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PhD project ID: 1BPhD-06

Date advertised: 23 November 2022

PhD project title:

Unlocking the potential of digital irrigation technologies

Description of the topic of PhD project:

This project will address challenges associated with the creation of value from digital irrigation technologies in the Murray-Darling Basin. Digital irrigation technologies are more widely available than ever before. Many technologies exist, many of which aim to improve irrigation decision-making. Yet their adoption remains low and their potential to create value unrealised. This is despite their potential to improve water use efficiency, the need for which is critical given the projected increase in horticultural water demand in coming years. This project will critically evaluate information generation (e.g. data-to-information) and transfer (e.g. along the value chain) processes and their implications for value creation. A systems approach will be taken to elucidate the context- and stakeholder-specific nature of information and value. The project will also consider aspects such as end-user experience (e.g. design simplicity/complexity) and behavioural economics (e.g. 'choice architecture'). The project will provide guidance on the design of new digital irrigation technologies, and by working in partnership with industry including technology companies, will help co-design these technologies.

Primary supervisor:

Dr Matthew Knowling (The University of Adelaide)

Co-supervisors (potential):

Professor Seth Westra, Professor Holger Maier (The University of Adelaide)

Professor Ruth Nettle, Dr Margaret Ayre (The University of Melbourne)

Dr Ketema Zeleke, Associate Professor Lihong Zheng (Charles Sturt University)

Requisite qualifications and experience:

Candidates with Masters or Honours degrees in the following disciplines, or with equivalent research or work experience will be favourably considered: Environmental engineering; Management and information technology; Water resource management; Agricultural systems; Data science.

1BCRC industry partner(s) potentially involved:

Sensand, Hort Innovation Australia, Wine Australia