
国家973项目“气候变化对我国东部季风区陆地水循环
与水资源安全的影响及适应对策”启动会

2. Case study on Global Catchment Initiative (GCI) in Huai River Basin, China

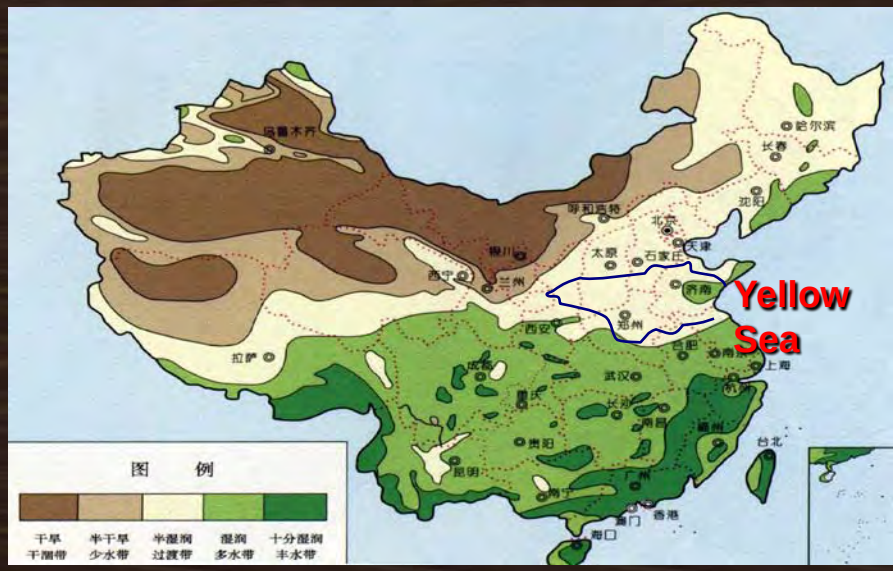
supported by MOST-MEP with 10.3 Million RMB
lead by J.Xia, 2009-2013

Huai River Basin

Total area : 270,000 km²
Populations: 165 million,
LUCC: 11, 000 dams and sluices in the basin

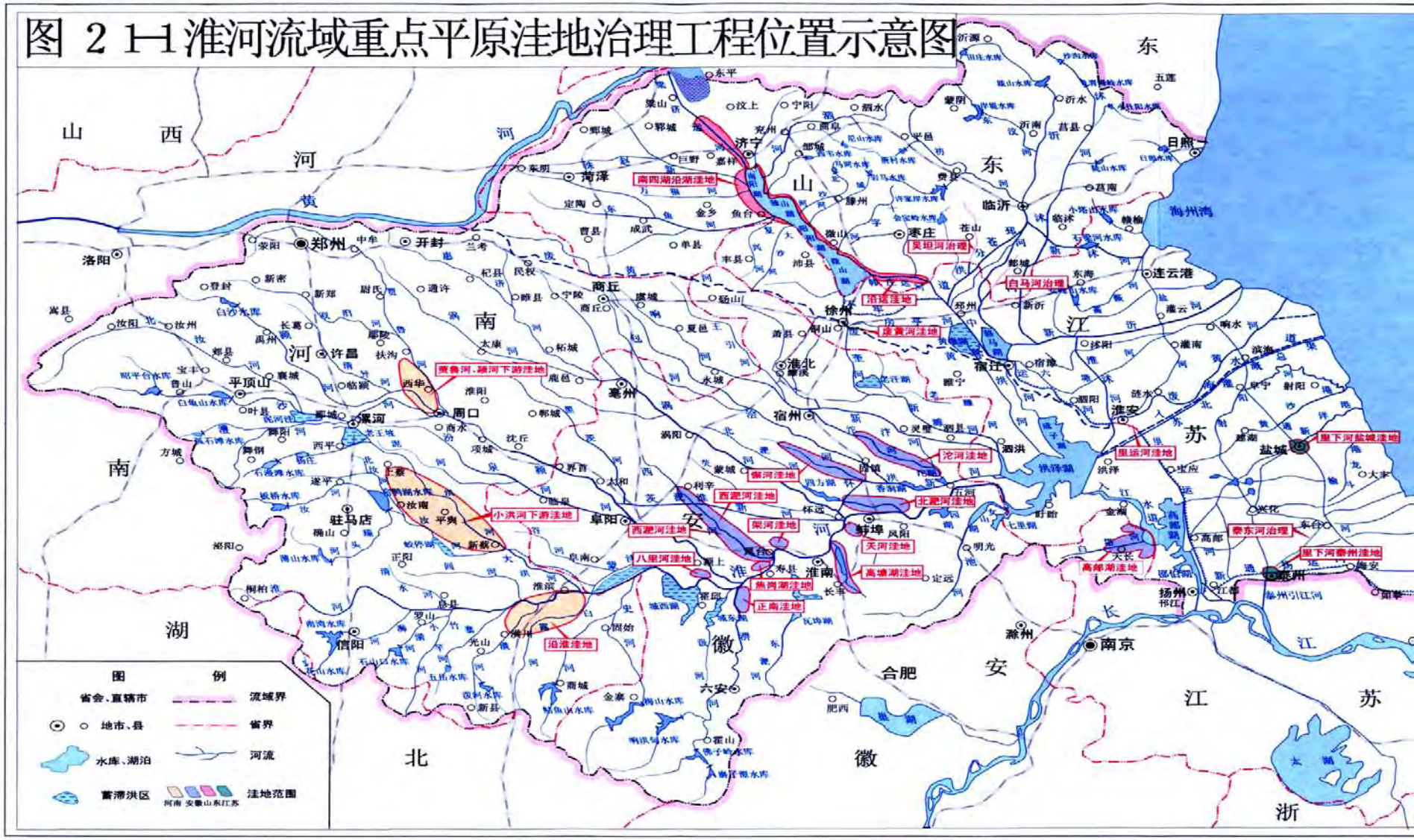
Floods & Droughts

Water Pollution



Distribution of dams and sluices in Huai River Basin

Flood control engineering and wetland distribution in Huai River



Complexity & Risk in Huai River

Flooding disaster

Water pollution risk

Flood control & water projects operation role

Waste water control ?

Non-point pollution?

One example is river pollution event in 1994 during flooding period in Huai main river

Rainstorm in upstream → Over reservoirs warming stage → Open gates to discharge

Let 0.2 billion m^3 polluted water accumulated in gates during non-flood period to go to the downstream.

Polluted water reached 90 km → Waterworks had to stop water supply for 54 days. → 1.5 million peoples face to drinking water problem. It caused at least ***RMB 2 billion worth of damages***.

Major Tasks & Researches

- Identifying major causes of Huai River water problem
- Assessing impact of dams/sluices & climate change on water quality and eco-system
- Developing comprehensive approaches by waste water control & water projects operation to improve river health

1. Filed Survey in Huai River

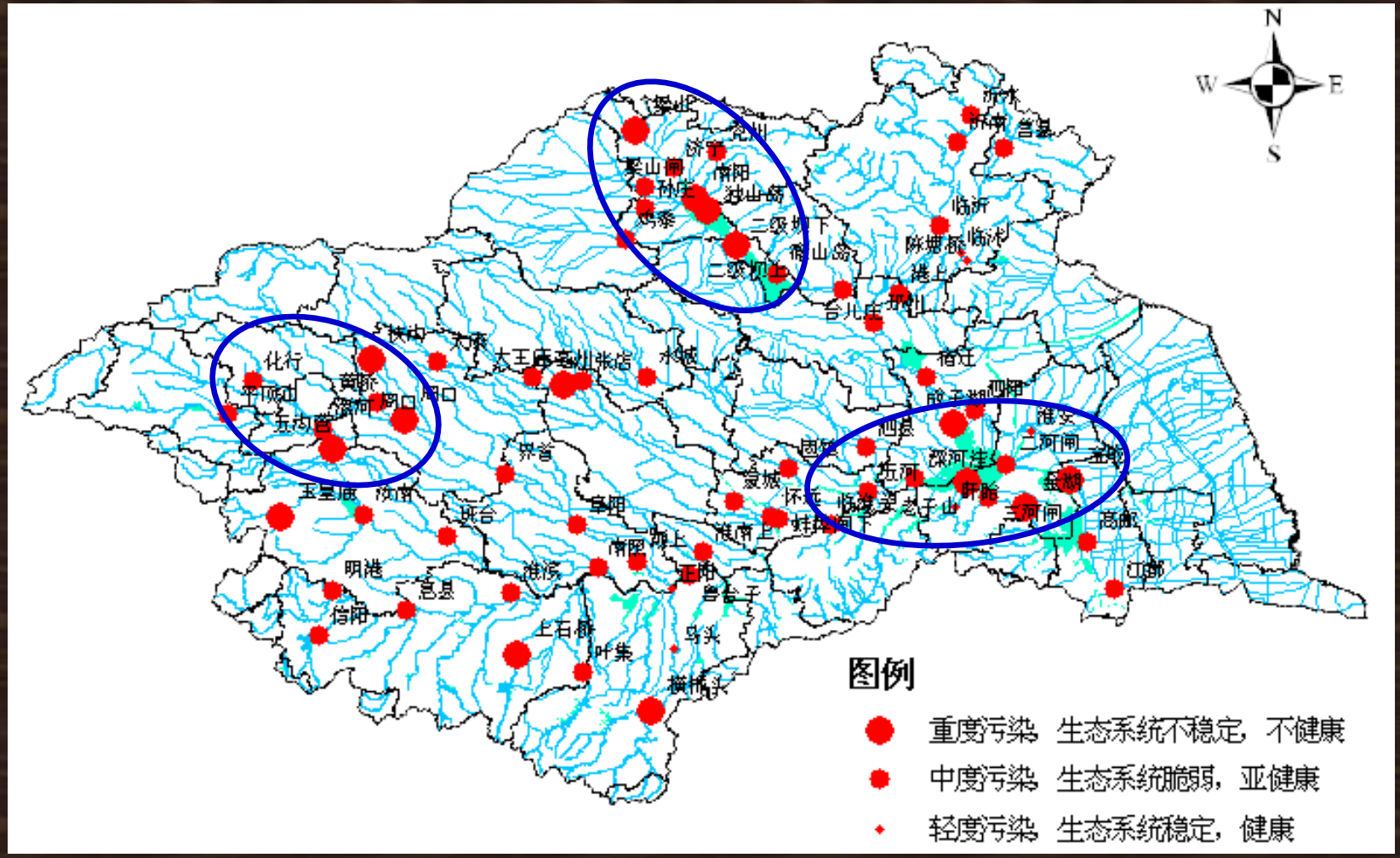








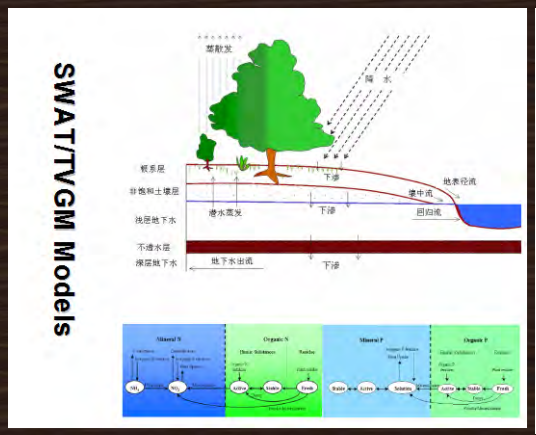
Water quality assessment in Huai River(2009)

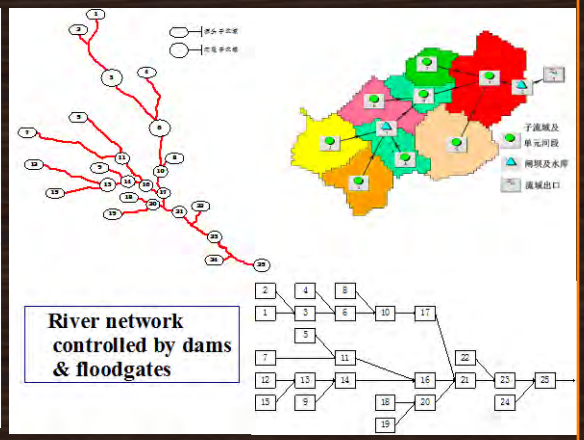


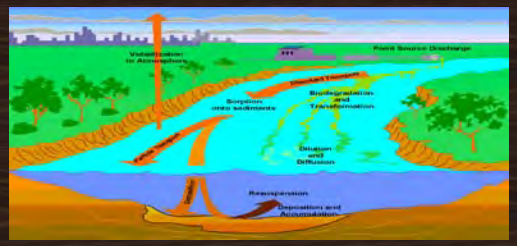
COD	Good water (I – III)	54.9%	Bad water (> IV) 44.1%
TP	Good water (I – III)	80.3%	Bad water (> IV) 19.3%
TN	Good water (I – III)	25.4%	Bad water (> IV) 74.6%

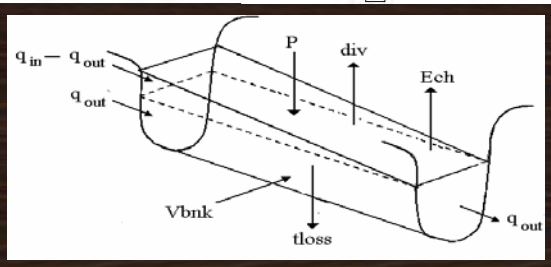
2. **Developing distributed hydrological model** coupled with reservoir operation processes, river water quality change and river ecological assessment

Hydrological modeling









Water quality model

Eco-hydrological model