

Irrigation Demand Forecasting Under Climate Change



Project Title

Geospatial modelling of region-scale crop water-use to forecast climate change impacts on irrigation demand



Goal

Estimating irrigation demand under future climate change scenarios



Case Study

Murray Darling Basin (MDB)



Crops

Main and emerging crops in MDB

The Main Research Question

How different future climate change scenarios affect different crops' irrigation demand in MDB spatially?

This is a **PhD project**, aligned with the **Quickstart project** entitled: **“Predicting the impact of climate change on irrigation demand across the One Basin”**, trying to provide a decision-making tool under the future changes in irrigation demand for enabling adaptation to climate change. This project is associated with **Loxton Research Hub** and related to **One Basin CRC's challenge 1: Building capacity to confront climate change together**.



Loxton Research Hub

More information?
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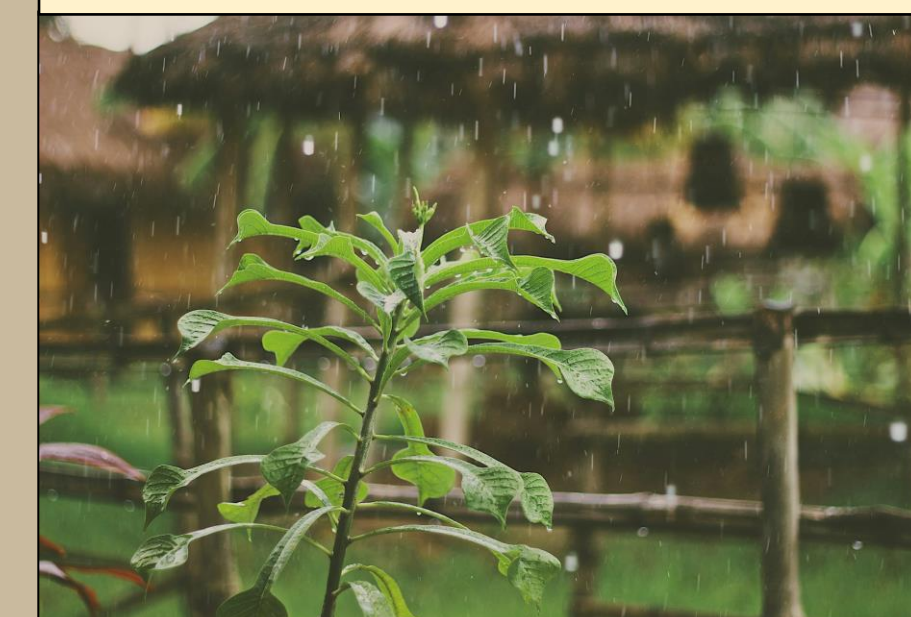


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CLIMATE CHANGE IMPACT ON IRRIGATION

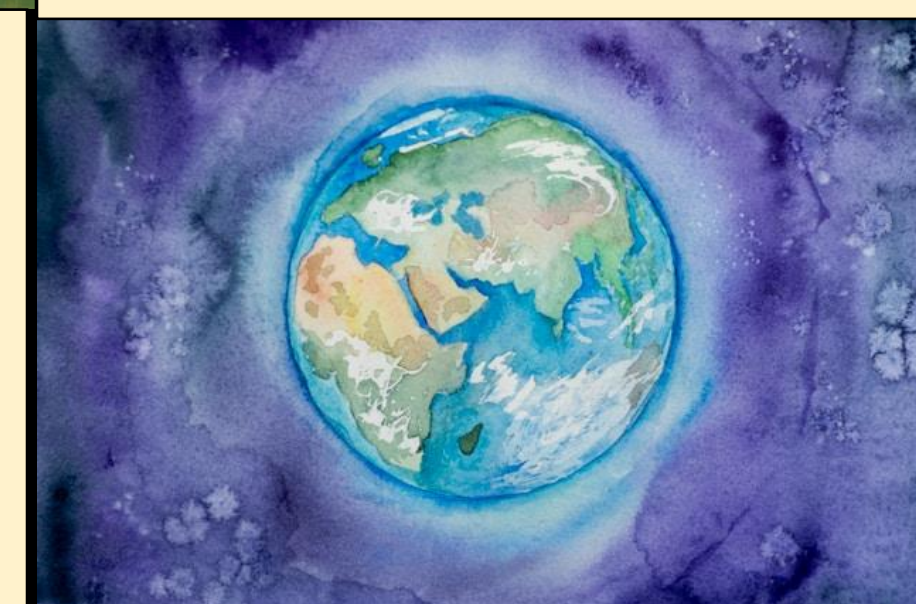
Irrigation could be impacted by climate change negatively or positively

Higher temperatures will increase crop water use and may **increase irrigation** demand



Changing rainfall characteristics (i.e., amount and pattern) may **decrease irrigation** demand

Climate will change diversly in different locations.
So:
Spatial analysis of irrigation demand across MDB would help better water management



Outcomes

The results will:

- Offer insights into how the agricultural sector can adapt to climate change
- Help growers manage water risks.
- Improve the strategic planning around the improvement of irrigation, crop management, and processing infrastructure that are required to overcome the challenges of the coming decades.



Why?

Future climate change will impact irrigation demand, which could be positive or negative. Changes in rainfall patterns might increase rainfall's contribution to crop water demand, while higher temperatures could raise evapotranspiration. The climate change might vary across MDB, leading to varied irrigation demands based on crop type and location. So, it's crucial to assess this issue across MDB to improve water management under future changes.