

Call to better manage Australia's hidden water

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Two of Australia's leading water scientists have called on the Federal Government not to overlook the nation's greatest natural resource – our vast reserves of underground fresh water – in developing a new national water policy.

In an editorial in the Fairfax press today, Professor Craig Simmons and Dr Rick Evans, point out that groundwater constitutes more than 95 per cent of Australia's available fresh [water](#) – but the current policy discussion focusses almost entirely on building more surface dams, mainly in the North.

"Surface water dams are costly to build, economically questionable, involve destroying local ecosystems, cause social and political acrimony and worst of all, in our hot climate, they evaporate. In the north of Australia, they lose metres of water per year into the sky. These losses may increase as the climate warms," the scientists say.

Prof. Simmons is Matthew Flinders Distinguished Professor of Hydrogeology at Flinders University and Director of the National Centre for Groundwater Research and Training and Dr Evans is Principal Hydrogeologist at Jacobs and immediate past president of the Australian Chapter of the International Association of Hydrogeologists (IAH).

"A renewed fit of dam construction will not only waste precious water: it will also cause Australia to miss major opportunities to generate billions of dollars' worth of mineral and food exports, create thousands of jobs,

sustain cities, towns and regional communities and restore native landscapes across the continent. It will invest a lot of money for a relatively meagre return."

Instead, they argue, Australia should focus on 'conjunctive management' of both surface and underground water resources because trying to manage one without the other does not make sense.

A Commonwealth options paper published in late October 2014 all but ignores groundwater and fails to give due weight to conjunctive [water management](#) – the integrated management of both [surface water](#) and groundwater resources. It has instead steered discussion towards building up to two dozen new surface dams, mainly in northern Australia.

"In a hot, dry land like ours – where evaporation rates often exceed annual rainfall – a promising water storage system is "underground dams", otherwise known as managed aquifer recharge (MAR). You pump or soak water down into the aquifer during the wet season, and withdraw it again for use during the dry.

"This has been shown to work well with stormwater in the city of Adelaide, in the outer metropolitan area of Perth and in the Burdekin Delta in Queensland. It is a widely recognised solution to both the Australian and world problem of approaching water scarcity."

"Good conjunctive water management takes advantage of both surface dams and underground storage, as well as other methods (eg weirs). Every situation is assessed on its own merits. When done well, conjunctive water management can be more cost effective, more environmentally sustainable and a more water-efficient way of using the total resource," the scientists say.

"Underground dams" are a solution to one of the great challenges of our

age, ensuring enough water for a world that will hold 10 billion people in less than 50 years. Designing and managing them, and the knowledge and technology behind it, is potentially a major new Australian export industry in its own right.

"Planned conjunctive management of surface and groundwater, which will in many cases involve MAR, is the most effective way to build a sustainable Australian economy, industries, communities and environment.

"Australia can also be a world leader in conjunctive water management, making a major contribution to a more sustainable world at a time of growing international water crises," they conclude.

More information: The researchers' opinion editorial can be found at [www.smh.com.au/comment/our-gre ... 20150308-134luk.html](http://www.smh.com.au/comment/our-gre...20150308-134luk.html)

Provided by National Centre for Groundwater Research and Training

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