

RESEARCH PROPOSAL CURRENTLY UNDER DEVELOPMENT

The research outlined below is based on Expressions of Interest received by, and feedback from, the Sustainable Irrigation Program Management Committee. It may not precisely describe the final project agreement, particularly in terms of final project design, cash and in-kind contributions.

Northern Australia Irrigation Futures

Building a basis for developing sustainable irrigation across tropical Australia

Principal Investigator	To be confirmed – initial contact Dr Keith Bristow
Host Organisation	To be confirmed
Issue or Problem to be Addressed	<p>Irrigation is fundamental to the Australian economy and the reality is that there will be further irrigation developments in northern (tropical) Australia. There is an opportunity to address this in a proactive way by designing irrigation systems to fit specifically within the northern Australian environment and thereby minimize the risk of mistakes and problems experienced by irrigation schemes in other parts of the country. The biophysical functioning of northern Australia is different to that of the rest of Australia, and is driven largely by the distinct wet season, which in most years provides a higher level reliability to water supply for dry season irrigation. Likewise the dry season is very reliable, providing opportunities for very precise manipulation of crop – water interactions. Issues that need to be addressed within a whole-of-systems and catchment context include the source and storage of water, variability in supply, the types of soils and landscapes, key features of the surface and groundwater systems and conjunctive use, environmental flow requirements, and likely on- and off-site impacts of implementing a particular irrigation system and management structure. Off farm issues of river and estuary ecology, including minimising impact on other commercial sectors such as fisheries must be considered. Opportunities for managing water tables and deep drainage for flushing salts from groundwater systems, and for using on-farm water storages or larger local storages (on- or off-stream) to serve more than one farm also need to be addressed.</p>
Objectives	<ul style="list-style-type: none"> • Develop sustainable irrigation criteria for northern Australia via a set of two or three linked case studies. • Develop an overall framework that policy makers and managers from farm to region can utilize to ensure irrigation is developed in a sustainable manner in northern Australia
Comment	A number of Expressions of Interest were received with the common aim of identifying the basis for developing sustainable irrigation in northern Australia. Case study sites to be considered include Lower Burdekin (Qld), Katherine Daly Basin (NT) and West Kimberley (WA).
Research Timeline	4 years
Proposed Funding	Sustainable Irrigation Program total budget \$550,000, to be expanded by local and state agencies. Overall budget forecast to be approx \$1.8M involving cash and in-kind.