Water and Wellbeing

External shocks on wellbeing

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Impacts of the Millennium Drought

Environment

Economic losses (*Salami et al.* 2009)

Change in livelihood (*Reece et al.* 2007)

Local impacts much greater

Especially in terms of Gross Regional Product and employment (*Wittwer and Griffith 2011*)

Mental and physical health (*Berry et al 2008*)

Q: How did the drought affect income and ‘wellbeing’ in the Murray Darling Basin
Modelling framework

Impact on the economy and community wellbeing.

Link regional CGE model with spatialMSM in a top-down fashion

Indicators:
- Disposable income per household
- Proportion of people who are satisfied with their life

Economic impact (Horridge, 2005)

Wellbeing impact (whole Australia coefficient)
Result and comparison to the actual data

- Changes in Disposable Household Income (%)

- Estimated (CGE-Spatial Microsimulation)
Result and comparison to the actual data

- Changes in Disposable Household Income (%)
- Estimated (CGE-Spatial Microsimulation)
- Actual (HILDA survey)
Result and comparison to the actual data

Percentage point changes, proportion of those who are satisfied with their life (%)

- Central West NSW
- Murray NSW
- Darling Downs QLD
- Goulburn VIC
- North West NSW
- Murray Lands SA
- Northern NSW
- South West QLD
- Mallee VIC
- Murrumbidgee NSW
- Yorke and Lower North SA
- Wimmera VIC

Estimated (CGE-Spatial Microsimulation)
Result and comparison to the actual data

Percentage point changes, proportion of those who are satisfied with their life (%)

- Central West NSW
- Darling Downs QLD
- Goulburn VIC
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Estimated (CGE-Spatial Microsimulation) Actual (HILDA survey)
Main points

• Drought is predicted to decrease overall income
• The impact is estimated to be different in different areas
• However, people adapt to the changes
• Some are more successful than others
• These differences show resilience
• Resilience in economic terms is not always correlated with resilience in terms of wellbeing
Further → Resilience in economic vs resilience in wellbeing

Spatial Map observation

Based on Deciles of Statistical Division Areas in Australia

- The darker the better

- Indicators:
  - Disposable income per household
  - Proportion of person who are satisfied with their life
Important points

People adapt – impacts are less than predicted

Different areas have different capacity to adapt

Income does affect satisfaction but they are not perfectly correlated

- Some areas e.g. Murrumbidgee are more resilient in terms of satisfaction than others e.g. North Western

- Levels of satisfaction can remain high despite decreases in relative income
Publications


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