



Closing the yield gap: Improved irrigation for increased sugarcane productivity and profitability.

1. What is the project about?

This project aims to improve the irrigation knowledge and skills of sugar extension and productivity staff by building their capacity to measure and assess irrigation systems. It will do this by providing access to irrigation information, tools, and on-farm demonstration activities.

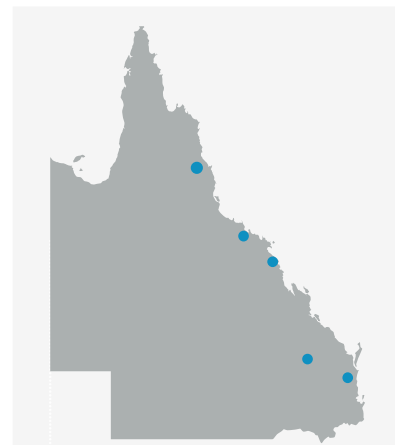
Working with sugarcane extension and productivity services, advisors, and researchers the project team have established irrigation innovation training hubs across four sugarcane regions. Members of the hubs are responsible of identifying the key areas of interest and are central to selecting the on-farm training and demonstration activities. The role and membership of the hubs is evolving as the project team continues to adapt the project delivery to meet local needs. The innovation hubs are located in:

Tablelands Region: Tablelands/Mareeba

Northern Region: Burdekin (BRIA and Delta)

Central Region: Mackay/Sarina; Proserpine

Southern region: Childers; Bundaberg; Maryborough



2. Why do irrigators need to know about it?

Skilled irrigation management is critical to the profitability and economic sustainability of Australia's 166,000ha of irrigated sugarcane. There is stronger link between water management and crop productivity than other environmental variables.

Irrigation decisions are complex. Factors such as yield response to irrigation, water availability, energy and water costs all impact farm profit. Energy can be a major cost and influences irrigation equipment purchases and operating decisions.

In both fully and supplementary irrigated regions, previous research found irrigation skills and knowledge could always be improved. Major knowledge gaps were a lack of understanding of irrigation management principles and the potential for improved water use efficiency.



3. How will the research benefit irrigators?

Irrigators will benefit though:

- Increased skills in irrigation system scheduling and system assessment.
- Improved understanding of irrigation system selection, operation, and management for increased productivity and profit.
- Access to irrigation "innovation hubs".
- Increased awareness of existing and emerging irrigation technologies and management strategies, including their technical requirements, potential productivity and economic trade-offs and associated risks.
- New resources and ready reckoners to support adoption of better irrigation practice.

4. Key results to date

The project delivery team have increased the regional engagement and development of materials and legacy items for the industry in the reporting period to accommodate the impact of COVID-19 shutdowns in 2020. 10 workshops have been conducted across the four regions. Sessions and materials were tailored to meet the level of the participants in each of the regions.

The web applets in www.canecalcs.com have been developed for the project and continue to be used. In the past 12 months, there has been significant improvement with the addition of data recording and regional benchmarking allowing users to compare their self-assessment with others in their growing region.

New hardware for measuring the advance time for surface irrigation evaluations has been developed and is currently being tested before a production run to build hardware sets for participants to retain in the regions.

Case studies and factsheets continue to be drafted. These materials will be available for download from the project website which is currently being populated on a staging server and will be migrated to Improvedirrigation.com.au in the near future.

The Basics of Sugarcane Irrigation Systems Assessment booklet is now in draft. This booklet covers: Introduction, Irrigated Soils, Crop Water Requirement, Types of Irrigation Systems, Basics of Hydraulics, Pumps and Pumping, In Field Irrigation Performance and Irrigation Scheduling.

For more information visit the Smarter Irrigation for Profit website and the project website, Improved Irrigation

- <https://smarterirrigation.com.au/sugarcane-growers-teaming-up-with-researchers-as-part-of-the-sip2-program/>
- <https://smarterirrigation.com.au/ial-icid-webinar-addressing-the-global-water-challenge-through-autonomous-irrigation/>
- Smarter Irrigation for Profit Economic case study, 2021. *Assessing the economic benefits of supplementary irrigation in Central Queensland*. Available at: <https://smarterirrigation.com.au/wp-content/uploads/2021/04/SRA-marginal-benefit-of-water-final.pdf>

For further information or project progress updates, contact: Michael Scobie, Project Leader T: 07 4631 1394

E: Michael.Scobie@usq.edu.au

