



WAKOOL REGION COMMUNITY ADAPTION STRATEGY



Western Murray
Land Improvement Group Inc.

A connected, dynamic & resilient
community



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Acknowledgements

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WMLIG Feb 2019

Cover photos: Merino stock photo, Wakool Dynamic Business Planning Workshop, Wakool River, Painted Snipe & Australasian Bittern Field Day x 2 & Wakool Hotel

Executive Summary

- Research clearly shows that the Wakool Region has and continues to experience significant local structural pressures from the water reform process, in addition to numerous other challenges facing many rural communities across Australia and abroad.
- In 2001 there were 1906 people in the age group of 25 and 54 in the Wakool LGA region. By 2011 the population in this age group declined to 1346. The Ag initiatives should focus on inspiring and engaging the next generation in the region and ensuring that there are adequate opportunities to entice them to stay or return to the region after higher education.
- The Western Murray Land Improvement Group (WMLIG) supports communities in the previous Wakool Shire boundary (approximately 750,000Ha) and has an area of influence extending into the surrounding regions. This puts WMLIG in a unique position to evaluate socio-economic research and community profile analysis alongside community engagement information it has obtained during targeted evaluation activities.
- After reviewing the recommendations and key themes emerging from the socio-economic studies and community engagement activities, it was notable to see that many of the ideas that were generated from community engagement align strategically to the plans and vision of leading research and development corporations and institutions.
- WMLIG has integrated community plans, structural adjustment research and engagement feedback into a cohesive model to move forward with community development. The model is termed the Wakool Region Community Adaptation Strategy. The strategy is designed to reach out to people who are 'doing it tough' and provide mutual support, shared learnings and successes. Agriculture is the driver for economic prosperity and community cohesion in the region and as such is a key pillar to the overall adaptation strategy.
- Along with supporting diverse community working groups, it is proposed that a consortia is formed between the local council, institutions, Landcare, government agencies and community groups to connect the region to diverse resources. It is anticipated that institutions would be a conduit for development of strategic alliances needed to fulfil niche knowledge and resource requirements.
- To support these initiatives, funding is required for on ground initiatives and labour that supports programs associated with connectedness, working groups, leadership, education and training, business and risk management, innovation and entrepreneurial support, agricultural production extension and adoption, agrisystem, and regional marketing development (quality systems, new markets, value chain, traceability, food provenance etc.). Funding is also sought to develop eco and agri-tourism opportunities within our community which will bring people to our area, create job opportunities, showcase our region and demonstrate pride in our produce, products and people.



Wakool Region Community Adaptation Strategy

- Labour that supports the Wakool Region Community Adaptation program would involve 3.3 full time equivalent positions (four people) and work out of a recently approved new community co-working space hub in Barham. This co-working space is ideally located to service the Wakool community being 35km from the Wakool town centre and Barham is the primary service centre for the Wakool community. Several of the labour units required would be highly skilled and experienced which will provide a great opportunity for the community to network with these professionals.
- The Wakool Region Adaptation Strategy would create enduring benefits for the community in the form of more community leaders, new connections, improved workforce capabilities, and timely access to new technologies. There will be new market opportunities, increased tourism to utilise and value add existing infrastructure, niche businesses will develop and existing businesses will be more adaptable and dynamic to meet rapidly changing customer demands.
- Via the new connections and relationships developed with regional business, producers, research centres and other partners, the region will be known by education and research institutions for its willingness to readily trial and adopt new technologies. This will provide transformation change opportunities, providing an investment vehicle for start-up business incubators and accelerator programs. The region will be recognised for being a hotbed for innovation and a Research and Development and ultimately new business investment.
- The Wakool Region Adaptation Community strategy will enable enduring processes to continue the build community capabilities and capacity, create economic development and ultimately, increase and sustain long term employment in the Region.

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The Wakool Region, NSW

The community has been impacted by major challenges such as the Millennium Drought, the Murray Darling Basin Plan and associated water reform process, the creation of Red Gum National Parks (and associated loss of timber industry jobs) and farm consolidation. These changes have resulted in a reduction of employment opportunities, and community and government services in the area. The socio-economic wealth decile for this region has diminished considerably reducing financial capacity for businesses to adapt to change.

Evidence of the need for adaptation is outlined in the range of reports and community engagement activities in the last few years. Many of the services and expertise necessary for adaptation and innovation are not accessible locally. Community facilities are rapidly declining, with numerous local sporting clubs and schools closing due to lack of participants.

Socio-economic evaluation statistics:

A 2014 report on the Economic Impact Assessment of the Murray Darling Basin Plan on the Wakool Shire (now the Murray River LGA), Michael Connell and Associates found that agriculture was the largest sector in the regional economy with an output of \$68 million in 2005-06 and \$95.8 million in 2010-11. The population decline seen in the last 10-15 years was suggested to reflect changes within the farming sector, with less income generation and employment available in the region. The report clearly stated that the local economy is highly reliant on irrigated agriculture and associated linked businesses. See Appendix A3.

The MDBA has completed Community profile evaluations for 40 basin communities. MDBA Community Profile evaluations completed for Wakool, Deniboota and Denimein clearly show the steep decline in socio-economic wealth decile ratings.

The Wakool Region has lost a considerable quantity of water entitlements compared to the original quantity of water entitlements that existed in the region. As summarised in Appendix A, Table A1, between 2001 and 2016, the Wakool community had a reduction in water entitlements of 98 GL, which is reduction of 38%. When taking into account the surrounding communities of Denimein and Deniboota, all west of Deniliquin NSW, there is a combined total reduction in water entitlements of 164 GL. According to the 2012 MDBA report, NSW Central Murray Community Profile (Appendix A2), a reduction in the long-term water availability of greater than 20% will result in many farm businesses becoming unviable with direct flow on impacts occurring at a community level.

Key findings in the Wakool Community Profile analysis of the period between 2001-2016 was that the;

- Area population decreased by 45.6% (715 people)
- Total area workforce decreased by 53.7% (288 Full Time Equivalent jobs)
- Agricultural workforce decreased by 61.5% (158 FTE)
- Agricultural manufacturing workforce decreased by 44% (8 FTE)
- Non-agricultural private workforce decreased by 57.3% (96 FTE)
- Government service workforce decreased by 35.1% (34 FTE)
- Socio-economic wealth decile ranking for Wakool went from a wealth rating of 5 in 2001 to a wealth ranking of 2, which leads to diminished capacity for adaption or change in response to circumstances.

Wakool Region Community Adaptation Strategy

When taking into account Wakool and neighbour affected communities of the Western Murray Valley (Deniboota and Denimein) between 2001-2016, the;

- Area population declined by 29.1% (1254 people)
- Total area workforce decreased by 40% (1518 Full Time Equivalent jobs)
- Agricultural workforce decreased by 57.8% (339 FTE)
- Non-agricultural private workforce decreased by 42.2% (232 FTE)
- Government service workforce decreased by 14% (27 FTE)

Demographics focal snapshot

In 2001 there were 1906 people in the age group of 25 and 54 in the Wakool LGA region. By 2011 the population in this age group declined to 1346.

The demographic information is census data from the abs website, references as follows,

Australian Bureau of Statistics, 2011, wakool region LGA population demographics, viewed 3rd March 2019,

http://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2011/quickstat/LGA17800?opendocument

Australian Bureau of Statistics, 2001, wakool region LGA population demographics, viewed 3rd March 2019,

http://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2001/quickstat/LGA17800?opendocument

Summary of key community adaptation research and institutional plans

- The *Community Adaptability Engagement Research Final Report, Fortunato, June 2017* (Appendix B1), report outlines the need for development of sound, tailored, community futures actions for on-ground projects that deliver innovative and transformational activities. To support delivery of these activities, the community needs economic resources and technical expertise to support the process of *institutional innovation* and facilitate capacity building in ways that enable innovation and adaptation across the community. A considerable effort of this research report was placed in the Wakool Region.
- The *Gippsland Smart Specialisation Strategy, 2018* identifies similar themes to Fortunato's report. The Strategy brings together government, business, research and education and civil society in Gippsland to create a shared vision for the region future prosperity, environmental sustainability and social wellbeing. The Strategy has the aim of building capabilities and enablers that grow future industry competitiveness, building skills and competencies needed for job creation and retention, partnerships and networks to support innovation and suitable projects and actions to demonstrate and trial the strategy. For more information see Appendix C-1 and link: <https://sustainable.unimelb.edu.au/research/research-projects/gippsland-smart-specialisation-strategy>
- *Food Innovation Australia Limited's Sector Competitiveness Plan* focuses on access to new markets and increased productivity and/or competitiveness. Inputs to achieve these outcomes include building industry players confidence and capacity, creating a culture of connectedness and collaboration in participants, policy and regulatory reform that fosters industry wide innovation and entrepreneurship in partnership with government. Appendix C-2
- *Rural Research and Development Corporation's Vision 2050, 2018*, identifies innovation as the key to long term productivity growth and future prosperity and innovation as the way to transform research into impact. *Vision 2050* describes how an agrisystem has an ability to open up new visions and opportunities for our production systems as a source of future prosperity with benefits for our economy, community and environment. The Vision also sets out how the agrisystem is supported by a knowledge and innovation ecosystem and the importance of collaboration, capacity building, education and knowledge exchange. For more information see Appendix C-3 and link: ; www.ruralrdc.com.au/wp-content/uploads/2018/12/Vision-2050-Brochure-December-2018.pdf

Summary of key WMLIG led engagement and activities

- Edward Wakool Basin Reference Group (Sep 2017 to present). Some of the key issues identified by the Group are competition for water, changing community structure, unreliable connectivity, need to foster a start-up culture, need to better promote the area, need to improve access to services and our messaging not being clearly heard outside our region. The Group unified to create the following success statement “We are adapting to a changing world; people are coming here and staying here, they have jobs and money in their pockets, there are more kids in schools and we have access to the very best technologies. We live in a healthy environment growing the best, safest food, and we are proud that our community can all pull together to be the very best that we can be.” See Appendix B1.
- Barham Innovation and Education Hub establishment involved several meetings with a diverse range of individuals and groups from the local community, industry and government. The Vision for the Hub is to create “...a thriving social, economic and environmentally unique region that is a centre for agricultural innovation and excellence”. The Hub Goals are to facilitate collaboration, community and business development; encourage partnerships and investment; and to create transformative and adaptive businesses and community. See Appendix B2.
- The Edward Wakool Stronger Community Initiative (Aug-Oct 2016) identified a vision to have more people and prosperity across the region through capital raising, novel use of existing infrastructure and companion industries and enduring innovation and value adding. The group identified their purpose as driving initiatives that; are large and transformational to enable effective and enduring change; and are not being driven by existing community groups or organisations. See Appendix B3
- The Wakool Dynamic Business Planning Workshop, 2018 identified that the community felt it needed water security, innovative technology, retention of young professionals, increased training facilities/opportunities, local R&D and improved connectivity to R&D, increased investment supporting industry diversification and additional government assistance. See Appendix B4.

Local Regional Plans

Riverina Murray Regional Plan (Appendix F)

This plan highlights the following vision for the region; *“A diversified economy founded on Australia’s food bowl, iconic waterways and a network of vibrant connected communities*

To achieve the vision, the NSW Government has: acknowledged the important role of this region’s centres and their relationship to, and export potential with, Melbourne and Victoria and set the following regionally focused goals:

- A growing and diverse economy
- A healthy environment with pristine waterways
- Efficient transport and infrastructure networks
- Strong, connected and healthy communities

Murray River Council Community Strategic Plan (Appendix F)

To achieve our Community Vision, we have clear aspirations and priorities across five themes:

- Built/Physical Environment
 - We want our built and physical environment to be well planned, connected, safe and designed to support our communities, industries, and business.
- Natural Environment
 - We value our natural environment and expect it to be accessible, sustainable, managed, and healthy.
- Social Wellbeing
 - We want to have services and facilities that support an active, healthy and diverse rural lifestyle, and help us celebrate and enjoy our rich cultural heritage and connected communities.
- Economic Growth
 - We need economic growth so that we are vibrant, strong and able to support our local townships, regional industries and future employment.
- Leadership and Governance
 - We expect effective, democratic, open, transparent leadership and governance that plans for, advocates for, and meets the changing needs of our diverse community.

Murray Regional Economic Development Strategies (REDS)

Vision: The Murray Region will sustainably grow its economy focusing on agriculture, food production and tourism while improving infrastructure and developing a skilled workforce to support these sectors. This will be done by;

- Enhancing market access and competitiveness for the agriculture and food product manufacturing sectors through strong transport infrastructure.
- Sustain and enhance utilities such as water, energy, and telecommunications to strengthen the agriculture and food product manufacturing sectors.
- Continue to develop and grow the tourism sector to diversify the region’s economy
- Boost and sustain the supply of skilled workers for the core industries of agriculture, manufacturing and tourism with regional skills development and attraction programs.

Community Engagement Summary Themes and Resource Needs

The region is currently being affected by a range of pressures encountered by many rural communities. Compounding this issue is drought, a reduction in water available for agriculture and a limited scope for farm transformations in the area west of Deniliquin due to heavy sodic soils and low rainfall. Farm businesses have severely eroded working capital, increased borrowings and realised assets to meet commitments (See Appendix A2).

The complexity of issues facing the Wakool region requires the community to adapt to rapidly changing socio-ecological systems. Incremental change while encouraged and welcomed, is not enough to prepare the community for the potential structural changes ahead. The community needs long-term solutions that have a lasting impact.

WMLIG has integrated community engagement feedback and local regional plans in tandem with structural adjustment research into a cohesive model to move forward with community and economic development. The model is termed the Wakool Region Community Adaptation Strategy.

This strategy focuses on enhancing the ability of the community to adapt to a range of pressures from the current drought, macro-level structural adjustment changes such as Basin Plan and the water reform process, and local level changes such as farm consolidation and decreases in government services.

Figure 5: WMLIG Wakool Region Adaptation Strategy planning session photos



To support the Wakool Region Community Adaptation Strategy, the community needs ‘Transformational Leadership’. The Leaders work with teams to identify needed change priorities, creating a vision to guide the change through inspiration, and execute the change with committed stakeholders.

The Wakool Region Adaptation Strategy has a vision for a connected, knowledgeable, adaptable, and resilient community.

WMLIG has summarised this vision in a success statement for the Wakool Region Adaptation Strategy as follows;

Success Statement: ‘A connected, dynamic, and resilient community’.

To achieve success we need;

Resources



Wakool Region Community Adaptation Strategy

People with skills, drive and foresight that are: Leaders, connected, united, skilled, innovative, adaptive, strategic, vibrant, resilient

Program resources to support community adaptation and resilience programs.

Examples of these are outlined below;

Leadership and mentoring, education and training, business and risk management, innovation and entrepreneurial startup support, on-ground action, extension and adoption support, agrisystem development and regional marketing. Locally focused tourism projects to create awareness of natural assets and utilises existing infrastructure.

Resource Objectives

The Wakool Region Adaptation Strategy resource objectives are incorporated into five key adaptation themes, objectives and outcomes;

- **Facilitation, Engagement and Leadership:**
Outcome: A community moving from one that has predominantly an incremental change problem solving approach, to a future where the community has the knowledge and tools to manage risk and implement agile, transformational activities.
Activities: Facilitate stakeholder committees and provide leadership support and governance arrangements around the processes. Drive new ideas and support project funding applications.
Responsibility: Local Engagement Facilitator. Note that this position will be filled by existing WMLIG labour resources and specialist engagement facilitation needs as required.
- **Education, workforce capabilities and business management:**
Outcome: Community capacity and capability building to respond with flexibility and agility in the face of emerging challenges, new technologies and changing societal and market expectations. Short and long term projects will be developed and activities delivered.
Activities: Improve underlying skills and workforce capability that supports economic development such as business management, risk management, and strategic planning. Work with local schools to seek opportunities for participating in entrepreneurial and social enterprise education programs. Develop tailored teaching resources for primary and secondary school education programs and tourism projects.
Responsibility: Education and Business Development Facilitator
- **Knowledge, innovation and investment:**
Outcome: Innovative, dynamic, transformational businesses that meet the needs of new and emerging markets.
Activities: Develop strong connections and foundational relationships with research and development institutions. Provide the structure, plans and support to connect the community and establish collaboration processes for partnerships with business, industry, government, research and education institutions. Foster a positive investment environment and develop an investor ready platform that enables investment opportunities to support local entrepreneurial ideas, the adoption and infusion of new technologies and business solutions that lead to commercialisation outcomes. Support the formation of a Community

Foundation (community engagement and governance) as a portal for philanthropic and business donations for community program redistribution.

Responsibility: Knowledge, Innovation and Investment Facilitator

- **Agrisystem Development**

Outcome: *Businesses feed into an integrated agrisystem with leveraged regional produce branding and new value added markets.*

Activities: An agrisystem is developed that is built on a robust understanding of the regions current situation, capacity and opportunities for growth. A situational analysis of the Wakool regions agricultural industry and investigation of case studies in other regions identify new national and international markets, growth strategies and value add opportunities for the overarching agrisystem plan. The agrisystem generates impact from R&D for industry and the community by building on the knowledge and innovation ecosystem developed from other program initiatives. The agrisystem responds with flexibility and agility in the face of challenges, new technologies and changing societal and market expectations. Successful new agribusiness launched.

Responsibility: WMLIG Staff (co-ordination of consultants), Graduate Project Officer – Agrisystem and Innovation Analyst

- **Tourism Development**

Outcome: *Eco and Agri-tourism which brings people to our area creating job opportunities, showcasing our region and demonstrating pride in our produce, products and people.*

A new school excursion program creates educational tourism that stimulates economic activity, and imprints the unique attributes of the region for repeat visitation.

Activities: Develop a tourism strategy/ plan that aligns with the agrisystem. Develop identified and yet to be identified tourist projects. Successful new ecotourism and agritourism projects launched increasing visitation to Wakool and outlying areas that value add to existing infrastructure and services (constructed and human capital).

Responsibility: Tourism Development Facilitator

- **Rural adaptation and resilience study:**

Outcome: *Murray Darling Basin and other rural communities with high structural adjustment pressures have a regional transformation model with real life case study and tools that informs communities and business management.*

Activities: Conduct a University study on economic planning and diversification strategies in a highly unpredictable business environment (markets, climate, resource competition etc.). Develop an agri-business planning toolkit and template, accounting for unique and difficult regional agri-business pressures, so that businesses can manage risk more effectively. Evaluate the adaptation strategy performance. Complete a study on the community adaptation journey and research outcomes inform other communities.

Responsibility: University Lead

It is proposed that strategy themes are supported by stakeholder networks, committees and project focus groups as follows;

- Knowledge & Innovation Stakeholder Committee
- Business cluster/s
- Entrepreneurial “Think Tanks”

Wakool Region Community Adaptation Strategy

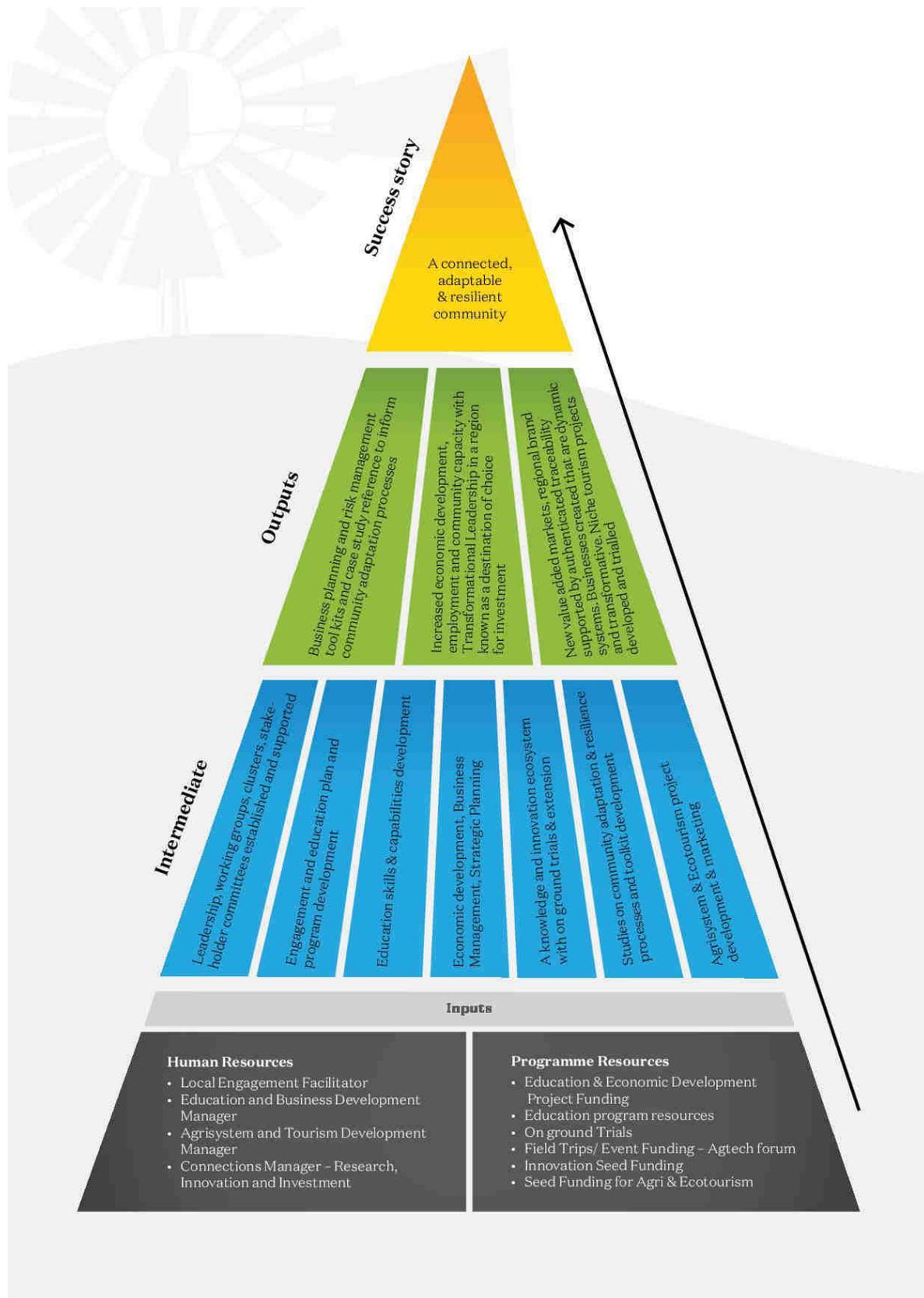
- Investment Platform Development Steering Committee
- Community Foundation Committee
- Agrisystem Stakeholder Committee
- Tourism Project Focus Groups

The key themes outlined in the Wakool Region Community Strategy do not work in isolation rather they are interconnected with continuous improvement feedback mechanisms that account for improvement in knowledge, education, change in perspectives and development of new opportunities that are created over time. See Figure 6.

Figure 6 - Inter-relationships between key community adaptation themes in the Wakool Region Community Adaptation Strategy



Figure 7 – Wakool Region Adaptation Strategy Process Pyramid





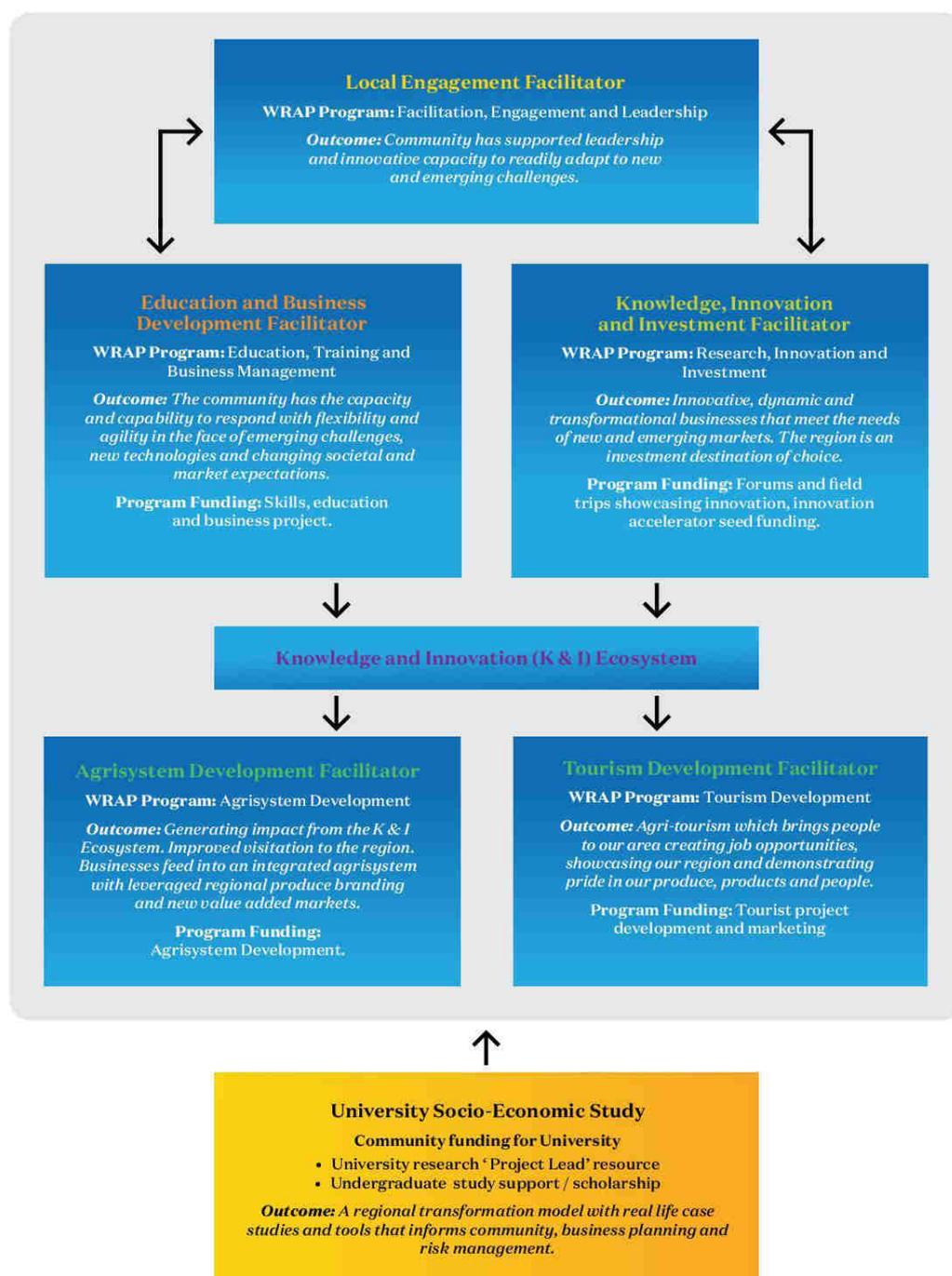
Wakool Region Adaptation Plan (WRAP) Program Detail and Structure Linkages

Program elements are embedded in the Wakool Region Adaptation Plan (or WRAP). The WRAP program requires human resources and program “on-ground” funding to support initiatives. Labour will be hosted within the WMLIG organisation structure with supported governance arrangements.

WRAP objectives, outcomes, responsibilities, initiatives, and potential stakeholder partners for different elements are detailed in the sections below. A WRAP summary is provided in Table 2.

The WRAP human resource (labour) positions and linkages are illustrated in Figure 8.

Figure 8 - Wakool Region Adaptation Plan labour resource linkages. This illustration also has includes a Research Institution socio-economic study on the adaptation process which is a long term goal.



Facilitation, Engagement and Leadership

Objective:

- A. The community moves from an incremental change problem solving approach, to a future with a proactive businesses and leaders that have the knowledge and tools to manage risk and implement agile, transformational activities.
- B. Identify local collaborative projects, infrastructure and resource needs via a co-designed and integrated engagement process.
- C. Build community resilience by feeding community based needs into skill/capability development for the broader community.

Outcome:

- *The community has supported leadership and a 'can do' attitude that can unleash its innovative capacity to readily adapt to new and emerging challenges.*

Resources needed:

- Local Engagement Facilitator (LEF). Note that this position will be filled by existing WMLIG labour resources, however it is proposed that specialist engagement facilitation needs will be funded via other funding sources. A new Community Support Officer Position (days/wk for two years) will provide assistance with funding programs.

Activities:

Proposed activities to be carried out by the Local Engagement Facilitator are as follows;

Governance;

- Provide a safe space and a stakeholder engagement operating framework.
 - Facilitate the co-development of stakeholder committee Terms of Reference and Code of Conduct.
 - Guide groups with development of clear direction and goals such as vision statements, and strategic plans.
 - Provide checks and balances on group dynamics and develop strategies for improvement as required.

Leadership;

- Support leadership / mentorship programs. *"Foster an environment where young people have ongoing opportunities to fill skills gaps and participate in **think tanks**"* (Dr Jo Newton, Chair of Youth Voices Leadership Team, The Land, January 2019)
- Create forums for the exchange of ideas related to diversification, including entrepreneurship, social enterprise, on line business, social media, youth leadership, education programs for schools.
- Connect people to Leadership programs
- Encourage positive attitudes and support for change.

Engage and exchange ideas;

- Develop a stakeholder consultation strategy
- Facilitate knowledge brokering, communicating information / network opportunities with professionals and advisors for cross pollination of ideas.

Wakool Region Community Adaptation Strategy

- Facilitate multidisciplinary working / community discussion groups, consultative committees, business clusters etc.
- Manage complexity inherent in social – ecological systems (when social agreement and technical complexity are managed appropriately, barriers to progress can be overcome).
 - As social complexity increases, build relationships and create common ground.
 - As technical complexity increases, experiment and coordinate expertise.
- Identify key community issues and work on realistic strategies to address these with the support of community leaders and external stakeholders.
- Foster and support the creation of local processes to identify adaptation strategies and apply for funding to address community needs.
- Facilitate community development forums – listen carefully and return for multiple, consistent iterations.
- Identify and implement new opportunities for ongoing local education, research, change management and community based innovation.
- Feed ideas generated from support clusters and networks into partnerships to the Education, Workforce Capabilities and Business Development Facilitator, Knowledge, Innovation and Investment Facilitator and the Agrisystem Development Facilitator, Tourism Development Facilitator, and other relevant stakeholders.

Community development funding;

Aid in structural diversification by connecting communities with development resources, specifically funding and expertise. Our community has innovative ideas that need help getting off the ground, which begins with the search for financial resources. Communities need to be connected to local and regional resources for funding and financial expertise. Assistance with grant writing, business planning, and community development will help communities launch projects to diversify the economy, or support institutional innovation (Fortunato 2017). To assist this process the LEF shall;

- Provide assistance with grant writing for projects intended to diversify the economy, or support institutional innovation.
- Seek assistance for agricultural funding programs with the Regional Agricultural Landcare Facilitator (RALF) as appropriate.

Building Resilience:

- Facilitate initiatives that encourage engagement with mental health services and reduce isolation.
 - Conduct ‘drought smokos’ and leverage workshops/forum with a resilience professional and community support services.
 - Seek opportunities to involve ‘The National Centre for Farmer Health’ group in future events.

Measure Performance:

- Measure the performance of initiatives and promote positive outcomes.

Potential Collaborative Stakeholders

- Murray Local Land Services, Regional Agricultural Landcare Facilitator
- Murray River Council
- Melbourne University
- Charles Sturt University

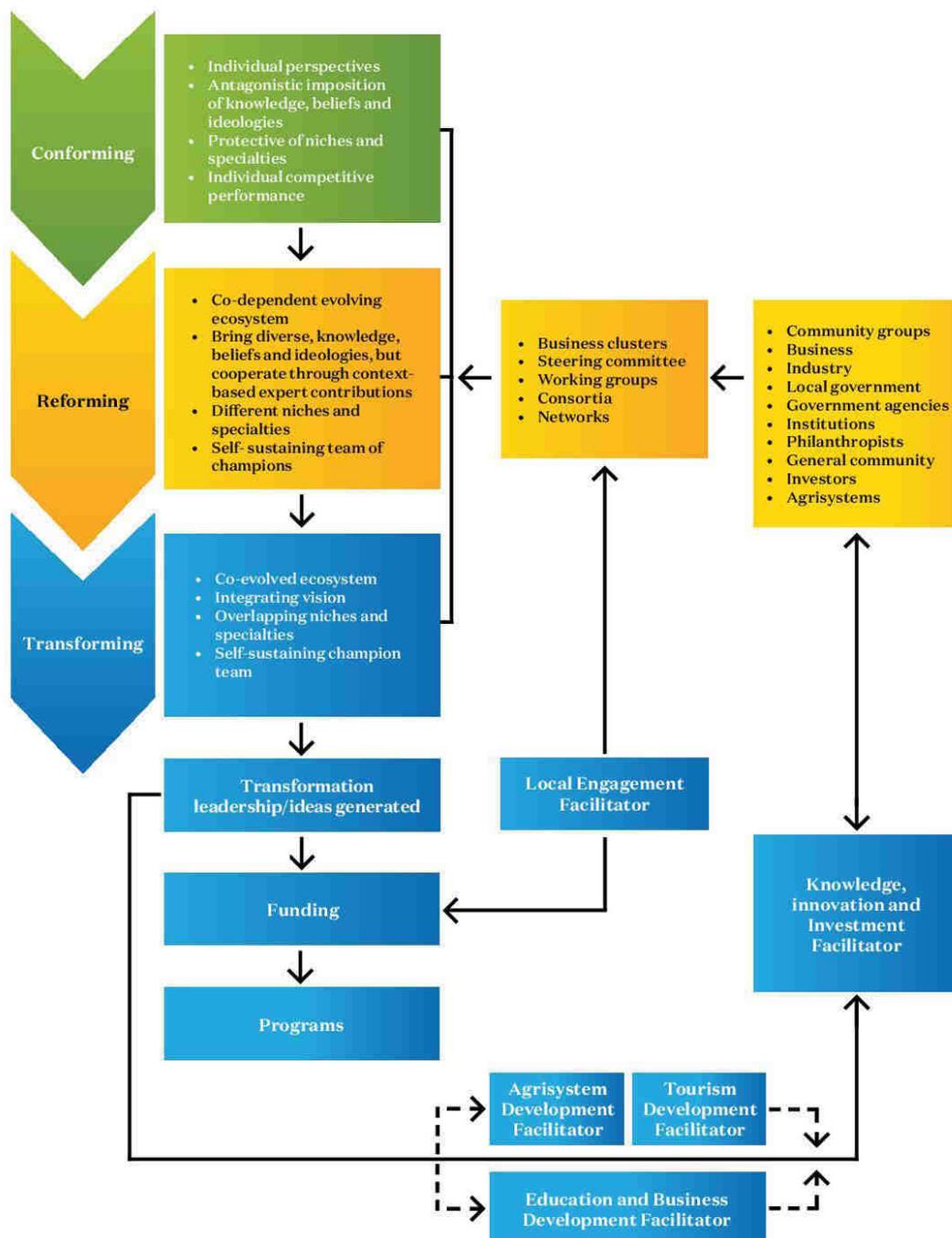
Wakool Region Community Adaptation Strategy

- NSW Farmers, Co-operative Research Centre
- Young Country Networkers
- Riverina Collective
- Rice Growers Association, Environmental Champions Programs
- Central Murray BestWool BestLamb Group
- Moulamein Cropping Group
- Barham Consolidated
- Koondrook Development Committee
- Wakool Landholders Association
- Wakool Progress Association
- Other Local community groups

Figure 10 illustrates how the Facilitator interacts with groups to connect people with divergent ideas to deliver improved leadership outcomes and identification of community resource needs.

Figure 10 - Connecting Entities, Collaboration and Facilitation across Differences

Third party facilitation supporting greater collaboration across differences



Education, Workforce Capabilities and Business Facilitation

Objective:

- a. Community leaders are inspired to stimulate innovation and action.
- b. Improve underlying skills that support economic development such as business management, risk management, and strategic planning.
- c. Strengthen workforce capabilities through skills development, entrepreneurialism, and adaptive capacities.
- d. Investigate opportunities for schools to participate in entrepreneurial and social enterprise education programs to create future job creators and leaders.
- e. Create educational tourism opportunities. E.g. school excursions to the region.

Outcome:

- *The community has the capacity and capability to respond with flexibility and agility in the face of emerging challenges, new technologies and changing societal and market expectations.*
- *School excursion programs create educational tourism that stimulates economic activity, and imprints the unique attributes of the region for repeat visitation.*

Resources needed:

- Education and Business Development Facilitator.
- Skills, education and business management program funding (e.g. workshops).
- School education resources (e.g. education packages). *WMLIG have partners that are experts in producing educational tools that align to the education syllabus for the Australian curriculum.*
- Educational tourism and school excursion promotion and marketing material.
- Funding for event venue hire and catering

Activities:

Proposed activities to be carried out by the Education, Workforce Capabilities and Business Development Facilitator are as follows;

Business Management and Workforce Capabilities Development

Strengthen education opportunities locally. There have been shifts in agricultural production and diversification. There is a need among the community for technical expertise, education, and training focused on economic and agricultural diversification. Contract out education and outreach services (Fortunato, 2017).

- Develop strategies for community engagement & capacity building. Liaise with community groups, local government, agencies and research organisation.
- Organise effective mechanisms for communication and dissemination of information. Create platforms for knowledge gathering and sharing
- Provide public access to information and service to groups.
- Awareness raising re Skills, training & knowledge development programs
- Capture key themes and community needs arising out of facilitated community engagement activities



Wakool Region Community Adaptation Strategy

- Conduct desk top reviews of business management and workforce capability development programs and liaise with stakeholders, such as research institutions to determine priority community capacity building development needs for achieving the community vision.
- Develop short and long term education program tailored to different skills and demographics.
- Provide economic development needs such as;
 - Business and financial planning
 - Risk management
 - Problem solving / innovation
 - Adaptive capacity
 - Strategic planning
 - Succession planning
 - Marketing
 - Resource use efficiency
 - Leadership
 - entrepreneurialism
- Provide resources to help businesses “work smarter, not harder” by assisting them to be more resource efficient and provide a blueprint for a more sustainable, viable business, and an inspired vision for where they want to be.
- Liaise with consultants that can provide farm business planning and diversification support by delivering individual consultations, community-wide workshops, third-party education events, provision of resource tools etc.
- Facilitate the incorporation of existing agricultural courses and extension programs. E.g. Making More from Sheep / Lifetime Ewe, BredWell FedWell, FarmFit for Profit, chemical handling certificates etc.
- Assist the Agrisystem and Tourism Development Manager with agrisystem resources such as on line trading, product marketing, blockchain technologies etc.
- Assist the Agrisystem and Tourism Development Manager with tourism project resources such as information and interpretive material.
- Assist the Connections Manager – Knowledge, Innovation and Investment with program resources such as investor ready education initiatives.
- Liaise with stakeholders for the delivery of interactive educational material to the broader community via community group and government agency networks. Potential network stakeholders include Landcare and Local Councils.

Secondary Schools;

- Work with local high schools to seek opportunities for secondary students to learn business problem solving skills using innovation and an entrepreneurial mindset. Two programs exist;
 - Social Enterprise in Schools program operated by the Australian Centre for Regional Entrepreneurship (ACRE). This program is a Victorian program that can be ran through secondary schools in Southern NSW and Northern Victoria. See link: <https://acre.org.au/>
 - AgriFutures Australia startup.business Entrepreneurial Learning in Action program. https://www.agrifutures.com.au/people-leadership/agrifutures-startup-business/?fbclid=IwAR3w0om0VTw_Zh1QK26T4UrEoKtdTV25WAQ13RJDCZDFCZmOWfHCQv87PYA



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- Canvas education institutions to determine applicability of the region to deliver education programs relating to NRM, agriculture and cultural heritage. The region has an enormous potential and existing infrastructure that can cater to the needs of large groups in different geographic locations (Barham, Moulamein, Wakool and Tooleybuc). An outline of potential educational subject matter is outlined in Appendix G.
- Develop educational material for school excursions to the region such as teaching resources, publications, reports, communication products and display materials. Resources such as workbooks and other publications can be readily aligned with the education syllabus of the Australian Curriculum. Our partners “PeakDesigns” are experts in this field and work extensively with a key Murray Catchment Landcare network delivery partner, Petaurus Education Group who operate out of the Wirraminna Education Centre. See link www.wirraminna.org.au/petaurus/
- *Note that as of 2019, stage 4 (yr7 & 8) and stage 5 (yr9 & 10) syllabi have strong themes {learning across the curriculum} of Aboriginal and Torres Straight history and culture, Sustainability, environmental change and management, the value of water and lots of skills including maps, fieldwork and spatial technologies.*
- Develop a school excursion program to create educational tourism that stimulates economic activity, and imprints the unique attributes of the region for repeat visitation.

Measure Performance:

- Measure the performance of initiatives and promote positive outcomes.

Proposed Stakeholder Committee / project focus groups

- Knowledge & Innovation Stakeholder Committee

Potential Collaborative Stakeholders (and Potential Stakeholder Committee members)

- Murray River Council
- Murray Local Land Services
- TAFE
- Mecardo
- AgriFutures
- Local schools
- Melbourne University
- Charles Sturt University
- Australian Centre for Rural Entrepreneurship (ACRE) and Social Enterprise Academy
- The Riverina Collective
- Rice Growers Association, Environmental Champions Programs
- Mallee Rising
- Young Country Networkers
- Moulamein Cropping Group
- Central Murray BestWool BestLamb Group
- Barham Consolidated
- Young Country Networkers
- Wakool Landholders Association
- Wakool Progress Association



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- Moama Local Aboriginal Land Council
- Barapa Land and Water Landcare Group
- Murray Regional Tourism

Knowledge, Innovation and Investment:

Objective: Create a knowledge innovation ecosystem where;

- The community has strong connections and foundational relationships with research and development institutions.
- Diverse, collaborative arrangements exist between industry, business, research centres and local government to co-develop plans and guide the infusion of the K&I ecosystem.
- Programs support adoption of new technologies and business solutions.
- Innovation accelerator programs foster investment and lead to commercialisation outcomes.
- A new investment platform brings in new capital for new ventures and for the growth of existing ventures

Outcome:

- *Innovative, dynamic and transformational businesses that meet the needs of new and emerging markets. The region is an investment destination of choice.*

Resources needed:

- Knowledge, Innovation and Investment Facilitator
- Specialist consultants
- Funding for field trips showcasing innovation.
- Stakeholder Committee for 'Innovation Think Tank' including sitting fees, catering & venue hire
- Field trips, Wakool Ag Entrepreneurs Forum
- Event catering and venue hire
- University innovation competition
- Investment prospectus
- Community Foundation development funding (marketing)
- Graduate Project Officer - Technology Integration (Yr 2 & 3)

Activities;

Proposed activities to be carried out by the Knowledge, Innovation and Investment Facilitator are as follows;

Forums and field days

- Host an agriculture event to draw in businesses, universities and producers to the region to boost the profile of Wakool, draw in new ideas and people, and excite the community.
 - An annual Ag Entrepreneurs forum. There are existing agtech forums/summits and while they are exciting and eye-opening, a more business-focused event (still with an agtech element) will have a greater impact for local agribusinesses and will better support the regions objective of exploring niche ag markets, growing business and



creating professional connections. It will also feed into the “think tank” initiative (outlined below).

- Field trips / farm tours. Showcase diversification and individuals who are making a ripple effect in their community through their capacity to think differently, embrace an open mind and challenge their own assumptions about what is possible.
- Support an innovation incubator 'think tank' and innovation investor 'pitch fest' accelerator programme to support new ideas off the ground.

Knowledge and Innovation (K&I) Ecosystem and Development Clusters

Develop institutional innovations by forming and strengthening relationships between community industry and government entities to solve local problems as a co-ordinated community effort (Fortunato, 2017).

- Build and maintain strong collaborations and networks with industry and research institutions to advance the community and increase prosperity.
- Initiate and support a **Knowledge & Innovation Stakeholder Committee** with government, research and education, industry and community entities (quadruple helix approach), including regional R&D network members where possible (e.g. GRDC’s Southern NSW / Northern Victoria Regional Cropping Solutions Network (RCSN), AgriFutures etc. This will help identify and prioritise constraints and opportunities for business profitability (refer Gippsland S3).
- Develop and implement a globally connected, high performing and effective knowledge and innovation (K&I) ecosystem for the region that provides regional delivery of research, development and extension with national coordination and leverage.
- Initiate and support **Entrepreneurial “Think Tanks”**
- University facilitation of an entrepreneurial discovery process.
- Universities to showcase innovation technologies to provide new business opportunities and broaden perspectives.
- Provide a competition for an innovation that will increase output (it should be agriculture based) to bring in ideas as well as focus to the region. It would show that the Wakool region is open to ideas, is prepared to listen to people outside the region, and is also prepared to tackle the challenge in a positive way.
- Provide a conduit for external research, development & extension (RD &E) connections (e.g. public and private research institutions) to provide vital on-ground linkages between growers, farming systems groups, agribusiness and researchers to deliver profitability and environmental sustainability gains at farm level.
- Develop and support **business clusters**. See Food Innovation Australia Limited (FIAL) as an example of an Agribusiness Cluster Programme:
[https://fial.com.au/Folder?Action=View%20File&Folder_id=105&File=20171013%20Cluster%20Programme%20Guidelines%20\(FINAL\)\[2\].pdf](https://fial.com.au/Folder?Action=View%20File&Folder_id=105&File=20171013%20Cluster%20Programme%20Guidelines%20(FINAL)[2].pdf)
- Promote the outcomes of successful ventures to community members and other stakeholders.
- Support and enable transformational practices and new industries that may suit our environment and are supported by the community.
- Manage activities of the Graduate Project Officer – Technology Integration (yr 2 & 3)
- Conduct on ground applications of proven technology with support of a Graduate Project Officer – Technology Integration.



Investment

- Initiate and support an **Investment Platform Development Steering Committee** and create an investor strategy by 2020-21.
- Guide the development of an investor and innovation incubator and accelerator programme by the Investment Platform Development Steering Committee.
- Explore fit for purpose investment and partnership models to provide for diversity in investment opportunities and capital sources.
- Explore and develop investment frameworks and governance arrangements.
- Develop an investment prospectus and investor ready packages.
- Facilitate Investment Platform Steering Committee networking and marketing opportunities
- Advocate for investment opportunities and networking with key stakeholders and new entities.
- Provide an investor ready awareness program and resources for structuring commercial partnerships. E.g. businesses seeking partnerships in land, water and infrastructure.
- Support an entrepreneurial investor 'pitch fest' to support new ideas off the ground.
- Provide a business and investment forum to cultivate relationships. *Funding to be sought via other programs.*
- Enable collaboration opportunities for adoption of new technologies, business solutions and innovation accelerator programs.
- Conduct testing of community interest
- Provide high level information sessions and capacity building for joint-ventures etc.
- Connect Murray River Council economic development resources to businesses for support of new ideas generated in the region.
- Explore novel options for capital raising;
 - Innovation realisation. Support innovation and entrepreneurship with funding akin to concepts such as Sprout X, Agrifutures Ignite, EvokeAg and other accelerator launch pads.
 - New business and superannuation fund investment.
 - In conjunction with local Government, encourage businesses, educational bodies, research and development organisations / institutions to invest in the rural community and provide opportunities for decentralisation of metropolitan services.
- Initiate and support a **Community Foundation Steering Committee**. Support the Murray River Council proposal for a Community Foundation that is a portal for philanthropic and business donations to be redistributed to the community for delivery of socio-economic and environmental programs in the Wakool region.
- Develop marketing material for the Community Foundation.

Measure performance:

- Measure the performance of initiatives and promote positive outcomes.

Proposed Stakeholder Committee / project focus groups

- Entrepreneurial "Think Tanks"
- Business cluster/s
- Investment Platform Steering Committee
- Community Foundation Committee

Potential Collaborative Stakeholders (and Potential Stakeholder Committee members)

- Melbourne University
- Charles Sturt University
- NSW Farmers, Co-operative Research Centre
- Regional Development Australia - Murray
- Irrigated Cropping Council
- Murray River Council
- Moulamein Cropping Group
- Central Murray BestWool BestLamb Group
- Murray Local Land Services
- Wakool Landholders Association
- Wakool Community Progress Association
- Business Enterprise Centre
- Food Innovation Australia Limited
- AgriFutures
- NSW DPI
- GRDC / MLA / AWI etc.

Agrisystem Development

Objective:

- A. Collaborate with agrisystem experts
- B. Conduct a situational analysis of the Wakool regions agricultural industry and investigation of case studies in other regions identify new national and international markets, growth strategies and value add opportunities
- C. Generate impact from R&D for industry and the community by building on the knowledge and innovation (K&I) ecosystem developed from other program initiatives.
- D. Create an agrisystem that responds with flexibility and agility in the face of challenges, new technologies and changing societal and market expectations.
- E. Empower the knowledge and innovation ecosystem to be globally-connected, high-performing, dynamic and effective.
- F. Successful new agribusinesses launched accessing new niche markets.

Outcome: *Generating impact from the K & I ecosystem. Businesses feed into an integrated agrisystem with leveraged regional produce branding and new value added markets.*

Resources Needed:

- Agrisystem Development Facilitator (*Note that this position will be filled by existing WMLIG labour resources, however it is proposed that specialist consultant needs will be funded via other funding sources*).
- University/specialist consultants for strategic activities (situation analysis, facilitation of an entrepreneurial discovery process, agrisystem analysis, program co-design, value chain and market investigation and development of communication products).
- Funding for catering and venue hire for meeting and information sessions

Activities:

Proposed activities to be carried out by the Agrisystem Facilitator are as follows;

Agrisystem development and industry cluster support;

Develop an agrisystem that encompasses ecological, sociological, economic and production systems;

- Initiate and support an **Agrisystem Stakeholder Committee**.
- Liaise with specialist consultants and a Graduate Project Officer - Agrisystem and Innovation Analyst.
- Develop an overarching agrisystem plan for the region that can generate impact from R&D for industry and the community. (*The agrisystem is supported by a knowledge and innovation ecosystem, built upon Australia's world-class research and development capacity. The knowledge and innovation ecosystem enhances and improves the agrisystem, providing knowledge and capacity to develop, deliver and adopt new products, technologies, practices and services*).
- Develop a robust understanding of the regions current situation, capacity and opportunities for growth. Conduct a situational analysis of the Wakool regions agricultural industry and investigation of case studies in other regions in Australia and overseas would help to identify new national and international markets, growth strategies and value add opportunities for the overarching agrisystem plan.



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- Identify infrastructure needs (e.g. connectivity technology) and seek funding opportunities.
- Customer relationship management platforms to embrace digital innovation and improve data management.
- Investigate other future value chain system opportunities, such as Asia, as they demand more nutritious, safe and healthy foods with traceability to a regional province. This will be done via development and support of an agrisystem that incorporates;
 - Quality assurance, food safety and biosecurity
 - Marketing / Regional branding / fostering relationships
 - Traceability and provenance
 - Blockchain (authenticity)
 - Global connectivity
- *Note: See enclosed letter of intent from Melbourne University / RMIT (Appendix H) - Prof. Leo Goedegebuure, Prof Geoff Wilson, Prof Lars Coenen*
- Partnership development with institutions specialising in the agrifood industry and rural adaptation;
Pursue partnership opportunities and provide active representation on relevant stakeholder Committees with;
 - Food Agility Cooperative Research Centre (CRC). The Food Agility CRC;
 - aims to empower Australia's food industry to grow its comparative advantage through digital transformation.
<https://www.agrifutures.com.au/partnerships/cooperative-research-centres-programme/food-agility-crc/>
 - is a \$150million+ innovation hub that is creating new digital technologies and services to benefit the Australian agrifood industry.
 - has partners that include agrifood businesses, technology companies, research institutions and government organisations.
 - represents a broad cross section of the food value system, bringing diverse perspectives to the table and approach challenges with a system-wide lens.
 - is funded by our partners and by the Federal Government under its Cooperative Research Centres Program. Food Agility works with experts from across the agrifood, technology, research and government sectors.
See link: <https://www.foodagility.com/partner>
 - Explore potential Agrisystem partnerships with Food Innovation Australia Limited, Universities, Agrifutures etc.
 - Pursue partnership / learnings from the Gippsland Smart Specialisation Strategy (S3) with Melbourne University and explore synergies to;
Infuse "Smart" Technologies;
 - Explore disruptive business models (e.g. Internet of Things) that have potential to facilitate information connection and transfer to improve the efficiency and targeting in value chains, local and globally.
 - Develop a Regional online trading platform (small producers)
 - Focus on pre-farm gate technologies to enhance the quality and efficiency of production and management for farming a broad range of produce. 'Smart farm' technologies provide farmers with additional information to enhance decision-making, and to automate the management and fulfilment of key processes and to deal with challenges such as water security. This work will

be done in conjunction with the Education and Business Development Manager and Connections Manager-Knowledge, Innovation and Investment.

- Facilitate regional extension of the online platforms such as *'Feast on East Direct'* Eastern Gippsland online produce market for linking smaller producers with consumers in local and potentially global markets. Access to disperse markets, and to share key management functions. Operating successfully on a small scale, there is potential for expansion of reach, throughput and markets.
- Develop new value-added markets;
 - Provision of technical expertise to provide information of future market trends. *Agricultural producers need guidance from technical experts regarding expected trends in the water and commodity market to better navigate the economic terrain and recognise opportunities for expansion and stabilisation when they are present (Fortunato, 2017);*
 - In conjunction with the Tourism Development Facilitator, incorporate agrisystem frameworks (outlined previously in the report) into the innovation hub ecosystem which connects the Wakool region stakeholders with a global network of world class researchers and entrepreneurs.
 - Facilitate the development of, and/or support to a regional branding focus group
 - Local produce food health, environment and ethical credentials (as applicable) marketed and known to national and international customers
 - Improve revenue from regionally produced goods through value adding and innovation including exploring transformational farm practices and new industries.
 - Pursue new opportunities for higher value products and value added processed products.

Measure Performance:

- Measure the performance of initiatives and promote positive outcomes.

Proposed Stakeholder Committee / project focus groups

- Agrisystem Stakeholder Committee

Potential collaborative Stakeholders (Potential Consultative Committee members)

- Universities – Agrisystem development, R&D, socio-economic adaptation
- Murray River Council – Economic Development and Tourism
- Murray Irrigation Limited
- Murray Local Land Services
- Sunrice (Australasian Bittern friendly rice product and learning journey)
- Rice Growers Association – Environmental Champions Program
- Barapa Land and Water Landcare Group
- Food Innovation Australia Limited (FIAL)
- NSW Farmers - Cooperative Research Centre
- NSW Department of Primary Industries
- Wakool Landholders Association
- Wakool River Association
- Wakool Progress Association



Tourism Development

Objective:

- a. Collaborate with tourism experts.
- b. Develop new tourism projects with community stakeholders
- c. Successful agritourism, education tourism and ecotourism projects launched showcasing the region and access to new markets.
- d. Increase visitation to Wakool and surrounds to value add existing infrastructure and services (constructed and human capital).

Outcome: *Eco and Agri-tourism which brings people to our area creating job opportunities, showcasing our region and demonstrating pride in our produce, products and people.*

Resources Needed:

- Tourism Development Facilitator
- Funding for ecotourism project development (sitting fees, site inspection and ideas from indigenous group members, consultants)
- Physical resources (communication products, interpretive signs, promotional material and marketing) and event launch.
- Funding for venue hire and catering.

Activities:

Proposed activities to be carried out by the Tourist Development Facilitator are as follows;

- Participate in regional tourism stakeholder committee/s (e.g. Murray Regional Tourism).
- Initiate and support **Tourist Project Working Groups**.
- Develop National and International agritourism and Ecotourism projects in collaboration with Murray River Council, local indigenous Landcare (e.g. Barapa Land and Water Landcare Group), local Landcare such as WMLIG and Murrakool Land for Wildlife) businesses and tourism entities (e.g. Murray Irrigation, Regional Development Australia, Destination NSW, Murray Regional Tourism, Golden Rivers Tourism) opportunities to showcase innovation, diversity and unique environment. Tourism projects will take advantage of unique natural assets, diverse agricultural production systems and utilise existing infrastructure (see Appendix E). Ideas raised during engagement activities include;
 - International irrigation infrastructure tours (agri-tours) showcasing our new efficient irrigation system to entities in other countries seeking to invest in water efficiency projects.),
 - Ecotours, leverage from the recently local production of the Edwards Wakool Geological multi-media package titled "An Inland Delta – A Geological History of the Edwards Wakool System". See link to the DVD:
https://www.youtube.com/watch?v=Lo_pQgUOA24
 - Moulamein arboretum,
 - Pollack Swamp boardwalk and birdhide*
 - Cultural heritage interpretive / twitcher trails*

**Note that both the Pollack Swamp and interpretive trail projects both support indigenous focused outcomes and there is a high likelihood for indigenous guides to be employed.*



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- Work with the Education and Business Development Facilitator to provide local content relating to agriculture, cultural heritage and environment that can be included in the school excursion curriculum.
- Schools from outside the region participate in school excursions that incorporate the local environment, agriculture and cultural heritage assets.
- Facilitate public campaigns that highlight the innovation of rural farmers, such as current farming practices that conserve and efficiently use water resources, and could stress the importance of Australian agriculture nationally and globally. This information would be used for agri-tourism projects.

Note: The tourism component of the project aligns with the goals and objectives of the Murray Region Destination Management to increase visitation, length of stay, regional dispersal, investment and grow regional employment. See link: www.murrayregionaltourism.com.au/research-resources/strategies-plans/destination-management-plan/

The Wakool Region Adaptation Strategy will provide investment in key enabling infrastructure and assist with the development of visitor experiences which address identified gaps in the Destination Management Plan.

These projects combined will assist in revitalising the current visitor experience, particularly for the central and western section of the Murray River, and act as a catalyst for further tourism investment. They provide an opportunity to take a collaborative approach to achieving whole of region strategic objectives.

Measure Performance:

- Measure the performance of initiatives and promote positive outcomes.

Proposed Stakeholder Committee / project focus groups

- Tourism Project Focus Groups

Potential collaborative Stakeholders (Potential Consultative Committee members)

- Murray River Council – Economic Development and Tourism
- Murray Regional Tourism
- Barham and Koondrook Tourism Committee
- Regional Development Australia - Murray
- Sunrice (Australasian Bittern friendly rice product and learning journey)
- Rice Growers Association – Environmental Champions Program
- Barapa Land and Water Landcare Group
- Moama Local Aboriginal Land Council
- Golden Rivers Travel
- Food Innovation Australia Limited (FIAL)
- NSW Farmers - Cooperative Research Centre
- Farm2Plate
- Wakool River Association
- Wakool Progress Association

Rural Adaptation and Resilience Study

Objective:

- A. University study on economic planning and diversification strategies in a highly unpredictable business environment (markets, climate, resource competition etc.)
- B. Co-design, support and steer Wakool Region Adaptation regional resources so that initiatives;
 - Build on community strengths and capability for the future
 - Leverage collaboration and innovation
 - Grow industry competitiveness, social cohesion and ecological sustainability
- C. Development of an agri-business planning toolkit and template, accounting for unique and difficult regional agri-business pressures, so that businesses can manage risk more effectively.
- D. Evaluation of the community adaptation journey. Research outcomes inform other communities.
- E. Findings contribute to policy development

Outcome:

- *Murray Darling Basin and other rural communities with high structural adjustment pressures have a regional transformation model with real life case study and tools that informs communities and business management.*

Resources needed:

- University research 'Project Lead' resource.
- Undergraduate study.
- WMLIG support via regional office base and networks for research, planning and program delivery.

Initiatives:

- Provide active representation on relevant stakeholder Committees.
- Liaise with WMLIG and Wakool Region Community Adaptation Strategy personnel as required.
- Investigate possibilities for developing an 'Inland Centre for Rural Adaptation and Resilience Studies'.
- Leverage learnings from the community adaptation support that is happening in Gippsland through the Gippsland Smart Specialisation Strategy. See link: <https://sustainable.unimelb.edu.au/research/research-projects/gippsland-smart-specialisation-strategy>
- Provide technical advice into a co-designed, integrated engagement process with Wakool Region Adaptation resources to identify local collaborative projects and infrastructure and resources that will practically translate the agreed new ideas, priorities and opportunities into actions on the ground in the region.
- Evaluate the Wakool Adaptation Strategy process during the three year plus journey. Provide checks and balances to ensure co-designed plans align to best available research knowledge to support complex change and extreme variability inherent in the rural agri-



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production environment. These plans shall understand market opportunities and risk and will be anticipatory, adaptable and agile.

- Provide an annual and final report on the effectiveness of the strategy. This report shall be available to the Wakool community and to the broader rural landscape for planning purposes.
- Assist with development of project case studies.
- Develop toolkits that help business plan and management risk in a highly variable environment.
- Wakool Region Community Adaptation Study findings inform local government and regional policy development.
- CSU – Contact Fiona Nash
- Melbourne University / RMIT, Marian Schoen, Prof. Leo Goedegebuure, Prof Geoff Wilson, Prof Lars Coenen (see enclosed letter of intent, Appendix H) (*note that this is not for research purposes*).
- NSW DPI – Giles Butler
- NSW Farmers – Co-operative Research Centre. David Eyre, GM, Research & Innovation

Key collaborative Stakeholders (and potential Steering Committee members)

- Universities – Social sciences
- NSW Farmers, Co-operative Research Centre
- Murray Local Land Services
- NSW DPI
- Murray River Council
- Mecardo

Table 2 - Wakool Region Community Adaptation Program Objectives, Responsibilities, Roles and Outcomes Table

Economic Development Objective	Year 1 (FY 2018-19)	Responsibility	Year 2 (FY 2019-20)	Year 3 & 4 (FY 2020/2012 & 2021-22)	In kind contribution	Outcome
Improve leadership capability and engagement	Position description and employment contracts	Local Engagement Facilitator*	<ul style="list-style-type: none"> Encourage positive attitudes and support for change Mentor community leaders Create forums for the exchange of ideas 	<ul style="list-style-type: none"> Encourage positive attitudes and support for change Mentor community leaders Create forums for the exchange of ideas 	WMLIG to provide leadership mentoring resources via the Local Landcare Coordinator Initiative. (Note that specialist engagement facilitation needs will be funded by the Murray Darling Economic Development programme resource funding as required)	<i>The community has transformational leadership and a 'can do' attitude that can unleash its innovative capacity to readily adapt to new and emerging challenges</i> <ul style="list-style-type: none"> Short and long term projects developed and activities delivered. New community leaders completing training courses.
	Advertise positions widely	Education and Business Development Facilitator	<ul style="list-style-type: none"> Connect people to Leadership programs Support people conducting leadership courses 	<ul style="list-style-type: none"> Connect people to Leadership programs Support people conducting leadership courses 		
	Conduct interviews	-Knowledge, Innovation and Investment Facilitator	<ul style="list-style-type: none"> Create engagement and networking opportunities for community members/ leaders and stakeholder professionals Provision of a knowledge and innovation ecosystem with investment frameworks empowers community members to become transformational leaders. 	<ul style="list-style-type: none"> Continue engagement and networking with professionals. Knowledge trickle-down effect stimulates innovation and investment opportunities. Foster positive messaging of outcomes 		
	Induct new employees					
	Provision of office space and work resources	Tourism Development Facilitator	<ul style="list-style-type: none"> Create engagement and networking opportunities for community members/ leaders and stakeholder professionals Provision of an integrated agrisystem provides knowledge and opens minds to possibilities thus empowering community members to become transformational leaders. 	<ul style="list-style-type: none"> Continue engagement and networking with professionals. Knowledge trickle-down effect stimulates innovation, new market and investment opportunities Foster positive messaging of outcomes 		
	New employee target start date: 19/08/19	External Research Institution (Project Lead)	<ul style="list-style-type: none"> Create engagement and networking opportunities for community members/ leaders and institutional expertise Provision of community adaptation leadership framework 	<ul style="list-style-type: none"> A regional transformation model with real life case study and tools that informs community leaders Findings contribute to leadership development 		
Improve management and workforce skills and capabilities		Education and Business Development Facilitator	<ul style="list-style-type: none"> Develop strategies for community engagement & capacity building. Liaise with community groups, local government, agencies and research organisation. Organise effective mechanisms for communication and dissemination of information. Create platforms for knowledge gathering and sharing Provide public access to information and 	<ul style="list-style-type: none"> Adaptively manage the plan. Reinforce key messages. Continue to roll out education, business management and workforce skills programs. Evaluate performance (pre and post learning outcomes), document learnings and engagement statistics, adapt and improve program delivery. 	WMLIG will provide resources for the Wakool Region Adaptation Strategy in the form of; <ul style="list-style-type: none"> WMLIG networks for research, planning and program delivery. WMLIG support 	<i>The community has the capacity and capability to respond with flexibility and agility in the face of emerging challenges, new technologies and changing societal and market expectations</i> <ul style="list-style-type: none"> New community leaders inspired to stimulate



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Economic Development Objective	Year 1 (FY 2018-19)	Responsibility	Year 2 (FY 2019-20)	Year 3 & 4 (FY 2020/2021 & 2021-22)	In kind contribution	Outcome
			service to groups. <ul style="list-style-type: none"> • Awareness raising re Skills, training & knowledge development programs • Community capacity building development needs for achieving the community vision • Education and training program plans • Provide entrepreneurial / business management / workforce training needs • Assist with infusion of existing industry agricultural extension programs • Assist with education material development. Tourism, investor ready programs • Canvas education providers for regional excursion program opportunities 		staff and Committee to manage human resources, programme funding and governance to implement the project (Local Landcare Co-ordinator, Community Support Officer, Project Officers, Administration) <ul style="list-style-type: none"> • Governance arrangements supporting the process. 	innovation and action. <ul style="list-style-type: none"> • Improve underlying skills that support economic development such as business management, risk management, and strategic planning. • Strengthened workforce capabilities
Schools participating in entrepreneurial and social enterprise education programs		Education and Business Development Facilitator	<ul style="list-style-type: none"> • Seek opportunities to provide business management, innovation and entrepreneurial programmes to secondary school • Liaise with local high school regarding programme opportunities 	<ul style="list-style-type: none"> • Entrepreneurial and social enterprise education programs rolled out with schools; (e.g. Agrifutures start.up business entrepreneurial learning in action program, ACRE Social Enterprise program) 	<ul style="list-style-type: none"> • Hosting the labour resources within the WMLIG organisational structure. 	<ul style="list-style-type: none"> • People are job creators as well as job seekers • Young people with problem solving, entrepreneurial and leadership skills
Enhancing connectedness of community, business and research		Local Engagement Facilitator*	<ul style="list-style-type: none"> • Co-development of stakeholder engagement plans and governance framework (Terms of Reference, Code of Conduct) • Foster and support the creation of local processes to identify adaptation strategies • Apply for funding to address community needs • Develop relationships with community, business, government and research institutions • Support development of consultative and steering committees with government, research and education, industry and community (quadruple helix approach), including regional R&D network members where possible • Immature business clusters and stakeholder Committees 	<ul style="list-style-type: none"> • Facilitate formation of new work groups and committees as required. • Ideas generated from engagement activities and focus groups fed into funding applications and to other WMLIG workforce personnel for infusion into programs as appropriate. • Provide continuous improvement feedback loop to Community members and Committee representatives. • Promote positive outcomes to broader community • Celebrate success 	<ul style="list-style-type: none"> • WMLIG policy and procedures are within a quality system framework. • WMLIG Committee governed by a constitution • Provision of a centrally located regional office base and an education and innovation hub. This facility will provide high technology infrastructure such as teleconference facilities and education tools to 	<ul style="list-style-type: none"> • The community has strong connections and productive collaborative arrangements with business, industry, research centres and government entities.



Wakool Region Community Adaptation Strategy

Economic Development Objective	Year 1 (FY 2018-19)	Responsibility	Year 2 (FY 2019-20)	Year 3 & 4 (FY 2020/2021 & 2021-22)	In kind contribution	Outcome
		-Knowledge, Innovation and Investment Facilitator	<ul style="list-style-type: none"> Conduit for RD&E connections Provide the structure, plans and support to connect the community with other stakeholders. Initiate and support a Knowledge & Innovation Stakeholder Committee Develop and support business cluster/s Seek funding opportunities to support business clusters (e.g. FIAL Agribusiness Cluster Programme) Host an Agtech forum Field trips showcasing innovation 	<ul style="list-style-type: none"> RD&E entities feeding opportunities into the K&I ecosystem Maturing relationship with community, business, research institutions and government builds trust and collaborative opportunities New business clusters developed and supported Mature Knowledge & Innovation Stakeholder Committee and Business clusters Promote positive outcomes to broader community 	<p>connect rural communities, urban centres and tourists to facilitate activity programs.</p> <ul style="list-style-type: none"> WMLIG to provide evaluation tools and labour to help with performance statistical analysis Co-working space infrastructure Stakeholder engagement / committee representation Foundation structure developed and governance arrangements board assigned for distribution of philanthropic and business donations for community project redistribution Various Stakeholder representatives attending proposed Steering / consultative committees, business clusters etc. Murray River Council economic development resources to 	<ul style="list-style-type: none"> Well-developed stakeholder relationships Knowledge and innovation ecosystem creates enduring innovation
Knowledge and Innovation ecosystem, creates new and enduring innovation and business and community investment		Knowledge, Innovation and Investment Facilitator (also managing a Research Graduate?)	<ul style="list-style-type: none"> Explore novel investment models and platforms Explore fit for purpose investment and partnerships models to provide for diversity in investment opportunities and capital sources. Provide information about investment governance structures New to region innovations Establish viable sources of new income by testing plausibility and feasibility of new industries Companion industry investigations-e.g. intensive animals, crop waste, compost Provide information about entrepreneurial innovation incubator and acceleration programs Initiate and provide governance structures around an Investment Platform Steering Committee Guide the development of an investor and innovation incubator and accelerator programme by the Investment Platform Steering Committee development. Innovation incubator 'think tank' and innovation investor 'pitch fest' to support new ideas off the ground. 	<ul style="list-style-type: none"> Market investor ready programs Cultivate investor relationships (business, superannuation funds etc.) Connect entrepreneurial ideas to investors. New business expanding with diversified investment streams (new business, superannuation funds etc.) Support entrepreneurial ideas / business stakeholder New investment opportunities lead to commercialisation outcomes. Novel use of existing infrastructure and companion industries 2020-21: Continue support for an Investment Platform Steering Committee 2020-22: Innovation incubator 'think tank' and innovation investor 'pitch fest' accelerator programmes ran (2 years). 2020-22: Regional investment marketing plan developed and marketing program rolled out to investors. Continue on ground trials of proven technology with support of a Graduate Project Officer – Technology integration 	<p><i>Profitability improvements and innovative, transformational businesses that meet the needs of new and emerging markets. The region is an investment destination of choice</i></p> <ul style="list-style-type: none"> The community has improved capacity to raise capital for new ventures Productivity improvements and innovative transformational businesses meet the needs of new and emerging markets. Solution based mindset creates enduring innovative, dynamic businesses Community projects supported by a Community Foundation that is funded from philanthropic, government and business donations 	



Wakool Region Community Adaptation Strategy

Economic Development Objective	Year 1 (FY 2018-19)	Responsibility	Year 2 (FY 2019-20)	Year 3 & 4 (FY 2020/2021 & 2021-22)	In kind contribution	Outcome
			<ul style="list-style-type: none"> Provide a business and investment forum to cultivate relationships Enable collaboration opportunities for local trials and adoption of new technologies, business solutions and innovation accelerator programs On ground trials of proven technology with support of a Graduate Project Officer – Technology integration Manage activities of the Graduate Project Officer – Technology Integration Develop investor ready packages Provide information to community stakeholders about establishing Community Foundations 	<ul style="list-style-type: none"> Community Foundation structure developed and governance arrangements completed. 2020-21: Community Foundation Committee established and is actively networking and promoting the foundation as a portal for charity funds. 2021-22: Community Foundation Committee distributes philanthropic and business donations for community program redistribution 	<p>businesses for support of new ideas generated in the region.</p> <ul style="list-style-type: none"> <u>Wakool River Association</u> providing use of the Edwards Wakool Geological multi-media package titled “An Inland Delta – A Geological History of the Edwards Wakool System” 	
New business models and value added markets		Agrisystem* and Tourism Development Facilitator	<ul style="list-style-type: none"> Collaborate with agrisystem experts Develop an overarching agrisystem plan for the region. Initiate and support an Agrisystem Stakeholder Committee Strengthen quality assurance, food safety and biosecurity systems into production systems Local produce food health, environment and ethical credentials (as applicable) marketed Participate in regional branding & ‘Food2Plate’ programs Investigate blockchain technologies that authenticate produce Investigate new national and international markets Technical experts provide timely information about future market trends. Smart technology training including exploring transformational farm practices and new industries. Pursue new opportunities for higher value products and value added processed products. Pursue new market channels and supply chains 	<ul style="list-style-type: none"> Active RD&E, Business, Community, government entity Stakeholder Committee representation Agricultural producers receiving timely market trend information Businesses have tools and support to navigate the economic terrain and recognise opportunities for expansion and stabilisation when they are present Businesses adopt new innovative practices and technologies to improve productivity and environmental outcomes Information provided to business regarding customer relationship management platforms Identify infrastructure needs (e.g. connectivity technology) and seek funding opportunities. Infusion of smart technologies into business practices Customer awareness of local produce food health, sustainability and ethical credentials. Customers paying premiums for local produce 		<p><i>Generating impact from the K & I ecosystem. Businesses feed into an integrated agrisystem with leveraged regional produce branding and new value added markets.</i></p> <ul style="list-style-type: none"> Improve revenue from regionally produced goods through value adding and innovation Business embracing digital innovation to improve data management and customer information



Wakool Region Community Adaptation Strategy

Economic Development Objective	Year 1 (FY 2018-19)	Responsibility	Year 2 (FY 2019-20)	Year 3 & 4 (FY 2020/2021 & 2021-22)	In kind contribution	Outcome
			<ul style="list-style-type: none"> Investigate customer relationship management platforms to embrace digital innovation and improve data management 	<ul style="list-style-type: none"> New local and export markets Businesses leaner with minimised waste. 		
New niche tourism ventures created		Agrisystem* and Tourism Development Facilitator	<ul style="list-style-type: none"> Facilitate public campaigns that highlight the innovation of rural farmers, such as current farming practices that conserve and efficiently use water resources, and could stress the importance of Australian agriculture nationally and globally Participate in regional tourism stakeholder committee/s. Initiate and support local Tourism Project Focus Groups on locally identified projects. Develop tourism projects in collaboration with Murray River Council, businesses and tourism entities. (e.g. Murray Irrigation, Regional Development Australia, Destination NSW, Murray Regional Tourism). Education resources are developed for school excursions. International and national agri-tourism, edu-tourism and eco-tourism opportunities to showcase innovation, diversity and natural assets. Tourism projects will take advantage of unique natural assets, diverse agricultural production systems and utilise existing infrastructure. 	<ul style="list-style-type: none"> International irrigation infrastructure tours (agri-tours) showcasing our new efficient irrigation system to entities in other countries seeking to invest in water efficiency projects.), Schools from outside the region participate in school excursions that incorporate the local environment, agriculture and cultural heritage assets. Ecotours, leverage from the recently local production of the Edwards Wakool Geological multi-media package titled "An Inland Delta – A Geological History of the Edwards Wakool System". Moulamein arboretum, Pollack Swamp boardwalk and birdhide*, Cultural heritage interpretive / twitcher trails* <p><i>*Note that both the Pollack Swamp and interpretive trail projects both support indigenous focused outcomes and there is a high likelihood for indigenous guides to be employed.</i></p>		<ul style="list-style-type: none"> Successful new agribusiness and ecotourism projects launched accessing new niche markets. Increase visitation to Wakool and surrounds to value add existing infrastructure (constructed and human capital).
Rural community adaptation study		External Research Institution (Project Lead)	<ul style="list-style-type: none"> Research institution/s providing active representation on Project Steering Committees University study on economic planning and diversification strategies in a highly unpredictable business environment (markets, climate, resource competition etc.) Co-design, support and steer Wakool Region Adaptation regional resources Development of an agri-business 	<ul style="list-style-type: none"> Provide an annual and final report on the effectiveness of the strategy. This report is available to the Wakool community and to the broader rural landscape for planning purposes. Development of project case studies. Evaluation of the community adaptation journey. Research outcomes inform other communities. Develop toolkits that help business plan and management risk in a highly 		<p><i>Murray Darling Basin and other rural communities with high structural adjustment pressures have a regional transformation model with real life case study and tools that informs communities and business management.</i></p> <ul style="list-style-type: none"> Findings contribute to Policy Development



Wakool Region Community Adaptation Strategy

Economic Development Objective	Year 1 (FY 2018-19)	Responsibility	Year 2 (FY 2019-20)	Year 3 & 4 (FY 2020/2012 & 2021-22)	In kind contribution	Outcome
			planning toolkit and template, accounting for unique and difficult regional agri-business pressures, so that businesses can manage risk more effectively.	variable environment		

**Local Engagement Facilitator (LEF) and Agrisystem Manager: Note that WMLIG will provide in-kind labour for co-ordination and other resources (such as consultants) to complete duties identified by the LEF and Agrisystem Manager.*

Steering Committees / business clusters / project focus groups arising out of the Wakool Region Adaptation Program;

- Knowledge & Innovation Stakeholder Committee
- Business cluster/s
- Entrepreneurial “Think Tanks”
- Investment Platform Steering Committee
- Community Foundation Committee
- Agrisystem Stakeholder Committee
- Tourism Project Focus Groups

Community Adaptation Program Funding and Governance

Programme funding and labour resources being sought for the Wakool Region Adaptation Strategy are outlined below;

Programme Funding

- Education and training that enhances workforce capabilities and business management.
- School education program resources (e.g. workbooks aligned to the education curriculum)
- Events and field days showcasing technologies and innovation
- Agrisystem development
- Knowledge and Innovation programmes
- Investment platforms
- Tourist project development resources and marketing. Potential projects identified include;
 - International and national irrigation infrastructure tours (agritour), ecotours, arboretum, interpretive / twitcher trails

Human Resource Funding

- Education and Business Development Manager (1.0FTE)
- Connections Manager – Knowledge, Innovation and Investment (1.0FTE)
- Tourism Development Manager (1.0FTE)
- Graduate Project Officer – Technology Integration (0.5FTE for 1yr)

Other Resources and governance (WMLIG Provision);

WMLIG will provide resources for the Wakool Region Adaptation Strategy in the form of;

- WMLIG networks for research, planning and program delivery.
- WMLIG support staff and Committee to manage human resources, programme funding and governance to implement the project (Local Landcare Co-ordinator, Community Support Officer, Project Officers, Administration)
- Governance arrangements supporting the process.
 - Hosting the labour resources within the WMLIG organisational structure. The WMLIG organisation chart is illustrated in Figure 9.
 - WMLIG policy and procedures are within a quality system framework.
 - WMLIG Committee governed by a constitution
 - Allowance for independent financial audit for the process
- Along with the committee, Community Support Officer/Landcare Coordinator, the group has Project Management, and Technical Support Staff experienced in administrative, governance and importantly practical on ground functions. Subcontracting arrangements will be conducted with consultants and businesses on an 'as needs basis' pending stakeholder and committee feedback.
- WMLIG is experienced at engaging diverse contractors and businesses as part of its day to day operations. Contractors are checked against guidelines stipulated in relevant policies and procedures which take into account due diligence checks and balances. i.e. financial viability, relevant insurances etc.
- A Program Manager will be assigned with additional responsibility to manage additional employees and track outcomes. The role will act as an intermediary between the Committee and Project staff and recognise the increasing complexity of the business and

need for improved delineated lines of responsibility, accountability and feedback. The Program Manager role and value is as follows;

- Role
 - Provide committee with progress reports
 - Provide project managers with direction & support
- Value
 - Separation of committee & project manager responsibilities
- Support will need to be provided to Program Manager. This will be from suitably skilled independent consultancy and provide:
 - Value to the CEO
 - Mentoring support
 - Management advice
 - Value to the committee
 - Audit process
 - System health check (how are the projects going?)
 - Provide confidence that oversight is in place
 - Report against performance measures
- Stakeholder Committees will comprise members of Local Government, Universities, Industry, Businesses and Community Groups. The risk analysis and budget has taken into account the need to monitor strategy priorities and performance outcomes and shall be part of review and feedback loop process.
- Provision of a centrally located regional office base and an education and innovation hub (See BMEIC section outlined above). This facility will provide high technology infrastructure such as teleconference facilities and education tools to connect rural communities, urban centres and tourists to facilitate activity programs.

Governance arrangements are outlined in Figure 9 (WMLIG Organisation Chart) and Figure 10 (Wakool Region Adaptation Strategy Governance Structure)

The positions will be hosted by the WMLIG. The proposed organisation chart incorporating the Wakool Region Adaptation Plan is illustrated in Figure 9.

Figure 9: WMLIG Organisational Chart incorporating the proposed Wakool Region Adaptation Strategy positions

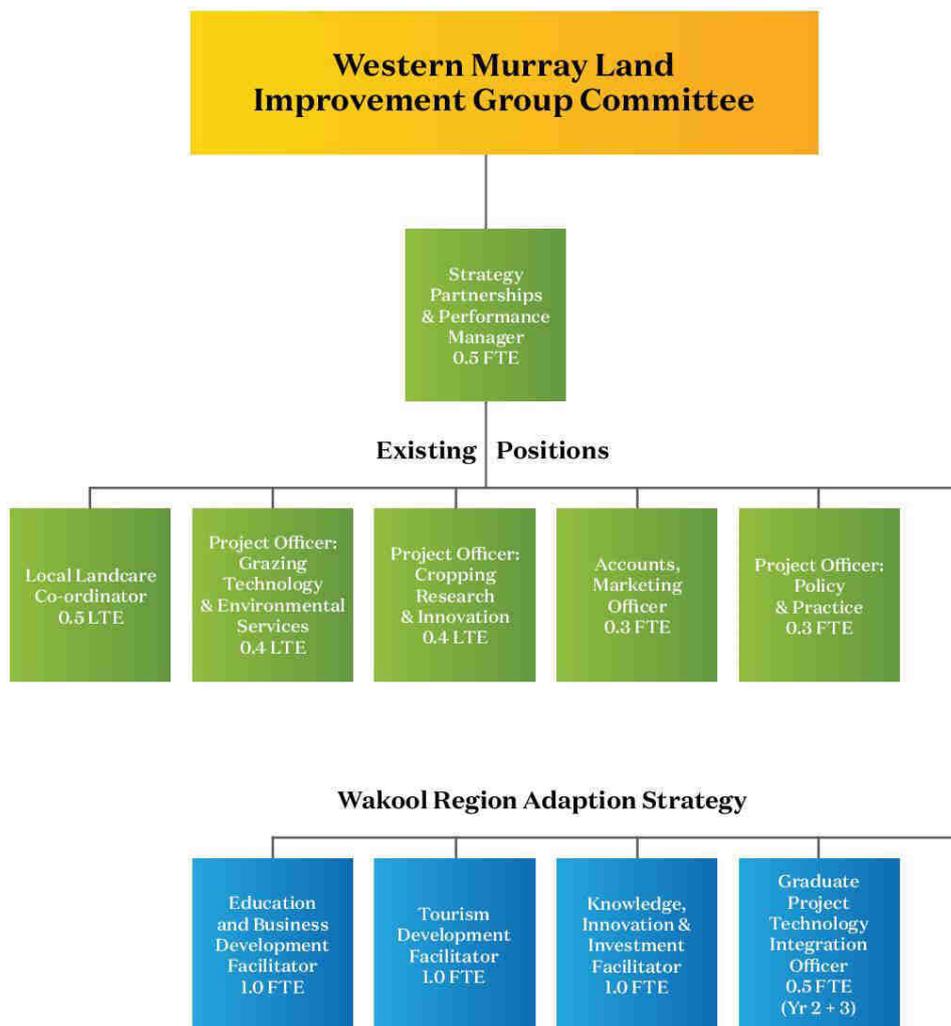
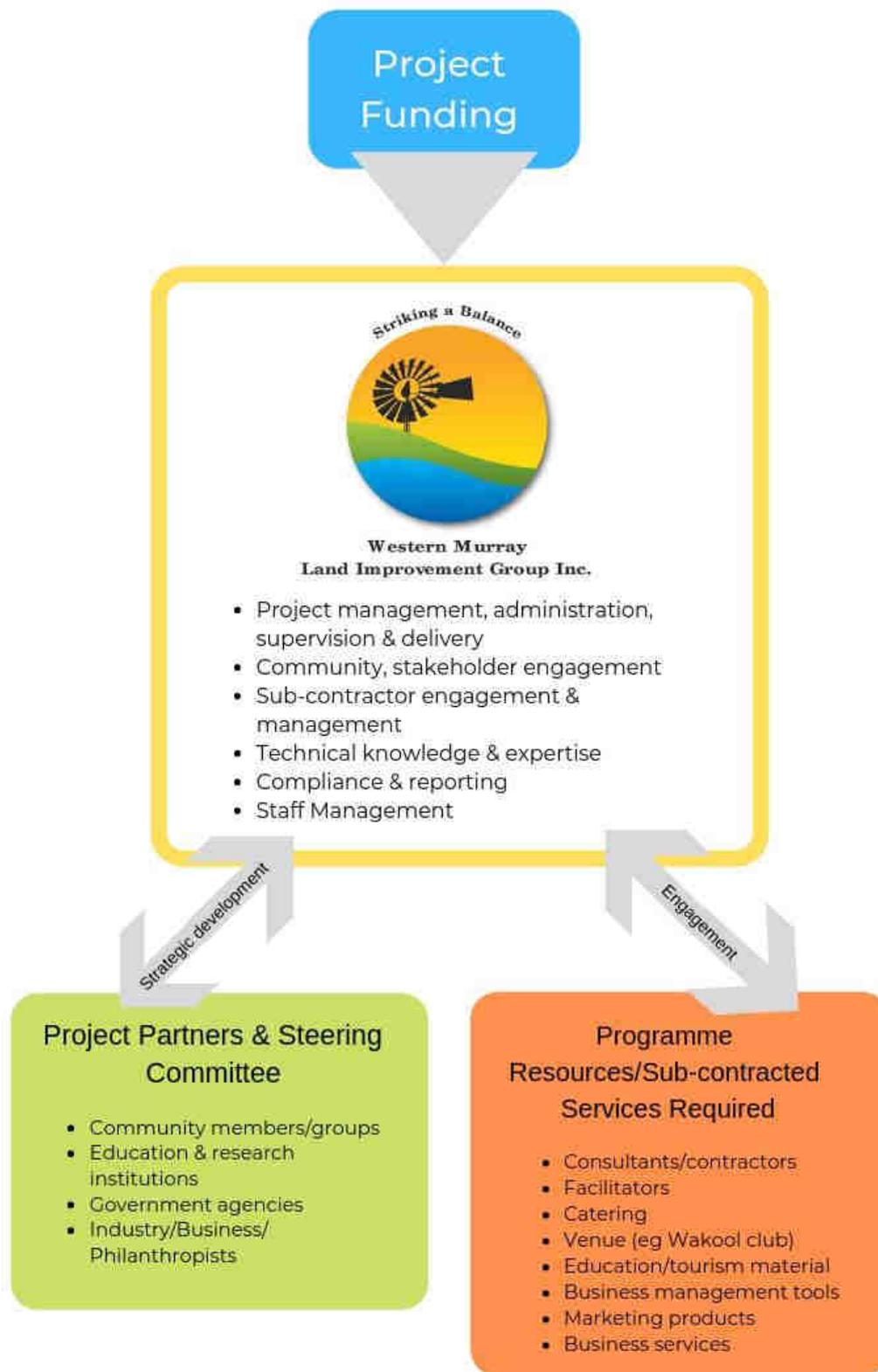


Figure 10: Wakool Region Adaptation Strategy Governance Structure



Program Budget

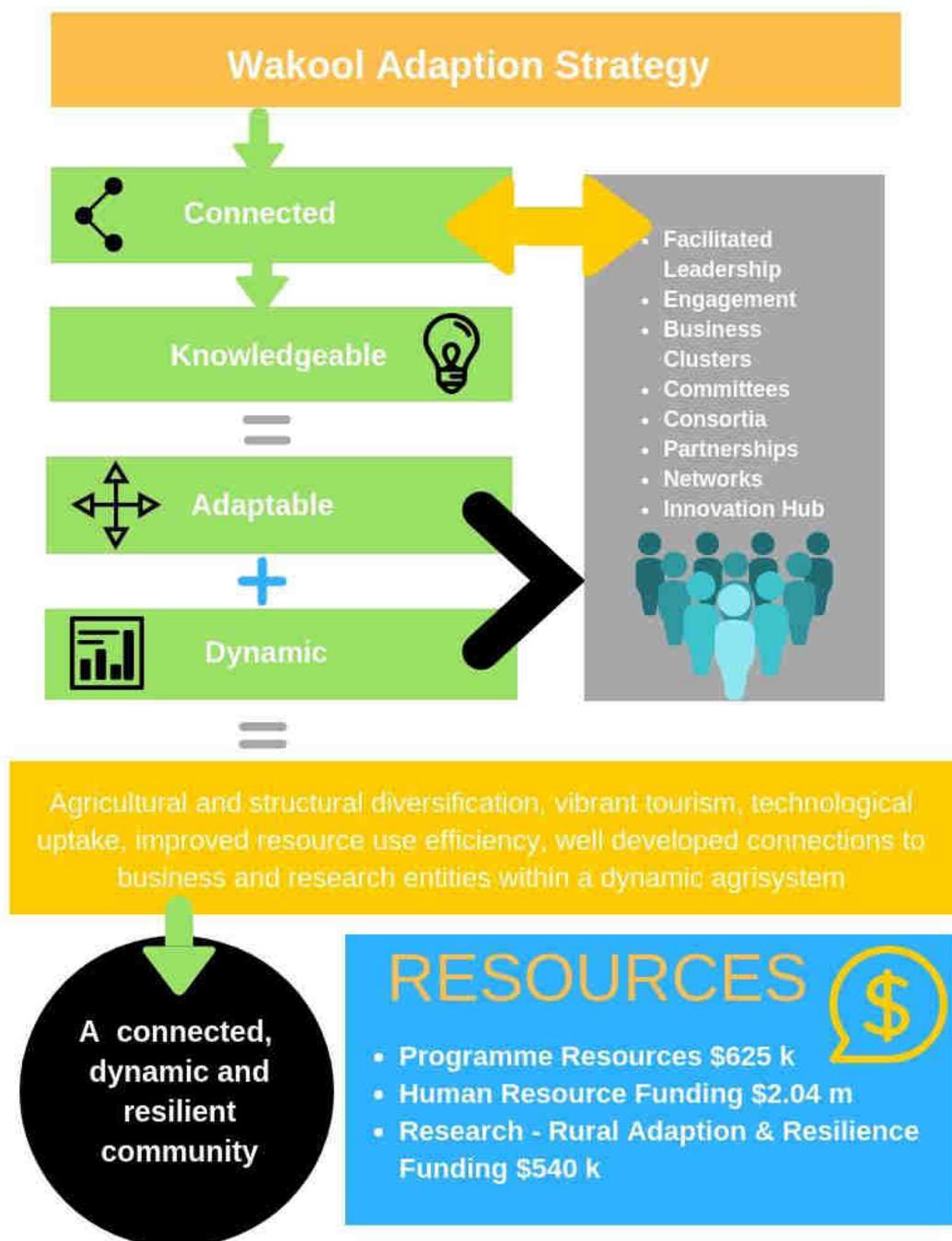
Table 3: Wakool Community Adaptation Strategy Budget

Programme Funding	Cost (\$)
Human Resources*	
Local Engagement Facilitator (LEF). Duties conducted by WMLIG staff and specialist Facilitators as required. Facilitator costs included in Programme resources, item 1.	
Education and Business Development Coordinator	\$297K
Knowledge, Innovation and Investment Facilitator	\$297K
Tourism Development Co-ordinator	\$282.5K
Graduate Project Officer - Agrisystem and Innovation Analyst	\$162K
Graduate Project Officer - Technology Integration (yrs 2 & 3)	\$220K
Total wages with travel:	\$1248.5K
Administration	\$120K
Project Management	\$181K
Total: (incl. admin and Project management)	\$1.459.5M
Programme Resources (Consultants etc.)	
1. Facilitation, education and economic development program funding (facilitators, consultants, skills and capabilities development, workshops, training, teacher resources modules etc.).	\$336K
2. Field trips showcasing innovation with cost benefit analysis. \$5K/yr x 3 yrs	\$15K
3. Seed funding for an Innovation incubator "think tank" and innovation investor 'pitch fest' accelerator to support new ideas off the ground. \$3K x 3 yrs and University Innovation competition (\$10K/yr x 3 years). Includes \$15K sponsorship co-contribution	\$24K
4. Event funding for an Ag Entrepreneurs forum. \$10K x 2 years	\$20K
5. Funding for Agri and Ecotourism development (site inspection and incorporation of ideas from indigenous group members, consultants), resources (workbooks, promotional material) and marketing (e.g. National and International Agribusiness Irrigation infrastructure tours*, nature / cultural heritage trails, * MIL has offered to contribute \$8K seed funding for this project.	\$142K
6. Stakeholder Committees (attendance by expert consultants in the Knowledge & Innovation Stakeholder Committee, Investment Platform development Committee, Agrisystem Development Stakeholder Committee)	\$93K
7. Investment prospectus	\$7K
8. Venue hire, catering, marketing etc.	\$24K
Total Program Resources	\$671K
Total All programs:	\$2120.5M

**Note that travel is included in the labour budget*

The resources (the inputs) that support the Wakool Region Adaptation Strategy Program Activities (the output) will enable the community to have enduring outcomes in the form of improved community leadership, adaptation and resilience (success). This process is outlined in Figure 11.

Figure 11 – Schematic of Wakool Region Adaptation Strategy Funding Proposal



APPENDICES

APPENDIX A

SOCIO-ECONOMIC EVALUATION AND RESEARCH

Evidence of the need for adaptation is outlined in the range of reports and community engagement activities in the last few years. A summary of the reports are outlined below.

Appendix A1

MDBA Community Profile Evaluations (June 2018)

Across the MDBA Community profile evaluation period 2001 to 2016, the average change in total employment across the 40 irrigation-dependent communities in the Murray Darling Basin was a decrease of 24.1%. This was comprised of decreases of 2.8% between 2001 and 2006, 8.1% between 2006 and 2011, 13.1% between 2011 and 2016. In 2001, average participation rates across irrigation-dependent communities was 34.6 full-time equivalents per 100 people. In 2016, the average participation rate had fallen to 28.7 full-time equivalents per 100 people. For more information refer to; <https://www.mdba.gov.au/publications/mdba-reports/southern-basin-community-profiles>

The timeframe covered in the profiles means the observed changes incorporate shifts in agricultural production, technology and climate, in addition to the changes in water available for irrigated production.

MDBA Wakool Community Profile

Trends in social and economic conditions

- From 2001-2016, local farm employment from irrigated production fell 72%. In Wakool specifically, the population declined by 45.6%. Government services dropped by 35.1%. The socio-economic wealth decile category has dropped from 5 in 2001 to 2 in 2016. This has created a diminished financial capacity for adaption to change in response to their circumstances. <https://www.mdba.gov.au/sites/default/files/pubs/community-profiles-wakool-june2018.pdf>

MDBA Kerang-Cohuna Community Profile (which incorporates Barham)

Trends in social and economic conditions

- From 2001-2016, there was increase in area population of 8.8%. The total area workforce decreased by 10%. Agricultural workforce was heavily impacted and decreased by 30.8%, Agricultural Manufacturing decreased by 44% and non-agriculture private workforce decreased by 10.8%.

Report themes illustrate the need for capacity building, skills training, structural adjustment support and reduction in social isolation. Many of the services necessary for adaptation and innovation are not accessible locally.

Table 1. Summary tables of MDBA Community Profile statistics of Wakool, Deniboota, Denimein and Kerang-Cohuna from 2001 - 2016

Changes to Water Entitlements 2001 - 2016							
Community	Water entitlements (WE) before Basin Plan (BP) (GL)	WE Recovered	% Reduction in WE	WE after BP	WE after BP (GL)*	Change to WE (GL)*	WE change (%)*
				Net without efficiency	net with efficiency	net with efficiency	net with efficiency
				infrastructure	infrastructure	infrastructure	infrastructure
NSW Murray Valley							
Wakool	258	-97.9	-37.9%	160.1	170	-88	-34.5%
Deniboota	175	-49.5	-28.3%	125.5	133.1	-41.9	-24.3%
Denimein	72.7	-16.1	-22.1%	56.6	63.6	-9.1	-13.4%
Total:	505.7	-163.5	-32.3%	342.2	366.7	-139	-27%
Nth Vic Mallee & GMID							
Kerang-Cohuna	350.7	-64.6	-18.4%	286.1	292.9	-57.8	-16.6%
<i>Cohuna SEIFA</i>							
Total (all):	856.4	-228.1	-26.6%	628.3	659.6	-196.8	-23%

Population Change and Total Workforce Statistics 2001-2011					
Community	Area population		Area workforce	Total area workforce (FTE)	
	No. of people	% of population	2011	Change in FTE's	% of population
NSW W-MV					
Wakool	-715	-45.6%	537	-288	-53.7%
Deniboota	-332	-15.8%	754	-195	-25.8%
Denimein	-207	-32.5%	227	-90	-39.6%
Total:	-1254	-29.1%	1518	-573	-37.7%
Nth Vic Mallee & GMID					
Kerang-Cohuna	873	8.8%	3379	-338	-10%
Total:	-381	-8.8%	4897	-911	-18.6%

Workforce statistics by sector 2001-2016								
Community	Agricultural workforce		Ag Manufacturing workforce		Non-ag private workforce		Govt services workforce	
	No. of people	% of population	No. of FTE's	% of population	No. of FTE's	% of population	No. of FTE's	% of population
NSW W-MV								
Wakool	-158	-61.5%	-8	-44.0%	-96	-57.3%	-34	-35.1%
Deniboota	-129	-51.5%			-99	-29.1%	14	11.3%
Denimein	-52	-60.4%			-37	-40.1%	-7	-15.2%
Total:	-339	-57.8%	-8	-44.0%	-232	-42.2%	-27	-13.0%
Nth Vic Mallee & GMID								
Kerang-Cohuna	-437	-30.8%	-101	-44.3%	-134	-10.8%	211	41.8%
Total:	-776	-44.3%	-109	-44.2%	-366	-26.5%	184	14.4%

Wakool Region Community Adaptation Strategy

SEIFA Rating 2001-2011												
Community	Disadvantage			Adv/disadvantage			Wealth			Education		
	2001	2011	Change	2001	2011	Change	2001	2011	Change	2001	2011	Change
NSW W-Murray Valley												
Wakool	2	2	-	2	2	-	5	2	-3	2	3	1
Denibootea	2	3	1	1	2	1	2	3	1	1	1	0
Denimein												
Total:									-1			
Nth Vic Mallee & GMID												
Kerang-Cohuna	7	5	-2	5	5	0	4	4	0	6	5	-1
Cohuna SEIFA	8	4	-4	5	4	-1	4	4	0	4	5	1

**Note that red fill denotes negative outcome, and green fill denotes positive outcome*

ABS SEIFA Indices. Decile scores are used to represent the four ABS socio-economic indices for area (prepared by the Australian Bureau of Statistics from the census data) at the town scale for 2001, 2006, 2011. The four SEIFA measures compare the relative levels of disadvantage, advantage, wealth and qualifications/occupations across all communities in Australia.

A decile score of 1 for a community indicates it is amongst the 10% most challenged locations across Australia for that measure. A decile of 10 indicates the community is ranked amongst the top 10% of communities for that measure. A change in relative ranking of two deciles or more between 2001 and 2011 indicates a considerable degree of change. If there is a change to three or four of the indices across time, it provides further evidence for the strength of the changing social conditions experienced by the community.

Rural communities experiencing relatively good social and economic conditions tend to have decile scores around 4,5 or 6 across the four indices. Communities with lower decile scores or scores declining by at least two deciles are likely to have a reduced capacity to initiate change than communities with higher decile values. When used in combination with other data in the profiles, the SEIFA scores and changes provide insights to the overall adaptive capacity of communities.

Appendix A2

MDBA report, NSW Central Murray Community Profile - Outline of the Socio Economic Analysis, Appendix C— Guide to the proposed Basin Plan Technical Background Part III, 2012.

- Summary findings
 - There is significant human and financial stress within the region. Many farm businesses have either sold or offered to sell water entitlements to the Government as a means of raising funds to meet critical household and business needs.
 - A reduction in the long-term water availability of greater than 20% will result in many farm businesses becoming unviable with direct flow on impacts occurring at a community level.
 - A reduction in long-term water availability in the order of 60% will be equivalent to the drought conditions experienced since 2002–03. Experience over the past seven years has shown that farm businesses have severely eroded working capital, increased borrowings and realised assets to meet commitments.
 - A transformation to dryland agriculture would require the aggregation of 5–10 farms into a single farm business. This would have significant flow on impacts to the service community and the provision of community services such as health, education, police and recreational facilities.
 - There is limited scope for farm transformations for Murray Irrigation farms in the area west of Deniliquin due to heavy sodic soils and low rainfall. Most farms are too small to become viable dryland farm businesses.
 - Forestry is a long standing industry for the region, based on the River Red Gum forests of the Central Murray. There are an estimated 530,000 hectares of River Red Gum forests in the Murray Valley Region (both NSW and Victoria). The forestry industry supports both direct and indirect jobs and will be impacted by the recent decisions regarding restricting future red gum logging.

Appendix A3

Economic Impact Assessment of the Murray Darling Basin Plan on the Wakool Shire (now the Murray River LGA), by Michael Connell and Associates, October 2014.

Key industry information;

- Agriculture was the largest sector in the regional economy with an output of \$68 million in 2005-06 and \$95.8 million in 2010-11. The population decline seen in the last 10-15 years was suggested to reflect changes within the farming sector, with less income generation and employment available in the region. The report clearly stated that the local economy is highly reliant on agriculture and associated linked businesses.

Future directions;

- Ongoing support is needed for adjustment and modernisation and diversification of agriculture in the region. This includes: program support for on-farm improvements (under MDB programs); and support for developing industry diversification options.
 - The rice industry is recognised as a key sector for the region, and technology change and improvements in productivity and water efficiency are encouraged.
 - New opportunities for higher value crops and value added processed products are pursued.

Appendix A4

Community Adaptability Engagement Research Report, (June 30, 2017).

Facilitator: Michael Fortunato, Director, Centre for Rural Studies Sam Houston State University.
Centre for Rural Studies, Research and Outreach. Project funded by the MDBA

Project overview

Overview:

This project focused on enhancing the ability of communities to adapt in response to changes in water management practices, as well as other macro-level changes affecting rural communities across the Murray-Darling Basin.

- Engagement and key findings
 - Nine communities from four regions were selected to participate in this research project, including four from Queensland and five from New South Wales – Barham/Wakool, Murray Downs, Moulamein, Tooleybuc, and Coleambally.
 - Three community engagement sessions were held in each community.

Themes emerged from the community engagement sessions, including:

- Agriculture diversification has been the primary strategy for adapting to the changes associated with the Basin Plan. Diversification in other sectors requires more training and resources.
- Concern for rural-urban divides across the country and a call for better messaging on both the local and federal level of the benefits of agriculture and farming.
- Need for the expansion of technology and connectivity to connect rural communities to urban centres and attract young adults.
- Interest in expanding local tourism, particularly as related to agriculture, environmental features (i.e. rivers)

The following is a set of recommendations to foster partnerships:

1. Aid farmers in seizing opportunities presented by the Murray-Darling Basin Plan through continued engagement and communication.
2. Strengthen educational opportunities locally.
3. Facilitate public campaigns that highlight the innovations of rural farmers.
4. Aid in structural diversification by connecting communities with development resources, specifically funding and expertise.
5. Engage meaningfully with communities – listen carefully and return for multiple, consistent iterations.

Notable report quotes from research findings about community adaptation:

- *“Adaptable communities are encouraged to work together with experts, and with one another, to create innovative change mechanisms that meet legal requirements and program goals and make sense for the community”.*
- *“Where diverse sets of community members are connected to one another in trust-based relationships, innovation often results”*

Community Adaptability Engagement Recommendations

The report outlines the need for development of sound, tailored, community futures actions for on-ground projects that deliver innovative and transformational activities. To support delivery of these activities, the community needs economic resources and technical expertise to support the process of *institutional innovation*, and facilitate capacity building in ways that enable innovation and adaptation across the community that;

1. Create a safe space for constructive dialogue about how to best adapt to environmental change as a community through the formation of formal and informal groups for deliberation, discussion and innovation.
2. Develop institutional innovations by forming and strengthening new relationships between community and government, and new processes for working with government entities to solve local problems in a coordinated community effort.
3. Implement new opportunities for ongoing local education about adaptability, change management, and community-based innovation.
4. Foster the creation of local processes for identifying and applying for funding to address community needs, not limited to water management.
5. Engage meaningfully with community – listen and return for multiple, consistent iterations.

Engagement Sessions

Nine communities within four regions were provided the opportunity to participate in this research project. In Southeast Queensland (Balonne Shire), research sites included Bollon, Dirrandbandi, St. George, and Thallon. In Southern New South Wales (Wakool Shire), communities included Barham/Wakool, Murray Downs, Moulamein, and Tooleybuc. Three facilitated sessions were completed between May to August 2016 at each location.

Researchers in the report noted that the communities across the Murray-Darling Basin are not locked into a state of perpetual conflict over water by default. These communities demonstrated that they have ample capacity to think big about a future that is more viable, more imaginative, and more economically, socially, and environmentally sustainable.

Many common concerns and development opportunities were raised during the course of the community engagement sessions. The meetings transcended through three layers of discussion: immediate (issues with water availability and the Basin Plan), mid-level (agricultural diversification), and system-level (diversification of the broader economy and the future of the community). Table 1 summarises key concerns and opportunities for southern NSW communities

Table 1: Primary Concerns and Opportunities in Each Southern NSW Community*

Community	Key Challenges	Key Opportunities
Barham/Wakool	Severe water impact on agriculture	Opportunity for local planning, education on improving local ag,



Community	Key Challenges	Key Opportunities
		the next generation of farmers
Moulamein	Isolation, lack of connectivity, low youth engagement, and difficult relationship with MDBA	More strategic thinking about the future, improved capacity to communicate with each other and the Shire, Young Country Networkers
Murray Downs	Geographic dispersion, lacking a voice in the region	Addressing infrastructure issues, advocacy for agriculture
Tooleybuc	Farm consolidation paired with population loss, local planning conflicts, bridge rerouting around town	Tourism development, branding, cultivating interesting draws in the town, school leadership

**An expanded table of community engagement summary results is outlined Refer to Appendix B: Final Report Community Engagement Research, Fortunato, 2017.*

Community Capacity for Adaptation and Needs

There is a wide variation in local community capacity to address issues and pursue development ideas in terms of social capital, economic capacity, technical capacity and leadership. A summary of community capacity and needs is outlined below;

Barham/Wakool: There is considerable interest in agricultural diversification and opportunities outside of agriculture that capitalise on lifestyle and quality of life. There is a need to integrate existing plans and studies into a cohesive model for moving forward with community development. There is a need for strong unified leadership to bring the whole community together to work for the future.

Moulamein: There is a need for technical expertise on multiple fronts that could facilitate economic development across the community. Community members expressed interest in creating a technology and connectivity collective, similar to the agriculture collectives in place, but need assistance with the procedures and necessary steps to establish it. Succession plans are needed to continue the initiatives in place, keep momentum going, and enable the next generation of community leaders. For all of this to be realised, the community needs consistent engagement of residents.

Murray Downs: Community members expressed a desire to learn how to communicate with experts to translate local knowledge in ways that protects and expands their local interests. Training and education of those willing to lead community efforts is a stated need.

Tooleybuc: There is a need for transformational leadership to unite the community

The facilitators of this project relied on the following method to induce collaboration and inspire local innovation (depicted in Figure 1):

Community Engagement Methods: Stimulating Institutional Innovation & Action

Our approach to stimulating institutional innovation requires participants to be immersed in a new way of thinking, even if they are in familiar surroundings. Innovation is the product of novel thinking, which is stimulated by exposure to different perspectives and unfamiliar ideas. The great creativity that arises from the intersection of different points of view is sometimes called the "Medici Effect," through which many of the world's greatest advancements, dating back to the Renaissance, have arisen from the collision of seemingly unrelated ideas. On a smaller scale, the Medici Effect can be viewed in communities that work together across boundaries in an unfamiliar process. This catalyses new thinking, and decouples established groups from older ways of thinking about local problems.

Figure 1: Method to Encourage Community Innovation





APPENDIX B

WMLIG LED LOCAL COMMUNITY ENGAGEMENT ACTIVITIES

The following is a summary of key WMLIG led engagement and activities;

- Appendix B1** Edward Wakool Basin Reference Group (Sep 2017 to present)
- Appendix B2** Barham Innovation and Education Hub (2018)
- Appendix B3** Edward Wakool Stronger Community Initiative (Aug-Oct 2016)
- Appendix B4** Wakool Dynamic Business Planning Workshop,

The total statistics for the above WMLIG led engagement activities in the period from August 2016 to December 2018 involved;

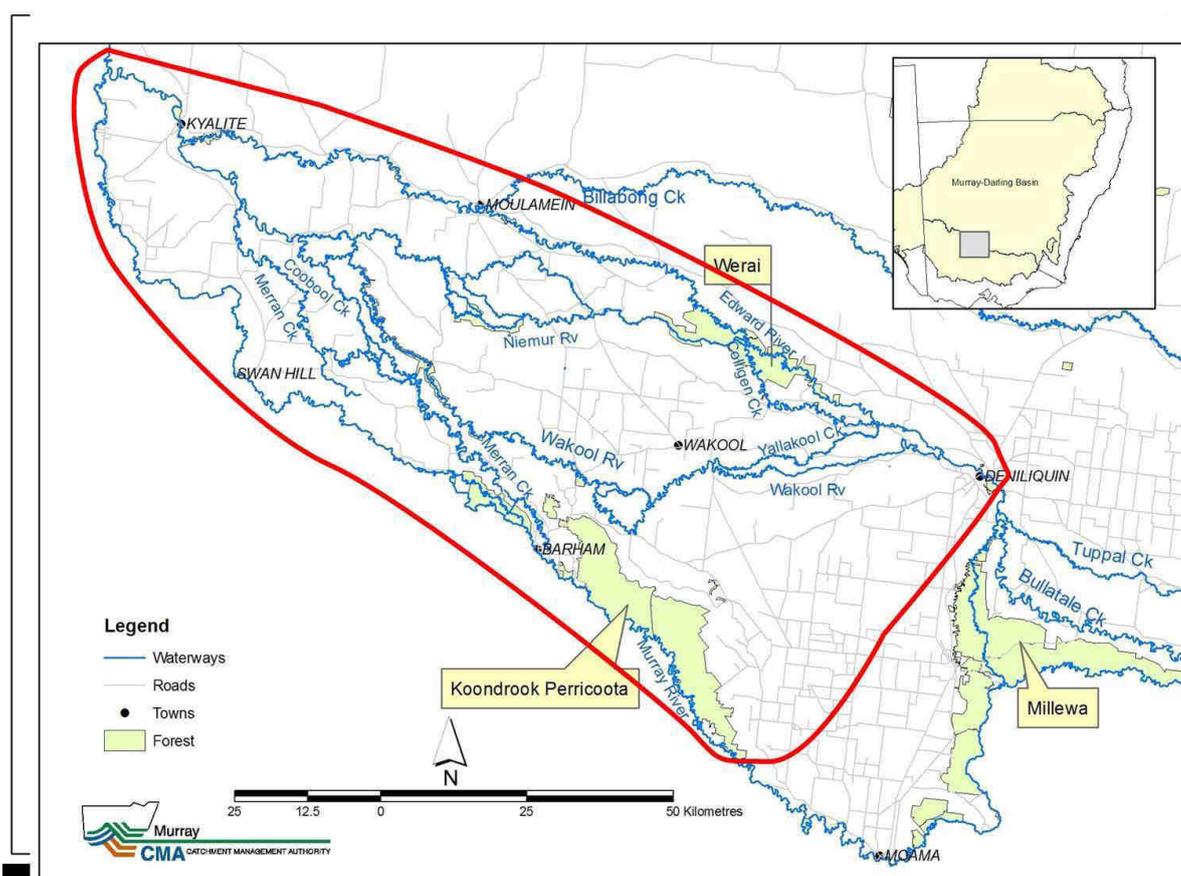
- 12 planning sessions
- 202 people
- 27 local community groups
- 24 business and government entities
- 1,435 hours
- 191 person days
- 26,774km travelled

Appendix B1

Edward Wakool Basin Reference Group (EWBRG) (September 2017-Current)

Community reference group comprising 18 groups within a geographical boundary outlined in Figure B1-1. The group is partnered with five government agencies and organisations.

Figure B1-1. Geographical scope of Edward-Wakool Basin Reference Group membership focal area



EWBRG Meeting statistics

Meetings held;

- 19/9/17 Inaugural meeting: **17 people**, Local Stakeholder Group rep attendee time with travel: **(46 hrs, 1,800km)**.
- 22/2/18 Tour. **26 people**, Local Community Group, government rep attendee time with travel: **(172 hrs, 4,600km)**.
- 23/2/18, Meeting. **37 people, 15 groups** represented. Local Stakeholder Group rep attendee time with travel: **(176 hrs, 4,800km)**.
- 9/5/18, Meeting & workshop **20 people, 12 groups** represented. Local Stakeholder Group rep attendee time with travel: **(100 hrs, 3,580km)**.



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- 12/12/18, Meeting & workshop, **15 people, 12 groups** represent. Local Stakeholder Group rep attendee time with travel: **(68 hrs, 1,600km)**.

EWBRG Facilitators: Dan Hutton, Hutton Consulting (23rd Feb 2018 & 9th May 2018). Mick MaGuire, The Primary Agency (12th December, 2018).

Funding:

The project was funded by WMLIG & MDBA;

- WMLIG Facilitator sponsorship \$6,363 and program support catering & labour \$9,879. **Total: \$16,242**
- MDBA facilitation sponsorship **\$3,984**

Total:

- Engagement activities held: 5
- Stakeholder groups represented: 18
- No. of attendees: 115 people
- Local group time: 562 hrs
- Distance travelled: 12,900km

Workshops:

Edward Wakool Basin Reference Group Workshop Outcomes (9th May 2018)

Facilitator: Dan Hutton, Hutton Consulting. \$1,984 MDBA Sponsorship provided.

Workshop Themes

Cultural

- Need to improve adaptive capacity
- Opportunity for the community to find solutions
- Need to move forward
- Need to foster innovative thinking and culture
- Resistance to change and adjustment
- Need for positive speak, messaging and community image
- Lack of participation of women in meetings and decision making in the context of land and water management
- General lack of diversity in decision making. Need to value all types of skills and thinking
- Need to find ways to increase the diversity of those 'in the room'

Structural

- Loss and reduction of government services in the area
- Reduction in population
- Uncertainty surrounding the Basin Plan- buybacks, availability, flood frequency, CMS
- Poor digital services and connectivity
- Need for succession planning for community leaders

Trends participants see

- Water security and reliability is of great importance
- Increased farm business sizes, greater scale
- Growing their farm businesses



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- Importance of technology
- Importance of research, development and innovation at the local level
- More diversification
- More seasonal commodity swings based on water availability between cropping and livestock choices and compositions
- Transitioning to succession stage
- Reduce dependency on water
- Lack of availability of skilled staff
- Communities will get smaller as farming enterprises get larger

Edward Wakool Basin Reference Group Workshop, 12th December 2018

Facilitator: Mick MaGuire, The Primary Agency. Facilitator sponsorship of \$2000 by MDBA

Success Statement – EWBRG *workshop outcomes*

“We are adapting to a changing world, where we unite to be the best we can be”. Edward Wakool Basin Reference Group (EWBRG), Compelling Common Story Workshop, 12th December 2018.

“What does success looks like?”

We are adapting to a changing world; people are coming here and staying here, they have money in their pockets, there are more kids in schools and we have access to the very best technologies. We live in a healthy environment growing the best, safest food, and we are proud that our community can all pull together to be the very best that we can be.

Success Diagram

Fact: we are competing for water:

- Adapting farming systems
- Negotiating availability and ensuring a better balance
- New crops
- Trading water
- Educating ourselves regarding water
- Seeking dollars for capacity building

Fact: structure of our community is changing:

- Lobbying to keep government services
- Lobbying for doctors, childcare, dentists, etc.
- Need \$
- Encouraging entrepreneurs
- Create ethnic culture , convert from itinerant to permanent

Fact: Connectivity is unreliable:

- Whole of community lobbying/solutions *
- Creating community hub
- Professional opportunities

Fact: We are fostering startup culture:

- Dollars
- Expertise

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- Partnerships
- Working exchange

Fact: Lack of public transport and freight:

- Improve access to distribution network
- Better understanding

Fact: Skills and training and cross border issues:

- The hub - training WHS
- TAFE partnerships
- Lack of school subject selection
- Lack of school based apprenticeships

Fact: Rural community Mindset bruised resulting in:

- community hub proposal
- Be opportunistic - capitalise on developments elsewhere (Bendigo airport)
- Embrace tourism opportunities
- Messaging to urban base
- Own attitude

Fact: Better promoting the region:

- Centralised Edward Wakool web hub and coordinated
- Improving the brand
- Get messaging right for each audience

Fact: Improve access to services:

- Good place to live and work
- Accommodation
- Social
- Manage expectations
- Formal welcoming
- Guild the lily

Fact: Not being clearly heard i.e. water, Sydney, Canberra, Murray Strategic Group etc:

- United vision
- Low profile
- Our story

Appendix B2

Barham Innovation and Education Hub (BMIEC).

Facilitators: Regional development Australia-Murray (3 sessions), Gary Saliba, Strategic Journeys (1 session)

Funding acknowledgement:

- *This project received financial support from Murray River Council of \$5,000 and initial facilitation support from Murray Regional Development Australia. WMLIG provided facilitator sponsorship of \$2,205.*
- *WMLIG were notified by the Foundation for Rural and Regional Renewal (FRRR) that they were successful in receiving a grant for \$150,000 to provide infrastructure and a Community Support Officer (0.4FTE for 2 years) for the BMEIC co-working space initiative as part of the Tackling Tough Times Together Program.*

Overview:

The Barham Innovation and Education Hub (BMIEC) involved four meetings with a range of local stakeholders from the Wakool region. The ideas borne out of this process have been incorporated into infrastructure needs of the community space as well as community service needs that are required to help the community adapt to structural challenges. These ideas have been used in the development of the Wakool Region Community Strategy.

As well as designing a co-working space, it was interesting to note that many big picture, visionary community needs were drawn out in the planning process indicating the activities and niche services that could be operated out of the community co working space. The ideas borne out of this process have been incorporated into infrastructure needs of the community space as well as community service needs that are required to help the community adapt to structural challenges. These ideas have been used in the development of the Wakool Region Community Strategy.

Funding Notification Received;

WMLIG was notified on the 7th February, 2019 that it was successful in receiving a grant for \$150,000 to provide infrastructure and other resources sought to establish a community co-working space in the old school office facility that WMLIG operates out of. Amongst the range of resources the new co-working space will provide, the new facility will also provide interactive technologies such as smart board and teleconference facilities. WMLIG is planning to make available webinars and virtual presentations to other regional communities as part of the proposed Wakool Region Adaptation program as well.

BMIEC Business Plan Summary;

Role

Provide infrastructure for the coordination and facilitation of ideas, information and projects to build capacity and new perspectives in individuals, the community and industry

Vision

By 2030, the Central Murray is a thriving social, economic and environmentally unique region that is a centre for agricultural innovation and excellence.

Community, business, R&D organisations and local education working together to create;

- A vibrant community with increased employment and diversity of business and skills
- A world recognised ecosystem for R&D
- A growth centre for the Murray region
- A collaborative relationship between Southern NSW and Northern Victoria
- A Country town that has maintained its character with a strong, vibrant, growing community
- Economically viable towns and surrounds driven by diverse, emergent, adaptive, sustainable small business and agribusiness
- A sustainable environment

Goals

1. Collaboration, community and business development

People recognise BMIEC as a collaborative space with the infrastructure that is a catalyst and supports their community, business and personal development needs.

2. Encouraging partnerships and investment

Businesses and R&D organisations hold BMIEC as a priority space to achieve business goals.

3. Transformative and adaptive businesses and community

The region has a vibrant, diverse culture that enables and supports continuous and adaptive change.

Niche

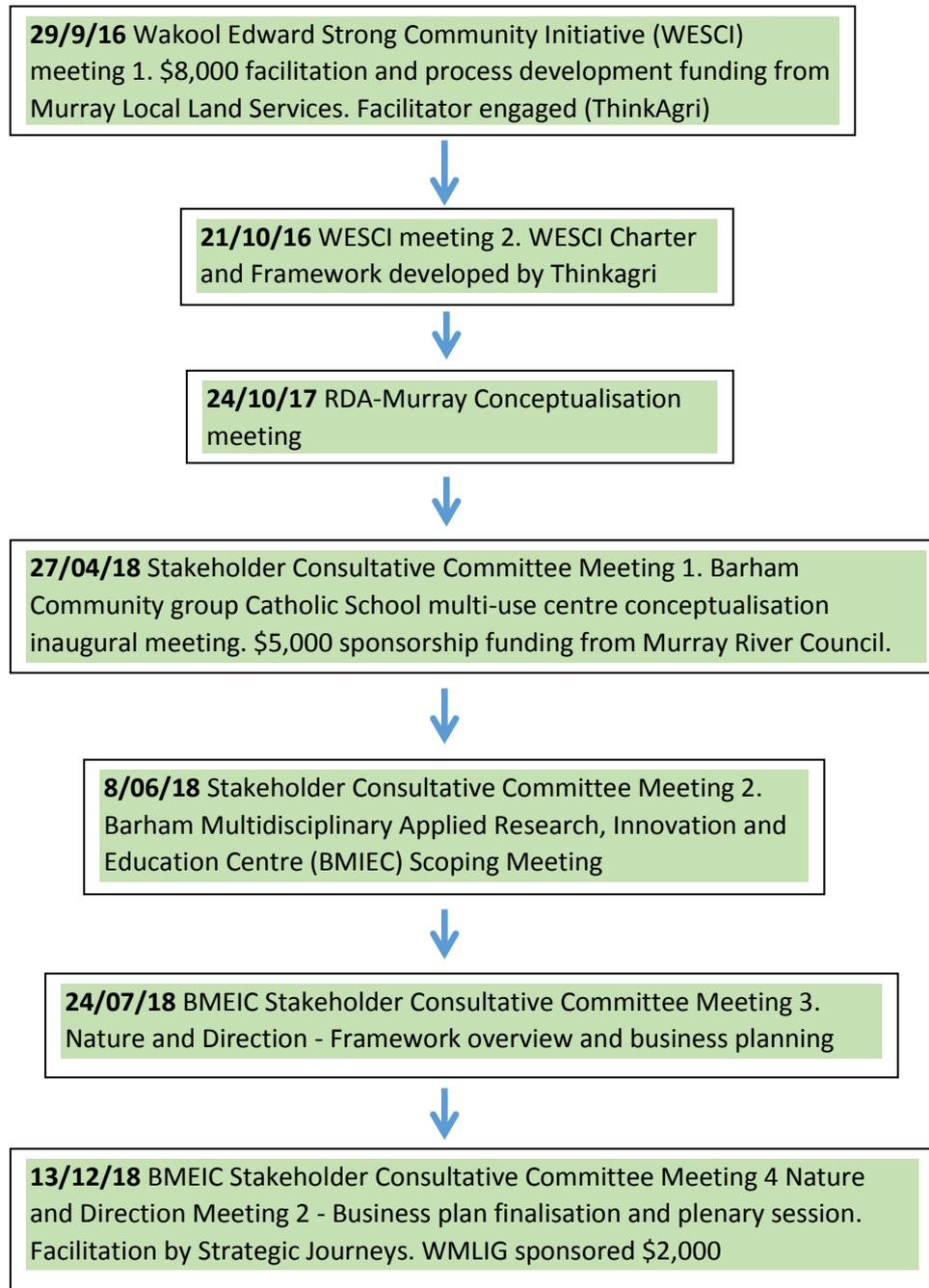
“The Central Murray Enterprise Centre provides the catalyst for leadership, direction, adaptation and growth in people, ideas, perspectives with developing innovation that translates to economic growth”

Figure B2-1: Inaugural BMEIC centre conceptualisation meeting 27/4/18.



Barham Multidisciplinary Innovation and Education Centre (BMIEC) Stakeholder Engagement, Co-Planning Process and Business Plan

Figure B3-2: Flow chart outlining project planning timelines and milestones



BMIEC stakeholder engagement and co-development statistics summary

BMIEC Consultative Committee planning meetings - Quick facts:

- 4 Stakeholder planning meetings
- 24 agency, education, research and development group and business entities
- 38 individual representatives
- 485hrs (65 person days) stakeholder engagement meeting time
- 9,574 km travelled to attend meetings
- \$5,000 sponsorship provided by Murray River Council

BMIEC process from conceptualisation through to stakeholder co-developed planning – Quick facts:

- 11 planning development meetings
- 38 agency, education, research and development group and business entities
- 53 individual representatives
- 963 (128 person days) hours total stakeholder engagement time
- 12,354 km travelled to attend meetings
- \$8,000 WESCI seed funding provided by Murray LLS

BMEIC Stakeholder Meeting Log, and engagement outcomes

Table B2-1: BMIEC Stakeholder meeting log 29/9/16 – 13/12/18

Date/s	Workshop / meeting / Facilitator	Stakeholder/s	Engagement outcomes
29/9/16 & 21/10/16	Wakool Edward Strong Community Initiative (WESCI). Facilitator: Kate Burke – ThinkAgri Assistance: Roger Knight , Local Landcare Coordinator, WMLIG \$8,000 WESCI seed funding provided by MLLS	<u>Attendance of 10 people</u> Troy Mauger – Extension Officer, Rice Growers Association Extension David May – Chair, Wakool Landholders Association John Lolicato – Chair, Wakool River Association Peter Kaylock – Director, Moulamein Grain Cooperative Katrina Myers – Young Country Networkers Peter McDonald – Farmer Ben Barlow – Director, Murray Irrigation Limited Phil O’Neill – Chair, Western Murray Land Improvement Group Alan Mathers – Barham Landcare, Lions Club Karen McDonald, Speak Up	Wakool Edward Strong Community Initiative – Charter and Framework. Key relevant themes for project consideration relevant to the Multidisciplinary Centre project were to create enduring innovation and resources for the community that provide; <ul style="list-style-type: none"> • Community infrastructure and services • Education and innovation centre • Vertically integrated education and agtech start up incubator • Leadership and entrepreneurship programs • Ag investment conferences, advisory services and provision of publications and narratives • Improve the capacity of the community to raise capital for new ventures and for existing growth of existing ventures
24/10/17	RDA Murray planning workshop	<u>Attendance of 3 people</u> Gary Saliba – Director, RDA Murray RDA Casey Bootsma –	Ideas and opportunities flow chart developed for the Barham Multidisciplinary, Education and Innovation Centre



Date/s	Workshop / meeting / Facilitator	Stakeholder/s	Engagement outcomes
		Communications and Project Officer, RDA Murray Roger Knight, Local Landcare Coordinator, WMLIG	
27/4/18	Barham Multidisciplinary Applied Research, Innovation and Education Centre (BMEIC) Conceptual Workshop. Facilitator: Gary Saliba, Regional Development Australia – Murray \$5,000 project support funding from MLLS	<u>BMEIC Consultative Committee Meeting - Attendance of 18 people</u> Barham Catholic School – Phil Mertz, Jim Whelan (Parish Finance Council) Western Murray Land Improvement Group - Roger Knight (Community Support Officer / Local Landcare Coordinator), Laura Kaylock (Project Officer / Agronomist), Rick Ellis (Secretary / Project officer) Murray River Council - Chris Bilkey (Mayor), Des Bilske (General Manager), Alan Mathers (Councilor), John Harvie (Economic Development Manager) Regional Development Australia – Murray, Gary Saliba (Executive Officer), Brook Doughty (Business Officer Deniliquin) Petaurus Education Centre – Owen Dunlop (Executive Officer) via phone link Dan Hutton – NRM Consultant Barham Consolidated – Colin Membrey (President), Faye Ashwin (Treasurer) Young Country Networkers – Amy Lolicato Wakool River Association – John Lolicato (Chairman) Murray Irrigation – Nathan Holahan (Communications Officer)	Topics covered; <ul style="list-style-type: none"> • Background on BMEIC conceptual idea • Background and learnings from other innovation and education centre ideas and projects; Deniliquin Murray Valley Industry Park, Wirraminna Education Centre • Opportunities for partnerships, and investment • Business ideas include co-working space, innovation centre, ag and environmental research, recreation and business tourism, storytelling, education • Develop a Steering Committee and canvas potential representatives
8/6/18	BMEIC Scoping meeting 2 Facilitator: Gary Saliba, Regional Development Australia - Murray	<u>BMEIC Consultative Committee Meeting - Attendance of 15 people</u> Western Murray Land Improvement Group - Roger Knight (Community Support Officer / Local Landcare Coordinator), Laura Kaylock (Project Officer / Agronomist), Rick Ellis (Secretary / Project officer) Murray River Council - Des Bilske (General Manager), Alan Mathers (Councilor), John Harvie (Economic Development Manager) Regional Development Australia – Murray, Gary Saliba (Executive	Topics include; <ul style="list-style-type: none"> • List potential stakeholders to canvas ideas and support • Investment of industry stakeholders • Ecotourism opportunities • Structural adjustment options • International exchange networks • University research for Masters degree etc. • Cross border opportunities • Food waste management projects • Improve telecommunication services

Date/s	Workshop / meeting / Facilitator	Stakeholder/s	Engagement outcomes
		Officer), Brook Doughty (Business Officer Deniliquin) Petaurus Education Centre – Owen Dunlop (Executive Officer) via phone link Dan Hutton – NRM Consultant Barham Consolidated – Colin Membrey (President), Faye O’Brien (Treasurer) Young Country Networkers – Amy Lolicato Wakool River Association – John Lolicato (Chairman) Murray Irrigation – Nathan Holahan (Communications Officer) Gannawarra Shire – Roger Griffiths	<ul style="list-style-type: none"> Professional co-working space and networking Case studies Arboretum development
12/7/18	Sprout X meeting, Docklands, Melbourne	<u>Steph Stubb and April Heasley (Sprout X). 3 people</u>	Discussed the Sprout X Agtech startup incubator program and relationships with investors
19/7/18	RMCG meeting	<u>George Warne & Roger Knight (2)</u>	Ideas review of adaptation initiatives and socio-economic analysis discussion
24/7/18	Nature and Direction BMEIC Facilitator: Gary Saliba, Director, Strategic Journeys	<u>BMIEC Consultative Committee Meeting - Attendance of 22 people</u> Consultative Committee attendees; Future Pulse – Ashley Julien and Chris Phelan Mallee Rising – Paul Dillon Murray River Council / – Alan Mathers, John Harvie (until 1pm) Barham Consolidated –, Colin Membrey, Petaurus Education Group – Damian Wells, Young Country Networkers – Katrina Myers, Western Murray Land Improvement Group – Roger Knight, Laura Kaylock, Rick Ellis, David McDonald Regional Development Australia, Murray – Gary Saliba, Brooke Doughty Barham High School – Ian McConnell, Glenn Buchannan Latrobe University / Murrakool Land for Wildlife – Stephen Coates Barham Catholic School – Phil Mertz and Jim Whelan, Irene Whelan Murray Local Land Services – Jamie Hearn (part) NSW DPI- Giles Butler (teleconference phone in for part) Wakool Landholders Association	Overview of the Nature and Direction Framework <ul style="list-style-type: none"> Overview of the framework Presentation of examples of how the framework has been used Completing the Nature and Direction for BMIEC <ul style="list-style-type: none"> Group work to develop ideas for components of the model

Wakool Region Community Adaptation Strategy

Date/s	Workshop / meeting / Facilitator	Stakeholder/s	Engagement outcomes
		– David May Irrigated Cropping Council – Charlie Aves	
7/8/18	MIL meeting	<u>Nathan Holahan, Pete Smith (3 people)</u>	Irrigation industry tourism and education, MIL sponsorship opportunities
11/12/18	Roger Knight overview	<u>Attendance by 7 people</u>	Overview and review of Business Plan development to date to Committee at meeting
13/12/18	Facilitator: Gary Saliba, Director, Strategic Journeys	<u>BMEIC Consultative Committee Meeting - Attendance of 9 people</u> Western Murray Land Improvement Group - Roger Knight (Community Support Officer / Local Landcare Coordinator), Laura Kaylock (Project Officer / Agronomist), Rick Ellis (Secretary / Project officer) Murray River Council – Julia Polkinghorne and Alan Mathers Young Country Networkers – Amy Lolicato Mallee Rising – Paul Dillon Murray Local Land Services – Jamie Hearn Koondrook Development Committee – Jacki Russ	Overview and review of Business Plan development to date. Plenary session to present ideas and develop a shared view of the “official definitions”.

Note: BMEIC Consultative Committee Planning meetings in blue shading

Table B2-2: BMEIC Stakeholder planning meeting attendance summary;

Stakeholder	Representative / contact	Comments/ attendance status
WMLIG	David McDonald, Rick Ellis, Roger Knight, Laura Kaylock, Amy Lolicato	Planning and attendance to all meetings
Regional Development Australia - Murray	Gary Saliba, Brooke Doherty	Involved in initial conceptual planning meeting in Albury. Facilitated all meetings, except 13/12/18 when Strategic Journeys facilitated the meeting
Murray River Council	Des Bilske, John Harvie, Alan Mathers, Julia Polkinghorne	Attendees for all planning meetings. Contributed \$5K sponsorship to hold school facility for innovation and education hub use
Petaurus Education Group	Owen Dunlop and Adrian Wells	Adrian Wells attendance 24/7/18 and phone in by Owen Dunlop. Provision of Wirraminna Education Centre business plan and budget for review
Gannawarra Shire Council	Roger Griffiths	Attended 8/6/18 meeting
Mallee Rising	Paul Dillon	Attended 24/7/18 & 13/12/18 meetings
Wakool River Association	John Lolicato	Attended 27/4/18 and 8/6/18 meetings



Wakool Region Community Adaptation Strategy

Stakeholder	Representative / contact	Comments/ attendance status
Wakool Landholders Association	David May	Attendance 8/6/18, 24/7/18 and 13/12/18 meetings.
Murray Irrigation	Nathan Holahan / Peter Smith	Attended 27/4/18 & 8/6/18 WMLIG to meet with Murray Irrigation in the future for project overview. Meeting held 7/8/18.
Central Murray BestWool BestLamb	Rick Ellis	Attendance to all meetings
Barham Consolidated	Colin Membrey and Faye O'Brien	Attendance to 21/4/18, 8/6/18 meetings
Barham High School	Ian McConnell, Glen Buchanan	Attendance to 21/4/18, 8/6/18 and 24/7/18 meetings
Moulamein Cropping Group	Laura Kaylock	Attendance to all meetings
Young Country Networkers	Katrina Warne and Amy Lolicato	Attendance to all meetings
Future Pulse	Ashley Julien and Chris Phelan	Attendance to 8/6/18 and 24/7/18 meetings
Catholic School	Jim and Irene Whelan, Phil Mertz	Attendance to 21/4/18, 8/6/18 and 24/7/18 meetings
Koondrook Development Committee	Jacki Russ	Attendance at 13/12/18 meeting. KDC Committee presentation by RK 11/12/18.
Irrigated Cropping Council	Charlie Aves	Attendance 24/7/18 meeting
Murray Local Land Services	Jamie Hearne	Attendance 24/7/18 and 13/12/18
RMCG	George Warne	Planned meeting with WMLIG on Thursday 19/7/18. Would like to be kept in loop on outcomes
NSW DPI	Giles Butler	Phoned in for teleconference
Barham Landcare	Alan Mathers	Attended 21/4/18, 8/6/18. Kept in loop
Dan Hutton Consulting	Dan Hutton	Attended 27/4/18
Sprout X	Steph Stubbs, April Heasley	Met with Steph and April Heasley 12/7/19 at Docklands Office. Not in a position right now to develop another SproutX satellite office. Happy to be kept in the loop and provide any help and support. As plans and the space develops, will think about referring Agtech start-ups for on farm trials and a base.

BMIEC Planning meeting development engagement summary, outside of local stakeholder planning meetings:

- 24 agency, education, community group, business entities
- 38 individual representatives

Table B2-3: BMIEC stakeholder canvassing & engagement (others);

Stakeholder	Representative / contact	Status / comments
Melbourne University - Climate – KIC (Knowledge Innovation Community)	Marian Schoen	Apology for meeting, however would like to stay in the loop. Potential for collaboration and knowledge sharing between initiatives with Latrobe Valley structural adjustment initiative for a Gippsland Smart Specialisation Strategy (S3) Project. Provision of valuable information regarding adaptation strategies
Murray Darling Association	Emma Bradbury	Unavailable for workshop, however would like to be kept in loop on outcomes
Murray Regional Tourism	Karen Oliver / Mark Francis	Unfortunately unable to attend due to prior commitments, however am interested to continue to learn of the development and see how we may be able to assist into the future. Look forward to learning of the outcomes from the session.
FRRR	Natalie Egleton	Unavailable for workshop, however would like to be kept in loop on outcomes
NSW OEH	Dieuwar Reynolds	Unavailable for workshop, however would like to be kept in loop on outcomes
CSU	Fiona Nash	Interested to stay abreast of project outcomes and can provide input as needed
NSW Farmers – Cooperative Research Centre	David Eyre (GM, Research & Innovation)	Great to talk – you guys are right on trend – this is the kind of thinking our industry needs and regional Australia needs. Our CRC is designed to provide research and capacity building support to this kind of initiative. Its early days though – if we get short listed, we can potentially bring you into our stage 2 bid as an interested party
ACRE	Peter Sacco	Understanding Social Enterprise workshops are available for all the rural councils in Victoria and Rural Councils Victoria are funding it. The Gannawarra Shire Council is a eligible for one of these workshops Click on this link below for this short video of participants who have taken part in the workshops to date giving their feedback on their experience and what they got out of it. https://acre.org.au/latest-news/building-thriving-rural-communities/ There is a great deal of scope for broader opportunities for you and your group to access ongoing support and to keep the momentum going for your project. I would also be happy to meet with school principals in your region to talk to them about our Social Enterprise in Schools program. I have attached a link to a short voxpop video that explains the program: https://youtu.be/LW77KICbhEg
AgConcepts	Robert Herrmann	Supportive of project and has provided a letter of support
Forestry NSW	Linda Broekman	I wish you well with this idea and look forward to hearing more about it in the future. FYI This centre might be similar to your idea?? https://www.rgasa.org.au/mccormickcentre http://www.murrayriver.com.au/river-management/mccormick/



Stakeholder	Representative / contact	Status / comments
AgriFutures	Samantha Munro	Unavailable at present, however opportunities for extension assistance with research outcomes

In total 11 meetings, 38 Entities, 53 individual representatives engaged.

Barham Multidisciplinary Innovation and Education Centre (BMIEC) Business Plan – Nature and Direction (status up to 13/12/18)

Role

What is it that we do?

Coordination and facilitation of ideas, information and projects to build capacity and new perspectives in individuals, the community and industry

Vision

What does society look like in 10-15 years' time as a result of BMIEC's activities?

By 2030, the Central Murray is a thriving social, economic and environmentally unique region and a centre for agricultural innovation and excellence.

Business, R&D organisations and local education working together;

- A vibrant community with increased employment and diversity of business and skills
- A world recognised ecosystem for R&D
- A growth centre for the Murray region
- A collaborative relationship between Southern NSW and Northern Victoria
- A Country town that has maintained its character with a strong, vibrant, growing community
- Economically viable towns and surrounds driven by diverse, emergent, adaptive, sustainable small business and agribusiness
- A sustainable environment

Purpose

BMIEC exists to provide resources to support, connect, foster, motivate and empower the community and businesses to realise opportunities to grow, adapt and thrive in an ever changing world.

Behaviours

What do we hold as important?

Positivity, collaboration, openness, integrity and transparency in operations, respect, valuing diversity, supporting/encouraging, listening

Goals

Collaboration, community and business development

People recognise BMIEC as a collaborative space with the infrastructure that is a catalyst and supports their community, business and personal development needs

Encouraging partnerships and investment

Businesses and R&D organisations hold BMIEC as a priority space to achieve business goals

Transformative and adaptive businesses and community

The region has a vibrant, diverse culture that enables and supports continuous and adaptive change



Niche

Central Murray Enterprise Centre provides the catalyst for leadership, direction, adaptation and growth

Growth in people, ideas, perspectives, economy

Services

- Secure, vibrant, co-working space
- Collaborative technology
- Meeting rooms/ conference room
- Business Development
- Mentoring
- Product development
- Market development
- Conduit to people, networks and resources
- Base operations for research
- Business and Financial Services
- Innovation incubator and accelerator programs
- Access to a trusting, respectful, open, inclusive diverse culture of innovation
- Education about the surrounding natural assets and cultural heritage
- Private offices
- Access to clients and customers
- Hot desk
- Training and education experiences
- Pop-up shops
- Expos
- Multidisciplinary projects / forums
- Video conferencing
- Telepresence, Augmented reality
- Information Brokering
- Tourism programs – regional overview info
- Fostering productive relationships with clients and customers
- Facilitated business clusters and working groups

Reputation

How do clients/stakeholders perceive BMIEC?

- We are a trusted, reliable, honest and loyal provider of services that support business and community development
- We are a hub for access to information, collaboration, social connectedness, technology, innovation, possibility and new ideas.
- The hub is a driving force for regional development and a first stop for connectedness to the community
- Clients and stakeholders consider the hub as a catalyst for progress.
- The hub fosters a “can do” attitude.
- We are a professional provider of services: responsive and adaptive to demands, understand the real-time business needs of the client

Customers / Stakeholders

Local business, Whole community, Government, Large business, R&D organisations, Education

Appendix B3

Wakool Edward Strong Community Initiative (WESCI), (August - October 2016).

Facilitator: Kate Burke, ThinkAgri.

Engagement statistics:

- Meetings 2
- Attendees: 20
- Time: 120 hours
- Travel: 1,500km

Project initiated by WMLIG with funding (\$8,000) from Murray Local Land Services and the Federal Governments National Landcare Programme.

WESCI was formed to leverage positive attributes about the region and create a strong and prosperous future by exploring options that may have a transformative impact on the region.

Positive attributes include, but are not limited to;

- Strong, cohesive, vibrant communities, pleasant lifestyle
- Unique natural assets - four healthy rivers, a network of creeks and wetlands, extensive forests, great biodiversity, sunshine, space
- A diverse food production sector - rice, dairy, red meat, wool, avocados, citrus, cereal grain, oilseeds and pulses
- Reasonable proximity to market distribution channels and major cities
- Community services and existing infrastructure for irrigation
- A range of soil types
- A wealth of farm knowledge and expertise in land management and primary production

Incremental change while encouraged and welcomed, is not enough to prepare the community for the potential structural changes ahead. WESCI is in search of big solutions that have a long-lasting impact.

The WESCI Vision, Purpose, Framework and Charter of Conduct;

Vision

For more people and prosperity across the region to be achieved by:

- Capital raising
- Novel use of existing infrastructure and companion industries
- Enduring Innovation and value adding

Purpose

To drive initiatives that:

- are large and transformational to enable effective and enduring change
- are not being driven by existing community groups or organisations.

Priorities

1. Create an effective plan (of which this document forms a part) to drive change under three themes
 - a. Exploring novel options to obtain access to water
 - b. Improve revenue from regionally produced goods through value adding and innovation including exploring new transformational farm practices and new industries that may suit our environment, and are supported by the community

- c. Explore novel methods of raising funds for individuals and groups to purchase water and to facilitate business growth and aid the exiting of retiring businesses.
- 2. Resource and execute the plan with regular checks and readjustments as required.

Charter of Conduct

The community needs to discuss issues in a constructive manner and:

- Listen and hear each other and be respectful, acknowledge what was not in their control, and take responsibility for the things they can control.

Practically, this means to:

- Show leadership, look forward, be proactive and focus on solutions

Table B3-1 outlines the key themes, aims, methods and outputs from the WESCI workshops

WESCI theme summaries from workshops completed 21st Oct 2016

Table B3-1: WESCI Theme Summaries

Theme	Aim	Method	Output
1. Capital Raising	To improve the capacity of the community to raise capital for new ventures and for the growth of existing ventures including stabilising the security of water	Resource and execute the following: -Further testing of community interest -Investor ready awareness program and resources for structuring commercial partnerships -High level information sessions -Capacity building on joint-ventures etc. -A forum to cultivate relationships -Regional Brand / geographic differentiation -Communications and marketing package -Marketing and sales training	1. Resources (training, information, fit for purpose partnership prototypes, networks, brand, communications,) that enable community members to raise capital 2. Links to sources of capital 3. Realistic expectations
2. Novel use of existing infrastructure and companion industries	To look at novel ways to utilise existing infrastructure while improving the economic capacity of the region	Test plausibility pros and cons of initiatives such as: -Reverse passage of water in the irrigation infrastructure -Utilisation of Tullakool evaporation pond for commercial purposes -Companion industry investigations-e.g. intensive animals, crop waste, compost.	1. Short list plausible and feasible initiatives 2. Community champions 3. Execution plan 4. Potential partners
2. Enduring Innovation	To establish viable sources of new income by testing plausibility and feasibility of new industries	Test plausibility pros and cons of initiatives. of: -Aquaculture -Renewable energy -Large scale greenhouses -High Pressure Processing (HPP) Plant -Pharmaceutical production facility -Education and innovation centre	1. Short list plausible and feasible initiatives 2. Community champions 3. Execution plan 4. Potential partners

Note that not all identified initiatives are outlined in the table above. Some initiatives have been investigated and addressed already or are being progressed currently and are likely to need some labour resources to progress more rapidly.

Appendix B4

Dynamic Business Planning Workshop, Wakool NSW, 25th June 2018

This workshop was a CMBWBL and WMLIG joint initiative with funding from Murray Local Land Services and the National Landcare Program.

Presenters: Phil Townsend (MDBA Senior Economist), Robert Herrmann (Mecardo General Manager)

Workshop Engagement Statistics:

- Attendance: 67 people
- Attendance time: 268 hrs (36 people days)
- Participant travel: 2,800km

Dynamic Business Planning. This event was created in response to the ongoing structural changes in the water industry and corresponding socio-economic impacts for local communities. Attendees felt that the community needs;

- Water security,
- Innovative technology,
- Retention of young professionals,
- Increased training facilities/opportunities,
- Local R&D, improved connectivity,
- Increased investment supporting industry diversification
- Additional government assistance would be key factors in helping to build businesses in the future.

So with all of this information, how do we move forward? Can we use these adverse statistics to our advantage? Will these above ideas enable local business' to plan, establish and seize opportunities? The answer will be dependent on community response, supported by good leadership.

Figure B4-1: Dynamic Business Planning Workshop held in Wakool, 25th June 2018



APPENDIX C

Summary of key community adaptation research and institutional plans

The Western Murray Land Improvement Group (WMLIG) has completed a literature review of socio-economic and community adaptation studies and institutional plans to create improved knowledge and innovation ecosystems, and food sector competitiveness that will transform the rural sector.

A desk top review of research reports and plans are outlined below.

Appendix C-1

Smart Specialisation Strategy (S3)

The ‘Smart Specialisation Strategy’ (S3) methodology pioneered in the European Union also has similar themes to Fortunato’s report. A project known as the Gippsland Smart Specialisation Strategy (S3) was initiated by the Victorian [Latrobe Valley Authority](#), and brings together government, business, research and education and civil society in Gippsland to co-design a shared vision for the region’s future prosperity, environmental sustainability and social wellbeing. For more information see <https://sustainable.unimelb.edu.au/research/research-projects/gippsland-smart-specialisation-strategy>

The Gippsland Smart Specialisation Strategy (S3) is being explored, designed and tested for the Latrobe Valley Authority, drawing explicitly on the principle of co-design with regional stakeholders. The objective is to:

- Build on community strengths and capability for the future
- Leverage collaboration and innovation
- Grow industry competitiveness, social cohesion and ecological sustainability

This aim will build:

- Capabilities and enablers that grow future industry competitiveness
- Skills and competences needed to ensure sustainable job creation and retention
- Partnerships and networks to support innovation
- Suitable projects and actions to demonstrate and trial the strategy

A co-designed, integrated engagement process will identify local collaborative projects and infrastructure and resources will practically translate the agreed new ideas, priorities and opportunities into actions on the ground in the region.

Appendix C-2

Desk Top Review – Food Innovation Australia Sector Competitiveness Plan and Rural R & D Corp Vision 2050

The following is a desk top review of Rural R & D Corp Sector Competitiveness Plan and Rural R & D Corporation Vision 2050 that seeks to improve food sector competitiveness and improve stakeholder participation in knowledge and innovation ecosystems that will transform the rural sector.

Food Innovation Australia Limited (FIAL) Sector Competitiveness Plan

The Sector Competitiveness Plan developed by Food Innovation Australia Limited (FIAL) has the following vision: *by 2025, the industry is working together to grow the share of Australian food in the global marketplace*. Achieving this vision will require industry to be supported to:

1. Access new markets
2. Increase productivity and/or competitiveness

The sectoral inputs that are needed are;

1. Industry players that have the confidence and capacity to use their knowledge, resources, skilled workforce and associated capabilities to develop innovative, cost effective and differential offerings that meet the wants and needs of Australian and international markets and consumers.
2. A culture of connected, collaborative industry participants who desire transformational change, and continue to proactively seek and utilise collaborations for international and supply chain success.
3. Policy and regulatory reform that fosters industry-wide innovation and entrepreneurship, in partnership with government. *Note that WMLIG believes that policy and regulatory reform is generally outside the scope of this project, although there may be opportunity for reform input as part of research and case studies into regional adaptation.*

Appendix C-3

Vision 2050 - New thinking about rural innovation in Australia, Rural R&D Corporations

www.ruralrdc.com.au/wp-content/uploads/2018/12/Vision-2050-Brochure-December-2018.pdf

Innovation is the key to long term productivity growth and future prosperity, and innovation is how we transform research into impact. We know our research efforts could be better integrated with the needs of industry and the community. Taking a systems approach, aligning around ambitious goals and implementing appropriate governance arrangements will support more efficient, effective and impactful responses. Through the Council of Rural Research and Development Corporations, the RDCs have been developing a vision for the future of Australia's rural innovation system.

The agri-food and fibre system, or agrisystem, is a description of how we use natural resources and biological processes to generate value through food, fibre and related products and services. A system level perspective reveals new opportunities and a new vision for our production industries as sources of future prosperity, with benefits for the economy, community and environment.

The agrisystem is supported by a knowledge and innovation ecosystem, built upon Australia's world-class research and development capacity. The knowledge and innovation ecosystem enhances and improves the agrisystem, providing knowledge and capacity to develop, deliver and adopt new products, technologies, practices and services. It is how we generate impact from R&D for industry and the community.

Empowering the knowledge and innovation ecosystem to be globally-connected, high-performing, dynamic and effective will be critical to unlock the potential of the agrisystem.

An agrisystem with a supported knowledge and innovation ecosystem would result in;

- 1. Community and environmental wellbeing:** Australia's national, regional and rural communities are flourishing because of a strong and sustainable agrisystem.
- 2. Destination of choice for agrisystem investment:** Australia's agrisystem is an investment destination of choice, enabling production capacity optimisation and enhanced value creation
- 3. Growing sustainable wealth:** Australia's thriving and profitable agrisystem is an essential component to sustaining the national and regional economies.
- 4. The agrisystem adapts and is resilient:** Australia has an agrisystem that responds with flexibility and agility in the face of emerging challenges, new technologies and changing societal and market expectations.
- 5. A world-class R&D industry supporting a thriving agrisystem:** Australia has an R&D industry supporting talent and research, development and innovation capacity and foresight to support advancement of the national and global agrisystems.
- 6. Information and knowledge for value creation:** Australia's agrisystem has the information, knowledge and know-how needed to optimise its production processes, now and into the future.

What is needed to achieve this?

- **Research efforts aligned with the needs of industry, the community and the environment:**

Frameworks that increase the engagement of domestic and global research capacity with industry and community stakeholders.

- **Confidence, capacity and capability for success:**
Leadership capacity, the ability to make evidence-based decisions and availability of skilled people to support sustainability and prosperity.
- **Enhanced profitability of production:**
Productivity and efficiency is enhanced to support adaptiveness, resilience and international competitiveness.
- **Enhanced social and environmental sustainability:**
Industry maintains the trust and confidence of the community in the long-term Industry are effective custodians of natural resources.

APPENDIX D

Western Murray Land Improvement Group Organisational Overview

(Mission, major programs / activities, users of our facilities, engagement with other community groups, key partnerships etc.)

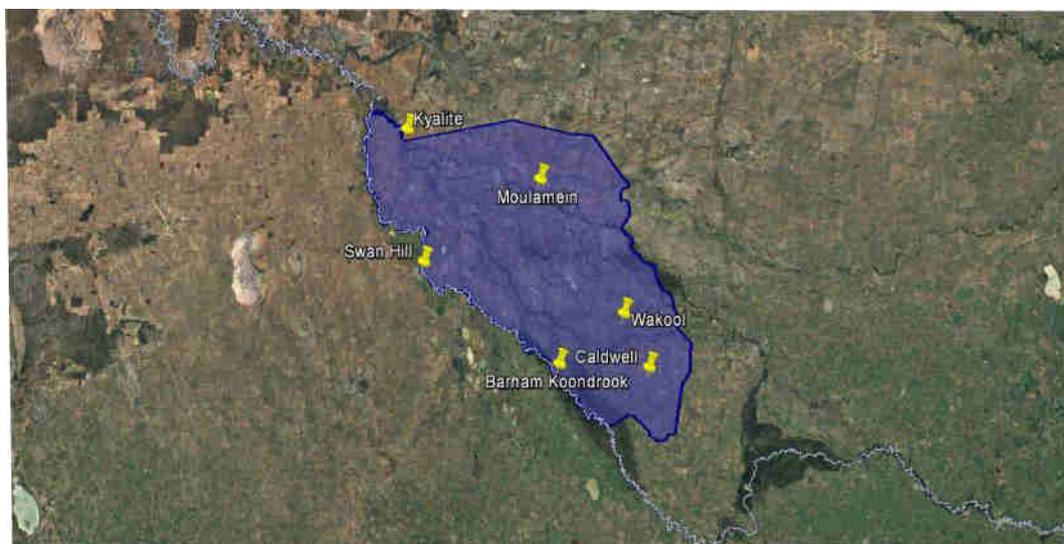
Western Murray Land Improvement Group (WMLIG) captures its purpose and aims in the mission statement; ***‘Western Murray Land Improvement Group promotes sustainable farm and land management practices to enhance our unique natural environment through innovation, education and strong community networks’.***

WMLIG is an incorporated non-profit Landcare Group with an office based in Barham, a member based organisation with 150 members, governed by an elected board, created to respond to community needs in the capacity building, farm productivity and environment space. The group is a key natural resource management and sustainable agriculture service provider and represents the region as part of Murray Landcare in the NSW Murray Catchment. See website link about WMLIG <https://www.westernmurraylig.org/about.html>

The committee is made up of community members with broad skill sets that are geographically located across the region, and have well connected stakeholder networks that represent a diversity of local community needs. The group welcomes new members.

Our area of operation is within the footprint of the previous Wakool Shire boundary, an area of approximately 750,000 ha (See Figure C-1 below).

Figure D-1: WMLIG Area of operations



Within this area, WMLIG supports 12 local Landcare and producer groups, local indigenous groups and is the largest and most respected community group in the area. Supported groups include;

- Central Murray BestWool BestLamb Group
- Moulamein Cropping Group
- Young Country Networkers
- Barham Landcare Group



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- Border Flywheelers
- Wakool River Association
- Wakool Landholders Association
- Edward Wakool Angling Association
- Murrakool Land for Wildlife
- Barapa Land and Water Landcare
- Barham Angling Club
- Koondrook Perricoota Alliance

Further information about these groups are outlined in the following link:

<https://www.westernmurraylig.org/supported-groups.html>

WMLIG's networks and capacity building engagement relationships translates to the most effective provider for community engagement in our region. WMLIG have a proud record of delivering applied research, development and extension projects to their community. These works are often in conjunction with other organisations or providers so as to ensure the best knowledge is available for extension to the community. WMLIG also collaborates with local government, industry groups, state and federal agencies to provide community networking opportunities and develop projects which will benefit the local region.

WMLIG is an experienced team and employ relevant professional personnel experienced in agronomy, NRM, marketing, business and project management, policy, quality systems and general practical on-ground skills that provide a solid platform for operational functions and governance.

WMLIG hosts the employment of a Local Landcare Co-ordinator (0.5FTE). This role contributes to the delivery of strategies around local decision making, on ground change, strengthening networks and the capacity of groups and landholders.

The group is represented in regionally based steering/stakeholder Committees and Advisory Groups. Examples include the Edward Wakool Basin Reference Group (Co-ordinated by WMLIG), Commonwealth Environmental Water Reference Group for the Edward Wakool System, Murray Local Land Services (MLLS) Local Community Advisory Group and Murray Landcare Collective.

The group was incorporated in 2003. Between 2003 to 2010 the group focused on several large revegetation projects. In April 2011 the group employed a part time regional Landcare facilitator and focused on Community Capacity Building programs and awareness raising activities relating to natural resource management, sustainable agriculture and business management/planning.

The group ensures that the projects selected have had outcomes that are beneficial to members of the community and community groups. The proof that projects meet community needs is borne out in healthy project activity attendance rates. Projects, events and collaborative planning meetings so far have delivered extension, training, and education programs to more than 3,000 people in the region from 148 activities in the last 8 years (refer to Table C-1).

WMLIG is currently working collaboratively on the following projects;

- Pollack Swamp wetland enhancement
- Managing rice stubble post-harvest
- Mid row banding of nitrogen in cereals post rice crop
- Barham Multidisciplinary Education and Innovation Centre co-working space
- Wildlife corridor 'saving our species'



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- Lifetime Ewe course
- Annual Wakool Sheep Night
- Wakool District get together / drought smoko
- Economically Viable Options for Retired Irrigation Land (EVORIL)
- Grazing Technologies for Production and Adaptation to Climate Change (GTPACC)
- Mentoring Young Landcare Enthusiasts in the Murray Region (Murray MYLE) program
- Rehabilitation of acid sulphate sediment sites in the Wakool Region
- Wakool Region Adaptation Strategy
- Water for Wildlife and Rice

For further information about WMLIG and examples of projects and case studies see enclosed link to the WMLIG website showcasing project case studies <https://www.westernmurraylig.org/past-events-2018.html> or visit Landcare NSW Landcare gateway website for Case Studies; <https://landcare.nsw.gov.au/groups/western-murray-land-improvement-group-inc/casestudy-listing/>

Newsletters and other written products are communicated via the membership base and 275 email contacts, its own website, use of NSW Landcare Gateway website, social media platforms of Twitter, Facebook and YouTube.

Recently WMLIG relocated to the old Barham Catholic School building in Barham. The move was initiated to expand WMLIG's operation to facilitate a multi-purpose centre in a new hub for innovation, education and strong community networks. The new community hub is located 22km from the Wakool Township and is the primary service centre for the Wakool community.

Table D-1: WMLIG Engagement Activity and Participation Rate Statistics 2011-Jan 2019

Financial Year	Attendees	Engagement Activities (No. of events and collaborative planning meetings)
2010-11	32	3
2011-12	289	8
2012-13	254	12
2013-14	444	18
2014-15	232	15
2015-16	423	30
2016-17	493	23
2017-18	670	29
2018-19 (Up to Dec 2018)	184	10
Total:	3021	148

WMLIG Labour

WMLIG Staff profile are enclosed in the following link; <https://www.westernmurraylig.org/staff.html>

WMLIG program delivery efficiency statistics: WMLIG spends approx. 13.8hrs for every \$1000 delivered on the ground in the form of community capacity building programs.

APPENDIX E

Economic Profiles of Council Areas around the Wakool Region

Table E-1: Economic Profile of Murray River Council (based on 2016 census)

Region and measure	Data
Murray River Council (includes the Wakool Region)	
Population	11,956 people
Employment*	4,446 (Moama and Deni East, 2365 people)
Largest employment sector is Agriculture, Forestry and Fisheries*	1,138 jobs or 25.6% of jobs. (the largest sector of employment) \$29.041M in wages and salaries
Gross Regional Product	\$0.637M
Output	\$1.321B
Agriculture, Forestry & Fishing industry value	\$348.663
Tourism Output	\$145.7M
Tourism employment	742 jobs

*Not converted to full time equivalence

Table E-2: Economic Profile of Surrounding Councils (based on 2016 census)

Region and measure	Data
Gannawarra Shire Council	
Population	10,570
Employment	4752
Largest employment sector is Agriculture, Forestry and Fisheries*	1048 or 26% of jobs
Gross Regional Product	\$0.56 billion
Swan Hill Rural City Council	
Population	20,850
Employment*	9,126
Largest employment sector is Agriculture, Forestry and Fisheries*	1632 jobs or 17.9% (the largest sector of employment) \$50.017M in wages & salaries
Gross Regional Product	\$1.276B
Value Added	\$1.183B
Agriculture, Forestry & Fishing industry value	\$495.943M
Tourism Output	\$104.905M
Tourism employment	594 jobs

To be added - socio-economic data for Edward River Council

APPENDIX F

Riverina Murray Regional Plan, Murray River Council Community Strategic Plan and Murray Region Economic Development Strategy

Riverina Murray Regional Plan

This plan highlights the following for our region;

VISION:

A diversified economy founded on Australia's food bowl, iconic waterways and a network of vibrant connected communities

To achieve the vision, the NSW Government has: acknowledged the important role of this region's centres and their relationship to, and export potential with, Melbourne and Victoria and set the following regionally focused goals:

- A growing and diverse economy
- A healthy environment with pristine waterways
- Efficient transport and infrastructure networks
- Strong, connected and healthy communities

Murray River Council Community Strategic Plan - *which states in part;*

Challenges and opportunities:

Changing demographics and changes in the local economy create both opportunities and challenges for the future of the Murray River Council area.

Some of these – population growth in Moama, population decline in smaller towns, and the ageing of the population have already been identified.

Other opportunities and challenges that may have implications for our communities are:

- ♣ Tourism – which is growing along the Murray River with positive implications for the economy;
- ♣ Retirement living – there is an increasing trend towards retirement along the Murray River with positive implications for the economy;
- ♣ Demand for agricultural products – food and agriculture exports from NSW have increased 6% per annum over the last five years. This economic environment is positive for local businesses;
- ♣ Improving broadband and telecommunication services – expanded and more stable services as a result of the NBN and more mobile towers will enable businesses to move to the area and offer their services remotely. Small businesses/sole operators will be able to work with more confidence remotely and this may be attractive to those contemplating moving to the region prior to retirement. Residents will also benefit from access to services, such as telehealth, without having to travel out of the area;
- ♣ Maintaining road infrastructure – roads are critical infrastructure for the community and their maintenance will continue to be a major expense;
- ♣ Maintaining and developing town infrastructure – to suit population needs and be accessible and attractive for visitors; Diversity of communities – including more urban, semi-rural and rural – can be more attractive to a range of households and individuals living in or visiting the region;
- ♣ Servicing smaller and remote towns – our community is concerned that towns and communities across the area continue to be provided services and are not forgotten.

The Riverina Murray Plan 2036 highlighted the following priorities for the Murray River Council area:

- ♣ Improve cross border connections;
- ♣ Protect the character and heritage values of the towns and villages to support residents' lifestyles and the tourism sector;



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- ♣ Ensure that irrigated land is appropriately zoned and protected from inappropriate development;
- ♣ Protect the water quality and aesthetic values of the Murray River;
 - Plan for a range of community services and facilities, including health and aged care, to meet the current and future requirements of the community;
 - Implement Council's Integrated Water Cycle Management Plan.

How will we get there?

To achieve our Community Vision, we have clear aspirations and priorities across five themes:

- Built/Physical Environment
 - We want our built and physical environment to be well planned, connected, safe and designed to support our communities, industries, and business.
- Natural Environment
 - We value our natural environment and expect it to be accessible, sustainable, managed, and healthy.
- Social Wellbeing
 - We want to have services and facilities that support an active, healthy and diverse rural lifestyle, and help us celebrate and enjoy our rich cultural heritage and connected communities.
- Economic Growth
 - We need economic growth so that we are vibrant, strong and able to support our local townships, regional industries and future employment.
- Leadership and Governance
 - We expect effective, democratic, open, transparent leadership and governance that plans for, advocates for, and meets the changing needs of our diverse community.

APPENDIX G

Barham Area Education / Excursion Program Opportunities

The local area offers the following opportunities for school excursions / educational tourism. The program can be tailored to suit educational opportunities sought and curriculum requirements.

School camps could be held for education about the topics outlined below. Schools go to the Grampians and south coast on excursions to learn about Geology and travel to Canberra to learn about politics. Why not educate school children about where food and fibre comes from (we have a diverse range of agriculture to show), the important Murray Darling Basin environment and unique floodplain mid river 'delta', unique cultural heritage etc. Students would learn about the region and may return to the region as tourists later in life!

Education Program Opportunities;

- Agriculture/ Agritourism. Farms & Food production. Diverse agriculture in region – horticulture, intensive irrigation, rangeland farming etc. / Sustainable Agricultural / Best Management Land Practices / irrigation / reconciliation ecology – surrogate wetlands on farms and linkage to the broader landscape.
- Indigenous Cultural Heritage. There is considerable cultural heritage evidence in the landscape. Artefact findings from construction of the Koondrook –Perricoota Forest are located in 'The Keeping Place' interpretive display within the Border Flywheelers museum. Cultural heritage field trips and interpretive trails conducted with trained indigenous guides.
- European heritage of area. Pastoral / irrigation history, Red Gum Industry, Flywheelers Museum hosting restored equipment next door to Barham Lake.
- Environmental Watering – Koondrook Perricoota Forest Flood Enhancement Project
- Bush / Farm Camping opportunities, hiking, Mylock Ck canoeing / birdwatching /yabbying, big trees.
- River complex (delta like) tour of area.
- Geomorphological history / megafauna fossils. Biodiversity Tour – red gum forests, box woodlands, sandhill species such as along Lower Thule Road, Cunninyeuk has examples of Mallee species on western margin of their range
- Historic Mooloomoon Shearing Shed at Moulamein.
- Water Quality Monitoring training / overview
- Wakool – Tullakool Salt Interception Scheme / bird watching site (tri-avian corridor)

Environmental – Mid Murray Floodplain Environment / Geology / Biology

The region is a unique area mid-way along the Murray River. The area is a kind of mini delta formed when the Cadell fault uplifted land and changed the course of the Murray River. What it created was a series of rivers, wetlands and floodplain environments intermixed with sandhills and lunette country. Showcase the recently completed Edward-Wakool Geological History multi-media package titled, "An Inland Delta – A Geological History of the Edwards Wakool System". See link to the DVD: https://www.youtube.com/watch?v=Lo_pQgUOA24



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The area's fauna diversity encompasses extensive River Red Gum forests, sandhill mixed species, Black box woodlands and so on.

The river complex within the Murray River and Edward River includes the Wakool River, Niemer River, Merran Creek and numerous ephemeral streams creating their own unique ecology suited to drying and wetting phases.

The area is known as a biodiversity hotspot, with considerable more bird species present than in Kakadu.

Wakool Rivers Association Information;

The Wakool River System is renowned as one of the major anabranches of the Murray River. The system is a highly braided complex mix of rivers, creeks and wetlands made up of approximately 1100kms of watercourses that supply water to around 600 households and businesses, as well as providing water and refuge for countless numbers of stock and native fauna. The Wakool River meanders its way through the middle of the system creating amazing biodiversity and a "continuous real wetland" for some 300 kilometres. The system is regarded as the "lungs" of the Murray with the deep holes supporting vital natural ecosystems. The Wakool System is also a famous breeding ground for hundreds of native flora and fauna including the iconic Murray Cod.

Environmental Watering Infrastructure

On the outskirts of Barham is the largest environmental works program in the Murray-Darling Basin. The works are designed to re-establish the frequency of natural flood events that have been mitigated by storage dams. The Koondrook-Perricoota Flood Enhancement Project seeks to flood up to 14,000 ha of the 34,000 red gum Forest to create a flood dependant understorey plant community.

Accommodation and Catering

The region can cater for the accommodation of a number of people including school groups. Outside of the Barham area is the Moulamein Bowling Club, Tooleybuc and Wakool RSL Club which can cater for large groups, such as schools to service field trips in the district. Additional catering would provide needed economic stimulus for these small communities.

APPENDIX H

Letter of Support and Intent



Roger Knight
Local Landcare Co-ordinator
Western Murray Land Improvement Group
Barham NSW 2732

Melbourne, March 6, 2019

Dear Roger,
Re: Letter of Intent

Following our earlier discussions and exchange of documents we are writing to you to confirm our interest in working with you in the further development and implementation of the Wakool Region Adaptation Strategy. Based on the work we have undertaken over the past one and a half year in Gippsland under the umbrella of the Gippsland Smart Specialisation Strategy (G-S3), and which will be continuing over this year, we see great benefits and potential in sharing our experiences with you and exploring further synergies between the two strategies and regions.

Given your focal areas of agribusiness and tourism, we feel it makes great sense to further the links with the Food & Fibre Cluster Gippsland and the Latrobe Valley Authority (LVA), both of whom have been key actors in bringing the G-S3 project to where it currently is. Both share the objectives of further developing agribusiness, increase productivity across the sector, opening it up to international value chains, and fostering close links with the visitor economy to promote the richness the region has to offer. A similar intent is expressed in your Adaptation Strategy.

Concretely, as the G-S3 Project Team we are happy to participate in your Stakeholder Committees at nominal cost (travel and accommodation) and share our experiences and learnings of the G-S3 project with your team (our in-kind contribution to the project). We are happy to partner with you in the design and implementation of the sector review (at cost – research associate @ 3days p/w over the period of a year) and would be very keen to work with you in the next steps leading up to and implementing the Entrepreneurial Discovery Process (at nominal cost). Further details can be discussed following your successful project bid.

We very much look forward joining you in this exciting project and hope that the learnings and outcomes of both the Wakool and the Gippsland projects can serve as inspiration for the further successful development of regional innovation systems across Australia.

On behalf of my G-S3 program co-directors Prof Leo Goedegebuure (LH Martin Institute, University of Melbourne) and Prof Bruce Wilson (EU Centre of Excellence in Smart Specialisation, RMIT University),
With best regards,



Prof Lars Coenen
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APPENDIX I

Definitions

Adaptation. The act of changing something or changing your behaviour to make it suitable for a new purpose or situation. Most living creatures are capable of adaptation when compelled to do so.

Agrisystem: The agri food and fibre system, or agrisystem, is a description of how we use natural resources and biological processes to generate value through food, fibre and related products and services. A system level perspective reveals new opportunities and a new vision for our production industries as sources of future prosperity, with benefits for the economy, community and environment.

The agrisystem is supported by a knowledge and innovation ecosystem, built upon our world-class research and development capacity. The knowledge and innovation ecosystem enhances and improves the agrisystem, providing knowledge and capacity to develop, deliver and adopt new products, technologies, practices and services. It is how we generate impact from R&D for industry and the community.

Empowering the knowledge and innovation ecosystem to be globally-connected, high-performing, dynamic and effective will be critical to unlock the potential of the agrisystem.

Dynamic: 1. (of a process or system) characterized by constant change, activity, or progress. synonyms: energetic, spirited, active, lively, zestful, vital, vigorous, strong, forceful, powerful, potent, positive, effective, effectual, high-powered, aggressive, driving, pushing, bold, enterprising; More

Institutional Innovation: institutional innovation refers to new ways of organizing, structuring, and implementing human action as a collective. It differs from individual creativity and firm-based innovation because institutional innovations apply to the relationships between people and across groups, producing new means of collective action on the ground. These innovations can be very simple. A new interest group or club created for the expressed purpose of solving local problems as a community is one institutional innovation. Likewise, creating better ways of exchanging information with governments, or connecting community members to government and university information more effectively, are both examples of an institutional innovation. What matters is that a) the way people interact is new, b) it is more beneficial than the way people interacted before, and c) it produces some positive outcome at the community level.

Transformational leadership: A theory of [leadership](#) where a leader works with teams to identify needed change, creating a [vision](#) to guide the change through inspiration, and executing the change in tandem with committed members of a group;^[1] it is an integral part of the [Full Range Leadership Model](#). Transformational leadership serves to enhance the motivation, morale, and [job performance](#) of [followers](#) through a variety of mechanisms; these include connecting the follower's sense of [identity](#) and self to a [project](#) and to the [collective identity](#) of the organization; being a [role model](#) for followers in order to inspire them and to raise their interest in the project; challenging followers to take greater [ownership](#) for their work, and understanding the strengths and weaknesses of followers, allowing the leader to align followers with tasks that enhance their performance.

Technology: The collection of techniques, skills, methods, and processes used in the production of goods or services or in the accomplishment of objectives, such as scientific investigation. Technology can be the

knowledge of techniques, processes, and the like, or it can be embedded in machines to allow for operation without detailed knowledge of their workings. Systems (e. g. machines) applying technology by taking an input, changing it according to the system's use, and then producing an outcome are referred to as **technology systems** or **technological systems**

Value Chain: The idea of the value chain is based on the process view of organizations, the idea of seeing a manufacturing (or service) organization as a system, made up of subsystems each with inputs, transformation processes and outputs. Inputs, transformation processes, and outputs involve the acquisition and consumption of resources – money, labour, materials, equipment, buildings, land, administration and management. How value chain activities are carried out determines costs and affects profits.

The concept of value chains as decision support tools, was added onto the competitive strategies paradigm developed by Porter as early as 1979. In Porter's value chains, Inbound Logistics, Operations, Outbound Logistics, Marketing and Sales, and Service are categorized as primary activities. Secondary activities include Procurement, Human Resource management, Technological Development and Infrastructure ([Porter 1985](#), pp. 11–15).^{[1][2]}

According to the OECD Secretary-General ([Gurría 2012](#))^[4] the emergence of [global value chains](#) (GVCs) in the late 1990s provided a catalyst for accelerated change in the landscape of international investment and trade, with major, far-reaching consequences on governments as well as enterprises ([Gurría 2012](#)).^[4]

APPENDIX J

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