

Climate adaptive domestic water supplies for rural and remote properties

COUNCIL NAME

Balranald Shire Council

WEB ADDRESS

balranald.nsw.gov.au

SIZE

21,346 square kilometres

POPULATION

2,361

FUNDING PROGRAM

Increasing Resilience to Climate Change

Overview

This project identified two areas of concern for Balranald's rural residents using private sources for domestic water supply. Screening tests indicated bacterial contamination in the majority of water samples, highlighting the need for households to take precautions and manage their rainwater tanks according to NSW Health guidelines. In terms of overall water supply, the project found that harvesting greater areas of roof and providing more tanks will not increase climate resilience. Balranald Shire has a semi-arid climate with hot summers. As rainfall in the region is projected to decrease in the coming decades, residents will need to make greater use of groundwater, reserving limited rainwater for drinking and cooking.

Background

Most Australians in rural and remote areas are dependent on private sources of drinking water; namely, rainwater tanks, aquifers and dams. Unlike urban water schemes, these water sources are largely unregulated, with little monitoring of their quantity or quality. Moreover, they are particularly vulnerable to drought and contamination. The potential health risks arising from this situation are ill quantified and there is insufficient data to assess the adequacy of potable water supplies on individual properties.

In this context, Balranald Shire Council, a primarily agricultural district in the western Riverina, has taken the first step to attaining water security for its rural residents now and into the future. Council's Increasing Resilience to Climate Change project aimed to identify and enact measures to mitigate the impact of rising temperatures and variable rainfall on rural water supplies.

This goal rested on three objectives: to build a sustainable partnership between Council, the community and supporting institutions; to establish an "environmental baseline" inventory of water supply and infrastructure at risk from changing climatic conditions; and to develop a Safe and Secure Domestic Water program addressing water adequacy and safety issues for use by Balranald Shire, the Far West and NSW non-scheme water users generally.

Implementation

A questionnaire survey and water quality screening were integral to the delivery of the project. Of the Shire's 201 rural properties, 106 were contacted by email or phone and a total of 51 surveys were returned, representing a statistically satisfactory 48 per cent response rate. The questionnaire canvassed water sources, treatment, usage and satisfaction with water quality.

Twenty DIY water quality test kits were requested with results returned for 17. These tests showed 60 per cent of water samples had positive recordings for coliforms, primarily from bird and animal droppings.



Properties with potential health risks were advised of the health hazards posed by bacteria in domestic water supplies; offered NSW Health information on managing private household water supplies; and provided water treatment industry contacts where technology is required to improve water quality.

Finally, climate change modelling using SimCLIM was undertaken to demonstrate the vulnerability of private water sources and provide site-specific implications for rainwater harvesting under projected future weather patterns.

Outcomes

The project was focused on developing a broadly applicable methodology to identify and address issues pertaining to water security in rural NSW. Despite the challenges of surveying an isolated population with poor internet access, the aim of the project was achieved and it offers a model that can be easily replicated by other LGAs.

Key Learnings

In the absence of commercial laboratories in the Far West region, home testing kits are a simple, cost-effective screening tool that allow households to easily monitor their water quality.

Balranald Shire residents now have greater awareness of the health risks associated with untreated tank water. However, while bacteria is the most common contaminant in rainwater tanks, chemicals, lead, pesticides and other contaminants may also be present. Going forward, water testing capacity is needed in key regional centres to determine the aggregate risk to population health from private household supplies.

COVID restrictions inevitably hampered the scope of the project, preventing site visits and detrimentally impacting communications. Informal “coffee shop chats” and drop-in sessions were replaced by a written survey, which some residents regarded as intrusive, too strongly linked to “government”, and meddling in private household matters. Given community attitudes to climate change and water-related issues in some rural areas, face-to-face contact is the best way to ensure clear messaging and mutual understanding.

Increasing climate resilience will, in some cases, require changes in attitude and water management behaviour to address threats to Balranald Shire residents’ livelihoods, lifestyles and health. Site-specific climate modelling can help to illustrate the risks of relying on rainwater harvesting in the future and reveal the benefits of improving water use efficiency now. Future communications should emphasise both the threats and possible options to ensure the adequacy and safety of domestic water supplies.

Contact

Phone: 03 5020 1300

Email: council@balranald.nsw.gov.au



Funded by the
NSW Government
in association with
LGNSW