

Drought Situation in Southwest China and
Reasoning of Water Level Declining in
Mekong River Mainstream

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Severe Drought in Southwestern China

Since October 2009, Southwestern China has suffered from a severe drought **once-in-80-year** or **once-in-100-year**.



Severe Drought in Southwestern China

 The main features of this drought :

- **Focus on southwestern China:**

Until March 30, affected farmland **97.16 million** Mu, **84%** of national total; including **50.11 million** Mu in Yunnan , **80%** of the provincial total.

- **Prominent drinking water shortage for local people :**

19.39 million people face drinking water shortage, **80%** of the national total, **8.28 million** people in Yunnan Province.


- **The lingering drought has caused severe losses :**

The drought has lasted for **6** months and is still spreading. Direct economic loss is more than **17 billion** RMB in Yunnan Province.

Severe Drought in Southwestern China



Severe Drought in Southwestern China

 To mobilize the national resources to fight against drought and to secure the people's livelihood

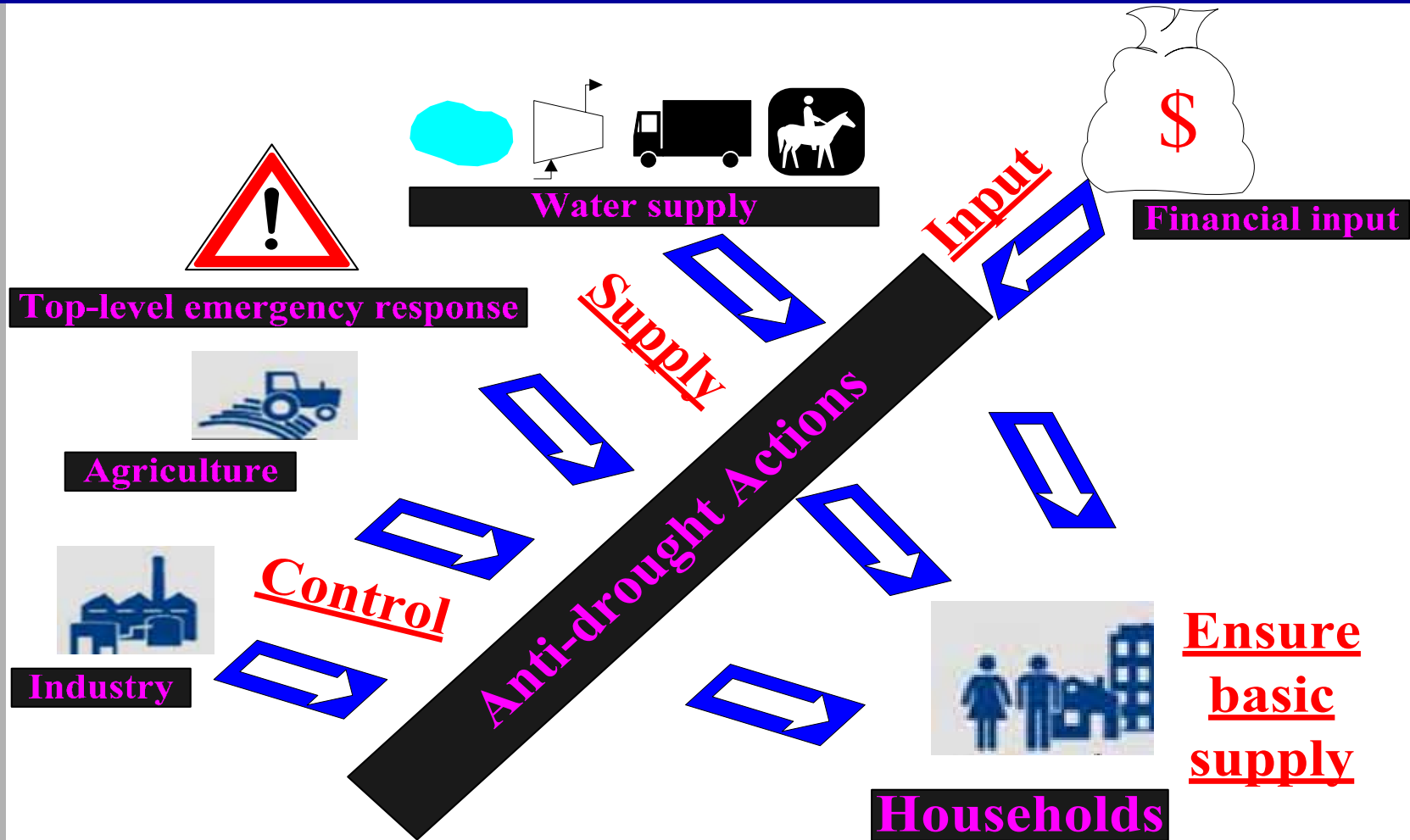
- Supervision of President Hu Jintao and Premier Wen Jiabao.
 - Provinces of Yunnan and Guizhou launched the **I - Class** emergency response.
 - The financial support from central government overpasses **1.1 billion** RMB.
 - **10** provinces or municipalities help Yunnan, GuiZhou and Gaungxi one-to-one.
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Severe Drought in Southwestern China

- **To mobilize the national resources to fight against drought and to secure the people's livelihood**
 - **Save water, restrict the water consumption for industry, so as to guarantee water for domestic use.**
 - **To supply drinking water , i.e. digging wells.**
 - **To increase water sources, use of small ponds, weirs, driven wells, pumping stations and tunnels.**
 - **Prepared for long-term drought mitigation.**
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Severe Drought in Southwestern China

To mobilize the national resources to fight against drought and to secure the people's livelihood



Severe Drought in Southwestern China



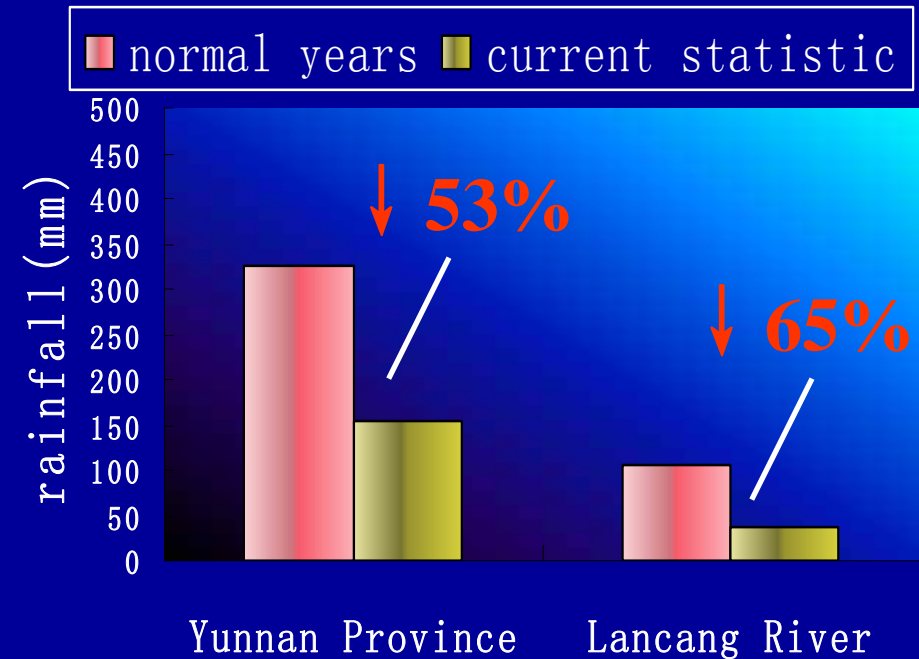
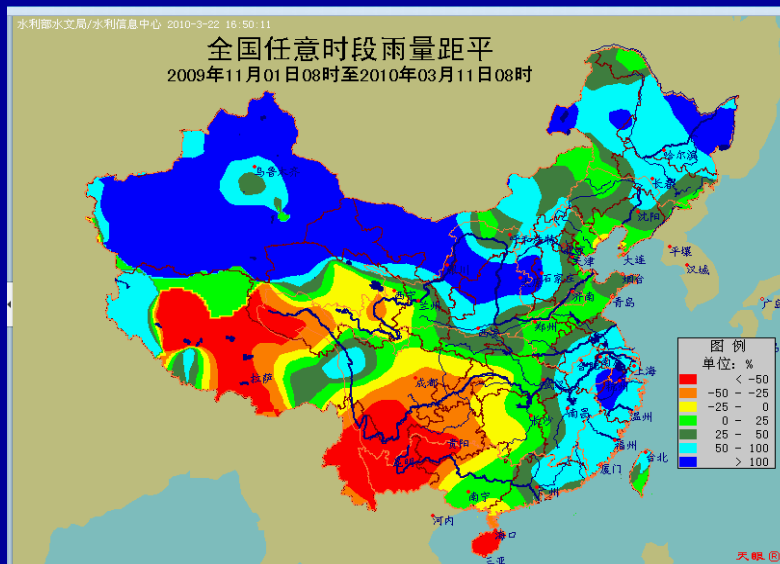
The armed police force is transporting water



Pumping water from wells and carrying water from distance

Extreme Dry Weather leads to water level decline in Mekong River mainstream

- Extreme dry weather in the Lancang/Mekong River Basin leads to less rainfall.



Precipitation in Yunnan province was extraordinarily low

Extreme Dry Weather leads to water level decline in Mekong River mainstream

 The lingering less rainfall leads to water level decline.

Yunnan Hydrologic Regime Analysis Table

	Hydrologic Regime
water inflow to the main rivers	40%~60% less than normal years in the same period
rivers	662 dried up
small reservoirs	309 dried up
small dams	3674 dried up
Yunjinghong Hydrological Station of Lancang River	Average water flow 604m³/s , ↓ 35% Water level ↓ 0.57m

Extreme Dry Weather leads to water level decline in Mekong River mainstream

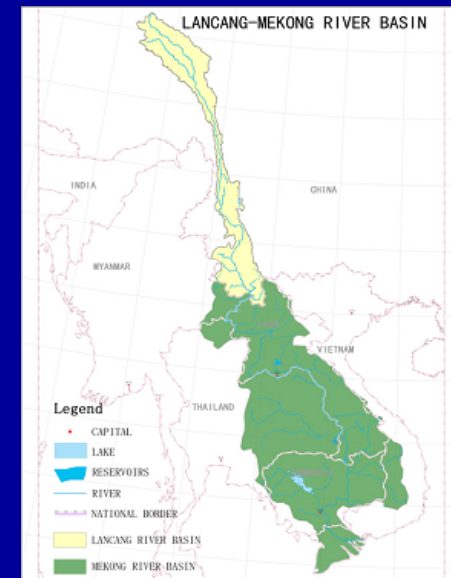


Rivers, reservoirs and small dams have dried up

Extreme Dry Weather leads to water level decline in Mekong River mainstream

● Less flow of Lancang River has little impact the downstream.

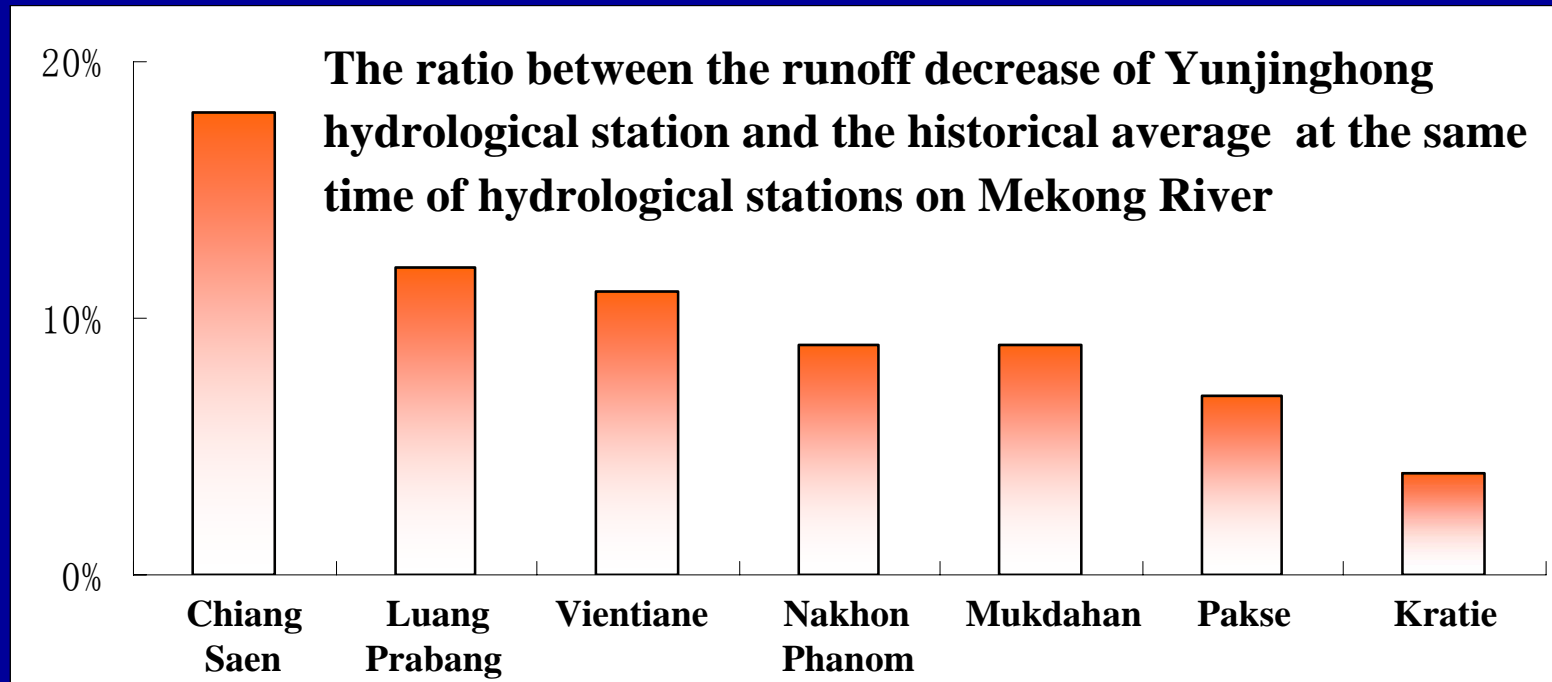
➤ The Lancang River Basin is **23.5%** of the total basin area. Its annual runoff at the border out of China is **13.5%** of the mean annual runoff of the whole basin.



➤ From Nov. 2009 to the early Mar. 2010, the average flow at Yunjinghong Hydrological Station in the Lancang River was about **320 m³ /s** less than normal years, equivalent to **18%-4%** of annual average flow over the same period from Chiang Saen to Kratie.

Extreme Dry Weather leads to water level decline in Mekong River mainstream

- Less flow of Lancang River has little impact in the downstream.



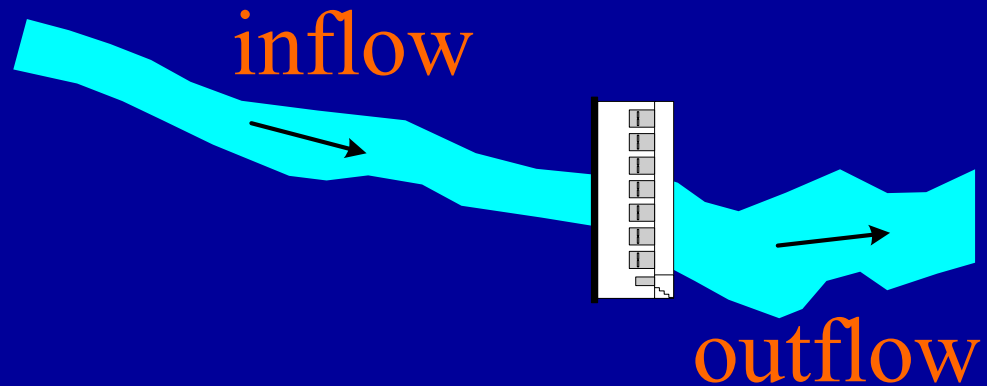
Analysis on the inflow decrease of Lancang River from last November to this March

Extreme Dry Weather leads to water level decline in Mekong River mainstream

- ❏ The water reduction and water level decline in the Mekong River mainstream was mainly caused by the regional dry weather.
 - Since November 2009, the monthly rainfall at the hydrological stations in Chiang Saen and Luang Prabang, lower than the average level.
 - **20** mm of rainfall in November and December 2009 in Chiang Saen, while **52** mm of the average in normal years over the same period, **62%** less.
 - Inflow from the tributaries in Laos and Thailand into the Mekong River far below expectation.
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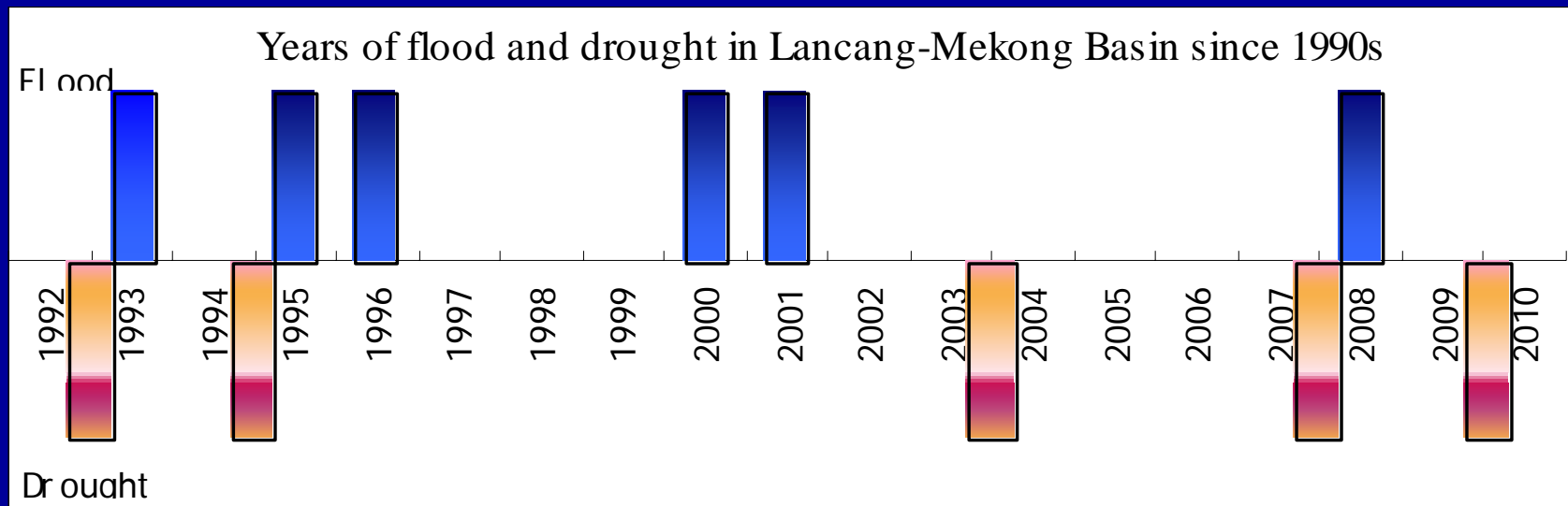
No impacts on the decrease of flow downstream by the hydropower stations on Lancang River

- For the existing daily-regulated runoff hydropower stations, such as Manwan, Dachaoshan and Jinghong in China, inflow and outflow are balanced.
- No water in the on-going Xiaowan Hydropower Station since dry season. From Dec. 2009 to Mar. 2010, the outflows from Xiaowan exceeded the inflows by about **500 million m³**.
From 2009.12 to 2010.3
 $\Delta \approx -500$ million m³
- Little evaporation and water consumption during operation of these hydropower stations.



In a long term, the hydropower stations will enhance the capacity of flood control, drought relief and water supply downstream

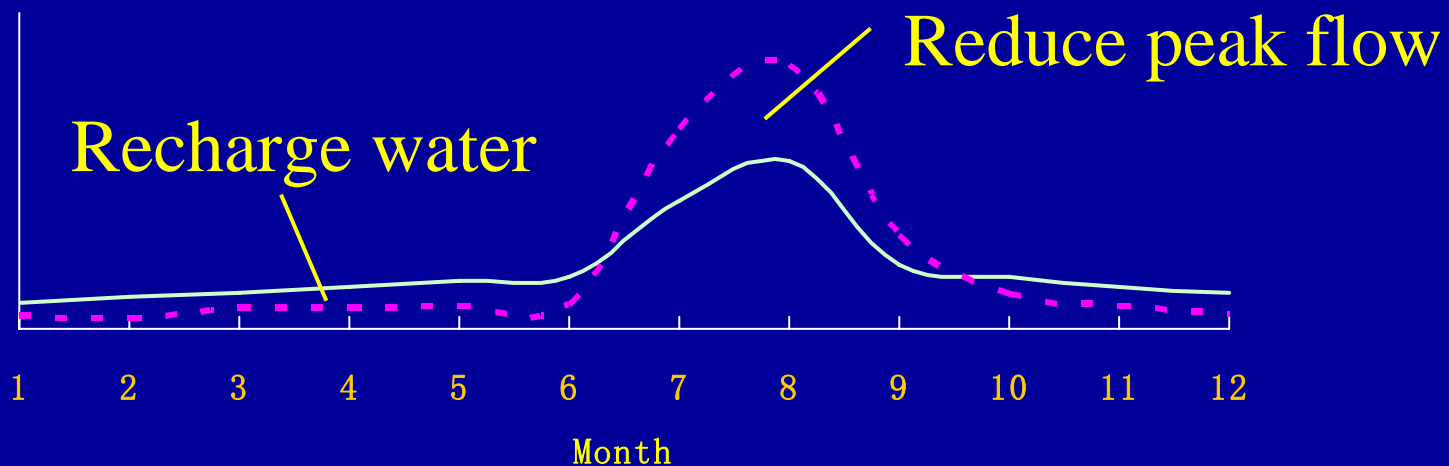
- Lack of necessary water regulation measures, so frequent flood and draught in Lancang/Mekong River Basin.**



Since 1992, six big floods and five worse droughts in Lancang/Mekong River Basin

In a long term, the hydropower stations will enhance the capacity of flood control, drought relief and water supply downstream

- With climate change as well as frequent flood and drought, water project, an important measure for flood control, drought relief and adapting to extreme weather and climate change.



- Hydropower stations on the Lancang River reduce peak flow and recharge water.
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High attention on the reasonable concern of Mekong River Riparian Countries

Since 2003, Ministry of Water Resources of China has provided hydrologic data collected from Yunjinghong and Manan stations to MRC on regular basis.



Flood reporting played a key role in flood control and disaster reduction of the downstream countries of the Mekong River.

High attention on the reasonable concern of Mekong River Riparian Countries

In order to combat drought caused by the extreme weather with riparian countries downstream together, since March 22, 2010 China has provided the current hydrological data collected from two stations, namely Yunjinghong and Manan, to MRC for emergency use.

High attention on the reasonable concern of Mekong River Riparian Countries

Strengthen technical exchange and cooperation with MRC



Chinese representatives in the Annual Dialogue Meeting



Study tour of MRC expert in Yangtze River Basin



Chinese experts in the Annual Mekong Flood Forum



Study tour of MRC expert in Yangtze River Basin

High attention on the reasonable concern of Mekong River Riparian Countries

As an upstream country with high sense of responsibility, we do nothing harming the interests of riparian countries downstream. Ministry of Water of Water Resources of China would like to strengthen communication and cooperation with all parties concerned on the basis of equality and mutual benefit, and work together to cope with this worst drought disaster.

High attention on the reasonable concern of Mekong River Riparian Countries

<http://www.iwhr.com/english/index.asp>

International Training Programme 2010

Management of Flood Control And Disaster Mitigation

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Thank you!
