

irrigation update

sustainable irrigation

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BUILDING RIGOROUS RISK ASSESSMENTS

Working at the interface between biophysical and social science, this research project aims to change the way risk-based approaches are incorporated into natural resource management decision processes.

A new decision support tool being developed through the National Program for Sustainable Irrigation will assist Australian irrigation industries to quantify, prioritise, address and manage ecological risks.

Principal researcher Professor Barry Hart says risk management is not new for the agricultural community, but that this project will provide a structured and rigorous methodology.

The project will involve extensive stakeholder consultation to identify all the relevant issues and enable those issues to be assessed and prioritised.

Case study projects that will inform the development of the decision-support tool are underway or already complete in the Goulburn-Broken (Victoria), Ord (Western Australia) and Fitzroy (Queensland) catchments.

The overarching project is also working with Murray Irrigation Ltd and the New South Wales Environmental Protection Agency as a pilot study for the consultation process and the decision framework.

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New risk based approaches will improve the way irrigators and regulators interact.



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SUSTAINABLE IRRIGATION PARTNER: LAND & WATER AUSTRALIA

The Sustainable Irrigation Program brings together a wide range of partners from across industry and government. In each issue of Irrigation Update we will be profiling one of the partners to build understanding between our partners, stakeholders and clients. Today, the focus is on Land & Water Australia, the agency charged with managing the Sustainable Irrigation Program on behalf of the partners.

Australia's natural resource base is a defining element of our national identity. It is central to our quality of life and underpins more than 30 per cent of our export earnings.

Land & Water Australia is a statutory corporation of the Australian Government specifically responsible for research and development aimed at the productive and sustainable management of the land, water and vegetation resources supporting Australia's primary industries and regional communities.

A Rural Research and Development Corporation, Land & Water Australia has a particular charter to foster national collaboration in order to improve the efficiency and effectiveness of the natural resources research effort.

One of the ways this occurs is through the establishment and support of a number of national research programs, including the National Program for Sustainable Irrigation, the Managing Climate Variability Program and the National Program for Dryland Salinity.

The mission of the Corporation is to provide national leadership in generating knowledge, informing debate and inspiring innovation and action in sustainable natural resource management. Since 1990 Land & Water Australia has invested approximately \$300 million in research and development activities, about half of that on behalf of partner agencies.

RIGOROUS RISK ASSESSMENTS

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The project has been conducted in three phases. The final phase of developing ecological risk assessment protocols will be completed later this year.

A detailed factsheet on this project can be found on the Sustainable Irrigation Program website – www.npsi.gov.au. For more information contact Professor Barry Hart, Director, Water Studies Centre, Monash University, Barry.Hart@sci.monash.edu.au, phone 03 9905 4070.

The research portfolio contains about 1300 projects across the spectrum of natural resource management-related topics including native vegetation management, rehabilitation and restoration of riparian lands, and social and institutional research.

Through the website (www.lwa.gov.au), visitors can browse the research portfolio, download or order from a catalogue of 500 titles and search the Streamline database with its 50,000 research abstracts.

For more information about Land & Water Australia visit www.lwa.gov.au, email Land&WaterAustralia@lwa.gov.au or call 02 6257 3379.



Land & Water Australia-supported research on environmental water allocations will help to improve the management of environmental assets such as the Barmah-Millewa Forest on the Murray River.

BROADACRE HYDROPONICS

Work is now underway to develop a new project to examine the issues surrounding the development and adoption of broadacre hydroponics. This technology is potentially the best opportunity to maximum control of nutrients and other plant inputs while minimising water use. However it will be reliant on the ability of water authorities to supply water on demand, 24 hours a day.

For more information contact Murray Chapman, rplan@benalla.net.au, 03 5763 3214.

www.npsi.gov.au

ADVANCING UNDERSTANDING OF WATER USE EFFICIENCY

Two recently completed research projects funded by the National Program for Sustainable Irrigation have made a major contribution to the understanding of water use efficiency.

Gaining acceptance of water use efficiency framework, terms and definitions

Until recently there has been no generally accepted way in Australia of defining water use efficiency and how it is measured. As a result, people used different measures for water use efficiency e.g. one person could measure crop water use to describe water use efficiency while another could use irrigation water use. While the answers were correct as far as the particular measures are concerned, there was no way of actually comparing them because they were calculated using different base criteria.

This project, managed by Jim Purcell from Aquatech Consulting at Narrabri, has resulted in agreement by the industry on a framework of terms and definitions for water use efficiency.

A next step is the formal adoption of the framework by government to allow for consistent evaluation and monitoring of irrigation systems throughout Australia. Then we'll all be talking the same language when we are discussing water use efficiency.

Visit www.npsi.gov.au for more information.

Water use efficiency information package

Irrigation Insights 5 Water Use Efficiency: an information package is a concise, practical guide to water use efficiency that collates and summarises current scientific and field knowledge about the subject. It is based on the framework of terms and definitions developed in the first water use efficiency project.

Because of its comprehensive nature this report is relevant to a wide audience, from water users, through to the irrigation service industry, researchers, policy makers and agencies.

Four of the seven chapters examine water use efficiency at a range of scales covering conveyance (taking water from reservoir to the farm gate); distribution (from farm boundary to the field); field (application on each paddock); and overall project efficiency (at an irrigation district or catchment scale). Within each of these four chapters the current situation; measurement; implementation and adoption; and emerging issues are addressed.

Where available, procedures for estimating water use efficiency are reviewed and assessed and case studies at a range of scales presented.

Download for free or purchase a hard copy from www.lwa.gov.au/catalogue, or telephone 1800 776616 and quote code PR030566.

REPORT IDENTIFIES LONG-TERM WATER TITLE NEEDS

A new research report into the water-titling regimes needed to underpin the long-term productivity of irrigated agriculture and the sustainable management of Australia's water resources has just been released.

The report An Effective System of Defining Water Property Titles was commissioned by Deputy Prime Minister John Anderson and authored by ACIL Tasman in association with Freehills.

This report focuses on identifying the proper role of a water-titling and registration system and is an important contribution to a very important aspect of the Australian water reform agenda.

To download or order a printed copy of the report visit

www.lwa.gov.au/catalogue.

Alternatively telephone 1800 77 66 16 and quote product code PR040675

This project was funded by the Australian Government Department of Agriculture, Fisheries and Forestry and Land & Water Australia.

It was managed through Land & Water Australia's Social and Institutional Research Program.



PROJECT SNAPSHOTS

The Sustainable Irrigation Program is currently investing in research projects at farm, regional and national levels involving at least 55 researchers. For more information check our website, www.npsi.gov.au.

Title: Northern Australian Irrigation Futures: Building a basis for developing sustainable irrigation across tropical Australia (CDS23)

Aim: To deliver an irrigation framework for policy makers, regulators, managers and investors to ensure irrigation is developed in a sustainable manner across northern Australia.
Contact: Dr Keith Bristow, Principal Research Scientist, CSIRO Land and Water, Keith.Bristow@csiro.au, Ph 07 4753 8596
Research Partners: CSIRO Land and Water, CRC for Irrigation Futures

Title: Sustainable Irrigation/ANCID Travel Fellowship (CID6) **Aim:** To provide young professionals within the irrigation industry the opportunity to travel overseas to undertake research and gain experience and knowledge in their nominated area of interest.
Contact: Mr John Mapson, Executive Officer, ANCID, johnmap@g-mwater.com.au, Ph 0408 505 153
Research Partner: Australian National Committee on Irrigation and Drainage

Title: The Economic Benefits of Irrigation to National and Regional Economies (CIE12)

Aim: To estimate the current economic contribution of irrigated agriculture to the Australian economy and the potential impact under alternative policy scenarios to irrigators and regional economies. This will help inform irrigation public policy and future research decisions.

Contact: Dr George Reeves, Senior Consultant, Centre for International Economics greeves@intecon.com.au, Ph 02 6248 6699
Research Partner: Centre for International Economics

Title: Understanding and Developing Effective Knowledge Management Systems (CRD1)

Aim: To develop systems to assist public and private sector organisations in managing knowledge to assist clients make irrigation decisions.

Contact: Mr Graham Harris, Senior Extension Agronomist, Queensland Department of Primary Industries, Graham.Harris@dpi.qld.gov.au, Ph 07 4688 1559
Research Partners: Queensland Department of Primary Industries, Australian Cotton CRC

Title: Coordinating Deep Drainage Research in the Northern Darling Basin (CRD2)

Aim: To develop an agreed understanding by peak stakeholders of deep drainage in the Northern Darling Basin, and to identify gaps in knowledge and strategies to overcome them.

Contact: Ms Nicky Schick, Research Liaison Officer, Australian Cotton CRC, nicky.schick@csiro.au, Ph 02 6799 1511
Research Partners: Cotton Research and Development Corporation, Australian Cotton CRC

Title: Tri-State Project - Impact of Salinity on Lower Murray Horticulture (DEP15)

Aim: To determine salinity relationships for the Lower Murray horticulture area, including the variability of soil water EC

and leaching efficiency under known irrigation management. Simulate the performance of vines & citrus under different scenarios at Morgan and provide input into the Murray Darling Basin Salinity Strategy, ICM Plan and Living Murray initiative.
Contact: Dr Gerrit Schrale, Department of Water, Land and Biodiversity, South Australia, schrale.gerrit@saugov.sa.gov.au, Ph 08 8303 9334
Research Partners: Department of Water, Land and Biodiversity, South Australia, South Australian Research and Development Institute, Victorian Department of Primary Industries, Mallee Catchment Management Authority, CSIRO Plant Industry, NSW Agriculture, Murray-Darling Basin Commission Catchment Water Management Board, South Australian Centre for Natural Resource Management

Title: Research Review to Inform Sustainable Irrigation (RUP1)

Aim: To capture, synthesize, and extract knowledge 'products' or 'lessons learnt' from completed research to identify directions, changes, standards or practices that can enhance the sustainability of irrigation.

Contact: Liz Chapman, RuralPlan Pty. Ltd. rplan@benalla.net.au Ph 03 57633214
Research Partner: Rural Plan Pty. Ltd.

Title: Changing Irrigation Systems and Management in the Harvey Irrigation Area (SOU3)

Aim: To bring innovation to irrigation systems and agronomy on-farm in the South West Irrigation Area (WA) that will increase water use efficiency, farm productivity and reduce ecological impacts through factors such as water and nutrient seepage to the water table, downstream nutrient run-off and soil structural problems. To understand the impact on water demand and supply and the energy balance of the changed operating system.

Contact: Mr Kenneth Moore, Boorara Management and Consulting, kenn@boorara.com, Ph 08 9388 1172
Research Partners: Boorara Research and Management, Harvey Water, Horizon Farming WA Pty Ltd, Kuzich & Co. Irrigation Specialists, Dale Hanks Farming Enterprise, Department of Agriculture, WA

Title: Delivering Sustainability through Risk Management (UMO45)

Aim: To achieve an improved level of adoption of (ecological) risk assessment and risk management methods in the Australian irrigation industry and in regulatory agencies.

Contact: Professor Barry Hart, Director, Water Studies Centre, Monash University, Barry.Hart@sci.monash.edu.au, Ph 03 9905 4070
Research Partner: Monash University, University of Melbourne

Title: Use of Reclaimed Effluent Water in Australian Horticulture (VPI4)

Aim: To undertake a coordinated national approach to assessing the benefits and drawbacks of irrigation with reclaimed water in Australian horticulture

Contact: Anne-Maree Boland, Horticulture Scientist, Department of Natural Resources & Environment, Victoria, anne-maree.boland@dpi.vic.gov.au, Ph 03 9210 9203
Research Partners: Department of Natural Resources & Environment, Victoria, Horticulture Australia, Primary Industries Research Victoria, CSIRO Land and Water, Water Corporation WA, Department of Environment WA and Department of Agriculture WA

The National Program for Sustainable Irrigation is managed by Land & Water Australia on behalf of the partners. The partners include irrigators, water authorities, research agencies, State and Commonwealth Departments and commodity groups. Suitable projects are being integrated into the new CRC for Irrigation Futures. For information about becoming involved in the Sustainable Irrigation Program, please contact:

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Managed on behalf of the partners by:

