Jinniu
Yi, Shaoliang

Water and Air

Mukherji, Aditi
Adhikary, Bhupesh
Bajracharya, Sagar Ratna
Bhave, Prakash
Dangol, Pradeep Man
Dhakal, Madhav Prakash
Joshi, Sarita
Joshi, Sharad Prasad
Nepal, Santosh
Pradhan, Bidya Banmali
Puppala, Siva Praveen
Rai, Sundar Kumar
Shea, Joseph
Shrestha, Rajendra Bahadur
Shrestha-Pradhan, Neera
Stumm, Dorothea
Surapipith, Vanisa
Wester, Philippus

Geospatial Solutions

Murthy, MSR
 Ali, Amm Mostafa
 Bajracharya, Rajan
 Bajracharya, Sameer
 Bajracharya, Samjwal Ratna
 Bhandari, Shova
 Dangol, Gauri Shankar
 Dhonju, Hari Krishna
 Gilani, Hammad
 Gurung, Deo Raj
 Joshi, Govinda
 Maharjan, Sudan Bikash
 Matin, Mir
 Pradhan, Suyesh
 Qamer, Faisal Mueen
 Shakya, Kiran
 Shrestha, Finu
 Uddin, Kabir
 Wesselman, Sebastian
 Zhang, Jianqiang

Knowledge Management and Communication

Rasmussen, Anja Moller
 Acharya, Gopilal
 Bajracharya, Jitendra Raj
 Dangol, Bikash

Gurung, Nira
 Jha, Anil Kumar
 Khatri, Shiva Hari
 Maden, Utsav
 Maharjan, Dharma Ratna
 Manandhar, Bindiya
 Mishra, Udayan
 Pandey, Sushil Raj
 Pradhan, Punam
 Sellmyer, Amy
 Sharma, Bishwonath (Sudas)
 Sherchan, Ujol
 Sherpa, Samden Lama
 Shrestha, Subasana
 Tamang, Jiwan
 Tandukar, Deependra
 Thaku, Asha Kaji
 Thapa, Ram Sharan

Administration and Finance

Amatya, Shree Mani
 Bajracharya, Pramila
 Bajracharya, Narendra
 Chitrakar, Indu
 Dabas, Rahul
 Jirel, Birkha Bahadur
 Kansakar, Chandra Bir Singh
 KC, Rishi

KC, Dhruva
 KC, Sudama
 Magar, Bishnu
 Maharjan, Chini Kaji
 Maharjan, Kishore
 Maharjan, Krishna
 Maharjan, Ram
 Mali, Rajendra Prakash
 Manandhar, Prem Krishna
 Pradhan, Pallavi
 Pradhan, Saisab
 Rana, Ganga Bahadur
 Ranjit, Rabindra
 Sadashankar, Pashupati
 Segaar, Liesbeth
 Shahi, Rajani
 Sharma, Achala
 Sharma, Yuvraj
 Shrestha, Kishore
 Shrestha, Kiran Man
 Shrestha, Mohan Krishna
 Shrestha, Nabindra Raj
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 Singh, Sabak Kumar
 Subedi, Jai Bahadur
 Tamang, Mik Mar
 Thapa, Chomu Prerna

Thapa, Rekha Khatri
 Thapa, Shambhu
 Vaidya, Jenny

Visiting Scientist/Advisor

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 Jodha, Narpat S
 Kargel, Jeffery S
 Kniven, Dominic
 Mobarak, Ahmed
 Mohtadullah, Khalid
 Pellicciotti, Francesca
 Rupakheti, Maheshwor
 Vaiyda, Ramesh
 Wagnon, Patrick

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Jasra, Abdul Wahid (Pakistan)
 Rezai, Jawid Ahmad (Afghanistan)

SANDEE

Shyamsundar, Priya
 Joshi, Malvika
 Kafle, Anuradha
 Lohano, Heman Das
 Nepal, Mani
 Pradhan, Neesha



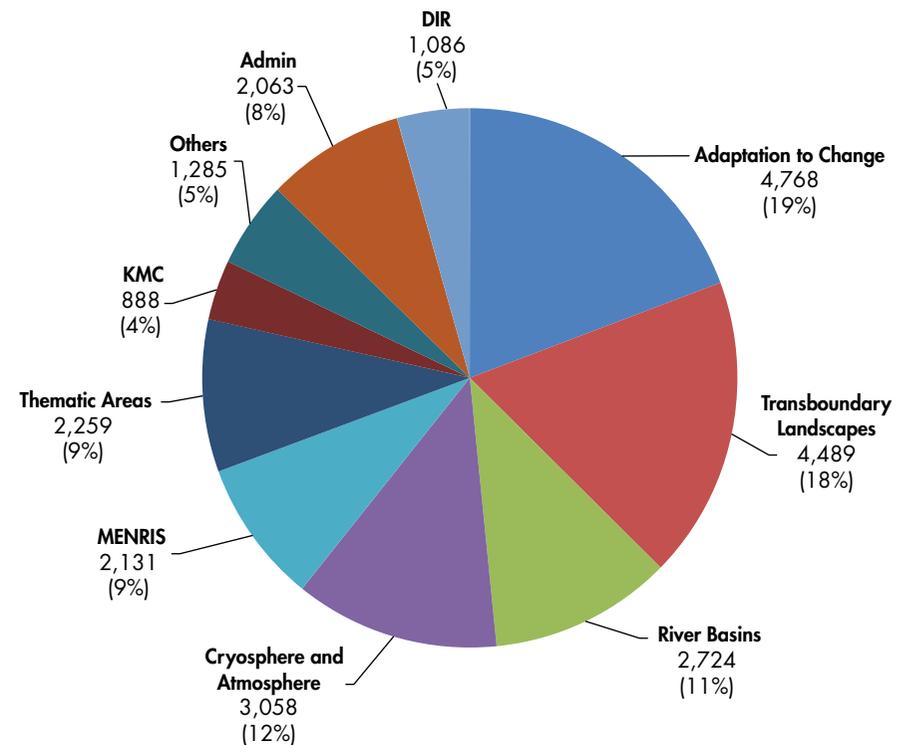
Financial Report

ICIMOD Income and Expenditure Accounts 2005-2014

The Financial management of the Centre is implemented through the establishment of programme and core funds, and cofinancing project funds. All unrestricted contributions made by sponsors and member countries are credited to the core programme funds. All restricted contributions made by sponsors, governments, and non-government sources for specific projects are credited to co-financing project funds.

ICIMOD Expenses by Programme 2014

(in thousand US dollars)



Core Programme Funds

(In US Dollars)

SOURCE	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
A. Regional	344,805	276,196	245,249	359,116	334,209	630,277	539,592	830,902	1,007,583	1,315,009
Afghanistan		10,000	5,770	7,873	10,742	14,658	14,658	35,342	37,000	45,000
Bangladesh	10,000	20,000	10,000	11,240	11,758	-	12,348	12,988	67,000	45,000
Bhutan	15,000	7,500	8,243		32,543	25,651	35,000	30,000	37,000	45,000
China	45,000	100,000	100,000	100,000	100,000	150,000	150,000	150,000	366,000	400,000
India	155,456	113,106	72,075	50,794	149,189	160,223	171,713	292,750	366,000	439,818
Myanmar			19,706	29,223	10,746	35,222	35,222	29,822	36,583	45,322
Nepal	14,154	13,784	21,246	23,566	19,231	20,175	20,819	80,000	98,000	123,746
Pakistan	105,195	11,806	8,209	136,420	-	224,348	99,832	200,000	-	171,123
B. Non-Regional	2,592,999	2,733,819	2,860,492	4,739,611	4,066,646	3,858,895	3,463,530	4,990,609	4,917,062	7,092,872
Austria	122,349	120,357	137,097	160,883	136,364	94,444	98,124	85,642	795,756	819,672
Australia (DFAT)	-	-	-	-	-	-	-	-	-	462,150
Denmark	200,901	-	214,264	-	-	-	-	-	-	-
DFID		-	-	-	-	-	-	1,770,968	831,818	2,725,523
Germany	630,416	931,632	888,988	1,002,060	1,536,038	1,225,203	1,446,528	1,186,611	544,959	587,990
Netherlands	600,000	600,000	540,000	60,000	-	-	-	-	-	-
Norway	539,333	581,830	580,143	1,843,281	817,625	841,652	909,310	882,211	1,632,821	1,407,163
Sweden				779,676	714,550	714,550	-	-	-	-
Switzerland	500,000	500,000	500,000	893,711	862,069	983,046	1,009,568	1,065,177	1,111,708	1,090,374
C. Other Income	130,360	334,535	632,666	1,296,940	1,182,790	1,105,367	1,686,966	1,493,387	1,540,893	2,214,669
Total Core(A+B+C)	3,068,164	3,344,550	3,738,407	6,395,667	5,583,645	5,594,539	5,690,088	7,314,898	7,465,538	10,622,550
Project Co-financing	3,237,024	3,072,532	4,002,301	5,801,899	6,112,452	7,732,803	14,050,498	15,608,647	13,933,432	16,349,059
GRAND TOTAL	6,305,188	6,417,082	7,740,708	12,197,566	11,696,097	13,327,342	19,740,586	22,923,545	21,398,970	26,971,609
EXPENDITURE	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Programme Cost	1,805,625	1,938,261	2,395,461	3,672,008	4,447,710	4,654,126	3,303,616	3,393,004	3,535,127	5,389,127
Project Cost	3,242,531	3,103,868	3,808,778	4,785,076	5,998,834	7,653,146	9,797,169	13,007,025	13,487,150	16,213,368
Support Cost 1	515,203	493,003	537,721	752,133	541,655	1,067,357	1,050,206	599,401	395,043	2,063,076
Directorate Cost 2	419,671	523,626	552,520	714,544	701,408	650,827	1,077,021	1,002,101	818,913	1,085,839
Total Expenditures	5,983,030	6,058,758	7,294,480	9,923,761	11,689,607	14,025,456	15,228,012	18,001,531	18,236,233	24,751,410

Note : Support cost in 2014 includes exchange loss amounting to \$ 869,132

Project Co-financing Funds

(in US dollars)

SOURCE	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Australia						-	-	1,479,600	1,570,050	901,700
Austria	432,394	523,798	538,037	615,087	586,667	267,555	416,844	127,138	122,372	-
Finland					602,410	-	1,154,401	-	651,890	406,504
Germany	191	252,528	95,891	214,436	204,378	878,025	209,074	1,350,101	316,863	931,118
Netherlands	169,012					-	-	-	-	-
Norway	100,630				647,354	1,379,884	4,779,286	4,496,448	5,740,075	3,009,968
Sweden					350,925	343,425	1,845,325	1,736,409	1,907,387	1,690,240
Switzerland	648,496	420,477	510,690	1,179,487	190,307	271,158	85,481	151,514	-	84,392
USA	158,320	161,641	364,858	742,374	426,354	422,452	513,862	983,088	696,971	2,557,328
ITALY/IUCN	9,275	152,062	510,381	583,702	200,262	111,832	-	-	-	-
ADA						228,472	238,755	238,413	-	-
ADB	4,000	19,340			57,090	213,737	110,000	12,821	215,794	41,247
EU	33,631	429,077	30,717	136,875	71,228	-	60,355	2,786,458	-	-
CIP			85,690	31,990	40,000	43,173	65,683	80,407	-	-
FAO	83,025	50,425	106,785	101,274	98,700	384,118	686,632	230,165	169,356	272,406
ISNAR						-	-	-	-	-
UNEP	119,337	101,560	55,500	176,300	270,000	424,534	442,284	358,342	110,280	304,000
UNESCO	8,000	4,000	12,400	14,600	2,000	65,000	48,000	-	-	-
WWF				5,000		-	-	-	-	-
IFAD	433,000	95,391	469,430	10,000	379,506	573,019	551,348	549,515	138,851	306,000
DFID						-	-	74,881	1,281,118	2,419,365
UNIFEM						-	-	-	-	-
ESA	44,609					-	-	-	-	-
WI	124,649			69,636		-	-	-	-	-
FORD	143,127		100,000	200,000		200,000	-	-	-	-
IDRC	338,707	517,383	297,398	784,121	833,867	632,098	682,861	422,503	471,590	3,225,958
MacArthur	175,000	100,000	150,000	240,000		400,000	-	-	200,000	-
ICCO	140,015	168,845	146,790		152,779	164,403	173,938	-	-	-
CEH, UK						-	-	-	-	-
CFC/FAO			301,143			-	-	-	-	-
APN/START	13,400					-	-	-	-	-
ITC						-	-	-	-	-
Twente	30,096	71,209	132,183	172,767		-	70,211	2,688	-	-
Sandia	24,909					-	-	-	-	-
CICERO				34,814	238,533	356,350	-	-	-	-
World Bank				23,385	202,541	70,815	1,511,128	-	-	-
UNDP				337,075	327,375	-	89,030	226,218	32,283	-
Others	3,201	4,796	94,408	128,976	230,176	302,753	316,000	301,939	308,552	198,833
TOTAL	3,237,024	3,072,532	4,002,301	5,801,899	6,112,452	7,732,803	14,050,498	15,608,647	13,933,432	16,349,059
EXPENDITURES	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Expenditure	3,242,531	3,103,868	3,808,778	4,785,076	5,998,834	7,653,146	9,797,169	13,007,025	13,487,150	16,213,368

International Centre for Integrated Mountain Development
Statement of Assets, Liabilities, Loan and Fund Balances
as of 31 December 2014

All amounts in US dollars

	Schedule	As at 31 December 2014	As at 31 December 2013
Fund Balances			
General Reserve	1	3,676,655	3,106,274
Operational Reserve	1	5,120,147	2,973,344
Exchange Equalisation Reserve	1	503,606	503,606
Restricted Programmes Support Fund Balance (net)			
[Note 3(g) of Schedule 14]			
Government of Germany		(45,642)	76,100
Austrian Development agency		465,821	305,611
Restricted Core Programme Support Fund Balance (net)			
[Note 3(h) of Schedule 14]			
The Department of Foreign Affairs and Trade (DFAT), Australia		346,732	
Department for International Development (DFID)		1,648,193	
Special Projects Fund Balance (net)	6D	1,994,925	2,095,688
Amounts to be incurred on projects		10,865,411	11,771,228
Amounts to be recovered		(542,619)	(1,584,127)
Total Sources of Funds		22,038,304	19,247,724

Assets and Liabilities

Fixed Assets	2	2,716,117	2,138,747
Current Assets, Loans and Advances:			
Cash and Bank Balances	3	21,815,457	19,819,056
Loans and Advances	4	1,965,533	2,126,972
		23,780,990	21,946,028
Less: Current Liabilities and Provisions	5	(4,458,803)	(4,837,051)
Net Current Assets		19,322,187	17,108,977
Total Application of Funds		22,038,304	19,247,724

Notes forming part of the financial statements 14

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
Chartered Accountants



Alka Chadha

Alka Chadha
Partner

For International Centre for Integrated Mountain Development

David James Molden

David James Molden
Director General

Shekhar Chhimire

Shekhar Chhimire
Director, Administration and Finance

Rajendra Prakash Malli

Rajendra Prakash Malli
Budget & Finance Officer

Place: Gurgaon, India

Date: 17 April, 2015

Place: Kathmandu, Nepal

Date: 17.04.15

International Centre for Integrated Mountain Development
Operating Statement for the Year Ended 31 December 2014

All amounts in US dollars

	Schedule	Year ended 31 December 2014	Year ended 31 December 2013
INCOME			
Contribution from Donors			
Restricted Programme Support	6A	1,134,438	1,075,463
Restricted Core Programme Support	6B	3,187,673	831,818
Core and Other Programmes Support	6C	4,085,770	4,017,364
Special Projects	6D	16,349,059	13,933,431
Other Income	7	2,214,669	1,540,893
	(A)	<u>26,971,609</u>	<u>21,398,969</u>
EXPENDITURE			
Programme Cost			
Restricted	8	1,095,970	693,752
Restricted Core	9A	3,288,436	507,098
Core and Others	9B	1,004,721	2,049,392
Special Project Cost	10	16,213,368	13,259,315
Scaling Up Cost			
Programmes	11	-	284,885
Special Projects	11A	-	227,835
11B			
Core Support Cost			
Discretionary	12	1,085,839	1,061,569
Administrative Support	13	1,047,009	1,061,846
Depreciation [Note 3(a)(iii) of Schedule 14]		146,935	98,570
Less: Indirect Cost Allocation [Note 3(f) of Schedule 14]		-	(508,643)
		<u>2,279,783</u>	<u>1,713,742</u>
Foreign Exchange (Gain)/ Loss (net)		869,132	(499,786)
	(B)	<u>24,751,410</u>	<u>18,236,233</u>
Surplus of Income over Expenditure	(A-B)	<u>2,220,199</u>	<u>3,162,736</u>
Less: Surplus of Special Projects' income over expenditure transferred to Special Project Fund Balances (net)		135,691	446,281
Less: Surplus of Restricted Programme Support's income over expenditure transferred to Restricted Programme Support Fund Balances (net)		38,468	381,711
Less: Surplus/ (Deficit) of Restricted Core Programme Support's income over expenditure transferred to Restricted Core Programme Support Fund Balances (net)		(100,763)	324,720
Net Surplus adjusted to Operational Reserve		<u>2,146,803</u>	<u>2,910,024</u>
Notes forming part of the financial statements	14		
Schedules referred to above form an integral part of the Operating Statement			

In terms of our report attached

For Deloitte Haskins & Sells
Chartered Accountants



Alka Chadha
Alka Chadha
Partner

For International Centre for Integrated Mountain Development

David James Molden
David James Molden
Director General

Shekhar Gulimire
Shekhar Gulimire
Director, Administration and Finance

Rajendra Prakash Mali
Rajendra Prakash Mali
Budget & Finance Officer

Place: Gurgaon, India
Date: 17 April, 2015

Place: Kathmandu, Nepal
Date: 17.04.15

International Centre for Integrated Mountain Development
Cash Flow Statement for the Year Ended 31 December 2014

All amounts in US dollars

Particulars	Year ended 31 December 2014	Year ended 31 December 2013
A. Cash flow from operating activities	2,220,199	3,162,736
Surplus of income over expenditure as per Operating Statement		
Adjustment for:		
Depreciation	146,935	98,570
Capital expenditure charged in the programmes	1,069,190	187,460
Interest on time deposits	(79,095)	(111,284)
Profit on sale of fixed assets	(5,000)	(16,328)
Exchange fluctuation-unrealised	867,005	(469,322)
Operating surplus before working capital changes	<u>4,219,234</u>	<u>2,851,832</u>
Adjustment for:		
Loans and Advances	137,418	(521,024)
Current Liabilities and Provisions	(365,743)	(498,566)
Net cash from operating activities	<u>3,990,909</u>	<u>1,832,242</u>
B. Cash flow from investing activities		
Purchase of fixed assets	(1,224,494)	(543,769)
Sale of fixed assets	6,380	16,404
Bank balances not considered as Cash and cash equivalents		
- Placed	(13,356,612)	(12,590,631)
- Matured	12,921,300	13,301,792
Interest received	88,684	111,425
Net cash from/(used in) investing activities	<u>(1,564,742)</u>	<u>295,221</u>
C. Effect of Foreign Exchange differences on Cash and cash equivalents	(865,078)	140,722
Net increase in cash and cash equivalents (A + B + C)	<u>1,561,089</u>	<u>2,268,185</u>
Cash and cash equivalents at the beginning of the year	6,897,756	4,629,571
Cash and cash equivalents at the end of the year (Refer Schedule 3)	<u>8,458,845</u>	<u>6,897,756</u>

In terms of our report attached

For Deloitte Haskins & Sells
Chartered Accountants



Alka Chaudhary
Alka Chaudha
Partner

For International Centre for Integrated Mountain Development

David James Molden
David James Molden
Director General

Shekhar Ghimire
Shekhar Ghimire
Director, Administration and Finance

Rajendra Prakash Mali
Rajendra Prakash Mali
Budget & Finance Officer

Place: Gurgaon, India
Date: 17 April, 2015

Place: Kathmandu, Nepal
Date: 17.04.15

ICIMOD Members, Sponsors, and Funding Partners

CORE FUNDING

Regional member countries

Afghanistan
 Bangladesh
 Bhutan
 China
 India
 Myanmar
 Nepal
 Pakistan

PROGRAMMATIC FUNDING

- Austrian Development Agency (ADA)
- Bundesministerium für Wirtschaftliche Zusammenarbeit (BMZ), (German Federal Ministry for Economic Development Cooperation) Germany
- Department for International Development (DFID), United Kingdom
- Department of Foreign Affairs and Trade (DFAT), Australia
- 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)
- National Aeronautics and Space Administration (NASA)
- Norwegian Ministry of Foreign Affairs; Royal Norwegian Embassy, Kathmandu
- United States Agency for International Development (USAID)

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)

STRATEGIC AND PROJECT FUNDING

- Asian Network for Sustainable Agriculture and Bioresources (ANSAB)
- Consortium for the Sustainable Development of the Andean Ecoregion (CONDESAN)
- DANIDA Fellowship Center (DFC)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- Food and Agriculture Organization of the United Nations (FAO)
- ICIMOD Foundation
- Institute for Global Environment Strategies (IGES)
- Institute for Advanced Sustainable Studies (IASS), Germany
- Ministry for Foreign Affairs of Finland
- Skoll Global Threats Fund, USA
- Swiss Agency for Development and Cooperation (SDC)
- The World Bank
- United Nations Environment Programme (UNEP)
- United States Embassy, Kathmandu
- University Corporation for Atmospheric Research (UCAR)
- Universiteit Utrecht
- World Meteorological Organization (WMO)

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 Himalayas – 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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