



## Experts from the Institute of Mountain Hazards and Environment Provide Technology for Hazard Prevention along the Karakoram Highway, Pakistan

On 4 January 2010, a landslide occurred in the Hunza Valley in northern Pakistan. The initial disaster buried the village of Attabad, destroying 26 homes and killing 20 people. As the weeks passed, the problems were compounded because the landslide did more than just destroy a village, it blocked the Hunza river creating an 11 km (7 mile) lake, which inundated several villages and submerged 5 km (3 miles) of the Karakoram Highway. The lake's level was rising by the day, and the seepage raised fears that the water might breach the dam and flood the villages downstream.

Commissioned by the China Road and Bridge Corporation (CRBC), experts from the Chengdu Institute

of Mountain Hazards and Environment (IMHE), Chinese Academy of Sciences (CAS), rushed to Pakistan to conduct an emergency risk elimination survey of the barrier lake. The IMHE expert team was composed of five people: Prof CUI Peng, Prof CHENG Zunlan, Prof ZHANG Xiaogang, Prof CHEN Xiaoqing, and Dr ZHUANG Jianqi.

With the help of the CRBC, University of Peshawar, and local police, experts arrived at the dammed lake in Gilgit, Pakistan, and made a detailed investigation and measurement of the landslide, dammed lake, and river hydrology. Based on the first-hand information acquired during the fieldwork, the experts discussed the causes of the dammed lake, the influences on it, and emergency countermeasures; the preliminary report was submitted to the Chinese Embassy in Pakistan and the CRBC.

The expert team returned to Chengdu on 4 April. The team's efficient work, courageous spirit, and rigorous attitude earned them accolades from the Chinese Embassy in Pakistan and the CRBC.

IMHE experts completed the consulting report on the emergency risk assessment of the landslide and dammed

lake on the Karakoram Highway in May 2010. The consulting report provides technological and emergency countermeasures for the CRBC. Meanwhile, IMHE experts will continue to provide technical consultation services for the work to follow.





## International Workshop on Koshi River Basin Transboundary Project Held in Nepal

An International Workshop on the Koshi River Basin Transboundary Project was held in Kathmandu, Nepal, on 22 and 23 April 2010. The workshop attracted 40 experts from China and other countries on four themes: glaciers, glacial lakes, water resources, and their risks; biodiversity; land use and land cover change; and the social economy and regional development.

Under the themes on biodiversity, and land use and land cover change, Prof ZHANG Yili from the Institute of Geographic Sciences and Natural Resources Research (IGSNRR), CAS, reviewed China's research progress in the Hindu Kush-Karakoram-Himalayan region (HKKH) on land use, land cover mapping, and biodiversity in the Himalayas. Dr Bishnu Bhandari from the International Centre for Integrated Mountain Development (ICIMOD) highlighted the importance of wetland resources in the Koshi Basin, explaining that their protection is directly related to the sustainable development of local resources. Under the theme on glaciers, glacial lakes, water resources, and their risks,

Dr Ravi Aryal from the Water and Energy Commission Secretariat (WECS) introduced river basin planning and integrated management on water resources in Nepal. Prof CHEN Ningsheng from the Institute of Mountain Hazards and Environment (IMHE), CAS, reported on the impact of climate change and earthquakes on landslides. Dr Luna Bharati from the International Water Management Institute (IWMI) introduced his research on the hydrological features of the Koshi Basin.

Under the theme on social economy and regional development, Prof Narendra Khanal from Tribhuvan University, Nepal, who has conducted years of research on the social economy in the Koshi Basin, made a detailed assessment of the fragility of the Basin's ecology and social economy based on his investigations. Prof FANG Yiping from IMHE summarised his group's experiences in climate change research at the source of the Koshi River and put forward countermeasures for animal husbandry, making suggestions for future research on the social economy of the Basin. The experts recognised each research institute's work in the HKKH, reached a consensus on data sharing in relation to research on the Basin, and proposed a blueprint for future cooperation. A seven-day field expedition to the Koshi River Basin was conducted from 2 to 9 July 2010.

## Third Pole Environment Scientists visit Nepal for Environmental Study

From 18 April to 15 May 2010, six scientists from the Institute of Tibetan Plateau Research (ITP) and five scientists from Tribhuvan University, Nepal, jointly conducted field trips in Nepal, at the southern edge of the Third Pole region, as part of the Third Pole Environment (TPE) Programme. During the nearly one-month expedition, scientists succeeded in setting up two meteorological stations in Nepal at Kyanjin Gomba (3900 masl) and Tahara (119 masl) in southeast Nepal. They also trekked along the Yala glacier carrying differential GPS instruments for glacial measurement, including the measurement of elevation at the glacial surface and the terminus. A series of line-poles were fixed on the Yala glacier slope to monitor glacial mass balance. Preliminary sampling of surface snow and at the snow-pit profile was conducted on the glacier to assess the region's suitability for microbial sampling and analysis.

Tree-rings were sampled and paleo-climate and environment reconstruction carried out in the Langtang catchment. River runoff was also monitored with an

equipment configuration suitable for the long-term continuous measurement of river water levels. Three sites were selected in the catchment for the regular and continuous study of stable isotope hydrology: two for fixed-site sampling of precipitation and one for fixed-site sampling of river water.

This joint expedition in Nepal was a follow-up to the first joint research last October. Both were funded by the TPE programme in an effort to understand environmental changes in the region.



## Tajikistan Scientists Actively Involved in the Third Pole Environment Programme

As part of the 'Tectonic transformation and environmental changes on the Pamir Plateau' project, one of the international projects within the Third Pole Environment (TPE) programme, scientists from the Institute of Tibetan Plateau Research (ITP), CAS, including Professors YAO Tandong, DING Lin, HE Jiankun, and TIAN Lide, visited the Institute of Geology, Academy of Sciences of the Republic of Tajikistan. They were welcomed by Tajikistan scientists from the Institute of Geology headed by Prof Abdulhak Faisezev, who participated in the first TPE workshop in Beijing and was highly supportive of the TPE programme.

The meeting between Chinese and Tajikistan scientists recalled the joint fieldwork and academic visits between both sides at Dushanbe and Beijing over the past years. Both sides expressed a wish to continue cooperation, starting with the establishment of a monitoring station on the Pamir Plateau, joint field expeditions, and the nurturing of talent.

The discussion also resulted in the formation of the Tajikistan-China Research Center of the Pamir Plateau, and the selection of a suitable site for the monitoring station. The site is to be cleared and provided with an automated weather station, constant GPS monitoring, and an automatic rain gauge for the long-term study of the climate and environment of the Pamir Plateau.

A 40-day joint expedition is planned to follow the meeting. The expedition will encompass a geologic expedition to the Pamir Plateau, an expedition to the Fedchenko glacier, and GPS monitoring of tectonic transformation. Chinese scientists also hope to test some shallow lake cores and collect samples from the basin of Tajikistan for a paleomagnetism study.

## Third Pole Environment Seeks Cooperation with Pakistan Space and Upper Atmosphere Research Commission

At the invitation of the Pakistan Space and Upper Atmosphere Research Commission (SUPARCO), a delegation of the Institute of Tibetan Plateau Research (ITP), CAS, led by Prof YAO Tandong, the Director of ITP, visited the SUPARCO headquarters in Karachi, Pakistan from 3 to 6 June 2010. During the visit, scientists from both sides made plans to launch a Sino-Pakistan joint expedition to Mutztag Ata-Karakorum in August.

The ITP delegates also discussed cooperative plans for the next five years with SUPARCO scientists, including a joint study on climate and glacial fluctuation in the Third Pole region, and noted exchanges in atmospheric physics and the environment, as well as responses and adaptations to environmental changes. Other research aspects were discussed, including study and modelling of ice and snow hydrology, paleo-climate and paleo-environmental records, and satellite and land surface monitoring.

The two sides agreed that the cooperation in August 2010 would cover the route from the Mutztag Ata in West Kunlun, China, to the Karakorum in northern Pakistan, including an expedition to various glaciers (Batura glacier, Passu glacier, and others), the observation of glacial hydrology, monitoring of glacial mass balance, measurement of quaternary glaciers, sampling of atmospheric-ice/snow, monitoring of ecology, and preparing tree-ring cores, among others. Mutual agreement was also reached regarding the joint development of PhD candidates, hosting of summer schools, and establishment of field stations.

The initiation of the Sino-Pakistan project marks a new beginning for cooperation between China and its neighbouring countries under the TPE framework.

## Joint Expedition to Koshi River Basin

Initiated by the CAS Project on Geo-Surface Processes and Regional Adaptation to Climate Change in the Himalaya Region, a seven-day field expedition to the Koshi river basin was conducted from 2 to 9 July



2010. Ten experts from China, Nepal, and ICIMOD participated in the expedition. Experts travelled along the upper Koshi Basin and investigated the use of land resources, water resources, hazards, biodiversity, and regional economic development on the Boqu and Pengqu rivers in Xigaze, Tibet. Experts also visited the Geological Hazards Observation Station located in Zhangmu Town, Nielamu County, and the Qomolangma Station for Atmospheric and Environmental Observation and Research, CAS, located in Tashi Dzong Village, Tingri County.



During the field trip, experts travelled from the subtropical climate zone at an altitude of 1700 m to the cold mountains of the northern Himalayas at 5300 m. The field trip had full support from the Tibet Science and Technology Department.

## International Workshop on Koshi River Basin Transboundary Project Held in Sichuan

An International Workshop on the Koshi River Basin Transboundary Project was held in Sichuan Province, China, from 24 to 27 August 2010, by the Chinese Committee on International Centre for Integrated Mountain Development (CNICIMOD) and the project group on 'Geo-Surface Processes and Regional Adaptation to Climate Change in Himalaya Region'. The workshop attracted more than 30 experts from home and abroad. Prof DENG Wei, Director of Chengdu Institute of Mountain Hazards and Environment (IMHE), CAS, and Prof OUYANG Hua, Programme Manager of

Dr Garrett Kilroy, the transboundary project's coordinator from ICIMOD, commented on the research in the Koshi Basin and outlined the United Kingdom sponsored programme on Ecosystems Services and Poverty Alleviation (ESPA).

After two transboundary investigations and three workshops, the experts have obtained preliminary knowledge and statistics on the ecosystems in the Koshi Basin. More collaboration is expected to promote collaborative research in this area.

## China, India and Nepal Strengthen Cooperation to Conserve the Kailash Sacred Landscape

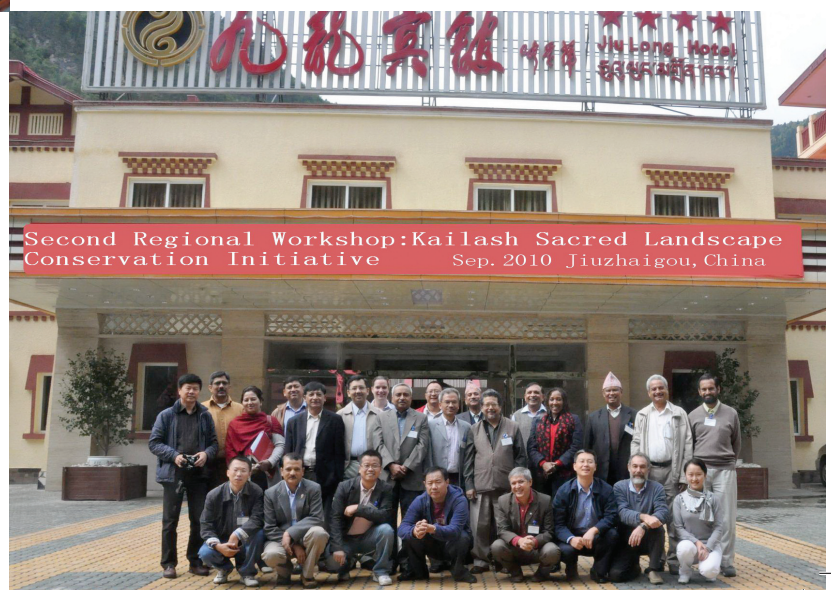
The Second Regional Workshop on the Kailash Sacred Landscape Conservation Initiative (KSLCI) was held from 4 to 6 September 2010, in Jiuzhaigou, Sichuan, China. The workshop was organised by ICIMOD, hosted by CNICIMOD and the Chengdu Institute of Mountain Hazards and Environment (IMHE), CAS, and supported by the United Nations Environment Programme (UNEP).

Representatives from China, India, and Nepal discussed the initial steps in developing a regional cooperation framework for the Kailash Sacred Landscape, including a feasibility report, conservation strategy and environmental monitoring plan. Representatives of the lead partners – the Institute of Geographic Sciences and Natural Resources Research (IGSNRR), CAS; GB Pant Institute of Himalayan Environment and Development (GBPIHED), India; and the Central Department of Botany, Tribhuvan University, Nepal – described progress made in the development of a conservation strategy and environmental monitoring plan. ICIMOD presented a regional feasibility assessment that included



Integrated Water and Hazard Management of ICIMOD, delivered speeches at the opening ceremony.

During the workshop, the experts had an in-depth discussion on the relationship between floods and climate change, glacier and glacial lake change, land use and land cover change, biodiversity and climate change, and regional socioeconomic development in the Koshi Basin.



the delineation of the target landscape, a policy review, and a synthesis of the feasibility assessments from each country.

A total of 25 participants representing 14 institutions discussed a draft outline for developing a 'Regional Cooperation Framework (RCF) Agreement'. Mr Surya Prasad Joshi, Joint Secretary of the Ministry of Forests and Soil Conservation of the Government of Nepal mentioned that the Kailash programme should also benefit from the two separate bilateral agreements of the Government of Nepal with its neighbours India and China. Dr Elizabeth Migongo-Bake of UNEP emphasised the importance of embedding an ecosystem approach to optimise landscape services in the programme development. Dr Shi Peili of IGSNRR expressed the need for integrated approaches and technical cooperation between the countries. The Director of GBPIHED, Dr LMS Palni, emphasised the participatory and people-centred approach that is being adopted in the preparation of the regional cooperation framework.

Dr Eklabya Sharma of ICIMOD presented the design and vision of the initiative and briefly explained the programme of work for the start-up phase of 18 months commencing February 2011, and outlined elements for two five-year implementation phases from the middle of 2012. The three countries will finalise their reports on the conservation strategy and environmental monitoring plan after discussions at the workshop.

During the workshop, participants visited the biodiversity and cultural conservation initiatives in the Jiuzhaigou National Park. The Park, located at the edge of the Eastern Tibetan Plateau, is a UNESCO World Heritage Site where ecotourism is strongly linked with conservation.

The Kailash Landscape covers the area linked culturally and geographically to the sacred mountain, which is also known as Kang Rinpoche, Gangrenboqi Feng, and Kailasa Parvata. The Kailash Sacred Landscape Conservation Initiative programme focuses on developing a transboundary regional cooperation framework for conservation and sustainable development. The first regional workshop on the Kailash Sacred Landscape Conservation Initiative was held at Almora, Uttarakhand, India in April 2010. The Third Regional Workshop will be held from 16 to 18 December 2010 in Kathmandu, Nepal.

## Evaluation Expert Dr Othmar Schwank Visits Chinese Partners

Dr Othmar Schwank, an Executive Board Member of INFRAS, Switzerland, acting as an evaluation expert for ICIMOD, visited the Institute of Geographic Sciences and Natural Resources Research (IGSNRR), Chengdu Institute of Mountain Hazards and Environment (IMHE),



and Chengdu Institute of Biology (CIB), CAS. He was in China to investigate ICIMOD's cooperation activities with China and to conduct a mid-term evaluation.

Dr Othmar Schwank visited IGSNRR on 12 April 2010. Prof ZHOU Chenghu, Deputy Director of IGSNRR, delivered a welcoming address and expressed the hope that the two partners could cooperate further in future. Prof ZHANG Linxiu, from IGSNRR, also an Independent Board Member of ICIMOD, suggested that ICIMOD should focus more on different strategic ideas for cooperation in science and technology with different developing countries. She considered that ICIMOD should facilitate and strengthen research on the stability of mountain development in social economies. During the meeting, Dr Schwank discussed cooperation ideas and suggestions with Chinese researchers.

Dr Othmar Schwank visited IMHE and CNICIMOD on 7 April 2010. Prof WEI Fangqiang, Deputy Director of IMHE, said he was glad to see the changes in the development strategy of ICIMOD, such as the focus on three key development areas, strengthening intergovernmental cooperation and exchange; and developing extensive partnerships in regional member countries, all of which play an important role in regional

environment protection and sustainable development. He also expressed the hope that ICIMOD would pay more attention to regional multilateral cooperation in the context of climate change and enhance basic research in order to better coordinate future work. Prof HU Pinghua, Director of CNICIMOD, introduced the work of CNICIMOD. He expressed the hope that ICIMOD will strengthen capacity building and provide more opportunities for young scientists. CNICIMOD also arranged for Dr Othmar Schwank to visit the Chengdu Institute of Biology, CAS, and the Sichuan Grassland Institute.

## CAREERI and ICIMOD Sign Cooperation Memo to Push Snow and Glaciers Database and Research in the Hindu Kush-Himalayas

The Cold and Arid Regions Environmental and Engineering Research Institute, CAS (CAREERI), signed a three-year cooperation memorandum with ICIMOD in Lanzhou on 7 June 2010 to conduct cooperative

research on the development of a snow and glaciers database and research in the Hindu Kush-Himalayan (HKH) region over the next three years. According to the memorandum, the two parties will establish a long-term mutual collaboration on the research and development of a regional database on the cryosphere (snow cover, permafrost, and glaciers) and will forge a closer partnership in promoting a regional database on the cryosphere, hydrology, and water resources of the HKH region and Tibetan Plateau.

The main collaborative activities under this memorandum include: 1) the mapping of cryosphere, hydrology, and water resources, and filling the data gap in order to build a regional database of the HKH region including the Tibetan Plateau area; 2) promotion of a common approach and methodology for mapping and monitoring of the cryosphere, hydrology, and water resources conforming to international standardisation; 3) joint field investigations on mutually agreed terms and conditions; 4) the sharing of data on the cryosphere, hydrology, and water resources; 5) the production and publishing of regional status reports on snow, glaciers, and glacial lakes in the HKH region; and 6) strengthening regular communication, exchange of personnel, and student training.



## Dr Andreas Schild, Director General of ICIMOD, Visits Kunming Institute of Botany

Dr Andreas Schild, Director General of ICIMOD visited the Kunming Institute of Botany (KIB), CAS, on 13 June 2010. Prof SUN Hang, Deputy Director of KIB met with Dr Andreas Schild and expressed a warm welcome.

During the meeting, both sides reviewed the history of cooperation between ICIMOD and KIB. They also discussed associated development, joint sponsorship of workshops and training courses, and how to promote regional cooperation between KIB and neighbouring countries. After the meeting, Dr Schild visited the Germplasm Bank of Wild Species in Southwest China and the Center for Mountain Ecosystem Studies.



**China considers ICIMOD as a valuable platform for increasing scientific exchange and regional cooperation among countries of the Himalayas**



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