



New revenue opportunities for AgriFutures Australia's rural industries

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In submitting this report, the authors have agreed to AgriFutures Australia publishing this material in its edited form.

AgriFutures Australia is the trading name for Rural Industries Research and Development Corporation (RIRDC), a statutory authority of the Australian Government established by the *Primary Industries Research and Development Act 1989*.

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### **Foreword**

#### A guiding principle at AgriFutures Australia is that everything we do must be about delivering value for Australian producers and rural industries.

That value is largely delivered through investing in, and delivering outputs from, research in areas such as productivity efficiency and sustainability for Australian plant and animal industries; this is the basic mandate of AgriFutures Australia's levied and emerging industry programs.

As Australian agriculture's operating environment evolves amid changing economic, social and environmental considerations, financial returns to producers can be impacted. And as an industry matures and the food, fibre or fodder produced shifts to becoming a commodity product in increasingly competitive markets, producers' capacity to differentiate and extract value is challenged.

This complex environment is the context in which AgriFutures Australia's *Research and Innovation Strategic Plan 2022-2027* exists. As its core goal, the strategy aims to grow the long-term prosperity of Australian rural industries. In developing the strategy, we identified that we needed to maintain a focus on collaboration and leveraging opportunities; this includes investigating opportunities for innovation and agrifood technology development.

To help producers spread the income risk of their enterprises, one of the strategy's 16 priorities is *Identifying new revenue streams*. The aim of this priority is to identify at least five new potential revenue streams on farm, post the farm gate or via other traditional or non-traditional activities. This project, the first major piece of work under the priority, was commissioned as a scoping study to help understand where new revenue streams could exist and be developed across AgriFutures Australia's levied and emerging industries, and other rural industries.

The key findings include: (1) the identified opportunities align to six common themes that are drivers or enablers, and that are complementary and not mutually exclusive; (2) the different life cycle stages of the industries offer different opportunities; (3) producers have different approaches and barriers to adopting new revenue opportunities; and (4) a skilled and capable workforce is a critical enabling power to assess, adopt and implement opportunities. Additionally, the project elucidated that new revenue streams could be on an all-of-agriculture, sector, region or individual business basis.

Work will continue in this area to ensure Australian producers have the reach and foresight to sustain their farming businesses and that the agriculture industry thrives into the future.

#### Peter Vaughan

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#### Acknowledgements

AgriFutures Australia acknowledges the First Nations people of Australia as the traditional custodians of the lands and waters on which we live, learn and work. We pay our respects to past, present and future Elders of these nations. In particular, we acknowledge the Wiradjuri people of Australia, the traditional custodians of the lands and waters where AgriFutures' head office is located.

CIS acknowledges the more than 130 individual industry value chain participants who graciously provided their time, knowledge, insights, expertise and patience to this comprehensive study spanning 28 Australian levied and emerging rural industries.

## About the authors

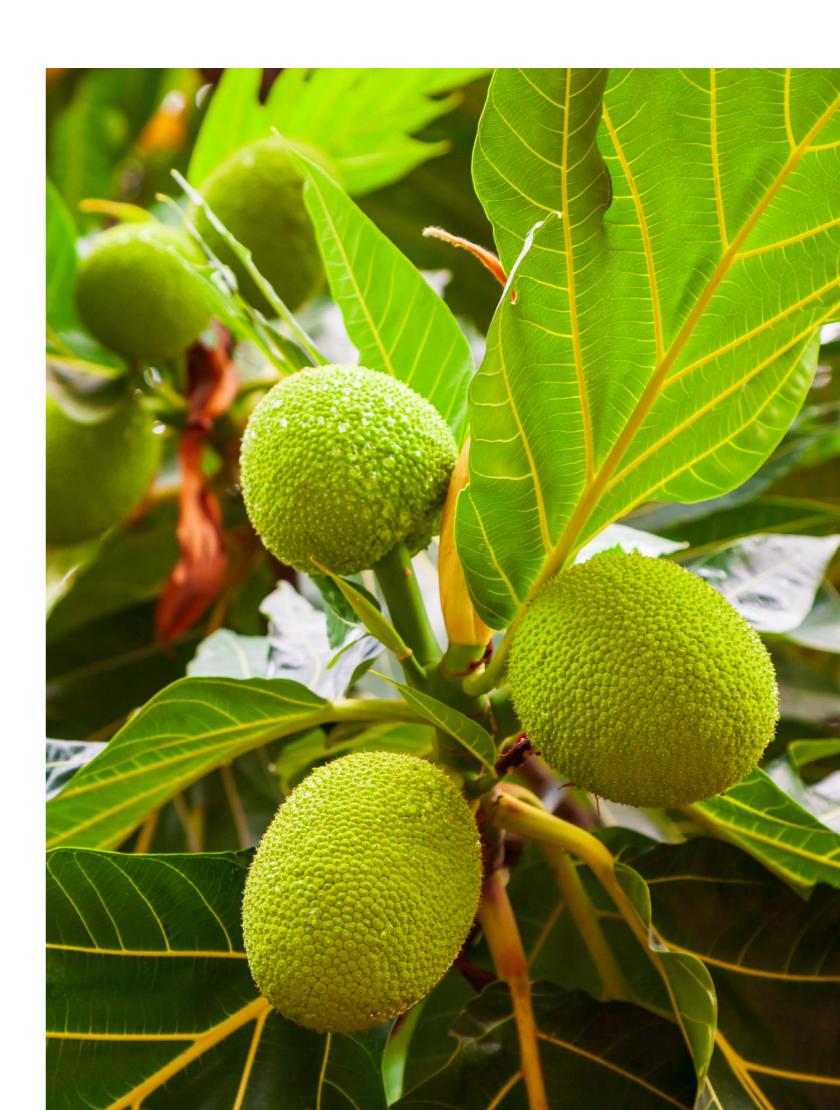
Since inception in 1995, Consulting & Implementation Services (CIS) has differentiated itself by providing clients with 'results, not just reports'. This means we deliver solutions that are both insightful and practical to provide real value to our clients. This study was a team effort involving CIS consultants Mike (Pep) Pepperell, Pratik Ambani, Karen Chow, Tessa Guerin and Davis George.

## **Abbreviations**

Abbreviation	Definition
AACU	Australian Carbon Credit Unit
agtech	agricultural technology
Al	artificial intelligence
CFI	Carbon Farming Initiative
ERF	Emissions Reduction Fund
ESG	environmental, social and governance
JSC	Jobs and Skills Council
GPS	global positioning system
loT	Internet of Things
NBTs	new breeding technologies
R&D	research and development
RD&E	research, development and extension

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## Executive summary



The primary objective of this study was to identify potential new and alternate revenue sources for 28 of AgriFutures Australia's levied and emerging industries, and the Australian agriculture sector more generally. The study sought to provide insights into the unique challenges and opportunities that each industry faces, with a focus on innovation, revenue growth and profit maximisation.

New and alternative revenue streams are crucial for Australia's rural industries and their associated value chains and ecosystems for several reasons. Primarily, they provide diversification, reducing reliance on current sources of income and thereby enhancing resilience against economic fluctuations and environmental uncertainties, such as drought or market downturn.

These revenue streams can promote sustainable practices and innovation, encouraging industries to adopt environmentally friendly and technologically advanced approaches, which in turn supports long-term viability. They can also foster economic growth and job creation in rural areas, helping to counter urbanisation trends and maintain vibrant rural communities. Finally, they can strengthen Australia's position in the global market by tapping into emerging trends and consumer demands, ensuring the continued competitiveness of its rural industries on a global scale.

#### Key findings

Four clear findings emerged from this comprehensive study.

Firstly, the study highlighted the existence of promising new and alternate revenue opportunities across the industries covered. These opportunities align to six common themes as drivers or enablers: (1) consumer expectations; (2) valueadd, export and niche markets; (3) collaborating along and across value chains; (4) carbon, biodiversity and natural capital markets; (5) genetics; and (6) agtech.

These themes are complementary and not mutually exclusive. By integrating efforts across these themes, rural industries can create a multifaceted approach to profitability that addresses diverse market demands, minimises risks and promotes sustainable success.

Secondly, it is evident that the appetite for, and interest in, these revenue opportunities will vary significantly among producers in the 28 industries studied. This variability is attributed to the distinct circumstances and life-cycle stages of each industry. The industries span the traditional industry life-cycle model, ranging from the introduction phase for emerging industries to the mature and decline phases for levied industries.

Thirdly, understanding where different industry participants fall on the innovation adoption curve can inform strategies for introducing and promoting new revenue opportunities. Effective communication and tailored approaches for each group can help rural industry participants explore and embrace new and alternative revenue opportunities more successfully.

Lastly, intertwined with each of the above findings is the critical enabling power of a skilled and capable workforce, reinforcing the impact that the development of, and access to, skilled workers has on Australia's agricultural supply chains. This challenge is heightened by the pace of agtech innovation.

#### Target audiences

This study's insights and findings are invaluable for a wide range of stakeholders, as detailed below.

**AgriFutures Australia:** As the primary research, development and extension (RD&E) funding body for the rural industries covered, AgriFutures Australia can leverage the findings of this study to guide the development of tailored strategies and investment plans for each industry, promoting growth, sustainability and innovation.

**Industry stakeholders:** Individual businesses, industry bodies and supply chain participants can benefit from understanding the specific revenue opportunities available to them and tailoring their strategies accordingly.

**Researchers and innovators:** The study provides a roadmap for research and development (R&D) investment pathways, encouraging innovation and technological advancements that align with the identified revenue drivers.

**Government agencies:** The study can be used to inform investments, program areas, policies and regulations that support the growth and diversification of rural industries.

#### Key recommendations

The recommendations of this study are relevant to some or all of the target audiences, and are general in nature. They are:

- Government agencies and industry stakeholders should recognise that each rural industry, regardless of its size and life-cycle stage, is unique and should be treated as such. They should avoid a one-size-fits-all approach to supporting these industries, and instead develop tailored strategies and initiatives that align with their specific circumstances and aspirations.
- 2. Government agencies and industry stakeholders should acknowledge the resource constraints faced by industries in the introduction and decline phases. They should provide targeted support to industries in these stages, including financial incentives, capacity-building programs and access to technical expertise. For industries in the growth and shake-out phases, resources should be directed towards supporting innovation, R&D, and market expansion.
- Producers should be encouraged to collaborate and exchange best practices, technologies and market insights that could benefit their industry in various phases of development.

- 4. Producers should utilise cross-industry forums or industry networks to share experiences, challenges and success stories. These forums could foster collaboration, promote knowledge exchange and serve as a platform for discussing potential new revenue opportunities.
- 5. Government agencies and industry stakeholders should recognise the need for industries in the mature and decline phases to transition towards sustainable practices and products, and consider incentives for adopting environmentally friendly and socially responsible approaches, ensuring a smooth shift to meet evolving consumer preferences.
- 6. Industry stakeholders should maintain partnerships with national workforce organisations to identify workforce demands and address training and capacity-building requirements.

#### Conclusion

This study has shed light on the intricate landscape of Australia's rural industries. Through a combination of interviews, desktop reviews and literature analysis, we have discerned insights into potential new and alternate revenue sources that can fortify the profitability of these industries. The study has also underscored the dynamic interplay of factors that influence producers' readiness and willingness to embrace these opportunities. Furthermore, this report emphasises the importance of recognising the diversity and maturity of these industries, as this significantly influences producers' willingness and capacity to explore novel revenue opportunities. As AgriFutures Australia moves forward, it must continue having a flexible and adaptive approach to supporting industries at various life-cycle stages, recognising that opportunities for growth, sustainability and renewal exist at each juncture.

It is important to emphasise that, regardless of their life-cycle stage, each industry contributes to the breadth, diversity, resilience and vibrancy of Australia's rural landscape. Hence, it is imperative that tailored revenue-generating strategies are developed to address the specific needs and circumstances of each industry. Similarly, effective communication and tailored approaches for each group along the adoption curve can help producers explore and embrace new and alternative revenue opportunities more successfully.

## Introduction



AgriFutures Australia is one of 15
Research and Development Corporations
(RDCs) that service the research,
development and extension (RD&E)
needs of Australian rural industries.

It represents 13 levied rural industries – chicken meat, rice, honey bee and pollination, ginger, tea tree oil, pasture seeds, export fodder, thoroughbred horses, kangaroo, buffalo, deer, goat fibre and ratite – investing in RD&E to deliver real returns to farmers and producers so they can thrive into the future. AgriFutures Australia also makes investments to drive the growth and development of emerging, high-potential rural industries, 15 of which have been within the scope of this study.

A priority contained in AgriFutures Australia's *Research* and *Innovation Strategic Plan 2022-2027* is to identify new and alternate revenue streams for rural industries. Within this context, this study aimed to identify potential new and additional revenue sources for 28 levied and emerging industries through reviewing existing information and engaging with growers, producers, processors and other key stakeholders along the respective industry value chains.

New and alternative revenue streams provide diversification, reducing reliance on a single source of income and thereby enhancing resilience against economic fluctuations and environmental uncertainties, such as drought or market downturn. They can promote sustainable practices and innovation, encouraging industries to adopt environmentally friendly and technologically advanced approaches, which in turn supports long-term viability. New revenue streams can foster economic growth and job creation in rural areas, helping to counter urbanisation trends and maintain vibrant rural communities. Finally, they can strengthen Australia's position in the global market by tapping into emerging trends and consumer demands, ensuring the continued competitiveness of its rural industries on a global scale.

#### Materials and methodology

This study was undertaken using a combination of key stakeholder interviews across levied and emerging industries and a desktop review of existing RD&E Plans (where available) and broader national and global literature in relevant fields. Stakeholder interviews spanned peak industry bodies, individual businesses, supply chain participants and researchers. They focused primarily on exploring revenue opportunities throughout the respective value chains of each industry and delivered a contemporary understanding of each industry's current situation and circumstances.

#### Report structure

The report identifies the key drivers and enablers of new and alternate revenue streams and associated R&D investment pathways across the 28 levied and emerging industries in scope, and discusses the challenges and opportunities associated with each industry's maturity and appetite for alternate revenue streams. This report is complemented by companion snapshots for each industry, available on request to AgriFutures Australia. These standalone overviews summarise the respective industry's situation, challenges and opportunities, cross-sector revenue opportunities, and suggested next steps with respect to further industry consultation and communication.

#### Rural industries in scope

More than 130 stakeholders spanning 13 levied and 15 emerging industries participated in structured interviews as part of this study. The levied industries were those mentioned above. The emerging industries were: coffee; hazelnuts; industrial hemp; insects; jackfruit; Kakadu plum; marron; native bees; native grains; pomegranate; quinoa; seaweed: sesame: truffles and wattle seed.



# Key drivers and enablers of revenue opportunities

There exist promising new and alternate revenue opportunities across rural industries. Based on the structured interviews and other consultations completed as part of this study, these opportunities align with six common themes that are drivers or enablers, and that are complementary and not mutually exclusive.

#### Consumer expectations

Changing consumer expectations, social licence to operate and environmental, social and governance (ESG) considerations are interconnected aspects of modern business practices (Perez et al., 2022). Understanding and responding to these viewpoints is critical, especially in an era where sustainability, ethics and social responsibility are increasingly important to stakeholders (Xie et al., 2019).

The use of environmental and sustainability claims is also becoming more common in the marketing of consumer goods. However, there are concerns that a significant proportion of the claims made by businesses may be false or misleading, or have no reasonable basis. This is known as 'greenwashing' (ACCC, 2023).

Key sub-themes associated with changing consumer expectations, social licence to operate and ESG, as raised by industry participants and contained in the literature, include: circularity and the environment; health and wellbeing; traceability; and animal welfare. In a world where consumer sentiment is increasingly intertwined with business success, embracing these trends is not just a choice but a necessity for long-term growth and prosperity (McKinsey and NielsenIQ, 2023).

Each sub-theme is discussed below, along with potential R&D investments relevant to the industry identified or applicable to other industries.

#### Circularity and the environment

Consumers are becoming more environmentally conscious and are concerned about the impact of their choices on the planet. Consumer sentiment favouring sustainable and ecofriendly practices may lead to increased demand for products that are produced with a lower environmental footprint (PwC, 2023). For example, a recent joint study from McKinsey and NielsenIQ examined sales growth for products that claim to be environmentally and socially responsible. Products making ESG-related claims averaged 28 per cent cumulative growth over a five-year period, versus 20 per cent for products that made no such claims (McKinsey and NielsonIQ, 2023).

Circularity, which refers to the concept of designing systems that minimise waste and make the most of resources by reusing, recycling and regenerating materials and products (Capgemini, 2021), has the potential to play a significant role in Australia's rural industries. Ways in which circularity can be applied to the sector to secure new revenue and maximise profit include waste reduction, waste-to-energy and renewable energy (Baillie *et al.*, 2019). The environmental concerns of consumers, however, go well beyond circularity, and are captured by the 'carbon, biodiversity and natural capital markets' revenue driver.

R&D investment opportunities tied to circularity and the environment identified through stakeholder interviews and the literature review are shown in Table 1.

Table 1. R&D investment opportunities relating to circularity and the environment.

Industry Source	<b>Opportunity</b> New or alternative	R&D initiative Current RD&E Plan? Cross-sectoral?
Chicken meat	Investigate more cost-effective circular water and energy solutions in the chicken meat processing industry.	R&D into more cost-effective solutions.
Industry stakeholders		In current RD&E Plan? Yes.
	Alternative	Cross-sectoral investment opportunity? Yes
Multiple	Promote new models for complementary solar	R&D into potential models for complementary solar
Literature review	energy and agricultural production, commonly known as agrisolar or agrivoltaics (CEFC, 2021).	energy and agricultural production.
		In current RD&E Plans? No
	Alternative	Cross-sectoral investment opportunity?Yes



#### Health and wellbeing

Consumers are increasingly focused on their health and wellbeing. Changes in dietary preferences, such as the rise of plant-based diets and alternative proteins, can impact the types of agricultural products in demand (McKinsey, 2022). Australian producers who can adjust to these changing preferences and meet these demands through practices like organic farming and reduced pesticide use may be rewarded with increased opportunities in the market.

R&D investment opportunities tied to health and wellbeing identified through stakeholder interviews and the literature review are shown in Table 2.

Table 2. R&D investment opportunities relating to health and wellbeing.

Industry Source	<b>Opportunity</b> New or alternative	R&D initiative Current RD&E Plan? Cross-sectoral?
Honey bee and pollination	Explore higher-value retail product categories for honey beyond table spreads, such as medicinal, skincare, beauty products, natural sweeteners and beverages.	R&D into potential commercial pathways for higher-
Industry stakeholders		value retail products.  In current RD&E Plan? Yes
	Alternative	Cross-sectoral investment opportunity? No
Multiple - Kakadu plum, wattle seed, tea tree oil, ratite,	Explore the nutritional properties of levied and emerging industry products to exploit value-add	R&D into the nutritional characteristics of products to determine their health benefits.
native grains, kangaroo	and health benefit claims.	In current RD&E Plans? Yes
Industry stakeholders and literature review	Alternative	Cross-sectoral investment opportunity? No
Rice Industry stakeholders and	Explore innovative rice-based products (gluten-free products, baby food and on-the-go products) and innovative packaging, incorporating new technology	R&D into how the rice industry can align with changing consumer preferences and emerging trends.
literature review	applications that enhance consumer appeal and convenience.	In current RD&E Plan? Yes
	Alternative	Cross-sectoral investment opportunity? Yes
Pomegranate	Explore the re-use of pomegranate juice processing waste for nutraceutical purposes.	R&D to explore value-add from previously discarded or underutilised by-products.
Industry stakeholder	New	In current RD&E Plan? Yes
		Cross-sectoral investment opportunity? Yes
Coffee	Explore the use of coffee by-products, which are often disposed despite their potential for utilisation in nutraceutical and cosmetic products.	R&D aimed at adding value to by-products, such as fertilisers, biodiesel and food formulation.
Literature review		In current RD&E Plan? No
	New	Cross-sectoral investment opportunity? Yes

#### Traceability

Better traceability systems will help Australia adapt to changing trade relationships and consumer preferences; emerging technologies; the impacts of climate change; the impacts of COVID-19; any data-sharing requirements; greater consumer emphasis on product provenance; and increasingly complex food safety incidents and biosecurity threats. Further, having robust traceability in place can open up export opportunities for Australian producers.

Strengthening national traceability systems is a shared responsibility; producers, retailers, transport and logistics operators, exporters, and government regulators all have a part to play (DAFF, 2023b).

R&D investment opportunities tied to traceability identified through stakeholder interviews and the literature review are shown in Table 3.



Table 3. R&D investment opportunities relating to traceability.

Industry Source	<b>Opportunity</b> New or alternative	R&D initiative Current RD&E Plan? Cross-sectoral?
Buffalo	responsible stewardship, sustainable and eco- friendly meat options and authentic Australian	R&D into potentially positioning the buffalo industry in the listed commercial areas.
Industry stakeholder		In current RD&E Plan? No
	Alternative	Cross-sectoral investment opportunity? No
Multiple – Kakadu plum, native grains	Explore certification opportunities for Indigenous products to achieve premium prices and be	R&D into consumer exposure in the market to Indigenous products.
Industry stakeholder	recognised for their cultural significance.	In current RD&E Plan? Yes
	Alternative	Cross-sectoral investment opportunity? Yes
Coffee		R&D into potential market opportunities.
Literature review	competitive advantage for the Australian coffee industry.	In current RD&E Plan? Yes
	Alternative	Cross-sectoral investment opportunity? No
Export fodder	Expand adoption of traceability systems to enhance	R&D into the barriers to adoption of traceability in
Industry stakeholders	transparency through the export fodder supply chain.	the industry.
	Alternative	In current RD&E Plan? Yes
	Audinative	Cross-sectoral investment opportunity? No

#### Animal welfare

Animal welfare is inextricably linked to ESG considerations (Keeling et al., 2019). Concerns about animal welfare have led to increased demand for products from industries that prioritise humane treatment of animals (Alonso et al., 2020). Rural industries that adopt animal-friendly practices and are transparent about their processes may gain favour among consumers who prioritise these issues.

Animal welfare R&D investment opportunities identified through stakeholder interviews and the literature review are shown in Table 4.

Table 4. R&D investment opportunities relating to animal welfare.

Industry Source	<b>Opportunity</b> New or alternative	R&D initiative Current RD&E Plan? Cross-sectoral?
Kangaroo Industry stakeholder	Explore marketing opportunities to raise awareness of kangaroo management practices and legislation	R&D into ways to promote eco-friendly and sustainably produced kangaroo meat.
madatry stakenotaer	around kangaroo meat, particularly regarding eco- friendly and sustainable meat production.	In current RD&E Plan? Yes
	Alternative	Cross-sectoral investment opportunity? Yes
Goat fibre  Industry stakeholder	Explore premium options for animal welfare- specific management in the goat fibre industry	R&D into the viability and value of premium animal welfare management options.
industry stakenolder	to capitalise on European Union export market opportunities.	In current RD&E Plan? No
	Alternative	Cross-sectoral investment opportunity? No
Thoroughbred horses	Explore the potential for horse studs in an area to run tourism experiences to promote horse welfare	R&D to determine whether Australia has the scale and supporting infrastructure to support a viable
Literature review	and enhance community engagement.	hub model for thoroughbred industry tourism experiences.
	New	In current RD&E Plan? No
		Cross-sectoral investment opportunity? No
Ratite Industry stakeholder	Explore marketing strategies to promote the unique selling points of emu and ostrich products, focusing	R&D into potential marketing strategies and promotion activities for the ratite industry.
IIIuusti y stanelloluel	on building consumer interest and creating market differentiation.	In current RD&E Plan? N/A
	Alternative	Cross-sectoral investment opportunity? Yes

#### Value-add, export and niche markets

The development of new value-add, export and niche markets presents a significant opportunity for Australia's rural industries due to the potential to diversify revenue streams, enhance profitability and reduce dependence on traditional markets. By customising products to cater to niche consumer preferences, creating high-quality and unique offerings, and tapping into global demand for superior agricultural goods, rural industries may command premium prices and establish a competitive edge. This approach not only increases economic resilience by mitigating the risk of market fluctuations but also fosters sustainable growth, strengthens rural communities and reinforces Australia's reputation as a reliable supplier of high-value agricultural products in the global marketplace.

#### Value-add markets

Value-add refers to the practice of enhancing the value and marketability of a product by processing, refining or adding value to it before it reaches the consumer. This can include using innovative packaging or branding, transforming raw materials into a processed product, or adding unique features or attributes to a product.

Producers adding value to their products do so to enhance their quality, diversify their use or create market differentiation, with the aim of commending premium prices and meeting specific consumer demands. Realising this increases the profitability of their enterprise and boosts the competitiveness of their industry.

R&D investment opportunities tied to adding value to products identified through stakeholder interviews and the literature review are shown in Table 5.

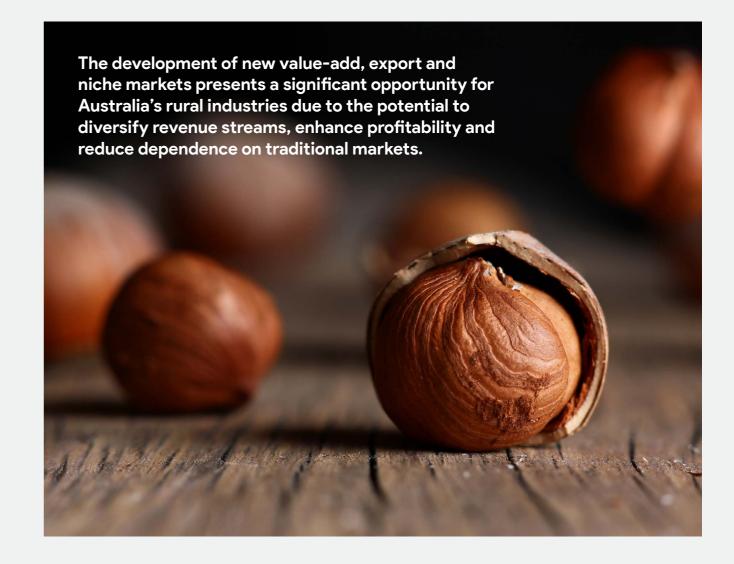


Table 5. R&D investment opportunities relating to adding value to products.

Industry Source	<b>Opportunity</b> New or alternative	R&D initiative Current RD&E Plan? Cross-sectoral?
Sesame	Optimise sesame extraction techniques for	R&D into sesame extraction techniques with an optimisation focus to improve efficiency.
Industry stakeholders	maximum yields and explore product development within the sesame industry.	In current RD&E Plan? Yes
	Alternative	Cross-sectoral investment opportunity? No
Honey bee and pollination  Literature review	Continue R&D into higher-value products generated from honey production.	
Literature review	Alternative	In current RD&E Plan? Yes
		Cross-sectoral investment opportunity? Yes
Deer Literature review	Explore value-add products from deer co-products to minimise animal waste and enhance usage	R&D into the potential value available for deer producers through adding value to products.
Literature review	efficiency.	In current RD&E Plan? No
	Alternative	Cross-sectoral investment opportunity? No
Kangaroo	Explore opportunities to maximise kangaroo product value-add to realise the full revenue	R&D into how the kangaroo industry can realise the full potential of kangaroo meat and bone meal.
Industry stakeholders	potential of pet food products.  Alternative	In current RD&E Plan? No
		Cross-sectoral investment opportunity? Yes
Ginger	Explore opportunities for ginger by-products to be fully utilised, for example in antimicrobial materials, environmental remediation agents, supercapacitors, bioenergy and heterogenous catalysts.	
Literature review		In current RD&E Plan? No
	New	Cross-sectoral investment opportunity? Yes
Kakadu plum	Explore value-add opportunities for previously discarded or underutilised by-products from	R&D to explore the viability of value-add opportunities from underutilised by-products.
Industry stakeholders	Kakadu plum (i.e. seeds, leaves and bark).	In current RD&F Plan? Yes
	New	Cross-sectoral investment opportunity? No
Hazelnut Industry stakeholders	Extract oil from discarded hazelnut shells for use in nutraceutical and cosmetic products.  New	R&D to explore the commercial potential of hazelnut oil extraction for use in nutraceutical and cosmetic products.
•		In current RD&E Plan? No
		Cross-sectoral investment opportunity? Yes
Jackfruit	Explore opportunities to use previously discarded by-products, such as jackfruit skin, to generate	R&D to explore the viability of using previously discarded jackfruit by-products.
Literature review	additional revenue.  New	In current RD&E Plan? No
		Cross-sectoral investment opportunity? No

#### Export markets

Export markets are important to Australia's rural industries because of their ability to expand product reach, enhance producer revenue and leverage our strengths in agricultural production and quality. They play a significant role in the sustainability and growth of Australian rural industries, and the broader economy.

An R&D investment opportunity tied to export markets identified through stakeholder interviews is shown in Table 6.

Table 6. R&D investment opportunity relating to export markets.

Industry Source	<b>Opportunity</b> New or alternative	R&D initiative Current RD&E Plan? Cross-sectoral?
Multiple – kangaroo, ratite, buffalo Industry stakeholders	Explore export opportunities for meat products, including market and processing requirements.  Low-carbon production and Australia's 'clean and green' reputation provide a unique opportunity for the industries to expand their market.	R&D into market access requirements and strategies to expand Australia's share of the kangaroo, ratite and buffalo markets internationally.  In current RD&E Plans? Yes
	Alternative	Cross-sectoral investment opportunity?Yes

#### Niche markets

Selling products into niche markets enhances profitability, reduces competition, fosters product differentiation, builds customer loyalty and supports sustainability, making it a valuable strategy for Australia's rural industries.

R&D investment opportunities tied to niche markets identified through stakeholder interviews are shown in Table 7.

Table 7. R&D investment opportunities relating to niche markets.

Industry Source	<b>Opportunity</b> New or alternative	R&D initiative Current RD&E Plan? Cross-sectoral?
Deer	Explore opportunities in the deer industry to increase market share through branding and	R&D into defining a successful business model and marketing strategy for the deer industry.
Industry stakeholder	targeting domestic markets.  Alternative	In current RD&E Plan? No  Cross-sectoral investment opportunity? No
Ginger	Explore differentiation activities in the ginger	R&D into the commercial potential of new ginger
Industry stakeholder	industry, such as promoting Australian ginger's unique flavour profiles and high quality, to target niche market opportunities.	varieties with different characteristics.  In current RD&E Plan? Yes
	Alternative	Cross-sectoral investment opportunity? No

#### Collaboration along and across value chains

Collaboration and partnerships across value chains is an integral strategy for Australian rural industries to achieve economies of scale, enhance efficiency and address challenges collectively. By working together, value chain participants and industries can harness their collective strengths to navigate the dynamic landscape of agriculture, drive innovation and secure a more prosperous and sustainable future. In Australia, where vast distances between production and processing sites are common and resources can be scarce, sharing infrastructure is a critical strategy for increasing efficiency and sustainability while reducing costs.

Key aspects of shared and mobile infrastructure with revenue and profit maximising potential include (1) shared and/or mobile processing facilities; and (2) collaborations and partnerships to build scale.

#### Shared and/or mobile processing facilities

Farmers and producers often share processing facilities to reduce costs and minimise food wastage. R&D investment opportunities tied to shared and/or mobile processing facilities identified through stakeholder interviews are shown in Table 8.

Table 8. R&D investment opportunities relating to shared and/or mobile processing.

Industry Source	<b>Opportunity</b> New or alternative	R&D initiative Current RD&E Plan? Cross-sectoral?
Multiple – deer and ratite	Explore innovative business models from other	R&D into the commercial potential of innovative
Industry stakeholders	industries, such as <u>Provenir</u> , Australia's only commercial mobile on-farm abattoir, to solve	business models like Provenir for the deer and ratite industries.
	processing and scalability challenges.	In current RD&E Plans? No
	New	Cross-sectoral investment opportunity? Yes
Seaweed	Explore innovative approaches to industry	R&D into exploring the commercial potential
Industry stakeholders	collaboration to expand production while utilising existing infrastructure. An example is <u>Clean Seas</u> working with CH4 Global to grow Asparagopsis spp. at a kingfish production site to reduce its environmental footprint.	of levied and emerging industries sharing infrastructure.
		In current RD&E Plans? No
		Cross-sectoral investment opportunity?Yes
	New	
Industrial hemp	Explore the potential of counter-seasonal use	R&D into exploring the commercial potential of the
Industry stakeholder	of cotton gins in the industrial hemp industry to overcome the lack of post-harvest processing infrastructure.	industrial hemp industry using cotton gins.  In current RD&E Plans? No
	New	Cross-sectoral investment opportunity?Yes

#### Collaboration and partnerships to build scale

Collaboration and partnerships are essential strategies to build scale and increase the efficiency and effectiveness of agricultural operations. These collaborative efforts can span a wide range of activities, from sharing resources and knowledge to accessing new markets and technologies.

R&D investment opportunities tied to collaboration and partnerships identified through stakeholder interviews are shown in Table 9.

Table 9. R&D investment opportunities relating to collaboration and partnerships to build scale.

Industry Source	<b>Opportunity</b> New or alternative	R&D initiative Current RD&E Plan? Cross-sectoral?
Multiple – industrial hemp, coffee, jackfruit Industry stakeholders	Explore collaborative frameworks to mitigate risks, enhance predictability and capitalise on untapped revenue potential within the industrial hemp, coffee and jackfruit industries.  New	R&D to identify examples of collaborative frameworks and their suitability to the industrial hemp, coffee and jackfruit industries.  In current RD&E Plans? Yes
Multiple – wattle seed, hazelnut Industry stakeholder	Explore vertical integration and cooperative business models in the hazelnut and wattle seed industries to leverage economics of scale and assist in supply chain and product development.  New	R&D to assess appropriate structures suitable to each industry.  In current RD&E Plans? No  Cross-sectoral investment opportunity? Yes
Multiple – native grains, wattle seed Industry stakeholders	Explore co-management, knowledge preservation and benefit sharing in the native grains and wattle seed industries to prioritise cultural significance.  New	R&D to explore strategies that uphold the unique goals and values of Indigenous communities while facilitating the expansion of the native grains and wattle seed industries.  In current RD&E Plans? No  Cross-sectoral investment opportunity? Yes

#### Carbon, biodiversity and natural capital markets

Environmental markets, including the carbon, biodiversity and natural capital markets, provide Australian producers with the opportunity to diversify their revenue and fund sustainable, long-term positive change on their properties. By participating in these practices and programs, producers can access premium prices, expand into new markets, enhance the reputation of their brand and gain a competitive advantage. The use of carbon-friendly practices aligns with increasingly strict environmental regulations and attracts investors focused on sustainability.

#### Carbon

Farmers can generate and diversify revenue by participating in national or international carbon markets, such as the Australian Government's Emissions Reduction Fund (ERF) or private carbon markets such as the Gold Standard or Verra.

Carbon credits are created by changing agricultural and land management practices to activities focused on achieving sustainable, long-term environmental outcomes and increasing the carbon content within the ecosystem.

The increase in carbon is measured and credits are assigned according to the standard comparable unit of carbon sequestered (tonnes of carbon dioxide equivalent). These credits can then be sold (offset) through the ERF or through private carbon markets to businesses or individuals managing their emissions profile to generate cash flow, or they can be retained (inset) to reduce the farm's overall emissions in pursuit of low-carbon or carbon-neutral status to access future market premiums.

R&D investment opportunities tied to carbon identified through stakeholder interviews and the literature review are shown in Table 10.

Table 10. R&D investment opportunities relating to carbon.

Industry Source	<b>Opportunity</b> New or alternative	R&D initiative Current RD&E Plan? Cross-sectoral?
Industrial hemp	atmospheric carbon, given initial studies show more effective sequestration compared to revegetation.	R&D into hemp's carbon potential in an Australian setting.
Literature review		In current RD&E Plan? Yes
		Cross-sectoral investment opportunity? Yes
Seaweed	Explore the carbon sequestration potential of Asparagopsis spp. to support development of a	R&D to verify the carbon sequestration potential of <i>Asparagopsis</i> spp.
Industry stakeholder	reliable carbon methodology.	In current RD&E Plan? No
	Alternative	Cross-sectoral investment opportunity? No
Rice Literature review	Investigate alternative uses for rice stubble, with a focus on sustainable practices and carbon	R&D to determine the potential application of rice as biomass for energy production.
Literature review	neutrality.	In current RD&E Plan? No
	Alternative	Cross-sectoral investment opportunity? Yes
Pasture seeds	Explore the carbon sequestration potential of perennial crops to support development of a reliable	R&D into the carbon and ecological benefits of using perennial crops compared to annual crops.
Industry stakeholder	carbon methodology.	In current RD&E Plan? No
	Alternative	Cross-sectoral investment opportunity? Yes
Multiple – tea tree, hazelnut, wattle seed	cropping to support development of a reliable	R&D into the carbon stored within tree crops.
		In current RD&E Plans? No
Industry stakeholders	Alternative	Cross-sectoral investment opportunity? Yes

#### Biodiversity and natural capital markets

Biodiversity offset schemes already exist, with each Australian state having biodiversity offset requirements and a list of eligible project types. Typically, developers and homeowners are required to offset their environmental impact during property development and land clearing if the ecosystem is considered native or significant. Farmers with similar ecosystems can generate biodiversity credits under their state's biodiversity offset scheme by protecting those ecosystems, and can sell the credits to any developers and homeowners needing to offset their environmental impact. Doing so provides them with a diversified revenue stream and helps maintain ecological integrity.

The Nature Repair Bill 2023 has now passed the Australian Parliament. The Bill establishes a framework for a world-first national, voluntary, legislated nature repair market that enables private finance to help to repair and protect our

unique natural environment, and rewards landholders for protecting biodiversity. Under the legislation, the Clean Energy Regulator can issue Australian landholders with tradeable biodiversity certificates for projects that protect, manage and restore nature. These certificates can then be sold to businesses, organisations, governments and individuals seeking to compensate for their ecological footprint (DCCEEW, 2023).

Furthermore, participating in sustainable natural resource management programs can yield revenue for rural industries. These programs often involve government grants and subsidies for land stewardship practices that enhance biodiversity.

An R&D investment opportunity tied to biodiversity and natural capital markets identified through the literature review is shown in Table 11.

Table 11. R&D investment opportunity relating to biodiversity and natural capital markets.

Industry Source	<b>Opportunity</b> New or alternative	R&D initiative Current RD&E Plan? Cross-sectoral?	
AgriFutures Australia's rural industries <i>Literature review</i>	Explore opportunities to stimulate ecosystem rehabilitation of Australian farmland through biodiversity and natural capital markets.	R&D into ecosystem monitoring technologies, biodiversity assessment tools and regenerative agriculture practices.	
	New	Collaborative efforts to unlock the potential of biodiversity and natural capital markets in the rural sector.	
		In current RD&E Plans? No	
		Cross-sectoral investment opportunity? Yes	

#### Genetics

Genetic improvement is crucial to the growth of Australia's rural industries. By leveraging genetic technologies, farmers can improve animal production and characteristics, crop yields, climate adaptability, disease and pest resistance, nutritional value, and the shelf life of products. Genetic improvement enables producers to respond to evolving challenges and opportunities in agriculture, ultimately contributing to the growth and prosperity of rural communities and the Australian economy.

Industries are continuously aiming for genetic improvement to ensure their crops or livestock contain desirable characteristics, and many industries have invested significantly in research focused on breeding. Changing the focus of industry research may create opportunities to generate further revenue from the resources available.

R&D investment opportunities tied to genetics identified through stakeholder interviews are shown in Table 12.

Table 12. R&D investment opportunities relating to genetics.

<b>Opportunity</b> New or alternative	<b>R&amp;D initiative</b> Current RD&E Plan? Cross-sectoral?	
Further explore pasture seed varieties that exhibit	R&D to develop seed varieties that help lower input	
heightened resistance to pests and rely on fewer fertilisers, herbicides and pesticides.  Alternative	costs. In current RD&E Plan? Yes	
, 10,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Cross-sectoral investment opportunity? No	
Explore tropical rice varieties to explore production	R&D to continue developing tropical rice varieties.	
in new growing areas with suitable rainfall.  Alternative	In current RD&E Plan?Yes	
	Cross-sectoral investment opportunity? No	
Explore alternative feedstocks to include novel proteins in meat chicken diets and reduce costs associated with feed.	R&D into alternative feed formulations, their nutritional value, and the ability to scale production – while keeping pace with fast-moving genetic improvements.	
Accomative	In current RD&E Plan?Yes	
	Cross-sectoral investment opportunity? Yes	
Explore new ginger varieties with different	R&D into the potential of novel cultivars.	
characteristics to reduce input costs and cater to evolving consumer preferences.	In current RD&E Plan? Yes	
Alternative	Cross-sectoral investment opportunity? Yes	
	Further explore pasture seed varieties that exhibit heightened resistance to pests and rely on fewer fertilisers, herbicides and pesticides.  Alternative  Explore tropical rice varieties to explore production in new growing areas with suitable rainfall.  Alternative  Explore alternative feedstocks to include novel proteins in meat chicken diets and reduce costs associated with feed.  Alternative  Explore new ginger varieties with different characteristics to reduce input costs and cater to evolving consumer preferences.	

#### Agtech

Agtech continues to represent a transformative opportunity for Australia's rural industries to grow and expand. It offers the capacity to harness vast amounts of data, from weather patterns to soil health, crop conditions and animal wellbeing, providing producers with unprecedented insights into their operations.

In essence, agtech empowers Australian producers to meet the challenges of a changing climate, resource constraints and evolving consumer demands, positioning rural industries for long-term resilience and growth in a globally competitive market.

R&D investment opportunities tied to agtech identified through stakeholder interviews are shown in Table 13.

Table 13. R&D investment opportunities relating to agtech.

Industry Source	Opportunity New or alternative	R&D initiative Current RD&E Plan? Cross-sectoral?	
Multiple – pasture seeds, pomegranate, export fodder	Explore opportunities to utilise technologies such as AI, drones, satellites and robotics to significantly enhance operating efficiencies, such as through	For each industry, R&D into the suitability of technology already adopted in other industries to improve operation efficiencies and data collection.	
Industry stakeholders	precision planting, fertilisation, pest detection and harvesting, and to improve data collection.	In current RD&E Plans? No	
	New and alternative	Cross-sectoral investment opportunity? Yes	
Wattle seed	Explore opportunities to adapt and modify existing technologies to achieve improved harvesting and	R&D into existing technologies and their suitability to (or ability to be adapted for) wattle seed processes.	
Industry stakeholders	processing efficiencies.		
	New	In current RD&E Plan? No	
		Cross-sectoral investment opportunity? Yes	



## Industry life cycles and circumstances

The 28 levied and emerging industries in the scope of this study span the full spectrum of the traditional industry lifecycle model (Mueller, 1972; Klepper, 1997).

Understanding the diverse life-cycle stages and circumstances of Australia's agricultural industries is crucial to providing effective support and guiding policy development. By tailoring strategies to meet the specific

needs of industries at different phases of development, the agricultural sector can unlock its full potential and thrive in an ever-evolving landscape.

Each industry, regardless of its maturity, plays an essential role in the broader agricultural ecosystem, and recognising their uniqueness is key to fostering growth and sustainability. Critically, what is considered old and a given in one industry may be a new and re-energising growth opportunity in another.

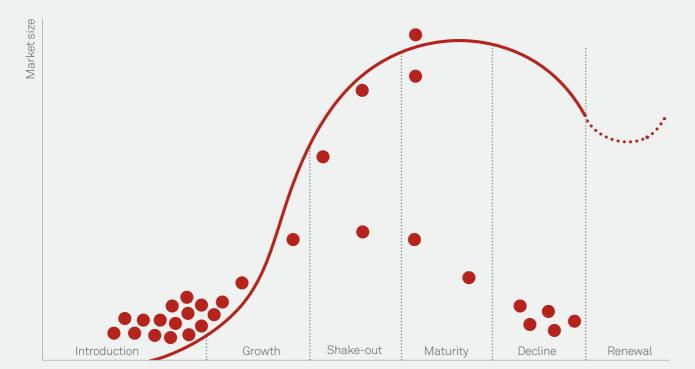


Figure 1. Industry life-cycle model. Adapted from Mueller, 1972.

#### Industry life-cycle phases

#### Introduction phase and emerging industries

The introduction phase is a critical stage where businesses work to establish a foothold in the market and prove the viability of their innovations (Porter, 1980). Most of AgriFutures Australia's emerging industries fall in the introduction phase. Some industry stakeholders advised that their immediate priorities for growth may limit their appetite for alternative revenue streams, while others had exhausted existing opportunities and were seeking new revenue opportunities.

#### Growth phase and levied industries

One of the most prominent features of the growth phase is a significant increase in industry-wide revenue. This growth is often driven by rising demand for products or services as consumer awareness and market penetration increases. As the industry gains traction and becomes more profitable, new entrants will emerge and competition within the industry will increase (Churchill, 1983). Despite the growth opportunities, industries in this phase can be volatile and uncertain. Rapid changes in technology, consumer preferences and market dynamics can challenge businesses. Some levied industries are in this phase; producers and companies in these industries may have strong interest in exploring new and alternative revenue opportunities to sustain or accelerate growth, while others may wish to merely consolidate their strong positions.

#### Shake-out phase and levied industries

The rapid growth observed during the growth phase begins to slow down during the shake-out phase. Market saturation occurs as most potential customers have already adopted the product or service. Mergers and acquisitions are common as companies seek to gain a competitive edge or achieve economies of scale. Smaller, less-competitive companies may be acquired or go out of business. Companies in industries in the shake-out phase often focus on market segmentation and product differentiation. This can result in them having a strong appetite for new and alternative revenue streams.

#### Maturity phase and levied industries

The industry structure tends to stabilise in the maturity phase. Often, a few dominant players emerge as market leaders, and competition may be limited to a smaller number of established firms. Producers and companies must adapt strategies that focus on cost control, differentiation and customer retention to maintain profitability and market relevance. Producers and companies in these established industries often have a strong appetite for new and alternative revenue streams.

#### Decline phase and levied industries

The decline phase is often considered the most challenging period in the industry life cycle. Producers and companies must make difficult decisions about resource allocation, adapt to changing market conditions and prepare for the eventual exit or transformation of their business. While decline is inevitable for most industries, some producers and companies may successfully pivot, adapt or reinvent themselves to find new opportunities.



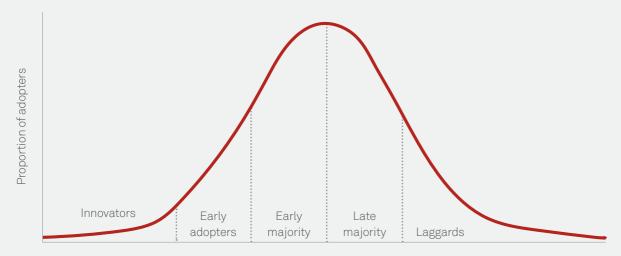
## Individual participant innovation adoption

The Rogers innovation adoption curve (Figure 2; Rogers, 1995) explains how innovations or new ideas are adopted and spread through a population over time.

The model is particularly useful to understand the appetite and interest of rural industry participants in exploring new and alternative revenue opportunities. The curve consists of five main categories of adopters: innovators; early adopters; early majority; late majority; and laggards. In the context of rural industries, understanding where different participants fall on the curve can inform strategies for introducing and promoting new revenue opportunities: innovators and early

adopters can be targeted with early trials and incentives; the early majority may require more evidence of success and reduced risks; the late majority and laggards may need more convincing to overcome their resistance to change, such as through education, outreach and demonstration of clear benefits.

Producers are not limited to one category of the curve – early adopters in one enterprise can be laggards in another. This is important to understand when considering appetites for new and alternative revenue streams. Additionally, existing tried and true revenue streams may be perceived as new and alternate by the early majority, late majority and laggards.



	Innovators	Early adopters	Early majority	Late majority	Laggards
Willingness to embrace new ideas and technologies	Very high	High	Medium	Low	Very low
Portion of the industry	Low	Medium	Large	Large	Low

Figure 2. The Rogers innovation adoption curve. Adapted from Rogers, 1995.



## Workforce skills and capabilities



The critical enabling power of a skilled and capable workforce for revenue growth and profit maximisation in Australian rural industries was a consistent theme in most interviews with levied and emerging industries stakeholders.

Access to skilled resources and developing existing resources remains a fundamental challenge for rural industries and the broader agriculture sector. Producers struggling with rapid technological innovation, climate change and new consumer expectations have become more dependent on farm consultants, market analysts, legal and finance experts, scientists, and even human resources managers as they pursue economies of scale and efficiency improvements (University of New England, 2022).

The number of agriculture industry workers required continues to grow, and the skills they require are everevolving amid technology development, increased market complexity and business acumen imperatives. The supplies of university graduates and VET paraprofessionals are well short of what is needed to fill vacant roles – and on the current trend this will remain the case unless there is intervention. Pratley et al. (2022) reported in recent years there have been between 3,000 and 5,000 on-farm jobs advertised each year, plus a further 4,000 off-farm roles – yet the supply of graduates maximises at about 900, and projections suggest this is unlikely to increase in the short term.

#### An ongoing, complex and broader issue

In October 2022, the Australian Agriculture Working Group, led by the Minister for Agriculture, Fisheries and Forestry, the Hon. Murray Watt, recognised the importance of promoting agriculture as a career choice for Australians.

The working group also highlighted the necessity to tackle ongoing and future workforce challenges, including skill shortages, fair wages and training programs to enhance workforce capabilities, particularly in rural areas (DAFF, 2022a).

In their final meeting in September 2023, members endorsed an ongoing collaborative approach through the Agricultural Workforce Forum, involving employer groups, unions and the Australian Government. They recognised their contributions to workforce issues, including advocating for fee-free TAFE courses in agriculture, and supporting the Food Supply Chain Capacity Study for 2023-24 and the Ag Trade Apprenticeship Project.

Members also focused on streamlining overseas worker arrivals, agreeing on labour hire licensing principles, representing sector needs in processes like the *Migration Review* and the *Employment White Paper*, and engaging directly with Ministers in key portfolios affecting the agriculture and processing workforce, as well as working with key partners such as Jobs and Skills Australia, Skills Insight and AgriFutures Australia on relevant initiatives.

The Agribusiness Jobs and Skills Council, known as Skills Insight, has been established as a tripartite body and will continue being inclusive of the full range of industry views in pursuing solutions to skills and workforce challenges currently facing Australian agribusinesses. The industry-led and owned organisation will identify skills and workforce needs, map career pathways across education sectors and develop VET training products. It will also support collaboration between industry and training providers to improve training and assessment practices, and act as a source of intelligence on issues affecting agribusinesses (O'Connor and Watt, 2023).



## Conclusion



This study has shed light on the intricate landscape of Australia's rural industries. Through a combination of stakeholder interviews, desktop reviews, and literature analysis, we have discerned valuable insights into the potential new and alternate revenue sources that can fortify the profitability of these industries.

This study not only reveals the potential for new and alternative revenue streams across rural industries, but also underscores the dynamic interplay of factors that influence their readiness and willingness to embrace these opportunities. Furthermore, this report emphasises the importance of recognising the diversity and maturity levels among these sectors, as this significantly influences their willingness and capacity to explore novel revenue opportunities. As AgriFutures Australia moves forward, it must continue having a flexible and adaptive approach to supporting industries at various life-cycle stages, recognising that opportunities for growth, sustainability and renewal exist at each juncture.

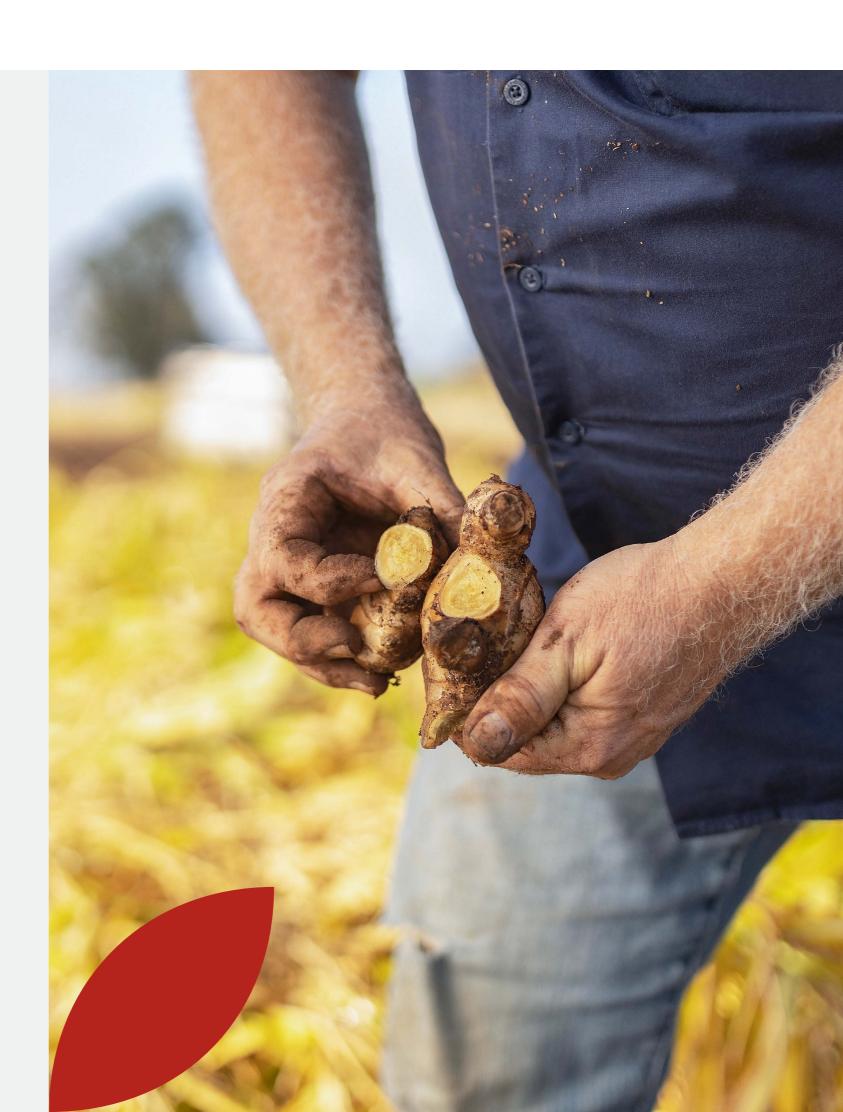
The study identified six key drivers and enablers that can potentially lead to new and alternative revenue streams within rural industries. These encompass: consumer expectations; value-add, export and niche markets; value chain collaboration; carbon, biodiversity and natural capital markets; genetics; and agtech. Each holds the potential to transform the landscape of rural industries and offers distinct pathways for R&D investment, thereby driving innovation and sustainability.

These drivers and enablers are complementary and not mutually exclusive. By integrating efforts around these themes, rural industries can create a multifaceted approach to profitability that addresses diverse market demands, minimises risks and promotes sustainable, long-term success. Similarly, what may be tried and true in one industry may be new and untried in others.

It is evident that the appetite for, and interest in, these revenue opportunities varies widely across industries. The life-cycle stage of each industry plays a pivotal role in determining its readiness to explore new revenue sources. Emerging industries, often in the introduction or growth phase, may have growing and expanding as their immediate priority, with existing plans in place. In contrast, some may actively seek new and alternative revenue sources to diversify and secure their future.

Levied industries, meanwhile, span a wide spectrum of maturity. Those in the growth phase are poised for expansion and innovation, seeking new ways to maintain their momentum. Conversely, industries in the shake-out phase may be grappling with increased competition and price pressures, making exploration of alternative revenue streams a pressing concern. In the maturity phase, stability and consolidation are the priorities, with producers and companies focusing on cost control, product differentiation and customer retention. Lastly, industries in the decline phase face the formidable challenge of surviving; for some, transforming and renewing through new revenue sources may be their lifeline.

It is important to emphasise that regardless of their lifecycle stage, each industry contributes to the breadth, diversity, resilience and vibrancy of Australia's rural landscape. Hence, it is imperative that tailored strategies be developed to address the specific needs and circumstances of each industry. Similarly, effective communication and tailored approaches for each group along the adoption curve can help rural industry participants more successfully explore and embrace new and alternative revenue opportunities.



### Recommendations

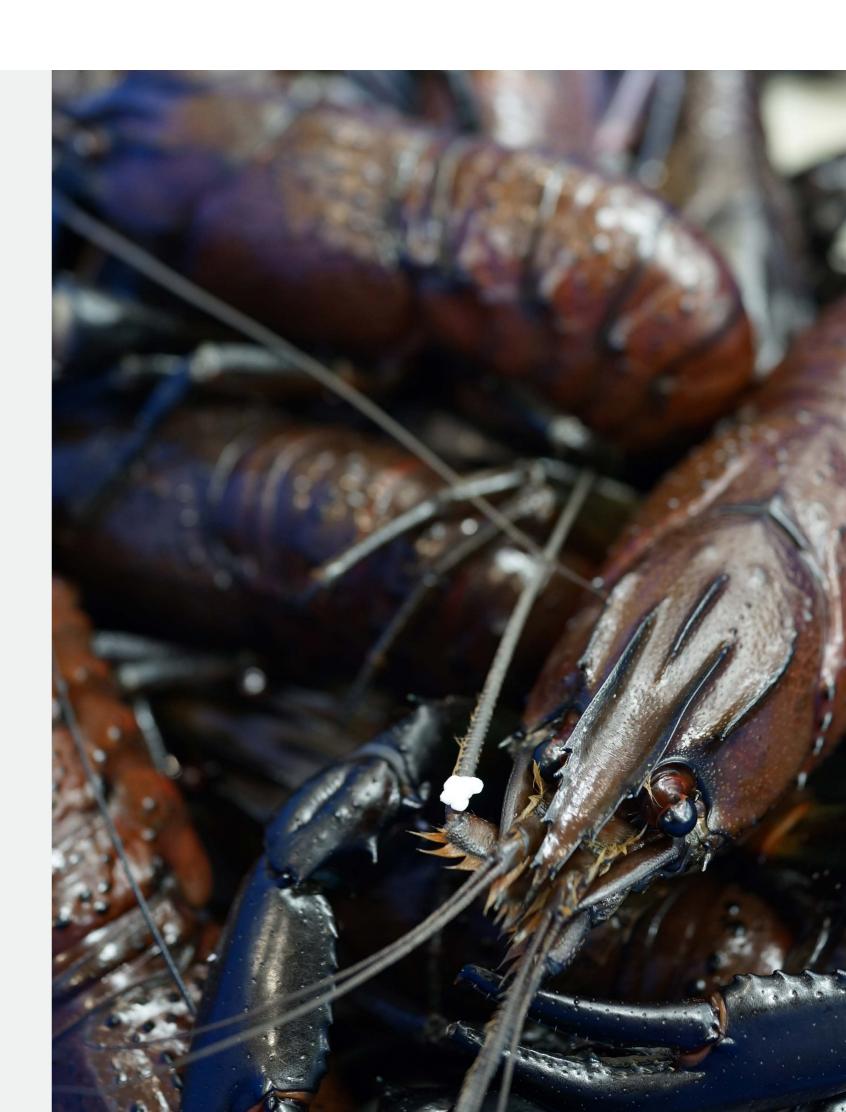
#### The recommendations of this study are relevant to some or all of the target audiences, and are general in nature.

The recommendations are:

- 1. Government agencies and industry stakeholders should recognise that each rural industry, regardless of its size and life-cycle stage, is unique and should be treated as such. They should avoid a one-size-fits-all approach to supporting these industries, and instead develop tailored strategies and initiatives that align with their specific circumstances and aspirations. This includes understanding their respective growth trajectories, immediate priorities and readiness to explore new revenue sources.
- 2. Government agencies and industry stakeholders should acknowledge the resource constraints faced by industries in the introduction and decline phases. They should provide targeted support to industries in these stages, including financial incentives, capacity-building programs and access to technical expertise. For industries in the growth and shake-out phases, resources should be directed towards supporting innovation, R&D, and market expansion.

- 3. Producers should be encouraged to collaborate and exchange best practices, technologies and market insights that could benefit their industry in various phases of development.
- 4. Producers should utilise cross-industry forums or industry networks to share experiences, challenges and success stories. These forums could foster collaboration, promote knowledge exchange and serve as a platform for discussing potential new revenue opportunities.
- 5. Government agencies and industry stakeholders should recognise the need for industries in the mature and decline phases to transition towards sustainable practices and products, and consider incentives for adopting environmentally friendly and socially responsible approaches, ensuring a smooth shift to meet evolving consumer preferences.
- 6. Industry stakeholders should maintain partnerships with national workforce organisations to identify workforce demands and address training and capacity-building requirements.

Government agencies and industry stakeholders should recognise the need for industries in the mature and decline phases to transition towards sustainable practices and products, and consider incentives for adopting environmentally friendly and socially responsible approaches, ensuring a smooth shift to meet evolving consumer preferences.



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Regardless of their life-cycle stage, each rural industry contributes to the breadth, diversity, resilience and vibrancy of Australia's rural landscape. It is imperative that tailored strategies be developed to address the specific needs and circumstances of each industry.





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