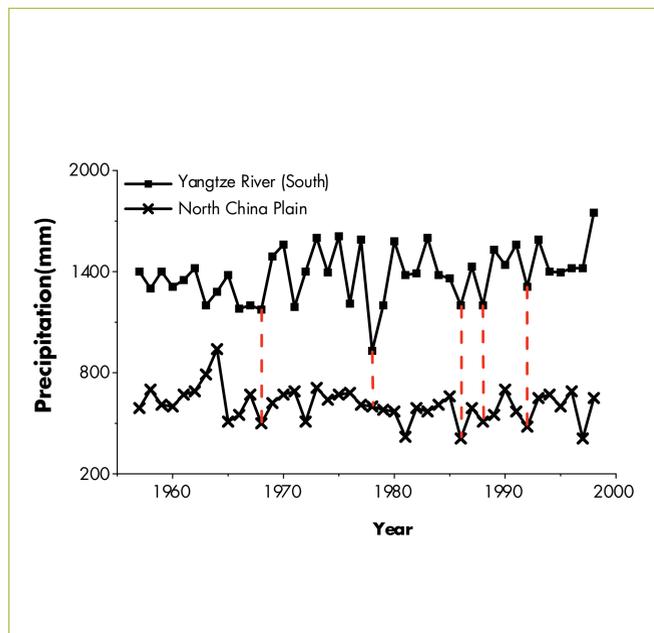
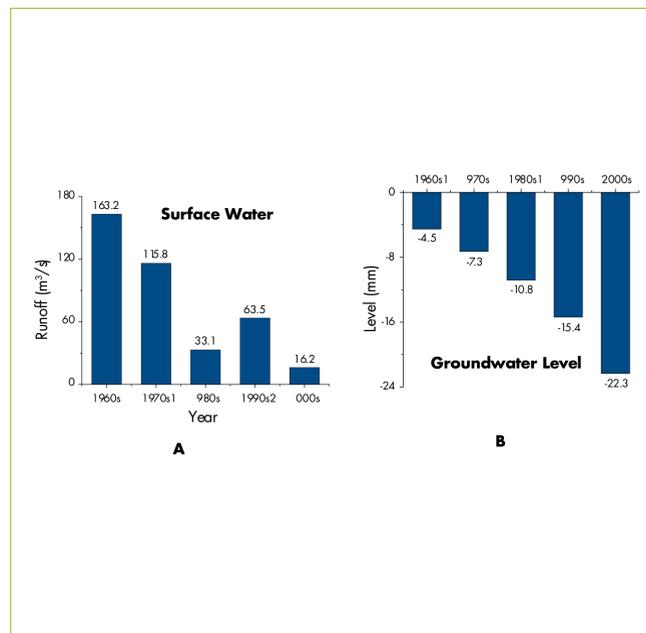


# China's Water Needs

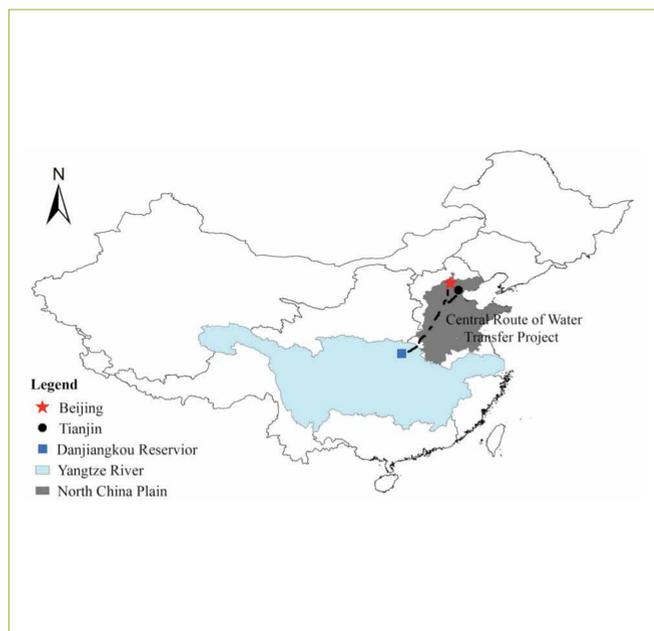
China's South to North Water Transfer Project could alleviate the water crisis in the North China Plain, but climate change could create problems.



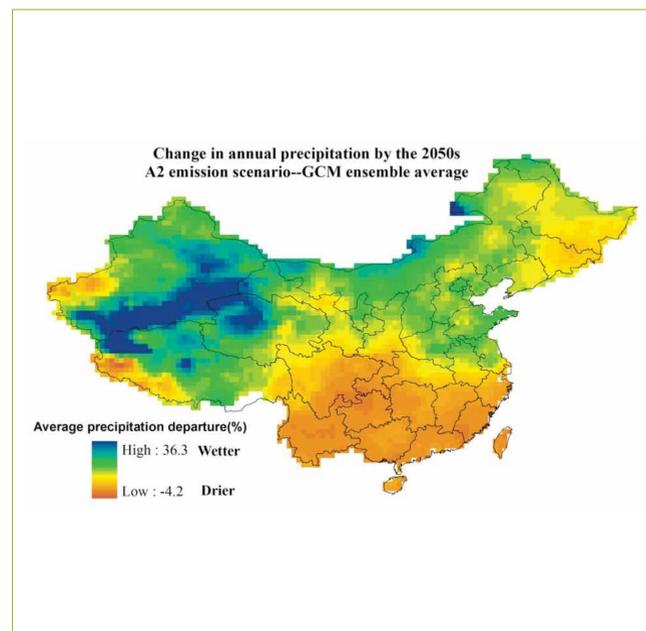
▲ Data from 1957 to 2000 show that about 23% of the years the South and North lacked water at the same time (as indicated by the red dashed line).



▲ In the North China Plain, surface runoff in to the sea decreased 73.0% after 1980 (figure a), average groundwater level decreased from -4.5m in the 1960s to -22.3m in the 2000s (figure b). The South-North Water Transfer Project is designed to divert water from the Yangtze River to the North China Plain (figure c).



▲ The South-North Water Transfer Project is designed to divert water from the Yangtze River to the North China Plain.



▲ According to the Intergovernmental Panel on Climate Change's projected climate scenario for China in the 2050, the north of China will be wetter while the south China will be drier.

THE NORTH CHINA PLAIN is the largest alluvial plain of eastern Asia as well as the "Granary of China," accounting for 28% of China's grain yield. In recent years, a water crisis has developed because of rapid urbanization and increased irrigation demand. In order to alleviate the water crisis, the Chinese government is building the South-North Water Transfer Project to divert 44.8 billion m<sup>3</sup> of water per year from the Yangtze River in southern China to the northern China. This is equivalent to nearly half the amount of water consumed annually in California.

However, the project faces challenges because of climate change. One challenge is that South and North may lack water at the same time. The frequency with which the South and North may lack water at the same time will increase because extreme weather will be more frequent due to global warming. A second challenge is that it maybe wetter in the North and drier in the South in the future, according to a projected climate scenario developed by the Intergovernmental Panel on Climate Change. The project may be a waste of resources, considering the huge economic cost (the project will cost \$62 billion) and social cost of creating a large number of migrant people. Our recommendation is to keep improving water-use efficiency and moving highly consumptive activities to water-rich areas. Non-stationary considerations should be built into the water planning and management process in order to address unexpected changes.

## CREDITS:

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