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# FINAL REPORT

Cultivating the Capacity of Food Businesses  
to Reduce and Transform Food Waste

Author(s):

Dr Joanne Freeman

Honey and Fox Pty Ltd

Associate Professor Elizabeth Jackson

Curtin University

Julie Bates

Regional Development Australia, Murraylands Riverland

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Level 1, Wine Innovation Central Building, Cnr Hartley Grove and Paratoo Road, URRBRAE SA 5064  
enquiries@endfoodwaste.com.au +61 8 8313 3564

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**END FOOD WASTE CRC REPORT APPROVAL**



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Program Leader signature and name

David Pearson

EFW CRC ENGAGE Program Leader

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## Industry Partner Foreword

Regional Development Australia Murraylands and Riverland (RDAMR) exists to *connect our region for a resilient and sustainable future*. Like others, in recent times our region has faced our fair share of disruptions (including drought, flood, bushfire, market disruptions and increasingly extreme weather conditions). In response to these increasing disturbances, and through a journey of listening to and learning from our people, RDAMR has transformed our approach to regional development. Our Board and staff have made a conscious effort to focus on creating long-term, collaborative, transformational systems change.

In 2021, with funding from PIRSA under the Regional Drought Resilience Planning Program and in partnership with the MR Landscape Board and MR Local Government Association, we ran the largest regional resilience consultation process in the region's history, with over 550 locals contributing an average of seven hours each. From this, the MR Plan was developed. We heard that our people wanted us to be 'prepared [for] and proactive' in the face of disruptions; to be 'productive and collaborative'; to work 'together [as a] community'; and to demonstrate 'leadership in action'.

In late 2022, RDAMR demonstrated 'leadership in action' around circular economy by partnering with Green Industries South Australia (GISA) on the 'Circular Opportunities – Murraylands and Riverland' report (GISA & RDAMR 2022). This linked local actions with global sustainability imperatives, helping us to be more 'prepared and proactive', 'productive and collaborative' and to work 'together [as a] community'. The report developed a baseline of the region's circularity status and identified opportunities to improve this status; an important foundation for us to progress our vision for the region *to be internationally recognised as a vibrant, world leading circular economy by 2030*.

This End Food Waste Cooperative Research Centre (EFW CRC) 'Cultivating the capacity of food businesses to reduce and transform food waste – Phase 1' report, developed with the support of project partners Honey & Fox and Curtin University, takes opportunities that were identified in the work we did with GISA and puts rubber on the road by testing the food waste valorisation opportunity with our small and medium sized enterprises (SMEs), who comprise around 98% of our regional businesses (that is, businesses employing 1 to 19 staff – source: .id informed decisions 2023 data). More importantly, this report takes the intelligence of our SMEs and routes a journey that our region, and other regions across Australia, can take to improve not only their individual food valorisation journeys, but also the collective circular economy journey that all SMEs need to take for our nation and the world to meet net zero targets.



Ben Fee

Chief Executive Regional Development Australia, Murraylands Riverland

27 August 2024

## Executive Summary

The *Cultivating the Capacity of Food Businesses to Reduce and Transform Food Waste* initiative stands at a pivotal moment, aligning seamlessly with the federal government's renewed focus on advancing circular economy opportunities in Australia. Our project, which began with a hypothesis to identify the training needs of businesses for independently implementing food waste circular economy activities, has evolved into a comprehensive, community-driven approach. This evolution underscores the importance of collaboration and regional engagement as critical elements for success.

**Community Driven Innovation:** Rather than creating isolated training modules, our research revealed that businesses need a more collaborative approach—one that fosters active engagement and peer-to-peer learning within their communities. By focusing on training local facilitators who work closely with businesses on agreed projects, we aim to create a ripple effect that not only motivates businesses to get started but also ensures they don't have to tackle the challenge alone. This strategy addresses the inertia that often prevents businesses from adopting circular economy practices and drives real-world impact, setting the stage for sustainable transformation.

**Opportunities for Business Growth:** By participating in the Food Waste Transformers Program, businesses will gain practical skills and knowledge to reduce food waste, convert waste into valuable resources, and adopt sustainable practices that directly contribute to their bottom line. This program is not just about compliance or corporate responsibility—it's about unlocking new revenue streams and reducing operational costs. The program's collaborative approach ensures that businesses are supported by a network of peers and facilitators who provide guidance, share best practices, and offer encouragement throughout the process. By training facilitators within each region, we are building a network of knowledgeable leaders who can inspire their communities to embrace circular economy principles. These facilitators will form a Community of Best Practice, sharing insights, strategies, and successes. This network will not only enhance the effectiveness of local initiatives but also contribute to a national movement towards sustainable food waste management.

**Regional Impact:** For regional areas, the rollout of this program is a powerful tool for economic and environmental sustainability. By reducing waste and transforming it into valuable products, regional economies can become more resilient, less dependent on external resources, and better positioned to thrive in an increasingly competitive market. The program will foster stronger connections between businesses, local governments, and communities, creating a united front in tackling food waste. This approach will not only retain economic value within the region but also create new job opportunities in emerging sectors related to the circular economy, such as waste management, product innovation, and sustainable agriculture.

**National and Federal Benefits:** At the federal level, the national rollout of the Food Waste Transformers Program aligns perfectly with the government's commitment to advancing Australia's circular economy and meeting sustainability targets. By equipping regional businesses with the tools to reduce waste and operate more sustainably, this program will significantly contribute to reducing national greenhouse gas emissions—a key priority in combating climate change. Additionally, this initiative will serve as a model for other sectors, demonstrating the effectiveness of a collaborative, community-driven approach to sustainability. It will also reduce the strain on public waste management systems, lowering costs for local governments and freeing up resources for other essential services.

**Call to Action:** The importance of supporting this initiative cannot be overstated. By investing in the national rollout of the Food Waste Transformers Program, the government will not only foster innovation and sustainability within the food sector but also pave the way for a more resilient, economically stable, and environmentally conscious Australia. This is an opportunity to lead by example, showing the world how Australia is taking bold steps to address one of the most pressing challenges of our time—food waste—while simultaneously driving economic growth and job creation.

As Australia embarks on the important inquiry by the Productivity Commission to explore circular economy opportunities, our project is well-positioned to support these efforts. The national rollout of the Food Waste Transformers Program could serve as a cornerstone for realising the potential to improve resource productivity in ways that benefit both the economy and the environment. It aligns with the government's goal of identifying priority areas for circular economy practices and overcoming barriers that limit the efficient use of raw materials.

The impact of this initiative will resonate at all levels—empowering individual businesses, revitalising regional economies, and contributing to Australia's national agenda for sustainability. By reducing food waste and converting it into valuable resources, we can create new jobs, improve industry profitability, and support environmental conservation. This collaborative and scalable model aims to drive widespread adoption of circular economy principles, positioning Australia as a leader in sustainable innovation.

## 1. Introduction

The pilot project, 'Cultivating the capacity of food businesses to reduce and transform food waste – Phase 1', aimed to understand how best to build the capabilities of regional food businesses to recognise and address food waste issues. The project was undertaken in South Australia's Murraylands and Riverland region, where primary production is the major economic activity accounting for 34% of the gross regional product, and one in five jobs. Through Regional Development Australia, Murraylands Riverland (RDAMR), the region already has an established strategic vision to be recognised internationally as a world-leading, vibrant circular economy by 2030, that is supported by a Murraylands and Riverland Circular Economy Opportunities report (GISA & RDAMR 2022).

The project focused on understanding the economic motivations of regional small food businesses to engage in local circular economy training and skills development initiatives by examining several key areas:

**Barriers/Resistance:** Identifying and clarifying the barriers small regional food businesses face in reducing and transforming food waste.

**Motivation/Value Proposition:** Understanding the perspectives of small regional food businesses regarding food waste and what would motivate them to participate in training.

**Messaging:** Gaining insights into how best to start a conversation with and engage small regional food businesses in circular economy strategies.

**Training Resources/Support:** Providing evidence on the training resources and programs needed to support small regional food businesses in implementing food waste reduction and transformation actions.

**Implementation Resources/Support:** Identifying what resources are needed, when and how they should be provided, and the path for successfully implementing, monitoring, evaluating, and improving food waste reduction and transformation actions in businesses.

The intention of this pilot project was to provide evidence and knowledge to support the development and establishment of a national program to be rolled out across regional Australia. By addressing these key areas, the project aimed to create a strong foundation for a comprehensive and effective national strategy for food waste reduction and circular economy practices, ensuring long-term sustainability and economic benefits for small regional food businesses

## 2. Methodology

The methodology of our project was designed to comprehensively explore and address the training needs of businesses for implementing food waste circular economy activities. As such, to achieve a comprehensive understanding that extends beyond what quantitative data can offer, this study adopted an exploratory qualitative methodology. This approach was selected to delve into the complex realities of integrating circular economy concepts into the day-to-day operations of businesses within two different regions. The qualitative approach allowed for the gathering of nuanced and in-depth perspectives, thus providing a rich tapestry of insights that inform the development of the training module and subsequent actions.

Our data collection consisted of three key stages:

**Stage 1: Literature Review** We conducted an extensive review of existing literature to gather insights and identify gaps in current knowledge regarding food waste management and circular economy practices. This foundational step provided a theoretical framework and context for our research, guiding the subsequent stages of the project.

**Stage 2: In-Depth Interviews** Building on the insights from the literature review, we conducted in-depth interviews with a diverse range of stakeholders, including small food business owners, industry experts, and community leaders. These interviews aimed to understand the specific challenges and needs of businesses in implementing food waste strategies, providing valuable qualitative data to inform our training program development.

### **Stage 3: The Reference Group**

To ensure the relevance and applicability of our findings, we established a Reference Group comprising key stakeholders and experts from the food industry, academia, and local government. This group provided ongoing feedback and validation of our research findings and training materials, ensuring that our approach was grounded in practical realities and supported by a broad spectrum of perspectives.

This three-step approach allowed us to develop a robust and comprehensive understanding of training needs and to create a targeted and effective Food Waste Training Framework and subsequent training resources.

## **3. Results**

### **3.1 Stage 1: Previous Research & Literature**

At this early stage of the project, a comprehensive literature review was conducted to establish existing knowledge and understanding of circular economy principles in relation to small regional businesses. This was useful to identify gaps in knowledge, unresolved questions and areas that need further investigation. The literature review was crucial in shaping research questions, guiding methodology and providing a foundation for new knowledge creation.

The purpose of this literature review was to establish existing knowledge and understanding of circular economy (CE) principles in relation to small regional food businesses in Australia. It also identified gaps in knowledge, unresolved questions and areas that needed further investigation.

An initial scan of existing knowledge of CE principles in relation to small regional food businesses in Australia revealed three major themes that would assist in addressing this project's over-arching brief for cultivating the capacity of food businesses to reduce and transform food waste:

1. How SMEs manage food waste.
2. How SMEs engage with circular economy principles.
3. How SMEs engage with B2B knowledge transfer.

Current knowledge on the problem of food waste in society is mature and voluminous with significant evidence-based government initiatives implemented for Australia to do better when it comes to food waste. However, in terms of how small businesses that are relevant to regional Australia are concerned, knowledge is lacking. Knowledge is rich on what large-scale agribusiness and their broader supply chains are doing to manage the problem of food waste, but it is unclear on how Small and Medium-sized Enterprises (SMEs) in the regions manage food waste, engage with CE principles and how they can learn about new ways of doing business that include CE principles.

Figure 1 provides an overview of the themes and issues uncovered for each of the three pillars of this literature review. Overall, the literature largely discusses barriers and enablers of SMEs managing food waste and adopting CE principles. Knowledge transfer about managing food waste and CE principles is sparse but there is sufficient knowledge to develop ideas for introducing strong, sustainable and relevant learning systems for regional food businesses.

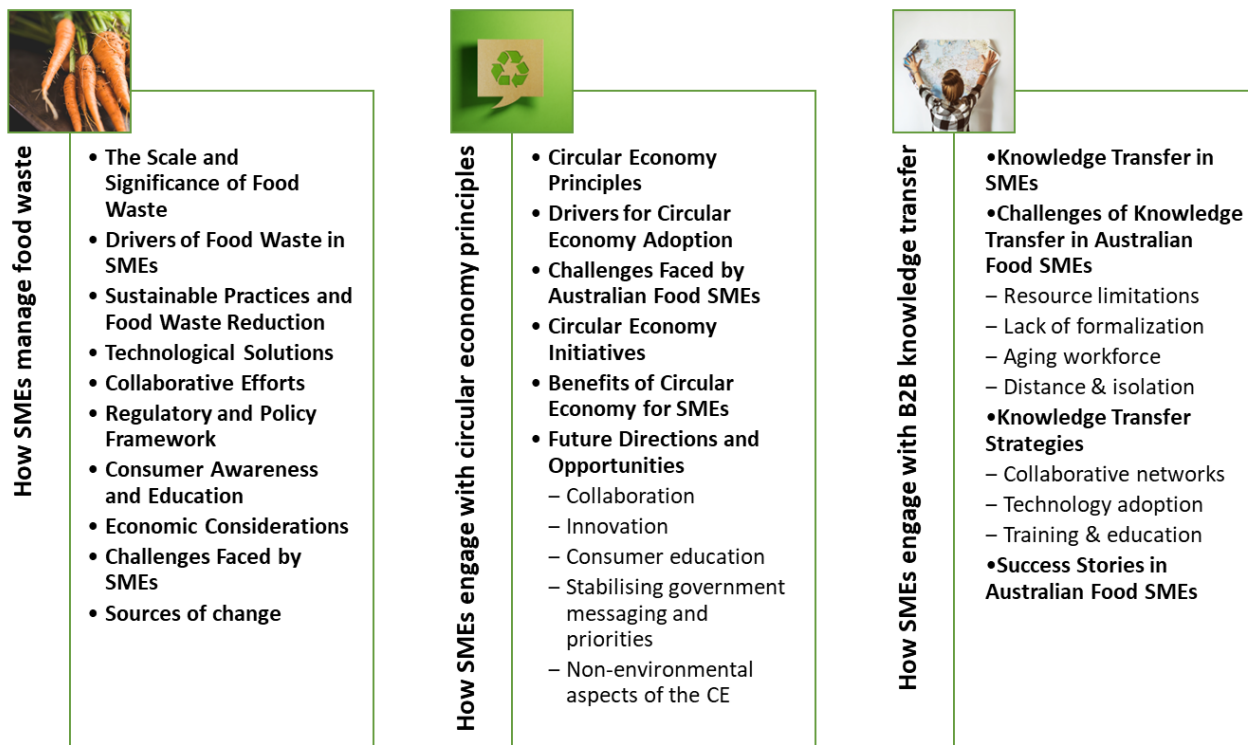


Figure 1: An overview of themes and issues identified in this literature review

**How SMEs manage food waste:** SMEs play a significant role in the global food waste challenge. Aramyan et al. (2021) were clear that food waste management or the adoption of circular economy business practices must be economically viable. Achieving economic viability is not the only challenge SMEs face when it comes to managing food waste. The literature states that the will to recycle, spatial constraints, costs, access to services (Woodard, 2020; Michalec et al., 2018), the ability to collaborate and poor adoption of digital systems (Annosi et al., 2021) are factors limiting better food waste practices. Overall, Woodard (2020) aptly suggests that businesses are having difficulties because they are still generating waste products that are not sufficiently able to be managed. While they face several challenges, there are various strategies and approaches available to help them reduce and manage food waste effectively. Collaborative efforts (Morea et al., 2023; Annosi et al., 2021; Zaridis et al., 2020), technological solutions (Somali, 2022), regulatory frameworks (Bird et al., 2022; Heinrich, 2022), and consumer education (Martin-Rios et al., 2020; Okumus, 2020; Michalec et al., 2018) are all crucial components of a comprehensive approach to address this pressing issue.

**How SMEs engage with circular economy principles:** The transition to a circular economy is essential for achieving sustainable development goals in Australia. The literature is abundant on how large and global-scale agribusinesses are adopting circular economy principles into their business models, but knowledge is scant on the SME context, especially the SME context in regional Australia. SMEs and food business in general are increasingly recognizing the value of circular economy principles in reducing environmental impact, cutting costs, and differentiating themselves in the market. Barriers and challenges to adoption include factors like: economic barriers of limited cash flow and high operating costs (Sohal and De Vass, 2022; Mehmood et al., 2021), lack of CE expertise (Chakraborty et al., 2023; Mehmood et al., 2021) and supply chain complexities (Esposito et al., 2020). Despite this, it is known that environmental concerns and regulatory frameworks are drivers for change (Mehmood et al., 2021; El Bilali et al., 2021) which support other benefits of CE practices in SMEs: cost savings (Ellen MacArthur Foundation, 2015; Champions 12.3;

2019), market differentiation (PACE, 2022) and reduced environmental impact (PACE, 2022). The literature suggests several concepts for future directions and opportunities. These can be summarised as: collaboration (Chakraborty et al., 2023), innovation (Boxall et al., 2019), consumer education (Bux et al, 2022; PACE, 2022, Hamam et al., 2021; Sadraei et al., 2023), stabilising conflicting government messaging and priorities (Mehmood et al., 2021; Zhang et al., 2022) and non-environmental aspects of CE (El Bilali et al. 2021).

**How SMEs engage with B2B knowledge transfer:** Knowledge transfer in Australian food SMEs is a critical factor in their long-term sustainability and competitiveness (Azeem et al., 2021). While these enterprises face significant challenges, there are various strategies that can help mitigate these obstacles. Collaborative networks, technology adoption (Bosua and Evans, 2023), employee training (Bosua and Evans, 2023; Corral de Zubielqui et al, 2015; Cother, 2019), and inter-generational knowledge transfer can all contribute to enhancing knowledge transfer in the industry. By learning from success stories like the Outback Academy Australia and Woodlane Orchard, Australian food SMEs can build a stronger knowledge-sharing culture and better position themselves for the future.

The literature was clear that establishing collaborations and partnerships with research institutions and universities do not facilitate the best knowledge transfer. Rather it is informal networks developed through supply chain relationships (like suppliers and customers) (Corral de Zubielqui et al, 2013; Corral de Zubielqui et al., 2019) and social relationships (Butcher and Sparks, 2010; Jones, 2013; Sawyer et al., 2014) where real learning about innovation takes place.

**Overall findings:** In addressing the three key themes, several common issues were identified. The power of collaboration and information sharing were repeated issues. It was found that formal training models (e.g., through universities or research institutions) may not be the most effective methods of helping regional food SMEs to learn about better managing food waste and the circular economy. Rather, it is existing partnerships with supportive staff and supply chain networks that create the most efficient learning opportunities.

The education and attitudes of consumers and staff was another important issue. It is helpful to managing food waste when consumers and staff are willing to learn SMEs tips to reduce and manage food waste. Typical examples that were given in the literature included reducing portion sizes and offering take-home options for unfinished meals.

Government intervention and policies constitute both an enabler and a barrier to understanding food waste management and circular economy principles in relation to small regional businesses. In Australia, initiatives such as the National Waste Policy and the National Food Waste Strategy (2017) have incentivized SMEs to implement sustainable practices. However, businesses are experiencing cognitive overload from the amount of new information that regulators are providing which means circular economy business models are not being recognised and adopted. Governments need to be mindful of the sectoral, industry and location-specifics of SMEs when developing policy and adopting a one-size-fits all approach could result in slow uptake of new ways of doing business. To add to this, it was identified that food systems are just too complex for a single circular economy model to be developed and adopted.

Another anomaly to be identified was about the costs of better managing food waste and adopting circular economy principles. On one hand, there is ample evidence to suggest that this way of doing business is expensive because it requires business process change and the learning of new ways of doing business. On the other hand, evidence is also provided about the cost savings that can be enjoyed when food waste is better managed and circular economy principles are practiced. These disparate findings add complexity to the decisions for businesses to change.

While there are some clear findings about the three themes identified for this literature review, significant gaps in knowledge were also identified. The literature is rich in evidence of how wasteful society is when it comes to food, but it is difficult to find knowledge on how progress is being made with achieving goals set down by governments. While knowledge is plentiful on how big agribusiness is managing food waste and supporting the circular economy, it is sparse on equivalent knowledge related to SMEs and micro-businesses in the developed world. Given the dominance of SMEs in the food preparation sector, this is alarming.

Knowledge is also plentiful on business-to-business knowledge transfer and learning amongst SMEs, but it is rare to find material on food business or regional business in this respect.

Overall, there is still much work to be done when it comes to understanding of circular economy principles in relation to small regional food businesses. This literature review has provided a good background about how SMEs manage food waste and how they engage with circular economy principles. It has also shed light on how the people who operate small regional food businesses can best learn about new and more sustainable ways of doing business.

Given the major outcome of this project is to develop a training framework for regionally based food SMEs to better manage their food waste, the main findings of this literature are presented in Figure 2.

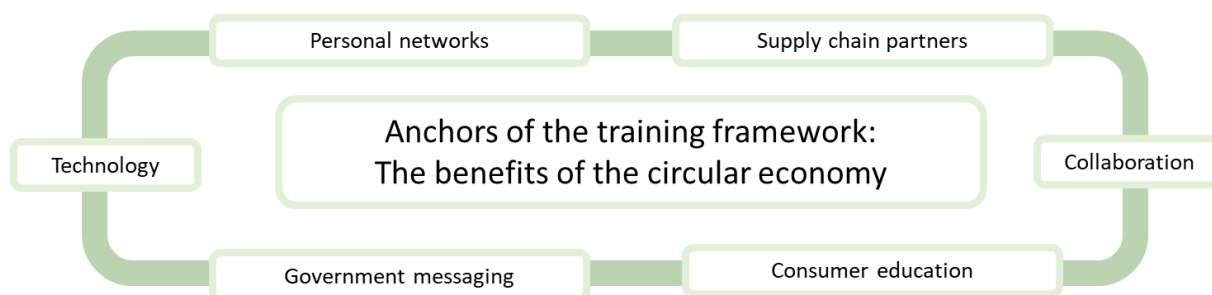


Figure 2: Theoretical concepts as anchors of a food waste training framework

A training framework would be best positioned to somehow include input from SME food business personal networks and supply chain partners. These have been found to be highly influential in the uptake of trusted information. Technology and collaboration for information sharing were also found to be themes that were constantly repeated throughout this literature review so it is clear that these need to be pivotal in the implementation of any framework. However, the literature did advise university and research institution methods of training (i.e., online or distance education models) are likely to be ineffective. Consumer education was a further prolific theme in the literature and relates to how food businesses can inform consumers about helping to minimise food waste by accepting smaller portion sizes or taking home unfinished meals. Finally, any training framework needs to assist food businesses in managing the conflicting sentiments around government messaging. This is a serious point of confusion that emerged from the literature, so food businesses need support on how to deal with managing government support.

### 3.2 Stage 2: In Depth Interviews

**Sampling Strategy:** Given the research team's intimate knowledge of the geographical focus of the research and its subject matter, interview participants were selected using purposive sampling, expert recommendation, and snowball sampling (Miles and Huberman 1994; Onwuegbuzie and Collins 2007). Exact population size was not crucial to the selection of participants, given that the sample does not have to be statistically representative, given the exploratory, qualitative nature of the research (Curtis et al. 2000). By adopting a qualitative theoretical perspective, the final size of the sample was determined by theoretical saturation when the marginal interview did not provide substantively new knowledge (Guest, Bunce and Johnson 2006; Morse 1995).

Having said that, the project was constrained by time and budget, so 15 interviews were deemed to be sufficient to address the overall project objectives, and this was ultimately determined by participant responses throughout the data collection process (theoretical saturation). An initial list of 12 potential interview participants was created based on the research team’s extensive industry knowledge and expert recommendation from RDAMR. This initial group of interview participants was used to generate suggestions for additional participants using snowball sampling (Guest, Bunce and Johnson 2006; Onwuegbuzie and Collins 2007).

**Participant Recruitment:** Businesses were approached based on a criterion sampling method (see below), which involved selecting cases that met certain predefined criteria relevant to the research questions.

Participant selection criteria	
Must be	<ul style="list-style-type: none"> <li>• Food businesses</li> <li>• In regional locations</li> <li>• Small to micro sized businesses</li> </ul>
Should include a range of	<ul style="list-style-type: none"> <li>• Two “champion” businesses (one small and one micro regional food business) i.e., actively engaged in circular economy.</li> <li>• Businesses that “want to know more” about managing food waste/circular economy.</li> <li>• Businesses that aren’t currently engaged but know that it’s coming and want to know more.</li> <li>• Businesses that aren’t currently engaged with managing food waste/circular economy and don’t want to be engaged.</li> </ul>

**Data Collection:** Semi-structured interviews were conducted with key representatives from 15 businesses, allowing for both guided questions and open-ended responses. This interview format was chosen for its flexibility, facilitating a conversational approach that encouraged participants to share their experiences and perspectives more openly.

**Interview Protocol:** An interview guide was developed to ensure consistency across interviews while allowing for the emergent nature of qualitative inquiry. The guide contained a series of open-ended questions crafted to explore the implementation of circular economy practices within the business operations.

**Data Analysis:** The interviews were transcribed verbatim and thematic analysis was applied to the data. This involved coding the transcripts to identify recurring themes and patterns. The analytic process followed Braun and Clarke’s (2006) six-phase framework, which includes familiarisation with the data, generating initial codes, searching for themes, reviewing themes, defining, and naming themes, and producing the report.

**Ethical Considerations:** The study adhered to ethical research standards (Ethics Approval 78687). Prior to conducting the interviews, informed consent was obtained from all participants. Confidentiality and anonymity were ensured by de-identifying the interview data during transcription and analysis.

### **3.2.1 Summary of findings**

The food sector in the Murraylands and Riverland regions stands at a pivotal juncture, confronting a multitude of evolving challenges that call for innovative and sustainable solutions. In-depth research, which included discussions with 15 local businesses, was conducted to ascertain a comprehensive understanding of the prevailing industry conditions. These conversations have culminated in a wealth of insights that paint a broader picture of the critical challenges faced by these businesses. Importantly, our findings do not merely recount isolated incidents but rather underscore seven predominant challenges (problems) that are indicative of more extensive systemic issues and reveal the potential for integrated, community-centric solutions.

These challenges encompass collaboration for growth, educational empowerment, financial and bureaucratic navigation, market adaptation, dual focus on financial and environmental responsibility, government policy alignment, and a commitment to zero-waste operations. Each of these areas presents distinct obstacles that businesses in the food sector must overcome to thrive.

Recognising these challenges, the research extends beyond mere identification; it also proposes actionable solutions that could serve as the foundation for robust training programs. These solutions are crafted to be not only responsive to the identified challenges but also practical, with a focus on creating training that fosters the knowledge and skills necessary for businesses to evolve and prosper.

### Finding 1: Lack of Collaborative Frameworks

In the Murraylands and Riverland regions, individual business efforts often fall short due to fragmented strategies. The absence of collective action whether through cooperative buying, shared processing facilities, or community-based circular economies, there's a strong belief that working together can lead to more significant opportunities, better waste management, and a more resilient agricultural sector.

Quotes from business participants:

*"But seriously it's about businesses working together. We could have a hub. ....if we as business owners know the opportunities out there we will use them."*

*"How do businesses know who to connect with. You got to have somewhere, coordination or a central spot where they can say - there is waste coming out of my business are there any businesses that could use it. So opportunities for people to connect who have a waste product that they can talk to other people I suppose is the most sensible thing."*

#### Training Solution: Fostering Community-Based Collaboration

The challenge of a lack of collaborative frameworks in the Murraylands and Riverland regions signifies a deeper need than just training individual businesses. The fragmentation of efforts suggests that while individual businesses are adept in their practices, there is a missing link in the chain of collective regional development. To address this, the solution involves implementing a model that emphasises regional empowerment and inter-business collaboration.

This model is not a traditional directive training approach. Instead, it's a dynamic model designed to cultivate a network of local leaders who can, in turn, train others within their community. By doing so it ensures that the knowledge and strategies for collaboration and waste management are disseminated more effectively and become deeply rooted within the local business culture. The model aims to identify and equip influential individuals with the skills and knowledge to drive collective action. These individuals would become the regional champions of sustainability, guiding their peers through cooperative buying, shared processing facilities, and the creation of community-based circular economies. This approach serves two key purposes:

- It fosters a robust, ongoing cycle of learning and skill-sharing. As trained facilitators share their expertise, the ethos of collaboration and community-driven solutions become more deeply embedded within the local business culture.
- It harnesses the inherent strength and commitment found within regional communities. Training individuals who are already passionate about their community's welfare ensures that the training is not only tailored but also deeply resonant with the people it's intended to help. This relevance guarantees that the strategies taught are not just theoretically sound but immediately actionable for the businesses they aim to benefit.

Ultimately, this approach is designed to catalyse a regional movement towards a more sustainable and resilient food and agricultural sector, one where businesses are not merely participants in training programs but active collaborators in a larger vision. The model positions the Murraylands and Riverland regions to pioneer a system where progress is measured not only by individual business success but by the collective growth and sustainability of the entire community.

## Finding 2: Insufficient Education on Waste Reduction Benefits

There is a knowledge gap regarding the financial gains of minimising waste. Without understanding the economic advantages, businesses are less motivated to adopt sustainable practices.

Quotes from business participants:

*“People need to see a reason to do it. I can see a reason to do it in the long run because I know it will work but if you want to get everyone on board you have to make them see that it’ll work now.”*

*“I guess it’s more a value-based thing than anything it’s not a training thing. The way to bring in the mainstream though is talk about how it is affecting their bottom line. If they get told you can convert so much more of your waste and make money out of it, they will get onboard.”*

*“Food waste to me is embarrassing because if it’s being thrown out it truly is an opportunity that has been missed. I think there is more money to be made in the value-added stuff than there is in fruit production.”*

### Training Solution: Empowerment through Education and Awareness

Addressing the insufficient education on waste reduction benefits, the training should provide detailed resources and examples on the financial aspects of waste minimisation. The content could include for example:

- **Value-Added Product Development:** Hold sessions on product development that encourage innovation in creating new products from waste materials. This may include design thinking workshops that help businesses ideate, prototype, and test value-added products.
- **Waste Audit Training:** Teach businesses how to conduct thorough waste audits. This hands-on approach will help them identify the types and quantities of waste they produce, uncovering the most significant areas for cost savings and potential revenue.
- **Cost-Saving Workshops:** Offer workshops focused on cost-saving practices that target waste reduction. These would cover topics such as efficient resource usage, process optimisation, and lean management principles tailored to agricultural practices.
- **Financial Planning for Sustainability:** Provide training on integrating sustainable practices into financial planning. This could involve guidance on budgeting for investments in waste reduction technologies, forecasting the financial benefits of sustainability initiatives and understanding the long-term economic impacts of waste minimisation.

### Finding 3: Financial and Bureaucratic Barriers to Innovation

Many businesses face challenges in obtaining financial support for necessary technological advancements and infrastructure improvements. These hurdles often stem from stringent bureaucratic processes and a mismatch between government support mechanisms and the practical needs of small-scale producers.

Quotes from business participants:

*“And that’s the other limitation our processing facility is not big enough now - if we were going to up the ante. The trouble is to get something big enough is a huge investment and government grants don’t pay for infrastructure.”*

*“We have tried to do grant applications, but it takes so much time, and we have not got the time to work on the business because we are too busy working in the business. My god you look at the application process and it’s too much.”*

#### Training Solution: Streamlining Access to Support

To help businesses deal with financial and bureaucratic barriers, training should include guidance on navigating funding opportunities and grant applications. Sessions could offer strategies to effectively match government support mechanisms with the practical needs of small-scale producers. This involves a multifaceted approach:

- **Understanding Funding Structures:** Training sessions should demystify the structures of funding opportunities, detailing how they work, what they aim to achieve, and how businesses can align their innovation projects with these goals.
- **Grant Application Workshops:** Conduct detailed workshops on grant writing and application processes, emphasising how to effectively communicate the necessity and potential impact of technological advancements and infrastructure improvements.
- **Case Studies of Successful Applications:** Presenting case studies and testimonials from those who have successfully navigated these processes can provide practical insights and encouragement to others.
- **Liaison Skills Development:** Teach businesses how to build relationships with funding bodies and bureaucrats, improving communication and understanding of mutual objectives.

#### Finding 4: Market Pressures and Consumer Perceptions

Businesses struggle to adapt to market changes and consumer expectations, particularly the challenge of countering the preference for aesthetically perfect produce.

Quotes from business participants:

*“Consumers want a plastic bit of fruit which is ridiculous but I'm not sure that consumer even gets a choice. It's driven by the supermarkets - they will buy a piece of fruit that they know lasts longer and that is pretty much a perfect orange.”*

*“Reducing waste is one of my best-selling points, for my customers definitely. It depends on who your customers are but yeah, my customers want to know that one I'm responsible water user, that I'm interested in preserving our land and what it takes to produce food in Australia.”*

#### Training Solution: Direct Engagement and Market Diversification

In response to market pressures and consumer perceptions, training should focus on strategies for direct consumer engagement and product diversification. Content could include:

- **Marketing Strategy Workshops:** Provide comprehensive training in marketing strategy that educates businesses on how to position their products, including 'imperfect' produce, in the market. This includes understanding consumer behaviour, market segmentation, and targeting.
- **Storytelling for Provenance Credibility:** Equip businesses with the skills to tell the story of their produce—where it comes from, how it's grown, and the people behind it. Provenance storytelling can be a powerful tool to build a brand's credibility and connect with consumers on an emotional level.
- **Branding and Packaging Design:** Offer guidance on creating packaging and branding that communicates the quality and sustainability of the produce, which can help counteract the bias against 'imperfect' items or produce made from “waste”.
- **Digital Marketing and Social Media:** Implement training on digital marketing and the use of social media to directly engage with consumers, share stories, and market products effectively to a wider audience.
- **Market Trend Analysis:** Offer training on how to conduct market trend analysis to anticipate consumer trends and adjust product offerings accordingly.
- **Customer Relationship Management (CRM):** Teach businesses how to implement CRM systems to better understand customer preferences and tailor marketing efforts to meet consumer demands.
- **Direct Sales Channels:** Guide businesses in establishing and managing direct sales channels, such as farmers' markets or subscription boxes, which can provide an alternative to traditional retail and allow for direct storytelling and engagement.

### Finding 5: Economic and Environmental Balance

Balancing economic survival with environmental stewardship is a common struggle. For many businesses, the difficulty lies in finding a middle ground where economic goals do not come at the expense of the environment. It's about making strategic decisions that support a company's financial bottom line while also enhancing its green credentials.

Quotes from business participants:

*"To me food waste is a financial decision, it should be a social decision as well. They should both be equal."*

*"I think the message to other businesses is to save money which I think they would be interested in - saving money is the message it's the biggest thing. Yeah, I mean it's good for the environment but it's all about saving them money."*

*"Waste could be a massive cost and if you don't manage it and not converting that into a profit then you're paying for it, you have to pay to get rid of it. It's a hidden cost that people don't always factor in."*

#### Training Solution: Investing in Value-Added Transformations

The training will aid businesses in finding the balance between economics and the environment by providing know-how on creating value-added products from waste. Sessions could include:

- **Circular Economy Principles:** Educate businesses on the principles of the circular economy, including how to keep products and materials in use, designing out waste and pollution, and regenerating natural systems.
- **Sustainable Supply Chain Management:** Offer training on sustainable supply chain management, focusing on how to source materials responsibly and ensure that every aspect of the supply chain aligns with zero-waste goals.
- **Marketing Sustainable Products:** Teach businesses how to create compelling narratives around their sustainability efforts which can help them tap into new market segments and build brand loyalty.
- **Waste Audits and Reduction Planning:** Conduct sessions on performing waste audits and developing waste reduction plans that align with business objectives.
- **Community Engagement for Sustainability:** Show businesses how to engage with the community to promote the environmental benefits of zero-waste practices and drive consumer support for sustainability.

## Finding 6: Perceived Misaligned Government Policies

Current government policies do not adequately reflect the operational realities of small agricultural businesses, hindering their potential for innovation and growth.

Quotes from business participants:

*“If the government wants to hit their target then putting their money into getting this food waste reduced and the carbon emissions that go with that, they could solve the problem very quickly. Farmers actually have the answers.”*

*“There are some well-intentioned people within government but unfortunately the process and the mechanisms of governments are completely screwed, you cannot do anything with government.”*

*“So, we made a business decision due to the biosecurity issues not to expand as moving fruit was too hard and cost prohibited.”*

### Training Solution: Understanding and Influencing Policy Training

Training will address misaligned government policies by educating businesses on the current policy landscape and how to advocate for change. Training could include:

- **Policy Development Workshops:** Host workshops on understanding the policy development process, including how policies are proposed, debated, and enacted. This knowledge is vital for knowing when and how to intervene effectively.
- **Effective Communication Strategies:** Educate participants on effective communication strategies with policymakers, including how to craft policy briefs, position papers, and case studies that highlight the realities of their business operations.
- **Stakeholder Engagement Techniques:** Teach businesses how to identify and engage with key stakeholders and coalitions that can amplify their voice and influence policy changes.

**Finding 7: Beyond the Jargon**

Despite active engagement in practices aligned with the principles of food waste circular economy and sustainability, the businesses interviewed seldom used specific terms like 'circular economy' or 'circularity' in conversations (see Figure 3 below). This finding suggests a disconnect between the technical jargon of circular economy and the everyday language used by these businesses. It highlights the need for bridging this gap to enhance understanding and communication of circular practices in the business community.



Figure 3 Common terminology used by business participants

### Training Solution: Tailing language for effective communication

It aims to bridge the communication gap between facilitators and participants, ensuring that the concepts of food waste circular economy are clearly conveyed, relatable and accessible.

- **Language Audit and Adaptation:** Conduct regular audits of training materials and facilitator language to ensure they align with the vernacular used by the target business audience. Adapt training content to replace industry jargon with clear, simple language that resonates with participants.
- **Facilitator Training Workshops:** Organise workshops for facilitators focused on effective communication skills, emphasising the importance of using accessible language. These workshops can include sessions on translating technical terms into everyday language and understanding the audience's perspective.
- **Feedback-Informed Content Development:** Implement a feedback loop with business participants to gather insights on their understanding and comfort with the language used in training sessions. Use this feedback to continually refine the training content to better match the language and concepts familiar to the business community.
- **Use of Practical Examples and Case Studies:** Integrate real-life examples and case studies from the businesses themselves or similar industries to illustrate concepts in a relatable and practical manner. This approach can help bridge the gap between theory and practice, making the content more accessible and relevant.
- **Co-Creation of Training Materials:** Involve business representatives in the creation or review of training materials to ensure the language and content are appropriate and resonant with the business community. This collaborative approach can foster greater buy-in and relevance.

### 3.3 Reference Group

Initially, our goal was straightforward: to develop targeted training to encourage and support individual businesses in implementing food waste strategies. We embarked on a series of interviews, expecting to uncover a need for specific, direct training in waste management and circular economy practices.

Interestingly, during these interviews, we noticed that business participants rarely, if ever, used terms like 'circular economy', or 'circularity'. This observation suggested a disconnect or a lack of familiarity with the jargon often associated with environmental and sustainability practices. Despite this, it was evident that the essence of these concepts was understood, even if the terminology was not explicitly used.

However, the insights gleaned from these conversations highlighted a different path. We found that businesses were not just looking for training in isolation; they sought a collaborative approach that fostered community engagement and shared learning. It became clear that there was a vibrant opportunity for peer-to-peer knowledge exchange, and a collective effort was far more valuable than solitary pursuits in making impactful changes. The conversations revealed a genuine enthusiasm for coming together as a community to tackle food waste—a shared challenge that affects all stakeholders. Businesses were eager to learn not just for their own benefit, but to contribute to a regional effort that could lead to broader sustainable practices and innovation.

The outcome of the literature review and the interviews was a training framework (Figure 3) that combines the genesis of the project with the modules that were planned for delivery.

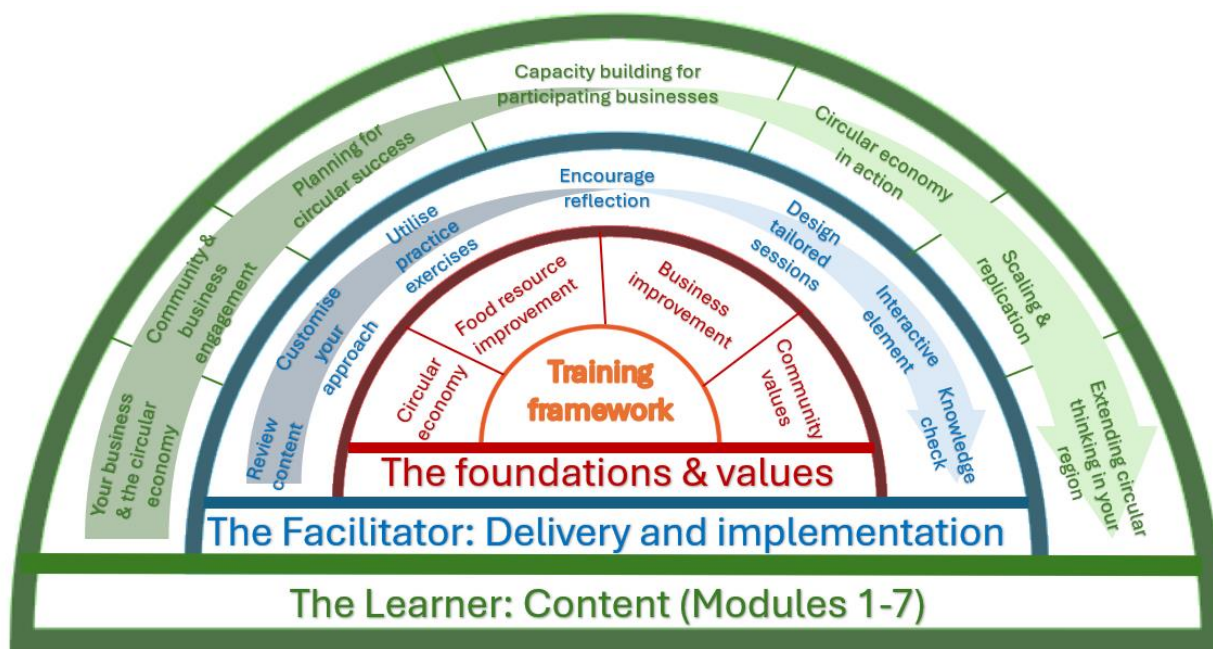


Figure 4: The Training Framework

At the heart of the framework are key themes revealed by the literature and constitute the framework’s foundations and values (red section): principles of the circular economy, food resource improvement, business improvement and community values. Following this (in the blue section) are the seven activities the facilitator will need to undertake in holding a leadership position to deliver and implement the modules. Of particular interest here is the facilitator’s opportunity to customise content to suit their cohort and encourage reflection so deep thinking is a continuous part of the learning process. Finally, the learner will undertake seven modules of learning provided by the facilitator (green section). These modules take the learners through a journey of the foundations and values of the training led by the facilitator whose role it is to bring members of a supply chain together for a planned, guided transition to a better means of managing food waste.

Hence, the training framework and subsequent training program are now designed to equip regional leaders, influencers and innovators with the tools and knowledge to guide their communities towards sustainable practices, fostering a collaborative environment where a pilot program could thrive. By focusing on training those who will lead and inspire others, this framework aims to initiate a ripple effect of sustainable practices, turning individual businesses into a united front against food waste, leading by example, and setting the stage for a sustainable transformation across regions.

The Reference Group aimed to bring the proposed training framework into the real world. The transcript of the discussion showed that this was achieved through a group of five food waste industry experts’ storytelling of lived experiences, fictional identities, and materials speculation (Heidingsfelder et al., 2017) and imagining what is possible for the future of a food waste management training framework that can be tailored to the needs of regional small food businesses.

### 3.3.1 Summary of findings

Four fictional pilot programs were developed by the group to imagine how a facilitator, who has completed the proposed training course, can go on to roll out pilot projects such as these in regional areas that are dominated by food production and have ambitions for better managing the by-products of their production processes.

In the process of developing these fictional pilot programs, important knowledge on authenticating the training course was gathered. Foremost, the training framework must **convincingly target the needs of small, regional businesses** for better managing food waste and include tangible benefits for everyone involved. The type of **language** used in the training was determined to be critical in enabling the seamless adoption of circular economy thinking and practices. It was agreed that **marketing** of the program needs to be through word-of-mouth via existing trusted regional networks and the key to success is having a **champion/influencer leading** the training process and development of pilot projects. This person will need to be skilled in their **delivery of materials** and have a sharpened sense of local production systems in order to craft learning experiences that include a) sharing their own experiences and b) facilitating **collaboration** between learners and pilot program partners.

Background knowledge generated from our literature review suggests that these findings corroborate with current knowledge of sustainable practices and food waste reduction. The importance of collaboration featured strongly in the literature and was discussed in detail in the Reference Group. As such, it was concluded that the close working relationships and collaborations suggested by Morea et al. (2023) can ease the pressures of adapting sustainability-oriented practices like circular economy into small businesses. Furthermore, Annosi et al.'s (2021) advice about the importance of creating networks and partnerships through a range of means to share best practices and resources for reducing food waste is at the heart of the training framework whereby a champion will use word-of-mouth and local networks to facilitate pilot projects. Further reflections and evaluations of the training framework are likely to result in Zaridis et al.'s (2020) findings that collaboration positively influences agri-food supply chain performance to overcome financial, efficiency or innovation constraints but this performance is mediated by the SME's strategy development.

Knowledge transfer strategies between SMEs that were discussed in the literature was also reflected in our findings. The criticality of collaborative networks (Azeem et al., 2021), social networks (Butcher and Sparks, 2010; Jones, 2013; Sawyer et al., 2014), supply chain networks (Corral de Zubielqui et al, 2013; Corral de Zubielqui et al., 2019) and government extension program (Manville et al., 2019) was abundantly clear in our data. This indicates that the "train the facilitator" model is likely to be successful for this training framework as it draws on the known successful aspects of B2B knowledge transfer for SMEs.

Another essential point that was raised in the literature, confirmed in interviews preceding the Reference Group and then raised again in the Reference Group was the resource limitations of SMEs when it comes to learning and knowledge transfer. The message was clearly articulated in the data that taking time to learn is perceived as a luxury that many Australian food SMEs do not have the time or financial capacity to enjoy (Corral de Zubielqui et al, 2013; Cother, 2020). The findings of Cother (2020) rang particularly true in that a motivated individual (i.e., a champion) and a supportive team and leadership were found to be the best drivers of change for implementing circular economy practices in food SMEs while training opportunities was amongst the lowest drivers of change.

Finally, the Reference Group provided four fictional pilot programs that future facilitators could potentially facilitate through their training. These fictional pilot programs helped confirm that all of the elements of the training framework are relevant to the needs of improving food waste practices. Further to this, a champion will be needed to drive the roll out of this program and collaboration between various supply chain partners will be essential.

## 4. Food Waste Transformers Program

Based on the validated training framework, we have developed the Food Waste Transformers Program. This program comprises seven training modules designed to equip facilitators with the necessary tools and knowledge to lead regional businesses in implementing food waste circular economy practices. We have successfully developed Module 1 along with its accompanying

resources, including a Facilitators Handbook, worksheets, case studies, icebreaker activities, a question bank, a feedback form, and a PowerPoint presentation. These resources form the cornerstone of the Food Waste Transformers Program, providing a structured and practical approach to reducing food waste and fostering sustainable practices in regional communities

## 5. Discussion

The research project "Cultivating the Capacity of Food Businesses to Reduce and Transform Food Waste - Phase 1" was guided by a hypothesis centred on understanding the training needs of small regional businesses to implement food waste circular economy activities independently. However, as we progressed through our research, particularly through in-depth interviews and the engagement of a Reference Group, we uncovered insights that led us to rethink our approach.

The key finding was that businesses were not simply seeking isolated training programs; instead, they were looking for a collaborative, community-driven approach. The traditional classroom or online-based training model was deemed ineffective for these businesses, as they expressed a clear preference for a leadership-based training opportunity that is embedded in real business practice and collaboration within their supply chain. This discovery has significant implications for how training programs are designed and delivered in regional areas, suggesting that successful implementation requires a more hands-on, locally tailored approach.

Our research validated the need for a "train the facilitator" model, which we believe will create the necessary momentum for broader adoption of circular economy practices. This model focuses on empowering local leaders who can guide and support businesses in their communities, fostering peer-to-peer learning and collective action. The Reference Group played a crucial role in affirming this approach, highlighting that regional collaboration and leadership are essential to driving meaningful change in food waste management.

## 6. Conclusions & Recommendations

To build on the success of Phase 1 and address the identified needs, we propose four potential options, starting with a 'do nothing' scenario. Each option is sequential, building on the former, but with significant time and resource savings if approached as one holistic initiative. The options are:

### Option 1 Do nothing

- Accept the recommendations report without progressing further.
- **Benefit:** NIL
- **Budget:** NIL
- **Timeframe:** 0 months

### Option 2: Module Development

Complete the six remaining training modules based on the learning from the Murraylands Riverland research (Phase 1).

**Benefit:** Leverages the foundational work from Phase 1 to develop six additional training modules, which are essential for scaling the program nationally. This option solidifies the groundwork for a consistent and effective approach to food waste reduction and transformation.

**Budget:** \$500,000 – \$550,000

**Timeframe:** 12 months

**Option 3: Regional Expansion, Module Development and Pilot Activation**

- **Step 1 Research Extension to Additional Regions:** Building on the initial success in the Murraylands and Riverland region, the research will be expanded to two additional regions.
- **Step 2 Completion of the Training Modules:** The remaining six training modules will be developed, informed by the findings from all three regional studies.
- **Step 3 Testing and Refinement:** The completed Food Waste Transformers Program will then be tested and refined through a pilot project in the Murraylands Riverland region. This process will involve close monitoring and feedback from participants to fine-tune the training materials and methods.

**Benefit:** Expanding the research to two additional regions is critical for capturing diverse regional insights, which will enhance the relevance and effectiveness of the training modules. This option ensures that the program is adaptable to various regional contexts, allowing for more precise tailoring to local needs. By testing and refining the Food Waste Transformers Program through a pilot project, ensures that the training is both practical and applicable to the regional context.

**Budget:** \$1,500,000 - \$2,500,000

**Timeframe:** 24 - 36 months

**Option 4: National Rollout** - This option represents a full-scale strategy to ensure that the Food Waste Transformers Program is not only comprehensive and effective but also adaptable and scalable on a national level.

- **Step 1: Research Extension to Additional Regions:** Expand the research to two additional regions.
- **Step 2: Completion of the Training Modules:** The remaining six training modules will be developed, informed by the findings from all three regional studies. This ensures that the content is robust, relevant, and able to address the varied needs of businesses across regional Australia.
- **Step 3: Broader Testing and Refinement:** The completed Food Waste Transformers Program will be tested and refined through pilot projects in the three regions ensuring that the Program is both practical and applicable, while also addressing local nuances setting the stage for a more inclusive and comprehensive national rollout. The goal is to identify and resolve any issues before a wider rollout, ensuring that the program is both effective and user-friendly.
- **Step 4: National Rollout Preparation:** Following successful testing, the program will be prepared for national rollout. This phase will include the development of a comprehensive rollout strategy, including marketing and communication plans to engage regional leaders, influencers, and businesses across the country. The strategy will also involve training a network of facilitators who can deliver the program locally, ensuring that the program is accessible and effective in every region

**Benefit:** This comprehensive option ensures the Food Waste Transformers Program is fully developed, tested, and refined to meet the needs of businesses across regional Australia. It maximises the program's impact by ensuring that all elements of the Program are scalable and adaptable on a national level. By creating a network of trained facilitators and establishing a detailed rollout strategy, this option lays the groundwork for a transformative shift in how food waste is managed nationwide. It ensures that the program not only reaches a wide audience but is also effective in driving significant, long-term changes in business practices, ultimately leading to a sustainable, circular economy across regional Australia.

**Budget:** \$4 million +

**Timeframe:** 36 - 48 months

In conclusion, the importance of this initiative cannot be overstated. Regional food businesses are at the forefront of balancing waste management with economic sustainability. By embracing circular economy principles through practical training that empowers business owners to innovate and connect within their regional ecosystems, there is immense potential to transform these local food systems. Reducing food waste and converting it into valuable resources not only improves financial performance but also enhances environmental conservation and community well-being.

Option 4 offers the most comprehensive pathway to achieving these goals. It combines localised validation in new regions, the development of targeted training modules, and a strategic national rollout. This approach ensures transformative benefits for regional food businesses across Australia, fostering a culture of sustainability, innovation, and collaboration on a national scale.

## 7. Impact and Ongoing Monitoring

### Expected Impact and Societal Benefit

The "Cultivating the Capacity of Food Businesses to Reduce and Transform Food Waste - Phase 1" project is anticipated to deliver significant impacts across several critical areas, aligning with the seven CRC impact areas:

1. **Food Waste Reduced:** The primary goal of the project is to reduce food waste within regional food businesses by implementing circular economy practices. By training facilitators who can guide businesses in adopting these practices, the project aims to create a measurable decrease in food waste across participating regions.
2. **Industry Profitability Gained:** By turning food waste into a valuable resource, businesses can increase their profitability. The Food Waste Transformers Program equips businesses with the tools to identify cost-saving opportunities and develop value-added products from waste materials, ultimately improving their bottom line.
3. **Rescued Food Distributed:** The project encourages businesses to repurpose and redistribute food that would otherwise go to waste. This not only reduces waste but also supports food security by making more food available for consumption.
4. **Greenhouse Gas Emission Savings:** Reducing food waste directly contributes to lowering greenhouse gas emissions. By minimising waste, the project helps decrease the carbon footprint associated with food production, transportation, and disposal.
5. **Circular Economy Jobs Created:** The project fosters the development of new roles within the circular economy, particularly through the creation of facilitator positions. These roles are crucial for driving the adoption of circular practices and supporting the ongoing education of regional businesses.
6. **Industry People Trained:** Through the "train the facilitator" model, the project will train a significant number of industry professionals. These trained facilitators will then educate others in their communities, creating a ripple effect of knowledge and skills across the region.

### Ongoing Monitoring Measures

To ensure the successful delivery of the project's impact, several ongoing monitoring measures will be implemented:

1. **Regular Progress Reporting:** Facilitators will be required to submit regular progress reports, detailing the activities undertaken, the number of businesses engaged, and the specific outcomes achieved. This will help track the reach and effectiveness of the training program.
2. **Surveys and Feedback Loops:** Participating businesses will be surveyed at multiple stages of the program to assess their progress in reducing food waste and adopting circular economy practices. Feedback loops will be established to continuously refine and improve the training materials based on participant experiences.
3. **Greenhouse Gas Emission Tracking:** Tools and methodologies will be developed to monitor the reduction in greenhouse gas emissions resulting from decreased food waste. This data will be critical in quantifying the environmental benefits of the project.
4. **Economic Impact Assessments:** Periodic assessments will be conducted to evaluate the financial benefits realized by businesses through the adoption of circular economy practices. This will include tracking profitability gains and cost savings from reduced waste.
5. **Facilitator Networks:** A network of trained facilitators will be established to share best practices, challenges, and successes. This network will also serve as a platform for ongoing monitoring and support, ensuring that facilitators are equipped to continue driving impact in their regions.
6. **Annual Reviews:** An annual review of the project will be conducted to evaluate its overall impact, identify areas for improvement, and make any necessary adjustments to the program's implementation strategy. This review will involve input from facilitators, participating businesses, and other key stakeholders.

By implementing these monitoring measures, the project will not only achieve its intended impacts but also ensure that the benefits are sustained and amplified over time, contributing to the broader goal of reducing food waste and enhancing sustainability in regional Australia.

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## APPENDIX – Summary of Findings Murraylands and Riverland

### Summary of Findings (Murraylands)

In the Murraylands, businesses are pioneering a shift towards a circular economy through collaboration and local networking. Initiatives like cooperative partnerships are pivotal in driving this transformation, allowing businesses to share resources, reduce waste, and foster direct sales and community engagement, which is not only environmentally beneficial but also economically advantageous. However, these innovative approaches are often stifled by financial constraints and bureaucratic challenges, with businesses facing difficulties in accessing grants and navigating governmental red tape that impedes growth.

#### Key themes

**Collaboration for a Circular Economy:** Across the board, Murraylands businesses are recognising the value in collaborative approaches to create a circular economy. They believe by fostering local networks, such as cooperative partnerships and shared-resource hubs they could support each other, reduce waste, and create a sustainable local economy. This synergy could help businesses like Rio Vista Olives, Woodland Orchard and Jabuk Pastured Berkshires to bypass traditional retail constraints and engage in direct sales and field days, contributing to the community while also finding innovative uses for by-products, thus improving their bottom line.

**Navigating Financial and Bureaucratic Hurdles:** A major theme is the struggle with financial barriers and bureaucratic red tape. Businesses are hampered by the difficulty in acquiring grants for necessary technology and infrastructure, often leading to self-funding. Moreover, excessive government bureaucracy and the disconnect between policy actions and ground-level business needs, as experienced by Rio Vista Olives and Coorong Wild Seafood, impede operational efficiency and growth. The narrative calls for streamlined government processes and more accessible financial support tailored to small-scale producers.

**Direct Market Engagement and Diversification:** Small-scale producers like Woodlane Orchard and Paradise Hill Honey face significant challenges in the retail market, dominated by large supermarkets. As a response, there is a shift towards direct engagement with consumers and diversification of products and markets. Businesses are adapting by finding new niches (eg Monarto Zoo retail outlet and tourist visitor centres and local markets), developing value-added products, and expanding their reach through community engagement, as seen with the introduction of new honey varieties and the success of direct sales initiatives.

**Scale and Self-Sufficiency Challenges:** All businesses interviewed are facing the dual challenge of scaling up operations to become more viable while striving for self-sufficiency. They are exploring various uses for their products, but often encounter obstacles such as the lack of local processing facilities, the high cost of technology, and difficulties in finding manufacturers for small-scale production. This theme reflects the need for strategic investment and infrastructure development that aligns with the principles of environmental care and sustainable growth.

## Summary of Findings (Riverland)

The Riverland region's businesses are at a crossroads where market pressures, consumer expectations, and regulatory challenges intersect with a strong drive for innovation, collaboration, and sustainability. The way forward involves a concerted effort to educate consumers, streamline supply chains, and leverage collaborative networks to transform agricultural practices and waste management into opportunities for growth and value creation.

### Key themes

**Collaborative Efforts and Shared Infrastructure:** The narrative underscores the importance of cooperative action and shared resources to enhance supply chain efficiency and address waste issues. By working with local packers like Riverland Packers and Exporters, and engaging in collaborative efforts, such as cooperatives for processing and marketing lower-grade produce, businesses like Century Orchards, Walker Citrus and Best Play Pty Ltd can benefit collectively. This collaboration is further extended to include consumer education, aiming to shift perceptions and increase the acceptance of less-than-perfect produce, thereby reducing waste.

**Market Dynamics and Consumer Influences:** Businesses in the Riverland region are navigating complex market dynamics that include intense international competition and stringent retail standards, which often result in significant produce waste. These pressures compel a call for regulatory revisions that better accommodate the natural diversity of agricultural products. To mitigate waste and better meet market expectations, businesses like Black Sheet Produce, Gurra Downs Dates and Toolunka Creek Olives are exploring a range of waste management and utilisation strategies, including the transformation of by-products into animal feed or other value-added products.

**Business Growth Amidst Regulatory and Financial Challenges:** Riverland businesses are striving for growth and facing significant challenges related to scaling, infrastructure investment, and navigating governmental red tape. Financial hurdles, such as the need for significant investment in infrastructure and technology to scale operations, are compounded by the frustration with bureaucratic processes that impede access to government support. These challenges necessitate a balance between financial viability and social responsibility, with businesses often prioritising financial decisions to sustain operations.

**Innovation and Sustainability in Agricultural Practices:** The region's businesses are committed to sustainable practices and innovation in product development, driving change from a passion for making a living while respecting the environment. This commitment is evident in the diversification of crop cultivation and efforts to turn waste into valuable resources. However, the pathway to achieving these goals specifically with businesses like Singing Magpie Produce, Black Sheep Produce and Toolunka Creek Olives involves overcoming obstacles such as finding manufacturers for small-scale production and aligning grant applications with business philosophies that prioritise environmental care and sustainable growth.

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COOPERATIVE RESEARCH CENTRE

**For further information  
please contact:**

[enquiries@endfoodwaste.com.au](mailto:enquiries@endfoodwaste.com.au)  
or visit [endfoodwaste.com.au](http://endfoodwaste.com.au)