

How adapting to a changing climate builds social capital

COUNCIL NAME

Murray River Council

WEB ADDRESS

murrayriver.nsw.gov.au

SIZE

11,850 square kilometres

POPULATION

12,000

FUNDING PROGRAM

Increasing Resilience to Climate Change

Overview

Following years of drought and water insecurity, pandemic and population decline, Murray River Council's Adverse Event Plan was launched to build resilience and grow the region's social capital.

The plan was developed following deep collaboration with farmers and local business owners, representatives from Landcare groups and health and crisis support specialists – and it is underpinned by one simple resilience principle: “plan in the good times to be prepared for the bad times”.

Following the launch of the plan, Council turned to its partner organisation, the Western Murray Land Improvement Group (WMLIG), to turn aspiration into action.

Building Our Community in Advance is the broad banner for a series of innovative on-ground trials, pilots and workshops, as well as desktop scoping studies and funding application development, that WMLIG has rolled out across the region.

Together, Murray River Council and WMLIG are finding the opportunities in climate adaption with projects that grow jobs, enhance agricultural productivity, protect biodiversity and build social capital.



Background

The Murray River Council oversees a region rich in natural beauty, from sweeping flood plains to magnificent stands of red gum forests. The region's towns are enfolded within productive agricultural land and the mighty Murray River and its tributaries.

Water is critical to every region's productivity and prosperity. But a community that is dependent on irrigated agriculture is particularly vulnerable when water is scarce.

In recent years, this part of the Murray has recorded some of its lowest rainfall and warmest temperature on record. At the same time, with the introduction of the Murray Darling Basin Plan in 2012, reduction in water availability has corresponded with a decrease in agricultural employment.

"We are at ground zero for the worst effects of water reform. We've lost 48% of our population over the last 16 years, and 72% of our local agricultural jobs," says WMLIG's Executive Officer, Roger Knight. Farm employment fell by around 72% between 2001 and 2016. Water recovery was responsible for around 27% of this, according to the [Murray-Darling Basin Authority](#).

The region's socio-economic rating, according to the [Australian Bureau of Statistics' Socio-Economic Indexes for Areas \(SEIFA\)](#), has fallen from a score of 5 (the least disadvantaged), to 2.

"WMLIG is a solution-based group. WMLIG is in search of large and transformational initiatives to enable effective and enduring change. Incremental change, while encouraged and welcomed, is not enough to prepare the community for the ongoing structural changes," Roger adds.

Implementation

Recent rains have eased the drought – for now. But drought poses a significant threat to livelihoods and liveability across the region in the years ahead.

Drought is just one of the risks identified in the [Adverse Event Plan](#). Many other high-risk hazards are more likely to occur as the climate changes, including bushfire, heatwave, storm, pandemic and agricultural disease.

Understanding the risks is one thing. But Murray River Council and WMLIG are delivering "on-ground" projects that help their communities prepare for the next adverse event.

"Many of our members have lived in the region for several generations," says WMLIG's Environmental Markets Project Officer, Jacqueline McArthur. "They know their environment is changing, and how water availability and production are changing, and they are looking for ground-based solutions."

The number and diversity of these "ground-based" projects is truly impressive.

Take the soil aerator trial at Restdown, a 1100-acre, certified organic beef farm and vineyard. Dry matter has been collected and soil tested on trial sites around the property to compare soil aeration treatments against untreated control areas. While the project is at its earliest stage, changes to the structure of soil takes time as litter

decomposes, nutrient levels rise and the capacity for soil to hold moisture improves. Restdown's owners Don and Joanne Hearn have already reported upticks in productivity and water infiltration across the property.

Then there's a carbon accounting trial, which harnessed FarmLab's agronomy and natural capital project management software to create a 'digital twin' of Peter and Wendy McDonald's property 'Glencoe'. A collaboration with Regen Farmers Mutual aims to "put more money back into the pockets of farmers" by helping them access carbon markets. And a workshop on the water market, with brokers and policy experts has helped the community better understand the current state of play, drivers influencing permanent and temporary water allocations, and strategies for securing water in the long-term.

Meanwhile, an organic waste trial is looking to use wood waste collected from the Koondrook-Perracoota State Forest, the second-largest red gum forest in Australia. WMLIG is exploring opportunities to use wood waste as a feedstock for biochar production – a form of residual black carbon – to enhance productivity and reduce methane emissions. WMLIG estimates that up to \$102 million a year in economic benefits could be ahead.

Then there's the ambitious proposal for an agri-innovation precinct taking shape. WMLIG has developed the concept, outlining the contextual issues driving the proposal and the potential knowledge areas and activities to be investigated further.

These are just a handful of the dozens and dozens of projects, each with a case study outlining the process undertaken and the lessons learnt, available on WMLIG's website.



WMLIG workshops. Credit: Western Murray Land Improvement Group

Outcomes

A resilient community is one which can survive, adapt and grow, regardless of chronic stresses and acute shocks. The people of the Western Murray will continue to face chronic stresses – slow-moving impacts with long-term consequences, like droughts, water shortages and poor access to infrastructure – as well as acute shocks, like floods, bushfires, heatwaves and pandemics.

But with passion and persistence, Council and WMLIG are building an evidence base, expanding skills, strengthening networks and uncovering new opportunities to expand the region's social capital.

“We are focused on projects that improve biodiversity and create new income streams – because that will buffer us against drought and commodity price cycles and help producers to adapt to the structural changes associated with the water reform process,” Jacqueline notes.

Key Learnings

WMLIG was established in 2003 by a group of local landholders and stakeholders who understood the importance of sustainable agriculture practices and Roger says this important conduit acts as an “intermediary between community and government”.

WMLIG takes a “community-led, bottom-up approach” to all its activities, and that has enabled the community to secure significant government funding to turn aspiration into action.

Each project under the Building Our Communities in Advance banner aligns with broader government strategies whether that is Murray River Council's Adverse Event Plan or state and federal policy.

Importantly, each project, regardless of its level of ambition, is underpinned by a determination to build community social capital.

“We have solutions that help with structural change – but it's the social capital we build that is gold. We have proof that adapting to a changing climate builds social capital,” Jacqueline concludes.

More information

Visit the [Western Murray Land Improvement Group website](#).

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