

Water, regional development & resilience

Exploring the linkages between water reform and the resilience of small business people in drought-affected rural Australia

Summary Report



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Front cover: Rainbow Main Street (top)
Sea Lake (bottom)

Forward

Water is a scarce resource. Less than one percent of the world's water is usable fresh water. The value of water is becoming increasingly important, especially in the Wimmera Mallee where continued drought years and climate change and variability have placed greater pressure on the availability of water for its various uses. In this region, substantial change is underway to the current stock and domestic channel system, with construction of the Wimmera Mallee pipeline which will replace 16, 000 km of highly inefficient earthen channels responsible for the loss of up to 85% of water through seepage and evaporation. Although the pipeline will provide a reliable, quality water supply and save up to 103 000ML of water per year, the actual amount of water available will depend on climate.

The Water In Drylands Collaborative Research Program (WIDCORP) is a group of peak organisations from the Wimmera Mallee and University of Ballarat working collaboratively to study the social, economic and environmental impact of this water infrastructure change on the community. Using the Wimmera Mallee pipeline as a case study, this research focuses on identifying water uses and water values in a dryland region; how communities balance the competing demands for water and; how communities can best maximise opportunities from the additional water as a result of a piped system. Research is undertaken concurrently with the construction of the pipeline and forms the basis of an on-going research program at the Horsham Campus of the University of Ballarat. The research frameworks and outcomes are expected to be of significance to dryland communities elsewhere in Australia and globally.

This report presents the research of an explorative study investigating the resilience of small businesses and their operators in small towns in drought affected regions. It looks at two towns within the Wimmera Mallee to explore differences in a region with a piped supply of water, compared to one without. The report identifies key challenges for small businesses, and explores resilience and the strategies and tools small businesses draw upon to manage change and adversity including drought. The research was funded by the Early Career Researcher Grant, University of Ballarat, as part of the Early Career Researcher Program which is offered to staff which are beginning an academic career.



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Summary Report

Project rationale

There has been much recent attention on the extent to which people and ecosystems have the capacity to adapt to future uncertainties such as global pressures and climate change. The concepts of resilience, adaptive capacity, and innovation are becoming increasingly important to understand in this current era of rapid social, technological and environmental changes. In common with other rural locations, the Wimmera Mallee communities have faced droughts, water shortages, bushfires and other structural adjustments with many farmers, as well as small businesses experiencing extreme financial hardship which has led to poor health outcomes. The question that rural social researchers are very interested in and which is central to this research is: Despite experiencing such hardship, how do some rural people survive (and thrive) during these times of adversity and change?

The research objectives to address this question are:

- To explore the impacts of low water supply on small business operators and their businesses;
- To understand how the nature of small business influences health and resilience of small business operators;
- To understand what the term 'resilience' means to small business operators and their businesses;
- To identify the processes of resilience among small business operators through which they 'ride out' tough times; and,
- To identify differences in factors of resilience between small business operators with a secure, reliable water supply compared to those with a limited, uncertain water supply.

This project is exploratory to understand the links between water scarcity (including drought and water shortages), the advent of water reform (ie. Northern Mallee (NM) and Wimmera Mallee (WM) Pipeline), and the resilience of small business operators. As a pilot, this initial project forms the basis for more extensive research on the resilience of regional communities.

Scope

There are two study areas which coincide with two small rural towns, one located in the WM Pipeline footprint, and the other in the NM Pipeline footprint (Refer to map below). The objective of having two study areas is to examine differences between small business operators in a town (i.e. Sea Lake) with a secure, reliable water supply from the NM pipeline (experiences 10 years on) compared with a town (i.e. Rainbow) without a piped water supply (experiences prior to connection to WM Pipeline). Therefore the towns within the study areas were selected on the basis that:

- One received both its domestic and livestock water from the pipeline, and the other from the current channel-fed Wimmera Mallee Domestic and Stock Water Supply System.
- And that the towns are comparable. Each town is highly dependent on the agriculture sector and farm families for its economic viability, and are near in size and town characteristics. See Table 1 for the level of match between the two towns.

Table 1 Selected demographic and characteristics of two towns in study area¹

Features	Sea Lake	Rainbow
Population	634	650
Economy	Agriculture	Agriculture
Geography	Semi-arid	Semi-arid
	Green Lake	Lake Hindmarsh
Drought status – EC Declared	Yes	Yes
Nearest Towns	75km Swan Hill	65km Nhill 100km Horsham
Weekly Income	\$568	\$571
Unemployment	5.2%	6.8%
Wellbeing (PWI)	79.9	80.5
Community connectedness	High	High

Method

The research includes:

- Review of literature on links between health and regional development, resilience of people in rural communities.
- Profiling of study areas: Sea Lake and Rainbow
- 10 case studies (including interview and photographs) of small business operators from two study areas (5 from each town)
- Analysis of interviews using a grounded theory approach to identify factors of resilience including pipeline impacts, and comparisons between the two study areas.

Small Business Case Studies - Characteristics

- Most respondents were aged between 30 and 50 years, had lived in the town for more than 10 years (7), and operated one small business (6).
- Most small businesses belonged to the retail sector including food outlets, general supplies, nursery/giftware, and newsagency. One business operated a waste disposal and public transport service.
- The number of years operators had worked in the business varied – 5 had been in operation for less than 5 years, and 5 for greater than 5 years.
- The size of businesses according to employees also varied, however all business, except one, had fewer than 10 employees.

Major findings

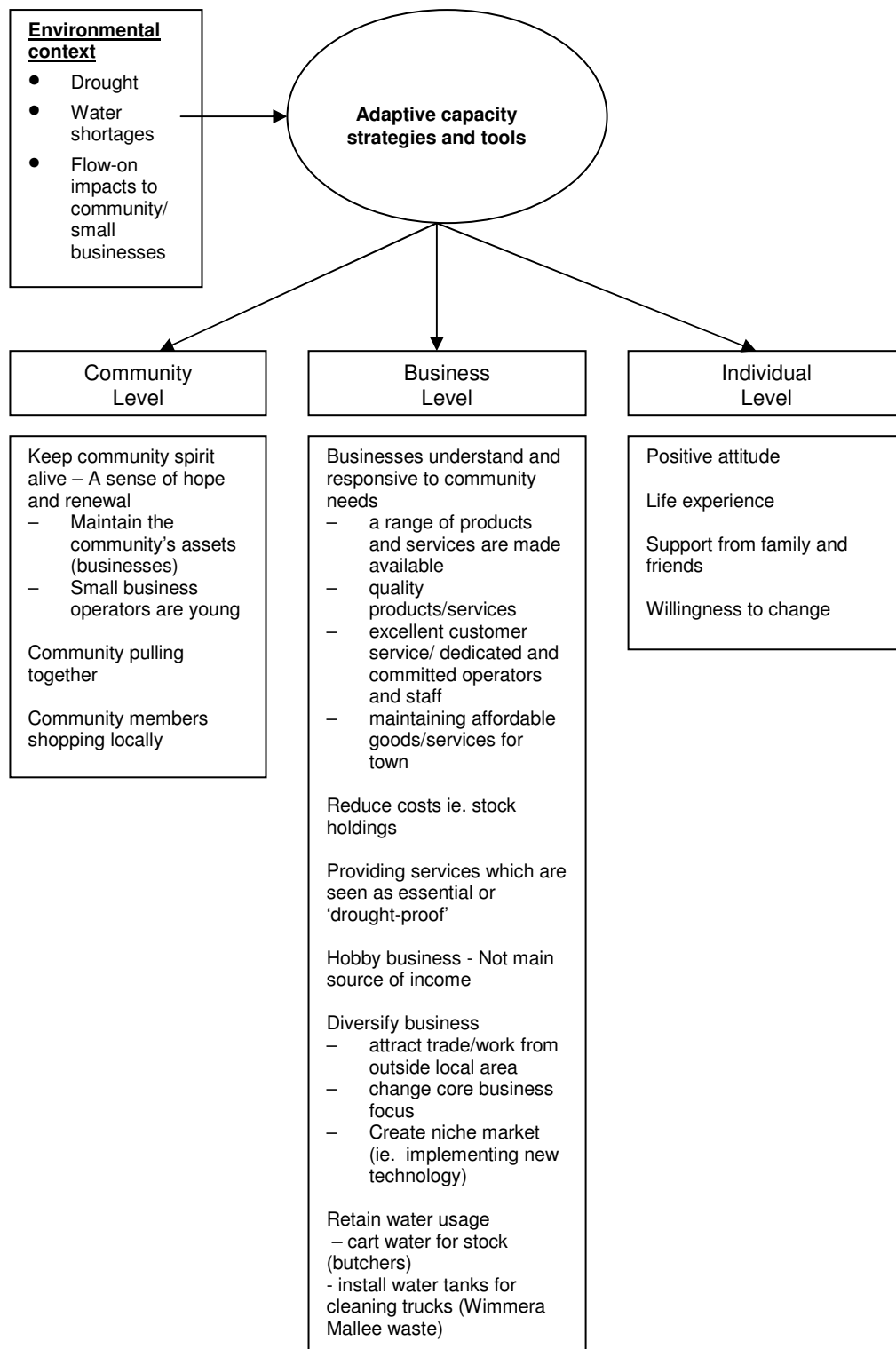
- Business identity was attached to meanings about providing basic needs (ie. financial security for self and family) and fulfilling intrinsic factors such as a sense of pride, sense of community belonging and service to town, autonomy in working for oneself and personal satisfaction.
- Most business operators identified major changes and challenges they encountered in their business. Reported changes were mixed. Some related to progressive changes such as expansion, renovations and upgrades within business whilst other challenges related to impacts of drought conditions and subsequent modifications to businesses.

¹ ABS 2006a, 2006b; LGV 2007, 2008; DAFF 2006; CIV, 2008.

- The impacts upon human resilience as a result of these changes were mixed. The responses ranged from favourable attitude to change to drought impacts upon livelihoods. Issues raised were family, personal and economic stress, and loss of educational, recreational and social opportunities.
- The meanings of resilience varied between participants. However small business operators highlighted four main sources of resilience: support from family and friends, community support, business attributes and personal attributes.
- Small business operators from both towns were positive about the NM and WM Pipeline. Comparisons between the two towns were minimal. Benefits from the pipelines related to social and individual aspects of living in the community, rather than the business per se. The main benefits identified were providing the community with a guaranteed water supply, and instilling a sense of hope and security. The future possibility of refilling lakes as a major water source of tourism, recreation and social values was seen to be a major benefit for both towns.
- Small business operators were asked to identify how their business and other local businesses had 'ridden out' tough times. Whether through a natural evolution process or more direct actions, the results revealed these responses to adversity are often ways of adapting to change. These responses are referred to as 'adaptive capacity strategies and tools' and serve the basis for further climate-related research into community resilience. Refer to Figure 1.

Figure 1

Adaptive capacity strategies and tools



Recommendations for Further Research

This project forms the basis for more extensive research into community resilience and adaptation to climate-related shocks. Considerations for further research are:

- This research adopted a ‘grounded theory’ approach for data analysis. Grounded theory relies upon interpretation of the results from the data-upwards, without relying upon existing theories being imposed upon the data. The next step is to compare the results of this research with other existing theoretical frameworks on resilience. This will assist to develop a preliminary conceptual model for the larger study and inform the research process.
- Examine the applicability of the adaptive capacity strategies and tools in other settings.
 - Are these common adaptive strategies and features of other small businesses facing climate change impacts?
 - Are small businesses who adopt multiple strategies more resilient than those businesses which don’t?
 - How significant are each level (community, business, personal) in survival of small businesses? For example does the strength of community cohesion influence the options that people adopt?
- Investigate the extent to which external factors influence the resilience of small business people. For example, distance/fuel prices, internet technology from other regional centres.
- Investigate reasons for inward and outward migration of people into small businesses in rural communities. Why do people invest in small businesses in small towns? What are the factors which influence decisions to leave small business?