Management of Flood Control for the Yangtze River Basin

Changjiang Water Resources Commission  MWR

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Location of the Yangtze River Basin in China
Length: 6300km
Area: 1.8 m km²

Map of the Yangtze River Basin
The Yangtze River Basin is the birthplace of the Chinese nation, and a region of tremendous overall economic strength.

- **Area:** 1.8 million km², about 1/5 of China, crossing south-west, central and East parts, passing 19 provinces (autonomous regions, municipality)
- **Population:** 427 million, 33.4% of total of China
- **Water Resources:** 996 billion m³, 36.5% of total of China
- **Theoretic water resource potential:** 277.8 GW, 40% of total
- **GDP:** 317 million RMB, 35.5% of total of China
Policies and Principles for flood protection

- Policies: Storage and discharge concurrently, dominated by discharge

- Principles: Benefiting both the river and the lake, considering both banks concurrently, and coordinating between the upper, middle and the lower stream
Sketch of Flood Control System for the Yangtze River

Integrated measures for flood control, the whole system consists of Three Gorges Dikes, Reservoirs, Flood Detention Areas, River Training, and other non-structural measures.
Non-structural measures

Non-structural measure is the important component part of the Yangtze flood control system.

1. Flood Forecasting and Warning System
2. Flood Fighting Information
3. Various Laws and Regulations
Important Roles for the Yangtze River caused by Three Gorges Project:

- **Flood Control**
  - Flood control volume: 22.15 billion m³.
  - In 2010, Inflow Peak Discharge: 70,000 m³/s
  - Release discharge: about 40,000 m³/s

- **Power Generation**
  - Total capacity: 18.2 million kilowatts
  - Designed Annual power generation: 84.7 billion kilowatts hours.
  - In 2010, power generation: 84.3 billion kilowatts hours.
Important Roles for the Yangtze River caused by Three Gorges Project:

- **Navigation**
  Improving the water way conditions, navigation in the upper and middle reaches well developed.
  In 2010, 77.8 million tons cargo passed the ship lock, which is much more than the expected.

- **Water supply**
  During the dry seasons, much more water is released for navigation, irrigation, water supply, and ecosystem.
  From Dec. 2010 to Feb. 2011, more than 6 billion cubic meter water released than natural condition.
Releasing from Three Gorges Dam in 2010
Basic philosophy in new era:
Ensuring the health Yangtze, Promoting the harmony between human and nature

Basic requirement of flood protection and disaster mitigation of the Yangtze in new era:
Harmonious relation of human and water
Now what we are convince of

- The idea of harmonious relation between human and flood must be set up firmly in concept.

- Flood is a kind of natural phenomenon with its inherent laws of production, development and motion.

- Only when human and flood struggle for the existing living space, flood will cause losses and disasters to human.
Now what we are convince of

- The relationship between control and management shall be treated properly in action.

- Flood control is the precondition and foundation of flood management.

- The flood risk shall be taken appropriately and the risk management shall be performed.

- On the premise of safeguarding flood protection, the flood shall be utilized as far as possible.
1. Coordination of five relations

- Relationship between storage and discharge
- Relationships between rivers and lakes
- Relationship between upstream and downstream
- Relationships between stem streams and tributaries
- Relationship between human and water
2. Persisting in keeping harmony between human and water, giving the way to flood

- Flood defense works construction and socio-economic construction
- Ensuring the safety of key areas and giving consideration to common ones
- Structural measures and nonstructural measures
- Flood harnessing and ecological environment improvement.
3、Strengthening construction of flood defense works continuously

- Strengthening the dike construction
- Speeding up the construction of flood detention areas
- Strengthening the river improvement
- Strengthening continuously the reservoir construction and reinforcement
4. Exploring flood risk management positively

- Studying the flood risk according to the importance of each protected object
- Taking into consideration the combined regulation of reservoirs including the Three Gorges
- Organizing carefully and well carrying out the dynamic regulation of flood control water level of reservoir
- Strengthening planning and management of land development and utilization in the areas liable to mountain torrents
谢谢！Thank you!