Cities under Siege: the great flood of 1931 and the environmental challenges of Chinese urban modernization

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The flood in 1931 is believed to be the deadliest disaster in 20th century China. Eight provinces along the Yangzi River (the longest in China) were the most seriously hit and the affected up to one-fourth of China's total population.



"the kingdom of marshlands (泽国)"



- Question: Why the cities after experiencing the most rapid urban modernization since the late Qing were only found more vulnerable in the threat of flooding in 1931.
- Flood prevention was historically important to the development of Chinese riverine cities.
 - "Since the economy of China was based on intensive farming, regulation of water, either for the positive purpose of irrigation or the negative purpose of flood prevention, remained throughout Chinese history a matter of utmost importance and a principal concern of the state." (Ch'ang-tu Hu, 'The Yellow River Administration in the Ch'ing dynasty')

Traditional water control schemes to protect against floods in the cities

- City walls, floodgates, and the moat connecting lakes within and outside the cities to form a natural drainage system
- high-water discharge areas (natural lakes and wetlands) outside the cities deliberately preserved to protect against floods
- Water control policies of the local authorities





1868年续汉阳县志图





1869汉阳县志图

Zhang Zhidong's massive reclamation in the late Qing reform

Hanyang

Reclaimed a land of twice as large as the old city of Hanyang and established the largest industrial base of Central China

Wuchang

 Two major embankments—Wutai (武泰) and Wufeng (武 丰) in 1899, extending 30 li (1500 meters) and 60 li (3000 meters) along the Yangzi

block the connection between the Yangzi and its reservoir lakes

Hankou

Zhanggong Dike, stretching 27 li (about 13500 meters) from the Han River in the south to Jinkou in the northwest by the Yangzi, reclaimed a land of **Twenty times larger** than the original city of Hankou!





 Urban development in the early twentieth century
 A new urban center emerged out of the drained land in Hankou after the collapse of the Qing

 Population increased three times more
 Hankou merchants' short-term and profit-driven urban

development

 In Wuchang and Hanyang radical changes to their flood control system occurred after the Northern Expedition in 1926, when the nationalist government unified the China.

- Dismantling city walls in 1927
 Damages to the moat system and floodgates
 - Reduction of number and size of lakes
- The birth of "the developmental state"
 - the decline of local organizations assuming traditional water control responsibility
 - the rise of state and municipal governments of "technostructure"
 - their break with traditional wisdom and practice of flood defense in the cities





July 2012 Beijing flood





2015 7.23 Wuhan



