CNICIMOD Newsletter

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ICIMOD

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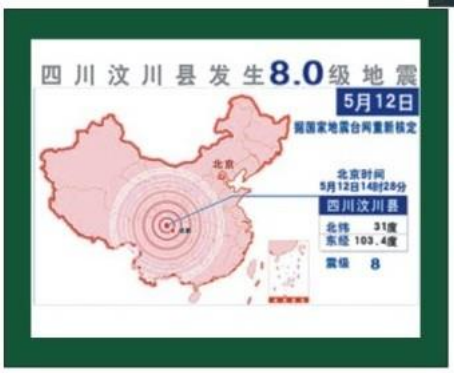
FOR MOUNTAINS AND PEOPLE

The Disaster

Earthquake:
Time: at 14:28 '04 on May 12, 2008
Latitude: 31.0 ° N
Longitude: 103.4 ° E
Depth: 33 km
Magnitude: Richter 8.0
The greatest intensity: 11 degrees

Earthquake feeling

The earthquake in Wenchuan on 12th May was the strongest in China since 1949. The directly and seriously affected areas covered 100,000 square kilometres,



including counties around the epicentre within 50 km and large and medium-sized cities within 200 km. Beijing, Shanghai, Tianjin, Ningxia, Gansu, Qinghai, Shaanxi, Shanxi, Shandong, Hebei, Henan, Anhui, Hubei, Hunan, Chongqing, Guizhou, Yunnan, Inner Mongolia, Guangxi, Tibet, Jiangsu, Zhejiang, Liaoning, and other provinces, cities, and settlements nationwide clearly felt the earthquake. It was also felt to varying degrees in Heilongjiang, Jilin, and Xinjiang in China, and as far away as the Thai capital Bangkok, and the Vietnamese capital Hanoi among others.

The human cost

Dead: 69,225
Missing: 17,923
Injured: 374,640
Affected: 46.24 million

Causes of the earthquake

The Wenchuan earthquake occurred on the southeast edge of the Qinghai-Tibet Plateau, in the centre of Mount Longmenshan in western Sichuan province, along the Wenchuan-Maowen fault zone. The northward movement of the Indian Ocean plate squeezes the Eurasian plate causing uplift of the Qinghai-Tibet Plateau, and on the mainland scale, the seismic activity in Central and east Asia is due to this collision. At the same time, the eastward movement of the Indian Ocean plate also squeezes the Sichuan Basin. The focal mechanism of the earthquake was the northeastward thrust; with a single direction of movements in a southwest to northeast migration which caused squeeze-thrust earthquake aftershocks spreading to the north and east after the main shock. The process of dissemination and stress release has been slow, resulting in extremely intense aftershocks continuing for a long time.

Disaster Relief

The Chinese Academy of Sciences organises active involvement of scientists and technicians in the earthquake relief

On 12th May in the evening, after the meeting of the CPC Central Committee Political Bureau and State Council on earthquake relief, Lu Yongxiang, President of the Chinese Academy of Sciences (CAS), gave urgent instructions to provide the scientific and technological resources needed for services and consultation to central and local governments in disaster monitoring, and prevention and response to secondary disasters. The Executive Vice President, Bai Chunli, Deputy Secretary of the CAS party group, gave a briefing on the earthquake situation during a morning video meeting on 13th May, made arrangements for the earthquake relief work of the Chinese Academy of Sciences, and put forward specific requirements.

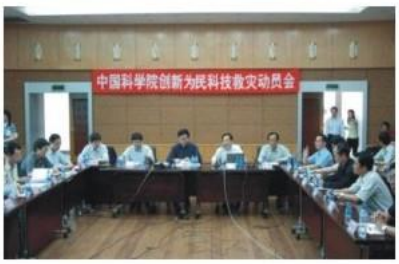
CAS issued an urgent circular demanding that all relevant units quickly gather forces to carry out active research in disaster monitoring, and prevention and response to secondary disasters with the help of reserves of high-tech and environmental resources in earthquake knowledge, remote sensing, emergency rescue, communication, transport, logistics, and others that play an important role in earthquake relief work.

Mobilisation video meeting on technology innovation for the people disaster relief by technology held in Chengdu

On 18th May, Bai Chunli, the Executive Vice President of the Chinese Academy of Sciences, Deputy Secretary of the party group, head of the group leading the earthquake relief work, and representative of the CAS Party Group, visited the CAS Chengdu Branch and offered his condolences to the affected units, staff members, and young students, and hosted a mobilisation video meeting on 'Technology innovation for the people disaster relief by technology'. He stressed that in order to further mobilise all the institutions to collect information and data, they first had to provide scientific and technological support to the earthquake relief in a continuing spirit of collaboration between disciplines and units.

Commissioned by President Lu Yongxiang, Vice Chairman of the NPC Standing Committee, on behalf of the CAS Party Group, Bai Chunli expressed their deep condolences to the victims and injured and their families of Huaxi Garden of Beijing Botany Institute and Chengdu Biological Institute. He also paid tribute to the scientific research personnel working at the forefront of the earthquake relief. Bai Chunli indicated that since the disaster occurred, the relevant institutions of CAS have initiated a number of projects using their accumulated knowledge and data, and carrying out the role of a 'technological army' serving the earthquake relief itself and also playing a positive role in 'Technology innovation for the people disaster relief by technology'.

Bai Chunli stressed that the Chinese Academy of Sciences is an academy of the people throughout the country. It is our duty-bound responsibility to provide references for decision-making in the earthquake relief work of the state. He pointed out that research units should further strengthen their capacity in interpretation of remote sensing image maps of the landslide, buildings, roads, water conservation, and infrastructure and carry out a systems analysis to produce accurate, scientific, analytical and advisory reports. It is necessary to focus closely on the earthquake relief and reconstruction work and prediction of secondary disasters, psychological assistance to post-earthquake relief, the impact on China's economy and society, and prevention and control of epidemics. All of these information and advisory reports can provide advice and a scientific basis for central command decision-making and the relevant state departments.



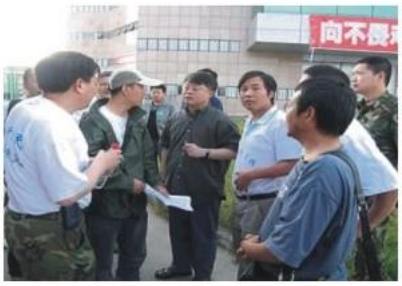
Earthquake relief action plan initiated by IMHE

On 14th May, the Chengdu Institute of Mountain Hazards and Environment (IMHE) held a mobilisation meeting on the scientific and technological earthquake relief operations. The leaders of IMHE decided to launch a scientific and technological disaster relief action plan based on the existing situation and including the following actions:

1. To dispatch 12 experts to participate in three expert groups (earthquake disaster comprehensive study and evaluation, technical support services, and first-line experts) according to the disaster contingency plan of the Ministry of Science and Technology, in order to solve the key issues of disaster relief with the help of technological expertise.
2. To organise immediately a voluntary group of rescue experts, in accordance with the Sichuan Provincial Government's request, to rush to the disaster areas to provide targeted technical services such as clearing blocked roads and carrying out a security assessment of settlements on blocked rivers, and other urgent needs.
3. To respond to the CAS remote sensing disaster relief plan by organising remote sensing and disaster experts working with the Institute of Remote Sensing Applications and other units, to carry out aerial remote sensing surveys to assess the impact of disaster losses and provide the state with the important information.
4. To organise experts to visit the earthquake-stricken areas and to provide Sichuan Provincial Government, with the relevant ground support information using satellite remote sensing instruments.
5. To print out and distribute as soon as possible a mountain disaster information booklet for local government departments and the general public, to increase awareness on disaster prevention and mitigation in the affected areas.

Jiang Mianheng commanded Sichuan earthquake relief operations at the scene in earthquake-stricken areas

From 1st to 3rd June 2008, Jiang Mianheng, Vice President of the Chinese Academy of Sciences, representing the CAS Party Group, expressed his cordial regards to the scientific and technological personnel fighting in the first line of the earthquake rescue work.



Jiang Mianheng said that CAS would fully mobilise its strength to ensure that advantage was taken of system integration, innovation for the people, and disaster relief using science and technology, and that due contributions were made to repair and reconstruction. Jiang Mianheng listened to a report on 'broadband wireless emergency communications system' in the Tangjiashan Dammed Lake Relief Headquarters in Mianyang and talked to the leaders from the Ministry of Water Resources (MWR) and the

Yangtze River Water Resources Committee. Chen Lei, Minister of MWR, spoke highly of the 'system' for real-time monitoring of the Tangjiashan dammed lake, and its important role, and of the layout of monitoring points, night vision capabilities, and access control to further improvement. On 2nd June, Jiang Mianheng, organised and dispatched a working team for debugging and installing the Tangjiashan dammed lake monitoring system and saw them off at Mianyang airport. Later, Jiang Mianheng and his entourage went to the China Engineering Physics Research Institute headquarters in Mianyang and met with President Zhao Xiangeng, and Vice President, Zhang WeiYan, expressed condolences to the brother units, and said that the two units should support each other and overcome the difficulties together. On 3rd June, the entourage arrived at the Chengdu Institute of Optics and Electronics, where they listened to a report on the earthquake relief work and inspected the earthquake-affected laboratories, offices and residential buildings. Jiang Mianheng urged them to give great importance to the lives and safety of their staff, to mobilise forces from all quarters, and to do everything possible to resolve the practical difficulties of the affected staff in an effort to reduce the losses.

Experts from the Institute of Geology and Geophysics investigated the Wenchuan disaster areas

A comprehensive investigation group of eight experts led by Dr Zhu Rixiang, Academician and Director of the Institute of Geology and Geophysics, rushed to the earthquake-stricken areas to carry out a comprehensive scientific investigation on the secondary geological disasters.

After preparing a detailed inspection plan, they visited the landslides, collapses, and other geological disasters along the road from Dujiangyan City to Hongkou Town with Professor Yue Zhongqi from Hong Kong University and Dr Su Tianming from the Research Institute of Highway, Ministry of Communications. During one of the inspections they found that landslide collapses, rolling stones, and other signs of slope failure constantly appeared along the length of the road, and some slopes were dangerously cracked and loose as a result of the earthquake. Various signs showed that rainfall and other unfavourable factors could induce slope instability and result in risks to the security of the newly reconstructed road.

From 15th June, the group continued their investigation on the post-earthquake study of geological disasters in the seriously disaster-affected areas of Anxian, Beichuan, Jiangyou, Mianzhu, and Shifang including Beichuan Middle School; the towns of Leigu, Hanwang, Luoshui, Yinghua; and the hardest hit towns such as Hongbai. In terms of terrain, the southeast part of Shifang and Mianzhu are plains areas, and the northwest is mountains. The earthquake disaster gradually spread approximately along the northwest direction. The impacts of the earthquake became more serious towards the northwest side along the mountain margins (such as Hanwang, Luoshui, Ying-hua, and Hongbai towns). The site inspections found that small landslides and rockfalls triggered by the earthquake were very common in the mountainous areas but larger scale landslides were very rare.

The on-site investigation, an exchange and analysis led to a new awareness on the mechanism of the dynamics of the earthquake disaster, which will provide an important scientific basis for earthquake disaster mitigation and reconstruction.

Experts from CAS and the Bureau of Science and Technology of Sichuan province discussed the psychological relief action plan

On 20th May, the Vice Director of the Chinese Academy of Sciences Chengdu Branch, Dr Yuan Jiahu, the Director of the Institute of Psychological Relief, Dr Zhang Kan, and the Director of the Bureau of Science and Technology of Sichuan Province, Dr Tang Jian discussed the psychological relief action plan for the earthquake-stricken areas in Sichuan.

Eight days had passed since the '5.12' earthquake, the earthquake relief work needed to be shifted from rescue of those buried to psychological rescue and resettlement of the survivors, and then to the stage of confidence building and reconstruction of homes. In the relatively long-term stages, mental relief is one of the most important tasks in disaster areas. Because there is a lack of psychological disaster relief organisations, Dr Zhang Kan made eight recommendations from a professional point of view for carrying out psychological rescue work effectively in the disaster areas: first, to organise and coordinate a unified command, as well as effective scientific professional resources, under the leadership of government work departments supported by psychologists; second, in accordance with the post-disaster stage of development, distinguish between different geographical groups and rational interventions and implement a psychological relief system step-by-step; third, to guide all types of social support, media planning, and reasonable publicity, and eliminate the victims negative emotions and help them rebuild their lives in a positive way; fourth, to promote mental health and enhance psychological counselling, and solve the psychological problems of the victims; fifth, to pay more attention to all types of high-risk groups, check their stress response, and treat their mental problems well in order to prevent long term mental disability; sixth, arrange for reasonable rest periods for counselling staff and maintain their physical and mental health in order to protect the health of rescue workers and prevent secondary trauma; seventh, to support the professional teams in Sichuan Province, organise training

courses for the trauma treatment staff, develop psychological decompression products, and maintain the mental health of the general public; and eighth, to summarise the experiences of psychological relief and expand cooperation at home and abroad, highlight the laws of psychological relief, and create a psychological relief mode with Chinese characters.

The monitoring work on the draining of the Tangjiashan dammed lake was successful

The Tangjiashan landslide-dammed lake was the most dangerous lake formed after the '5.12' Wenchuan earthquake. Its stability had direct implications for hundreds of thousands of lives and the properties of residents in the lower reaches, and also attracted close attention from the central leadership. From the 7th to 10th of June 2008, the Chinese Academy of Sciences organised professionals from five institutions to jointly monitor the dam body. These units made full use of their professional competence in close cooperation with the successfully real-time monitoring of the lake-draining process.

The Director of the Institute of Microelectronics, Professor Ye Tianchun, associate researcher Wang Yangchuan from IMHE, Professor Li Shihai from the Institute of Mechanics, and Dr Li Shouding from the Institute of Geology and Geophysics completed the dam geological survey and the selection of monitoring equipment points by helicopter.

The sites for the monitoring points were selected based on a detailed geological investigation; the information from the sensors was transmitted directly to the information monitoring data analysis centre in Beijing so that the experts could inform the Central Government and the general public about the situation as it developed and ensure that the draining work proceeded smoothly.

Reconstruction of Houses

A special session of the Xiangshan Science Conferences focuses on the devastating earthquake in Wenchuan

An emergency session of the Xiangshan Science Conferences (XSSC) was held in Beijing on 19th May, the seventh day after the earthquake in Wenchuan County in Sichuan province which rocked half the Asian continent.

The meeting brought together more than 40 experts in seismology and geophysics to discuss China's most destructive tremor since the founding of the People's Republic in 1949.

Under the theme of the 'Formative Mechanism and Scientific Analysis of the Consequent Aftermath of the Mega-earthquake in Wenchuan County, Sichuan Province' the participants made an exhaustive and multi-disciplinary scrutiny of the disastrous earthquake's early warning and an all-round assessment of its devastating consequences.

Some scientists working or residing in the quake-hit areas brought in a great amount of first-hand data on the earthquake to the meeting, which was presided over by three authoritative scientists, Professor Zhang Peizhen from the State Bureau of Seismology (SBS), Professor Xu Zhiqin of the China Academy of Earth Sciences, and Professor Wang Guangqian of Tsinghua University.

At the meeting, three keynote reports were given by Professor Zhang Guomin of SBS, Professor Wang Guangqian, and Professor Xu Zhiqin under the titles of 'A Brief Introduction to the Wenchuan Earthquake at 8th

Magnitude on the Richter Scale', 'The Wenchuan Mega-earthquake and Water Conservancy Projects', and 'Tectonic Background, Seismic Fractures and Analysis of the Aftershocks in the Wenchuan Mega-earthquake'.

In his roundup report, Professor Xu presented the idea that the tremor resulted from eruptive displacement occurring in the Yingchuan-Beichuan Fault, which is located in the Longmenshan nappe structure belt at the eastern fringe of the Qinghai-Tibet Plateau, and that the fracture's chief role was a reverse thrusting reaction overlapped with a clockwise component of slipping-off. According to Liu Jing of the CAS Institute of Qinghai-Tibet Plateau Research, the earthquake poses a theoretical challenge to the prevailing view on the lower mantle's flowing model. Also in the discussion, the experts universally maintained that the whole process of the tectonic fracture in the Wenchuan mega-earthquake was extremely complicated but that they were convinced that sorting out, analysing and providing a comprehensive summary of all the materials and data obtained before and after the quake would help to raise the level of precision in predicting such destructive tremors.

The experts present at the meeting came to a consensus on the following suggestions: the studies on the sequence of the serialised aftershock activities should be strengthened; and efforts should be made to carry out effective forecasting of the quake's powerful aftershocks with tangible and substantial effects. The experts urged the related governmental departments to call together and organise scientists to carry out investigative surveys of the Wenchuan earthquake, probing the tectonic causes of the disaster, the structure of the fractured belt, and the dynamic process. The theoretical exposition should highlight the following: the formative mechanism of the nappe structure thrusting earthquakes and objective laws on the powerful even disastrous outbreaks of these quakes; and comprehensive estimates of the losses and damage caused by a destructive quake and its devastating mechanisms. In the fieldwork for monitoring and on-the-spot observation, the following subjects must be stressed: correct and timely diagnosis of the damaged conditions of reservoirs; the possible collapse of the lakes formed by landslide dams resulting from the earthquake; and preventive measures designed to prevent secondary calamities after the massive earthquake. Last but not least, a nationwide survey should be carried out in earthquake-prone localities or areas potentially situated in places likely to be hit by high earthquake intensities on the anti-quake safety of all public buildings such as premises in primary and middle schools and hospitals.

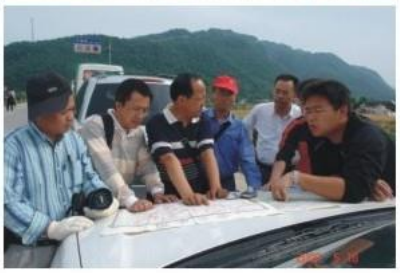
IMHE initiated project on 'Secondary mountain disaster emergency projects after the Wenchuan earthquake'

On 1st July 2008, an initiation ceremony was held in Chengdu for the project on 'Secondary Mountain Disaster Emergency Projects after the Wenchuan Earthquake' organised by the Chengdu Institute of Mountain Hazards and Environment (IMHE). Dr Cheng Genwe, Deputy Director of IMHE, presided over the meeting. Mr Feng Renguo, Vice Director of the Bureau of Science and Technology for Resources and Environment (BSTRE), Dr Deng Wei, Director of IMHE, and Professor Kong Jiming, who is in charge of the project, as well as some experts from other institutions of CAS attended the meeting.

First, Dr Deng Wei made a welcome speech in which he expressed his earnest thanks to BSTRE and its concern and support since the '5.12' Wenchuan earthquake. Dr Deng Wei mentioned that the project team would organise the implementation planning strictly in accordance with the requirements of the Party Group of Chinese Academy of Sciences to carry out a series study on the earthquake-induced secondary disasters, refining the key scientific problems and never failing the leadership's expectations.

Mr Feng Renguo conveyed the instructions of Dr Ding Zhongli, vice president of CAS and sent his high praises to IMHE for their positive actions in the earthquake relief work. He hoped that the research project team members would be able to identify the key scientific issues in earthquake-induced secondary mountain disasters and carry out comprehensive studies on the formation and mechanism of the disasters from a multi-disciplinary and multi-angle perspective by collecting the relevant information.

Finally, Professor Kong Jiming described the basic arrangements and had extensive discussions on secondary earthquake-induced disasters so that the project team members were clearly aware of the theme of the project.



Experts from the Wuhan Institute of Rock and Soil Mechanics took part in a reconstruction inspection of the earthquake-stricken areas

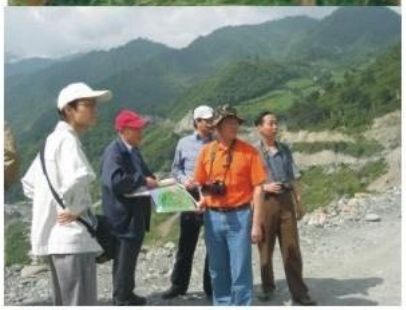
A working group from the Wuhan Institute of Rock and Soil Mechanics (IRSM) investigated the earthquake-stricken areas from 30th June to 3rd July, headed by the chief scientist of the 973 project on Basic Study on Safety of Major Projects in the Disaster Environment, with Academicians Dr Xie Heping and Professor Feng Xiating. The group visited Beichuan county in Mianyang, Chenjiaba in Jiangyou, Hongbai town in Shifang, Xuankou and Yingxiu town in Wenchuan, and Yinchanggou in Pengzhou. They visited the victims in temporary shelters and talked with the local government and project management departments to gain a better understanding of post-disaster reconstruction and others.

After the investigation, the experts said that they would carefully analyse the secondary geo-hazards they had discovered which had been triggered by the earthquake, and would prepare a report as soon as possible. They would also organise a further investigation of the secondary geological disasters, structural damage, and geotechnical engineering, to conduct a more in-depth and meticulous study for the large collection of information and experience for future research on the 'safety of major projects in the disaster environment'.

A reconstruction planning study on the giant panda habitat of the world natural heritage site in Sichuan after the earthquake.

The giant panda's habitat in the world natural heritage site in Sichuan was severely damaged by the '5.12' earthquake in Wenchuan. In order to give a more secure home to the giant pandas, a reconstruction planning study for the giant panda's habitat of the world natural heritage site was organised by the Sichuan Provincial World Heritage Management office according to the deployment of the Sichuan Provincial Government. IMHE was invited to participate in the work of disaster damage assessment and reconstruction planning.

Because IMHE has gained rich experience in the application and management of the giant panda's habitat at the world natural heritage site, it considered this work to be one of the particular areas to support after the earthquake



and allocated special funds. At present, Professor Chen Fubin and his group have been completely focussed on the reconstruction planning of the giant panda's habitat in Sichuan.

A seminar on 'Ecological Recovery and Revitalisation Measures of Tourism after Disasters' held in Chengdu

On 26th May, two weeks after the '5.12' Wenchuan earthquake, a seminar on 'Ecological Recovery and Revitalisation Measures of Tourism after Disasters' was held at the Chengdu Academicians Advisory Service Centre. Participants included members of the panel of science and technology consultants, and experts. Dr Wu Ning, Director of Chengdu Institute of Biology, was invited to attend and chaired the meeting.

At the meeting, consultants and experts put forward suggestions of issues on the ecological environment and development of tourism in Chengdu. Dr Wu Ning presented his views on the dammed lake, ecological restoration and environmental improvement, resettlement for victims, and urban construction. He also pointed out that the formation of dammed lakes would change the surrounding environment, forming new attractions. At the same time, areas of vegetation have disappeared as a result of the landslides

and collapse, and these ecological effects need long-term monitoring. The geographical and ecological research in the geological fault zone of Longmenshan also requires in-depth studies in order to gain a clear understanding of the natural events.

Experts of IMHE completed the work on capacity evaluation of resources and environment for reconstruction after disasters

On 13th June the Vice Governor of Sichuan Province, Mr Wei Hong, hosted a meeting on the report 'Capacity evaluation of resources and environment for reconstruction after disasters'. The Vice Governor of Sichuan Province, Mr Li Chengyun, and Deputy Secretary-General, Mr Yang Guoan, attended the meeting. The work was organised by the CAS Chengdu Branch and technical support was provided by IMHE. The Office of Land and Resources, the Office of Water Resources, the Bureau of Environmental Protection, the Bureau of Seism, the Bureau of Meteorology, and the Bureau of Statistics of Sichuan Province, and others participated in the work.

Participants listened to the report by Dr. Dengwei, Director of IMHE. Mr. Wei Hong and Li Chengyun told participants that the report was organised around the theme in accordance with the requirements of the provincial party committee and government. They thanked the CAS Chengdu Branch and IMHE for their leadership and the efforts made by the various experts. They gave clear instructions for the further revision and improvement of the report. Some leaders and experts from other units also made recommendations on the report from their own business perspectives.

Sino-Japanese experts discussed disaster reduction measures against the extremely serious '5.12' Wenchuan earthquake

The Government of Japan commissioned the "Wenchuan earthquake early resumption of technical assistance mission" prepared by the relevant academic units with the Chinese authorities. On the 31st May an exchange seminar was held on earthquake disaster relief and reconstruction in Chengdu. Scientists from both sides discussed the structure design against earthquakes, the structural earthquake response, structural reinforcement, and repair technology, as well as the prevention of geological disasters. Professor s Qiao Jianping, He Siming, and Zhang Xiaogang from IMHE were invited to participate in the meeting and delivered their presentations.

The "Wenchuan major earthquake early resumption of technical assistance mission" was composed of five academic institutions: Japanese Civil Society, the Seismological Society of Japan, the Japanese Institute of Earthquake Engineering, the Japan Institute of Geotechnical Engineering Building Society, and the Japan Society of Architecture. The delegation was headed by the former President of the Japanese Civil Society, Dr Hamada of Waseda University, and was accompanied by 10 experts. They carried out a primary survey in the earthquake-stricken areas. The investigation raised serious interest; many mainstream media from Japan came to Dujiangyan, Pengzhou, and other earthquake-stricken areas to obtain a basic understanding of earthquakes, and to facilitate more effective technical assistance.

During the meeting, Professor Qiao Jianping held a talk with experts from the Japan Institute of Geotechnical Engineering for further cooperation on the failures, landslides, and distribution of disaster and risk evaluation, and prepared a good foundation for long-term cooperation in the fields of personnel training and scientific research.

Condolences and Incentives

President Lu Yongxiang offered condolences to the scientific and technical personnel in Chengdu From 3rd to 4t

From 3rd to 4th June, President Lu Yongxiang, Secretary of the CAS Party Group, accompanied by the Vice Secretary of the Party Group, Miss Fangxin, the Director of Office of CAS, Mr Jiang Xiezhu, and other leaders from the CAS Bureaus visited the CAS Chengdu branch to inspect the disasters and offered condolences to the scientific and technological personnel, cadres and workers, graduate students, and families of the victims and provided guidance to the post-disaster recovery and disaster-relief work.

The group inspected the districts of Huaxiba and Mumashan, DIAO Group, and Weishi Company in the Hi-

tech Zone. In the evening of 3rd June, President Lu Yongxiang held a debate on science and technology innovation for disaster relief work. Miss Fangxin presided over the meeting. Dr. Peng Yuxing reported on the earthquake relief work of Chengdu Branch. Mr. Jiang Xiezhu introduced recent work of CAS. Representatives from other institutions of CAS attended the meeting and delivered speeches.

To conclude, President Lu Yongxiang made an important speech. He pointed out that this major earthquake disaster had been a warning to us that natural disasters have Become a major challenge, which must be faced. It is a practical and urgent major issue to effectively prevent and resist natural disasters and minimise the losses. Although we cannot fully prevent the occurrence of natural disasters, We should be able to enhance early warning, disaster prevention and mitigation, and relief and reconstruction methods. Through technology innovation and cooperation and further understanding of natural adaptation, scientific and technological workers should shoulder the responsibility and mission to deal with the challenges of natural disasters and provide a scientific basis for the happiness and peace of the entire human community. As a national, strategic power for science and technology, the Chinese Academy of Sciences should provide scientific knowledge and technical support with scientific innovation and the concept of scientific development.

President Lu stressed that calamities and innovation make a country strong and that we must closely unite around the CPC Central Committee headed by comrade Hu Jintao, and take the spirit of the 17th Congress of the CPC as our guideline, to continue to emancipate the mind, promote innovation for the people, make our due contributions to China's economic and social development, the safety, health, prosperity and happiness of 1.3 billion people, the social security of our country as well as the civilization and progress of human society as a whole.

International scientific institutions and international organisations expressed their sympathy on the Sichuan earthquake to the Chinese Academy of Sciences

On the 12th of May, an 8-magnitude earthquake hit Wenchuan County in Sichuan Province. The earthquake also affected many other provinces and cities in China and resulted in enormous losses of life and property. After hearing the news, a number of international scientific institutions, international organisations, and individuals sent telegrams to our President Lu Yongxiang, as well as other leaders of CAS. They expressed their sincere sympathy and condolences over the earthquake and wished for a quick recovery for the injured individuals. In addition, they highly complimented the earthquake relief efforts of the Chinese Government. They also believed that the Chinese Government would lead their people to overcome all if ficulties and rebuild their homes at an early date.

By the 5th of June, the following individuals had sent telegrams to express their sympathy: the President of the Russian Academy of Sciences, Yuri Aoxibofu; the Canadian Ambassador to China, Robert G. Wright; the former Minister of Education of Japan; the President of the French Academy of Agricultural Sciences, Marion Guillou the Vice President of the Russian Academy of Sciences and President of the Siberian Branch, Nikolai Dobretsov; the President of the U.S. Academy of Sciences, Ralph J. Cicerone and Foreign Affairs Secretary, Michael Clegg; the President of the Australian Academy of Sciences, Kurt Lambeck; member of the European Commission Research, Janez Potocnik; the President of the Academy of Romania, Ionel Haiduc; the Director of the Institute of Physics and Chemistry, Ryoji Noyori; the President of the Academy of Sciences of Pakistan, Ishfag Ahmad; the Secretary-General of the Asian Academy of Sciences, Namil K Aras; the Director of the Academy of Developing Countries, Hassan; the Executive Director of the International Academy of Sciences, Campbell; Miss Lena from the Secretariat of the Third-world Women in Sciences; the Director-General of the International Centre for Integrated Mountain Development, Andreas Schild; the Director of the International Cooperation Bureau of the Max-Planck Institute and Scientific Research Center for Djibouti, Yalv

Dan; the Director of the Bureau of Meteorology of Pakistan, Dr. Ghulam Rasul; the Secretary-General of the Federation of International Translation, Sheryl Hinkkanen; the Director of the Office of International Cooperation of the Australian Science and Technology Academy of Engineering, Elizabeth Meiev; the Acting President of the Bulgarian Academy of Sciences, N. Sabotinov; and representatives of the International Cooperation of the Ministry of Science of Thailand, and Division of Foreign Affairs of the Institute of Industrial Technology of Japan.

The International Centre for Integrated Mountain Development (ICIMOD) sent letters of sympathy to the Chinese Academy of Sciences (CAS) headquarters and affiliated institutions in the earthquake affected areas, as well as to non-CAS Chinese partners and the Chinese Embassy in Nepal, immediately after the "5.12" Wenchuan Earthquake, and the Centre's staff voluntarily contributed support to the earthquake victims through the Chinese Embassy in Nepal. The Centre has also been engaged in a series of activities related to rebuilding in earthquake affected areas and natural disaster preparedness of mountain people in partnership with IMHE and other institutions in the Hindu Kush-Himalayan region.

The Ministry of Water Resources wrote to express appreciation of the support provided by the Chinese Academy of Sciences To the Chinese Academy of Sciences:

A great number of landslide-dammed lakes were formed due to the catastrophic earthquake that struck in Wenchuan County. As some of the dammed lakes were located in the upper catchment, where cities, towns, and population are concentrated, and the lakes were at a high water level and of high risk status, they created an enormous threat to the safety of the people living in the downstream. Under the strong leadership and powerful coordination of the party and the State Council, as well as considerable support from various sides, we were fully committed to the unrelenting and strenuous earthquake relief efforts. As a result, the work was extremely effective which ensured the safety of the local population and led to a decisive victory in the earthquake relief work. At the critical time to decide emergency actions in dealing with the dammed lakes, the Vice President Jiang Mianheng of your institute appeared in person and worked out the plans with our Minister Chen Lei. They facilitated the relief work and enhanced the battle with the earthquake by efficiently organising the following institutes of CAS: Institute of Micro Electronics, Institute of Remote Sensing Applications, Institute of Acoustics, Shanghai Institute of Microsystems and Information Technology, Institute of Optics and Electronics, and Chengdu Institute of Mountain Hazards and Environment and sent experts and technicians and provided hi-tech equipment. All the workers involved worried about the people in danger. They worked selflessly and vigorously to analyse the dangerous cases and presented scientific recommendations. They made a great contribution to the success in the earthquake relief work. It is also important to mention that, the Shanghai Institute of Microsystem and Information Technology established a long-distance broadband video surveillance system which provided a highly valued real-time audit opportunity. In this way, by analysing the collected information and data, the Chengdu Institute of Mountain Hazards and Environment was able to offer many effective approaches and suggestions, which provided important scientific evidence for the prevention of potential secondary disasters caused by the dammed lakes.

Thus, we would like to express our heartfelt appreciation for your generous support and assistance for the earthquake relief work. Please also pass our sincere regards to all the participating technicians and scientific researchers.

At the moment, the focus of our work has shifted from emergency rescue towards rebuilding the earthquake-ravaged areas. It is an arduous work that requires great responsibility. Under the correct leadership of the party and the State Council, we will work collaboratively and consistently to obtain the final success in the earthquake relief work and build lovely new homes for the people in the affected areas.

The Ministry of Water Resources
20/06/2008

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

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