



Research

Workshop on Interactions of Multilayer Circles in the Qinghai-Tibet Plateau and Environmental Effects

The seventh workshop on the strategic priority research programme Interactions of Multilayer Circles in the Qinghai-Tibet Plateau and Its Resource Environmental Effects was held in Beijing on 28 March 2013. Dr Fan Weiming, Director of the Bureau of Science and Technology for Resources and the Environment of the Chinese Academy of Sciences (CAS), presided over the workshop. Dr Yao Tandong and Wu Fuyuan, Chief Scientists of the programme, and 19 experts in charge of projects participated in the workshop along with other team members. Dr Chai Yucheng, Director of the Department of Earth Sciences, National Natural Sciences Foundation of China (NSFC); Dr Liu Guohua from the Research Center for Eco-Environmental Sciences, CAS; and Prof. Xue Chunji from China University of Geosciences in Beijing were invited to the workshop.

After listening to reports from project managers on scientific issues and the study protocol and approaches the chief scientists pointed out that the programme is designed from the top level, and that the projects below must thoroughly understand the design. They noted that discussion and communication among projects must be strengthened to clarify common key problems, and that those key scientific problems must be addressed using diverse disciplines and state-of-the-art technology and methods.

Initiation Workshop on Koshi Basin Programme

Through the Chinese Committee on ICIMOD (CNICIMOD), a Koshi Basin Programme initiation workshop on water management and hazard risk reduction related policy and institutional analysis in China for Koshi River basin management was held at the Institute of Mountain Hazards and Environment (IMHE), CAS, 27-28 May 2013 with support from the Australian Agency for International Development (AusAID). About 20 participants attended the workshop.

Dr Deng Wei, Director of IMHE, met with a delegation from ICIMOD and Tribhuvan University of Nepal before the workshop to exchange ideas about the implementation of the programme and further collaboration with ICIMOD and Tribhuvan University. In his welcome address at the opening ceremony, Dr Xiong Donghong, Director of the Science and Technology Department of IMHE gave a brief

Initiation workshop on the Koshi Basin Programme



introduction to the work of IMHE. Dr Arun Shrestha and Dr Shahriar Wahid from ICIMOD introduced the workshop objectives and the approach, progress, and partnership arrangements for the KBP. Prof. Narendra Khanal from Tribhuvan University and Dr Chen Ningsheng and Fang Yiping from IMHE reported on the foundation, approach, and work plan of research on Koshi water hazards and the socioeconomic and environmental part in China and Nepal. Participants discussed and reached a consensus on the objective, approach, and action plan of the programme, thus laying a good foundation for the smooth implementation of the programme.

The Koshi River originates in Tibet Autonomous Region of China and flows through China, Nepal, and India. It is an extremely important South Asian transboundary river. In 2009, CNICIMOD applied a CAS External Cooperation Programme on Geo-Surface Processes and Regional Adaptation to Climate Change in Himalaya Region. This project was funded by the Bureau of International Cooperation, CAS, and implemented by IMHE; the Institute of Geographic Sciences and Natural Resource Research, CAS; Cold and Arid Regions Environmental and Engineering Research Institute, CAS; Chengdu Institute of Biology, CAS; ICIMOD; and the Central Department of Geography of Tribhuvan University, Nepal. The achievements have been made after nearly three years of concerted efforts, which have created a strong foundation for future research and helped form a sound international cooperation group, which is key for the Koshi Basin Programme.

IMHE participated in the organization of the Koshi Basin Programme, which is being undertaken to improve integrated river basin management by providing policy-relevant knowledge on integrated water management and the potential impacts from climate and environmental change. A further objective is to improve understanding on adaptation and livelihood strategies in the context of those changes. The first phase of the programme is from 2012 to 2016.

Third Pole Environment (TPE) Joint Investigation in Nepal

Scientists from China and Nepal carried out a sixth field investigation on glaciers, runoff, and climate in the Langtang basin in Nepal sponsored by the Third



Participants in the Third Pole Environment joint field investigation

Pole Environment (TPE) international plan. Scientists involved in the field investigation, held from 27 April to 16 May 2013, included Associate Researcher Yu Wusheng, Gong Ping and Dr Li Shenghai from the Institute of Tibetan Plateau Research (ITP), CAS; Prof. Lochan P Devkota from Tribhuvan University, Nepal; Prof. Gurung Sanjaya from Kathmandu University, Nepal; and Dr Dorothea Stumm from ICIMOD.

The investigation successfully completed the following activities:

- Yala Glacier mass balance observation;
- Yala Glacier surface absolute elevation and ice edge position differential GPS measurement;
- Maintenance of passive sampler for persistent organic pollutants (POPs);
- Maintenance of automatic meteorological stations at Kyanjin Gumpa (3,900 m) and Tarahara (119 m); and
- Downloading of meteorological data.

In addition, rainfall and river water samples were collected from May 2012 to April 2013 from fixed sites in Kyanjin Gumpa, Langtang Valley, and Tarahara. For monitoring water stable isotopes in the basin, persistence pollutants and spatial change characteristics of the soil corresponding normal alkanes, water, soil, and vegetation samples were collected.

The Third Pole Environment plan, especially the research activities in the Langtang basin of Nepal, provides an opportunity to improve understanding of atmospheric circulation and water vapour transport processes and the transmission path of persistent pollutants both on south and north slope of Himalayan mountains.

Zhangmu Landslide Exploration Project Passes Acceptance Inspection

The Zhangmu Landslide Exploration Project, undertaken by the Institute of Mountain Hazard and Environment (IMHE), CAS, has passed an acceptance inspection in Beijing at a meeting hosted by the Bureau of Science and Technology for Development on 2 June 2013. Dr Wei Fangqiang from IMHE reported on the major work, exploration and evaluation results, integrated prevention scheme, and investment estimation of the project. The project was highly praised by experts from the Ministry of Land and Resources, Land and Resources Department of Tibet Autonomous Region, and related departments. The project is considered an important foundation for landslide prevention schemes and innovative engineering design.

Wang Jun, Director of Land and Resources Department of Tibet Autonomous Region, expressed his thanks to CAS for its contribution to landslide prevention work in Zhangmu township and expressed the aspiration to carry out research on other potential geological disasters. Feng Renguo, Vice Director of the Bureau of Science and Technology for Development, CAS, expressed thanks to the expert panel for their serious review and valuable opinions and suggestions, the relevant units in Tibet for their strong support of the project's implementation, and to the working team for their hard work.

Zhangmu Landslide Exploration Project passes acceptance inspection



Workshop on Technology Research and Demonstration of Fragile Ecological Restoration in the Tibetan Plateau

A workshop on the latest progress in a national key technology support programme on Technology Research and Demonstration of Fragile Ecological Restoration in the Tibetan Plateau was held on 23 June 2013 in Beijing. More than 20 participants took part in the workshop, including representatives from the Science and Technology Department of Tibet Autonomous Region and the Institute of Geographic Sciences and Natural Resources Research (IGSNRR), CAS.

Prof. Cheng Shengkui from IGSNRR presided over the workshop. Prof. Chen Yuansheng, Fang Jiangping and Associate Prof. Wang Zhaofeng introduced a working plan and progress on the projects of Technology Research and Demonstration of Typical Degraded Ecosystem Restoration in the Tibetan Plateau; Partition of Fragile Ecological Environment and Monitoring and Evaluation Research on Typical Fragile Ecosystem in the Tibetan Plateau; and Impact from Typical Fragile Ecological Environment on Livelihood in the Tibetan Plateau.

Participating experts discussed the reports and put forward concrete suggestions. They pointed out that, as a support programme, it should highlight the ability to solve practical problems to give technical specifications and guidance from an enforceable angle. Under limited funding, research works should be focused on key issues. After listening to the project reports and expert advice, Sun Yuming, Deputy Director General of the Science and Technology Department of Tibet Autonomous Region, appreciated the guidance and support from all experts for the implementation of the programme and other Tibetan science and technological works. He expressed that the department will fully support this research work and will communicate problems and suggestions to the relevant authorities in time. After the workshop, the work group discussed the experts' opinions and suggestions and further improved the action plan, which laid a sound foundation for carrying out the programme smoothly.

Seminar on Assessment Report of Ecological Environment Change in the Tibetan Plateau

On instruction from President Bai Chunli and Vice President Ding Zhongli of Chinese Academy of Sciences (CAS) to promote the construction of a regional innovation cluster in Tibet, a seminar on the assessment of ecological environment change in the Tibetan Plateau was held in Beijing on 27 July 2013. The seminar was attended by CAS Members Sun Honglie and Zheng Du; Yao Tandong, Chief Scientist of the Cluster; and Feng Renguo, Director of the Cluster Office. They had a discussion on the assessment report with participants from the Bureau of Science and Technology for Development, the Institute of Tibetan Plateau Research (ITP), the Institute of Mountain Hazards and Environment (IMHE), the Institute of Geographic Sciences and Natural Resources Research (IGSNRR), the Cold and Arid Regions Environmental and Engineering Research Institute (CAREERI), the Institute of Remote Sensing and Digital Earth (RADI), and the China Tibetology Research Centre.

Following the presentation on preliminary schemes of the assessment report made by Professor Xu Baiqing, an expert panel put forward comments and suggestions that pointed out the need for the assessment report to objectively evaluate the ecological environment of Tibet in the past, the present situation, and possible future trends; promote the development of the report on the basis of scientific evaluation; systematically summarize the information in order to put forward a report that is helpful for improving local government work; study the influence of the natural changes and human activities on the ecological environment respectively, particularly select typical case to study; study the risk transformation and long-term and short-term effects of ecological environment change to present policy advice for local sustainable development and to combine social-economic development with regional environmental change to analyse the relationship between them at different times.

Yao Tandong expressed his thanks to expert panel for their advice and pointed out that the programme Construction of Monitoring System and Assessment of Ecological Environment Change in Tibetan Plateau is the construction of one of the three regional innovation clusters in Tibet set up by President Bai

Chunli of CAS and Padma Choling, Chairman of Tibet Autonomous Region. The programme aims to address not only scientific problems but also political problems. In addition to scientists from CAS, other scientists should also become actively involved in the implementation of the programme to evaluate ecological environment problems of Tibet objectively and fairly, and to provide a series reports to support economic and social development and improve the living standards of the people living in the Tibet Autonomous Region.

International Cooperation Research on Peatlands in the Hindu Kush Himalayan Region

A research project on the assessment of greenhouse gas (GHG) emissions from peatland ecosystems of the Hindu Kush Himalayan region has been recently launched by ICIMOD. Two peatlands in Nepal were selected as intensive field study sites: one is Bishazari Lake (286 masl) located in the buffer zone of Chitwan National Park, and the other is Dhaap Lake (2089 masl) located in Shivapuri-Nagarjun National Park. The Zoige Peatlands – the largest alpine peatlands in the world – was selected to represent peatlands in the eastern part of the Hindu Kush Himalayan region and as a reference site for this project.

To conduct this project, a research team was formed by ICIMOD staff, students from Tribhuvan University, staff in national parks, and some local people. Dr Zhu Dan from the Chengdu Institute of Biology (CIB), CAS, and currently an Ecosystem Analyst at ICIMOD supported by the Chinese Academy of Sciences-ICIMOD Young Scholar Programme, is the team leader. The objective of this project is to assess

Measurements being taken for international cooperation research on peatlands in the Hindu Kush Himalayan region



the GHG emissions in both spatial and temporal scales and to study the key biotic and abiotic factors impacting GHG emission from peatlands.

This project, supported jointly by the National Natural Science Foundation of China and ICIMOD's Innovation Fund, is the first to assess GHG emissions from the southern slopes of the Himalayas. It is operated under the supervision of Prof. Wu Ning from CIB who is currently the Ecosystem Services Thematic Area Leader at ICIMOD.

Cooperation

MoU Signed between ITP and Myanmar Geosciences Society

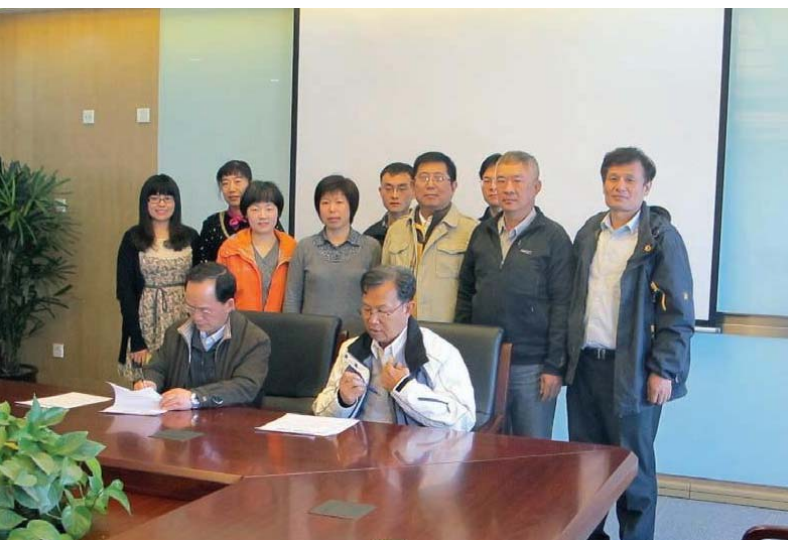
A Memorandum of Understanding (MoU) was signed in April 2013 between the Institute of Tibetan Plateau Research (ITP) and Myanmar Geosciences Society (MGS). The agreement will strengthen cooperation between the two institutions in areas like the joint establishment of field GPS stations and automatic weather stations stations to improve understanding of the tectonic activities and dominant climatic and environmental patterns in Myanmar as well as to enhance collaboration in the development of young scientists. The MoU is conducive to further understanding climate and the environment in the Third Pole region. It will also allow for the study of the tectonic plates in and around the Tibetan Plateau, thus contributing to the holistic understanding of the Tibetan Plateau uplift history.

Training Course on Wild Plant Germplasm Resource Collection Technology in Yunnan Nature Reserves

The Bureau of Personnel, CAS, and the Forestry Department of Yunnan Province jointly organized the Fifth Training Course on Wild Plant Germplasm Resource Collection Technology in Yunnan Nature Reserves. This training, hosted by the China Germplasm Bank of Wild Species of KIB, included basic theory at KIB and field practice in the Jiaozi Snow Mountain National Reserve. Participants from 22 national and provincial nature reserves and related domestic universities and institutions attended the course. Prof. Li Dezhu, Director of KIB; Zhang Jie, Bureau of Personnel, CAS; Tian Yongsheng, Bureau of Science and Technology for Development, CAS; and Zhao Xiaodong, Forestry Department of Yunnan Province delivered speeches at the training course. After the training, participants had a fundamental grasp of technologies used for wild plant germplasm resource collection and received a certificate of completion from KIB and the Forestry Department of Yunnan Province.

Since 2007, KIB and the Forestry Department of Yunnan Province has held this training course five times and has trained over 140 personnel. The fifth training course received financial support from the first continuing education project of CAS.

MoU signed between ITP and Myanmar Geosciences Society



Training Course on Wild Plant Germplasm Resource Collection Technology in Yunnan Nature Reserves



Academic Activities

Mekong Environmental Symposium in Vietnam

The Mekong Environmental Symposium, held in Ho Chi Minh City, Vietnam 5–7 March 2013, was the first event organized by the German Aerospace Center (DLR) and WISDOM Project, Ministry of Science and Technology of Vietnam. The event, co-organized by the Southern Institute of Water Resources Research of Vietnam, Vietnam Academy of Science and Technology, National Natural Science Foundation of China, and the Institute of Geographic Sciences and Natural Resources Research (IGSNRR), CAS, aimed to serve as an international platform for governmental decision makers, scientists, and other organizations active in the Mekong region. The symposium was attended by over 400 prominent experts, professors, laboratory principals, project leaders, and representatives of governments from Cambodia, China, Germany, Laos, Myanmar, Thailand, Vietnam, and the USA.

The ten key topics for the symposium included hydropower development and impacts on the economy and the river ecology; Mekong basin forest dynamics and REDD+; Mekong basin land use (non-forest) dynamics; Mekong basin hydrology and hydrography; hazards and disaster risk reduction in the Mekong basin; Mekong basin aquatic ecology, biodiversity, and water quality protection; Tonle Sap Lake: ecology, biodiversity and rural livelihoods; climate change related challenges in the Mekong delta; impacts of urbanization and industrialization on agriculture and water resources; and collaboration platforms in basin management:

information systems and spatial infrastructures, capacity building, education and outreach.

During a keynote speech in the opening ceremony, Prof. Shen Lei, from IGSNRR, highlighted a four-year comprehensive survey and research results undertaken by IGSNRR in the Lancang River of China covering issues like water, land and biological resources, ecosystems, natural heritage, habitat environment and disasters, and the progress of information systems on resources and environment. He further noted some key areas for potential international cooperation opportunities.

The Mekong River is the world's twelfth longest river. Known as the Lancang River in China, it originates in Qinghai Province and runs through Yunnan Province of China, after which it flows through Myanmar, Laos, Thailand, Cambodia and Vietnam. The Mekong River basin has raised great attention around the world over the last 30 years.

The Chinese delegation consisting of 30 researchers was financially supported by the National Natural Science Foundation of China, projects under Ministry of Science and Technology of China, and IGSNRR.

Fourth Third Pole Environment (TPE) Workshop

The Fourth Third Pole Environment (TPE) Workshop was held at the Wadia Institute of Himalayan Geology (WIHG) in Dehradun, India 1–3 April 2013. The workshop attracted more than 50 world-renowned scientists from 14 countries, as well as officials from international organizations and governments.

Mekong Environmental Symposium in Vietnam



Fourth Third Pole Environment (TPE) Workshop in India



President of Iceland Ólafur Ragnar Grímsson was the chief guest at the inaugural session of the workshop. President Grímsson lauded the work of scientists from the Third Pole region and beyond and said it is "a great honour for Iceland to be a part of this evolving Himalayan cooperation". TPE co-chairs Profs. Yao Tandong and Lonnie Thompson introduced the latest progress of the TPE programme and called for further cooperation among scientists. S Jaipal Reddy, Minister of Science and Technology and Earth Sciences of the Government of India; Ram Boojh, UNESCO representative; and Anil K Gupta, Director of WIHG also spoke at the event, stressing the importance to further promote TPE research to confront the challenge of global climate change.

Scientific presentations and group and plenary discussions were held during the following two days. Twenty-nine scientists from different academic fields presented their latest research results in six sessions, including on the human-nature relationship in the Third Pole region, climate changes in the past and at present in polar region on earth, and regional efforts in TPE study, ecosystem and geology, as well as the TPE Mass Balance Working Group report and the TPE Precipitation Working Group report. During plenary discussions, it was agreed that the next TPE event would be an open conference instead of a workshop, which will allow for broader involvement of scientists and policy makers.

Third Pole Environment Session at the European Geosciences Union General Assembly

During the 2013 General Assembly of the European Geosciences Union (EGU), the Third Pole Environment (TPE) programme hosted a themed session on 11 April 2013 on the Observation and Modelling of Hydrometeorological Processes. This is the third time the TPE has hosted such a session at the EGU general assembly.

Revolving around the theme of 'Observation and Modelling of Hydrometeorological Processes in High Elevation Areas', the session featured 12 oral presentations by scientists from China, France, Italy, Germany, the Netherlands, and the USA in addition to the presentation of 15 posters on recent research achievements on land surface processes and environmental changes in the Third Pole region.

This year's session was jointly organized by ITP, CAS Profs Ma Yaoming and Zhang Fan; Prof. Bob Su of University of Twente, Netherlands; Prof. Antonello Provenzale of Institute of Atmospheric Sciences and Climate, Italy; Dr Hans-Werner Jacobi of Laboratory of Glaciology and Environmental Geophysics, France; and Dr Peter van Oevelen of GEWEX. The TPE session was open to the over 10,000 EGU participants, which allowed for intensive and extensive academic exchanges on hydrological and environmental research of the Third Pole region.

New Project Launches on Ecosystem-Based Adaptation in Developing Countries

A project on Enhancing Capacity, Knowledge and Technology Support to Build Climate Resilience of Vulnerable Developing Countries was officially launched on 22 April 2013 in Beijing, China.

The project seeks to build climate resilience using the ecosystem-based approach in three pilot countries – Mauritania (desert ecosystems), Nepal (mountain ecosystems) and the Seychelles (coastal ecosystems) – by mobilizing knowledge, transferring appropriate adaptation technologies, sharing knowledge, and increasing the institutional capacity across Africa and the Asia-Pacific.

The project is funded through the Global Environment Facility – Special Climate Change Fund (GEF-SCCF) in collaboration with the National Development and Reform Commission of China (NDRC), the United Nations Environment Programme (UNEP), and the Chinese Academy of Sciences (CAS). The launch was attended by dignitaries from GEF, NDRC, UNEP, CAS, UN Resident Coordinator Office, United Nations Development Programme (UNDP), and China's Ministry of Finance as well as regional representatives from the African Climate Change Policy Centre (ACPC) and the Asia-Pacific Adaptation Network and senior government representatives from Mauritania, Nepal, and Seychelles.

The workshop was opened with an introduction to the project by Dr Liu Jian, Director of UNEP-International Ecosystem Management Partnership (UNEP-IEMP). In his opening remarks, Su Wei, Director General of NDRC, noted that climate change is one of the most pressing challenges facing humanity in the 21st

century. He called for joint efforts by the international community to mainstream climate change actions in the overall framework of sustainable development, and said he envisages that this project will become a flagship in south-south cooperation on climate change. His comments were further reiterated by Liang Ziqian, Deputy Director General of the Department of International Cooperation, MOF, who noted China's willingness to share their lessons and experiences with other developing countries and the international community within the framework of south-south cooperation. Renata Lok-Desallien, UN China Resident Coordinator, stressed the need for effective action beyond national borders including both regional and international action. Bonizella Biagini, Head of Climate Change Adaptation Strategy and Operations of the GEF, commended the project for its innovative and integrated approach to dealing with adaptation and the partnership that China has developed in addressing climate change issues. Ermira Fida, Head of GEF Adaptation Portfolio of UNEP, said that while this project complements the big picture of the UNEP's Ecosystem-Based Adaptation Flagship Programme, it is the first GEF adaptation project that follows the newly developed GEF guidelines for ecosystem-based adaptation projects. The project is expected to deliver tools, methods, and platforms for use by other developing countries as they advance their national adaptation planning.

The first day of the workshop focused on the human dimension of climate change, including the need for capacity building, planning, and the implementation of ecosystem-based adaptation approaches. National and regional activities, including an implementation plan for each pilot country, were discussed the second day. The final day of the workshop concluded with a wrap-up of key findings and recommendations from the deliberations.

The launch was co-organized by UNEP-IEMP and the Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR, CAS).

Regional Workshop for Awareness Raising and Capacity Building on Access and Benefit Sharing

ICIMOD, in collaboration with the Sichuan Academy of Environmental Sciences; Chengdu Institute of Biology (CIB), Chinese Academy of Sciences; and Kunming Institute of Botany (KIB), CAS, held a 'Regional Workshop on Awareness Raising and Capacity Building to Support the ABS Mechanism under the CBD Nagoya Protocol' 15–17 May in Chengdu, China. More than 30 participants from Bhutan, China, Germany, India, Myanmar, Nepal, and Pakistan attended this workshop.

Prof. Zhao Xinquan, Director of CIB, addressed the meeting, and participants were able to share experiences on the ratification and implementation of the Nagoya Protocol on ABS. They also discussed and identified common transboundary and other issues related to ABS and the corresponding challenges at the national level, and discussed



Regional workshop on awareness raising and capacity building to support the access and benefit sharing mechanism

important articles of the Nagoya Protocol in order to develop some guidelines for moving forward.

The workshop gave participants a chance to improve understanding of important issues relevant to the implementation of the Nagoya Protocol and share effective ABS mechanisms that can be used in critical landscapes like the transboundary Kailash Sacred landscape.



New GEF-SCCF project on launches ecosystem-based adaptation in developing countries

Workshop on Conservation and Sustainable Development in the Karakoram-Pamir Landscape

From 19 to 22 May 2013, ICIMOD and the Xinjiang Institute of Ecology and Geography (XIEG), CAS, organized a workshop on Conservation and Sustainable Development in Karakoram-Pamir Landscape in Urumqi, China. The symposium attracted more than 50 researchers and officers from CAS, ICIMOD, the Forestry Administration of Pakistan, the State Forestry Administration of China, the Forestry Administration of Xinjiang Uygur Autonomous Region, Nature reserve region of Taxkorgan county, and Forestry Administration of Kashi prefecture, Xinjiang.

The symposium aims to promote biodiversity conservation and sustainable development in the Karakoram-Pamir region and to develop action plans. In the symposium, researchers and officers discussed topics of economic and social development, biological resources and biodiversity conservation, regional development programming, and sustainable development of the Karakoram-Pamir.

XIEG has endeavoured to protect transboundary biodiversity along the China-Pakistan border since 2003. During the symposium, Prof. Chen Xi, Director of XIEG, said, "Based on political mutual trust, similar culture and beliefs, and convenient traffic conditions, I hope transboundary cooperation for biodiversity conservation between China and Pakistan will obtain significant achievements."

International Symposium on Changes in Glaciers and Ice Sheets

The International Symposium on Changes in Glaciers and Ice Sheets was held at the Institute of Tibetan Plateau Research (ITP), CAS from 28 July to 2 August 2013. The meeting, which was organized by the International Glaciological Society (IGS) and ITP, attracted 172 participants from 22 countries, including some prominent glacier scientists such as Qin Dahe, CAS Member; Prof. Douglas MacAyeal, Chair of IGS; Prof. Robert Bindshadler, former Chair of IGS; and Prof. Lonnie Thompson.

Glaciers and ice sheets are important components that control sea level change. In response to a warming climate, the Greenland and West Antarctic ice sheets have significantly lost mass during the last decade, and mountain glaciers worldwide have rapidly declined. Changes in mountain glaciers have direct impacts on human activities, especially in mid-altitude regions, where changes in high-altitude snow and ice can directly affect human activity. Therefore, the symposium specifically included topics pertinent to the earth's 'Third Pole', including the assessment



International Symposium on Changes in Glaciers and Ice Sheets

of present glaciers and ice sheets, remote sensing technology, ice change in the Third Pole, disasters, and impacts on society.

In order to improve our understanding of the dynamics of cryospheric change, interactions with the climate, and impacts on the living environment of mountainous regions, this symposium provided a

Workshop on Conservation and Sustainable Development in the Karakoram-pamir Landscape



forum for general discussion on these components of the global cryosphere with broader aspects from recent in situ observations, remote sensing measurements and modelling efforts. This symposium increased public awareness of global changes in glaciers and ice sheets, especially the about changes in the environment and water resources of the Third Pole and surrounding regions. Moreover, this symposium promoted the TPE plan and enhanced cooperative research on snow, ice, and environmental change between China and the surrounding countries.

First International Conference on Environment, Energy, and Development in Rwanda

Organized by the Independent Institute of Lay Adventists of Kigali in conjunction with the Xinjiang Institute of Ecology and Geography, CAS (XIEG), the first International Conference on Environment, Energy and Development (ICEED 2013) was held in Rwanda 7-8 August 2013. The conference revolved around the theme 'Environment Energy, and Development'. More than 160 participants from Austria, China, Ethiopia, India, Morocco, Nigeria, Rwanda, Tanzania, and Uganda attended the meeting.

Discussion during two plenary sessions and two parallel sessions were held on the following topics: urban ecology, climate change, environment regulation, new technologies, water management,

environmental risk assessment, energy needs and solutions, sustainable economics, resource management, soil conservation, clean solution, and modelling approaches in environment.

Prof. Chen Xi, Director of XIEG, and Ngamije Jean, Director of the Independent Institute of Lay Adventists of Kigali, gave opening remarks during the opening ceremony. Prof. Li Lanhai from XIEG presented a report on climate change and water resource in arid areas of Xinjiang.

The meeting laid a good foundation for further cooperation, and both sides put forward proposals for joint training and cooperative research projects, including the establishment of the Natural Resources and Environmental Research Centre of excellence in East Africa. This centre will help promote the dissemination of scientific research problems on resource and environment in East Africa, carry out research on sustaining resources and responses to global change, and promote capacity building in ecology and environmental science research in East Africa.

Third Africa-Asia Drought Adaptation Forum Held

From 15 to 21 August, the third Africa-Asia Drought Adaptation Forum (AADF) was held in Urumqi to provide a communication opportunity for the researches in the field of mitigating drought disaster risk, and to achieve agreed targets of south-south cooperation in drought disaster risk reduction under the frame of Africa-Asia Drought Risk Management Peer Assistance Network.

The forum was jointly organized by the Australian Agency for International Development (AusAID), Drylands Development Centre (DDC) of United Nations Development Programme (UNDP), UNDP Country Offices in China, China International Center for Economic and Technical Exchanges, and Xinjiang Institute of Ecology and Geography (XIEG), CAS. More than 40 domestic and foreign researchers from Ethiopia, Ghana, Namibia, Zimbabwe, Mauritania, Kenya, USA, Japan, India and China attended the forum.

Prof. Lei Jiaqiang, Deputy Director of XIEG, CAS, presided over the opening plenary and. Fu Chunli, Deputy Director of Xinjiang Branch, CAS, and Xiao

First International Conference on Environment, Energy, and Development in Rwanda



Fenghuai, Director of the China International Center for Economic and Technical Exchanges, attended the opening plenary and presented welcome addresses.

This forum was divided into two parts: symposium and field investigation. On the first two days, the symposium was conducted and mainly focused on the utilization, protection and management of water resources, degradation and restoration of soil structure, and soil fertility management. For the remaining days, researchers conducted field investigations in the Turpan Eremophytes Botanical Garden, CAS; Taklimakan Station for Desert Research, XIEG, CAS; and Qira National Field Research Station for Desert Steppe Ecosystems.

Meetings

2013 Annual Meeting of Geographical Society of China (Southwest)

The Southwest Chapter of the Geographical Society of China (GSC) held its annual meeting in Kunming 27-29 April 2013 with the theme Mountain Environment and Ecological Civilization Construction. More than 240 participants from domestic universities, companies, and institutions attended the meeting, which was co-organized by the Southwest Branch of the GSC, International River Centre of Yunnan University, and Yunnan Geography Society. The Sichuan Geography Society, Chongqing Geography Society, Guizhou Geography Society, Tibet Geography Society, Mountain Branch of the Geographical Society of China and ICIMOD Chinese Committee provided assistance to the meeting.

Prof. Lin Wenxun, President of Yunnan University, opened the meeting with a speech. Prof. Zhang Guoyou, Secretary General of GSC, and Prof. Deng Wei, Director of the Institute of Mountain Hazards and Environment, CAS, also delivered speeches. Prof. He Daming, Director of International River Centre of Yunnan University and President of Yunnan Geography Society, hosted the opening ceremony. Prof. Zhang Guoyou issued the letter of appointment to the first leaders.

This meeting consisted of keynote speeches and sessions on mountain hazards and global climate change; mountain resources, mountain economy and

ecological civilization construction; plateau mountain environment; security of the Chinese borderland; and ecological civilization construction and regional development in the Three Gorges as well as two forums. Ninety-eight participants made oral speeches, including 44 graduate students and 19 basic geographical educators. Participants had heated discussion focusing on frontier science and regional problems. This type academic exchange plays an important role in the development of geographical science in the southwest areas of China.

At the closing ceremony, the Organizing Committee issued excellent paper awards, including 18 graduate papers and 12 basic geographic education papers. After that, Prof. Cui Peng, Vice President of GSC; Prof. Zhang Guoyou; Prof. HE Daming; Prof. Qimei Duoqi, Secretary General of Tibet Geography Society; Prof. Wang Jianli, President of Chongqing Geography Society; and Prof. Xiong Kangning, Vice President of Guizhou Geography Society delivered speeches. In closing the event, the Organizing Committee announced that the 2015 annual meeting of GSC (Southwest) will be held in Guizhou Province.

Focus

450th Session of Xiangshan Science Conference: Climate Change and Ecological Security Shelter on the Tibetan Plateau

The uplift of the Tibetan Plateau changes the dynamic and thermal conditions of the atmosphere, forming a unique distribution pattern of heat and moisture and leading to changes of the general atmospheric circulation in the Tibetan Plateau and surrounding area. Against the background of global warming, extreme weather and climate events occur frequently, exerting influence on the climate system of east China and causing droughts and flooding. The Plateau plays the important role as a source of water. It has the third largest group of glaciers in the world behind to the Antarctic and the Arctic, and the world's largest group of plateau lakes both in terms of number and area. It is the source of more than ten major Asian rivers including the Yangtze and the Yellow River, playing an important role in safeguarding the water security of China. With its unique wildlife and plants, the Plateau plays a major role in maintaining

both the genetic diversity and uniqueness of the regions biodiversity. With 62,000 km² of forests and 1,500,000 km² of natural grasslands, the Plateau is an important carbon sink. Its more than 1,400,000 km² of permafrost also sequesters large amounts of greenhouse gases. Changes in its surface processes will have a direct bearing on the carbon absorption, emission, and atmospheric content of greenhouse gases. Therefore, the Plateau is an important ecological shelter for China.

Global warming is bringing about changes in the processes of many types of surfaces such as glaciers, permafrost, lakes, wetlands, grasslands and desert. These changes influence not only the frequency and magnitude of regional disasters and the economic growth of the Plateau, but also its functions as an environmental and ecological shelter on a larger scale.

The 450th Session of the Xiangshan Science Conference on Climate Change and Ecological Security Shelter took place from 11 to 13 December in Beijing with the objectives of investigating the influences of the land surface environment and extreme climate events of the Tibetan Plateau on its neighbouring regions against a background of global warming; expounding the internal relationships between contemporary surface processes of the Plateau (such as glaciers, permafrost, lakes, wetland, grassland and desert) and regional water circulation and related disasters; and exploring the relationships between current conditions of biodiversity of the Plateau and climate evolution and offering suggestions on measures to maintain the function of the Plateau as an ecological security shelter against the background of global warming.

Under the theme of Climate Change and Ecological Security Shelter on the Tibetan Plateau, the symposium invited scholars and experts from different fields to have in-depth discussions on: changes in land surface of the Plateau and extreme environment events; the influences of the Plateau's cryosphere on the regional water circulation and ecological changes; the responses and influences of the Plateau's land cover changes to climate change; assessment of the role of the Plateau's ecological system as a carbon source and sink and related suggestions.

The meeting was co-chaired by Sun Honglie and Zheng Du, Research Professors, Institute of Geological Sciences and Natural Resources Research, CAS; Yao Tandong, Research Professor, Institute of Tibet Plateau Research, CAS; and Qin Dahe, Research Professor, China Meteorological Administration. A keynote review report was given on Global Warming and Environmental Responses of the Tibetan Plateau by Yao Tandong. Reports on the central topics on specific topics including Climate Change on the Tibetan Plateau and Extreme Environmental Events by Wu Guoxiong; Cryosphere Processes on the Tibetan Plateau and Regional Water Circulation by Yao Tandong; Land cover of the Tibetan Plateau and Climate Change by Liu Jiyuan; and the Carbon Source and Sink Effects of the Ecological System on the Tibetan Plateau by Li Wenhua.

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

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