



International Cooperation on Trans-boundary Rivers between China and its Neighbouring Countries

Ministry of Water Resources, People's Republic of China

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1. Profile of the Trans-boundary Rivers between China and its Neighboring Countries

China shares many trans-boundary rivers with other countries, including 13 directly bordering countries and 3 closely neighbored countries. And in most cases, China is located in the upper reach of rivers. The volume of water flowing out of China or entering border rivers is about 730 billion m³, more than 30 times the volume flowing into China. And the outbound river water, which is in good quality, accounts for about one fourth of the total water resources available in China.



China's trans-boundary rivers with neighboring countries

In general, the utilization rate of water resources and hydropower of trans-boundary rivers in China is as low as 8% and 7% respectively, far below the average rate for inland rivers in China as well as large rivers in other countries. In terms of trans-boundary river development, China sticks to principles of putting people first, emphasizing equality and rationality, balancing development and protection, and enhancing good-neighborly friendship and cooperation. China has developed a complete system of environmental impact assessment for water and hydropower projects to ensure that such projects, under construction or in operation, are ecologically safe and environmentally friendly, causing no marked impacts on the neighboring countries.

In summary, trans-boundary rivers in China, thanks to their abundant water volume and good water quality, contribute a lot to the economic and social development of the neighboring countries.

2. Effective Cooperation on the Trans-boundary Rivers between China and its Neighboring Countries

China has set up, as needed, multiple trans-boundary rivers cooperation mechanisms with 12 neighboring

countries, which have strongly promoted the exchanges and cooperation in fields of hydrological data provision in flood season, flood control, emergency response, boundary rivers improvement, utilization and protection of water resources, etc.

Country (Organization)	Trans-boundary Rivers Cooperation Mechanisms
Sino-MRC	Dialogue meeting Provision of Hydrological data
Sino-Kazakhstan	Joint Steering Commission Experts Group
Sino-Russia	Joint Steering Commission Experts Group
Sino-Indian	Expert-level Mechanism
Sino-Mongolia	Joint Steering Commission Experts Group
Sino-Vietnam	Exchange of Hydrological data
Sino-DPRK	Hydrological Cooperation
Sino-Bangladesh	Provision of Hydrological data

China's trans-boundary rivers cooperation mechanisms

• **Sino-MRC and the Mekong Countries**

The government of China pays high attention to the cooperation between China and the Mekong River Commission (MRC) and the riparian countries. Dialogue between China and MRC began in 1996 and great achievements have been made in relevant fields. At the 2nd Mekong River Commission Summit held in 2014, Minister Chen Lei of Water Resources of China addressed that China would enhance the dialogue partnership and practical cooperation with MRC and the Mekong countries in the spirit of mutually beneficial cooperation and common development. Meanwhile, China is willing to work jointly with other countries on the natural belt of Mekong River to advance the regional economic integration process and commit to the building of a “community of development” and a “community of shared destiny”.

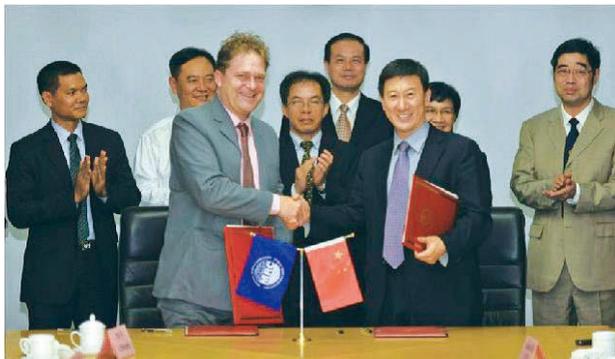


Minister Chen Lei of MWR China at 2nd MRC Summit

China has established unblocked information communication and exchange channels with MRC and the member countries to strength cooperation in flood control and disaster mitigation. Since the signing of an agreement on providing hydrological data in flood season in 2002 between Ministry of Water Resources of China and MRC, China has been providing hydrological information during flood seasons for 13 consecutive years. In 2010, in order to help mitigate the impact of extreme dry weather in downstream countries, China additionally provided hydrological information in the extreme dry season to meet the urgent needs. In September 2014, China timely notified MRC of precipitation forecasting for Lancang River and the scheduling plans for major reservoirs in order to assist Thailand in flood fighting. In March 2015, China also promptly delivered the status of reservoirs operation and the scheduling plans to meet the concerns of MRC. The MRC has more than once expressed its gratitude for China's help, highly evaluating the scientific scheduling as well as the hydrological information provided by China for the purposes of flood control, drought mitigation and disaster relief in downstream countries.



Mutual visits between MWR China and MRCs



Signing the agreement

Participation in the Dialogue Meeting

China has carried out wide cooperative activities in fields of experience exchange, technical training and field visits with MRC and its member countries. Senior officials and experts from relevant departments and institutions have actively participated in regional and international workshops in the Mekong River basin. China has also organized technical trainings for downstream countries of Mekong River, sent 6 young experts to the MRC Secretariat for short-term work, and invited delegates from downstream countries to visit hydropower stations in upstream Lancang River as well as relevant water projects in other rivers of

China, which has enhanced mutual trust and friendship.



Technical training for downstream countries



Participation in international conference

Receiving MRC's technical delegation

In response to the actual needs, China has provided technical assistance to relevant countries. In 2011 when Thailand was stricken by extraordinary floods, Chinese government dispatched two groups of experts to Thailand to offer technical advice on flood control and disaster relief and assistance in the formulation of flood control planning, for practical benefits to Thai people. Meanwhile, China has also actively carried out technical cooperation with Laos, Myanmar and Cambodia to help improve their institutional capacities in water sector.



Former Thailand Prime Minister visit to MWR China



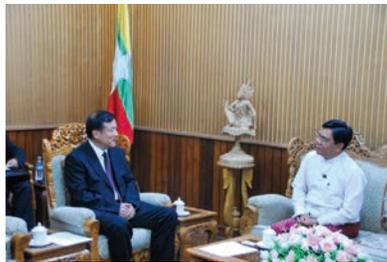
Chinese flood experts in Thailand



Signing water cooperation agreement with Laos



Laos's technical delegation visit to water projects in the Yangtze River



MWR China delegation visit to Ministry of Transport and Ministry of Agriculture and Irrigation, Myanmar



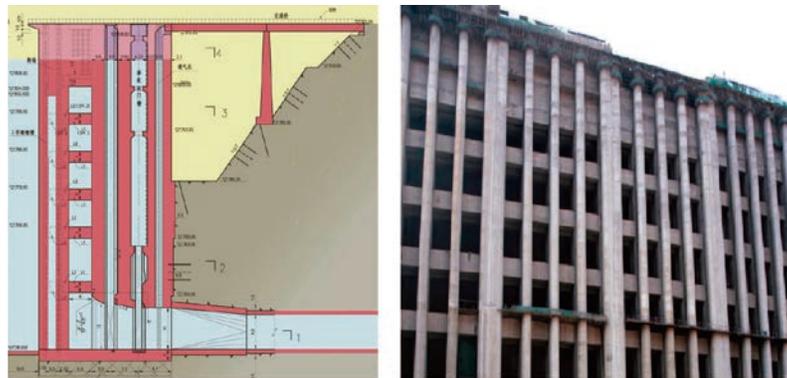
MWR China delegation visit to Cambodia and signing cooperation agreement

With regard to China's development and utilization of the Lancang River water and hydropower resources, we take an appropriate, orderly and sustainable approach that stresses harmony between man and water, and take into account both the interests of China and the lower-reach countries and pay equal attention to conservation and development. China has increased investment to enhance the scientific scheduling of cascade reservoirs in the Lancang River, and to ensure minimum discharge volume and eliminate or reduce the negative influence

on the downstream water level. An originally planned dam with Mengsong Power Station near the border was abandoned voluntarily to guarantee the fish migration routes. Multi-level water intake measures have been adopted in dam design in order to reduce water temperature changes and to improve fish habits. And fish release stations and fish natural reserves have been set up to protect the local species.



Biological resources released proliferation ceremony

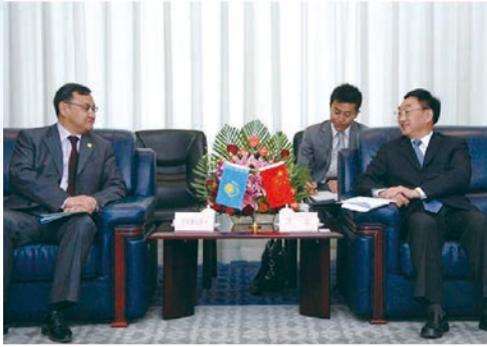


Multi-level intakes of Nuozhadu Hydropower

The cascade reservoirs on the Lancang River play positive functions in balancing water resources between rainy and dry seasons and contribute to the flood and drought resistance, and irrigation and shipping capacity of the lower reaches. For example, during the dry season between November 2012 and May 2013, precipitation in the Lancang River area was 50% lower than previous average. Yet through scientific regulation, the net discharge of the cascade reservoirs to the lower reaches was increased by seven billion cubic meters which was 65% more than that under natural conditions. In the first three months of 2014, the Lancang River witnessed a severe drought. However, due to the regulation of the cascade reservoirs on the Lancang River, the water discharge in the river channel was increased by 215% on average. In doing so, despite of the severe drought with 50% less of precipitation, the downstream countries were free from the impact of drought.

• Sino-Kazakhstan

In 2001, the Agreement on Cooperation in the Use and Protection of Trans-boundary Rivers was signed between the governments of China and Kazakhstan, and a Joint Steering Commission of trans-boundary river was established to coordinate the utilization and protection of trans-boundary rivers.



Enhancing Sino-Kazakhstan cooperation



Joint comission meeting

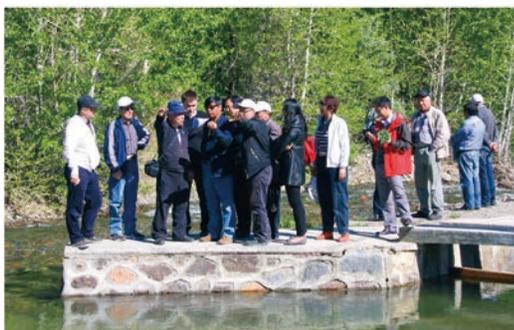
The two countries jointly constructed the Horgos River Friendship Water Diversion Project and the Sumbe River Water Diversion Project to share the water resources of boundary rivers.



Horgos River Friendship Joint Water Diversion Project



Joint scientific research and technical cooperation are also conducted between the two countries to make a concerted effort in identifying solutions for protecting and utilizing the boundary rivers.



Joint field technical visit



Conducting joint research on prevention of ice-lake breaking in upstream of Horgos River

In summer of 2014 when a serious drought occurred in the Ili River basin, China made great efforts to increase water dispatch urgently to downstream, which further enhanced mutual strategic trust between China and Kazakhstan. The president of Kazakhstan especially extended sincere thanks to Chinese side for

the assistance.

Thanks to the commitment of China to rational development and effective protection of trans-boundary rivers, the ecological environment of the Ili and Irtysh river basins has been kept in good condition which becomes a good model of trans-boundary river protection in Central Asia.



Irtysh River

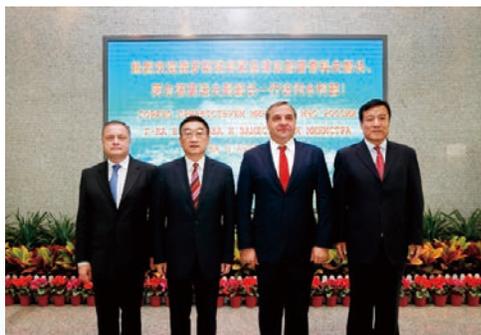


Ili River

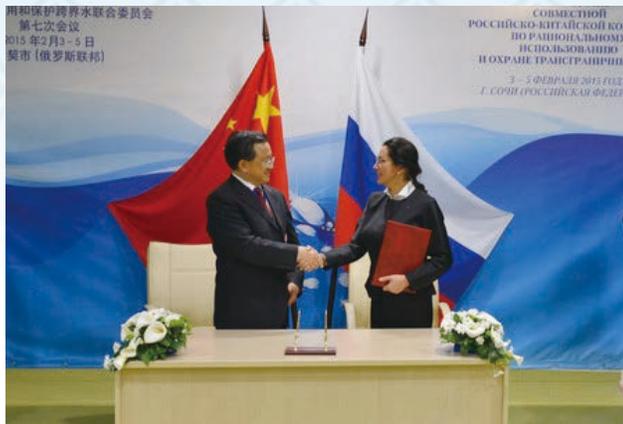
Currently, both sides are carrying on multilevel cooperation in various fields. As said by the touring ambassador with the Ministry of Foreign Affairs of Kazakhstan who also served as national coordinator based at the Shanghai Cooperation Organization to the News Agency of Kazakhstan on June 30, 2014: recent three generation of leaders of China sincerely respected the interests of Kazakhstan in the development of trans-boundary rivers, which is a solid witness of friendly cooperation in utilization and protection of trans-boundary rivers, and Kazakhstan is the country with which China has held most bilateral meetings in trans-boundary river cooperation.

• Sino-Russia

China made cooperation with the former USSR in investigation and planning of multi-purpose utilization of water resources and exchanging hydrological information of boundary rivers as early as the 1950s. In 2008, the Agreement on Rational Utilization and Protection of Trans-boundary Waters was signed between the governments of China and Russia and a Joint Steering Commission was established to facilitate the cooperation in fields of utilization and protection of trans-boundary waters, exchange of hydrological and water quality information, flood control and disaster relief, etc.



Mutual visits between MWR China and Ministry of Emergency Situations of Russia to strengthen flood prevention cooperation



Signing the agreement with Russia



Expert group meeting



Joint technical field visit and discussion

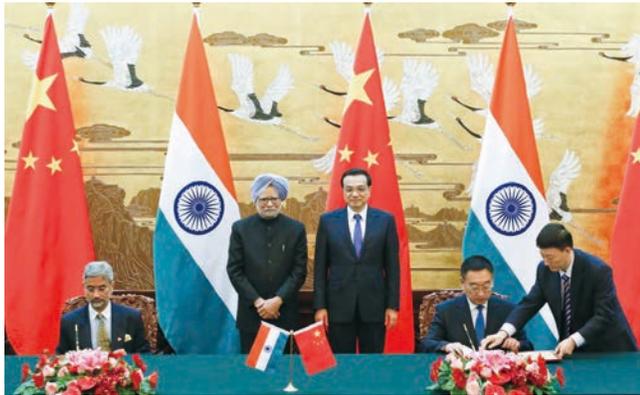
In 2013, a once-in-a-century flood occurred in the main stream of the lower reach of the Heilong/Amur River, a boundary river between China and Russia. Two countries exchanged information in a timely, effective and frank manner while scientifically operating controlling reservoirs in each country to minimize flood damage.



Flood in the Heilong/Amur River 2013 and the joint post-flood investigation

• **Sino-India**

MWR China signed cooperation agreements with MWR India in 2002 and 2005 respectively to provide India with hydrological information of major trans-border rivers in flood season. In 2006, an expert-level mechanism on trans-border rivers was established. In order to further enhance cooperation, two governments entered into a MOU on strengthening cooperation on trans-border rivers in 2013.



Signing the MOU with India



The expert-level mechanism meeting

With a view of decreasing the potential secondary disasters to downstream India, China has, on many occasions, invested significant human and material resources to deal with emergencies of natural disasters properly, such as blocked river sections and barrier lakes caused by landslides.



Dealing with emergencies caused by natural disasters

Currently, the sections of trans-border rivers within China have generally been kept in their natural conditions, and should be viewed as the best protected rivers in the world, making significant contributions to the economic and social development, as well as the ecological and environmental protection in India.

In many joint communiqués issued by Chinese and Indian governments, it is stated that the two countries' cooperation on trans-border rivers has set a good example, and the Indian side highly appreciates China's provision of hydrological information in flood season, which has helped India in protecting the lives and properties of riparian population.

•Sino-Mongolia

In 1994, the Agreement on Cooperation in the Protection and Use of Boundary Waters was signed between the governments of China and Mongolia, and a Joint Steering Commission of Boundary Water was established. Both sides have regularly held joint commission meetings and expert group meetings, and carried out practical cooperation in the fields of hydrological data exchange, joint investigation and research, rational development and protection of boundary waters.



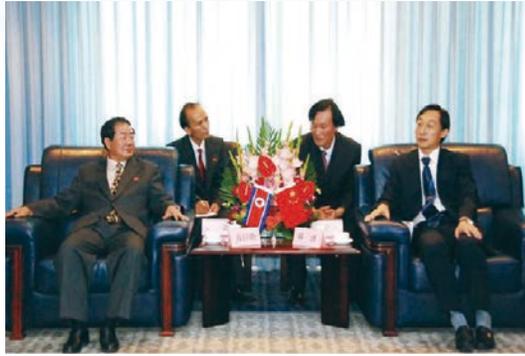
Meetings of Joint steering commission and expert group



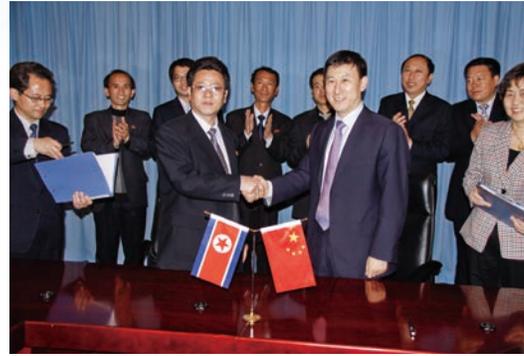
Joint measuring in boundary Lake Bair

• **Sino-other neighboring countries**

China began exchanging hydrological information in flood season of the Yalu River and Tumen River with Democratic People's Republic of Korea (DPRK) since the 1950s, and jointly constructed hydropower stations on boundary river to guarantee power generation, flood prevention and water supply, etc..



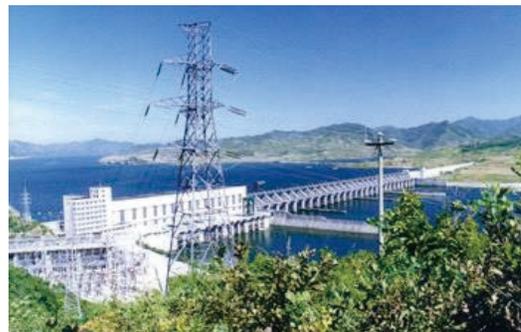
Enhancing China-DPRK boundary water cooperation



Meeting on hydrological cooperation



Donating hydrological monitoring equipment



Jointly completed hydropower station on the Yalu River

China and Vietnam signed ministry-level agreement on exchanging hydrological information in flood season of the Yuanjiang-Red River and Zuojiang River respectively in 2002 and 2009, which have made positive contribution to flood control and disaster relief in both countries.

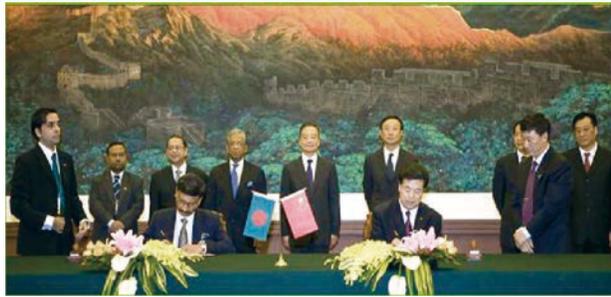


Signing the agreement with Vietnam



Field Visit to Estuary of Mekong River in Vietnam

China signed a cooperation ministry-level agreement with Bangladesh in 2008 to provide Bangladesh with hydrological information of Yaluzangbu/Brahmaputra River in flood season, and carried out cooperation in flood forecasting and prevention, which has played an active role in protecting the lives and properties of the downstream population.



Signing the agreement with Bangladesh



MWR China delegation visit to downstream of Brahmaputra



MWR Bangladesh delegation visit to the Three Gorges Project on Yangtze River

In addition, China has also held international training programs on flood prevention and disaster mitigation for relevant countries in south Asia region, and carried out technical exchange and cooperation with Kyrgyzstan in hydropower development on trans-boundary rivers.



Technical training for countries in south Asia



3. International Exchange

In addition to conducting trans-boundary cooperation with its neighbouring countries, China also pays attention to carrying on international exchange in trans-boundary river management across the world. The MWR China sent delegations to visit some other regional trans-boundary rivers including USA-Canada boundary rivers, USA-Mexico boundary rivers, Danube, Rhine, Nile, Euphrates and Tigris, and rivers in Southern African Development Community and central Asia. Through field visit, meeting communication and other approaches, the Chinese side has shared experience and knowledge on trans-boundary river management and cooperation with relevant international institutions, out-regional countries as well as experts abroad .



Visit to International Commission for Protecting Danube River Visit to International Joint Commission (USA-Canada)



Visit to Nile Basin Initiative Secretariat

Meeting with the US Department of State



Visit to International Boundary and Water Commission (USA-Mexico)

4. Prospect

With the aggravation of climate change, emergency events caused by flood, ice jam or other natural disasters on trans-boundary rivers have imposed increasing threats to all countries along the rivers. From the humanitarian point of view, China will further strengthen the hydrological monitoring and early-warning forecasting, strengthen the information communication with the downstream countries, and conduct quick and effective measures to minimize the event impacts.

Scientific and rational development and utilization of water and hydropower resources are the significant support and security of social and economic development. In the process of the development and utilization of trans-boundary rivers, the upstream countries shall follow the scientific and reasonable principles, and minimize impacts on downstream countries; the downstream countries shall not exceed rational claims for limiting the rational development and utilization of water resources and damaging the legitimate rights of the upstream countries. Under the premises of making overall considerations, and protecting the ecological environment, China insists on water and hydropower resources development in the trans-boundary rivers on the basis of scientific planning, full demonstration and rational development mode. In the development of water and hydropower resources of trans-boundary rivers, China strictly implements the national environmental impact assessment system to ensure the project ecologically sound and environmental friendly.

As a country with frequent natural disasters, China has accumulated rich experience in the aspects of integrated river basin planning, flood control and disaster mitigation, irrigation, etc. The Chinese side is ready to further strengthen technical exchange and cooperation with relevant countries and international institutions to share successful experiences and technologies.

Strengthening international exchange and cooperation on trans-boundary rivers as well as fairly and rationally developing water resources of trans-boundary rivers are an important guarantee for realizing the sustainable utilization of water resources as well as regional peace, prosperity and development. China will follow the principles of equality, rationality and no significant damages generally recognized by international community, make full use of the cooperation mechanisms on trans-boundary rivers with surrounding countries to further strengthen cooperation and exchange, respect reasonable concerns of the relevant countries, properly solve the problems on trans-boundary rivers, and turn them into "the rivers of peace, cooperation and friendship".