

# China's struggle for water security

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Way back in 1999, before he became China's prime minister, Wen Jiabao warned that water scarcity posed one of the greatest threats to the "survival of the nation".

Sixteen years later, that threat looms ever larger, casting a forbidding shadow over China's energy and [food security](#) and demanding urgent

solutions with significant regional, and even global, consequences.

The mounting pressure on China's scarce, unequally distributed and often highly polluted [water](#) supply was highlighted in a report released at the World Water Forum this week in Daegu, South Korea.

Published by the Hong Kong-based NGO, China Water Risk (CWR), it underlined the complexity of the challenge facing China as it seeks to juggle inextricably linked and often competing concerns over water, energy supply and climate change.

"There are no one-size-fits-all solutions to China's water-energy-climate nexus," the report said.

"More importantly, China's energy choices do not only impact global climate change, but affect water availability for Asia," it said, warning of the danger of future "water wars" given China's upstream control over Asia's mightiest rivers.

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The most significant link in the nexus the report describes is the fact that 93 percent of China's power generation is water-reliant.

"Chinese officials are starting to say water security comes first," the report's author Debra Tan told AFP in Daegu. "Because without it, there is no energy security and, of course, no food security."

## **Kung Pao potato**

Agriculture accounts for between 65 and 70 percent of China's water use

and vast amounts are wasted by inefficient irrigation.

This is especially true in northern regions that, despite being some of the most arid in the country, are the production focus for water-hungry crops like corn and wheat.



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"They even grow corn in Inner Mongolia, which is incredibly dry," said Li Lifeng, director of the WWF International Freshwater Programme.

"I recently talked to a farmer there who had been growing corn for just three years," Li said in Daegu. "His well started off three metres (10 feet) deep, but now it already goes down 50 metres."

Efforts to change the crop mix have included a recent campaign to promote the harvesting of potatoes, which require far less water.

Given the traditional taste preference for rice and wheat, the state broadcaster CCTV has tried to prod things along by publishing recipes on its Weibo account, including one for Kung Pao potato.

Northern China's thirst for water—the coal industry is centred there as well—extends to its rapidly growing and increasingly affluent urban populations.

The need to meet the rising demand from these cities resulted in one of the world's most ambitious engineering projects, with an overall estimated cost of more than \$80 billion.

The central phase of the massive South-North Diversion Project opened in December, as water began flowing to Beijing through more than 1,200 kilometres (745 miles) of channels and pipes—the distance from London to Madrid.

But experts stress that China cannot simply engineer its way out of its water crisis with headline mega-projects that will never be big enough to keep pace with increasing demand.

## **'Good water after bad'**

A study published in the Proceedings of the National Academy of Sciences journal in January warned that large-scale water transfers would actually exacerbate problems in the long-run.

"China needs to shift its focus to water demand management instead of a supply-oriented approach," said the study's co-author, Dabo Guan, a professor at the University of East Anglia.

"The current transfer programme is pouring good water after bad: the problems of water-stressed regions aren't being alleviated and the provinces sharing their water are suffering greatly," Guan said.

Years of declining rainfall in southern China means it now regularly sees droughts of its own.

China is in fact implementing an extremely ambitious water management strategy, albeit one that risks being undermined by inter-departmental rivalries, corruption and incentives that favour economic development over sustainable resource use.

In 2011, it issued its "three red lines" policy establishing strict limits on water quantity usage, efficiency and quality, while this year a new Environment Law came into force with harsh fines for polluters.

State media reported last year that 60 percent of China's groundwater and more than half its major freshwater lakes were polluted.

"Before, there wasn't much of a stick for punishing wastage and polluting," said CWR's Tan. "Now there are strict standards and a very big stick."

Having experimented with charging urban residents for water in order to encourage conservation, the government is reportedly set to roll out a tiered pricing system for residential users in all cities and some towns nationwide later this year.

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