

Groundwater under increasing pressure worldwide

As groundwater use soars globally, experts warn of increasing environmental and social costs.



Credit: National Centre for Groundwater Research and Training

Threats to increasingly scarce groundwater supplies are intensifying globally, according to Professor Craig Simmons, Director of Australia's [National Centre for Groundwater Research and Training](#) (NCGRT) and a member of the UNESCO's global groundwater governance program.

Ahead of a gathering of international experts on groundwater in Sydney in late January 2012, Professor Simmons urges better management of groundwater in the face of increasing negative environmental, social and economic impacts from over-extraction and pollution of this valuable resource.

'The world has experienced a boom in groundwater use, more than doubling the rate of extraction between 1960 and 2000 – with usage continuing to soar up to the present,' he says.

A recent satellite study has revealed falling groundwater tables in the United States, North Africa, India, the Middle East and China, where expanding agriculture and cities have increased water demand.

High rates of groundwater use are being driven by competition for increasingly scarce water supplies between the megacities, the energy sector, manufacturing and farming, and have been hastened by an era of cheap pumps and relatively cheap energy, making it easy to extract.

Professor Simmons points out that groundwater is a key driver of the global economy. For example, water is emerging as potentially one of the main limits to Chinese economic growth. Groundwater supplies 70 per cent of China's drinking water and irrigates a substantial proportion of its food – yet water levels in aquifers in some regions are sinking by a metre or more a year. On the North China Plain, which contains sixty-five per cent of the country's agricultural land and produces nearly all of China's maize and wheat, the water table is estimated to be falling by nearly 0.125m to 3m per year because of over extraction¹. It is estimated that around 660 Chinese cities have polluted supplies or are water insecure.

‘Over-extraction also has serious implications for the environment, especially when the climate is warming – as falling water tables can lead to emptying lakes and rivers and dying landscapes as the water they depended on is withdrawn,’ says Professor Simmons,

He believes poor governance and lack of political will are the key culprits, ‘exacerbated by a lack of knowledge of the size and condition of the resource, rates of recharge, lack of transparent policy, lack of ownership, and lack of price signals to users.

‘It's fixable – but it will take a lot of hard work and good science to do so.’

Source: National Centre for Groundwater Research and Training

¹ Ma, M. (August 2001). [Northern Cities Sinking as Water Table Falls](#). *South China Morning Post*. Earth Policy Institute.

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