

Climate Change Adaptation Research Grants Program

- Social, Economic and Institutional Dimensions Projects

Project title:

Water Trade, Climate Change and Irrigator Adaptability in the Murray-Darling Basin.

Principal investigators:

Dr Sarah Wheeler

Lead organisation:

University of South Australia

Objectives:

The objectives of the project can be summarised in four main areas:

1. Undertake a literature review of the ecological, social and economic consequences of water markets, and in particular how they can relate to adapting to future climate change;
2. Identify how irrigators' in the southern Murray-Darling Basin (MOB) have used water trading to cope with reduced water allocations. In particular, we are interested in quantitatively exploring:
 - a. How do various participation strategies in the water market impact on farm viability (e.g. type of water market used, type of security traded, timing of sale/purchase, volume sold/bought)?
 - b. How do changed institutional structures, water allocations, and rainfall changes impact on particular bidding and offering allocation water strategies?
3. Design explicit experimental economic scenarios on water trade and climate change issues;
4. Provide evidential-based policy recommendations on how to make water markets more efficient to allow irrigators to better manage their water and adapt to changing conditions.

Project design and methods:

The detailed methodology would include:

1. Continue collecting and adding to our existing database of water markets.
2. Undertake the literature review, identifying all possible studies on the impacts of water markets;
3. Utilise both UniSA's historical irrigation farm surveys (n = 3,253) with ABARES irrigated farm survey database (n= 4,250) to model the impact of water market trade strategy on farm viability; as well as using the farm surveys to continue to explore trade behaviour patterns. Using UniSA's long-term Goulburn Murray Irrigated District water market database (we have monthly prices and volumes traded and bid and offer amounts for water from the 1990s onwards) and our Murrumbidgee database (from the late 1990s onwards) we shall analyse how changing water market policy and rainfall patterns impact on specific water market strategies (i.e. how they bid or offer for water).
4. Design explicit experimental economics scenarios on water trade and climate change adaptation.