DN6_25_17 “Drought Resilient Soils – optimising water capture and use in the landscape”

CULTIVATING CAPACITY

Empowering People, Unlocking Soil Potential

Project Concept developed by

Felicity Turner and Dr Melissa Fraser

for the South Australian Drought Hub

Contact: Felicity felicity@turneragri.com.au
M: 0400 299 087

Mel mel@soilfunction.com.au
M: 0407 773 369

Australian Government
Department of Agriculture, Fisheries and Forestry
Future Drought Fund
SA DROUGHT HUB

This program received funding from the Australian Government's Future Drought Fund

Soil SUNLIGHT STRATEGISTS

Program Background

Drought Resilient Soils – Optimising Water Capture and Use in the Landscape (Project ID DN6_25_17) was commissioned by the South Australian Drought Hub to identify the knowledge, capability and investment needed to strengthen drought resilience in South Australian dryland cropping, pasture and mixed farming systems.

Project objective:

To develop a statewide, practical and adoption-focused approach that improves the capture, storage and productive use of water by combining regionally relevant evidence, skilled people, structured learning and farmer-led implementation.

Project rationale:

Statewide Drought Hub consultation and co-design in 2021 identified improved soil water management as a consistent priority. In May 2025, Felicity Turner and Dr Melissa Fraser, operating as Soil Sunlight Strategists, were engaged to build on this work and scope a future statewide investment ahead of the 2026–2032 funding period.

The project deliberately moved beyond asking what additional research is required. It examined what growers and advisers have learned from previous investments, what has changed in practice, where adoption remains constrained, and what combination of evidence, extension and capability is required to convert knowledge into sustained on-farm action.

Consultation reach and approach:

4	63	22	4
regional workshops	**workshop stakeholders**	**additional stakeholders**	**regional project concepts**

Regional workshops were held at Wudinna, Cummins, Watervale and Tailem Bend in October 2025, supplemented by smaller consultations with the Coorong Tatiara Local Action Plan reference group and MacKillop Farm Management Group. Participants included farmers, agronomists and advisers, farming systems groups, Landscape Board staff, and representatives from DEW and PIRSA.

The facilitated process explored five areas: agronomy; crop and pasture sequences; pastures; amelioration; and nutrients and fertility. Participants identified key learnings, evidence of practice change, gaps and barriers, and then co-designed regionally relevant project concepts.

Consultation findings:

The consultation found that the primary challenge is not just a lack of information; there is a larger gap in the ability to interpret evidence, understand risk and return, and apply technically sound options within variable and complex farm businesses across the themes identified in Figure 1.

From there, priority areas for investment were identified (Table 1) and the project Cultivating Capacity developed.



Figure 1. Key insights from consultation

Table 1. Priority areas for future investment

1. Soil water and plant available water (PAW) interpretation, including practical decision triggers.	2. Subsurface constraint diagnosis and cost-effective sampling and management.
3. Amelioration longevity, payback periods and economic risk across soil types.	4. Nitrogen cycling, pulses, legacy nitrogen and nutrient-water interactions.
5. Machinery–soil matching, seeding systems and soil-specific decision frameworks.	6. Stubble and groundcover strategies that balance erosion protection, establishment and economics.
7. Spatial agriculture and variable-rate technology, with stronger interpretation and ROI support.	8. Mixed farming system options, including resilient pasture, pulse and enterprise combinations.
9. Simplified evidence-based decision tools using thresholds, triggers, financial and risk metrics.	10. Human capacity and advisory support, including facilitation, financial literacy and peer learning.

These findings led directly to the development of Cultivating Capacity – Empowering People, Unlocking Soil Potential: a coordinated investment framework designed to connect capability, evidence, learning and adoption.

Proposed response: Cultivating Capacity

Cultivating Capacity is a proposed multi-year statewide learning and innovation system. Its purpose is to strengthen the three conditions repeatedly identified as necessary for successful practice change: skilled people, practical evidence and effective learning and adoption pathways.

Consisting of four interconnected components with five evidence based themes (Figure 2), Cultivating Capacity aims to create a connected statewide learning and innovation system that empowers people to translate knowledge into action, improve water capture and utilisation, and build more resilient agricultural businesses and communities.

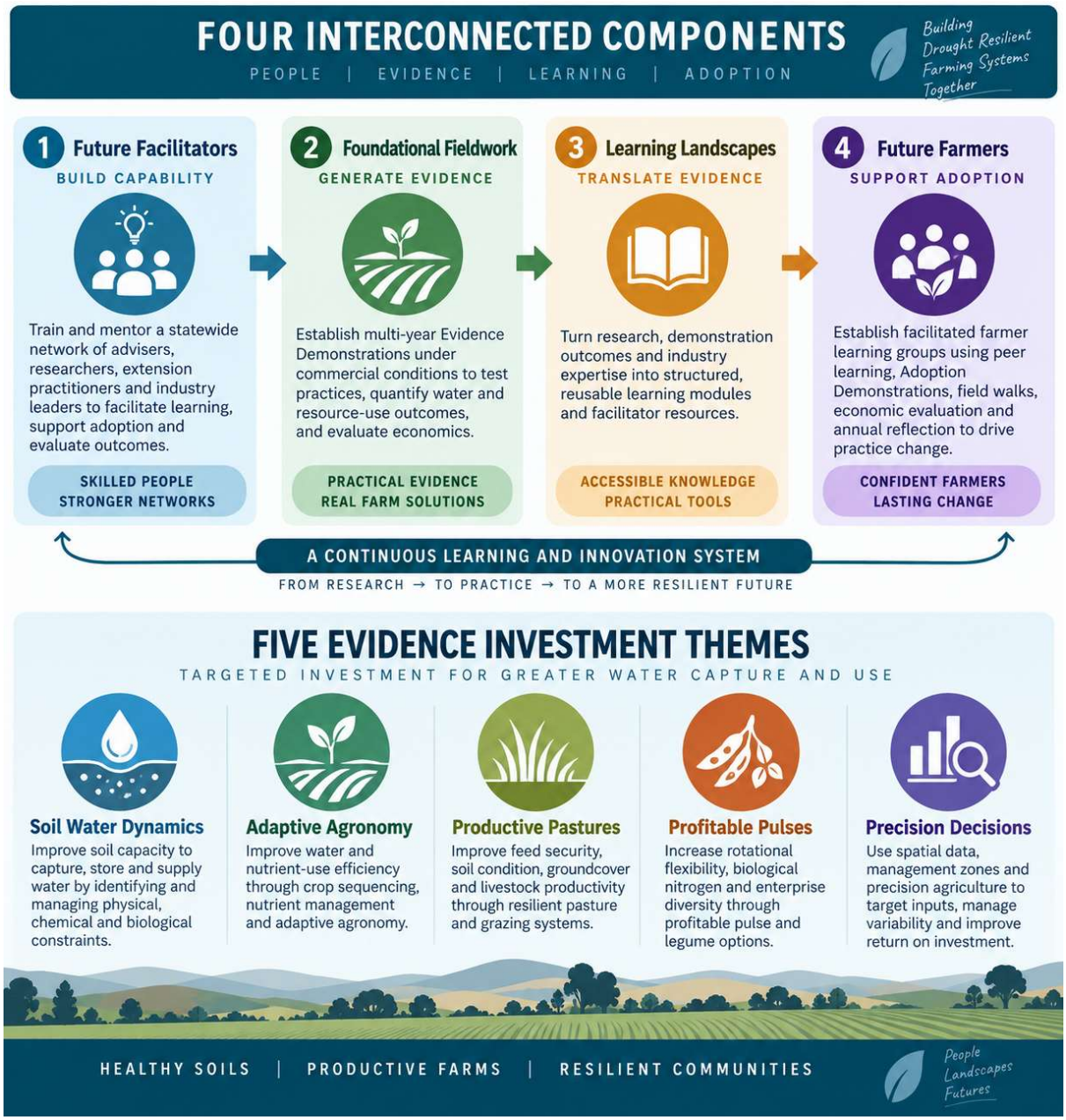


Figure 2. Outline of the Cultivating Capacity Framework

Table of Contents

Project Background 2

Executive summary 6

1. The Challenge 6
2. Program Vision 8
3. Program Response 8
4. Program Components 9
5. Program Theory of Change 10
6. Program Design and Delivery Principles 11
7. Monitoring, Evaluation and Learning Framework 12
8. Learning and Continuous Improvement 12
9. Program Success Measures 16
10. Program Management, Governance and Delivery 16
11. Investment Summary 18
12. Legacy Beyond 2032 18

Appendix A: Project Component 1 – Future Facilitators 20

Appendix B: Project Component 2 - Foundational Fieldwork 27

INVESTMENT THEME 1: SOIL WATER DYNAMICS 35

INVESTMENT THEME 2: ADAPTIVE AGRONOMY 39

INVESTMENT THEME 3: PRODUCTIVE PASTURES 43

INVESTMENT THEME 4: PROFITABLE PULSES 47

INVESTMENT THEME 5: PRECISION DECISIONS 51

Appendix C: Project Component 3 – Learning Landscapes 55

Appendix D: Project Component 4 – Future Farmers 66

Executive summary

South Australian agriculture operates in one of the most variable production environments in the world. Increasing climate variability, declining seasonal reliability and rising production costs are placing greater pressure on farmers to improve water capture, water utilisation and farm business resilience. While significant investment has been made in research, development and extension, consultation undertaken in 2025 with growers, advisers, researchers and industry organisations identified a persistent challenge: translating knowledge into practice and supporting the widespread adoption of proven drought resilience strategies.

Cultivating Capacity has been developed in response to this challenge.

Cultivating Capacity is a coordinated statewide investment framework that strengthens the critical foundations required for successful practice change. Rather than investing solely in research or extension, the program integrates capability development, evidence generation, knowledge translation and farmer-led adoption into a single learning and innovation system that supports long-term drought resilience across South Australian agriculture.

The program is built around four interconnected components that create a continuous pathway from research and innovation through to on-farm implementation.

Future Facilitators builds and develops a statewide network of skilled advisers, researchers, extension practitioners and industry leaders who can effectively facilitate learning, support adoption and evaluate outcomes.

Foundational Fieldwork establishes a network of multi-year Evidence Demonstrations that generate practical, regionally relevant information on practices that improve water capture, water utilisation, productivity and farm business resilience.

Learning Landscapes transforms research findings, demonstration outcomes and industry expertise into practical learning modules and extension resources that provide consistent, evidence-based learning pathways for growers, advisers and industry personnel.

Future Farmers provides the adoption pathway through facilitated farmer learning groups, Adoption Demonstrations, field walks and peer-to-peer learning that enable farmers to evaluate, trial and implement proven drought resilience practices within their own businesses.

Together, these components form an integrated system that connects people, evidence, learning and adoption ensuring that knowledge generated through research and demonstration is translated into practical practice change on farms. This integrated approach addresses the key barriers identified during consultation and provides an enduring framework for strengthening drought resilience across South Australian farming systems.

A central focus of the program is improving the ability of farming systems to capture, store and utilise water more effectively. Investment is organised around five priority themes that reflect the major opportunities identified through consultation:

- Soil Water Dynamics
- Adaptive Agronomy
- Productive Pastures

- Profitable Pulses
- Precision Decisions

Collectively, these themes improve the capacity of farming systems to capture and retain rainfall, optimise the productive use of available water, strengthen resource use efficiency and support more profitable and resilient farm businesses.

By the end of the project, Cultivating Capacity will have established a statewide network of 15 skilled Future Facilitators, 15 multi-year Evidence Demonstrations, 25 farmer learning groups, 70+ Adoption Demonstrations and eight Learning Landscapes that provide enduring pathways for knowledge exchange and practice change. The program will improve grower and adviser capability, strengthen regional learning networks and accelerate adoption of proven drought resilience practices. It will also create a lasting extension resource and evidence base that continues to support innovation and meaningful practice change beyond the initial investment period.

Cultivating Capacity represents a strategic investment in South Australia's people, farming systems and regional communities. By building capability, generating practical evidence, translating knowledge into accessible learning resources and supporting farmer-led adoption, the program will establish a self-reinforcing learning and innovation system that delivers stronger productivity, greater profitability and more resilient agricultural businesses for decades to come.

1. The Challenge

South Australian agriculture has benefited from decades of investment in research, development and extension. While these investments have generated significant knowledge and innovation, consultation undertaken during 2025 found that translating this knowledge into widespread on-farm practice change remains a persistent challenge.

Participants consistently reported that the issue is not a lack of information. Rather, the challenge lies in connecting research, demonstration, learning and adoption in a way that enables farmers to confidently implement change within their own businesses.

Consultation identified four key barriers limiting the impact of previous investments:

- Practical evidence is often fragmented across projects, regions and organisations, making it difficult for growers and advisers to identify what works, where and why.
- Demonstration activities are frequently short-term, reducing confidence in outcomes under variable seasonal conditions and limiting opportunities to observe longer-term impacts.
- Extension and facilitation capacity is limited, with increasing reliance on a small number of trusted individuals to support knowledge exchange and practice change.
- Farmers require practical, regionally relevant learning opportunities that combine technical information, economic analysis and peer-to-peer learning to support confident decision-making.

At the same time, South Australian farmers are operating in an increasingly complex environment characterised by climate variability, seasonal uncertainty, increasing enterprise size and complexity, rising input costs and greater pressure to improve resource use efficiency. These conditions require farm businesses to continually adapt while managing production, financial and environmental risk.

Addressing these challenges requires more than additional research investment. It requires an integrated system that strengthens capability, generates practical evidence, translates knowledge into accessible learning resources and supports long-term adoption of proven drought resilience practices.

Cultivating Capacity has been developed in response to this need.

2. Program Vision

To create a connected statewide learning and innovation system that empowers people to translate knowledge into action, improve water capture and utilisation, and build more resilient agricultural businesses and communities.

3. Program Response

The consultation process identified three critical requirements for improving drought resilience across South Australian farming systems:

1. **Skilled people** capable of facilitating learning, supporting adoption and connecting growers with trusted information.
2. **Practical evidence** generated under commercial farming conditions that demonstrates what works, where and why.

3. **Effective pathways for learning and adoption** that enable growers to confidently evaluate, implement and adapt new practices.

Cultivating Capacity has been designed to address each of these requirements through four interconnected components that build capability, generate evidence, translate knowledge and support adoption.

Together, these components create a continuous pathway from research and innovation through to on-farm implementation, helping South Australian farmers improve water capture, water utilisation and drought resilience.

4. Program Components

Component 1 – Future Facilitators strengthens the capability of advisers, extension practitioners, researchers, grower group staff and emerging industry leaders to effectively facilitate learning, support adoption and evaluate outcomes. This component establishes the people and networks required to support long-term learning and adoption across the program.

Key Outcome: build capability within the extension network.

Component 2 – Foundational Fieldwork is the evidence generation engine of the program. Through a statewide network of multi-year demonstration sites (Evidence Demonstrations), the component will generate practical evidence, validate innovations and provide growers with confidence to implement proven practices.

Activities are organised around five investment themes:

- Soil Water Dynamics
- Adaptive Agronomy
- Productive Pastures
- Profitable Pulses
- Precision Decisions

Key Outcome: generate practical evidence and validate drought resilience practices.

Component 3 – Learning Landscapes translates research findings, demonstration outcomes and industry expertise into practical learning resources.

The framework provides structured learning pathways that cater to different levels of knowledge and experience.

Key Outcome: transform evidence into learning.

Component 4 – Future Farmers is the primary adoption component of the program.

Through facilitated peer learning groups, adoption demonstration activities, field walks and structured learning opportunities, growers collectively identify priorities, test solutions and implement practice change.

Key Outcome: support adoption and behaviour change.

5. Program Theory of Change

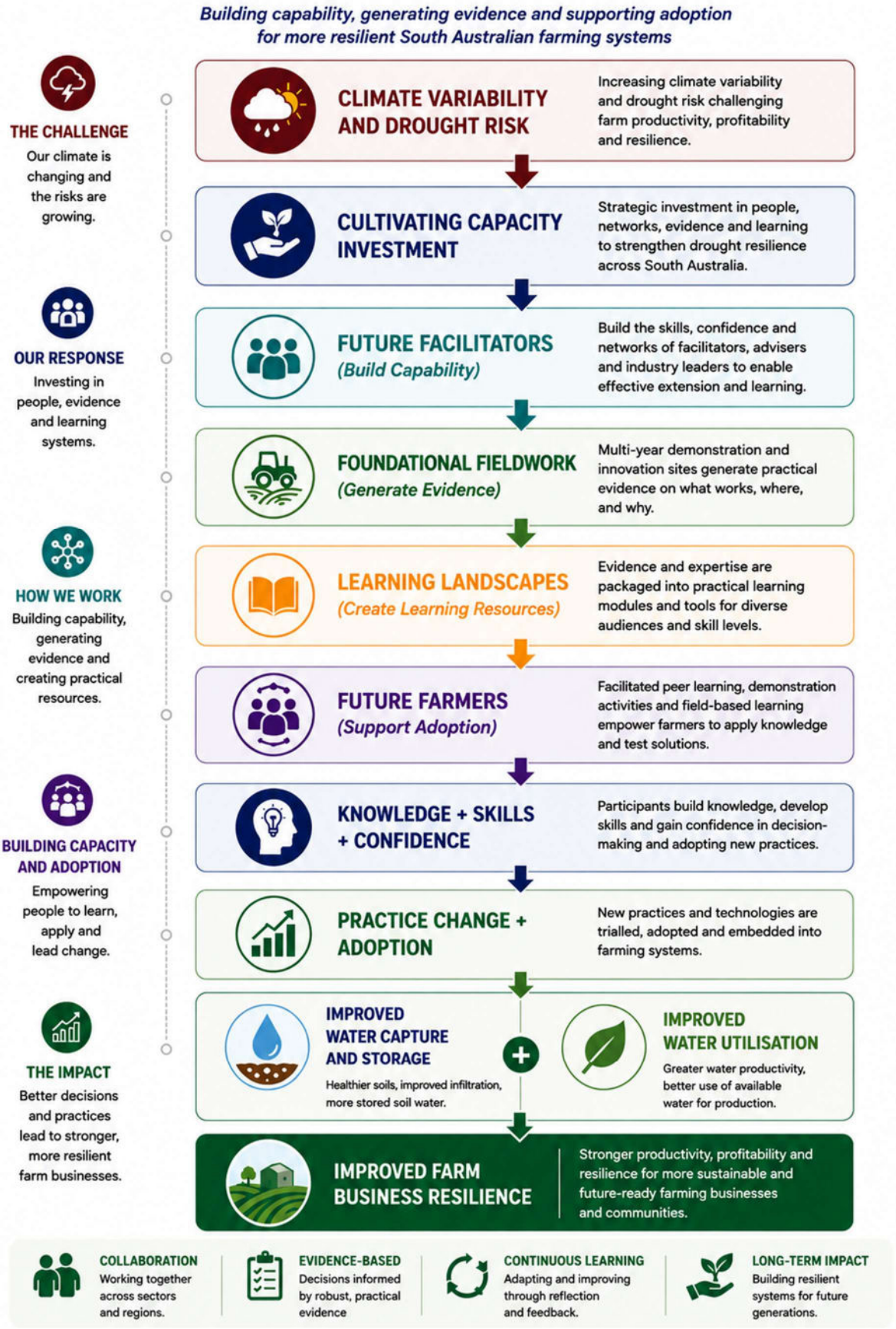


Figure 1. Cultivating Capacity Program Theory of Change.

6. Program Design and Delivery Principles

All activities delivered through Cultivating Capacity will be guided by the following principles:

- **Farmer-led and regionally relevant**

Activities will be co-designed with growers, advisers and regional partners to ensure practical relevance and local ownership. Best practice extension and adult learning approaches will be used, tailored to regional/local group needs and learning and engagement preferences.

- **Evidence-based delivery**

Activities will be informed by research, demonstration outcomes and industry expertise.

- **Multi-year learning and demonstration**

Activities will support learning over multiple seasons to capture seasonal variability and improve confidence in decision-making. To support both evidence generation and adoption, demonstration activities will be delivered through two complementary demonstration models.

Evidence Demonstrations (EDs) will generate robust, multi-year evidence on drought resilience practices, while Adoption Demonstrations (ADs) will provide locally relevant opportunities for peer-to-peer learning, discussion and practice change.

Evidence Demonstrations Component 2	Adoption Demonstrations Component 4
Generate evidence	Learning and discussion
Multi-year	Farmer-led
Intensive monitoring	Local priorities
Validation and economics	Support practice change

- **Water productivity and resource use efficiency**

  Where relevant, activities will evaluate:
  - Water use efficiency
  - Legacy soil water
  - Legacy nitrogen
  - Resource use efficiency
  - Productivity and profitability outcomes

- **Decision-making and economics**

  Activities will incorporate:
  - Cost-benefit analysis
  - Return on investment assessment
  - Economic benchmarking
  - Risk management
  - Practical implementation pathways

- **Adoption and capacity building**

  Activities will support:
  - Peer-to-peer learning
  - Adviser engagement
  - Discussion groups
  - Field days
  - Learning resources
  - Case studies

Monitoring, evaluation and learning

All program activities will contribute to a common monitoring, evaluation and learning framework that assesses knowledge, skills, confidence, practice change, adoption and impact.

7. Monitoring, Evaluation and Learning Framework

Monitoring, Evaluation and Learning (MEL) is a core function of Cultivating Capacity and underpins all program activities. The framework has been designed to support accountability, demonstrate impact and facilitate continuous improvement across the four program components.

Unlike traditional project reporting approaches, the MEL framework will be used as an active learning process that informs decision-making throughout program delivery. Findings will be used to refine demonstration priorities, improve learning resources, strengthen facilitation approaches and identify barriers to adoption.

The framework aligns with the program Theory of Change (Figure 1) and Results Framework, providing a clear line of sight between investment, activities, outputs, outcomes and long-term impact. Monitoring and evaluation activities will assess both the effectiveness of individual components and the collective contribution of the program to improved drought resilience outcomes.

The framework focuses on five key questions:

- Was the program relevant to industry needs?
- Did the program build knowledge skills and confidence?
- Did the program influence practice change and adoption?
- What agronomic, environmental and economic benefits were achieved?
- What legacy has been created?

Evaluation will occur at multiple levels, including participation and engagement, knowledge and capability development, practice change and adoption, and longer-term agronomic, economic and resilience outcomes.

The following figures outline the program Results Framework (Figure 2), Evaluation Framework (Figures 3 and 4) and Program Success Measures (Figure 5), which collectively guide monitoring, evaluation and reporting across all components.

8. Learning and Continuous Improvement

Evaluation findings will be reviewed annually by program partners and used to support adaptive management and continuous improvement. Lessons learned will inform future demonstration priorities, resource development, facilitation approaches and adoption strategies. This process will ensure that program activities remain responsive to industry needs while maximising the impact of investment over time.

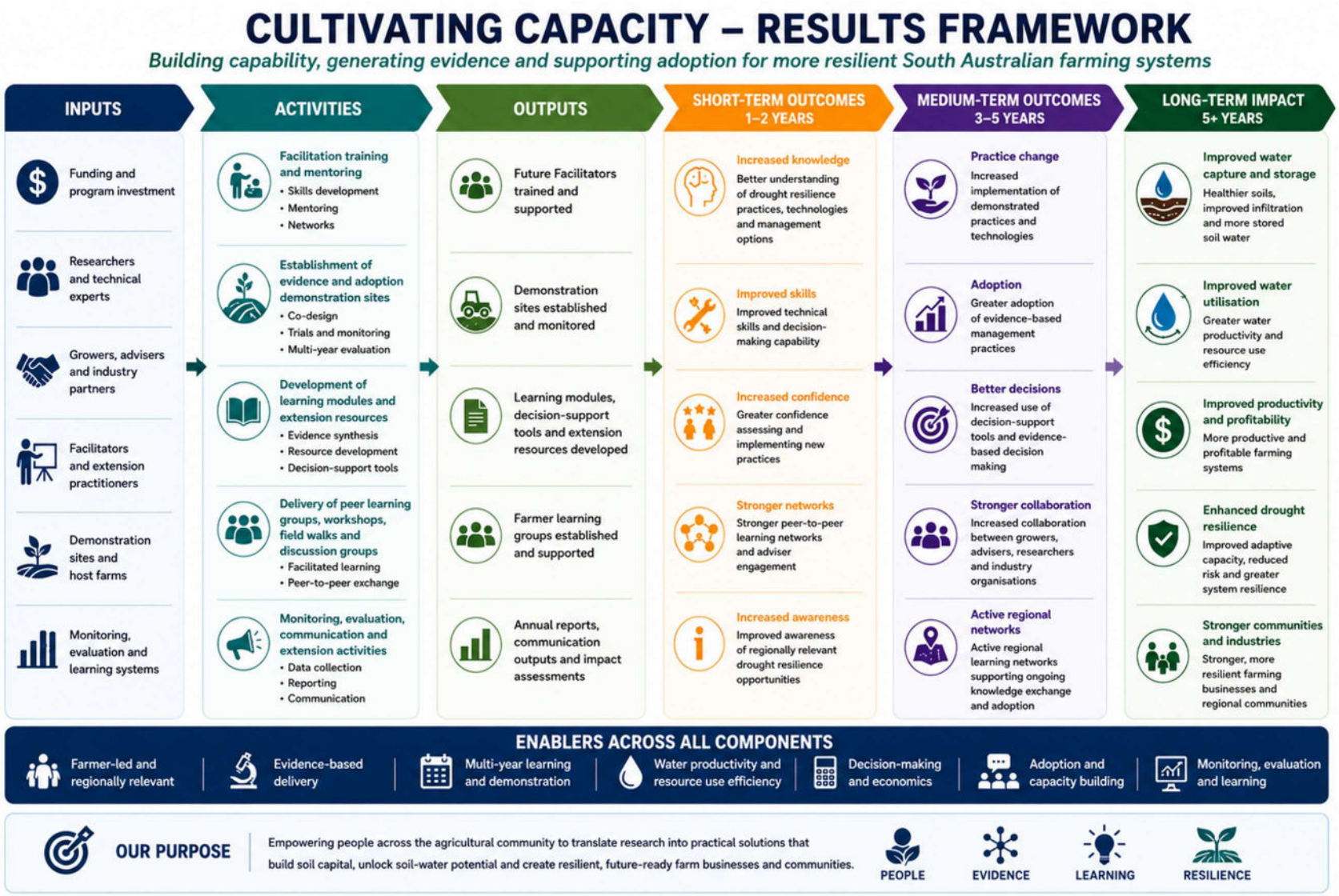


Figure 2. Cultivating Capacity Results Framework

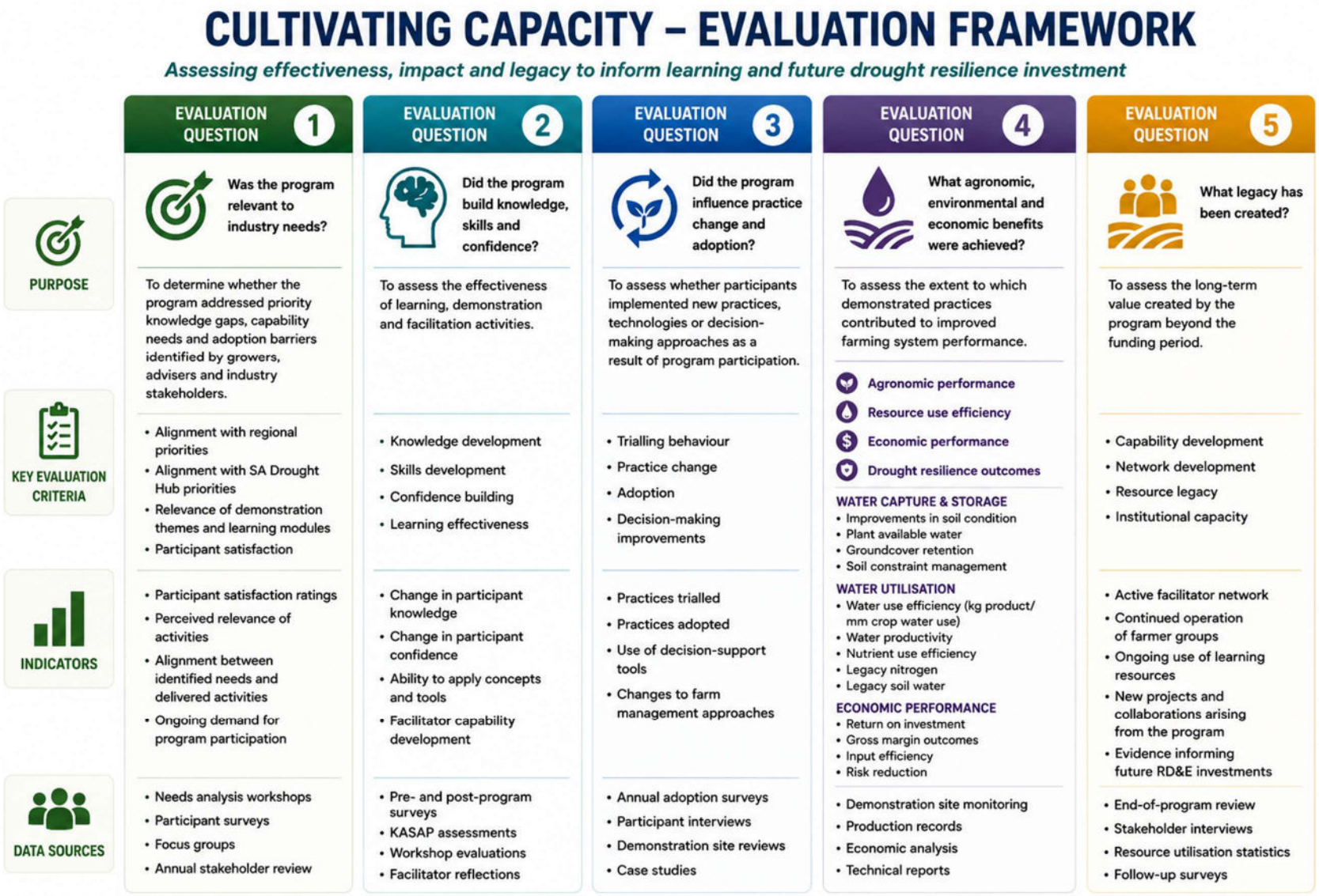


Figure 3. Cultivating Capacity Evaluation Framework.

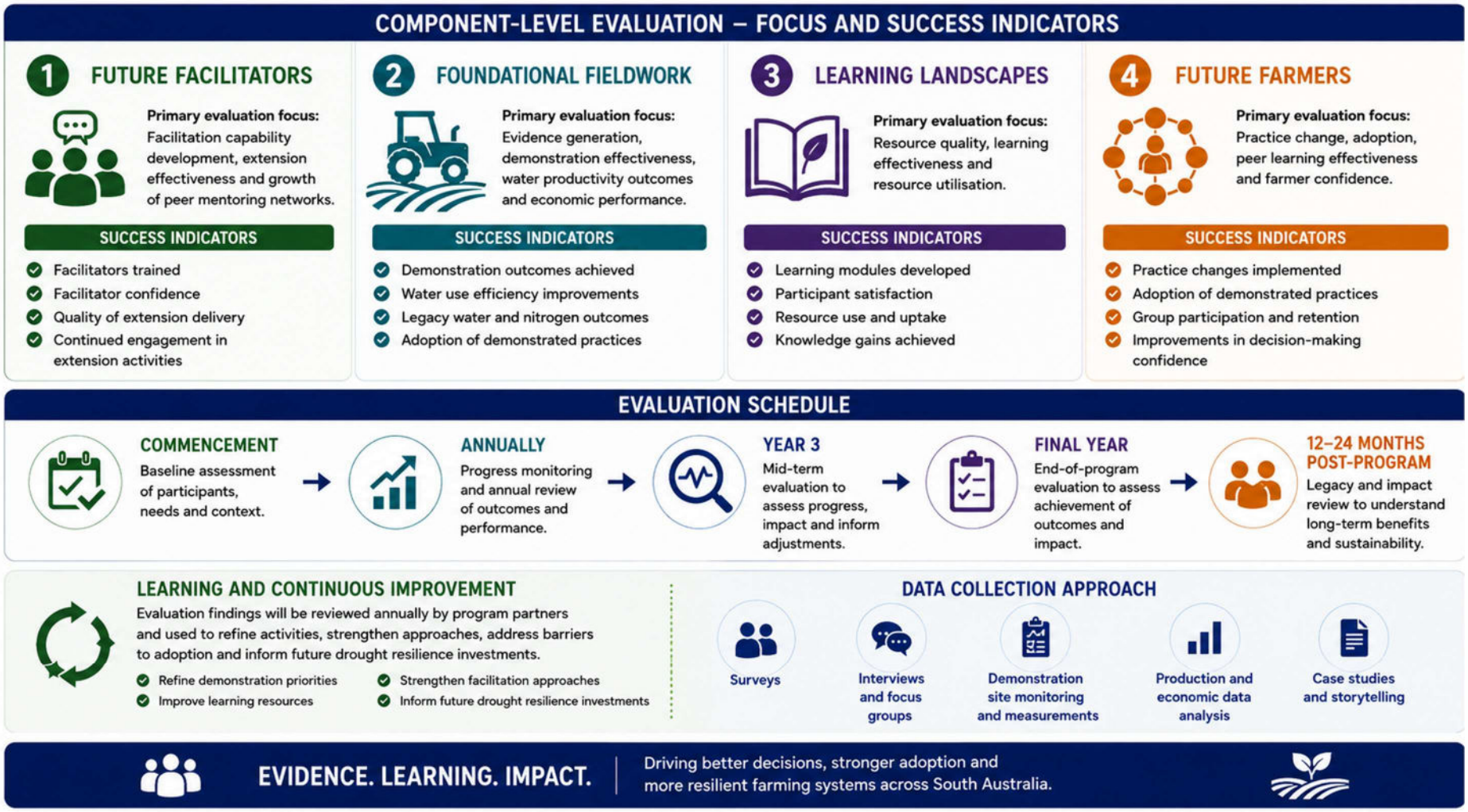


Figure 4. Cultivating Capacity Evaluation Framework (continued).

9. Program Success Measures

The Program Success Measures (Figure 5) translate the Cultivating Capacity Theory of Change into a set of measurable indicators that track progress across the program. The framework recognises that successful drought resilience outcomes require more than activity delivery alone and therefore measures performance across capability development, evidence generation, learning, adoption and long-term impact. Collectively, these indicators will be used to assess the extent to which the program is strengthening regional networks, improving decision-making capability, accelerating adoption of proven practices and contributing to more resilient farming systems and communities.

10. Program Management, Governance and Delivery

Effective program management is critical to ensuring Cultivating Capacity operates as an integrated statewide investment rather than a collection of individual projects. It is envisaged that the South Australian Drought Hub will deliver Program Management, providing strategic coordination, governance support, financial oversight, contract management, communications, monitoring, evaluation and learning (MEL), reporting and stakeholder engagement across all program components.

The Program Management team will work closely with a Program Steering Committee, Technical Advisory Group, Component Leads and Regional Delivery Partners to ensure activities remain aligned with program objectives, investment priorities and industry needs. This includes coordinating delivery across Future Facilitators, Foundational Fieldwork, Learning Landscapes and Future Farmers, facilitating collaboration between partners, supporting adaptive management and ensuring that lessons learned are incorporated into future activities.

A key responsibility of Program Management will be the implementation of the program-wide Monitoring, Evaluation and Learning Framework. This will include the collection and analysis of performance data, preparation of annual impact reports, facilitation of program reviews and communication of outcomes to funding partners, industry stakeholders and regional communities.

Program Management will also provide leadership in communications, knowledge sharing and stakeholder engagement to maximise awareness, participation and adoption outcomes. Through consistent governance, reporting and continuous improvement processes, Program Management will ensure that investment outcomes are effectively delivered, measured and communicated throughout the life of the program.

Program Steering Committee

- Strategic oversight
- Investment alignment
- Performance monitoring

Component Leads (SA Drought Hub)

- Future Facilitators
- Foundational Fieldwork
- Learning Landscapes
- Future Farmers

Component 2 Technical Advisory Group

- Technical review
- Demonstration activities, monitoring and measurement
- Scientific integrity

Regional Delivery Partners

- Grower groups
- Universities
- PIRSA/SARDI
- Landscape Boards
- Private Consultants, Agronomists and other industry representatives

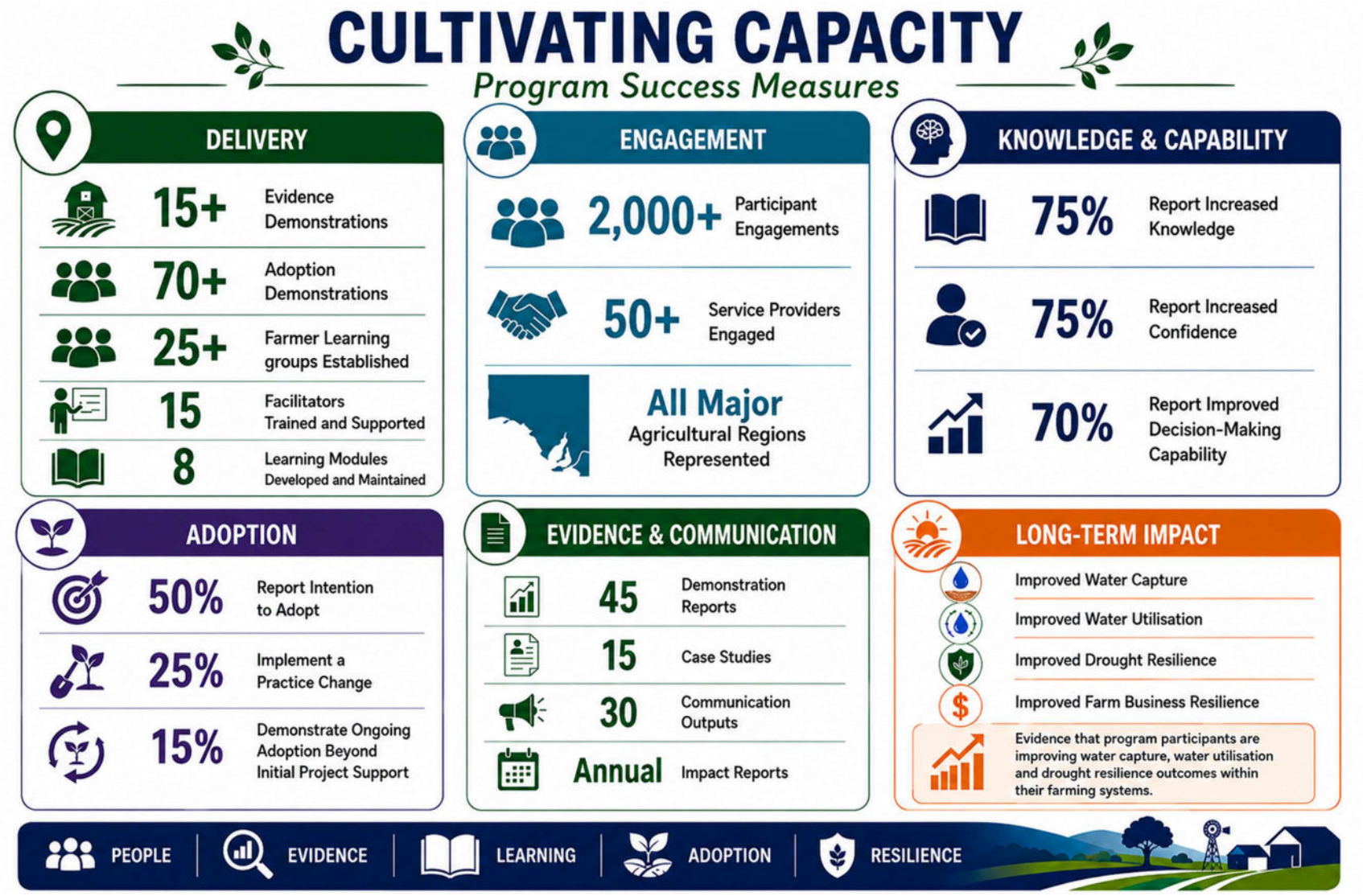


Figure 5. Cultivating Capacity Program Success Measures

11. Investment Summary

Component	Key Outputs	Primary Outcome	Investment
1. Future Facilitators	15 Future Facilitators trained and mentored.	Build statewide facilitation and extension capacity.	$227,200
3. Learning Landscapes	8 structured learning modules and facilitator resource packages.	Translate evidence and expertise into practical, reusable learning resources.	$269,200
4. Future Farmers	25+ Future Farmer groups; 70+ adoption demonstrations; 2,000+ participant engagements.	Accelerate adoption, practice change and drought resilience.	$4,566,800
Capacity Building and Adoption Coordinator (1 FTE x 5 years)	Program coordination, governance, partner management and integrated delivery.	Ensure coordinated, efficient and accountable delivery across capacity-building and adoption components.	$1,000,000
Communications and MEL	Program communications; MEL framework and data collection; annual evaluation and impact reporting.	Demonstrate program reach, outcomes, adoption and impact, and communicate learnings to industry.	$783,460
Total Capacity Building and Adoption Budget			**$ 6,846,660**
2. Foundational Fieldwork	15 multi-year evidence demonstration sites across five investment themes.	Generate practical, locally relevant evidence to improve drought resilience.	$4,215,000
Foundational Fieldwork Coordinator (1 FTE x 5 years)	Statewide coordination of demonstration design, delivery, monitoring, analysis and reporting.	Ensure a coordinated, scientifically robust and consistent statewide evidence program.	$1,000,000
Total Evidence Generation Budget			**$ 5,215,000**
Total Program Investment			**$12,061,660**

12. Legacy Beyond 2032

Cultivating Capacity has been designed to create enduring capability, knowledge and networks that continue to deliver value beyond the life of the investment. Rather than funding a series of disconnected projects, the program establishes the foundations of a long-term learning and innovation system that supports drought resilience across South Australian agriculture.

By 2032, the program will have built regional workforce capacity and capability by establishing a network of skilled Future Facilitators capable of supporting farmer learning, knowledge exchange and adoption activities. These individuals will provide an ongoing source of facilitation, extension and evaluation capability that can be applied across future industry and community resilience initiatives.

The program will also leave a legacy of practical, regionally relevant evidence generated through Foundational Fieldwork. Evidence Demonstrations will provide a valuable knowledge base on soil water dynamics, adaptive agronomy, productive pastures, profitable pulses and precision decision-making, helping farmers and advisers make more informed decisions under variable climatic conditions.

Learning Landscapes will create a suite of legacy learning resources and educational modules that can be updated and adapted over time, ensuring that knowledge generated through research and demonstration activities remains accessible and relevant to future generations of farmers, advisers and industry professionals.

Future Farmers will establish strong regional learning networks and peer-to-peer relationships that support ongoing collaboration, innovation and practice change. These networks will strengthen the social capital of agricultural communities and provide a platform for future extension, adoption and resilience-building activities.

Collectively, these investments will create a self-reinforcing system of people, evidence, learning and adoption that continues to improve water capture, water utilisation and farm business resilience long after the initial investment period has concluded.

Appendix A: Project Component 1 – Future Facilitators

Overview

Future Facilitators aims to strengthen the capability of advisers, researchers, extension staff, consultants, grower group personnel and emerging industry leaders to effectively translate research into practical on-farm outcomes, primarily in the area of soil and crop and pasture management. Through facilitation training, mentoring, peer-to-peer learning and extension capability development, the program will build a network of skilled facilitators capable of supporting the adoption of drought resilience practices and innovations across South Australia.

The component addresses a key challenge identified during statewide consultation on soils management opportunities and gaps; the need for trusted individuals who can bridge the gap between research, extension and practical implementation. By developing facilitation, communication and evaluation skills, the project will increase the effectiveness of future learning programs and strengthen regional support networks.

Aim

To develop a statewide network of skilled facilitators and extension practitioners who can effectively support knowledge exchange, peer learning and adoption of on farm drought resilience practices within agricultural communities across South Australia.

Proposed Investment

$ 227,200 (GST exclusive)

Option to scale up or down depending on the number of Future Facilitators participating in the program each year and with the option of a new group of facilitators in future years.

Duration

3-5 years

1. Background and rationale

Consultation highlighted that successful adoption of new technologies and management practices is often dependent on the quality of facilitation, trusted relationships and ongoing support. Stakeholders identified a need to strengthen extension capability and create pathways for future facilitators to support farmer learning and adoption in areas that will increase on-farm drought resilience. This model provides some financial assistance to ensure that the correct people are identified and supported while ensuring that their employers are partially re-imbursed for their time.

Consultation Findings

Key Challenges

- Limited extension and facilitation capacity across regions; facilitation training has occurred through the SA Drought Hub but ongoing mentoring to provide feedback and refinement of skills has been limited.
- Reliance on a small number of experienced individuals to drive adoption, particularly in the area of soil management.

- Difficulty in translating research findings into practical farm-scale applications.

Opportunities

- Build regional facilitation and extension capability to support a range of future drought programs and other initiatives.
- Connect emerging facilitators with experienced mentors and subject matter experts to refine and reinforce skills.
- Improve quality and consistency of extension delivery and project evaluation.
- Increase adoption of drought resilience practices through improved engagement approaches.

Industry Need

The agricultural sector requires skilled facilitators who can support growers to navigate increasingly complex production, climate, and business decisions. Investment in facilitation capability will strengthen the effectiveness and impact of future drought resilience extension programs, and better support farm businesses and farming communities to adopt drought resilience practices.

2. Project Purpose

To deliver a statewide network of 15 agricultural professionals with advanced facilitation, extension and evaluation capability who actively support peer-to-peer farmer learning groups utilising workshops and demonstration activities to support farmer learning, adoption and drought resilience outcomes across South Australia.

3. Project Objectives

1. Develop participant skills in facilitation, engagement and adult learning methodologies.

2. Increase participant knowledge of extension principles, project design, monitoring, evaluation and learning.

3. Establish peer-to-peer learning networks and mentoring opportunities connecting participants with experienced facilitators and subject matter experts.

4. Build participant capability to design and deliver workshops, field days, learning resources and demonstration programs that support drought resilient soils outcomes.

Program success measures

Delivery • 3 core training workshops delivered • 2 annual peer-learning and professional development activities • Practical delivery through learning landscapes and future farmers programs	**Engagement** • 15 facilitators recruited • Statewide participation across South Australia • Facilitators connected with mentors, subject matter experts and peers
Capability • 15 facilitators build skills in facilitation, extension and evaluation	**Application and Legacy** • 15 facilitators apply their skills through practical program delivery

• Increased knowledge, skills and confidence demonstrated from baseline to end of program • Increased capability to design and deliver extension activities	• 1 statewide facilitator network established • Active peer-learning and mentoring network supporting future drought resilience programs

4. Drought Hub Priority Areas

The following priority themes will be directly addressed through this component:

✓ Access to drought information and technical support

✓ Upskilling advisers, researchers and key influencers

✓ Community resilience and wellbeing through support, collaboration and access to technologies

5. Proposed Process

Target Audience

Agricultural advisers and consultants, Grower group staff, Landscape Board staff, researchers and project officers delivering regionally based drought resilience programs.

Methodology

Future Facilitators will be recruited through a competitive process where an open call is put out asking for expressions of interest to be involved in the program. A commitment will be sought to attend all training activities, participate in the module development (Component 3) and delivery of the Future Farmers program (Component 4). An assessment panel will meet and appoint the future facilitators and work with them and their employer (if applicable) to seek commitment to the program.

Training packages will be adapted by the Subject Matter Experts (SME's) to meet the needs of the program and will be delivered to the Future Facilitators. These packages will cover;

Facilitation Training

- Build skills in adult learning and behaviour change
- Strengthen group facilitation and engagement techniques
- Improve confidence in leading extension and learning processes

Extension methodology and monitoring, evaluation and learning programs

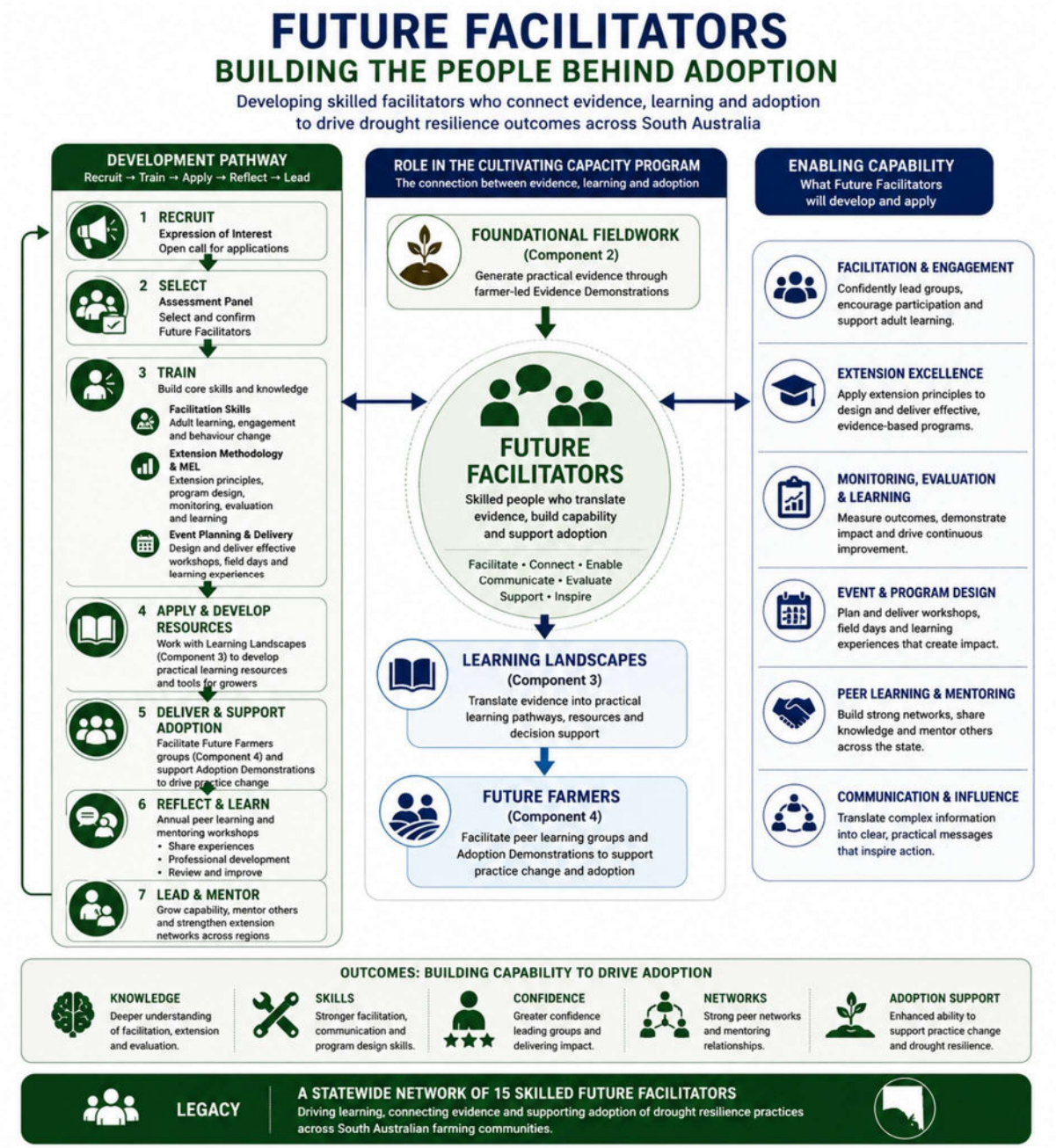
- Understand extension methodology (Bennets hierarchy)
- Design evidence-based extension programs
- Measure outcomes, impact and practice change
- Foster continuous learning and program improvement

Extension event planning

- Design events with clear purpose and audience focus
- Importance of planning (session plans)
- Create engaging and interactive learning experience
- Plan for impact beyond the event

Future Facilitators will participate in Component 3 “Learning Landscapes” to develop material for delivery and Component 4 “Future Farmers” where they will utilise the skills developed through the training program (discussed in Component 3 and 4).

In Year 2 and 3, an annual meeting will be held to allow peer-peer learning; sharing experiences and reviewing processes. This will include a professional development opportunity as agreed on by the Future Facilitators. The process is shown diagrammatically below.



Project partners

SA Drought Hub Partners, Industry organisations, Research organisations and Subject Matter Experts (e.g. Jeanette Long – Ag Consulting Co (Facilitation Training), Jeff Couts (Extension and Evaluation Methodology).

6. Project Outputs (Workplan)

Output	***Description of Activity***	***Description of Output***	***Estimated Due date***
1	*Future Facilitator EOI and meeting of assessment panel. Initial baseline knowledge, confidence and skills survey completed.*	*Future Facilitators are appointed, Baseline knowledge and skills captured*	*Year 1*
2	*Development and delivery of Facilitation training workshop*	*Facilitator Training*	*Year 1*
3	*Development and delivery of Extension Methodology and MEL training workshop*	*Extension Methodology Training and Evaluation frameworks and templates*	*Year 1*
4	*Development and delivery of Extension and Event Planning training workshop*	*Extension event Training and event framework templates*	*Year 1*
5	*Development and delivery to peers of Component 3 (Learning Landscapes)*	*Resource development toolkit*	*Year 2*
6	*Annual review meeting*	*Peer-Peer learning, PD training, annual review/learning report*	*Annually*
7	*Annual review meeting; program reflection. End of program knowledge, confidence and skills survey captured.*	*Peer-Peer learning, PD training, annual review/learning report*	*Year 3*

7. Expected Outcomes

Short-Term Outcomes (1–2 years)

Knowledge

- Increased understanding of facilitation and extension methodologies.
- Increased knowledge of monitoring, evaluation and learning frameworks.

Skills

- Improved facilitation, workshop design and communication skills.
- Improved ability to develop learning resources and extension activities.

Confidence

- Increased confidence to engage with farmers, deliver workshops and facilitate groups.
- Increased confidence evaluating program effectiveness.

Medium-Term Outcomes (3–5 years)

Practice Change

- Increased use of participatory extension approaches
- Improved evaluation and reporting practices to demonstrate project impacts

Adoption

- Greater adoption of evidence-based methodologies

Collaboration

- Stronger collaboration between advisers, researchers and grower groups
- Active peer learning and mentoring networks established

Long-Term Outcomes (5+ years)

Productivity

- More effective extension delivery resulting in improved uptake of innovative practices

Profitability

- Improved return on investment from extension and adoption activities

Resilience

- Strong regional support networks that accelerate adoption of drought resilience practices and technologies

Legacy

- Knowledge and skills are being passed on to new graduates, farmers and adviser coming into the industry

8. Budget

Future Facilitators (FF)		
	Activity	**Total**
1	Call for EOI from project partners (FSG's, LB's and private industry) for interest in putting forward a person to be trained and deliver the project outlining the participant background, history and capacity. (Similar to the GRDC EATS program). Need to commit to attending all training activities, participate in module development and delivery of the program.	
2	Assessment panel to determine and appoint **16** suitable 'future facilitators' and work with them and their employer (if applicable) to seek commitment to program.	$4,500
	(Note: May include both a sustainable ag focus and/or farm business focus)	
3	Participation in the following training activities:	$62,400
	a. Facilitation training (if haven't already attended one of Jeanette's courses)	$36,000
	b. Extension methodology and MEL programs	$18,000
	c. Extension event planning (Purpose, Outcome, Activities, Session plans)	$7,200
		$10,500
4	Project development – budget included in Component 3 (Building Blocks)	
	a. Develop a 'building block' within the field of interest over a 3 month period – includes mentor support	
	b. Deliver the building block program back to the group, refine content and provide a finished product	
5	Development of a modified DRINKS facilitated workshop plan	$4,000
6	Annual catchup to review process and feedback any changes/adjustments required – Y2. Includes a professional development opportunity with a SME.	$20,800
		$12,000
		$6,000
		$3,500
7	Annual catchup to review process and feedback any changes/adjustments required – Y3. Includes a professional development opportunity with a SME.	$20,800
		$12,000
		$6,000
		$3,500
		$227,200
	Budget Notes	
	FF - Includes $800 for participant time and $500 for travel and accomodation (TA)	
	SME - Subject Matter experts for delivery of professional development training or development of resources	
	Facilitator time - 3 days per workshop for planning, delivery, follow-up and reviewing and reporting	

Appendix B: Project Component 2 - Foundational Fieldwork

Overview

Foundational Fieldwork is the evidence generation component of the Cultivating Capacity framework.

The project will establish a coordinated statewide network of farmer-led Evidence Demonstrations that generate practical evidence, validate emerging technologies and accelerate adoption of drought resilience practices across South Australian farming systems.

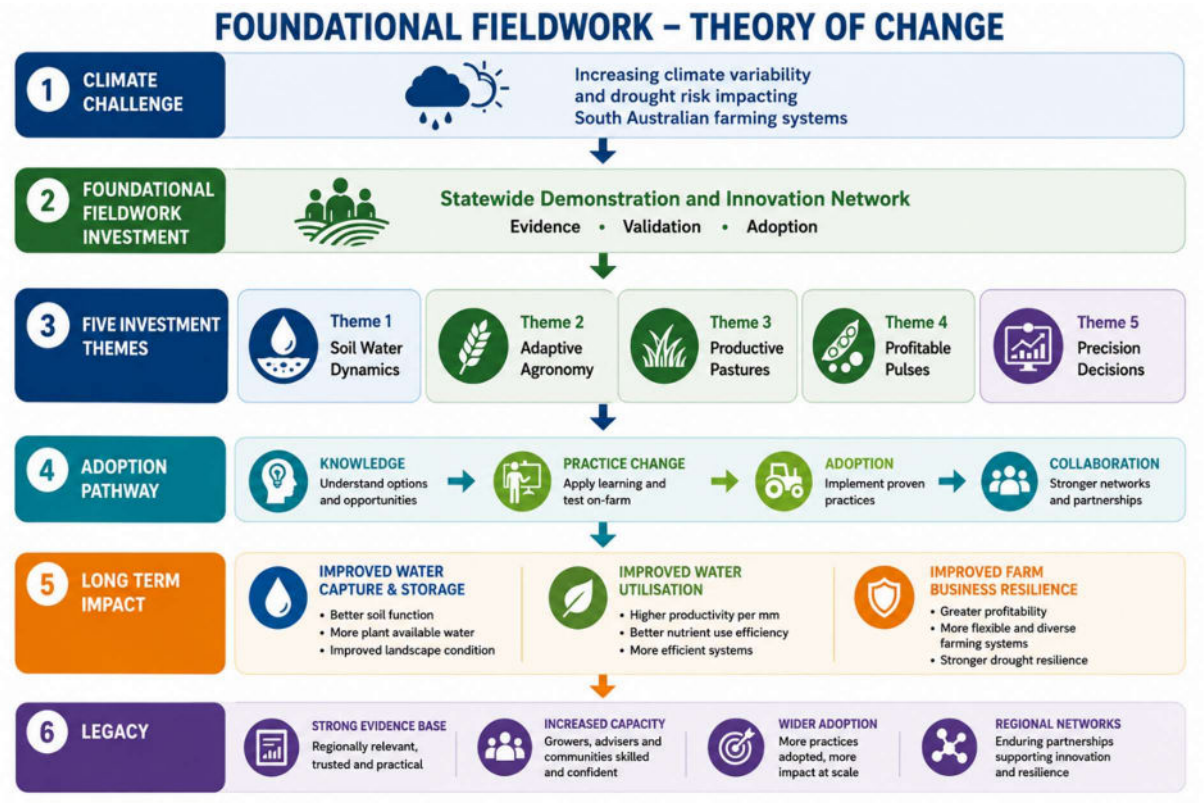
Industry consultation consistently identified a need for practical, locally relevant evidence that helps farmers make better decisions regarding soil, water, crops, pastures and enterprise management under increasingly variable climatic conditions.

While significant investment has occurred in research and development, stakeholders highlighted an ongoing gap between research outcomes and on-farm implementation. Farmers require opportunities to see practices operating under commercial conditions, understand the economic implications of adoption and build confidence through peer-to-peer learning.

Foundational Fieldwork addresses this challenge through the establishment of a statewide network of multi-year demonstration sites focused on improving the capacity of farming systems to capture, store and utilise water while strengthening profitability, productivity and resilience.

The program is built around one simple principle:
Improving drought resilience requires farming systems to either capture and store more water; or generate greater productivity from the water they have available.

This principle underpins all demonstration activities delivered through the program.



Project aim

To establish a statewide network of multi-year Evidence Demonstrations that generate practical data, accelerate adoption and improve drought resilience outcomes for South Australian farming systems.

Proposed investment

$4,215,000

Project duration

Five years

1. Background and rationale

Why is it important?

Consultation findings consistently highlighted that farmers are more likely to adopt new practices when they can observe outcomes under local conditions, understand the economic implications of adoption and learn from trusted peers.

Stakeholders identified several persistent challenges:

- Limited visibility of long-term outcomes from previous research investments.
- Difficulty translating research findings into practical farm-scale implementation.
- Limited evidence in local environmental conditions and farming systems demonstrating economic and production benefits.
- Seasonal variability creating uncertainty around management decisions.
- Limited opportunities for growers to validate innovations under commercial conditions.
- Fragmented demonstration activities that are often short-term and disconnected.

At the same time, consultation identified strong opportunities to establish a coordinated statewide demonstration network that supports both regional priorities and statewide learning.

Industry need

Industry requires practical evidence that demonstrates how drought resilience practices perform under commercial farming conditions. Multi-year demonstration sites provide an opportunity to evaluate innovations, build confidence in decision-making and accelerate adoption of proven practices.

2. Project Purpose

To establish and maintain a statewide network of Evidence Demonstrations that generate practical data, improve grower and adviser capability, and accelerate the adoption of practices that improve water capture, storage and utilisation across South Australian farming systems.

3. Project Objectives

1. Establish a network of co-designed demonstration sites addressing key regional drought resilience priorities.
2. Generate practical evidence on the effectiveness, profitability and suitability of management practices and technologies that improve water capture, storage and utilisation.

3. Create a network of growers, researchers, advisers and industry organisations who collaborate, innovate and translate to extend learning outcomes.
4. Improve farmer and adviser capability to make evidence-based decisions under increasingly variable seasonal conditions.
5. Accelerate adoption of proven drought resilience practices across South Australian farming systems.
6. Provide a robust evidence base that supports the Learning Landscapes and Future Farmers investments (Program Components 3 and 4) and future RD&E investment.

Program success measures

Delivery • 15 demonstration sites • 5 agricultural regions • 5 demonstration themes	**Engagement** • 150 core producers directly engaged • 250 observer producers • 25 advisers engaged • 45 extension events
Knowledge and Adoption • 75% report increased understanding • 50% report intention to adopt • 25% implement a practice change	**Evidence** • 45 progress reports with trial results • 15 case studies • 30 communication outputs (print, radio, social, webinar, podcast)

4. Drought Hub priority areas

✓ Access to drought information and technical support
✓ Farm planning and decision making to manage climate and operational risk
✓ Livestock and fodder management strategies, technologies and innovations
✓ Crop and pasture management strategies, technologies and innovations
✓ Soil and land management strategies, technologies and innovations
✓ Water security and management strategies, technologies and innovations
✓ Upskilling advisers, researchers and key influencers
✓ Farm business management

5. Investment Framework

Foundational Fieldwork will generate practical evidence and adoption pathways across five investment themes that directly support the broader Cultivating Capacity framework.

Through a coordinated statewide network of evidence demonstrations, the project will investigate and validate practices that improve water capture, storage and utilisation, while building the evidence base underpinning the learning streams of Store & Explore, Profitable Pulses, Productive Pastures, Adaptive Agronomy and Precision Decisions.

The Capture & Conserve learning stream has been intentionally excluded from this investment component. Existing and complementary projects are already generating evidence on stubble retention, groundcover management, seeding systems and related water conservation practices (e.g. De-risking the seeding program). Rather than duplicating these investments, Foundational Fieldwork will focus on identified gaps where additional demonstration, validation and adoption support are required.

The investment framework is structured around two primary drought resilience outcomes:

- **Increasing water capture and storage** through improved soil function and management of soil constraints.
- **Increasing water utilisation** through improved agronomic, livestock and enterprise management practices.

These outcomes will be delivered through five interconnected investment themes.

Increasing Water Capture and Storage

This investment area focuses on increasing the amount of rainfall that enters, is retained within and remains available to farming systems. Activities will improve soil function, increase infiltration, enhance plant available water and strengthen the resilience of agricultural landscapes.

Investment Theme 1 – Soil Water Dynamics

- Improving the ability of soils to capture, store and supply water through the identification and management of physical, chemical and biological soil constraints, leading to improved plant growth and water use efficiency.

Increasing Water Utilisation

This investment area focuses on increasing the productivity generated from available soil moisture. Activities will improve nutrient use efficiency, enterprise performance, soil condition and whole-farm profitability.

Investment Theme 2 – Adaptive Agronomy

- Improving nutrient use efficiency and optimising productivity from available soil moisture.

Investment Theme 3 – Productive Pastures

- Improving soil condition and landscape resilience through productive grazing systems.

Investment Theme 4 – Profitable Pulses

- Increasing rotational flexibility, nitrogen fertility and farming system resilience through greater enterprise diversity.

Investment Theme 5 – Precision Decisions

- Precision agriculture acts as an enabling investment theme supporting both water capture and storage, and water utilisation outcomes. Activities will focus on understanding variability, improving resource allocation and strengthening data-driven decision-making across farming systems.

Together, these five themes provide a practical framework for generating regionally relevant evidence, supporting adoption and improving the capacity of South Australian farming systems to capture, store and utilise water more effectively.

By focusing on areas of unmet need and leveraging existing investments, Foundational Fieldwork will maximise the value of available resources while ensuring strong alignment with the broader Component Three framework.

Demonstration activities will:

- Address regional priorities.

- Generate practical evidence.
- Evaluate productivity, profitability and risk.
- Support grower learning and peer-to-peer knowledge exchange.
- Strengthen adviser capability and regional support networks.
- Improve adoption pathways and practice change.

Sites will be distributed across major agricultural regions and represent diverse farming systems, rainfall zones and soil types. The detailed scope, delivery approach and expected outcomes for each investment theme are provided in Appendices A to E.

6. Project design and delivery principles

Component 2 Coordination

A dedicated Component 2 Coordinator will be appointed to oversee the establishment, coordination and delivery of the Foundational Fieldwork program across South Australia. The Coordinator will provide a central point of accountability for the component and ensure that individual demonstration activities contribute to a coherent, scientifically robust and strategically aligned statewide program.

The Coordinator will work with regional delivery partners, growers, researchers, technical specialists and other project components to:

- Coordinate the selection, design and establishment of demonstration activities across the five investment themes.
- Ensure demonstration activities respond to identified regional priorities while maintaining consistency with the objectives and outcomes of the broader investment.
- Support the development of appropriate experimental and demonstration designs, monitoring protocols, data collection and economic evaluation.
- Facilitate connections with existing research, demonstration projects and subject matter experts to build on previous investment and avoid duplication.
- Maintain consistency in data collection, statistical analysis, interpretation and reporting across demonstration sites.
- Coordinate annual planning, review and refinement of the demonstration program in response to seasonal conditions, emerging findings and regional priorities.
- Support the translation of demonstration outcomes into practical evidence, case studies and extension resources for use within Component 3 Learning Landscapes and Component 4 Future Farmers.
- Maintain oversight of program-level outputs, milestones, budgets, risks and reporting requirements.
- Facilitate communication and knowledge exchange between regional demonstration sites so that findings and experiences can be shared across the statewide network.

The Coordinator will not replace regional delivery partners or technical specialists. Rather, the role will provide the coordination and integration required to ensure that locally relevant activities collectively generate a consistent and credible body of evidence that supports improved drought resilience across South Australian farming systems.

All activities delivered through Foundational Fieldwork will incorporate the following principles:

Farmer-led and regionally relevant
Demonstrations will be co-designed with growers, advisers and regional partners to ensure relevance and practical application. Component 4 Future Farmers will provide the delivery pathway for the identification of investment priorities and confirmation of strategies to demonstrate.

Multi-year demonstration
Activities will be established and monitored over three seasons to capture seasonal variability and demonstrate medium-term impacts.

Water Productivity and Resource Use Efficiency
All demonstration activities will incorporate the measurement and evaluation of water productivity and resource use efficiency outcomes, where relevant to the farming system and management practice being investigated.

Activities will seek to quantify and compare:

- Water use efficiency (kg product/mm crop water use) across crop, pasture and mixed farming systems.
- Changes in soil water availability and utilisation.
- Legacy soil water remaining following different management practices.
- Legacy nitrogen remaining following different crop, pasture and rotational treatments.
- The interaction between soil water, nutrient availability and productivity outcomes.

This information will be used to improve understanding of how different management practices influence both current-season performance and the resources available to subsequent crops and pastures, supporting improved whole-farm decision making and drought resilience.

Decision making and economics
All projects will include:

- Return on investment assessment.
- Cost-benefit analysis.
- Economic benchmarking.
- Demonstrating existing decision-support tools.
- Practical implementation pathways.

Adoption and capacity building
All project demonstration sites will be linked to a 'Future Farmer' group to facilitate:

- Discussion groups.
- Adviser engagement.
- Peer-to-peer learning.
- Field days and workshops.
- Case studies and extension resources.

Monitoring and Evaluation
Activities delivered will contribute to the program-wide monitoring, evaluation and learning framework and will assess agronomic, environmental, economic and adoption outcomes relevant to the investment objectives.

Target audience

- Broadacre cropping producers
- Mixed farming enterprises
- Livestock producers
- Agricultural advisers and consultants
- Researchers and extension personnel
- Regional grower groups

Project Partners

- SA Drought Hub
- RDC's (GRDC, MLA etc)
- Grower groups
- Research organisations
- Universities
- PIRSA
- Landscape Boards
- Agricultural advisers and consultants
- Demonstration host farmers

7. Expected Outcomes and Long-Term Impact

Short-Term Outcomes (1–2 Years)

Knowledge

- Increased understanding of practices that improve water capture, storage and utilisation.
- Increased understanding of soil constraints and soil amelioration opportunities.
- Increased knowledge of nutrient management strategies that improve water use efficiency.
- Increased awareness of precision agriculture technologies and existing decision-support tools.
- Increased understanding of resilient pasture systems, rotational diversity and enterprise options that support drought resilience.

Skills

- Improved ability to assess soil constraints and management opportunities.
- Improved capability to interpret soil moisture, nutrient and production data.
- Improved ability to evaluate the suitability of new technologies and management practices.
- Improved skills in applying precision agriculture and decision-support tools.
- Improved capability to assess the economic costs, benefits and risks associated with management change.

Confidence

- Increased confidence trialling new practices and technologies on-farm.
- Increased confidence using evidence generated through demonstration activities.
- Increased confidence making decisions under variable seasonal conditions.
- Increased confidence evaluating opportunities to improve water capture, storage and utilisation.

Medium-Term Outcomes (3–5 Years)

Practice Change

- Increased implementation of practices that improve soil function and water capture.
- Increased adoption of nutrient management practices that improve water use efficiency.
- Greater use of precision agriculture technologies and data-driven decision-making.
- Increased implementation of resilient pasture, grazing and mixed farming systems.
- Increased rotational diversity and enterprise flexibility.

Adoption

- Greater adoption of demonstrated drought resilience practices and technologies.
- Increased use of soil moisture monitoring, nutrient budgeting and existing decision-support tools.
- Increased uptake of soil amelioration, precision agriculture and improved water use efficiency practices.
- Increased adoption of regionally relevant innovations demonstrated through the project.

Collaboration

- Stronger collaboration between growers, advisers, researchers and industry organisations.
- Increased co-design of demonstration, research and extension activities.
- Active regional learning networks established to support knowledge exchange and adoption.
- Improved sharing of practical evidence and experience across regions.

Long-Term Outcomes and Impact (5+ Years)

Productivity

- Improved capacity of farming systems to capture, store and utilise available water.
- Increased productivity from available soil moisture through improved soil, nutrient and enterprise management.
- Multi-year evidence generated across seasonal variations relevant to local conditions.
- Improved crop, pasture and livestock performance through adoption of demonstrated practices.

Profitability

- Improved return on investment from soil, nutrient, pasture and technology investments.
- More informed and effective farm business decision-making.
- Improved efficiency of resource use and management inputs.
- Reduced exposure to production risks associated with seasonal variability.

Resilience

- Increased resilience of farming systems to drought and seasonal variability.
- More diverse and adaptable farming systems.
- Stronger grower and adviser capability to respond to changing climatic conditions.
- Strong regional networks that support ongoing learning, innovation and adoption of drought resilience practices.

INVESTMENT THEME 1: SOIL WATER DYNAMICS

Overview

Many farming systems are constrained by physical, chemical and biological soil limitations that reduce infiltration, restrict root growth, limit plant available water capacity and ultimately reduce productivity and resilience.

This investment theme focuses on improving the ability of soils to capture, store and supply water through the identification and management of soil constraints. Demonstration activities will help growers understand how soil constraints influence plant available water capacity and water-limited yield potential, providing a framework for evaluating opportunities to improve productivity and drought resilience.

The theme directly contributes to improved drought resilience by increasing the amount of rainfall retained within the soil profile and available for productive use.

Purpose

To improve the capacity of South Australian farming systems to capture, store and utilise rainfall through the identification and management of physical, chemical and biological soil constraints.

Objectives

1. Identify the key physical, chemical and biological soil constraints limiting water capture, storage and productivity across participating regions.
2. Demonstrate practical soil amelioration strategies that improve soil function, infiltration, rooting depth and plant available water capacity.
3. Evaluate how soil condition influences water capture, plant available water, productivity and profitability.
4. Improve grower understanding of the costs, benefits and return on investment associated with soil amelioration practices.
5. Build grower and adviser capability and support adoption of soil improvement practices that enhance water capture, productivity and drought resilience.

Outcomes

Short-Term Outcomes

- Improved understanding of soil constraints and their impact on productivity.
- Increased awareness of soil amelioration opportunities.
- Improved understanding of soil water dynamics and plant available water.

Medium-Term Outcomes

- Improved grower confidence in assessing and prioritising soil amelioration investments.
- Increased adoption of soil amelioration practices.
- Improved infiltration and water storage capacity.
- Increased rooting depth and access to stored moisture.
- Improved crop and pasture establishment.

Long-Term Outcomes and Impact

- Increased productivity and profitability.
- Improved drought resilience.
- Enhanced soil health, soil function and natural capital.
- Increased water capture and storage across farming systems.

Activities

Evidence Demonstration activities will follow a structured, paddock-scale process designed to help growers understand the relationship between soil condition, plant available water capacity, productivity and profitability, while providing practical evidence of how soil amelioration can improve water capture and utilisation.

Phase 1 – Soil characterisation and water capacity assessment (Year 1)
Participating growers will undertake detailed spatial characterisation of selected demonstration paddocks to identify soil variability and understand the factors influencing water capture, storage and crop access to soil moisture.

Activities may include:

- Spatial mapping using technologies such as electromagnetic induction (EM38), gamma radiometrics, elevation mapping and other available spatial datasets.
- Collation and interpretation of existing farm data including yield maps, protein maps, NDVI imagery and other production records.
- Delineation of management zones based on soil type, landscape position and production performance.
- Soil characterisation within each management zone, including assessment of physical, chemical and biological soil properties through the profile (typically to one metre depth).
- Identification of soil constraints affecting water entry, water storage, root growth and nutrient availability.
- Quantification of plant available water capacity (PAWC) within each management zone using tools such as Soil Water Express and associated soil characterisation methods.

Assessment of PAWC will consider factors including soil texture, particle size distribution, bulk density, drained upper limit (DUL), crop lower limit (CLL), soil chemistry, salinity, pH and other constraints that influence the effective size of the soil water bucket available to crops and pastures.

The information generated will be used to estimate water-limited yield potential and identify the extent to which soil constraints are limiting productive use of rainfall.

Phase 2 – Constraint identification and treatment design (Year 2)
Following soil characterisation, growers and project partners will identify opportunities to improve water capture, storage and extraction through targeted soil management interventions.

Activities may include:

- Identification of key physical, chemical, nutritional and biological constraints limiting productivity and water use efficiency (if not undertaken in Phase 1).
- Evaluation of potential soil amelioration and management options appropriate to each management zone.
- Assessment of risks, costs and likely benefits associated with proposed interventions.
- Development of treatment plans and management strategies tailored to local soil conditions.
- Consideration of post-amelioration management requirements to maximise the longevity and effectiveness of treatments.

Potential treatments may include deep ripping, strategic tillage, lime, gypsum, nutrient amendments, organic amendments, drainage improvements, soil mixing, clay spreading, delving or other regionally relevant soil improvement practices.

Phase 3 – Demonstration, Monitoring and Evaluation (Years 2–4)
Selected treatments will be implemented and monitored over multiple seasons to assess their impact on soil function, water dynamics and farm performance.

Activities may include:

- Implementation of soil amelioration and management treatments.
- Monitoring of soil moisture, crop and pasture performance, rooting depth and soil condition indicators.
- Evaluation of changes in plant available water capacity and crop access to stored moisture.
- Measurement of production outcomes including establishment, biomass production, grain yield and quality where relevant.
- Comparison of treated and untreated areas to quantify impacts on productivity and resilience.
- Collection of economic data to evaluate costs, benefits, payback periods and return on investment.
- Assess farmer satisfaction with project activities, implementation and outcomes, knowledge gained, confidence to implement practices, and perceived impacts on drought resilience.

Knowledge exchange and decision support
Throughout the project, Evidence Demonstration sites will be used as focal points for grower learning and discussion, facilitated through Component 4: Future Farmers.

Activities may include:

- Field days with discussion groups.
- Soil pit demonstrations and soil water bucket activities.
- Training in soil moisture monitoring and interpretation.
- Demonstration of existing decision-support tools used to assess soil constraints, plant available water capacity and yield potential.
- Development of case studies highlighting practical outcomes, lessons learnt and economic performance.

The overall aim is to help growers understand the relationship between soil condition and soil water, identify the factors limiting productive use of rainfall, and implement practical management strategies that increase water capture, improve access to stored moisture and enhance productivity, profitability and drought resilience.

Success Measures

- Number of demonstration sites established.
- Number of growers and advisers engaged.
- Number of growers using soil characterisation and PAWC assessments in decision making.
- Number of soil amelioration investment decisions informed by project activities.
- Demonstrated improvements in water-limited yield potential.
- Improvements in plant available water capacity.
- Demonstrated economic returns from soil management interventions.

Collaborators, linking projects and complementary research

- Complementary Projects: GRDC Sandy Soils II, GRDC Heavy Soils, South Australian Climate Resilience Discovery Farms and Innovator Sites (Future Drought Fund), Assessing soil water storage (CRC Soils).
- Key collaborators may include the Soil CRC, University of Adelaide, Flinders University, CSIRO, SAGIT-funded projects, SARDI soil science teams, consultants, adviser and grower groups.

INVESTMENT THEME 2: ADAPTIVE AGRONOMY

Overview

Rainfall is the primary driver of agricultural production in South Australia, however the productivity achieved from available soil moisture is strongly influenced by farming system design, crop sequencing, nutrient availability and agronomic management. The interaction between water and nutrients determines how effectively crops and pastures convert limited seasonal resources into biomass, grain yield and profit.

This theme focuses on improving water and nutrient use efficiency through adaptive agronomic management. Demonstration activities will evaluate how crop sequences, rotations, legumes, fodder crops, nutrient management strategies and other agronomic interventions influence residual soil water, nutrient availability, crop performance and system profitability. Particular emphasis will be placed on understanding the legacy effects of management decisions, including the contribution of biological nitrogen fixation, nutrient cycling and carryover soil moisture to future crop performance.

Through practical demonstrations and monitoring, growers will gain a better understanding of how different farming system configurations influence the capture, retention and productive use of water and nutrients. This will support more informed agronomic and investment decisions that improve productivity, profitability and resilience under increasingly variable seasonal conditions.

The theme directly contributes to drought resilience by improving productivity per millimetre of rainfall, increasing nutrient use efficiency and supporting farming systems that make more effective use of limited soil moisture.

Purpose

To improve water and nutrient use efficiency, farming system productivity and profitability through adaptive agronomic management and evidence-based decision-making.

Objectives

1. Improve understanding of the interaction between nutrient availability, soil moisture and crop productivity.
2. Demonstrate agronomic and nutrient management strategies that increase nutrient use efficiency and productivity per millimetre of rainfall.
3. Evaluate the contribution of crop sequences, biological nitrogen fixation, nutrient budgeting and management to productivity, profitability and water use efficiency.
4. Improve grower confidence in making nutrient investment decisions under variable seasonal conditions.
5. Build grower and adviser capability and support adoption of nutrient management practices that improve profitability, productivity and resilience.

Outcomes

Short-Term Outcomes

- Improved nutrient budgeting capability.
- Improved understanding of nutrient-water interactions.
- Increased confidence in nutrient management decisions.

Medium-Term Outcomes

- Increased nutrient use efficiency.

- Improved fertiliser return on investment.
- Improved water use efficiency.
- Reduced nutrient losses.

Long-Term Outcomes and Impact

- Increased productivity per millimetre of rainfall.
- Improved profitability.
- Reduced production risk.
- Increased resilience to seasonal variability.
- Increased ability and confidence to make data-based decisions on farm.

Activities

Demonstration activities will follow a structured plot-scale approach designed to help growers understand how crop sequences, rotations and agronomic management influence the capture, retention and utilisation of water and nutrients within farming systems.

The focus will be on quantifying the legacy effects of different crops and management practices on soil water, nutrient availability, productivity and profitability, and identifying opportunities to improve water use efficiency and resilience through more adaptive agronomic systems.

Phase 1 – System characterisation and baseline assessment (Year 1)

Participating growers will undertake characterisation of selected demonstration paddocks to understand spatial variability, soil water holding capacity and nutrient status prior to the establishment of demonstration activities.

Activities may include:

- Spatial mapping using available soil and production datasets.
- Delineation of management zones based on soil type, landscape position and production performance.
- Assessment of plant available water capacity (PAWC) across management zones.
- Soil testing and nutrient assessment to establish baseline fertility and nutrient supply.
- Development of soil water and nutrient maps that describe the productive capacity of different soil types within the paddock.
- Identification of agronomic constraints and opportunities associated with existing farming systems.

This information will provide the foundation for evaluating how different crop sequences and management practices influence the availability and utilisation of water and nutrients over time.

Phase 2 – Crop sequence and rotation demonstrations (Years 1–4)

Demonstration activities will evaluate the impact of alternative crop sequences and rotational strategies on residual soil moisture, nutrient availability, productivity and profitability.

Activities may include:

- Comparison of cereal, pulse, pasture and fodder-based crop sequences.
- Evaluation of grain legumes, grazing legumes, brown manure legumes and hay crops.
- Monitoring of residual soil water following different crop and pasture phases.
- Quantification of biological nitrogen fixation across different legume systems.
- Assessment of nitrogen carryover and nutrient cycling within farming systems.
- Evaluation of the interaction between soil water availability, nutrient supply and crop performance.

- Investigation of regionally relevant rotation options that improve system productivity and resilience.

Demonstrations will be designed to examine both immediate and legacy impacts of management practices, recognising that the benefits of some agronomic interventions may extend across multiple seasons.

Phase 3 – Legacy effects, monitoring and evaluation (Years 2–4)

Monitoring activities will assess how crop sequences influence water and nutrient availability beyond the season in which they are implemented.

Activities may include:

- Monitoring changes in residual soil moisture between seasons.
- Measurement of nitrogen availability and carryover effects following legumes and other break crops.
- Assessment of crop performance in subsequent years to determine legacy benefits.
- Evaluation of water use efficiency and productivity across different crop sequences.
- Measurement of production outcomes including biomass, grain yield and grain quality.
- Comparison of alternative systems to identify the most profitable and resilient agronomic strategies.

Where nutrient limitations are identified, demonstration activities may also include best-practice management of phosphorus, potassium, sulphur and trace elements to ensure that water and nitrogen responses are not constrained by other nutrient deficiencies.

Economic Analysis and Decision Support

Economic evaluation will be incorporated throughout the project to improve grower confidence in agronomic decision-making under variable seasonal conditions.

Activities may include:

- Nutrient budgeting and fertiliser investment analysis.
- Economic assessment of crop sequence and rotation options.
- Evaluation of the return on investment associated with legumes, hay crops and other break phases.
- Assessment of risk and profitability under different seasonal scenarios.
- Demonstration of existing decision-support tools used to guide nutrient and agronomic management decisions.
- Assessment of farmer opinion on management implications and efficacy of using different crop sequences from a profitability, capital equipment, input and labour perspective.

The overall aim is to help growers understand how crop sequences, rotations and agronomic management influence the capture, retention and productive use of water and nutrients, and to identify practical system changes that improve water use efficiency, profitability and drought resilience.

Success Measures

- Number of adaptive agronomy demonstrations established.
- Number of growers participating.
- Improvements in nutrient use efficiency.

- Improvements in water use efficiency.
- Adoption of nutrient budgeting tools.
- Demonstrated fertiliser return on investment.
- Productivity gains achieved through improved nutrient management.

Collaborators, Linking Projects and Complementary Researchers

- Complementary Projects: GRDC Farming Systems South (University of Adelaide), GRDC Southern Farming Systems / legacy farming systems research (CSIRO), GRDC herbicide persistence and rotational crop risk.
- Collaboration will occur with universities, industry partners and research organisations undertaking nutrient use efficiency and water productivity research, including consultants, adviser and grower groups.

INVESTMENT THEME 3: PRODUCTIVE PASTURES

Overview

Pasture and grazing systems play a critical role in the productivity, profitability and resilience of South Australian farming businesses. The ability of grazing enterprises to convert rainfall into feed and livestock production is strongly influenced by pasture composition, grazing management, soil condition and nutrient availability. Well-managed pasture systems can improve feed security, maintain groundcover, enhance soil function and increase the capacity of farming businesses to respond to seasonal variability and drought.

This theme focuses on improving the productivity and resilience of grazing and mixed farming systems through adaptive pasture and grazing management. Demonstration activities will evaluate how grazing pressure, recovery periods, pasture composition, nutrient management and feedbase design influence feed production, livestock performance, soil condition and water use efficiency. Particular emphasis will be placed on understanding the relationship between groundcover retention, soil function, water capture and long-term pasture productivity.

Through practical demonstrations and monitoring, growers will gain a better understanding of how pasture and grazing management decisions influence the capture, retention and productive use of water, and how these decisions affect feed production, livestock performance and whole-farm profitability. Activities will also examine the longer-term impacts of management practices on soil health, nutrient cycling, water infiltration and pasture persistence.

The theme directly contributes to drought resilience by improving feed production per millimetre of rainfall, maintaining productive and persistent pasture systems, and supporting grazing enterprises that are better equipped to withstand and recover from seasonal variability.

Purpose

To improve feed security, livestock productivity and whole-farm resilience through the development and demonstration of productive and drought-resilient grazing systems.

Objectives

1. Identify pasture systems that improve productivity, persistence and resilience across a range of environments.
2. Demonstrate grazing management practices that optimise livestock production while protecting soil, pasture and natural resources.
3. Evaluate the relationship between pasture management, soil health, water capture, feed production and farm profitability.
4. Improve grower understanding of the economic and operational factors influencing resilient grazing systems.
5. Build grower and adviser capability and support adoption of productive, profitable and drought-resilient mixed farming systems.

Outcomes

Short-Term Outcomes

- Improved understanding of pasture and grazing options.
- Increased awareness of feedbase opportunities.
- Improved grazing management capability.

Medium-Term Outcomes

- Increased feed security.
- Improved livestock productivity.
- Improved groundcover retention.
- Enhanced soil condition.

Long-Term Outcomes and Impact

- More resilient mixed farming enterprises.
- Improved profitability.
- Improved landscape function.
- Increased drought preparedness.

Activities

Demonstration activities will focus on pasture and grazing systems that improve feed production, livestock productivity, soil function and drought resilience. Activities will primarily target grazing enterprises and mixed farming systems where paddocks are managed predominantly as pastures rather than cropped.

The focus will be on understanding how grazing management, pasture composition and nutrient management influence the capture, retention and productive use of water, while also improving soil condition, pasture persistence and whole-farm profitability.

Phase 1 – Pasture system characterisation and baseline assessment (Year 1)
Participating growers will undertake baseline assessment of selected demonstration paddocks to understand soil condition, pasture performance and the factors influencing feed production and resilience.

Activities may include:

- Delineation of management zones based on soil type, landscape position and production performance.
- Assessment of soil physical, chemical and biological condition.
- Soil nutrient testing and fertility assessment.
- Evaluation of existing pasture composition and productivity.
- Assessment of plant available water capacity and soil water dynamics.
- Identification of key constraints affecting pasture production, persistence and grazing performance.

This information will establish the foundation for evaluating the impact of different grazing and pasture management strategies on productivity, resource use efficiency and resilience.

Phase 2 – Pasture and grazing system demonstrations (Years 1–4)
Demonstration activities will evaluate alternative pasture and grazing management strategies designed to improve feed production, soil condition and drought resilience.

Activities may include:

- Evaluation of grazing pressure and recovery periods (set versus rotational grazing).
- Assessment of the impact of residual groundcover on pasture recovery, water use efficiency, feed production and soil function over multiple seasons.
- Comparison of annual, perennial and mixed-species pasture systems.
- Evaluation of pasture diversity and species composition on productivity, persistence and resilience.

- Demonstration of best-practice phosphorus, potassium, sulphur and trace element management where nutrient limitations are identified.
- Evaluation of pasture establishment and renovation strategies where appropriate.

Phase 3 – Monitoring, Soil Function and Productivity Assessment (Years 2–4)
Monitoring activities will assess the longer-term impacts of grazing and pasture management on soil function, feed production and enterprise performance.

Activities may include:
- Measurement of pasture biomass production and feed quality.
- Monitoring of pasture persistence and recovery following grazing.
- Assessment of groundcover retention throughout the year.
- Monitoring of residual soil moisture and water use efficiency.
- Evaluation of nutrient cycling and biological nitrogen contributions from legume-based pastures.
- Assessment of changes in soil condition, including infiltration, soil structure and water holding capacity.
- Monitoring of soil carbon and other soil health indicators.
- Comparison of management systems to identify those delivering the greatest productivity and resilience benefits.

Monitoring will be undertaken over multiple years to assess both seasonal and cumulative impacts of management practices on pasture systems and soil function.

Livestock Productivity and System Performance
Where appropriate, livestock production measures may be incorporated to demonstrate the whole-system benefits of improved pasture management.

Activities may include:
- Monitoring of livestock growth rates and liveweight gain.
- Evaluation of carrying capacity and feed utilisation.
- Assessment of feed conversion efficiency.
- Demonstration of technologies and tools that support livestock performance monitoring.
- Comparison of livestock productivity outcomes under different grazing and pasture management systems.

Economic Analysis and Decision Support
Economic evaluation will be incorporated throughout the project to improve grower confidence in pasture and grazing management decisions.

Activities may include:
- Feed budgeting and carrying capacity assessments.
- Economic evaluation of grazing management strategies.
- Assessment of the costs and benefits associated with pasture improvement and nutrient management.
- Evaluation of productivity and profitability outcomes associated with different pasture systems.
- Demonstration of existing decision-support tools used to support grazing management and feedbase planning.

Success Measures

- Number of pasture demonstration sites.
- Number of participating producers.
- Improvements in feed production and utilisation.
- Improvements in livestock performance.
- Groundcover retention outcomes.
- Adoption of grazing management practices.
- Improvements in profitability and resilience.

Collaborators, Linking Projects and Complementary Researchers

- Complementary Projects (all MLA funded): Grazing for Climate Resilience / PACE; Optimising Grazing Management for Improved Production Outcomes (2026–2029); Improved Pasture Management Systems, SA; Data-driven system optimising the forage base.
- Research collaboration may involve universities, SARDI livestock teams and industry organisations, along with consultants, adviser and grower groups.

INVESTMENT THEME 4: PROFITABLE PULSES

Overview

Legumes play a critical role in the productivity, profitability and resilience of South Australian farming systems. In addition to providing valuable grain, fodder and grazing opportunities, legumes contribute biological nitrogen, improve rotational flexibility, support soil function and can enhance the efficiency with which farming systems utilise available water.

This theme focuses on identifying and demonstrating profitable pulse, legume and break-crop options that strengthen farming system performance and increase resilience to seasonal and market variability. Demonstration activities will evaluate the adaptation, productivity and profitability of existing and emerging legume species, while quantifying their contribution to nitrogen supply, residual soil moisture, subsequent crop performance and whole-farm profitability.

Particular emphasis will be placed on understanding the broader farming system benefits of legumes, including biological nitrogen fixation, rotational diversity, disease management, enterprise flexibility and opportunities for alternative grain, fodder, grazing and mixed-enterprise production systems. Activities will also investigate emerging species, new varieties and alternative market opportunities that may provide growers with additional options for adapting to changing climatic and economic conditions.

Through practical demonstrations and monitoring, growers will gain a better understanding of how legumes can be integrated into farming systems to improve productivity, reduce production risk and enhance long-term sustainability.

The theme directly contributes to drought resilience by increasing rotational flexibility, improving biological fertility, enhancing water-use efficiency and supporting farming systems that are better able to adapt to seasonal variability and changing market conditions.

Purpose

To improve farming system resilience through greater enterprise diversity, rotational flexibility and biological fertility.

Objectives

1. Evaluate alternative legumes, break crops and diverse rotational systems suitable for South Australian farming environments.
2. Demonstrate how rotational diversity can improve soil fertility, water use efficiency, risk management and whole-farm resilience.
3. Evaluate profitable enterprise options that increase flexibility and adaptation to seasonal and market variability.
4. Improve grower confidence in assessing rotational, enterprise and diversification opportunities.
5. Build grower and adviser capability and support adoption of diverse rotational systems that improve productivity, resilience and long-term sustainability.

Outcomes

Short-Term Outcomes

- Increased awareness of alternative species and enterprises.
- Improved understanding of rotational benefits.

- Increased confidence evaluating alternative options.

Medium-Term Outcomes

- Greater rotational diversity.
- Increased adoption of alternative legumes.
- Improved nitrogen supply and soil fertility.
- Reduced production risk.

Long-Term Outcomes and Impact

- More resilient farming systems.
- Increased profitability.
- Improved adaptability to climate variability.
- Enhanced biodiversity and system function.

Activities

Demonstration activities will focus on evaluating profitable pulse, legume and alternative break-crop opportunities that improve farming system productivity, nitrogen supply, rotational flexibility and drought resilience.

Activities will primarily be delivered through small-plot demonstrations that assess the adaptation, profitability and farming system benefits of existing and emerging pulse and legume options across South Australian environments.

The focus will be on understanding how alternative legumes contribute to biological nitrogen fixation, residual soil water, enterprise profitability and whole-farm resilience, while identifying opportunities to diversify farming systems and reduce production risk.

Phase 1 – Enterprise opportunity assessment and baseline characterisation (Year 1)

Participating growers will identify opportunities to increase enterprise diversity and rotational flexibility through the introduction of alternative pulse and legume species, new genetics or advanced agronomy.

Activities may include:

- Assessment of local production constraints limiting pulse adoption.
- Identification of opportunities for integrating grain legumes, pasture legumes and break crops into current rotations.
- Characterisation of soil, climate and farming system factors influencing pulse suitability.
- Assessment of plant available water capacity and nutrient status within demonstration sites.
- Identification of market opportunities and alternative end uses for pulse and legume species.

This information will provide the foundation for selecting species and management strategies that are suited to local environments and farming systems.

Phase 2 – Species evaluation and farming system demonstrations (Years 1–4)

Demonstration activities will evaluate the adaptation, productivity and profitability of alternative pulse and legume options, such as:

- New genetics of established pulses — chickpea, lentil, faba bean, field pea.
- Alternative grain legumes — species that aren't currently mainstream in a particular region.
- Pasture/forage legumes — vetch, medic and emerging harvestable annual legumes.

- Dual-purpose legumes — grain/graze, seed/graze, hay/graze.
- Intercropping/companion systems — where the legume's contribution to N, risk or overall system productivity is the question.

Particular emphasis will be placed on identifying opportunities to introduce legumes into farming systems where they have traditionally been underutilised or where economic returns are diminishing (e.g. lentils).

Phase 3 – System benefits, legacy effects and resource use efficiency (Years 2–4)
Monitoring activities will evaluate the broader farming system benefits of incorporating pulse and legume phases into their existing rotations.

Activities may include:

- Assessment of residual nitrogen available to subsequent crops.
- Monitoring of residual soil moisture following pulse and legume phases.
- Evaluation of nitrogen cycling and nutrient-use efficiency.
- Assessment of crop performance following different pulse and legume sequences.
- Measurement of grain yield, biomass production and feed quality.
- Comparison of farming system productivity and water-use efficiency outcomes.

Monitoring will be undertaken over multiple seasons to quantify both immediate and legacy benefits associated with pulse and legume enterprises.

Enterprise diversification and market opportunities
Demonstration activities will explore opportunities to increase enterprise flexibility through alternative markets and end uses.

Activities may include:

- Evaluation of grain, grazing, hay and fodder opportunities.
- Feed quality and palatability assessment for livestock enterprises.
- Assessment of dual-purpose and mixed-enterprise systems.
- Investigation of emerging domestic and export market opportunities.
- Evaluation of value-added and niche enterprise opportunities.

Economic analysis and Decision support
Economic evaluation will be incorporated throughout the project to improve grower confidence in enterprise diversification decisions.
Activities may include:

- Gross margin analysis of alternative pulse and legume options.
- Assessment of the economic value of biological nitrogen fixation.
- Evaluation of rotational benefits and legacy effects.
- Comparison of enterprise profitability under different seasonal scenarios.
- Assessment of risk, resilience and return on investment.
- Demonstration of decision-support tools used to evaluate enterprise options and rotational planning.

The overall aim is to help growers identify profitable pulse and legume enterprises that improve rotational flexibility, enhance nitrogen supply, increase water-use efficiency and strengthen the resilience of South Australian farming systems.

Success Measures

- Number of demonstration sites established.
- Number of species evaluated.
- Grower participation and engagement.
- Increased adoption of legumes and pulses in the rotation.
- Improvements in rotational diversity.
- Economic returns from alternative enterprise options.
- Increased resilience and system flexibility.
- Improved understanding of the suitability and performance of alternative legumes and pulses under local soil and climatic conditions, increasing confidence in their adoption.

Collaborators, Linking Projects and Complementary Researchers

- Complementary Projects: GRDC – Closing the economic yield gap and maximising farming systems benefits from grain legumes in South Australia; GRDC – Improving Adaptation and Profitability of High Value Pulses (Chickpea and Lentil), Phase 2; GRDC NGN – Optimising and expanding pulse production in cold environments of the Mid North; GRDC/MLA PDS – Legumes in Mixed Farming Rotations; MLA – Raising the Bar for Harvestable Pasture Legumes / HALO.
- Research collaboration may include SARDI, Universities, CSIRO, industry organisations, adviser, consultants and farming system groups.

INVESTMENT THEME 5: PRECISION DECISIONS

Overview

South Australian farming systems exhibit significant variability in soil type, production potential, nutrient status, water availability and seasonal risk, often within the same paddock. While many growers already collect large amounts of spatial and production data, there remains a substantial opportunity to improve how that information is interpreted and applied to management decisions.

This theme focuses on helping growers identify, understand and manage spatial variability through the practical application of precision agriculture technologies, spatial information and data-driven decision-making. Demonstration activities will support growers to move beyond data collection and develop confidence in using management zones, soil information, yield data and other precision agriculture tools to guide input allocation, crop management and investment decisions.

Particular emphasis will be placed on understanding the productive capacity and limitations of different parts of the landscape and using that information to optimise resource allocation. Activities will evaluate how targeted management strategies, including variable-rate applications and zone-based management, can improve productivity, input efficiency, profitability and resilience across variable production environments.

Through practical demonstrations, case studies and one-on-one support, growers will gain the knowledge and skills required to implement precision agriculture practices within their own businesses. The project will also examine the economic and operational factors influencing adoption, helping growers understand the costs, benefits and practical considerations associated with precision management.

The theme directly contributes to drought resilience by improving the efficiency with which water, nutrients and other inputs are allocated across farming systems, enabling growers to make more informed decisions and better manage variability under increasingly uncertain seasonal conditions.

Purpose

To improve profitability, resource use efficiency and drought resilience through the adoption of precision agriculture technologies, spatial management and data-driven decision-making.

Objectives

1. Improve understanding of spatial variability within farming systems and its impact on productivity, profitability and water use efficiency.
2. Demonstrate practical approaches for identifying and managing spatial variability, soil constraints, nutrient limitations and water-related constraints at paddock scale.
3. Evaluate the economic performance and return on investment of variable rate and precision management strategies.
4. Improve grower and adviser confidence in interpreting and applying precision agriculture data to support management decisions.
5. Build grower and adviser capability in the use of precision agriculture equipment and machinery, interpretation of spatial data and application of precision agriculture practices to support effective management decisions, improve resource use efficiency, profitability and drought resilience.

Outcomes

Short-Term Outcomes

- Improved understanding of spatial variability.
- Increased confidence using precision agriculture tools.
- Improved interpretation of data layers.

Medium-Term Outcomes

- Increased adoption of variable rate technologies.
- Better management of production zones.
- Improved resource allocation and efficiency.

Long-Term Outcomes and Impact

- Increased profitability.
- Improved water and nutrient use efficiency.
- Enhanced digital agriculture capability.
- Improved drought resilience.

Activities

Demonstration activities will focus on helping growers identify, understand and manage spatial variability within existing farming systems using precision agriculture technologies, spatial data and targeted management practices.

Unlike Theme 1, which focuses on overcoming soil constraints through amelioration, this theme focuses on improving decision-making and resource allocation by managing variability within existing soil and production environments. The emphasis is on helping growers move beyond data collection and towards practical implementation of precision agriculture practices that improve profitability, resource use efficiency and drought resilience.

The project will utilise real paddocks and real farm data to support growers through the process of identifying variability, developing management zones, implementing targeted management strategies and evaluating outcomes over multiple seasons.

Phase 1 – Spatial characterisation and management zone development (Year 1)

Participating growers will undertake detailed paddock characterisation to understand spatial variability and identify opportunities for targeted management.

Activities may include:

- Collation and interpretation of existing farm datasets including yield maps, protein maps, NDVI imagery, satellite data and machinery-generated datasets.
- Spatial mapping using technologies such as electromagnetic induction (EM38), gamma radiometrics, elevation mapping and other relevant datasets where required.
- Delineation of management zones based on soil type, production potential, landscape position and historical performance.
- Soil testing and characterisation within management zones.
- Identification of soil constraints, nutrient limitations and factors affecting productivity within each zone.
- Assessment of plant available water capacity and production potential within management zones.

This information will be used to develop a clear understanding of the productive capacity and limitations of different parts of the paddock and establish a foundation for precision management.

Phase 2 – Precision management implementation (Years 2–4)
Demonstration activities will evaluate practical precision agriculture strategies designed to improve resource allocation and match inputs to production potential.

Activities may include:

- Development of zone-specific management strategies.
- Variable-rate nutrient applications.
- Variable-rate seeding strategies.
- Targeted management of soil constraints and production limitations.
- Precision nitrogen management and in-season decision-making.
- Evaluation of opportunities to improve input efficiency and reduce production risk.
- Assessment of management strategies that optimise productivity within existing soil and landscape constraints.

Management approaches will be designed to align input investment with the productive potential of individual management zones and improve the efficiency with which water and nutrients are converted into production.

Phase 3 – Monitoring, evaluation and adaptive management (Years 2–4)
Monitoring activities will assess the impact of precision management practices on productivity, profitability and resource use efficiency.

Activities may include:

- Monitoring crop performance within management zones.
- Assessment of yield, grain quality and production outcomes.
- Evaluation of nutrient use efficiency and water use efficiency.
- Monitoring of input utilisation and resource allocation.
- Comparison of zone-managed and conventional management approaches.
- Assessment of economic outcomes associated with precision agriculture practices.

Monitoring will be undertaken over multiple seasons to evaluate the consistency of benefits across varying seasonal conditions and production environments.

Adoption pathways and producer case studies
A key focus of the project will be supporting growers through the practical process of adopting precision agriculture technologies and management practices.

Activities may include:

- One-on-one support for participating growers.
- Demonstration of data management, interpretation and decision-making processes.
- Training in accessing, integrating and analysing farm datasets.
- Development of producer case studies documenting adoption journeys.
- Identification of barriers, costs and opportunities associated with precision agriculture implementation.
- Evaluation of the knowledge, skills, infrastructure and support required to successfully adopt precision agriculture practices.

Case studies will document the experiences of participating growers, including the challenges encountered, lessons learnt, implementation costs, management changes adopted and economic outcomes achieved.

Economic analysis and Decision support

Economic evaluation will be incorporated throughout the project to improve grower confidence in precision agriculture investment decisions.

Activities may include:

- Cost-benefit analysis of precision agriculture technologies and management practices.
- Assessment of return on investment from variable-rate applications and targeted management strategies.
- Evaluation of input savings and productivity improvements.
- Assessment of profitability across management zones.
- Demonstration of decision-support tools used to support precision agriculture and resource allocation decisions.

The overall aim is to help growers understand and manage spatial variability within their farming systems, enabling more targeted input decisions, improved resource use efficiency and greater profitability and resilience under variable seasonal conditions.

Success Measures

- Number of precision agriculture demonstrations established.
- Number of growers and advisers trained.
- Adoption of VRT and precision agriculture tools.
- Improvements in resource use efficiency.
- Demonstrated return on investment.
- Improvements in decision-making capability.
- Improved understanding of the suitability and performance of precision agriculture practices under local soil and climatic conditions, increasing confidence in their adoption.

Collaborators, Linking Projects and Complementary Researchers

- Complementary projects: GRDC SoilWaterNow – Soil water nowcasting for the grains industry; GRDC Next Generation Machine Learning Models for 3-D Soil Mapping; GRDC Fostering Adoption of Variable-Rate Fertiliser Application for Improved Nutrient-Use Efficiency; GRDC PrecisionProtein – Mapping Grain Quality for Improved Management; SAGIT – Assessing the Role of Grain Protein Maps in Improving N Fertiliser Response
- Research collaboration may include Universities, CSIRO, SARDI, technology providers, machinery sales and service, adviser, consultants and farming systems groups.

Appendix C: Project Component 3 – Learning Landscapes

Project Overview

Learning Landscapes transforms research, demonstration outcomes and industry expertise in soil and crop management into practical, structured learning modules that support growers, advisers and industry personnel to build capability in drought resilience. The component provides a scalable learning framework that can be adapted to different audiences, skill levels and regional priorities.

The Learning Landscapes framework creates a suite of learning modules covering key crop and pasture production topics that contribute to drought resilience. These modules will be developed by the Future Facilitators to further build capacity and will benefit Future Farmers by providing consistent, evidence-based educational resources and extension materials.

Project Aim

To create a scalable knowledge translation and learning framework that transforms evidence into practical learning resources, supports consistent extension delivery and strengthens the capability of South Australia's agricultural sector to improve productivity, profitability and drought resilience.

Proposed Investment

$ 269,200 (GST exclusive)

With the ability to be scaled up to include additional learning modules

Project Duration

3-5 years

1. Background and Rationale

Consultation identified that growers and advisers often have differing levels of knowledge and experience, making it difficult to deliver extension activities that meet the needs of all participants. Stakeholders highlighted the need for practical, structured learning resource packages that can be tailored to different audiences while maintaining consistency and scientific integrity. During the consultation various themes for development, extension and education were identified around the topics of water capture and storage and water utilisation to optimise the use of water in the landscape building more resilient farming systems.

Consultation Findings

Key Challenges

- Significant variation in baseline knowledge and experience between participants.
- Research findings are often difficult to access and apply in practice.
- Existing resources are fragmented across organisations and projects.
- Limited opportunities for structured learning pathways.
- Need for practical resources that support implementation and decision making.

Opportunities

- Create a consistent statewide learning framework.
- Package research into practical, user-friendly formats.
- Develop learning pathways from introductory to advanced levels.
- Support extension delivery through ready-to-use resources.

Industry Need
The industry requires practical and accessible learning resources that support continuous capability development and enable growers to make informed decisions in increasingly variable climatic conditions.

2. Project Purpose

By 2032, establish a statewide learning framework that translates research, demonstration outcomes and industry expertise into practical learning experiences that improve knowledge, skills, confidence and decision-making capability across South Australian agriculture.

The framework will create consistent and accessible learning pathways that support growers, advisers, facilitators and industry personnel to understand, evaluate and adopt practices that improve water capture, soil water storage, water utilisation and drought resilience. Through the development and continual refinement of Learning Landscapes, the component will strengthen the connection between evidence generation and on-farm adoption, ensuring that knowledge gained through research and demonstration activities is effectively transferred into practice.

3. Project Objectives

1. Develop evidence-based learning modules aligned with key drought resilience priorities
2. Build facilitator capacity to develop extension resources that are engaging and educational
3. Create consistent learning pathways that cater for beginner, intermediate and advanced audiences
4. Increase participant knowledge and confidence to implement improved soil and crop and pasture management practices to improve drought resilience.

Program success measures

Delivery • 8 learning landscape modules developed • 2 overarching themes – Water Capture & Storage + Water utilisation • 1 standardised resource library / toolkit developed for ongoing extension delivery	**Engagement** • 15 future facilitators involved in module development and testing • Modules reviewed by subject matter experts • Resources designed for statewide use by farmers, adviser and industry
Capability • Increased facilitator capability to develop and deliver technical information • Increased participant knowledge and confidence in drought resilience practices • Consistent learning pathways supporting different levels of learning	**Application and Legacy** • 8 practical, evidence based learning pathways available for ongoing delivery • Modules refined through peer delivery, feedback and SME review • Resources maintained through an ongoing review process in Years 2-4

4. Drought Hub Priority Areas

The following priority themes will be directly addressed through this component:

✓ Access to drought information and technical support

✓ Farm planning and decision making to manage climate and operational risk

✓ Livestock and fodder management strategies, technologies and innovations

✓ Crop and pasture management strategies, technologies and innovations

✓ Soil and land management strategies, technologies and innovations

✓ Water security and management strategies, technologies and innovations

✓ Upskilling advisers, researchers and key influencers

✓ Community resilience and wellbeing through support, collaboration and access to technologies

5. Proposed Process

Target Audience

Farmers, Agricultural advisers and consultants, grower group staff, Landscape Board staff, agricultural students and emerging industry leaders, researchers and project officers delivering regionally based drought resilience programs.

Methodology

Future Facilitators will work collaboratively to develop a series of Learning Landscapes within their chosen area of interest over a 3–6 month period. Each Learning Landscape will comprise a suite of educational and extension resources designed to support practical learning and knowledge transfer within farming communities.

Each Learning Landscape will include:

- A structured learning module.
- A facilitated session plan, including practical activities and discussion prompts.
- A presentation slide deck.
- Supporting learning resources and reference materials.
- A list of relevant subject matter experts (SMEs) who can contribute to or support delivery of the module.

Future Facilitators will be supported throughout the development process by experienced mentors to ensure that the resources produced align with program objectives and are suitable for extension and adult learning purposes.

Once developed, Learning Landscapes will be delivered back to the Future Facilitator group. Feedback from participants will be used to refine and improve module content and delivery approaches. Each module will then undergo review by an appropriate subject matter expert to ensure technical accuracy, relevance and suitability for broader extension use.

Following review, modules will be professionally formatted and standardised with the assistance of a communications specialist to ensure consistency across the program. This will create a suite of high-quality extension resources that can be used by Future Facilitators and

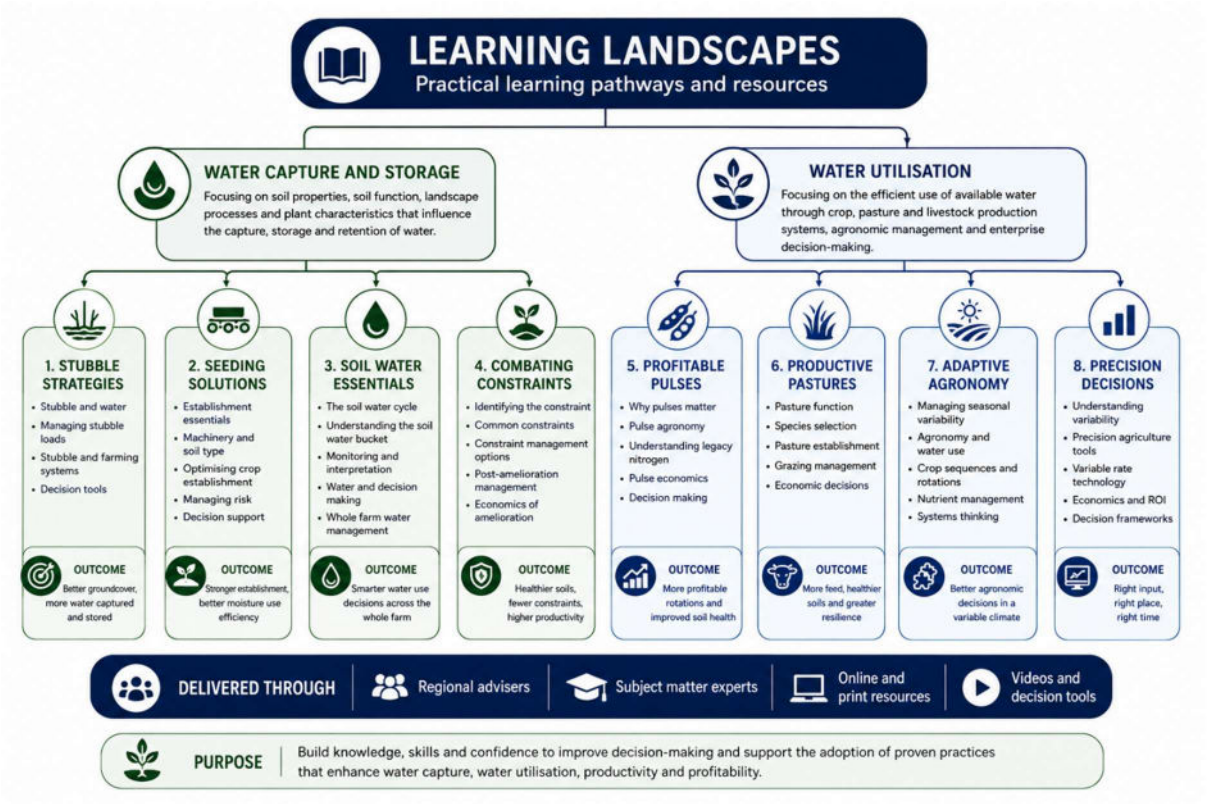
Future Farmer groups throughout the life of the project and updated as new knowledge and experiences emerge.

Learning Landscape Themes

The Learning Landscapes are organised into two broad themes:

1. **Water Capture and Storage** – focusing on soil properties, soil function, landscape processes and plant characteristics that influence the capture, storage and retention of water within farming systems.
2. **Water Utilisation** – focusing on the efficient use of available water through crop, pasture and livestock production systems, agronomic management and enterprise decision-making.

The relationship between these themes is shown below.



While not exhaustive, the topics listed below provide an initial framework to guide module development and ensure alignment with grower needs and regional priorities.

Stubble Strategies:

Understand how stubble and groundcover influence water capture, erosion risk, nutrient cycling and crop establishment.

Stubble and Water

- Relationship between residue cover and water infiltration
- Reducing evaporation losses
- Maintaining groundcover for drought resilience
- Soil moisture conservation through summer

Managing Stubble Loads

- High stubble loads and establishment challenges
- Low stubble systems following pulses
- Grazing stubbles and residue utilisation
- Burning versus retention trade-offs

Stubble and Farming Systems

- Impact on herbicide efficacy
- Harvest weed seed control systems
- Frost interactions
- Carbon and biochar opportunities

Decision Tools

- Groundcover assessment methods
- Residue thresholds for different environments
- Balancing erosion risk versus establishment risk
- Economic assessment of stubble strategies

Seeding Solutions:

Improve crop establishment by matching machinery, sowing strategy and agronomy to soil moisture and soil type.

Establishment Essentials

- What drives successful establishment
- Soil moisture location and crop emergence
- Dry sowing principles and risks
- Understanding emergence triggers

Machinery and Soil Type

- Disc versus tyne systems
- Hybrid seeding systems
- Matching machinery to soil constraints
- Fertiliser placement and seed safety

Optimising Crop Establishment

- Seeding depth decisions
- Row spacing and plant density
- On-row versus inter-row sowing
- Long coleoptile varieties

Managing Risk

- Herbicide residues
- Furrow design and seedbed finish
- Hairpinning and non-wetting sands
- Establishment under low rainfall

Decision Support

- Seeding decision matrices
- PAW at seeding interpretation
- Machinery ROI frameworks

Soil Water Essentials

Provide foundational knowledge of how water moves through farming systems and how it determines productivity.

The Soil Water Cycle

- Capture, storage and utilisation
- Infiltration, runoff and evaporation
- Plant available water (PAW)

Understanding the Soil Water Bucket

- Soil texture and water holding capacity (soil characterisation)
- Rooting depth and extraction patterns
- Crop lower limits and water use efficiency

Monitoring and Interpretation

- Crop water use relative to growth stage
- Soil moisture probes

Water and Decision Making

- Water-limited yield potential
- Seasonal risk assessment / forecasting and planning
- Moisture legacies
- Water use across rotations

Whole Farm Water Management

- Water as the foundation of all decisions
- Linking water to fertility, constraints and crop choice

Combating Constraints

Build the ability to identify, diagnose and manage physical and chemical soil constraints.

Identifying the constraint

- Understanding the soil profile
- Soil testing, interpretation and decision thresholds
- Soil characterisation techniques

Common Constraints

- Acidity
- Sodicity
- Salinity
- Water repellence
- Compaction
- Boron and aluminium toxicity

Constraint Management Options

- Lime
- Gypsum
- Clay spreading and mixing
- Deep ripping
- Organic amendments

Post-Amelioration Management

- Nutrition requirements
- Crop sequencing
- Groundcover recovery
- Monitoring responses

Economics of Amelioration

- Calculating ROI
- Longevity of responses
- Risk and timing considerations
- Prioritising investment

Profitable Pulses

Help growers maximise the agronomic and economic benefits of pulses within rotations.

Why Pulses Matter

- Nitrogen fixation
- Disease breaks
- Diversification
- Soil health benefits

Pulse Agronomy

- Species selection
- Soil suitability
- Establishment requirements
- Managing drought risk

Understanding Legacy Nitrogen

- N banking
- Mineralisation
- Nitrogen credits
- Impacts on following crops

Pulse Economics

- Gross margins
- Long-term rotational value
- Profit versus risk
- Alternative pulse opportunities

Decision Making

- Pulse fit within rotations
- Herbicide residue considerations
- Moisture legacy effects
- Pulse decision trees

Productive Pastures

Increase understanding of pasture systems that improve resilience, feed supply and soil function.

Pasture Function

- Pastures within mixed farming systems
- Groundcover and soil protection
- Nitrogen cycling benefits

Species Selection

- Annual versus perennial systems
- C3 and C4 species
- Legumes and multi-species mixes
- Native grasses and shrubs

Pasture Establishment

- Establishing pastures in low rainfall environments
- Establishment after amelioration
- Herbicide considerations

Grazing Management

- Feed utilisation
- Rotational grazing

- Containment feeding to protect groundcover

Economic Decisions

- Hay versus grain versus grazing
- Grain and graze systems
- Feedbase resilience

Adaptive Agronomy

Develop whole-farm agronomic decision-making skills under variable seasonal conditions.

Managing Seasonal Variability

- Risk management
- Forecast interpretation
- Adaptive planning

Agronomy and Water Use

- Crop choice and phenology
- Root architecture
- Matching varieties to season length

Crop Sequences and Rotations

- Rotation design principles
- Moisture legacies
- Disease and weed management

Nutrient Management

- Nitrogen cycling
- P and K management
- Post-amelioration fertility

Systems Thinking

- The "Barrel Effect"
- Managing interacting constraints
- Whole-farm decision frameworks

Precision Decisions

Enable growers and advisers to use data, technology and economics to make better decisions.

Understanding Variability

- Soil variability
- Yield variability
- Water variability
- Nutrient variability

Precision Agriculture Tools

- Soil testing
- Yield maps
- Veris pH mapping
- EM38
- NDVI
- Satellite imagery
- Protein mapping

Variable Rate Technology

- Where VRT adds value
- Creating management zones
- Interpreting spatial data

- Ground-truthing maps

Economics and ROI

- Measuring return on investment
- Variable rate nutrient decisions
- Prioritising interventions
- Risk-adjusted decision making

Decision Frameworks

- Decision matrices
- Thresholds and triggers
- "Right map, right time", “right scale”
- Translating data into action

Additional opportunities

Consultation identified a strong and recurring interest in farm business management, financial literacy and decision-making capability. While Cultivating Capacity focuses on Better Farm Production outcomes, the same framework could be applied to a complementary Better Farm Business program focused on profitability, risk management and business resilience refer Footnote[1].

Project partners

Future Facilitators, Research organisations, Universities, Grower groups, industry experts, Communications specialist

6. Project Outputs (Workplan)

Output	***Description of Activity***	***Description of Output***	***Estimated Due date***
1	*Develop the ‘Learning Landscape’ modules*	*Draft Learning Landscape Modules*	*Year 1*
2	*Develop workshop session plans and activities and deliver back to FF network*	*Draft Facilitator toolkit*	*Year 1*
3	*Establish a network of Subject Matter Experts (SME’s)*	*SME directory*	*Year 1*
4	*Formatting and branding of resources*	*Resource library*	*Year 1*

[1] *Potential Learning Landscapes for a Better Farm Business program:*

Program 2: Better Farm Business					
Economic Essentials	Fundamentals of Farm Finance	Succession Success	Decision Dynamics	Communicate with Clarity	Build your Brand

Output	*Description of Activity*	*Description of Output*	*Estimated Due date*
5	*Ongoing module review process*	*Module Review Process*	*Year 2-4*

7. Expected Outcomes

Short-Term Outcomes (1–2 years)

Knowledge

- Improved understanding of drought resilience concepts
- Increased awareness of available tools and technologies

Skills

- Improved capacity to develop and deliver technical information to farmers
- Improved technical understanding

Confidence

- Increased confidence implementing new practices

Medium-Term Outcomes (3–5 years)

Practice Change

- Increased use of recommended management practices

Adoption

- Greater uptake of research, innovations and technologies

Collaboration

- Increased interaction between farmers, advisers and researchers

Long-Term Outcomes and Impact (5+ years)

Productivity

- Improved production efficiency

Profitability

- Improved farm business performance

Resilience

- Increased capacity to adapt to seasonal variability and drought

8. Budget

Learning Landscapes						
	Activity	Who	Number staff	Days	Cost / day	Total
1	Develop a 'Learning Landscape' within the field of interest over a 3 month period To include a. Learning module b. Facilitated session plan c. Slide deck d. Additional resources e. List of SME's to support learning outcomes	FF	16	10	$ 800	$ 128,000
2	Provision of mentor support	Mentor	1	16	$ 1,800	$ 28,800
3	Deliver the Learning Landscape Module back to the group, refine content and provide a finished product	FF + T&A	16	2	$ 1,300	$ 41,600
		Venue/Catering	1	2	$ 3,000	$ 6,000
		Facilitators x2	2	2	$ 3,000	$ 12,000
4	SME review and final product development and release (slide deck, resources and factsheets etc)	SME	1	16	$ 1,800	$ 28,800
		Communications Specialist	1	16	$ 1,500	$ 24,000
						$ 269,200

Appendix D: Project Component 4 – Future Farmers

Overview

Future Farmers is the primary farmer-facing adoption component of the Cultivating Capacity Program. It provides the pathway through which evidence, learning resources and facilitation capability are translated into practical on-farm decision-making and practice change.

The component will establish and support facilitated farmer learning groups across South Australia. These groups will be led by Future Facilitators and will use the Learning Landscapes modules, Foundational Fieldwork demonstration sites and locally relevant discussion activities to build knowledge, confidence and capability.

Future Farmers is designed around an annual learning and reflection cycle. Each group will identify local priorities, participate in structured learning activities, engage with relevant demonstration sites, review outcomes and evaluate opportunities for practice change. This process ensures that learning remains farmer-led, regionally relevant and directly connected to practical business decisions.

The component recognises that farmers are more likely to adopt new practices when they can learn with trusted peers, observe practices under local conditions, understand the economic implications and reflect on what is relevant to their own farming system.

By combining peer-to-peer learning, demonstration activities, field walks, structured learning modules and annual reflection, Future Farmers will support the adoption of drought resilience practices and technologies across South Australian farming systems.

Aim

To empower future farmers with the knowledge, confidence, networks and practical experience required to assess, trial and implement drought resilience practices and technologies.

Proposed Investment

$ 4,566,800 (GST exclusive)

Duration

3 – 5 years

1. Background and Rationale

Consultation Findings

Consultation identified that farmers are more likely to adopt new practices when learning occurs through trusted peer networks, practical demonstrations and locally relevant examples. Stakeholders consistently emphasised the importance of ongoing learning, reflection and support rather than one-off extension events.

Key Challenges

- Limited time and capacity to assess new opportunities.
- Difficulty translating technical information into farm decisions.
- Lack of confidence implementing unfamiliar practices.
- Seasonal variability reducing willingness to adopt change.
- Limited opportunities for long-term peer learning.

Opportunities

- Peer-to-peer learning groups.
- Farmer-led demonstrations.
- Practical field-based learning.
- Structured learning pathways.
- Improved decision-making capability and confidence.

Industry Need

Future farming systems require producers who can confidently assess risk, adapt to changing climatic conditions and adopt practices that improve drought resilience and business performance.

2. Project Purpose

Establish and support at least 25 facilitated farmer learning groups across South Australia, resulting in measurable improvements in participant knowledge, confidence and adoption of drought resilience practices.

3. Project Objectives

1. Support farmer-led learning through facilitated peer-to-peer groups.
2. Increase participant knowledge through structured learning modules.
3. Improve confidence and capacity through demonstration activities and field learning
4. Drive practice change and adoption through reflection, evaluation and continuous improvement processes.

Program success measures

Delivery • 25 farmer peer-peer learning groups established • 200 workshops or on farm events delivered across the program • 150 Learning Landscape modules delivered • 75 adoption demonstrations established and evaluated	**Engagement** • 300 farmers directly engaged through learning groups • 2,400 participant attendances across program activities • 10-15 farmers per learning group, supported through peer-to-peer learning
Capability • Increased farmer knowledge of drought resilience strategies and techniques • Increased decision making skills and confidence to assess opportunities and risk • Increased confidence to trial and implement new practices	**Adoption & Impact** • 75 locally relevant practices demonstrated and assessed through Adoption Demonstrations • Increased implementation and adoption of drought resilient practices and technologies • 25 ongoing regional peer learning networks supporting longer term resilience and practice change

4. Drought Hub Priority Areas

- ✓ Access to drought information and technical support
- ✓ Farm planning and decision making to manage climate and operational risk
- ✓ Livestock and fodder management strategies, technologies and innovations
- ✓ Crop and pasture management strategies, technologies and innovations
- ✓ Soil and land management strategies, technologies and innovations
- ✓ Water security and management strategies, technologies and innovations
- ✓ Upskilling advisers, researchers and key influencers
- ✓ Community resilience and wellbeing through support, collaboration and access to technologies
- ✓ Farm business management

5. Proposed Process

Target Audience

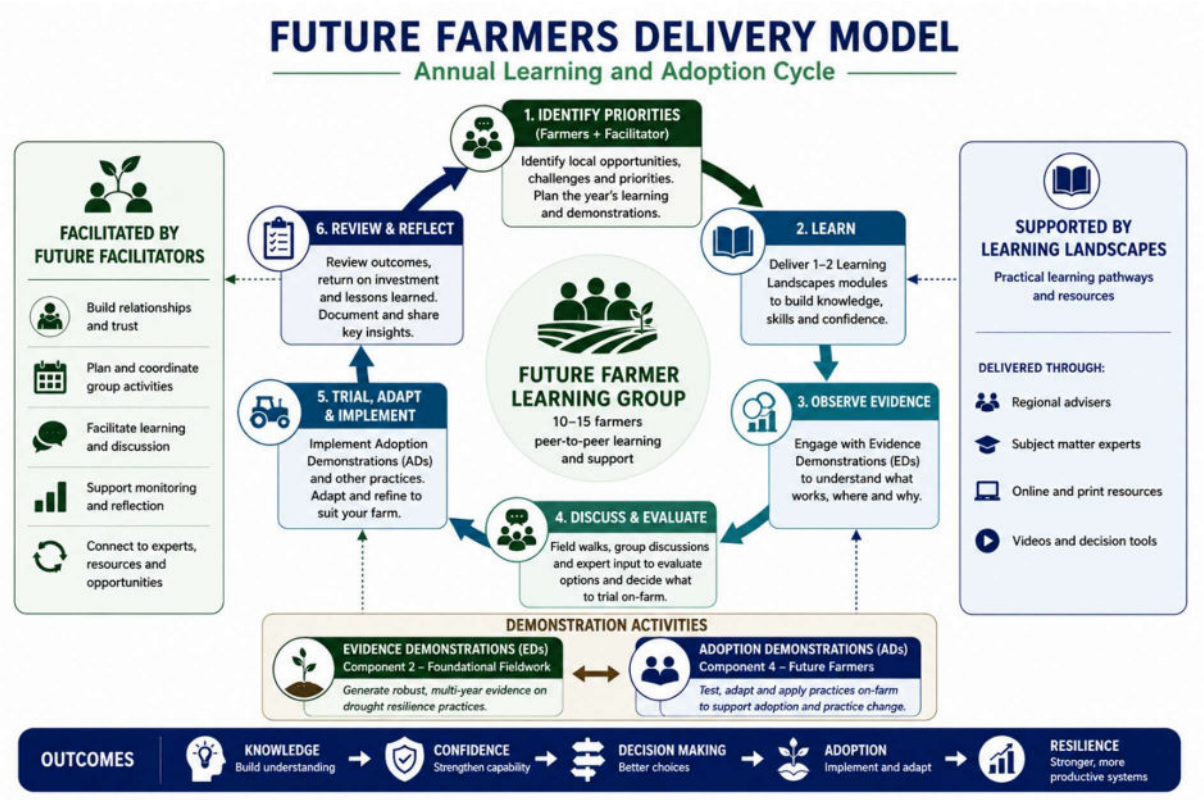
Broadacre cropping producers, mixed farming enterprises, livestock producers, emerging farmers, research and advisory community

Methodology

The Future Facilitators developed through Component 1 will lead the Future Farmers Program, applying the knowledge, skills and experience they have gained to design and deliver a relevant, engaging and farmer-led learning program. Through facilitated workshops, peer-to-peer learning activities and practical demonstrations, they will support participants to build knowledge, confidence and networks that strengthen their capacity to respond to future challenges and opportunities.

Future Facilitators will be supported throughout the process by experienced mentor facilitators and subject matter experts, ensuring access to technical expertise, guidance and professional development opportunities. The program will operate as an annual continuous improvement cycle, incorporating participant feedback, emerging industry priorities and lessons learned from previous cohorts. This iterative approach will ensure the program remains responsive, relevant and aligned with the evolving needs of South Australian farmers.

The process is illustrated diagrammatically below.



Initial Workshop:

- Facilitated workshop to identify gaps, opportunities and priorities; run by the Future Facilitator with support from a mentor facilitator.
- Modified DRINKS (Drought Resilience, Information and Knowledge Sharing) process (developed in Component 3) used to capture information to allow for an active learning program for the next 12 months to be developed that is specific to the group.
- Farmers work through aspects of Bennetts Hierarchy to design an Adoption Demonstration activity to address the gaps identified ensuring that the activity meets the group's needs.
- Participants will also nominate their preferred Evidence Demonstration theme/s (Component 2).

Adoption Demonstration Activity

- An Adoption Demonstration activity will be implemented locally to be utilised in workshop and learning activities and to address the gaps that farmers need to be able to implement / adopt the drought resilience practice.

Learning Module Delivery

- At least one of the learning modules developed as part of the 'Learning Landscapes' program to be run during the season based on gaps identified at the commencement workshop. Where applicable a subject matter expert will be brought in to deliver technical information.

Demonstration site visit and learning activity

- Review Adoption Demonstration progress and encourage peer-to-peer learning. Where applicable utilise a subject matter expert to re-enforce learnings. Opportunity to run an additional learning module and link it back to the demonstration site.

Review and reflection

- Evaluate outcomes, ROI, practice change and determine the priorities for the coming season. Farmers to again work through KASAP to ensure that the demonstration site for that season is relevant and will meet needs.

The process then repeats with the option to continue monitoring the initial demonstration site established as well – if it is still relevant and providing outcomes.

Item	Target	Total for project
Learning Groups	25+	25
Farmers per group	10-15	300
Annual workshops or on-farm events	2 per group = 50 annually	200
Adoption demonstrations	1 per group = 25 x 3 years = 75	75
Learning modules delivered	2/group per year = 50 x 3 years = 150	150
Annual participation	12/workshops &/or farm events x 2 annually = 24 x 25 groups = 600	2400

Project partners

Grower groups, Future Facilitators network, Research organisations, Agricultural advisers, Landscape Boards, consultants and other subject matter experts

6. Project Outputs (Workplan)

Output	***Description of Activity***	***Description of Output***	***Estimated Due date***
1	*Establish regional peer learning groups*	*Active Farmer learning groups established*	*Year 2*
2	*Initial workshop to identify needs analysis and planning*	*Group action plans*	*Annual*
3	*Farm led Adoption Demonstrations*	*Demonstration sites and reports / case studies*	*Annual*
4	*Delivery of learning module and field walks*	*Learning event*	*Annual*
5	*Reflection process and next steps*	*Reflection, evaluation and planning report*	*Annual/Ongoing*
6	*Final review at the end of the program to assess relevance*	*Final review and report*	*End of program*

7. Expected Outcomes

Short-Term Outcomes (1–2 years)

Knowledge

- Increased understanding of drought resilience strategies.
- Improved awareness of available technologies and management options.

Skills

- Improved decision making and evaluation skills.
- Improved ability to assess opportunities and risks.

Confidence

- Increased confidence testing and implementing new practices.

Medium-Term Outcomes (3–5 years)

Practice Change

- Increased implementation of drought resilience practices.

Adoption

- Increased adoption of technologies and management innovations.

Collaboration

- Strong peer learning networks established across regions

Long-Term Outcomes and Impact (5+ years)

Productivity

- Improved productivity and resource-use efficiency

Profitability

- Improved financial performance and return on investment.

Resilience

- More adaptive and drought-resilient farm businesses and communities.

8. Budget

Future Farmers		
Activity		Total
1	Delivery of workshop Y1_1 with each group to identify needs (modified DRINKS process where farmers identify needs and work through a KASAP to develop a demonstration activity that addresses	$ 2,400 $ 5,500 $ 1,500
2	Delivery of workshop Y1_2	$ 2,400 $ 5,500 $ 1,500
3	Development & delivery of demonstration site and results – Y1	$ 7,200 $ 3,500
4	Workshop Y1_3 and Demonstration site visit	$ 2,400 $ 5,500 $ 1,500
5	Delivery of workshop Y2_1 – results of demonstration site & financial benefits, review process & determine next steps	$ 2,400 $ 5,500 $ 1,500
6	Delivery of workshop Y2_2	$ 2,400 $ 5,500 $ 1,500
7	Development & delivery of Y2 demonstration site	$ 7,200 $ 3,500
	Optional continued monitoring of Y1 site	$ 7,200 $ 2,000
8	Delivery of workshop Y2_3 and Demo site visit	$ 2,400 $ 5,500 $ 1,500
9	Delivery of workshop Y3_1 – results of demonstration site & financial benefits, review process & determine next steps	$ 2,400 $ 5,500 $ 1,500
10	Delivery of workshop Y3_2	$ 2,400 $ 5,500 $ 1,500
11	Development & delivery of Y3 demonstration site	$ 7,200 $ 3,500
	Optional continued monitoring of Y1 site	$ 7,200 $ 2,000
	Optional continued monitoring of Y2 site	$ 7,200 $ 2,000
12	Delivery of workshop Y3_3 and Demo site visit	$ 2,400 $ 5,500 $ 1,500
13	Delivery of workshop Y4_1 – results of demo site and financial benefits	$ 2,400 $ 5,500 $ 1,500
14	Delivery of final workshop Y4_2	$ 2,400 $ 5,500 $ 1,500
		$ 163,100
		28
		$ 4,566,800.00

ACKNOWLEDGEMENT

This project is supported by the South Australian Drought Resilience Adoption and Innovation Hub, through funding from the Australian Government's Future Drought Fund.

The SA Regional Soils Coordinator role is part of a national network of Regional Soils Coordinators (RSC), supported by the Australian Government through funding from the Climate-Smart Agriculture Program under the Natural Heritage Trust.



DISCLAIMER

Any recommendations, suggestions or opinions contained in these publications do not necessarily represent the policy or views of the South Australian Drought Resilience Adoption and Innovation Hub (SA Drought Hub). No person should act on the basis of the contents of these publications without first obtaining specific, independent, professional advice. The SA Drought Hub and contributors to these publications may identify products by proprietary or trade names to help readers identify particular types of products. The Hub does not endorse or recommend the products of any manufacturer referred to. Other products may perform as well as or better than those specifically referred to. The SA Drought Hub will not be liable for any loss, damage, cost or expense incurred or arising by reason of any person using or relying on the information in these publications.