

System Harmonisation

A Cooperative Research Centre for Irrigation Futures Research Program



What is System Harmonisation?

System Harmonisation is one of two major research programs within the Cooperative Research Centre for Irrigation Futures.

The System Harmonisation program recognises that irrigation is part of a dynamic complex social-ecological system that requires new approaches based on integrating science, policy, management and communities to deliver on long-term sustainability.

System Harmonisation is working with regional irrigation partners to increase profitability and reduce the environmental footprint of improved irrigation systems.

It is promoting transdisciplinary approaches to develop and implement strategies that improve cross-organisational communication, and transparent, objective decision-making to support irrigation planning and management within a catchment context.



Dealing with the hard stuff

System Harmonisation is dealing with the high risk 'hard stuff' that everyone says is needed but no one is doing!

It is working at the interfaces; the socio-economic-ecological, surface water-groundwater, water quantity-quality, and land-water interfaces. It recognises that the whole is more than the sum of the parts, and is dealing with the complexity and uncertainty of the catchment system, which includes irrigation.

System Harmonisation is also helping organisations and communities question why things are being done the way they are, and encouraging new and different approaches to create a better future.

The sorts of questions all communities associated with irrigation are faced with include:

- Do we have the right policies and institutions in place?
- Are we using appropriate economic models that account for impacts on the environment to support long term decision making?
- If current trends in population, water demand and energy usage persist, where will we get our water and food from?

- Should we encourage more local food production through careful design of peri-urban zones including 'horticultural precincts'?
- Are we properly considering 'systems' and 'long-term' thinking for the benefit of future generations?

Working together

System Harmonisation has highlighted that the core challenges being faced by irrigation in particular, and society in general, cannot be solved in isolation.

A systems approach and strong collaboration across a broad range of partners is needed.

Experience shows that this is not easy, especially when many of our approaches to date have been based on 'competition' between potential collaborators.

By contrast, collaboration requires a change in attitude, commitment and hard work. It takes time to build the trust necessary for such collaboration.

Effective collaboration, which is ultimately about relationships based on genuine caring, and alliances that share risks and solutions, is essential to help create a better future for all.



Key regional partnerships

The System Harmonisation Program established key regional irrigation partnerships across Australia to ground its work in a range of different irrigation situations and issues. Location of these partnerships is shown below.

System Harmonisation researchers are working with these regional communities to develop and apply new knowledge, tools and processes to enhance the resilience of their interconnected ecological, social and economic systems and their ability to adapt to change.

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★ Ord River

A flow through, largely furrow irrigated system undergoing expansion where System Harmonisation researchers are helping raise awareness of groundwater level and salinity challenges.

★ Daly River

An emerging groundwater-based mosaic irrigation pattern with expansion pressure where our researchers are helping to identify potential risks to highly valued and unique downstream ecosystems.

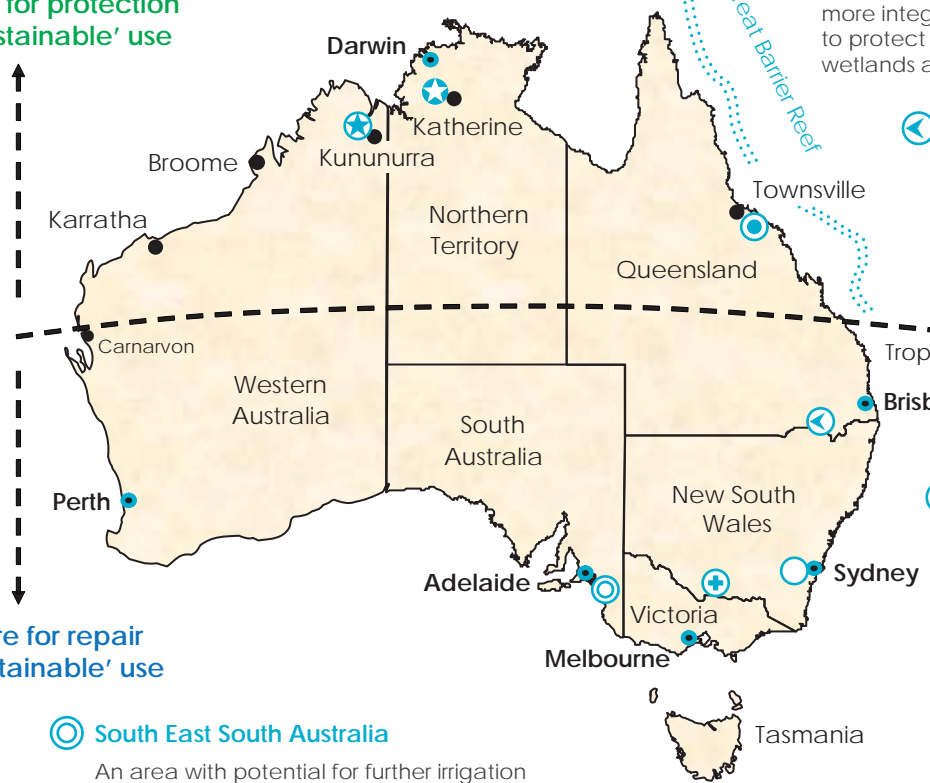
○ Burdekin

A complex ground and surface water coastal floodplain irrigation system where our researchers are working with the community on more integrated water resources management to protect the Great Barrier Reef, Ramsar listed wetlands and groundwater resources.

Pressure for protection and 'sustainable' use



Pressure for repair and 'sustainable' use



○ Macintyre Brook

A surface water irrigation area where our researchers are helping the community to establish an accreditation system that supports both profitable irrigation and a sustainable catchment.

○ Western Sydney

A peri-urban irrigation area with a growing population and increasing water demand where our researchers are supporting the community to develop strategies for water re-use, stormwater harvesting and managed aquifer storage and recovery to substitute the use of high quality water supplies and improve catchment water quality.

○ South East South Australia

An area with potential for further irrigation development where our researchers are helping the community to understand if and how irrigation can expand without risking current and future groundwater quality and quantity.

+ Coleambally

An irrigation area where our researchers are working with community-driven future scenarios to explore the options for altering cropping and irrigation practices in response to changing markets and reduced water allocations.



The CRC for Irrigation Futures is a partnership of water service providers, industry, universities, and state and federal government agencies. It exists to provide tools and knowledge for better decision-making about irrigation in Australia.

Established and supported under the Australian Government's Cooperative Research Centres Program.

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