



# SA GRAIN INDUSTRY **BLUEPRINT**

SETTING OUR INDUSTRY  
VISION TO 2030 AND BEYOND



**GPSA**



Government  
of South Australia  
Primary Industries  
and Regions SA

This project is proudly supported by  
the Government of South Australia



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# FOREWORD

## MESSAGE FROM THE MINISTER

Innovation, leadership and world-class product are hallmarks of the South Australian grains industry.

In recognition of this \$3.8 billion sector in South Australia, the Grain Industry Blueprint – a first of its kind in this state – has been developed to drive an industry-wide vision for future growth.

In the face of adversity, our grains industry has demonstrated it is adaptive, resilient and innovative, with production in recent drought years more than doubled compared to droughts in the mid-2000s.

The industry is well-placed to continue growing some of the world's most premium wheat, barley, canola, lentils, oats, cereal rye and field peas.

The Grain Industry Blueprint lays the groundwork to shape a whole-of-sector strategy to drive growth and unlock even greater value from the industry. It comes after extensive consultation and collaboration from across the entire industry and value chain to set development goals and a long-term vision to take the sector forward.

The Blueprint, led by Grain Producers SA, details the six pillars to support accelerated growth – new market opportunities; biosecurity and market access; industry capacity; capturing value; innovation; and infrastructure.

The Marshall Liberal Government is driving growth in the grains sector with policies such as lifting the moratorium on genetically modified crops and investing \$1.1 billion over eight years for regional roads and infrastructure upgrades. The opportunities are enormous to increase productivity to achieve the average annual rate of three per cent per annum set out in the Growth State Agenda.

The South Australian grain sector is aiming high, setting a growth target of \$6 billion in value by 2030.

Congratulations to everyone involved in the development of this strategy, which shows the ingenuity, dedication and commitment of the South Australian grains industry as a world-leader.



**Hon David Basham MP**  
Minister for Primary Industries  
and Regional Development

## MESSAGE FROM THE GPSA CHAIR

Grain Producers SA is proud to have led and coordinated the development of the South Australian Grain Industry Blueprint, which establishes the industry's vision for the next decade.

In developing the Blueprint, a common theme with growers was the strong desire to take greater control over their own futures and to move beyond just being a price taker in the global market.

As an industry, we can help enable this by proactively planning for success. This means taking a longer-term approach and investing in niche projects that become mainstream over time. We need to create new markets with targeted offerings and become a producer of food, not simply bulk commodities.

Key in achieving this will be proactively building our capacity, retaining talent, encouraging others to join our industry, working as an integrated value chain and developing best practice in everything we do as an industry. Of course, underpinning all of this is access to markets and customers. We need to fiercely defend our existing export markets and exploit opportunities to create and embed ourselves in new ones.

At the same time, we can create demand points for grain in South Australia and capitalise on potentially the biggest opportunity right at our doorstep – a larger domestic market that delivers a price premium and, once established, is the hardest market to lose.

We must build our resilience to better respond to potential threats and challenges and plan how to futureproof our industry as much as possible. This includes identifying and preparing for macro trends such as climate change, changing community expectations and evolving consumer demands. Harnessing the growth in agtech to solve challenges unique to Australian farming and rural life, such as access to labour in remote locations, will be critical.

Setting your own path is empowering. Being prepared to take risks is less daunting when you know the potential upside and have planned for all eventualities.

The South Australian Grain Industry Blueprint provides the ideal destination for the South Australian grain industry by 2030. It is up to government and industry to work together to plot the journey.



**Wade Dabinett**

Chair

Grain Producers SA



## OUR VISION:

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THE SOUTH AUSTRALIAN GRAIN  
INDUSTRY WILL BECOME A

**\$6 BILLION  
INDUSTRY BY 2030**

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# EXECUTIVE SUMMARY

Global population growth and changing dietary patterns are driving increased world demand for grain. Consistent with this global trend, Australia's population is expected to increase by up to 19% by 2030, or an additional 4.89 million people, with a corresponding increase of 3.25 million tonnes in domestic grain demand.

These are compelling growth trends for grain sectors with access to global markets, established customers, leading industry practices and the ability to capitalise on rising domestic demand. Proactive growers are well-positioned to capture these opportunities, making it an exciting time to be in the grain industry.

The South Australian Grain Industry Blueprint is an industry-led initiative designed to identify these opportunities and shape the future to 2030. The Blueprint identifies how SA's grain industry can harness its inherent strengths to capitalise on these pending opportunities while also managing and mitigating external threats and challenges.

The State Government is committed to supporting SA's primary industries to invest, expand and grow. To drive this, the government has set an objective to lift the sustainable economic growth rate in SA to an average of 3% per year.

This equates to the grain industry contributing \$6 billion to gross food revenue by 2030. To achieve this, the industry needs to consider:

- Access to best markets
- Increasing yields
- Decreasing cost

As such, the Blueprint has identified six key pillars to focus on. These pillars represent the greatest growth potential for the sector, which includes:

1. Market Opportunities
2. Capturing Value
3. Biosecurity and Market Access
4. Innovation
5. Building Industry Capacity
6. Infrastructure

This vision and the Blueprint's supporting pillars have been developed with broad industry consultation. It incorporates stakeholder input from across the grain value chain and will support the National Farmers' Federation's vision for Australian agriculture to exceed \$100 billion in farm gate output by 2030.



# 2020 SNAPSHOT

## 4,500

Grain farms in South Australia

South Australia's  
Average Annual

## Harvest is 8.0 million

tonnes of grain



## 60



countries around the  
world receive SA grain

## \$4.2 billion



the contribution of  
the SA grain industry  
to gross food revenue  
in 2017-18

## Grain Products



HOMMUS, BEER, FLOUR,  
PASTA, BISCUITS

## 20%

the percentage that  
SA contributes to Australia's  
total grain production



## 23,000

THE NUMBER OF PEOPLE  
THE GRAIN INDUSTRY  
EMPLOYS DIRECTLY

## SOUTH AUSTRALIAN BARLEY



Family-owned  
Coopers Brewery  
and Japanese brewer  
Sapporo export  
beer containing  
high quality South  
Australian barley



## 80%

of SA grain exported in an  
average year

State of the art,  
world class research  
and development  
facilities can  
be found at the  
University of  
Adelaide's Waite  
Campus in South  
Australia



Sources: PIRSA Primary Industries Scorecard 2018-19 and ACCC Bulk grain ports monitoring report 2018-19

South Australia grows about four million hectares of grain crop each year, including wheat, barley, lentils and canola. Farmgate value totals \$1.7 billion. Yields continue to grow whilst maintaining minimal impact on South Australia's clean soils and water resources.

## Major Export Markets & Products

### Wheat



**4,555,500**

Tonnes produced each year  
(Based on 10 year average)

Overseas export markets  
in 2018-19 include:

New Zealand \$106m

Vietnam \$73m

Malaysia \$63m

Iraq \$57m

Fiji \$47m

### Oilseeds

(Canola)



**344,440**

Tonnes produced each year  
(Based on 10 year average)

Overseas export markets  
in 2018-19 include:

Belgium \$132m

Japan \$5m

Canada \$5m

Bangladesh \$0.4m

New Zealand \$0.3m



### Barley

**2,146,000**

Tonnes produced each year  
(Based on 10 year average)

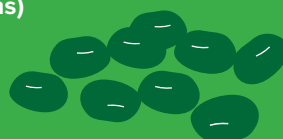


### Pulses

(lentils, field peas,  
broad beans, chickpeas, lupins)

**550,000**

Tonnes produced each year  
(Based on 10 year average)



# SUSTAINABLE GROWTH TO 2030

South Australian growers continue to exceed expectations in producing quality grain despite an increasingly harsh climate. This resilience is a testament to our growers, who continue to innovate and adapt to climate challenges to remain viable.

The SA Grain Industry Blueprint recognises the risk that climate change and increased climate variability poses to grain production in South Australia. Hence, the Blueprint will provide a framework for growers to remain profitable and insulate production from climate-related threats while continuing to encourage clean, smart and environmentally friendly practices.

Sustainability must be considered in the implementation of all Blueprint projects, although it has a particularly significant role in the development and adoption of innovative technologies, agronomic practices, market opportunities and processing capabilities.

The Blueprint acknowledges and supports the achievement of key industry targets and projects which will ensure the sustainability of our sector to 2030 and beyond.

## **The Blueprint recognises:**

- The risk climate change and climate variability pose to the grain industry
- The importance of preserving, protecting and enhancing SA's agricultural land used for food production
- The valuable opportunity for the grain industry to participate in carbon and natural capital markets, diversifying farm incomes while providing a valuable contribution to mitigating climate change

- That coordinated government and industry policies are required to address climate change as a fundamental criteria for achieving the Blueprint's priorities for whole-of-industry growth

## **Our industry will seek to:**

- Continue to embrace sustainable farming practices, in alignment with state and national sustainability frameworks, including Behind Australian Grain, the Australian Grains Sustainability Framework
- Pursue carbon neutral status by 2030, deriving a competitive market advantage through embracing a climate-conscious approach to primary production
- Maintain and sustain SA's agricultural land used for food production
- Support growers' access to and adoption of technologies and practices which mitigate the risk of increased climate variability
- Conduct a study on the carbon footprint of food production and consumption in SA, to address areas where sustainability may be feasibly improved in our supply chains
- Create a South Australian grain industry sustainability policy to ensure a unified approach to enhance the sustainability of SA's grain production and seek to minimise the risk of a changing climate.

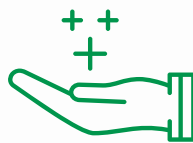


# BLUEPRINT PILLARS



## **PILLAR 1:** **MARKET OPPORTUNITIES**

The South Australian grain industry will be engaged with a range of diverse and differentiated domestic and international markets, based on an advanced understanding of consumer needs and wants.



## **PILLAR 2:** **CAPTURING VALUE**

The South Australian grain industry will capture additional value by developing domestic processing pathways, markets that diversify from bulk grain export and by producing differentiated products to target high-value markets.



## **PILLAR 3:** **BIOSECURITY AND MARKET ACCESS**

The South Australian grain industry will protect market access by being internationally recognised for assurance, traceability and diagnostic processes associated with the supply of high-quality grain.



#### **PILLAR 4: INNOVATION**

South Australia will be the national leader in cutting edge agricultural science and technology that improves both the quality and quantity of our grain products and reduces the cost of production in a changing climate.



#### **PILLAR 5: BUILDING INDUSTRY CAPACITY**

The South Australian grain industry will be recognised for its innovation and diverse career pathways, ensuring the industry can attract, train and retain talent across the value chain.



#### **PILLAR 6: INFRASTRUCTURE**

The South Australian grain industry will have enhanced productivity and competitiveness as a result of public and private investment in sustainable infrastructure.





PILLAR 1:

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# MARKET OPPORTUNITIES

“There are significant opportunities for the South Australian grain industry with the advent of the plant-based protein movement. The question is, how do we best capitalise on that?”

PILLAR CHAMPION PROFESSOR WENDY UMBERGER

# 2030 VISION

The South Australian grain industry will be engaged with a range of diverse and differentiated domestic and international markets based on an advanced understanding of consumer needs and wants.



Position South Australia as a global leader in plant-based food research



Implement a value chain approach, requiring buy-in from across the whole industry



Establish SA as the Australian origin of choice for baking wheat, soft grains and feed grains

This pillar identifies genuine opportunities to develop new or expanded markets for South Australian grain. To capture these opportunities, the South Australian grain industry must move beyond operating in supply chain mode and instead adopt a value chain approach which involves each participant having a deep understanding of markets and consumer demands.

There is a unique opportunity for SA to establish itself as the origin of choice for baking and soft wheat. If successful, the industry can recapture lost export markets and embed South Australian grain in new Asian markets where there is an emerging middle class which is demanding food products more aligned to western tastes.

Equally, there is an opportunity for SA to become the origin of choice for the feed grain market, both domestically and internationally.

A new approach is required to capitalise on these wheat and feed grain opportunities, including the willingness to breed and grow different varieties to meet these market demands.

There is also an exciting opportunity to position SA as a leader in plant-based food and create other markets through investing in pulse, oats and oilseed projects, turning niche initiatives into large, accessible and profitable markets for SA growers.

Expanding the South Australian pulse industry is a key initiative of the Blueprint. This recognises the opportunities and importance of pulses in the cropping rotation for South Australian growers, who have a wealth of experience in growing pulse crops. Pulses also offer growers more flexibility in the types of crops that can be grown across a range of soil types and rainfall zones.

## ALIGNED PLANS

*The National Farmers' Federation (NFF) 2030 Roadmap*

Primary Industries and Regions SA (PIRSA), SA Government and Industry, Growth State - Food, Wine and Agribusiness Draft Discussion Paper 2019

Grains Research and Development Corporation (GRDC) Research, Development and Extension Plan 2018-23

South Australian Research and Development Institute (SARDI) Strategic Plan 2018 - 2023

Grains Industry Market Access Forum (GIMAF) Strategic Direction (2011)

Australian Export Grains Innovation Centre (AEGIC) Australia's grain supply chain: Costs, risks and opportunities (2018)

AEGIC Structural change in SA's grain industry (2019)

Pulse Australia Pulse Growing Industry outlook (2019 - 2024)

# PILLAR 1. MARKET OPPORTUNITIES



PRIORITIES	TARGETS	PROJECT AREAS
Develop greater information flow through the supply chain to understand market demands and opportunities, including potential reactions to non-tariff measures.	<p><b>1.1</b> Build a diversified export and domestic market base.</p> <p><b>1.2</b> Create a communication pathway that enables market intelligence information from collaborating organisations to be relayed regularly to South Australian growers.</p> <p><b>1.3</b> Establish a coordinated response to potential non-tariff trade barriers.</p>	<ul style="list-style-type: none"> <li>Identify major export destinations that will demand SA product by 2030.</li> <li>Continue to build knowledge of market access requirements connecting growers more directly with market signals.</li> <li>Encourage establishment of government-to-government relations to support the production and export of pulses, oilseeds and grains.</li> <li>Source and disseminate market intelligence information to agronomists and farming systems groups as an extension investment.</li> <li>Deliver education programs to growers to inform decision making regarding marketing and logistical choices.</li> <li>Support research to identify key export opportunities, such as Africa.</li> </ul>
Pulse opportunities.  Grow pulse sector value by 3% per annum.	<p><b>2.1</b> Establish pulse fractionation and processing capability in SA.</p> <p><b>2.2</b> Genetic improvement and management of pulse crops to meet global demand for plant protein, ingredients and animal feeds.</p> <p><b>2.3</b> Expand pulse production on low rainfall land.</p>	<ul style="list-style-type: none"> <li>Develop varieties suitable for domestic processing where visual characteristics are no longer as important.</li> <li>Develop options for growers to produce feed lentils for aquaculture and pet food markets.</li> <li>Commission a report on projected future demand for plant-based protein, particularly in Indonesia.</li> <li>Conduct research to promote the economics of concentrated plant protein against water/carbon footprint.</li> <li>Explore opportunities to diversify export destinations for faba beans.</li> <li>Conduct research to support the introduction of medium/large (Jumbo type) lentils.</li> </ul>
Develop additional malting barley opportunities.	<p><b>3.1</b> Fast-track opportunities to diversify the malting barley market for SA growers.</p> <p><b>3.2</b> Develop opportunities to export SA malting barley to India by addressing technical barriers to trade.</p> <p><b>3.3</b> Conduct research on producing varieties in high demand in key Asian markets and the quality and functionality of those varieties.</p>	<ul style="list-style-type: none"> <li>Identify alternative markets for SA malting barley, including the expansion of domestic malting capacity.</li> <li>Ensure the accreditation of malting varieties is aligned with export market requirements, not just the domestic market.</li> <li>Align malting barley production with key demand centres and/or proximity to the domestic market.</li> <li>Develop and produce 250,000 tonnes of low-astringency malting barley to compete directly with varieties such as Metcalfe.</li> </ul>

PRIORITIES	TARGETS	PROJECT AREAS
Tailor production to meet increased coarse/ feed grain demand domestically and internationally.	<p><b>4.1</b> Support the expansion of intensive livestock production in SA to drive feed grain demand.</p> <p><b>4.2</b> Develop feed grain research and breeding programs in SA, specifically catering to SA's environment.</p> <p><b>4.3</b> Support research into feed grain production in SA and engage with growers on production.</p> <p><b>4.4</b> Build and deliver long-term breeding pathways.</p>	<ul style="list-style-type: none"> <li>• Fast-track access to and availability of germplasm for breeding, demonstrating a commercial impetus to breeding companies to develop and commercially release suitable feed grain varieties.</li> <li>• Develop protocols for market acceptance.</li> <li>• Establish a nationally consistent End Point Royalty pathway for feed grains.</li> <li>• Develop alternate feed grains for cropping rotations.</li> </ul>
Produce 500,000 tonnes of wheat per annum suitable for cakes, biscuits and/or white salted noodles.	<p><b>5.1</b> Investigate potential noodle wheat varieties suited to SA.</p> <p><b>5.2</b> Source market intelligence information from collaborating organisations and communicate this to SA growers.</p>	<ul style="list-style-type: none"> <li>• Build and deliver long-term breeding pathways.</li> <li>• Develop protocols for market acceptance.</li> </ul>
Aim to produce up to 1m tonnes of elite baking wheat annually.	<p><b>6.1</b> Target specific market opportunities for SA-grown baking wheat.</p> <p><b>6.2</b> Establish collaborative arrangements between breeders, producers and the marketplace to produce sufficient quantities of baking quality grain to determine the market acceptance of SA-grown wheat.</p>	<ul style="list-style-type: none"> <li>• Encourage existing breeding companies to produce suitable adapted varieties to meet emerging baking wheat markets.</li> <li>• Develop value chain protocols to assess market acceptance of speciality varieties.</li> <li>• Identify and remove barriers to fast-track access and acceptance of gene editing technology for breeding.</li> <li>• Link market demand with breeders and end users</li> </ul>
Oilseed opportunities.	<p><b>7.1</b> Generate a tenfold increase in the production of specialty oils in SA, such as safflower, hemp and linseed from approximately 2000 tonnes to 20,000 tonnes.</p> <p><b>7.2</b> Develop and commercialise plant-based sources of industrial and food ingredients, utilising gene technology.</p> <p><b>7.3</b> Support the adoption of new canola varieties to lift productivity.</p>	<ul style="list-style-type: none"> <li>• Develop a canola breeding program specific to SA environments (as opposed to taking varieties developed for east coast production).</li> <li>• Attract investment to SA in research and development and breeding programs for high-value oilseeds based on emerging health and food ingredient demand.</li> <li>• Fast-track commercial cultivation of Omega-3 canola varieties in SA for use in aquaculture feed and human consumption.</li> </ul>
Oats opportunities. Meet a market opportunity of 300,000 tonnes of milling oats for export and domestic consumption.	<p><b>8.1</b> Meet the increased demand for milling oats high in beta-glucan in existing export and domestic markets, including an expanding organic market.</p> <p><b>8.2</b> Explore the opportunities to export high beta-glucan oats into new markets, particularly South-East Asia.</p> <p><b>8.3</b> Maintain and, where feasible, grow export markets for fodder to Japan, China and other Asian markets.</p>	<ul style="list-style-type: none"> <li>• Target breeding of high-quality oats to meet consumer preferences and promote the on-farm management practices required to produce high yields of quality grain.</li> <li>• Support the local development of foods containing oats high in beta-glucan to broaden domestic and international export opportunities.</li> <li>• Determine the feasibility of establishing a new oat processing plant on the Eyre Peninsula and/or the Lower North.</li> <li>• Identify alternate end uses for oats, such as noodles, oat rice and dairy substitutes.</li> </ul>



PILLAR 2:

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# CAPTURING VALUE

“There are plenty of lessons to be learned from the eastern seaboard, especially when it comes to containerised exports of grain as a way of capturing more value from what we grow.”

PILLAR CHAMPION MARK SCHILLING

# 2030 VISION

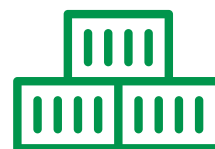
The South Australian grain industry will capture additional value by developing domestic processing pathways, markets that diversify from bulk grain export and by producing differentiated products to target high-value markets.



Double grain consumption/processing in SA – currently worth about \$1.7b – to c.40% of production or 2.8m tonnes of consumption



Align production quality with ingredient production requirements to develop value-added grain products



Triple container exports to 15% of total grains exports from about 335,000 tonnes to 1m tonnes

One of the greatest opportunities for the South Australian grain industry is to increase demand for grain within the state to capture additional value during processing.

A domestic customer pays a premium to divert grain from the export market, particularly in SA where the international market is the natural pathway for grain. Once established, domestic customers depend on local producers for their grain supply. Put simply, domestic markets are reliable customers who pay a premium. These are significant motivators to grow the domestic market in SA, which is why a key target of this pillar is to double the state's domestic grain consumption, taking it to almost 40% of total grain production.

When considering the development of SA's domestic market, there are lessons to be taken from the growth of the domestic market on the east coast of Australia. However, there are also significant differences to factor in, most notably the greater population density and different climatic conditions on the eastern seaboard.

It is important for SA to develop its own point of difference and build on existing strengths in the feed grain market. SA is already the second-largest producer of poultry meat and the largest producer of pig meat in the country. With chicken and pork demand estimated to increase significantly over the coming years, SA is well-positioned to take advantage of this expected increase in feed demand. Beef consumption is also expected to increase globally, which represents an additional opportunity.

This includes the container grain trade, which is an export market that is more mature in eastern Australia, yet one that SA can clearly participate more fully in. The Blueprint is targeting a tripling of the state's container exports to 15% of its total grain exports.

Other value adding processing opportunities are identified in this pillar, building on some of the initiatives from the Market Opportunities Pillar.

If reached, the targets in this pillar will transform SA from an export-focused state to an industry where 40% of the state's production is consumed domestically. In addition, another 15% would be exported in containers, meaning more than 50% of total state production would be away from the bulk grain export market.

All of these opportunities are designed to maximise the return for South Australian growers.

## ALIGNED PLANS

The National Farmers' Federation (NFF), 2030 Roadmap

Primary Industries and Regions SA, (PIRSA) Food, Wine and Agribusiness Discussion Paper 2019

Grains Research and Development Corporation (GRDC), Research, Development and Extension Plan 2018-23

South Australian Research and Development Institute (SARDI), Strategic Plan 2018-2023

Livestock SA & SA Sheep Advisory Group, The South Australian Sheep Industry Blueprint – 2015 to 2020 and beyond

Livestock SA, The South Australian Beef Industry Blueprint – 2018 to 2028

Australian Export Grains Innovation Centre (AEGIC), Structural change in SA's grain industry (2019)

Pulse Australia, Pulse Growing industry outlook (2019 – 2024)

AEGIC, Australia's grain supply chain: Costs, risks and opportunities (2018)

## PILLAR 2. CAPTURING VALUE



PRIORITIES	TARGETS	PROJECT AREAS
Support the expansion of intensive animal production in SA.	<p><b>1.1</b> Increase feed demand in SA by 1m tonnes, worth about \$1.2 billion per annum.</p> <p><b>1.2</b> Support the expansion of feed demand in SA by producing grain specifically for feed usage.</p> <p><b>1.3</b> Target future chicken meat demand and aim for 15% of national growth to occur in SA (the equivalent of about 1.25m birds processed per week), creating additional demand of 170,000 to 200,000 tonnes of grain.</p> <p><b>1.4</b> Supply an additional 500,000 tonnes of feed grain to meet the projected increased demand as part of the implementation of the South Australian Beef Industry Blueprint.</p> <p><b>1.5</b> Improve access to infrastructure to end-users to enable efficient and cost-effective delivery of product.</p>	<ul style="list-style-type: none"> <li>• Work with the feed milling sector to increase production capacity to meet projected demand</li> <li>• Support plant breeders to develop and commercially release germplasm that permits higher yielding varieties to be grown in SA.</li> <li>• Establish infrastructure to meet chicken meat expansion including a processing facility, fertile egg production facility, hatchery and poultry farms.</li> <li>• Identify the best areas of SA to increase feed grain production and demand and provide information to feed producers.</li> <li>• Seal or cap the Strzelecki Track to attract livestock to 'finish' in SA rather than other states.</li> <li>• Establish a more rigorous End Point Royalty system for feed grains to provide commercial incentives for plant breeding.</li> <li>• Identify opportunities to provide compound feed to aquaculture.</li> <li>• Identify and supply export opportunities for compound feeds.</li> <li>• Engage with and educate growers to enable the sustainable production of grain specifically suited to the feed sector.</li> </ul>
Support the development of value-added grain products for domestic and international markets, including ingredients for processing and health foods.	<p><b>2.1</b> Develop value-added SA grain products which meet growing consumer demand for plant-based protein alternatives and functional food products.</p> <p><b>2.2</b> Establish pulse fractionation and processing capability in SA.</p> <p><b>2.3</b> Determine the feasibility of establishing a new oat processing plant on the upper Eyre Peninsula or in the Lower North.</p> <p><b>2.4</b> Explore opportunities for the processing and utilisation of specialty oils.</p>	<ul style="list-style-type: none"> <li>• Explore the feasibility of developing novel value-added grain products for human consumption to meet market opportunities in Australia and regionally.</li> <li>• Focus on the increased production of oats high in beta-glucan.</li> <li>• Develop an integrated framework for confirming the provenance of grain products from paddock to processor.</li> </ul>

PRIORITIES	TARGETS	PROJECT AREAS
Support the development of and access to container packing/export pathways.	<p><b>3.1</b> Increase the availability of food grade containers for non-bulk export pathways.</p> <p><b>3.2</b> Develop an on-farm protocol to support the integrity of container packing for the export market.</p>	<ul style="list-style-type: none"> <li>Investigate the economics of manufacturing food grade containers in Whyalla.</li> <li>Investigate the feasibility of incentivising the import of food grade containers versus non-food grade at the point of import.</li> <li>Investigate opportunities to cost-effectively 'line' non-food grade containers.</li> <li>Increase the awareness and ability of growers to fill containers for export on-farm.</li> <li>Develop pathways for the movement of empty containers, linking with the inland rail project.</li> </ul>
Increase wheat milling capacity in SA by 300,000 tonnes (worth about \$360m).	<p><b>4.1</b> Identify the opportunity to attract a new flour milling facility to SA based on an efficient supply chain, consistency of supply and potential functionality benefits of SA-grown wheat.</p>	<ul style="list-style-type: none"> <li>Proactively develop a prospectus for flour milling in the area north of Adelaide.</li> <li>Develop and grow varieties of wheat that qualify for an 'elite baking' class.</li> <li>Enhance varietal segregation capacity for supplying milling wheat to the domestic market</li> </ul>
Build an oilseed crushing facility in SA capable of crushing at least 50,000 tonnes per annum.	<p><b>5.1</b> Support the development of other non-canola, high-value or niche oilseeds such as linseed.</p> <p><b>5.2</b> Develop partnerships with the feed sector to take canola meal.</p>	<ul style="list-style-type: none"> <li>Conduct a feasibility study into the commercial viability of an oilseed plant with a 50,000-tonne capacity.</li> <li>Develop breeding programs and pathways for other oilseeds in SA.</li> <li>Develop a prospectus of SA oilseeds for potential investors drawing on the reliability and continuity of supply benefits in SA.</li> </ul>

A large grain shipper is shown from a high angle, with a long conveyor belt system extending from the ship's deck over a body of water. The shipper is white with a metal frame, and the conveyor belt is filled with yellow grain. The water is a deep blue, and the sky is clear. The shipper is positioned diagonally across the frame, leading the eye from the bottom left towards the top right.

PILLAR 3:

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# BIOSECURITY & MARKET ACCESS

“To ensure we remain competitive on the world stage, we need to ensure we have continued access to our key markets.”

PILLAR CHAMPION STEPHEN BALL

# 2030 VISION

The South Australian grain industry will protect market access by being internationally recognised for assurance, traceability and diagnostic processes associated with the supply of high-quality grain.



Effective planning and response to incursions



Biosecurity systems and standards will provide enhanced market access for SA grains

This pillar recognises the importance of developing world's best practice for the supply of quality managed grain, which is critical to the ongoing viability of SA's grain sector.

Globally, the grain production environment is becoming increasingly competitive. Australia competes against countries that often have a much lower cost of production and shipping costs sometimes negate historical advantages relating to our close proximity to markets.

Australia, and South Australia in particular, has an excellent reputation for providing clean, green agricultural products and working closely with trading partners to ensure their needs are met. By continuing to uphold high grain hygiene standards, South Australian grain growers will continue to differentiate from global competitors and maintain access to a large range of markets across the world.

The exciting opportunities identified in the previous pillars will be meaningless if SA cannot maintain market access due to grain hygiene issues. All domestic and export markets for Australian grain have a low to nil tolerance level for chemical residues and contaminants.

As different logistic pathways and new storage infrastructure develops in SA, it will be important to ensure grain hygiene standards are maintained. All industry participants have a responsibility to ensure grain meets market requirements and is within physical, chemical and biological tolerance limits.

In addition, end users of South Australian grain will continue to demand even greater assurance of the integrity of their food and its provenance. The industry must ensure its current programs and resources are prepared to meet these future requirements or create the programs, structures and resources that will.

It is critical to the future of our industry that we also proactively manage and maintain Australia's plant health status. A biosecurity incursion, caused by insects, plant pathogens, weeds and other crop-damaging organisms, can have a major impact on grain production if not managed efficiently and effectively.

Biosecurity is a shared responsibility between government and industry and all participants in the grain supply chain have a role to play.

Ultimately, by ensuring the industry is responsive to the requirements of destination countries with a focus on quality assurance, traceability and food safety, ongoing market access can be assured for SA grain into the future.

## ALIGNED PLANS

The National Farmers' Federation (NFF),  
2030 Roadmap

Primary Industries and Regions SA (PIRSA),  
SA Government and Industry, Growth  
State - Food, Wine and Agribusiness Draft  
Discussion Paper 2019

Grains Research and Development  
Corporation (GRDC), Research,  
Development and Extension Plan 2018-23

South Australian Research and  
Development Institute (SARDI),  
Strategic Plan 2018 - 2023

Grains Industry Market Access Forum  
(GIMAF) Strategic Direction (2011)

Australian Export Grains Innovation Centre  
(AEGIC), Australia's grain supply chain:  
Costs, risks and opportunities (2018)

AEGIC, Structural change in SA's grain  
industry (2019)

Plant Health Australia,  
2016-21 Strategic Plan

## PILLAR 3. BIOSECURITY & MARKET ACCESS



PRIORITIES	TARGETS	PROJECT AREAS
Develop feedback loops for non-commercially sensitive information to allow for better planning and response to potential pests, weeds and other market access issues which may disrupt trade.	<p><b>1.1</b> Develop education campaigns that promote grain as food, not a commodity.</p> <p><b>1.2</b> Develop reporting systems to allow for the ability to trace issues back to the point of origin.</p> <p><b>1.3</b> Develop an industry group to be able to appropriately action and communicate plans and practices through the whole value chain.</p> <p><b>1.4</b> Strengthen partnerships along the grain value chain on pre and post-competitive market access issues.</p>	<ul style="list-style-type: none"> <li>Establish an industry group to define what information is required and protocols to manage potential negative implications that may result from increased traceability.</li> <li>Develop a communication plan for industry to clearly explain the difference between receival specifications, contract specifications, export specifications and importing countries' specifications.</li> <li>Revamp the SA Grain Market Access Group to coordinate an industry and government response.</li> </ul>
SA will proactively prepare, assess and respond to emerging market access issues relating to crop protection products.	<p><b>2.1</b> Develop strong industry stewardship and communication capabilities regarding the use and management of crop protection products.</p> <p><b>2.2</b> Ensure coverage of the National Residue Survey (NRS) to all grain storage and handling facilities to capture new entrants.</p>	<ul style="list-style-type: none"> <li>Support stewardship programs, research and trials which aim to reduce industry reliance on agri-chemicals.</li> <li>Develop a communication plan for industry to minimise market access threats arising from pesticide misinformation.</li> <li>Investigate the feasibility of a South Australian chemical application code of practice, similar to the South Australian Grain Harvesting Code of Practice, to support industry self-regulation.</li> </ul>
Develop the capacity of plant health surveillance and diagnostics in SA (SARDI/Waite).	<p><b>3.1</b> Boost SARDI/Waite capacity to respond to challenges regarding grain-related pests and diseases.</p> <p><b>3.2</b> Provide national capacity on grain-related pests and diseases.</p>	<ul style="list-style-type: none"> <li>Develop high throughput accurate diagnostic and surveillance tools using the latest technology, to support the 'known not to occur' criteria required for market access.</li> <li>Support the ongoing adoption of new and advanced diagnostic and surveillance tools throughout SA grain supply chain.</li> </ul>

PRIORITIES	TARGETS	PROJECT AREAS
<p>Improve the preparedness of SA's grain industry for plant pest or disease incursion(s).</p>	<p><b>4.1</b> Increase grain on-farm biosecurity capacity and awareness of industry programs led by Plant Health Australia (PHA).</p> <p><b>4.2</b> Develop an industry group including government to deal with ongoing or potential biosecurity issues with capacity and capability to deliver on objectives.</p> <p><b>4.3</b> Establish regular grain-focused incursion simulations with feedback on implications and actions, including on business continuity.</p>	<ul style="list-style-type: none"> <li>Review the PHA-funded Grains Farm Biosecurity Program to ensure relevance to the whole value chain in managing grain biosecurity and market access risks in SA.</li> <li>Assess other regions that currently have the climate SA is expected to have in 2030 to identify potential pests, diseases and plant health issues.</li> </ul>
<p>SA grain to have access to the world's best markets through maintaining high standards of grain hygiene, food safety and product quality.</p>	<p><b>5.1</b> Ensure growers are engaged with the market specifications and best practice compliance measures required to ensure access to the best markets.</p> <p><b>5.2</b> Develop industry management plans to establish whole of value chain protocols for managing biosecurity pests.</p> <p><b>5.3</b> Create and establish the minimum standards required while allowing commercial entities to establish their own value proposals.</p> <p><b>5.4</b> Develop the ability for the consumer to link food back through each step of the value chain.</p>	<ul style="list-style-type: none"> <li>Increase grower engagement and knowledge regarding market requirements, standards, quality assurance and compliance practices.</li> <li>Review current industry management plans in place to support market access of SA grain to key export destinations.</li> <li>Contribute to a nationally consistent framework for identifying product and production location.</li> <li>All grain deliveries – regardless of destination – to have a commodity vendor declaration attached, linking to production software and accessible as evidence of grain management.</li> <li>Assess and study what our competitors do to meet importing nations' and customer requirements, including areas of differentiation.</li> </ul>

A weather station is mounted on a blue pole in a field of yellow flowers. The station includes a solar panel, a white anemometer, and a black sensor unit. The background shows a cloudy sky and a fence line.

PILLAR 4:

# INNOVATION

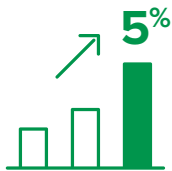
“Growers are innovators. The possibilities for automation and robotics are endless and we want the South Australian grain industry to be playing a major role in this space.”

PILLAR CHAMPION TANJA MORGAN

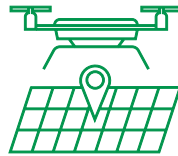
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# 2030 VISION

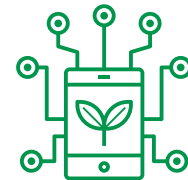
South Australia will be the national leader in cutting edge agricultural science and technology that improves both the quality and quantity of our grain products and reduces the cost of production in a changing climate.



Achieve a reduction of input and labour costs associated with production by 5% to improve profitability of grain production



SA grain producers must have access to and understand the tools and technology that allow increased product quality and quantity and reduce costs in an environmentally sustainable way



On-farm productivity driven by adoption of best technology

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## Innovation has a key role as a driver of productivity growth.

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Growers have always been early adopters of technology and have always been prepared to innovate in their approaches to production, agronomy and farming systems. They have demonstrated a willingness to look abroad for new ideas and accept recognised research as a guide to future developments. As a result, crop water-use efficiency has doubled in the past 15 years and, combined with other yield improvement initiatives, on-farm innovation has added significant farm gate value.

Farming systems groups have played a key role in driving on-farm practice change through localised research, development and extension. There are 18 of these groups in SA which have a direct reach to approximately 75% of broadacre farmers. These groups will continue to be a key influencer in accelerating the adoption of innovative research and technology on-farm, as will consultants, ag bureaus and other related groups.

Growers' willingness to consider innovative new technologies has been driven by the need to remain commercially viable and environmentally sustainable, particularly in Australia's challenging and variable growing conditions. Hence, a very pragmatic target of this pillar is for growers to have access to the latest tools and technology to reduce input and labour costs associated with production by 5%.

It is clear that growers are prepared to incur additional production costs if greater productivity or environmental benefits occur as a result, however this is a modest goal which reflects the intensely competitive environment growers operate in. It also underscores the necessity for South Australian growers to have access to the latest technologies to remain competitive with interstate and overseas growers.

By 2030, SA's grain industry will need to incorporate the latest innovations in areas such as agtech (including robotics, automation and gene technology), record keeping, information gathering and decision making. This will be critical as growers contend with escalating climate change challenges and rapidly advancing competitors such as the Black Sea.

This pillar also identifies the necessity for SA's grain

industry to work collaboratively with State Government and other institutions to position the Waite Research Precinct as an "Innovation and Translation Neighbourhood" and, in the process, help establish SA as a leader in agtech, plant breeding, food science and sustainable farming practices.

As championed by the South Australian Chief Scientist, there may be the possibility to "integrate a Frontier Technology Capability Centre at the Waite Research Precinct to support small to medium enterprises and business leaders to harness the capability of emerging technologies to add value in competitive global markets and introduce expertise into traditional research areas to enhance the delivery of innovation and impact."

In order to effectively drive innovation, it is important to find avenues to connect developing technologies and science to end users. This will drive faster adaptation and adoption that can address key industry challenges, including climate change. All industry stakeholders need to be part of this process, including universities, research and development organisations, technology companies, farming systems groups, private farm consultants, the retail sector, government and growers.

## ALIGNED PLANS

The National Farmers' Federation (NFF), *2030 Roadmap*

Primary Industries and Regions SA (PIRSA), SA Government and Industry, *Growth State - Food, Wine and Agribusiness Draft Discussion Paper 2019*

Grains Research and Development Corporation (GRDC), *Research, Development and Extension Plan 2018-23*

South Australian Research and Development Institute (SARDI), *Strategic Plan 2018 - 2023*

Chief Scientist for South Australia, *South Australia – The State of Science: The EXCITE Strategic Plan 2020*



## PILLAR 4. INNOVATION

PRIORITIES	TARGETS	PROJECT AREAS
Secure the science base to support growth in SA's grain industry by driving innovation in agriculture.	<p><b>1.1</b> Ensure SARDI and the Waite Research Precinct are supported to drive research for the benefit of SA's grain industry.</p> <p><b>1.2</b> Establish the Waite Research Precinct as a centre for ag-commercial entities, using the facilities, reputation and location to attract innovators and innovation to SA.</p> <p><b>1.3</b> SA to lead the nation in public investment in grain research and development and innovation.</p> <p><b>1.4</b> Attract plant breeding investment to mitigate the impact of climate change in SA, including potential alternative crops.</p> <p><b>1.5</b> Develop a coordinated focus on major research and innovation schemes, including Cooperative Research Centres relevant to the SA grain industry, which have significant co-investment from federal, international, industry and other sources.</p>	<ul style="list-style-type: none"> <li>• Focus investment in traits to combat the greatest environmental risks to grain production, such as heat, drought, frost and salinity tolerance.</li> <li>• Target postgraduate students to focus on emerging and adopting agtech in SA.</li> <li>• Work with the State Government, the University of Adelaide and other key stakeholders to reposition the Waite Research Precinct - with its statewide, national and global connections - as an "Innovation and Translation Neighbourhood".</li> <li>• Support the location of commercial entities at the Waite Campus to interact with research and help drive priorities for commercialisation.</li> <li>• Establish industry forums to connect researchers and entrepreneurs with 'challenges'.</li> <li>• Develop leading researchers and global innovators in agriculture and create a talent pipeline by supporting early to mid-career researchers in SA while also attracting the best global talent.</li> <li>• Integrate a Frontier Technology Capability Centre at the Waite Research Precinct to support small to medium enterprises and business leaders to harness the capability of emerging technologies to add value in competitive global markets.</li> </ul>
Raise industry profile, ensure the correct policy settings and attract investments that recognise sustainability and environmental credentials of SA grain products.	<p><b>2.1</b> Establish the Waite Research Precinct as a centre of excellence for agricultural research and applied conservation agriculture.</p> <p><b>2.2</b> Support farmers to adopt sustainable agricultural practices through appropriate policy settings and programs.</p> <p><b>2.3</b> Pursue carbon neutral status for SA's grain industry by 2030 (while remaining profitable).</p> <p><b>2.4</b> Support the work undertaken by farming systems groups, agricultural bureaus and Landscape Boards in research, development and extension.</p> <p><b>2.5</b> Monitor and respond to opportunities in natural capital accounting.</p> <p><b>2.6</b> Leverage major national funding programs to deliver an increased South Australian share of investment to drive industry-research collaboration and economic impact.</p>	<ul style="list-style-type: none"> <li>• Improve access to technology/genetic material and methods to allow sustainable production.</li> <li>• Conduct a study to evaluate and assess the value and importance of a strong science capability to drive innovation at an industry level.</li> <li>• Develop enterprise-level sustainable metrics for grain production to support decision making.</li> <li>• Determine required industry steps to achieve carbon neutrality across the grain industry sectors.</li> </ul>

PRIORITIES	TARGETS	PROJECT AREAS
<p><b>Increase the production base of SA's grain industry through sustainable intensification of agriculture.</b></p>	<p><b>3.1</b> Identify and address land use conflicts to protect arable land available for grain production.</p> <p><b>3.2</b> Support GRDC's target to close the yield gap by 20% over the next five years by increasing yield (pa) by a minimum of 1% for cereals, 2% for pulses and 1.5% for oilseeds.</p> <p><b>3.3</b> Develop policy settings to ensure access to chemicals, technology and seeds.</p> <p><b>3.4</b> Maintain or expand SA's cropping area above 4m hectares by 2030.</p> <p><b>3.5</b> Identify marginal land that could be cropped through improved farming practices.</p> <p><b>3.6</b> Raise public awareness of scarcity of natural resources and arable land in SA suitable for grain production.</p> <p><b>3.7</b> Explore quality traits as a means to improve profitability and sustainability through creating a new market for post-farm gate valorisation.</p>	<ul style="list-style-type: none"> <li>Invest in research which targets plant breeding, agronomic management and better use of weather forecasts to develop solutions to frost, heat stress and drought.</li> <li>Identify and adapt gene traits that will allow a reduction in chemical and fertiliser use.</li> <li>Investigate alternatives to allow for a reduction of chemical spraying and improved stewardship of agricultural chemicals.</li> <li>Investigate the benefits of soil amelioration on marginal land.</li> <li>Conduct an agricultural land audit to identify strategic cropping land and grain infrastructure for protection through planning policy, in support of a whole-of-government approach to land use conflicts.</li> <li>Investigate potential areas for oats as a break crop in marginal land.</li> <li>Identify and access value-added nutrients such as iron or zinc.</li> <li>Support the development of bio-energy plants with a study on the economics of growers producing biomass crop specifically for bio-energy.</li> <li>Support the development of new genotypes and niche crops for quality traits to exploit value adding from grain products.</li> </ul>
<p><b>Position SA as the centre for agtech in the Southern Hemisphere.</b></p>	<p><b>4.1</b> Accelerate adoption of on-farm innovation in agtech, systems and record keeping.</p> <p><b>4.2</b> Improve access to funding opportunities for agtech start-ups.</p> <p><b>4.3</b> Influence and forge better collaborative relationships between entrepreneurs, researchers and government.</p> <p><b>4.4</b> Aim to attract 30 new agtech companies in SA by 2030.</p> <p><b>4.5</b> Facilitate the potential of the 'Internet of Things' and new technologies in agriculture through programs to support adoption on-farm.</p> <p><b>4.6</b> Leverage other industries driving innovation in agriculture including defence, space and healthcare.</p>	<ul style="list-style-type: none"> <li>Support the establishment of broadacre smart farm trials to understand technology and opportunities for adoption.</li> <li>Endorse, create and support incentive schemes to bring agtech companies to SA.</li> <li>Establish a partnership and coordinate with the emerging space industry in SA to use satellites for information gathering and other technologies that can be adapted for agriculture.</li> <li>Establish working agtech taxonomy in the grain context beyond drones and robotics.</li> <li>Optimise existing agtech to support the development of end user predictive tools for on-farm decision making.</li> </ul>

PRIORITIES	TARGETS	PROJECT AREAS
SA grain growers to have the capacity and confidence to adopt new technology.	<p><b>5.1</b> Increase the application and uptake of agtech on-farm for data collection.</p> <p><b>5.2</b> Support local grower groups/farming networks in developing their own research priorities and extension activities and improved data integration.</p> <p><b>5.3</b> Accelerate adoption and integration of on-farm innovation in agtech, systems and record keeping.</p> <p><b>5.4</b> Develop a coherent industry-wide response to identify and address areas where technology can quickly be deployed to solve problems.</p> <p><b>5.5</b> Ensure technology development opportunities engage research at local levels.</p>	<ul style="list-style-type: none"> <li>• Develop communications technology to allow accurate and timely diagnosis in the field, including internet connectivity and reliability, to support targets under the Biosecurity and Market Access Pillar for Emergency Plant Pests (EPPs).</li> <li>• Develop programs to assist growers in assessing the viability of agtech investment on their farms.</li> <li>• Examine opportunities with satellite technology for monitoring and data gathering.</li> <li>• Develop the capacity to have weather monitoring stations relevant to each paddock.</li> <li>• Accelerate the development and introduction of remote sensors for pest and disease monitoring, to support the achievement of targets under the Biosecurity and Market Access Pillar and ensure capacity for diagnostic and specialist crop protection.</li> <li>• Support the establishment of a centralised app to give access to real-time information such as grassland fire danger index, fire danger indices and spray drift information including inversion layers.</li> </ul>
Maintain and improve the availability of agri-chemicals for grain production and storage.	<p><b>6.1</b> Engage with chemical companies within the current framework to encourage the registration of chemicals for use in Australia.</p> <p><b>6.2</b> Support investment in chemical stewardship to maintain 'social licence' to chemical use.</p> <p><b>6.3</b> Conduct a value chain assessment on policy decisions regarding chemical requirements (for example, assess the value of on-board fumigation verses value of current policy).</p>	<ul style="list-style-type: none"> <li>• Identify chemicals used overseas that may be advantageous for future SA cropping systems.</li> <li>• Ongoing assessment of current major grain varieties' resistance to pests/diseases.</li> <li>• Identify what practices are commonly used by direct competitors in regard to loading export consignments.</li> </ul>

# PILLAR 5:

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# BUILDING INDUSTRY CAPACITY

“We want to create an environment where we can foster the growth of young people pursuing a career and maintain the world-class reputation of agricultural research here in SA.”

PILLAR CHAMPION ADRIAN MCCABE



# 2030 VISION

The South Australian grain industry will be recognised for its innovation and diverse career pathways, ensuring the industry can attract, train and retain talent across the value chain.



The South Australian grain industry must partner with, support and invest in primary, secondary, tertiary and vocational training and education pathways



Position Waite Research Precinct as an agricultural research and innovation hub

This pillar tackles the perennial challenge of attracting and retaining talent within the industry, which is essential if the grain sector is to reach its potential and thrive. The industry supports more than 23,000 jobs across the South Australian grain value chain and this will need to grow to support projected growth outlined in the Blueprint.

A cohesive long-term approach is necessary to build industry capacity and capability. This includes engaging school students from an early age and developing genuine education pathways for agricultural careers from school through to vocational and tertiary studies. This will involve investing in the state's existing agricultural education institutions as well as developing additional vocational options.

There is a significant opportunity to upskill and deepen the skills of the existing grain industry workforce in order to increase the chances of retention, which could be supported through existing investment in skills.

The value and contribution of vocational education and training (VET) qualifications in meeting the skill needs of the grain industry in terms of potential productivity gains and skills recognition cannot be underestimated. This is why a key target of the Blueprint is for industry and the education sector to partner to identify key VET priorities.

As previously identified, agtech will play an important role in driving future industry prosperity through the development of cutting-edge innovations and technology. In addition, if agtech is genuinely perceived as an innovative sector, it will naturally attract leading minds who can apply their knowledge and skills to the industry's greatest challenges. This also has the potential to generate a different type of engagement with the wider community, enabling the industry to meet community expectations and garner broader support.

As outlined in the EXCITE Strategy, initiatives which support citizen science, community engagement and input on all things science, technology, engineering, mathematics and medicine (STEMM) such as Inspiring SA, Science Alive and National Science Week form an important platform for STEMM engagement. The South Australian grain industry needs to be part of that discussion. This will lead to greater engagement with industry, communities and regions.

## ALIGNED PLANS

The National Farmers' Federation (NFF), *2030 Roadmap*

Primary Industries and Regions SA (PIRSA), SA Government and Industry, *Growth State - Food, Wine and Agribusiness Draft Discussion Paper 2019*

Grains Research and Development Corporation (GRDC), *Research, Development and Extension Plan 2018-23*

Parliament of Australia, *House of Representatives Standing Committee on Agriculture & Industry Smart Farming: Inquiry into Agricultural Innovation (2016)*

Training and Skills Commission (TaSC), *The TaSC Agribusiness Workforce Insights, 2020*

Chief Scientist for South Australia, *South Australia – The State of Science: The EXCITE Strategic Plan 2020*

## PILLAR 5. BUILDING INDUSTRY CAPACITY



PRIORITIES	TARGETS	PROJECT AREAS
Support an education pathway to engage students at school from Reception to Year 12.	<p><b>1.1</b> Investigate the feasibility of integrating agriculture into the SA secondary school curriculum.</p> <p><b>1.2</b> Engage a lead agricultural teacher for the state.</p> <p><b>1.3</b> Appoint an agricultural support teacher for each region.</p> <p><b>1.4</b> Drive greater engagement with industry, communities and regions through schools.</p>	<ul style="list-style-type: none"> <li>Support teachers to utilise investigative/ motivated learning principles in delivering the food and fibre components of the curriculum.</li> <li>Examine opportunities to engage agricultural education pilot programs such as 'facetime a farmer' in SA primary schools.</li> <li>Ag-based camps and competitions.</li> <li>Integrate agriculture into STEMM to ensure promotion of the industry in initiatives such as Inspiring SA, Science Alive and National Science Week.</li> </ul>
Collaborate with other sectors to promote career options in agriculture, including the grain industry.	<p><b>2.1</b> Enable students to visualise ag-based career options.</p> <p><b>2.2</b> Work with education institutions in SA to promote multi-disciplinary career opportunities in the grain value chain.</p>	<ul style="list-style-type: none"> <li>Develop work experience opportunities for students to engage with commercial/ primary production sector.</li> <li>Develop a program to deliver professional development to career advisers regarding ag-related career options.</li> <li>Engage with industry regarding careers to encourage support and participation.</li> <li>Create student-led demand for suitable and relevant agriculture-related undergraduate options.</li> <li>Examine opportunities for industry and employers to work closely with the Department for Innovation and Skills and the Department for Education to improve and consolidate the information available regarding career pathways in the grain industry, including the articulation from VET to higher education courses.</li> </ul>
Strengthen partnerships with university sectors to develop and expand relevant tertiary ag-related courses in SA.	<p><b>3.1</b> SA universities to offer undergraduate options in agricultural science, agribusiness, agtech and agricultural marketing.</p> <p><b>3.2</b> Business management to be a core component in agricultural degrees offered at the University of Adelaide.</p> <p><b>3.3</b> Provide opportunities for more cost-effective postgraduate agricultural study options.</p> <p><b>3.4</b> Develop a post-graduate ag education centre capitalising on proximity to agricultural areas and fully capitalise on the innovation/ education nexus of the Waite Research Precinct.</p> <p><b>3.5</b> Demonstrate the return on investment achieved from postgraduate study in ag-related subjects.</p>	<ul style="list-style-type: none"> <li>Establish an industry group to communicate with tertiary institutions to ensure courses are relevant to 2030 needs.</li> <li>Undertake a curriculum review of ag-based undergraduate degrees available in SA to determine their usefulness to the commercial sector.</li> <li>Ensure ag-based degrees will meet future Financial Services License compliance obligations and recognition.</li> <li>Develop online 'distance-education' and shorter postgraduate study opportunities, in addition to a full Masters degree.</li> <li>Develop linkages with industry, commercial and philanthropic bodies to provide scholarship opportunities to study agricultural-based courses, particularly in target areas.</li> </ul>

PRIORITIES	TARGETS	PROJECT AREAS
Position the Waite Research Precinct as a research and innovation hub; the key enabler of leading applied agricultural research in Australia.	<p><b>4.1</b> Directly partner with industry to identify and address research priorities regarding grains in SA.</p> <p><b>4.2</b> Develop linkages across industry to increase the adoption of technology.</p> <p><b>4.3</b> Capitalise on strong linkages with the Consortium of Internal Agricultural Research Centres (CGIAR) to promote Adelaide as a key collaborator and potential regional node of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and the International Centre for Agricultural Research in the Dry Areas (ICARDA).</p>	<ul style="list-style-type: none"> <li>• Work with the Waite Research Institute to raise the profile of the capability of Waite-based ag research.</li> <li>• Develop a program to target post-graduate students to focus on emerging and adapting agtech for the grain sector in SA.</li> <li>• Identify commercial enterprises to partner with universities to develop business plans for co-investment opportunities.</li> </ul>
Provide adequate and accessible vocational education and training to meet future workforce planning needs.	<p><b>5.1</b> Develop a skills passport for ag-related activities proving specific skillset competencies.</p> <p><b>5.2</b> Industry and education sector to partner to identify key VET priorities.</p> <p><b>5.3</b> Build individual competency on skills that can be transferred within and outside of the industry.</p>	<ul style="list-style-type: none"> <li>• Understand what the labour force will look like in regional areas in 2030 and identify which skills are likely to be required.</li> <li>• Conduct a comprehensive audit of currently available resources for VET in agriculture.</li> <li>• Develop a pilot funding model to enable a passport based on individual completion of skillset competency.</li> </ul>
Retain talent in the industry by investing in skills development and competency of primary producers in managing grain businesses.	<p><b>6.1</b> Support grain producers to pursue professional development opportunities.</p> <p><b>6.2</b> Improve business acumen of primary producers, including financial literacy, leadership and corporate governance.</p> <p><b>6.3</b> Targeted delivery of key skills to primary producers.</p> <p><b>6.4</b> Expand leadership collaboration and mentorship across the industry.</p> <p><b>6.5</b> Encourage diversity in industry leadership by providing opportunities for women and young people.</p>	<ul style="list-style-type: none"> <li>• Develop a new funding scheme for primary producers to access short courses for professional development.</li> <li>• Identify professional management skills required by farm managers and develop strategies to deliver.</li> <li>• Partner with industry groups such as Grain Trade Australia to create short-term training and development opportunities.</li> <li>• Attract investment in leadership and personal development courses to support grain producers.</li> <li>• Develop a coordinated approach to deliberately connect emerging talent with established leaders for mentorship.</li> <li>• Develop a network of skilled agribusiness trainers by recruiting, upskilling and retaining trainers with strong industry knowledge.</li> </ul>

PRIORITIES	TARGETS	PROJECT AREAS
Grain production sector to have increased business resilience and sustainability.	<p><b>7.1</b> Grain producers to incorporate resilience strategies as a key component of farm business management decisions.</p> <p><b>7.2</b> Every South Australian grain producer to have access to training which addresses common skill deficits.</p> <p><b>7.3</b> Every South Australian grain producer to have access to tools which enable the strategic review of their farm businesses.</p> <p><b>7.4</b> Support grain producers in their adoption of increasingly sustainable agronomic and business practices.</p>	<ul style="list-style-type: none"> <li>• Identify essential skills matrix for growers to thrive to 2030 and beyond.</li> <li>• Develop and support training and assistance programs which address key business skills areas for growers.</li> <li>• Support the adoption of a sustainability framework and policies throughout the grain supply chain.</li> </ul>
Sustain industry capacity by supporting the health and wellbeing of regional communities.	<p><b>8.1</b> South Australian grain producers to have access to a range of programs to support their ongoing health and wellbeing.</p> <p><b>8.2</b> Develop wellness programs in response to drought or other hardships in line with national policies.</p>	<ul style="list-style-type: none"> <li>• Support developing and continuing programs, initiatives and providers that work to foster rural health and wellbeing.</li> <li>• Develop programs to support improved workplace culture and awareness of on-farm work health and safety.</li> </ul>





PILLAR 6:

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# INFRASTRUCTURE

“Competing with overseas markets and reducing our cost of production means having efficient pathways to market and having the digital infrastructure to enable timely communication and decision-making.”

PILLAR CHAMPION WADE DABINETT

# 2030 VISION

The South Australian grain industry will have enhanced productivity and competitiveness as a result of public and private investment in sustainable infrastructure.



Attract \$500m of public/private investment in grain-related infrastructure in SA



Infrastructure is developed to enhance competitiveness by increasing our industry's capacity, supply-chain efficiency, connectivity and access to diverse markets



Build on SA's current digital capability to achieve widespread connectivity



The grain industry has a planned approach to its long-term infrastructure requirements

There needs to be a corresponding investment in infrastructure if the South Australian grain industry is to meet the growth targets outlined in this Blueprint.

During the past decade there has been investment in South Australian grain infrastructure, but it has come in smaller parcels — on-farm storage, additional elevation capacity, larger truck configurations and innovative bulk loading facilities. There have also been numerous standalone investments, ranging from processing outlets through to new innovative port facilities. The state's major bulk-handler Viterro has also invested significantly at many of its sites, increasing both inward elevation capacity and storage capacity. However, more large-scale grain infrastructure investment is required.

Priorities for this pillar include attracting at least \$500 million of public/private investment in grain-related infrastructure in SA in the next decade. This will involve working closely with industry and Infrastructure SA to develop a compelling business case that outlines the profit opportunity that exists from investing in grain infrastructure in SA.

Ongoing investment is needed to keep up with the industry's growth ambitions and to continue to put downward pressure on production costs so growers remain competitive nationally and internationally.

Finally, the counter-cyclical nature of grain production in Australia provides a natural advantage over Northern Hemisphere production. Therefore, the final priority in this pillar is to determine whether SA should have the practical capacity to ship its entire average export by the end of June following harvest to maintain this natural marketing advantage over grain originating in the Northern Hemisphere.

## ALIGNED PLANS

The National Farmers' Federation (NFF), 2030 Roadmap

Primary Industries and Regions SA (PIRSA), SA Government and Industry, Growth State - Food, Wine and Agribusiness Draft Discussion Paper 2019

Infrastructure Australia, Infrastructure Priority List: Australian Infrastructure Plan 2018

Australian Government Department of Infrastructure, Regional Development and Cities Trends: Transport and Australia's Development to 2040 and Beyond and Delivering on Freight (2016)

Infrastructure South Australia, 20-year State Infrastructure Strategy (2020)

## PILLAR 6. INFRASTRUCTURE



PRIORITIES	TARGETS	PROJECT AREAS
Reduce transport costs and improve sustainability by increasing heavy vehicle road access across the state and developing strategic freight corridors.	<p><b>1.1</b> Examine opportunities to reduce costs and increase the stability of input supplies to primary producers, such as fertiliser, chemicals and equipment.</p> <p><b>1.2</b> Establish minimum access levels to sites/facilities</p>	<ul style="list-style-type: none"> <li>Examine all sites or facilities that consume, access or store over 100,000 tonnes of grain and ensure last mile access matches the classification of the connecting highway.</li> <li>Examine the optimal network for grain haulage and determine desired limits.</li> <li>All major roads used to haul grain to be a minimum of B-Double (PBS2A) with an aim to become minimum Road Train (PBS2B).</li> <li>Identify opportunities to increase the A-triple (PBS4A) network for grain transport.</li> <li>Establish an industry forum to identify and action major freight routes that do not currently meet those targets.</li> <li>Support the ability to increase rail efficiency including increased axle weights and additional sidings/passing lanes.</li> </ul>
Support new investment in SA's grain industry.	<p><b>2.1</b> Investment is to specifically and proactively target infrastructure in line with the Blueprint.</p> <p><b>2.2</b> Maintain/improve access to existing east coast grain markets through rail development, loading access and linkages with inland rail.</p> <p><b>2.3</b> Support investment in the research infrastructure required to establish SA as a hub for agtech, agricultural research and innovation.</p>	<ul style="list-style-type: none"> <li>Industry to work collaboratively with PIRSA, Infrastructure SA and Department for Trade and Investment to provide a detailed analysis of the economic benefit grain brings to SA.</li> <li>Support and recruit one agriculture-focused staff member in the Department for Trade and Investment.</li> <li>Encourage new entrants in established grain markets.</li> <li>Identify and address issues associated with the cost, efficiency and regulatory burden associated with executing coastal vessels.</li> <li>Conduct a review of SA's current research infrastructure and capabilities.</li> </ul>
Establish new processing facilities for grains and pulses in SA.	<p><b>3.1</b> Establish processing facilities for pulses, oats, oilseeds, wheat and barley.</p> <p><b>3.2</b> Attract new capabilities in post-farm gate processing to significantly value add to grain production.</p>	<ul style="list-style-type: none"> <li>Develop a target list of companies to attract or further invest in infrastructure in SA.</li> <li>Commit to expand malted barley production for domestic or export markets.</li> </ul>
Increase container export capacity and consolidate export pathways through infrastructure development to enable containerised exports to triple to 15% of total export.	<p><b>4.1</b> Establish sustainable and efficient container export pathways.</p> <p><b>4.2</b> Increase container export capacity in SA through the development of required infrastructure.</p>	<ul style="list-style-type: none"> <li>Investigate the feasibility of Whyalla as an export load point, tranship point or export container port for grain.</li> <li>Examine the opportunity for an intermodal terminal to complement inland rail and east-west rail traffic.</li> <li>Address road versus rail pricing disparity for containers at port.</li> </ul>

PRIORITIES	TARGETS	PROJECT AREAS
Build digital infrastructure to allow a 5% decrease in production costs.	<p><b>5.1</b> Each farm should have the connective bandwidth to access, download and upload data to improve decision making.</p> <p><b>5.2</b> Accelerate the application of advancements in data science and connectivity.</p> <p><b>5.3</b> Telecommunications and digital infrastructure must allow for efficient data collection to improve decision making.</p>	<ul style="list-style-type: none"> <li>• Ensure connectivity across regional SA to allow the effective use of technology in paddocks.</li> <li>• Establish nationally consistent integration of data systems/identification to allow for streamlined data management.</li> <li>• Identify a nationally consistent process to allow ease of safe movement of automated vehicles on public roads.</li> </ul>
Improve safety and decision making by providing weather information at a farm management level.	<p><b>6.1</b> SA to have the most comprehensive network of Tier 2 weather stations in Australia.</p> <p><b>6.2</b> Additional Tier 1 weather station situated on the lower Eyre Peninsula.</p>	<ul style="list-style-type: none"> <li>• Partner with the Bureau of Meteorology to determine the best locations for weather stations and find a funding solution to expand and maintain the network in ongoing and sustainable way.</li> <li>• Establish opportunities for primary producers to co-invest in the establishment of weather stations that meet their requirements, including real-time information.</li> </ul>
Increase SA's effective and efficient vessel loading capability to remain internationally competitive in bulk exports.	<p><b>7.1</b> SA to have the practical capacity to ship the entire average export by the end of June following harvest (approximately 850,000 tonnes of practical capacity per calendar month).</p>	<ul style="list-style-type: none"> <li>• Determine the practical capacity required for exports in each region of SA in 2030.</li> <li>• Determine whether there is value achieved in exporting grain in the counter-cyclical window.</li> <li>• Establish the required export capacity for each region to allow the full export program to occur in the December-June period.</li> <li>• Establish the current practical capacity for export volume and match it against a study of the requirements.</li> </ul>
Increase efficiency through adoption of technology	<p><b>8.1</b> SA to have greater automation of vehicles for on-farm, logistics and handling.</p> <p><b>8.2</b> Identify emerging technologies to adopt/ use throughout the grain value chain.</p>	<ul style="list-style-type: none"> <li>• Ensure policy settings encourage the adoption and uptake of mechanical/ vehicle automation.</li> <li>• Proactively identify opportunities from Future Farming.</li> </ul>

A photograph of two men, Jonathan Wilson and Dr Don Plowman, sitting outdoors. Jonathan Wilson is on the left, wearing a blue patterned shirt. Dr Don Plowman is on the right, wearing a blue and white patterned shirt. They are both smiling. The background shows a clear blue sky and some greenery.

# ABOUT THIS BLUEPRINT

Blueprint Manager Jonathan Wilson with Blueprint Steering Committee Chair Dr Don Plowman

The South Australian Grain Industry Blueprint has set a course of action for the industry to capture greater value and capitalise on the opportunities which present themselves between now and 2030.

Grain Producers SA has led the development of the Blueprint, with Jonathan Wilson taking the reins as Blueprint manager. His work has been guided by a Steering Committee chaired by Dr Don Plowman and made up of representatives from across the industry.

An initial stakeholder workshop was held in June 2019 which attracted more than 70 people from across the industry and helped kickstart the Blueprint's development.

Each pillar had its own working group which has brought together people with a significant stake and passion from across the entire grain value chain to help flesh out the vision and opportunities for that particular aspect of the industry.

The Blueprint is a result of extensive research and consultation with representation from the whole value chain — growers, logistics providers, bulk handlers, containerised exporters, bulk exporters, breeders, researchers, marketers, processors and more. The level of engagement throughout the Blueprint development process was fantastic and GPSA greatly appreciates the support and involvement from all participants.

The draft Blueprint was launched for public consultation at Bulla Burra, Loxton, on 12 June 2020. Following this was a month-long consultation process which included online feedback, a roadshow and private meetings. Feedback during the consultation phase of the Blueprint was very positive, which reflected the sense of excitement regarding the opportunities highlighted in the document.

The final version of the Blueprint was launched at the GPSA Annual General Meeting, held on Monday 24 August 2020 at the Freeling Agricultural and Recreational Multi-use Centre.

The SA Grain Industry Blueprint could not have been developed without the contributions of the Blueprint partners, steering committee, industry working groups, industry stakeholders and roadshow attendees. We thank you all for your time and valuable contributions toward ensuring our industry reaches its fullest potential by 2030 and beyond.

**Jonathan Wilson**

Blueprint Manager

**Dr Don Plowman**

Blueprint Steering Committee Chair

# THE DEVELOPMENT OF THE BLUEPRINT IN NUMBERS

800<sup>+</sup>

Blueprint website users

50<sup>+</sup>

individual stakeholder meetings

14

grower meetings across the State

6

industry working groups

250<sup>+</sup>



primary producers attended grower meetings

40<sup>+</sup>



industry working group attendees

FOUR

Steering Committee Meetings



29,418

REACHED ON FACEBOOK

70<sup>+</sup>



attendees at Blueprint scoping workshop from across the value chain

17



steering committee members



14,905

TWITTER IMPRESSIONS

SEVEN



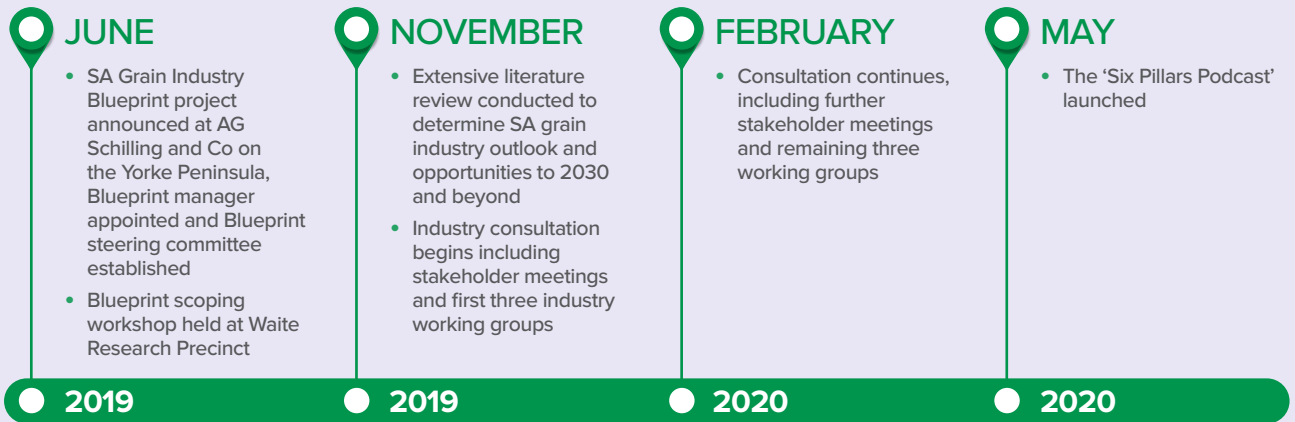
PODCAST EPISODES



ONE

SA GRAIN INDUSTRY BLUEPRINT!

# TIMELINE



## Blueprint Meetings

1. Waite Research Precinct 26 June 2019
2. Hart 16 July 2019
3. Cummins 30 July 2019
4. Minnipa 31 July 2019
5. Cleve 1 Aug 2019
6. Roseworthy 8 Aug 2019
7. Loxton 9 Aug 2019
8. Coomandook 9 Nov 2019
9. Arthurton 24 June 2020
10. Laura 29 June 2020
11. Murray Bridge 2 July 2020
12. Wudinna 7 July 2020
13. Ceduna 8 July 2020
14. Kimba 9 July 2020





# THE ROAD AHEAD

## Measuring and reporting progress

Annual updates on progress against targets will be provided through annual reports to stakeholders and GPSA forums.

You can keep up to date with Blueprint implementation progress and any other developments via the Blueprint website: [blueprint.grainproducerssa.com.au](https://blueprint.grainproducerssa.com.au)

# ACKNOWLEDGMENTS

## Blueprint Partners



Grain Producers SA is the peak industry body representing 4,500 grain farms in South Australia. GPSA develops and implements policies and projects that promote the economic and environmental sustainability of South Australian grain growing businesses.

Grain Producers SA led and coordinated the development of the SA Grain Industry Blueprint.



**Government of South Australia**  
Primary Industries and Regions SA

Primary Industries and Regions SA (PIRSA) is a key economic development agency in the Government of South Australia, with responsibility for the prosperity of the state's primary industries and regions.

The development of the SA Grain Industry Blueprint is proudly supported by the Government of South Australia.

## Blueprint Steering Committee

### **Dr Don Plowman**

Chairman

### **Wade Dabinett**

Grain Producers SA/grain grower

### **Jo Collins**

Primary Industries and Regions SA

### **Caroline Rhodes**

Grain Producers SA

### **Dave Lewis**

Primary Industries and Regions SA

### **Professor Wendy Umberger**

University of Adelaide

### **Richard Simonaitis**

Australian Export Grains Innovation Centre

### **Craig Ruchs**

Grains Research and Development Corporation

### **Stephen Ball**

Grain Producers Australia/grain grower

### **Professor Matthew Gilliam**

Waite Research Institute, University of Adelaide

### **Dr Haydn Kuchel**

Australian Grain Technologies

### **Professor Diane Mather**

University of Adelaide

### **David McKeon**

Grain Growers Ltd

### **Catherine Sayer**

Food SA

### **Dr Andrew Barr**

South Australian Grain Industry Trust/grain grower

### **John Gladigau**

Grain grower

### **Alistair Lawson**

AgCommunicators

## Secretariat

### **Jonathan Wilson**

Blueprint Manager

### **Amanda Bridge**

Executive Support, Eyre Consulting

### **Charlotte Wundersitz**

Grain Producers SA

## Pillar Champions

### **Professor Wendy Umberger**

Market Opportunities

### **Mark Schilling**

Capturing Value

### **Stephen Ball**

Biosecurity & Market Access

### **Peter Cousins & Tanja Morgan**

Innovation

### **Adrian McCabe**

Building Industry Capacity

### **Wade Dabinett**

Infrastructure

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### **Blueprint Communication**

- Alistair Lawson, AgCommunicators
- Paul Tierney, Porter Thomas

### **Design and Brand Development**

- Jane McLean, Jane McLean Design
- Dylan Read, Odyssey Design and Marketing

### **Images Courtesy of**

- Barb Woolford (Kimba)
- PIRSA
- South Australian Grain Industry Trust
- AgCommunicators

# KEY SUPPORTERS

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# OUR OPPORTUNITY

The South Australian Grain Industry Blueprint will be a game-changer for our industry.

In leading this project, Grain Producers SA has harnessed ideas and expertise from across the entire value chain, including growers, traders, exporters, domestic processors and other value adders, researchers, transporters and bulk handlers.

This report comes at a critical time in our state's history as we respond to the COVID-19 pandemic. There is heightened awareness about the essential role of the agricultural sector in ensuring food security and the shared responsibility of managing biosecurity threats. The pandemic has also demonstrated how community stability and confidence is shaken when a country's food supply chain is threatened. The grain industry is a critical component of this supply chain.

Through extensive research and consultation, the Blueprint has established a bold ambition to create a \$6 billion industry by 2030. This reflects the importance of agriculture to the Growth State plan.

To achieve these goals, we will need to attract greater investment across the value chain through public-private partnerships, boost agricultural research and development and provide jobs and skills training to support economic recovery. We want to instil investor confidence and attract new funding to our sector.

Creating a shared vision has been a key priority since the project was launched in June 2019.

Capturing greater value from export markets, building demand for grain within SA and reinforcing the state's reputation as a producer of quality grain in a changing climate, are challenges we must face together.

Our industry needs the best and brightest minds to bring new ideas and innovation on-farm and across the supply chain. That means attracting and retaining the capability in world-leading agricultural education and research programs here in South Australia.

It is our hope that the Blueprint's aspirations will foster a renewed culture of innovation.

From the outset we wanted to push boundaries, challenge conventional thinking and harness new ideas about how our industry can pursue sustainable growth.

The development process of the Blueprint was key in generating innovative ideas and building collective goodwill towards the industry's future.

Importantly, the Blueprint also sets a course of action to ensure the South Australian grain industry capitalises on its opportunities over the next decade. GPSA will continue to advocate to move this industry agenda forward, but we need your help.

We require a united and cohesive industry approach to move and succeed in achieving not only the Blueprint's goals but the future of our industry more broadly, as we partner with government in the years ahead.

It is an exciting time to be part of the South Australian grain industry and I am proud of what this project has achieved in bringing the value chain together.

The Blueprint shines a light on the incredible opportunity for our industry. However, to fulfil this potential we must continue to work together. So, I ask you to remain engaged with this strategy and partner with GPSA in furthering our vision for our sector to become an economic powerhouse.



**Caroline Rhodes**  
CEO  
Grain Producers SA



## SA GRAIN INDUSTRY **BLUEPRINT**

[blueprint.grainproducerssa.com.au](http://blueprint.grainproducerssa.com.au)

Keep up-to-date with Blueprint developments at [blueprint.grainproducerssa.com.au](http://blueprint.grainproducerssa.com.au)



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