

Changing the Nature of Water Projects:

Investing More in Non-Structural Interventions

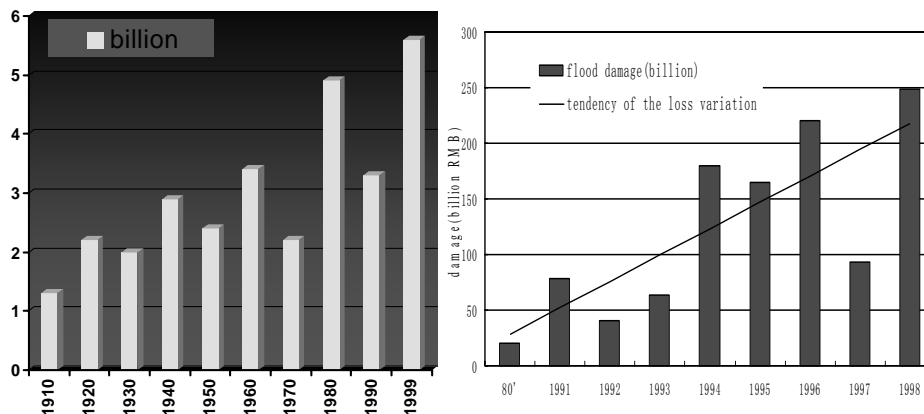
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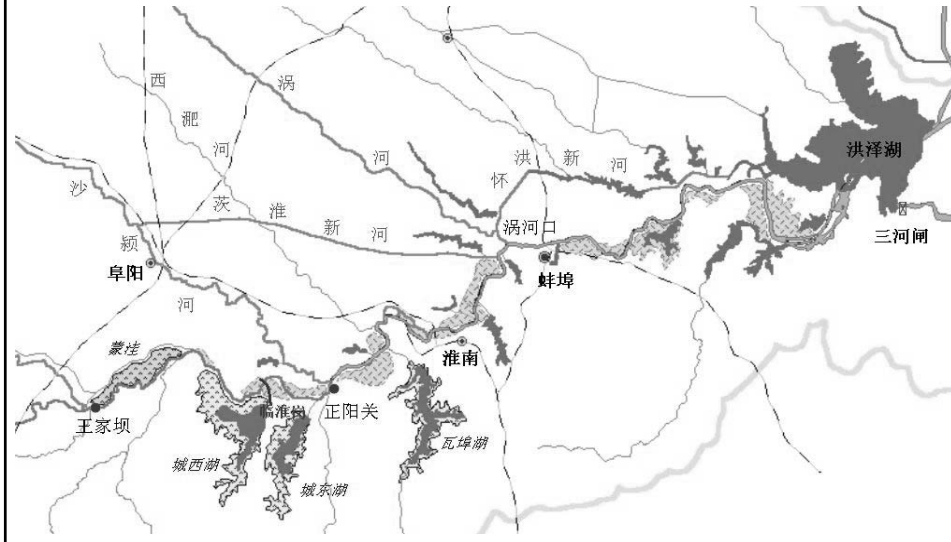
Ministry of Water Resources, China

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Structural flood control cannot fully reduce all disasters

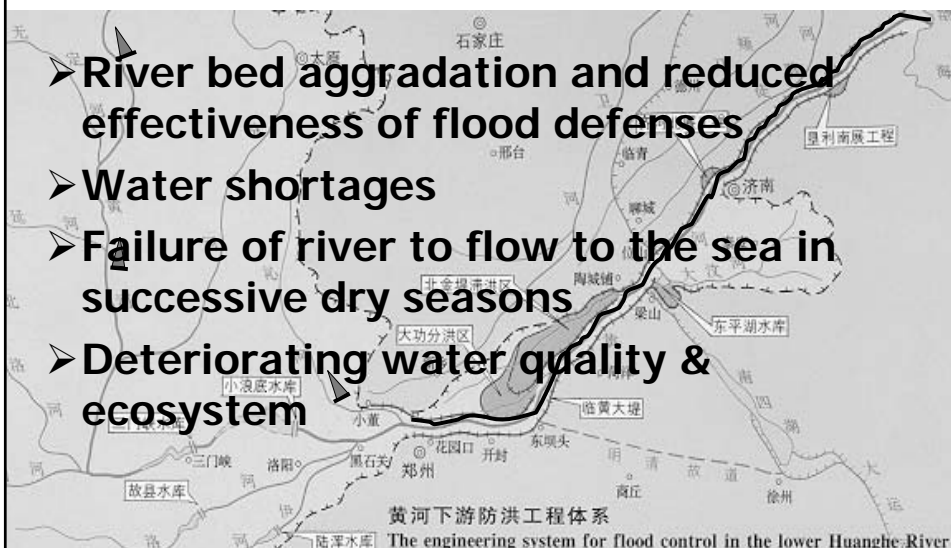


Flood disaster in Huai River in 2003



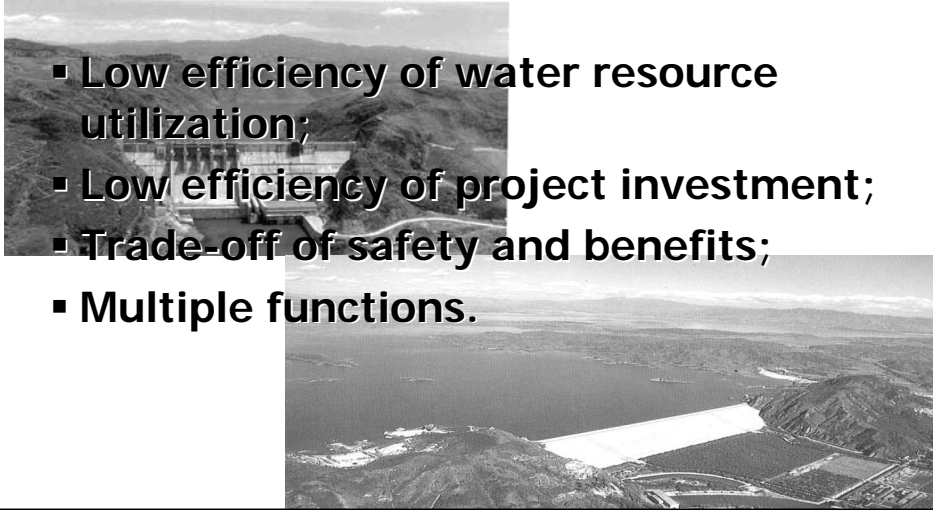
Some negative impacts of structural flood control in the lower Yellow River Basin

- River bed aggradation and reduced effectiveness of flood defenses
- Water shortages
- Failure of river to flow to the sea in successive dry seasons
- Deteriorating water quality & ecosystem

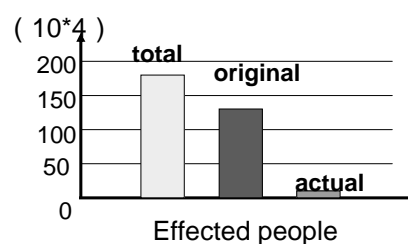
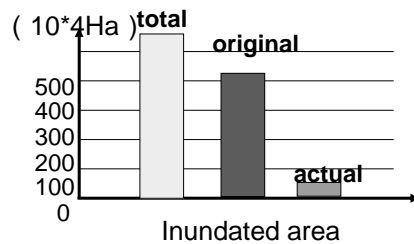
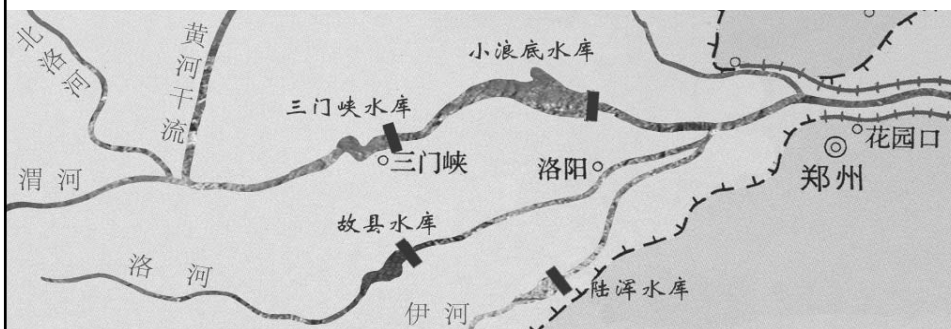


Structural works cannot fully realize their benefits without non-structural interventions

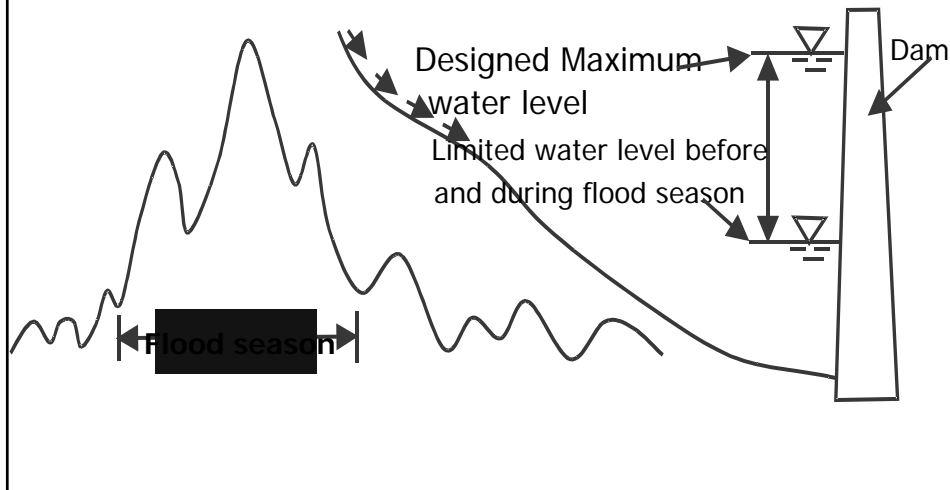
- Low efficiency of water resource utilization;
- Low efficiency of project investment;
- Trade-off of safety and benefits;
- Multiple functions.



What we have done » combined operation of all the structural works helped reduce risk of flood disaster in the Lower Yellow River in 2003

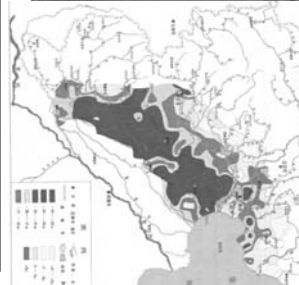


What we can do » forecasting and coordinated operation to increase safety & maximize water storage for beneficial utilization



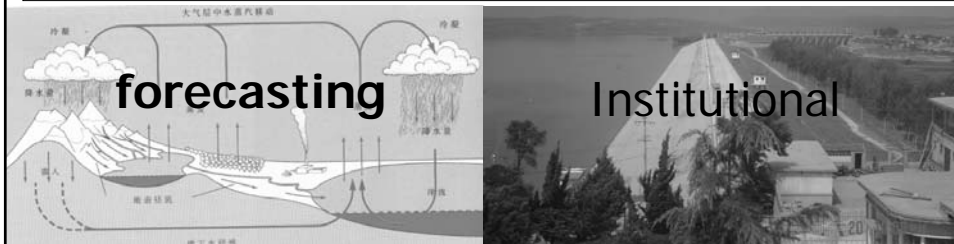
What we have done » integrated resolution of water issues

- Better use of flood detention areas
- Better wastewater management by diluting with flood water as an initial treatment
- Creation of a healthy biological environment in flood detention areas
- Using floods to recharge ground water tables



Key issues for non-structural interventions

- Flood Forecasting
 - increase the beneficial utilization of flood water in flood control projects
 - Improve flood disaster mitigation through flood warning and evacuation
- Institutional aspects
 - Legislative improvements
 - Appropriate policies
 - Adjustment of land use: higher efficiency of flood water use and disaster reduction in high risk areas



Conclusions

- Flood management aims to balance technical, social, and economic factors
- An over-reliance on structural measures leads to higher risk
- Flood management = structural works + non-structural interventions
- Transition from flood control to flood management is a slow process

