

# Innovative Water Reuse

## Novel applications for resource recovery

Droughts, climate change and competing needs for water resources make equitable allocation of this finite resource a major challenge.

CSIRO is uniquely placed to provide integrated scientific solutions – including technologies to harness and reuse water. Water reuse delivers the dual benefits of environmental protection and resource recovery.



CSIRO cropping trials of kanef and maize, using FILTER technology

## Aquifer storage and recovery

CSIRO is a world leader in advancing applications for aquifer storage and recovery. CSIRO's unique research into the behaviour and fate of various microbes has shown that disease-causing microbes can effectively be eliminated from recycled water by storing it in these 'underground water banks'.

CSIRO expertise in aquifer storage and recovery, together with our knowledge of groundwater and surface-water hydrology, is helping to transform our approach to developing integrated water supply systems in urban and rural landscapes, both in Australia and internationally.



Recycled Water Aquifer Storage & Recovery trial site

## Water from waste

Treated effluent from urban and industrial areas provides a small but increasing component of the water used for irrigation. Effluent waters from intensive rural industries are also being recycled in irrigation with the twin objectives of avoiding pollution and turning waste into wealth. Novel low-technology solutions for treating and reusing effluent have been developed by CSIRO scientists.

### FILTER

FILTER (Filtration and Irrigated Cropping for Land Treatment and Effluent Reuse) - combines the use of nutrient rich wastewater for intensive cropping with filtration through the soil to a subsurface drainage system. FILTER technology has been applied for treating secondary sewage, for winery effluent, and has been used for domestic effluent schemes in India.

### Sequential Biological Concentration (SBC)

Sequential Biological Concentration (SBC) can be used in tandem with FILTER to concentrate the salts into a manageable volume for use in aquaculture or evaporation. SBC is an inexpensive system for farmers and communities to achieve environmentally sound management of salt while generating income streams from cropping, aquaculture and salt harvesting.

## Global impact

The CSIRO research group studying aquifer storage and recovery was awarded the UNESCO International Water Prize for Innovation in Water Resources Management in Arid and Semi-Arid Areas in 2001. The award recognised the international significance of our work, the strong scientific base and its potential in developing countries.



For Further Information Contact:

Dr Shahbaz Khan or Dr Peter Dillon

Phone 61 2 6960 1578 or 61 8 8303 8714

Email Shahbaz.Khan@csiro.au or Peter.Dillon@csiro.au

www.clw.csiro.au www.csiro.au

General Information: Lynne Griffiths

Phone 61 8 8303 8513

Email Lynne.Griffiths@csiro.au

www.clw.csiro.au