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Protecting our
most precious
resource

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SPECIAL WATER ISSUE

Ownership, control and use

As water has become increasingly scarce and an issue of interest to the public, the policy and law makers have stepped up to protect it.



Nursing an ailing water system

Dr Keiko Hirota from the Centre for Health Assets Australasia (CHAA) in the Faculty of the Built Environment is looking at how a hospital's facility management strategies can impact on water use issues.

"It is important to understand how hospitals deal with water management within their facility, and as such this is one of the key research interests of CHAA and our key funder - the Health Capital and Asset Managers' Consortium of Australia and New Zealand," Keiko says.

Keiko sees this as a financial management issue for hospitals, as well as an opportunity to demonstrate responsibility in the area of managing resource utilisation and achieving efficiencies from being more environmentally aware.

"Many hospitals have funding issues and they can't recycle much of their water because of the nature of the facility," she says. "They feel that water harvesting is the way forward but this requires investment in technology to test its ongoing viability."

A hospital that Keiko has worked closely with has applied for a grant that would allow them to put in water harvesting infrastructure. If they are successful CHAA would be able to evaluate the implementation of this infrastructure and use this to build a systematic model for other hospitals.

- Victoria Brown

Effluent could mean affluence

Few people stop to ponder the question of who might "own" our sewage. We're perfectly happy to keep flushing it away.

But, there's a new group of entrepreneurs who want our effluent. "Sewer miners" want access to contaminated water to recycle it into a saleable commodity for irrigation and maybe even household use.

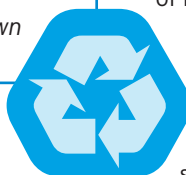
Senior Lecturer in the School of Law, Janice Gray, believes that legal frameworks can, and have in part, already been designed to deal with the challenges of a "third party" accessing public sewerage infrastructure. She also believes that the legal question of ownership of the raw resource can be resolved. Ms Gray has done extensive research, with Alex Gardner from the University of Western Australia, on Australia's current institutional framework for water and wastewater management.

However, Ms Gray argues that legal clarity may not be enough to open access smoothly to this potentially valuable new resource.

If sewage does appreciate in value, Ms Gray envisages problems ahead over access pricing as well as potential commercial conflicts between competitors who seek to harness the resource.

"Will governments and parliaments be forced, at some stage in the future, to legislate for a resource regulation regime based on public ownership of sewage and governmental allocation of this fantastic new resource?" Ms Gray asks. And, that could mean the answer lies in the political arena, not the courts.

- Louise Williams



Economics of salinity



Farmland irrigation has economic consequences.

Water is undervalued and misused, according to researchers analysing the environmental economics of water conservation.

"Salinity is uncertain, relying on many factors which are quite localised," explains Professor Kevin Fox, Director of the Centre for Applied Economic Research (CAER) at the Australian School of Business.

Professor Fox says a priority for CAER research is developing instruments and economic models that take the uncertainty of salinity into account.

Economics PhD student Amy Cheung is researching ways to find the lowest cost and highest efficiency value to salinity mitigation. Her preliminary findings indicate that this lies in tradeable permits, where companies monitor their own water use and pollution, are informed about consequences of overuse, and can sell leftover permits for cash.

However, balancing the needs of the environment with the bottom-line requirements of farmers is a delicate exercise.

Dr Lisa Lee, a CAER post-doctorate fellow, uses Geographical Information Systems (GIS) to develop models in which regulators can meet better environmental targets at the least cost to producers and irrigators.

"Using GIS provides realistic data for economic management of natural resources, and enables us to use water in more environmentally, economically and socially sustainable ways," says Lisa.

Thomas Longden, PhD student in Environmental Economics, says that phasing out inefficient farming practices will also help increase water availability and quality.

Thomas argues that non-point sources, such as agricultural run-off, create problems for tradeable permit schemes. What one farmer does upstream may affect another downstream. He suggests that a scheme where monitoring of water trading occurs at the level where pollutants are measurable could provide a solution.

- Jared Reed