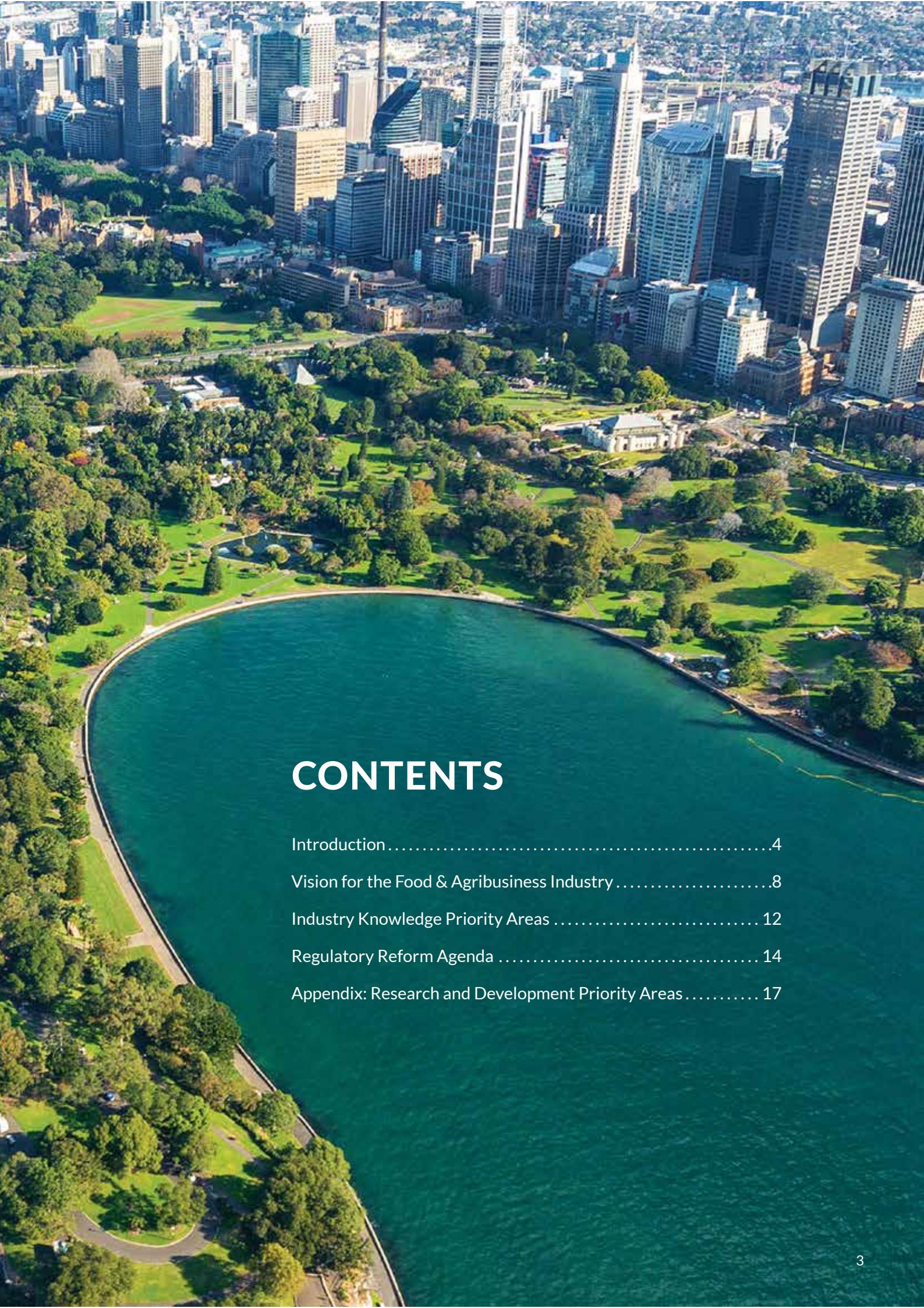


Industry Growth Centre: Food and Agribusiness

Sector Competitiveness Plan | July 2016





The background of the page is a high-angle aerial photograph of a city. In the upper right, a dense cluster of modern skyscrapers is visible against a clear sky. Below them, a large, well-maintained park with green lawns and trees stretches across the middle ground. A wide, dark blue river or bay curves from the bottom left towards the center of the frame. The overall scene is a blend of urban architecture and natural green space.

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INTRODUCTION

By 2025, the industry is working together to grow the share of Australian food in the global marketplace.

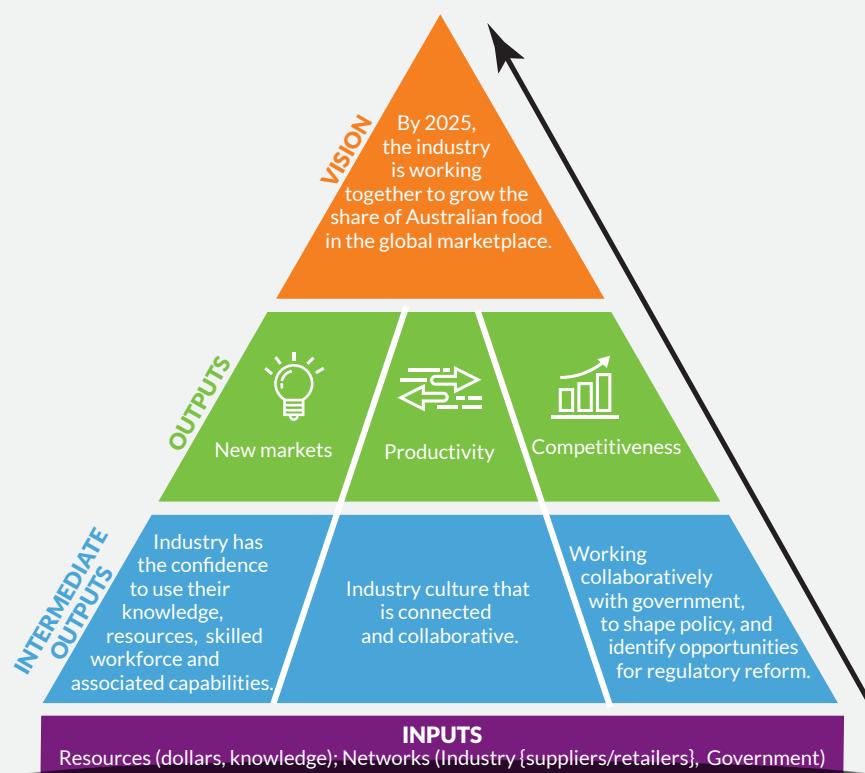
OBJECTIVES

Achieving the **vision** outlined above will require industry to be supported to:

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

The **inputs** necessary to achieve these **outputs** are:

1. Industry players have the confidence and capacity to use their knowledge, resources, skilled workforce and associated capabilities to develop innovative, cost-effective and differentiated offerings that meet the wants and needs of Australian and international markets and consumers.
2. A culture of connected, collaborative industry participants who desire transformational change, and continue to proactively seek and utilise collaborations for national and international market and supply chain success.
3. The cohesive and clear voice of industry, influences and shapes policy, and identifies opportunities for regulatory reform that fosters industry-wide innovation and entrepreneurship, in partnership with government.





LANDSCAPE

The Food and Agribusiness industry is highly fragmented and operates in a diverse, dynamic, and complex landscape. It spans growers, raw material producers and manufacturers to packaging, sales, marketing and retail providers, through to final users or consumers of the sector outputs. The industry is a significant contributor to the Australian economy.

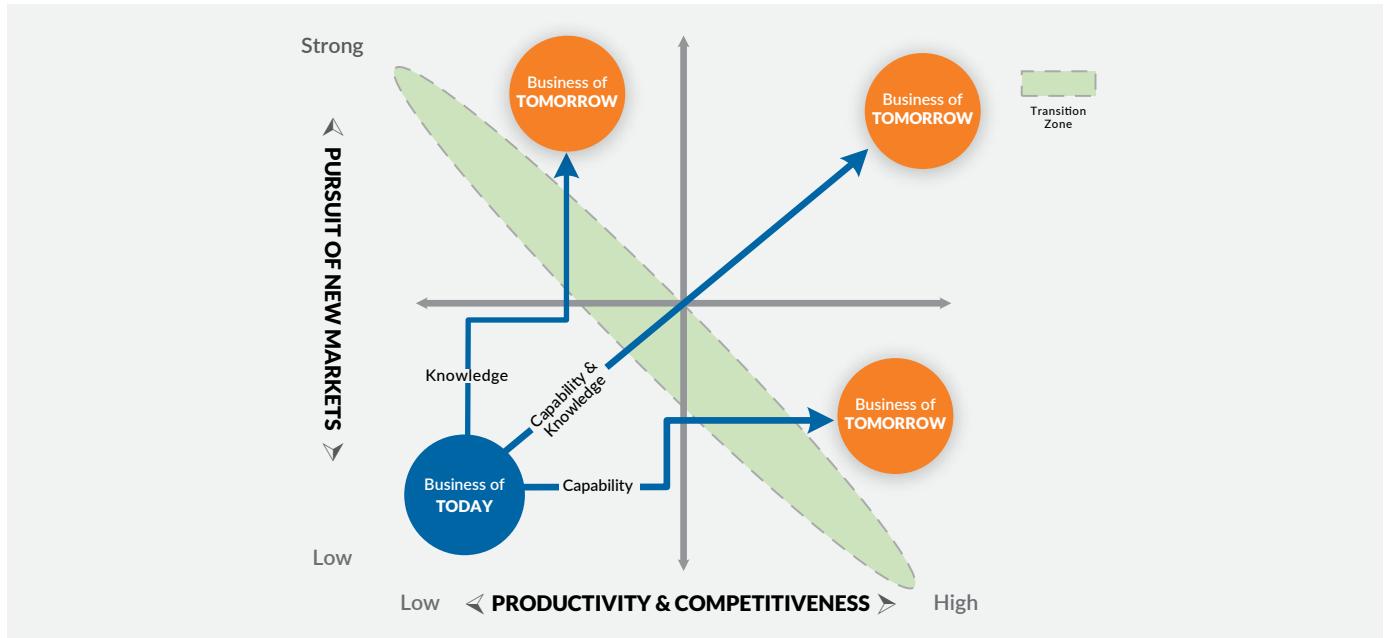
KEY FACTS ABOUT THE FOOD AND AGRIBUSINESS INDUSTRY:

SALES AND SERVICE INCOME	VALUE ADDED
\$164 billion in total sales and service income, equivalent to 5.9 per cent of all Australian industries in 2013-14.	\$53.9 billion of industry gross value added in 2014-15, representing 3.5 per cent of the total of all industries.
EXPORTS	BUSINESSES
Exports of \$40.8 billion representing 16.3 per cent of all Australian exports in 2014-15.	Total of 178,517 businesses in 2014-15, of which 121,341 were non-employing ¹ (representing 68 per cent of total businesses).
EMPLOYMENT	
Employed over 520,000 people or 4.4 per cent of total industry employment, with the biggest employers agriculture (251,300) and food and beverage manufacturing (240,900). Employment in the sector has remained static for the past 20 years.	

¹ Over half of these non-employing businesses are beef and sheep farmers who are "owner managers without employees". While in the food manufacturing sector, a significant portion of these are made up of small wineries and local bakeries. The remaining 57,176 employing businesses are mostly small to medium sized businesses (SME) that employ less than 200 employees; with large or multi national businesses that employ more than 200 employees only representing 0.3 per cent of the total number of employing businesses in the sector.

CHALLENGES

Today there are many challenges facing the industry, from food security and availability of arable land to how they can meet the needs of the growing middle class in Asia, as they demand more nutritious and healthy foods.



Within the sector, the landscape is shaped by two distinct types of businesses:

- **Businesses of Today** – generally are less growth orientated and often work to maintain market share. They tend to view a direct interest or involvement in overseas markets as outside their ‘need to know’ area. As a result, they rely heavily upon the downstream processors or exporters to manage access to supply chains and markets.
- **Businesses of Tomorrow** – actively pursue new markets and are more inclined to take risks to secure those new markets. Many of these businesses are directly connected to their end markets and continuously invest in building both their capability and knowledge of these markets.

At the heart of the challenges facing the Food and Agribusiness industry are the culture, beliefs and values that underpin the businesses in the industry. Specific challenges impacting the scale and scope of innovation undertaken by the industry include:

- it is estimated that out of the approximately 57,000 employing businesses in the industry, there are only around five per cent, or 3,000 businesses that belong to the cohort of Tomorrow businesses.

- businesses of Today are dominating the landscape dynamics, and shaping the industry culture – making it difficult to create a collaborative culture that fosters and encourages high growth and ambition
- approximately 50 of the businesses of Tomorrow are mostly retailers and multi national enterprises. These businesses:
 - dominate the sector’s discourse and shape the dynamics that steer it
 - are hesitant to engage, cooperate and collaborate with SMEs and other stakeholders
- misalignment between the federal, state, local and regional levels of government in the provision of services to build the capability and competence of the industry
- current disconnect between Australia’s extensive research community and businesses is resulting in poorly defined business solutions and commercialisation outcomes that are inferior in number and quality when compared with other developed nations
- infrastructure requirements for supporting non-employing businesses and those businesses of Today who do not aspire to become a business of Tomorrow or to remain viable

OPPORTUNITIES

Australia's proximity to Asia and its increased understanding of Asian tastes means the sector is well positioned to meet the needs of and capture an increased share of this growing market. To achieve this, Government, Industry and Researchers need to adopt a 'Triple Helix' Approach² and **lead** the development and implementation of a long-term vision. This will create the agility and guide the industry through the necessary transformative change.

Economies of scale in market knowledge and insights, manufacturing, and infrastructure will result in the following opportunities for the sector:

- support those businesses with the desire to develop the confidence to acquire the capabilities and capacity necessary to transition from a business of Today into a business of Tomorrow
- ensuring the large number of SMEs, in aggregate, have the scale and capability to realise significant results through:
 - **co-operation** and **collaboration** across the industry
 - aligning the performance objectives and metrics of programmes across all government levels
 - successfully leveraging Australia's world leading research capabilities and established food manufacturing infrastructure to **value-add** to the vast agricultural resources
 - upskilling front line government support, the research community, industry middlemen and future business leaders

Realising these opportunities will:

- attract new and different talent into the sector
- offer novel explorative **thinking** models and approaches
- build momentum and confidence across the industry to innovate and establish the platforms for growth beyond 2025

LEAD: I am prepared to cut through the bureaucracy, take a risk and state what I believe in because I can see that it is in the best interests of industry

CO-OPERATION: I can see that we need to link people from diverse backgrounds and experiences across business, research and government to address some of the vexing challenges of the future

COLLABORATION: It would be really nice if stakeholders from across the industry were prepared to work towards a common cause or future state where everyone could benefit from a performing and growing sector

VALUE-ADD: I just want to meet the needs of my customer so my offering is so unique from what is currently available in the market that people will pay a premium for it

THINKING: We need to be open and creative in the way we think. That is the only way we will come up with the brilliant solutions to our problems

² "European Integration and Triple Helix Systems in the New EU Member States and Candidate Countries", International Journal for Transition and Innovation Systems 3 (3), November 2014. Guest Editor: Marina Ranga

VISION FOR THE FOOD & AGRIBUSINESS INDUSTRY

By 2025, the industry is working together to grow the share of Australian food in the global marketplace.

Narrative opposite underpins the vision statement and explains the current challenges faced by the industry. It also describes what needs to change across the sector for businesses to capitalise on the global market opportunities. Furthermore, it is a call to businesses and others in the sector to align and collaborate for the good of the industry and Australia. This is the only way forward, as what has served the industry in the past, is no longer sufficient for a growing and sustainable future sector. Naturally this narrative will evolve to address new challenges and opportunities, as the sector goes on the journey of realising this vision.



NARRATIVE TO SUPPORT THE VISION

"Ours is an industry with roots in the substance of Australia. For generations, the food and agribusiness sector has supplied the capability that defines civilisation; to bring sustenance out of the ground, and put it on the kitchen table. Now is the time to recognise that table stretches right around the world.

The global market is hungry for Australian food. A growing international middle class, already familiar with our values and culture from visiting and studying in our beautiful country, want what we have to offer. Back at home, tastes are changing. People want products customised to their desires and their lifestyles, as food goes beyond simple nourishment and is chosen for functional benefit and self expression.

The size and density of this evolving market reflects the size of the opportunity for producers up and down the scale. It is enormous, and it has come at a perfect time, because the research suggests that business as usual for the Australian food and agribusiness industry simply is not an option. We've enjoyed a natural advantage for a long time, but our competitors overseas are catching up.

The famous Aussie inventiveness which has allowed us to draw an increasing yield from the land and harvest it more efficiently, cannot drive us in that direction indefinitely. We now need to apply Australian ingenuity to make what we have go further, to stay agile and to capture the value currently wasted at a household and industrial level all the way up to better coordinating government activities.

Connecting educational institutions with industry and supporting investment in research and development is how we seize this opportunity. We can do it in a way that protects lifestyles while increasing profits. We can work together and create the platform to support growth far into the future.

Changing how we do business and tackling a foreign market can throw up a lot of challenges, but if we cooperate and support one another, share resources, network effectively, apply the right technology and align for a common purpose, we will all share the future of Australian food."



WAY FORWARD

The Food and Agribusiness Growth Centre aims to realise this vision by:
 ‘Working collaboratively to develop innovative offerings that increase the productivity and competitiveness of businesses in the sector.’

The Food and Agribusiness Growth Centre will be the catalyst that helps identify, lead and support the industry in their quest for cultural and transformational business change. Programmes developed by the Food and Agribusiness Growth Centre will be most relevant to Transitional businesses, particularly SMEs, although stakeholders across the industry will find these complement existing government and other support services. It is important that a holistic, integrated and national approach be adopted to get a deep and intimate understanding of industry stakeholders, their wants and needs.

Roadmap below shows the inputs and outputs necessary to achieve the industry vision, which will be reviewed and modified to reflect changes in market and industry dynamics over a ten-year period.



Growth Centre Objectives	Year 1	Years 2-4	Years 5-8	Years 9-10	Sectorial INPUTS	
Improving management capabilities and workforce skills	Platforms for knowledge gathering and sharing	Different data combinations	Mega data and insights	Mega trends and foresights	1. Industry players have the confidence to use their knowledge, resources, skilled workforce and associated capabilities to develop innovative, cost-effective and differentiated products or services that meet the needs of Australian and international markets and consumers	2. A culture of connected, collaborative industry participants who desire transformational change, and continue to proactively seek and utilise collaborations for national and international market and supply chain success
	Channel readiness programmes	Channel readiness programmes	Channel readiness programmes	Channel readiness programmes		
	Traditional business models	Different business models	Changing business models	Transformative business models		
	Review of market support services	Market incubators	Market incubators	Market incubators		
Improving the capability of sectors to engage with international markets and global supply chains	Immature clusters	Network of clusters	Mature clusters	Clusters in Transition		
	Inefficient supply chains	Optimised supply chains	New supply chains and markets	Emerging supply chains and markets		
	3000 businesses of Tomorrow	3500 businesses of Tomorrow	4500 businesses of Tomorrow	6000 businesses of Tomorrow		
Enhancing industry-research collaboration and commercialisation	Inefficient innovation system	Innovation readiness for businesses and researchers	Innovation readiness for businesses and researchers	Efficient and effective innovation system		
	Innovation outcome metrics and funding models	New to industry innovations	New to country innovations	New to world innovations		
	Working industry	Sharing industry	Collaborating industry	One industry		
Identifying opportunities for regulatory reform	Mechanisms for identifying, gathering and prioritising regulatory challenges	Regulatory reform agenda	Reduced regulatory burden	Supported industry	3. Cohesive industry voice and Government shape policy and support, and identify opportunities for regulatory reform	

SECTORIAL INPUT 1

Industry players have the confidence and capacity to use their knowledge, resources, skilled workforce and associated capabilities to develop innovative, cost-effective and differentiated offerings that meet the wants and needs of Australian and international markets and consumers.

PRIORITY ACTIONS

1. Establish the criteria to identify businesses with a motivation to grow and desire to be a business of Tomorrow.
2. Build knowledge platforms for collecting and sharing technology, regulatory challenges, and market intelligence and insights.
3. Develop capability building programmes to ensure there are more ‘boundary speaking gatekeepers’ who comfortably traverse the industry–research divide. Also, develop channel readiness programmes, to up-skill the workforce on innovation, business models, market channels and supply chains, both nationally and internationally.
4. Establish a Food and Agribusiness market incubator that contains a myriad of support services to improve business knowledge, workforce skills and management capabilities.

SECTORIAL INPUT 2

A culture of connected, collaborative industry participants who desire transformational change, and continue to proactively seek and utilise collaborations for national and international market and supply chain success.

PRIORITY ACTIONS

1. Establish principles around how industry behave and interact on collaborative initiatives, resolve conflict, celebrate success and learn from failures.
2. Introduce the concept of clustering to the Food and Agribusiness industry and establish a network of clusters for effective and efficient stakeholders reach across Australia and internationally.
3. Establish a new set of metrics around engagement and collaboration, and outcome driven research that encourages connectivity between the research community and business, for greater commercialisation outcomes. This will support working in different ways and expose stakeholders to diverse ways of thinking methods, which are leading, but not yet widespread.

SECTORIAL INPUT 3

The cohesive and clear voice of industry, influences and shapes policy, and identifies opportunities for regulatory reform that fosters industry-wide innovation and entrepreneurship, in partnership with government.

PRIORITY ACTIONS

1. Establish effective working relationships and mechanisms for being the voice of industry to government (federal and state), and vice versa.
2. Encourage and optimise the alignment and effectiveness of government instruments, i.e. policies, free trade agreements and memorandums of understanding, across all government levels, to support and encourage a resilient and collaborative industry.



INDUSTRY KNOWLEDGE PRIORITY AREAS

The role of Industry Knowledge Priority Areas is central in helping the Food and Agribusiness industry achieve its vision and deliver increased productivity, sustainable economic growth, job creation, and investment attraction for the sector.

The Industry Knowledge Priority Areas have been identified with the aim to address the practical needs of industry and ensure that researchers' efforts are focused on overcoming them. These priority areas set the scene for a robust dialogue between researchers and businesses to ensure they are both working on business and industry challenges, and also that they both have the management capability and skills to take the ideas or outputs of this dialogue to market. This will lead to improved commercialisation outcomes of research investment made across Australia, by both government and businesses.

Industry Knowledge Priority Areas have been divided into two: **Research and Development Priorities**, which highlight what industry needs from the research sector; and the **Management Capability Priorities**, which define the collection of management capabilities required to generate profits and successfully compete with other firms in the marketplace.

The knowledge priority areas of today will also be different from those in the years to come. To address the practical needs of industry, research priorities ought to be revised annually. This will ensure that Australian research is targeted towards improving the commercialisation outcomes of research investment made across Australia, by both government and businesses.

Using information drawn from previously published sources such as the Chief Scientist's National Research Priorities (in Food and Soil Health), the National Food & Nutrition Research and Development, and Technology Transfer Strategy, the Commonwealth Scientific Industry Research Organisation's Global Megatrends Report including that information obtained through extensive industry consultation conducted by the Food and Agribusiness Growth Centre over the last three years, four industry research and development priority areas have been identified as shown as follows.

Food and agribusiness value chain

01

Food security
and sustainability

02

Enhanced
production &
value addition

03

A global
market place

04

The future
consumer

Research and Development Priorities

1. Food Security and Sustainability

Protecting Australia's economy and environment from climate change, pest and disease through improved integrity and traceability systems that raise the awareness of food safety and biosecurity risks.

2. Enhanced Production and Value Addition

Using better genetics, novel technologies and processing techniques to optimise operational efficiencies, minimise waste, and produce highly differentiated and value added foods.

3. A Global Market Place

Increasing connectedness with the emerging middle class in Asia, and elsewhere, will provide new market insights into their future needs, identifying new opportunities, markets and supply chains.

4. The Future Consumer

Feeding the growing and ageing population with functional and nutritional foods, personalised to their taste, health and lifestyle preferences.

Please note that further explanations on these themes are available in the Appendix: *Research and Development Priorities* (page 17).

Management Capability Priorities

Developments in the managerial systems for the administration of operations, as well as the operation of technical systems are vital to ensure the effective and efficient use of scarce resources.

At the core of the Management Capability Priorities are the different values, attitudes and behaviours across the industry.

These values and norms help regulate the behaviour of stakeholders, and align objectives across the sector to engender a culture of collaboration, whilst encouraging responsibility and accountability for optimal individual business performance and better industry outcomes.

Management Capability Priorities include:

1. **Learning and development models** that build the leadership skills and knowledge of the industry and government for better business results.
2. **Managerial systems** for the administration of operations such as business and strategic planning, including technical systems like innovation strategies for the effective and efficient use of scarce resources.
3. **Physical and technical systems** such as software and robotics that improve efficiencies and reduce costs of production through automation, whilst improving data management of business and customer information, through the use of customer relationship management platforms.





REGULATORY REFORM AGENDA

A whole-of-industry approach is required to strengthen the processes for identifying regulations that are unnecessary or burdensome, and that impede businesses' ability to innovate and grow.

The regulatory items identified for consideration have been grouped into three themes:

THEME 1

CROSS-JURISDICTIONAL REGULATORY ISSUES

- Cost of duplicating in market and other activities across federal, state and local government
- Misalignment of domestic regulation requirements – food safety, labelling, ratings systems



THEME 2

BUSINESS INTERACTIONS WITH GOVERNMENT (AND GOVERNMENT REGULATION)

- Preparing and reporting on grant applications for both research and business related projects
- Cost versus the benefit of meeting requirements for mandatory routine product testing, food labelling, safety, and Research and Development Tax Incentive
- Business registration processes
- Challenges of not addressing labour, workforce and environmental regulations such as the replacement of hydro fluorocarbons refrigerants with natural refrigerants to improve refrigeration performance and reduce climate change impact

THEME 3

MARKET ENTRY AND COMPLIANCE REQUIREMENTS FOR INDUSTRY TO INDUSTRY, AND INDUSTRY TO GOVERNMENT INTERACTIONS

- Business to business compliance, such as food safety auditing
- Accessing researchers and specialist equipment from research organisations and universities
- Packaging compliance – including labelling, rules of origin, certification for organic and third parties
- Understanding market information, import regulations (i.e. tariffs, behind the border trade barriers) and export requirements³ (i.e. quotas, export documentation)

³ Little in-market trade support available in established markets as defined by Austrade (USA and Europe) – Austrade offices in these markets focus on investment opportunities exclusively.

REGULATORY REFORM AGENDA (cont.)

Regulatory reform is required to help the industry in their quest to realise the sector vision. The role of the Food and Agribusiness Growth Centre is to support the industry in this endeavour by engaging with states, territories, and key organisations and associations; and be the driving force for regulatory reform that allows for business agility and flexibility. Through partnership with government, the items on the reform agenda are prioritised and plans put in place to address the burdens to industry.

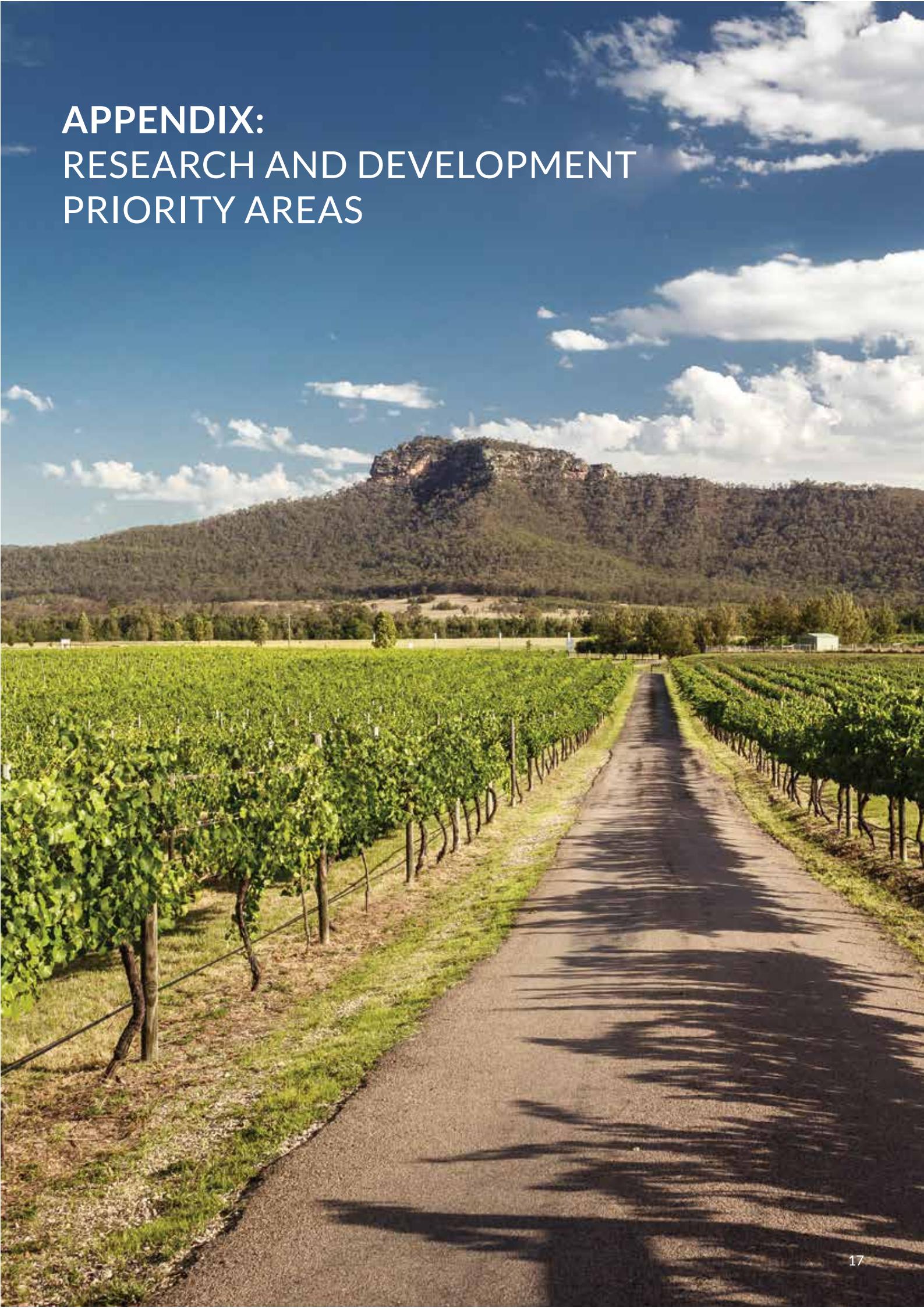
A range of reforms to improve industry productivity and reduce the burden imposed on stakeholders across the industry has been identified through two channels: formal and informal, as shown below.



The formal channel consists of key federal and state government agencies, associations like Australian Food Grocery Council and other organisations that actively research and gather market and other information on regulatory challenges. The reform agenda is further supported and enhanced through intelligence gathered through the informal channels. These channels are made up of individual stakeholders or businesses that actively play in the sector and are impacted by the regulatory challenges, but do not have a formal process for escalating the regulatory burden to Government, as they are not affiliated to a formal channel. It is also through events and initiatives launched and run by the Food and Agribusiness Growth Centre that also provides an informal channel for identifying different regulatory challenges that have not been formally reported to Government. The final stages of the process are prioritisation of regulatory items based on the significance of their impact to industry, and development of an action plan. This last stage requires both industry and government to work in partnership to determine the impact and appropriate instruments to address the burden.

Sometimes gathering sufficient qualitative and quantitative information on a regulatory burden or challenge is a timely exercise. The streamlining food safety certification and assurance system is an example of such an industry-led regulatory project. It has taken over 2.5 years for the Food and Agribusiness Growth Centre to work with the Australian Food Grocery Council and other stakeholders across industry to identify the problem, gather sufficient evidence and establish a robust recommendation on how to streamline commercial auditing practices. This project is currently aiming to strengthen the food safety culture across the industry and use the outcomes to promote Australian products in international markets. It will also result in the reduced frequency of food safety auditing and savings to industry.

APPENDIX: RESEARCH AND DEVELOPMENT PRIORITY AREAS





INDUSTRY KNOWLEDGE PRIORITIES

Acknowledgement

The Industry Knowledge Priorities were prepared by the Food & Nutrition Business Unit of the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Food Innovation Australia (FIAL).

Introduction

The Industry Knowledge Priorities highlight what the food and agribusiness industry requires from the Australian research sector (**R&D priorities**), as well as the management skills and capabilities an organisation requires to thrive in the industry (**Management capability priorities**).

Research & Development Priorities

The Research and Development (R&D) priorities highlight the priority areas that the food and agribusiness industry require from the Australian research sector. These areas are drawn from previously published sources such as the Chief Scientist's National research priorities (in Food and Soil Health), the National Food & Nutrition R&D and Technology Transfer strategy, the CSIRO's Global Megatrends report as well as from extensive industry consultation conducted by FIAL over the last three years. This process has identified four priority areas that span the food and agribusiness value chain and identify research areas where innovation is required to ensure the growth and sustainability of the industry.



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FOOD SECURITY AND SUSTAINABILITY

Australian industry has a vital role to play in improving global food security and feeding the growing population. This requires world-class food safety management and biosecurity systems, which need to be responsive to new threats and continually adapted to ensure Australian produce is safe for consumption and export.

At the same time, meeting the predicted global increased demand for food will highlight the interdependence between water, food and energy, and resource insecurities that need to be managed. Along with the water-energy-food nexus, Australia faces a range of pressures; weather patterns, annual rainfall levels, temperatures, bushfires, floods and other adverse weather events have a strong influence

on fluctuating agricultural yields and which are likely to become more prevalent with the effects of climate change. Given this, there is a national imperative to equip Australian agriculture to be prepared to adapt to climate change and engage in sustainable practices through the value chain.

In addition, the rise in wealth and education levels across the world is leading to increased demand for food products that have been produced in an environmentally sustainable, socially responsible and/or ethical manner. It is vital that increased food production is achieved whilst minimising environmental harm and ensuring animal welfare.

Priority research required by the food and agribusiness industry will address food security and sustainability in the industry through:

1. Research to assist industry produce food sustainably and adopt innovative practices and technologies to improve productivity and environmental outcomes
2. Research and deployment of best practice activities, science and technologies to ensure Australia's infrastructure, biosecurity and food safety systems will support a growing food industry
3. Research to understand the effects of climate change on agricultural production and the development of mitigation strategies
4. Development of best practices in ethical production and the attainment of a social licence to operate



ENHANCED PRODUCTION AND VALUE ADDITION

According to the United Nations Food and Agriculture Organization (FAO), the world must increase agricultural output by 70 per cent to feed its growing population by the year 2050.

Enhanced food production technologies, processes and science will have an ever increasing role in the food and agribusiness industry into the future. Advances in the fields of digital technology, robotics, genetic science and synthetics will change the way food products are made and transported, allowing for improved labour efficiency, improved productivity and traceability, increased yields from poor soils and semi-arid conditions and value chain disruptions. In particular, the bulk of Australian agricultural produce is exported as low value commodities which are subject to the

traditional boom and bust pricing cycles. The biggest opportunity for growth in the sector lies in value adding activities post-farm gate which has the potential to transform returns across the value chain.

In line with enhancing food production, value will come from minimising and/or utilising food waste, a problem that poses significant environmental, sustainability and productivity issues, and hinders the productivity of the food and agribusiness value chain.

Globally, one-third of food (approximately 1.3 billion tonnes per year) is wasted and lost. There is a significant opportunity to capture value from these waste streams through the creation of novel food products or the extraction of bioactives or industrial chemicals.

Priority research required by the food and agribusiness industry will enable value addition and enhanced food production through:

1. Research and development of transformative and novel technologies that assist operators in the food and agribusiness value chain to improve productivity and output
2. Research and development of novel food processing technologies to significantly increase their value
3. Technologies, knowledge and strategies to assist the industry minimise food wastage
4. Knowledge and investigation of opportunities to value add to wasted food, e.g., extraction of bioactives from waste, redistribution of food, compost, energy from waste food



A GLOBAL MARKETPLACE

Increasing globalisation of food markets and supply chains brings both opportunity and risk to the Australian industry. The food and agribusiness value chain comprises a wide range of companies, from suppliers of inputs required to grow produce such as agricultural machinery, seeds and chemicals to producers, transport and logistics, food manufacturers and food retailers. Vertical integration and consolidation is a growing trend within the industry, with many primary producers diversifying into processing, and similarly many processing companies acquiring primary producers. Despite being a net exporter of food, the Australian industry isn't self-sufficient and relies on global supply networks

for many inputs into food manufacturing, as well as imported foods, for example fertilisers, food ingredients and additives.

In the global marketplace, Australian industry not only has access to a global supply network for inputs, but competes with imported products in the domestic market. The largest market for the Australian industry is export, with around two thirds of total production exported. Developing a clear understanding of the global marketplace and the intricate machinations that control supply and demand has the potential to transform our ability to export our produce to the world (and import what we need).

Priority research required by the food and agribusiness industry will enable Australian industry to compete in the global market. This includes:

1. Knowledge and a better understanding of Australia's global supply chains and recognition of points of weakness and vulnerability within the system
2. Research into food safety and biosecurity risks (and opportunities) of a global supply chain
3. Research into disruptive "direct-to-consumer" models that may alter global supply chain networks
4. Research into global societal trends that may create new market niches or introduce food substitution threats



FUTURE CONSUMERS

The population, demographics and preferences of Australian consumers and Australia's export markets are changing. By 2030, Australia's population is projected to increase by 19.2% to reach 28.5 million, while the global population will increase by 16.4 per cent to reach 8.5 billion. The size of the global middle-class is also expected to increase from 1.8 billion in 2009 to 4.9 billion by 2030, with the majority of this growth in the Asia Pacific region, which will be home to 66 per cent of the total global middle class population by 2030. As billions of people move into the middle-income bracket, food consumption will increase and consumers will demand more diversified diets and increased protein consumption. The rising Asian middle-class population is a key growth export market for Australian industry.

In addition, the ageing population along with an increasing prevalence of lifestyle diseases, such as diabetes, are driving changing consumer preferences for food, with renewed interest in the health benefits and attributes of various foods. Functional foods, foods that provide inherent health benefits, is an area of increasing consumer demand and interest, along with other trends such as mass personalisation and healthy ingredients.

Consumer food and lifestyle trends and issues of health, environment, provenance and ethics are increasingly playing a vital role to the consumer of the future. These future consumers will be increasingly empowered and motivated to choose food products with new and emerging specialised characteristics.

Priority research required by the food and agribusiness industry will lead to a better understanding of the needs of the future consumer, including:

1. Knowledge and strategies on how to serve the growing middle-class, particularly in Asia, where changing consumer tastes and aspirations present export opportunities for Australian industry
2. Knowledge, technology and products to help industry better cater to changing consumer preferences as population's age and lifestyle and chronic diseases increase in prevalence
3. Developing deep market insights of the future consumer: their tastes, preferences and trends

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