

## Water-trading could exacerbate water shortages in China

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## Water-trading could exacerbate water shortages in China

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China approaches water trading with the twin problems of ensuring equity of supply and avoiding ecological damage



Poor smallholders are likely to lose out to manufacturing in a water trading system, warn sceptics (Image by [Greenpeace](#))

Large-scale engineering projects and rigorous state control are hallmarks of the Chinese developmental model, and both have been apparent in the country's approach to water management.

A US\$62 billion project to divert water from the south to the parched north is under way, while the government is investing US\$3.35 billion in desalination plants, aiming to produce 2.2 million cubic metres of desalted water a day by 2015. In 2002, it attempted to implement a permit system for water access to curb over-abstraction.

But such measures are proving insufficient to keep up with the country's increasing demand for water. Rapid industrialisation and urbanisation are bleeding China dry and pumping pollutants into its rivers. The 2030 Water Resources Group predicts there will be a water shortfall of 199 billion cubic metres by 2030. The government is therefore turning to a new solution: the market and allocating water through a system of tradable water rights.

"It's an attempt to move from a centralised, top-down system, to one with more horizontal arrangements between users," says Dajun Shen, who led the Chinese side of the Water Entitlements and Trading (Wet) Project, an attempt by the Ministry of Water Resources and the Australian government to examine the feasibility of nationwide water-trading in China.

Australia is one of a handful of countries that have implemented trading schemes to tackle water scarcity; Chile and the US are others. Under such systems water use is capped at a sustainable level, then users are allocated entitlements they can exchange like any property.

Supporters of these schemes say applying market mechanisms to water ensures its price reflects its scarcity, that it encourages conservation and that it allows water to be exchanged more easily between areas of abundance and shortage. But sceptics warn that such a system is impractical and

could have devastating effects on those most at risk of water shortage.

Nonetheless, China is embracing the concept. The Wet project, which ran from 2006 to 2008, was encouraged by the success of a few trial projects – in Inner Mongolia, Ningxia and Zhejiang province, among others. The resulting proposal was a multi-faceted trading system with regional, individual and sectoral elements. In 2008, the government outlined new principles for water allocation – the first, essential, step towards water rights trading. However, progress since has been slow, mainly because of the logistical problems of defining rights for a free-flowing resource in a large country.

Even after rights are assigned, there are difficulties. "Entitlements are not enough – they have to be enforceable," says James Nickum, vice-president of the International Water Resources Association. "If someone takes more than their share or holds on to a right without using it, there has to be a way to sanction them. China, in part because of its size, has long had problems enforcing rules at the local level."

In other words, a water market cannot compensate for poor governance. Past form, however, suggests that the Chinese government is capable of administering such schemes. "The water ministry is powerful," says Jennifer Turner, director of the China Environment Forum at Washington's Wilson Center think-tank, pointing to its strict management of the Yellow River Basin, where water rights allocation has progressed fastest.

Indeed, the interventionist attitude of the Chinese state is, perhaps, what makes it uniquely placed to implement such a complex system. Water trading in other parts of the world has generally been based on a free market model. China's interest in trading reflects its increasing faith in individual property rights and laissez-faire economics, but the communist state is, as ever, forging its own path.

"The nature of the Chinese government meant a water trading system was never going to be a fully free market," says Robert Speed, the Wet project Australian leader. "The goal was simply to give China's water system greater flexibility."

While adopting the principals of exchange, the government plans to maintain strict control over transactions. In Wet pilot projects, for instance, prices were based on the amount of water saved in a given area and the costs of achieving this, rather than simply what buyers were willing to pay. Moreover, the ministry arranged the trades, investing the money in infrastructure rather than handing it over to the sellers.

### **Who will be the losers?**

Such strict supervision could ensure water is allocated to its most beneficial uses and allow China's system to avoid pitfalls such as the potential for speculation on water and price manipulation.

On the other hand, what the government sees as efficient or urgent may not always be socially beneficial – water may be diverted from, say, subsistence living or ecological conservation to higher value uses such as cash crops, industry or tourism. "If a farmer and a power plant need water, we know who gets it," says Turner. "The energy sector reigns supreme in every country."

Shiney Varghese, senior policy analyst at the Institute for Agriculture and Trade Policy agrees: "As long as water trading benefits only those who can pay, is government control any better than private sector?" She points out that the definition of success varies. "If you evaluate success as environmental conservation that doesn't compromise growth, China may be more successful than,

say, India, where the state has to compromise. However, if it is defined in terms of environmental and social justice, then it'll be far from successful."

The social effects of privatising a common resource have been witnessed before – land reforms of the 1970s increased agricultural productivity, but were also associated with violence and antagonism. "Land grabs remain the biggest source of conflict in China today," says Turner. Speed emphasises that, like in other countries, the right to water for basic needs would remain. But it is possible that industries' needs would trump those of others in the long run.

"A strong sector like industry may damage weaker sectors like agriculture or ecological systems, and affect social stability," says Shaofeng Jia, chair of the department of water and land resources at Beijing's Institute of Geographic Sciences and Natural Resources Research. Ecological water requirements must be secured before rights are allocated for economic activities, he says.

As the Chinese government's efforts to formalise water rights progress, Turner anticipates it will encounter another problem – a basic lack of excess useable water. "Can China seriously embark on water trading when so much of its water is dirty?" she asks. "And after you account for infrastructure, dams, the demand from cities and agriculture, is there even any water left to trade?"

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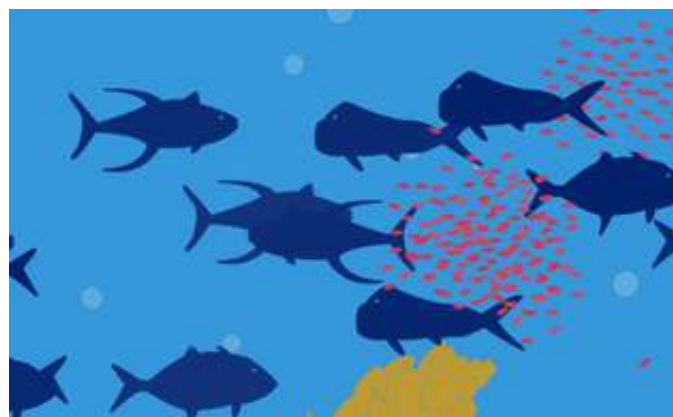
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