

The 2022 State of Agribusiness in Australia

A REPORT ON THE OPPORTUNITIES AND CHALLENGES FOR THE AGRIBUSINESS SECTOR



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EXECUTIVE SUMMARY

Australia is a major agricultural producer and exporter, making agribusiness a critical sector for the country's economy and contributor to continued economic growth. In the main Australia's agricultural producers are currently experiencing unprecedented favourable seasonal conditions and record high commodity prices leading to record-breaking results.

Overview

The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) forecast the gross value of agricultural production in 2021–22 to be a record \$81b, up by \$12b on the previous year, while the value of agricultural exports was forecast to be a record \$64b.¹

This unprecedented result stems from the combination of record high crop production, and the highest prices for Australian agricultural produce in 32 years.

Australia has also harvested what will be the most valuable winter crop ever, even after accounting for the widespread downgrades in grain quality, experienced across regions of New South Wales following an exceptionally wet harvest.

The total value of agriculture, fisheries and forestry production will also reach a record of almost \$87b in 2021–22.

Presenting the forecasts at the ABARES conference in 2022, Executive Director Jared Greenville said it had been a remarkable year for Australian agriculture.

"Notwithstanding mouse plagues, bush fires and floods in parts of the country, the sector has really gone from strength to strength after three consecutive years of drought," he said.

However with a return to more normal seasonal conditions, ABARES forecasts the gross value of agricultural production to pull back to \$75 to \$78b by 2026–27, which casts some doubt on the \$100b target by 2030 set by the National Farmers Federation.

Among the commodities, beef and veal are forecast to be the highest earners in 2021–22 at \$15.7b, up 8%, followed by wheat \$12.3b, horticulture \$12b, up 4%, canola \$5.8b, sheepmeat and dairy both \$5b, cotton \$4.3b, up 157%, barley \$3.8b, up 23% and wool \$3.2b, up 20%.

Australia's agriculture accounts for 11% of goods and services exports, as well as 55% of the country's land use and 25% of water extractions.² In addition, there are 313,700 people currently employed across agriculture, forestry, and fishing, with the sector experiencing 2.9% growth in the past five years.³

However, despite these conditions, the Australian agricultural sector faces significant challenges that may impede its growth trajectory, including financial and technological barriers. And, against the backdrop of the COVID-19 pandemic, the industry continues to face labour

shortages, placing a strain on production. Coupled with the challenges of the global supply chain and political impacts on export markets, agribusiness in Australia is facing taxing times.

Added to that has been steep rises in input costs like fertiliser, up 130% on 2021 prices to reach record levels and fuel, driven higher on the back of the Russian invasion of Ukraine, having wide-reaching impacts including significant disruptions to global grain supplies, according to Rural Bank's analysis. Russia is the world's biggest fertiliser exporter.

Russia was already restricting exports of wheat before the war, which initially contributed to global price rises. But with it and Ukraine contributing 30% to the world market and 20% of barley production, prices for both are forecast to remain high.

While global wheat prices have risen by 50% since the start of February 2022, although less so domestically, the added costs of fertiliser, fuel, chemicals and labour have cancelled out any benefit to farmers, according to Thomas Elder Markets analyst, Andrew Whitelaw.

Recent 2022 floods in south east Queensland and northern NSW has also hit many fresh fruit and vegetable growers hard with losses estimated to run into millions of dollars. The flooding has also caused devastating livestock losses.

Despite these events, Australian agriculture as a whole remains in a great position, Rural Bank says. As well, a wet outlook for autumn is supporting a strong production outlook.

The 2022 State of Agribusiness in Australia report provides an overview of the challenges the industry currently faces, along with recommendations and insights from industry leaders that will let agricultural players harness more opportunities and strengthen their position in the market. As outlined below, there are several areas that will be discussed in this report that will need to be addressed by those operating within the agricultural sector in 2022 and beyond.

¹ www.awe.gov.au/abares/research-topics/agricultural-outlook/agriculture-overview

² www.awe.gov.au/abares/products/insights/snapshot-of-australian-agriculture-2021

³ lmip.gov.au/default.aspx?LMIP/GainInsights/IndustryInformation/AgricultureForestryandFishing

Changing export markets and financial impacts

Australian producers export about 72% of the total value of agriculture, forestry, and fisheries production.⁴ While just under 40% of production is exported to markets such as New Zealand and the United States, 62% is exported to Australia's top eight largest markets in Asia: China; Japan; Singapore; Indonesia; Vietnam; Republic of Korea; India; and Hong Kong.⁵ However, the changing political landscape between Australia and its trade partners continues to create challenges for agricultural producers. China has placed tariffs on Australian exports of barley and wine, as well as limitations imposed on exports of beef and grapes, among others.⁶ As a result, producers are under increased pressure to source new markets to trade with, a challenge exacerbated by the limited opportunities available to network with international trade partners resulting from COVID-19-related travel restrictions.

Access to labour

Like the changing export market, access to labour is a significant challenge facing agribusiness in Australia, particularly as a result of COVID-19. Several sectors within the Australian agricultural industry rely on labour sourced under migrant visa arrangements, such as vegetable, irrigated fruit, nut, and cotton production.⁷ As the pandemic settles into its third year, ongoing travel restrictions may continue to impact the industry's access to labour. The needs of the agricultural sector also continue to evolve, as producers and growers adapt their farming practices, including increased investment in new technologies. As a result, new skills are required across the industry, including support and maintenance for new vehicles and technologies, such as electronic equipment and machinery that can be operated remotely.

Supply chains

Global supply chains have been tested by a perfect storm of tight shipping schedules, COVID-19 restrictions and shutdowns, and domestically by industrial disputes on our wharves. More recently the outbreak of war in Ukraine has the potential to create further uncertainty with supply chains. The "just in time" inventory management system long advocated by accountants is no longer appropriate and agribusiness needs to factor in the costs of holding higher levels of stock when making pricing decisions.

Increased investment in technology

As farming practices and needs advance, producers and growers across agriculture, forestry, and fishery continue to invest in new technologies. And, as technology advances in its sophistication, so too will its use across the industry. While many farmers and producers are already investing in sophisticated machinery for the likes of sowing, harvesting, and irrigation, this will only grow over time.

The use of data will also become more valuable. For example, supporting technologies, such as camera technology on sprayers, will help to provide not only additional security for properties and their machinery, but can also be leveraged to manage more selective spraying over blanket spraying methods.

Continued innovation and development

Australia boasts some of the best quality food and agriculture research and development in the world, with many of Australia's universities, research institutions, and businesses

developing cutting-edge technologies with potential for strong commercialisation. In addition, Australia is an ideal testing ground as a result of its diversity of soils, climates, and production systems.⁸

As farming practices evolve across Australia, investment in innovation and development must increase accordingly. This includes the further development of agricultural technology (agtech) and its use across different agricultural sectors.

Risk management and security

With growing investment in new technologies and research and development, the agricultural sector also faces increasing challenges in terms of risk management and security. This includes technology and cyber security, as well as succession planning and future proofing farming. As more connected, smart technologies and vehicles are used across properties, agricultural producers are at increased risk of cyberthreats and the potential for their production lines to go offline. As a result, more robust cyber security measures need to be considered alongside technologies as they're deployed on-farm.

In addition, many farmers and agricultural producers need to consider how to secure the future of their business and properties. For many, succession planning is a significant challenge, especially in light of changing export and investment markets, wider political landscape, and, closer to home, the changing perspectives of younger generations in relation to farming practices.

Environmental, social, and governance criteria

Underpinning each of these areas of concern are the changing elements within environmental, social, and governance (ESG) sectors across agribusiness and their impacts on farming and growing practices and processes across the board. The increased focus on climate change and the Australian government's commitment to achieving net zero by 2050 creates challenges for farmers and agribusiness organisations to update their practices to make production more sustainable. In addition, there is increased pressure on producers to meet compliance measures across a multitude of areas within their businesses including security, employment, production, distribution, and more.

While each of these areas is a critical consideration for the future of agribusiness in Australia, three of the largest overarching areas of concern are the financial impacts, including changing export and labour markets, and risk management and security. The *2022 State of Agribusiness in Australia* report discusses current challenges within these areas of consideration, what steps agricultural producers and growers can take to mitigate risks, and how this will impact the future of agribusiness in Australia. It is aimed at agribusiness decision-makers to help guide strategic planning and investment decisions in the near-to-medium term.

⁴ www.awe.gov.au/abares/products/insights/snapshot-of-australian-agriculture-2021#around-70-of-agricultural-output-is-exported

⁵ www.awe.gov.au/abares/products/insights/snapshot-of-australian-agriculture-2021#around-70-of-agricultural-output-is-exported

⁶ www.abc.net.au/news/2021-10-27/wto-to-examine-china-tariffs-on-australian-wine/100571326

⁷ daff.ent.sirsidynix.net.au/client/en_AU/search/asset/1030221/0

⁸ www.austrade.gov.au/agriculture40/why-australia



Anticipating
challenges,
identifying
opportunities



On current labour shortages and border closures over the past two years RSM's national head of agribusiness, Ross Paterson points to the innovative recruiting campaign Western Australian grain co-operative CBH Group employed during the pandemic to successfully source about 2000 seasonal workers living in Perth to help through harvest through a social media campaign.

Mr Paterson said, "The labour shortage also highlights how vital it is for employers to acknowledge the importance of existing staff and to be proactive with staff retention strategies. Agribusiness should consider investing in staff engagement surveys to measure job satisfaction levels and really drill down into what keeps people in jobs."

On the push for zero carbon emissions by 2050, Mr Paterson acknowledges that farmers are keen to be part of the solution with the proviso that they don't necessarily see themselves as being the solution to other industries that are looking for agricultural land to be used to offset carbon emissions.

Matthew Beevers, director of audit and assurance at RSM said, "Whilst labour shortages, access to expansionary capital and succession planning represent challenges to producers, emerging technologies to improve productivity, crop yield and demonstrate product provenance represent significant opportunities for the sector."

Innovation in up-stream processing and product development will contribute to enhanced value-add opportunities across the supply chain and enable further expansion into non-traditional markets for Australia's agribusinesses.

Mr Beevers said "Innovation and adoption of emerging technologies will be central to the continuing growth and competitiveness of the Australian agribusiness sector."



SECTION 1: Financial Impacts

COVID-19 has arguably had an impact on every person, business, and industry worldwide, and has created many challenges as a result. While the Australian agricultural industry is no different, the impacts the pandemic has had on the sector are far-reaching, and the full extent of its effects will take time to come to light. One of the most significant challenges currently facing agribusiness in Australia is the impact that different financial changes and considerations will have on farmers and agricultural producers, both on a national and international level, as a result of the pandemic.

Some of the more immediate challenges include the continued impact the pandemic and its associated restrictions have had on the labour market, as well as wider implications on potential export markets as a direct result of fracturing political relationships. Agricultural producers must remain cognisant of these challenges, and the steps they must take to mitigate risks, and to better prepare their businesses and properties for the future.



EVOLVING AGRICULTURAL LABOUR MARKET

While the pandemic has had direct impacts on the agricultural sector, it's also important to recognise that this has accelerated many of the challenges that the industry was already facing. For example, between 2001 and 2016, there was an overall downward trend nationally in the agricultural labour force.⁹ The impacts of COVID-19 on the labour force, particularly regarding access to skilled and experienced seasonal workers, have exacerbated this trend.

Seasonal workers sourced through migrant visa arrangements and working holiday visa holders, including backpackers, have long played an important role in Australia's agricultural labour force. However, different sectors within the industry have different labour needs. Where previously producers might have benefitted from backpackers that helped to pick and package produce, this isn't the only labour requirement across the industry.

Shane Kay, CEO, Moora Citrus, said, "As producers increasingly adopt new technologies to help streamline farming practices, there's a growing need for skilled workers that are capable of operating machinery. Working holiday visa holders and backpackers that journey out to agricultural regions aren't always the most suitable workers for these positions, as they have a steep learning curve and often require specific technical knowledge. As a result, our reliance on skilled migrant workers is growing. And, as the Australian government has forecast it might take up to seven years for travel to return to pre-pandemic levels, this creates a significant challenge for the industry."

Nick Ruddenklau, Farm Manager, EPASCO Farms, said, "One of the challenges the industry is currently facing is the impact of the pandemic on the flow of labour. Prior to the travel restrictions, we would see many skilled seasonal workers following harvesting and shearing cycles around the world for two to three years at a time. This has caused immense issues for producers that rely on this labour flow."

⁹ www.awe.gov.au/abares/research-topics/labour/australian-agricultural-workforce-trends#agricultural-production-employment-is-trending-downwards

David Williams, principal of Kidder Williams, who has been behind some large agribusiness acquisition deals over the years, lists the shortage of both skilled and unskilled labour, as the single biggest issue facing agriculture in industries as diverse as horticulture, abattoirs, trucking and professional firms.

The second biggest issue is logistics both domestically and internationally, particularly for seafood bound for Asian markets being unable to access flights, which is adding to costs.

Also, Mr Williams lists issues with getting agriculture visas stamped in a timely manner for trained staff ready to enter the country for pre-arranged jobs.

The National Farmers Federation President Fiona Simson has called on the Federal Government to speed up the process for issuing agriculture visas announced in September 2021 and expand the scheme to 10 partner countries.

Farmers have been battling labour shortages due to the lack of seasonal backpackers and Pacific Island workers due to the COVID-19 pandemic and state and international border closures.

Responding to challenges within the labour market is critical for the agricultural industry at large, particularly as it will take time to identify and implement appropriate solutions across the board. However, it's essential that farmers, producers, and industry bodies continue to investigate opportunities to alleviate the pressure that labour shortages place on the market. This is especially true because, while the current labour shortage may be exacerbated by pandemic-related restrictions, it's simply emphasising an ongoing trend that was already impacting the market. And, it's also essential to recognise that, when travel resumes post-pandemic, it may not mean the labour market will follow suit.

It's not only farming properties that have been impacted by staffing shortages. For many supporting businesses and trades, it is difficult to find suitable, qualified workers to fill roles across all parts of the business. This is also true for specialist roles across the industry, as well as technical roles and trades across a variety of support types, including support for production machinery among others.

Matt Roesner, technical director, Roesner, said, "Even when it comes to the supporting labour force, there is a challenge for many farmers, growers, and producers. Most of the agronomists that we work with are in their mid-30s or 40s and older; there aren't many in the younger age bracket. This is going to have a major impact in the years to come.

Agriculture is a specialist field. These days, agricultural producers must have someone available to assess crops and properties and make recommendations on soil type and inputs to produce the best possible output. Without specialists to make informed recommendations, growers will make a blanket input rate which could lead to poorer environmental outcomes.

Wessel Oosthuizen, commercial director, AFGRI Equipment Australia, said, "A significant barrier for the agricultural labour force is the isolated nature of the work. Not only is there a labour shortage, it can also be challenging to entice workers to relocate to isolated areas and operate branches in towns where there might only be 200 people. With border challenges and travel restrictions, this has been further exacerbated.

For farmers that rely on a migrant workforce to support with seeding and harvesting, among other tasks, this has been an especially difficult time without access to suitable workers. Where, previously, skilled migrant workers may have been brought into regional areas to live and work either on a temporary or permanent basis, we haven't brought anyone in over the past four years. In the long term, this may lead to smaller farmers disengaging, which can have significant knock-on effects for the industry.

Investments must be made to help grow the appeal of the agricultural industry for younger generations. This may include dedicated traineeships or incentives to study within the industry. However, while offering study incentives may make the industry more appealing, there is a major barrier that must also be overcome first.

With high commodity prices and good seasonal conditions, a career in farming has become more attractive for those with a family farm to return to or for those favouring a career in corporate agriculture.

As a result agribusinesses like Elders, have found it increasingly difficult to recruit staff. As well as domestically, Elders has relied on recruiting those with an agricultural background from Ireland, New Zealand and South Africa but even that has slowed, according to managing director and chief executive Mark Allison.

As well, "universities have not been generating agricultural science grads to the level required and not even close to level required so it's become tighter and tighter", he said.

According to Charles Sturt University research Professor of Agriculture Jim Pratley, there are at least four professional jobs for each agricultural graduate and most were off-farm with 40% located in the cities.

Mr Allison believes the longer term solution is having more facilities in rural and regional areas to attract more city people.

To counter the staff shortage, Elders has invested more into its graduate and training programs and retaining staff.

Matt Roesner said, "One of the problems the agricultural industry faces is the lack of courses available for students to take; over time, a number of universities have eliminated their agricultural programs. For the institutions that do still

offer relevant courses, the available areas of study often concentrate on the technical side. While this will continue to be critically important, especially as the role of technology increases, the basics of agricultural production can't be forgotten.

"Of the 20 to 30 agronomists we see in the field, there may only be a handful that truly have the skills to push into that next level with the use of supporting technology. The industry and supporting educational institutions need to push this more, and double down in offering relevant courses that support soil science or core science to help provide better agronomic support to producers longer term."

Wessel Oosthuizen said, "Across our business, we started a process four years ago to invest more heavily in traineeships and, after the January 2022 intake, we had more than 100 apprentices and trainees. However, even with this investment, we face challenges in retaining trainees once they're qualified. Both farms and mines face labour shortages, and the agricultural industry can't compete on the same level as the mining industry when it comes to financial compensation."

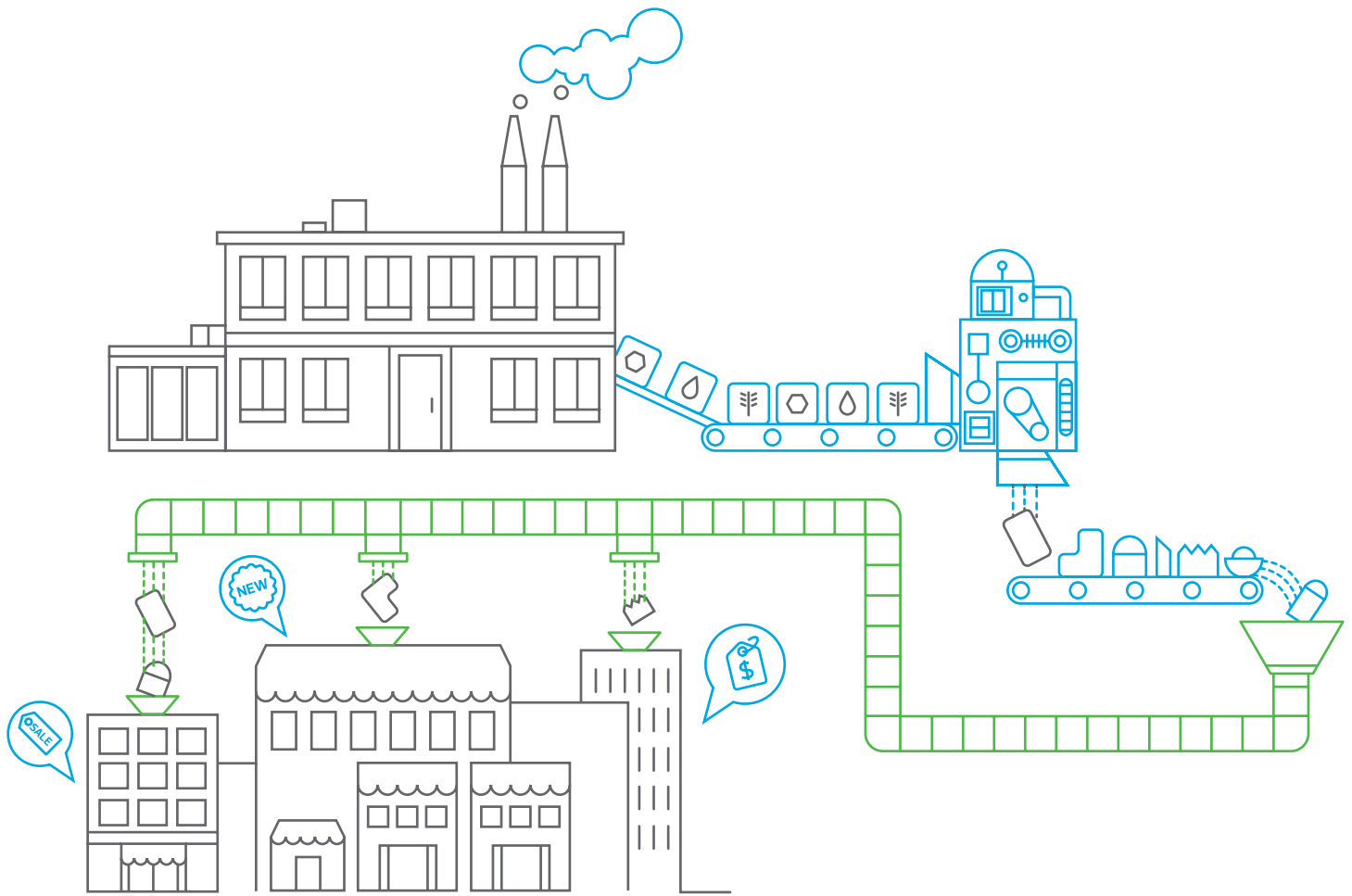
Attracting and retaining suitable workers in the labour market is a major challenge facing the agricultural industry in Australia. With access to skilled migrant workers likely to be a problem for some time, Australian agribusinesses must also consider turning their attention to a domestic labour force, and invest in solutions that will help encourage a new generation of younger Australians to make the move to the country and its supporting industries.

Wessel Oosthuizen said, "For some of the producers we work with, the last season was exceptional for the harvest period. Fortunately, we managed to support our partners with the same number of staff. However, this involved a lot of overtime from dedicated workers to get the job done and it isn't a sustainable working model. It's an issue that needs to be resolved."

Matt Roesner said, "At this stage, there aren't many young Australians that would choose to swap the city life for the farm, especially for those that haven't had any exposure to farming previously. This will continue to be a big risk for the country. The Australian agricultural industry needs to look at different regulations that, post-pandemic, will allow more foreign workers in to help support growers and producers."

Nick Ruddenklau said, "A big challenge facing the agricultural industry at large is how it's perceived in more built-up areas of Australia and around the world; there may be this continued image that the country is a backwater with places falling down. The perception needs to change. Farmers can struggle to tell their story and market themselves, but we need to communicate with the public and engage with our local and wider national community to help shift this narrative. There are regions across the country where workers can enjoy the laid back lifestyle Australia is recognised for, working on properties and living 10 minutes from beaches."





EXTENDED SUPPLY CHAINS

Mr Allison said the biggest issue for Elders had been buying products out of China and the cost of production inputs particularly crop chemicals, animal health products, general merchandise and fertiliser.

"And we've had a seafreight issue with container availability. That was impacted significantly through COVID-19 across all industries and with the Russian-Ukraine war, it's got worse."

Mr Allison said in terms of actual supply of product out of China for crop protection it went from eight-week to 12-week delays. "That has now come back to about 10 weeks but we've been able to get all the product we needed," he said.

Mr Allison said prices had stayed high, especially for fertiliser, with Russia being the world's biggest exporter.

Elders has forecast profits to be a third higher in 2021-22 due largely to increased sales and favourable seasonal conditions.

RSM's Ross Paterson said, "From an accounting and business perspective, we've always run the mantra that it should be just in time but with the supply chain completely turned on its head, we need to make sure our supply chains are protected.

"We also need to anticipate what's going on and actually carry more stock than normal to make sure you're not going to be left out of the game. So that's a big game changer."

Before the pandemic the world shipping system was already finely tuned that as soon as blockages appeared it resulted in lengthy delays resulting in a tripling or quadrupling of costs to some destinations in some cases, according to Western Australian based Shane Kay, Moora Citrus orchard manager.

Disruption to the global supply chain has exacerbated already significant challenges for agribusiness and every business in the sector has been impacted, according to Fraser Cuthbertson, chief financial officer The Pentarch Group.

"We export up to 8000 containers annually and booking space and price is becoming increasingly difficult meaning uneconomic decisions are being made all over the place," he said.

THE CHANGING POLITICAL LANDSCAPE AND IMPACTS ON EXPORT MARKETS

The labour market isn't the only area of the agricultural industry undergoing significant change as a direct result of COVID-19 restrictions and impacts. Another key area of consideration is Australia's changing export markets and, in particular, the challenges placed on exports and trade as a result of the shifting political landscape that Australia has with its trade partners.

Growing levels of protectionism from countries worldwide linked to the pandemic pose significant risks to Australia and its reliance on an open global trading environment. By April 2020, export prohibitions or restrictions had been introduced by 80 countries and customs territories as a result of COVID-19.¹⁰

Fraser Cuthbertson said, "Working across both forestry and agriculture, we've seen different changes across each sector, with neither unaffected by the pandemic and changing political landscape in the past couple of years. In addition to tariffs on certain products, the Chinese market also shut off importation of logs from Australia which has had a disruptive impact on the business and the sector as a whole."

In parallel with unstable political dynamics is the logistical challenge facing exports and the impact that different COVID-19-related restrictions have had on the shipping industry. However, separate to the pandemic has been several underlying issues contributing to the disruption of the global supply chain, including the including the [port strikes in Melbourne and Sydney](#) and the [Suez Canal blockage in 2021](#).

Shane Kay said, "Prior to the events of the past few years, the world shipping system was so finely tuned and tightly wound that, as soon as blockages appeared, it was put completely out of sync and resulted in a lengthy resolution. The immediate consequences have been significant increases in the cost of shipping, with some destinations tripling and quadrupling in price. The cost of sending a shipping container to the United Arab Emirates, for example, now costs more than AU\$6,000 compared to its previous cost of AU\$1,700; this cost comes straight off the bottom line.

"Delays are another major issue facing the industry; journeys that would previously take three weeks between leaving a port and arriving at a destination may now take up to eight weeks. For producers of perishable items, this adds further concerns as it is difficult to guarantee the condition of products on arrival."

Fraser Cuthbertson said, "Disruption to the global supply chain has exacerbated already significant challenges for agribusiness, and every business in the sector has been

impacted; the flow-on effect is critical. What may seem like a small challenge in one part of the industry can have more damaging flow-on effects in another.

We export up to 8,000 containers annually, and booking space and price is becoming increasingly difficult, meaning uneconomical decisions are being made all over the place. Where before COVID-19 we would have spent minimal time on logistics, including supply chain and distribution, we're now spending a significant amount of our time managing this. The complicated nature of these delays also means that processes that would previously have been automated and considered reliable are now being conducted manually. This affects our ability to conduct other areas of business, reducing productivity and efficiency across the business and the wider industry."

As a result of these political and logistical challenges, producers have been forced to consider alternative export markets to recover lost costs. Diversifying the supply chain and export markets helps to mitigate risk and ensure continuity of supply in most situations, as well as helping to boost both market performance and competitiveness.¹¹

Fraser Cuthbertson said, "While the Chinese market changes have presented significant challenges to Australian industry, it has been positive in other respects. One such positive effect is that it has accelerated and facilitated change and diversity in terms of market reliance.

For example, we've found opportunities in markets including Korea, India, and Japan; however, each market has a different way of doing business, and it's critical to understand how that impacts on the business."

Shane Kay said, "Changing export markets have forced us to look closely at our production base to help maximise the best opportunities for exports. For example, domestic buyers like Coles or Woolworths, or more premium Japanese or Chinese markets, may not accept what they consider to be a second-grade fruit, though these might be bought by the United Arab Emirates market. However, it's essential to also consider the shipping cost alongside the value of the export. As shipping prices rise, exporting second-grade produce to smaller markets for a lower cost may result in losses for producers."

A country with a high cost of production, especially in sectors that are as labour-intensive as Australian horticulture, can only survive with the support of premium markets. It's critical for producers to assess the benefits of, at least temporarily, eliminating second-grade produce to minimise challenges and instead focus more attention on those premium markets.

¹⁰ www.awe.gov.au/abares/products/insights/australian-agricultural-trade-and-the-covid-19-pandemic#there-are-risks-associated-with-insular-trade-policy-responses

¹¹ www.awe.gov.au/abares/products/insights/australian-agricultural-trade-and-the-covid-19-pandemic#increasing-diversity-in-value-chains-can-offer-improved-risk-mitigation

It's essential to continue to engage with the Chinese market, though important to also recognise that this could change in an instant for any number of reasons. Shifting focus and growing other premium markets, like Japan, can help to alleviate pressure for some producers.

However, while the opportunities exist, COVID-19-related restrictions are also affecting producers' abilities to harness those opportunities, especially in terms of growing their networks.

Shane Kay said, "Until recently, travel restrictions imposed across the states and the international border have exacerbated issues around access to labour, they've had similar impacts on our ability to network. In the past, we would have a chance to build up contacts and relationships in the industry and outside both domestically and internationally when we travelled. This is no longer the case.

While some of the contacts remained the same, we haven't necessarily been able to make new connections, and we've needed to maximise domestic opportunities as much as possible. At the same time, it's critical to find the best way to get the most out of the export markets we still have. In some cases, this may mean taking a loss here and there to protect the best markets in terms of cost recovery."

Fraser Cuthbertson said, "Australia is lucky on the agricultural side in terms of both weather and the volume of products produced relative to disasters that have occurred in the northern hemisphere. While there are major challenges facing the industry, and each new and existing market has its own idiosyncrasies, there are still opportunities and potential for plenty of growth across the globe. Being a farmer or otherwise involved in the Australian agricultural industry is still a good place to be, despite its challenges."

Investing in new technologies and embracing the shift to e-commerce and the digitisation of trade present great opportunities to savvy producers, especially in terms of networking. As producers move into new and emerging markets, there are opportunities to also adjust the ways in which they engage.

One industry sector benefiting from high global prices but still locked into intense competition for supply is the dairy industry.

Barry Irwin, chairman of Bega Cheese, Australia's third biggest dairy processor, said the industry still had challenges with capacity alignment. "But if you look at the international markets it's very strong in terms of global demand," he said.

"In terms of dairy as a commodity it's much improved this year and the outlook looks strong." In its favour was strong global demand, a competitive Australian dollar and positive seasonal conditions.

"The challenges back down on the farm are increased fuel and fertiliser costs and grain prices that are at historical highs.

"But overall those increases in costs are being reflected in (milk price) increases in the market. The other challenge for the industry is competitive land use.

"So where traditionally dairy farmers were probably the ones likely to buy beef farmers out, that's now the other way around."

Another challenge and the reason some farmers were selling up was because of a labour shortage. And with historic, high land prices, those dairy farmers that don't have family succession plans, see it as a good opportunity to retire in some form or another.

Mr Irwin said, "Processing was still highly competitive because there was little growth in milk supply and most dairy companies had spare capacity, a situation that had existed for some time.

"That competition could lead to some margin challenges in some products but I think the bigger issue was the impact of food inflation, with the high commodity prices being passed on to the domestic market and the impact that was having on the end consumer."

For Bega its suite of strong retail brands acquired since 2017 including Vegemite and Lion Dairy & Drinks provided the company with a diversity of food and drinks products.

Japan remains its largest market followed by other Asian countries including China, Indonesia and Malaysia and the Middle East.





SECTION 2: Risk management and security

On par with the financial challenges the agricultural sector faces, is the impact that its continued evolution has on the need for increased security and risk management. One of the more immediate factors that must be addressed by agribusiness across Australia is the growing role of technology and its use in different capacities across production, harvesting, distribution, and more. In addition, the long-term effects of technology changes and the pandemic need to be considered to assess how they may affect succession planning for local producers and the future of Australian agribusiness more broadly.



CHANGING ROLE OF TECHNOLOGY

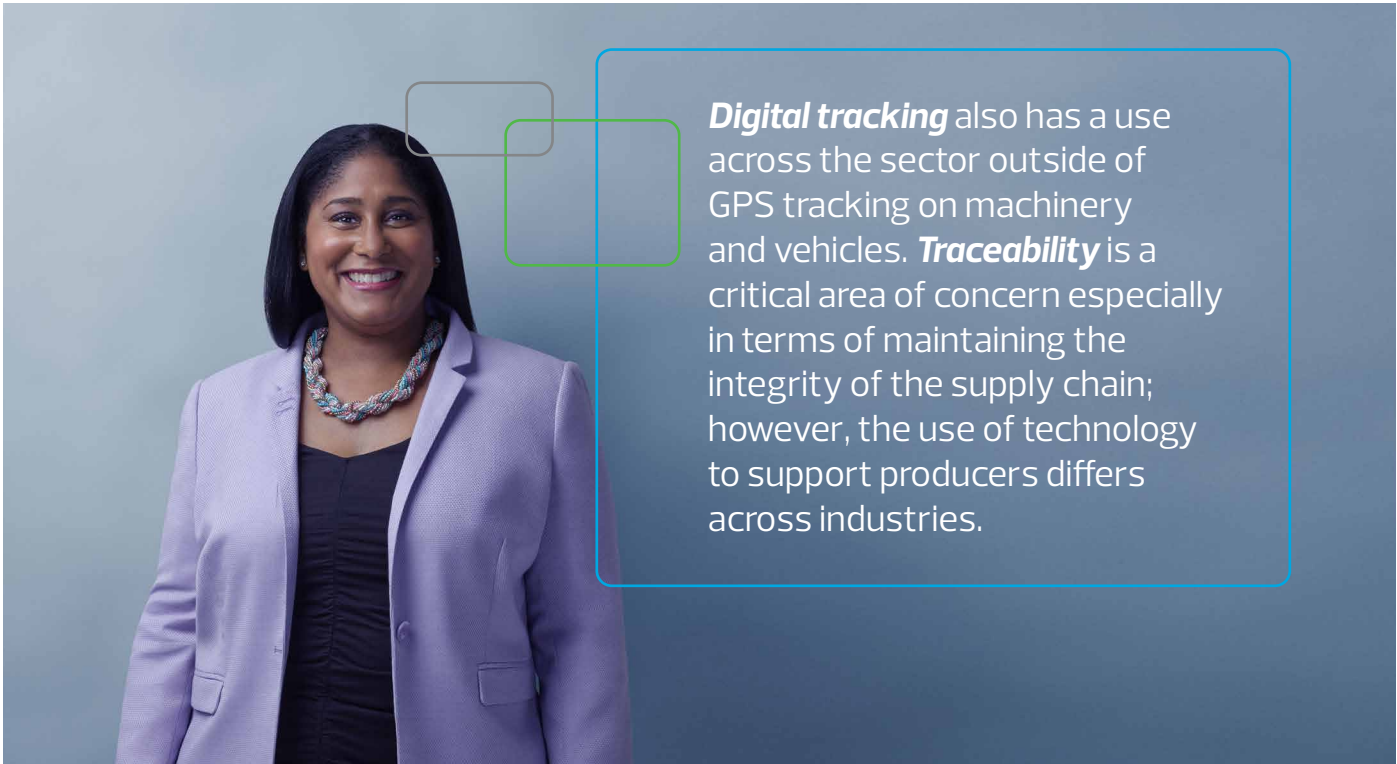
As with many other industries, advances in technologies present significant opportunities for the agricultural sector to streamline processes and achieve greater levels of productivity and efficiency. By harnessing the power of technologies like artificial intelligence (AI), automation, machine learning, data analytics, and more, farmers, producers, and other agricultural businesses can achieve greater yields and outcomes.

Wessel Oosthuizen said, "Technology has become increasingly more important in agribusiness and, as such, it should be seen as standard. Five years ago, some technologies might have been considered an option for new equipment; this should no longer be the case. Using advanced camera technology on sprayers or harvesters, for example, lets farmers and producers spray selectively to achieve optimal yields. Ensuring these technologies are available for all equipment moving forward will be critical in ensuring the future success of Australia's agricultural producers."

Shane Kay said, "GPS tracking is one of the most effective technologies we have in terms of efficiencies across our properties. With 82 blocks and 2870 rows of trees on the farm, it can be easy to go down the wrong row or block, especially at night. However, with GPS tracking, we can easily see on a screen the exact block, row, and tree where tanks have emptied, which lets us direct workers back to the right location to continue with spraying. This helps us more accurately monitor our output and spray rates, which is critical for accurate record-keeping.

"In addition, tracking workers more easily is essential for safety on the property. If a worker were to have a health or safety issue, we can be alerted immediately and identify exactly where we need to go to provide support."

Digital tracking also has a use across the sector outside of GPS tracking on machinery and vehicles. Traceability is a critical area of concern especially in terms of maintaining the integrity of the supply chain; however, the use of technology to support producers differs across industries.



Digital tracking also has a use across the sector outside of GPS tracking on machinery and vehicles. **Traceability** is a critical area of concern especially in terms of maintaining the integrity of the supply chain; however, the use of technology to support producers differs across industries.

Tony Girgis, former CEO, Brownes Dairy and principal, Audemars Consulting said, "Initially, traceability was implemented and grew in importance to help manage the authenticity of Australian produce, and to reduce the possibility of counterfeiting. However, traceability is critical in food production from a health and security point of view, though it's not always easy to implement depending on the product and its associated supply chain. Traceability in the dairy industry, for instance, can be simple if it's one tanker collecting milk from a single farm and delivered to the dairy for processing separately. However, in reality, it could be a tanker collecting milk from multiple farms, and it only takes one bad batch to contaminate the entire tanker. And, the more the product is mixed before it is processed, the harder it becomes to manage traceability, thereby requiring very robust systems and protocols to be in place by the processor.

"There needs to be more innovative systems and technologies in place to better manage traceability across the dairy industry, and also to strengthen its use across other industries. As supermarkets increasingly contract farmers and producers directly, it's likely we'll see more rigour in the industry for high quality traceability protocols. It may also mean some level of government involvement to assist in securing the supply chain, along with incentives to help producers implement new technologies and to invest in training to support this."

The use of data-driven technology is also increasing across the agricultural sector, with many producers harnessing the power of AI and analytics to deep-dive into their crops and adjust on a more granular level to get the most out of production. The use of sensors or similar technologies lets producers drill down into the crop to identify its specific needs for optimal growth. In some cases, using data lets producers change the treatment of specific plants for the best possible harvest results.

Shane Kay said, "There's lots of new technologies becoming available that will help to fine-tune the management of properties and production bases, leading to greater yields and harvests. Particularly in horticulture, there are technologies that can help to provide greater understanding around exactly what crops and individual plants need daily depending on climate, the weather at the time, and the water and nutrition requirements daily and at certain times of day.

"By using technological points and sensors, such as trunk and fruit dendrometers, sap flow measures, moisture probes, pressure sensors, flow meters, and more, we can access significant volumes of data and adjust irrigation measures across the orchard hourly in accordance with weather changes for the best results."

Matthew Rutter, chief executive officer, Geraldton Fishermen's Co-operative, said, "Fishing is highly seasonal. However, with the amount of information now available to producers, data can be used to maximise fishing efforts by constantly reviewing and enhancing data capture and analysis from the start of the supply chain all the way through to its end.

"This includes looking at data and analytics on supply and demand. Using data to determine where produce can be bought or sold for one, two, or 10 times more than other places, can make a significant change to the value of sales. This lets producers make up to 10 or 20 cents per kilogram more by using data to augment their sales, leading to a better return every day of the year."

However, despite the benefits of new technologies, there are a variety of barriers that must first be overcome before adoption accelerates further. One such issue is the lack of suitable workers available to help support and maintain new technologies, a challenge exacerbated by the ongoing pandemic restricting travel for skilled migrant workers.

Matt Roesner said, "One of the biggest challenges facing the Australian agricultural industry that must rapidly be resolved is, arguably, the shift towards smart technologies and the industry's inability to support it.

"Growers and producers must adopt new technologies to remain competitive, including moving towards robotics and more autonomous vehicles. These technologies will continue to be crucial to agribusiness in Australia in the coming years. However, the industry currently lacks the labour and skills required to support and maintain this type of equipment. Innovative agricultural technologies have been around for at least the past 20 years, though adoption has been slow as farmers recognise that there hasn't been anyone around to help support them to adopt new technologies."

Nick Ruddenklau said, "Over the next 10 years, the uptake in technology will have a significant impact on agribusiness and employment in the sector. Cropping systems especially will go through monumental changes, particularly in terms of the type of labour used, and the types of employment options in that space."

However, as discussed earlier in this report, strategic investments by industry and the Australian government in further education will help alleviate some of the pressure on the industry to help producers access more domestic labour. While this may not solve the immediate challenge, it is an important step towards ensuring the future security of the agricultural industry.

Richard Gorman, the managing director of large scale, Queensland family-owned vegetable grower, Kalfresh is an example of a vertically integrated business, which has benefited from diversification and moving to automate more of its operations to save on labour shortages and costs.

Kalfresh grows more than 1600 hectares consisting of a wide range of vegetable crops a year, produced on conventional and organic farms from Bowen in northern Queensland to northern NSW, which it processes, packs and markets in supermarkets and vegetable shops, fast food outlets, cafes, clubs and pubs around Australia and overseas. Many variants of these vegetables are processed into value added products such as organic tomatoes and micro capsicums.

Speaking at the ABARES Outlook conference in 2022, Mr Gorman said the challenges of managing through the COVID-19 pandemic included suffering delays in obtaining seed, packaging supplies and the field additive AdBlue for its trucks.

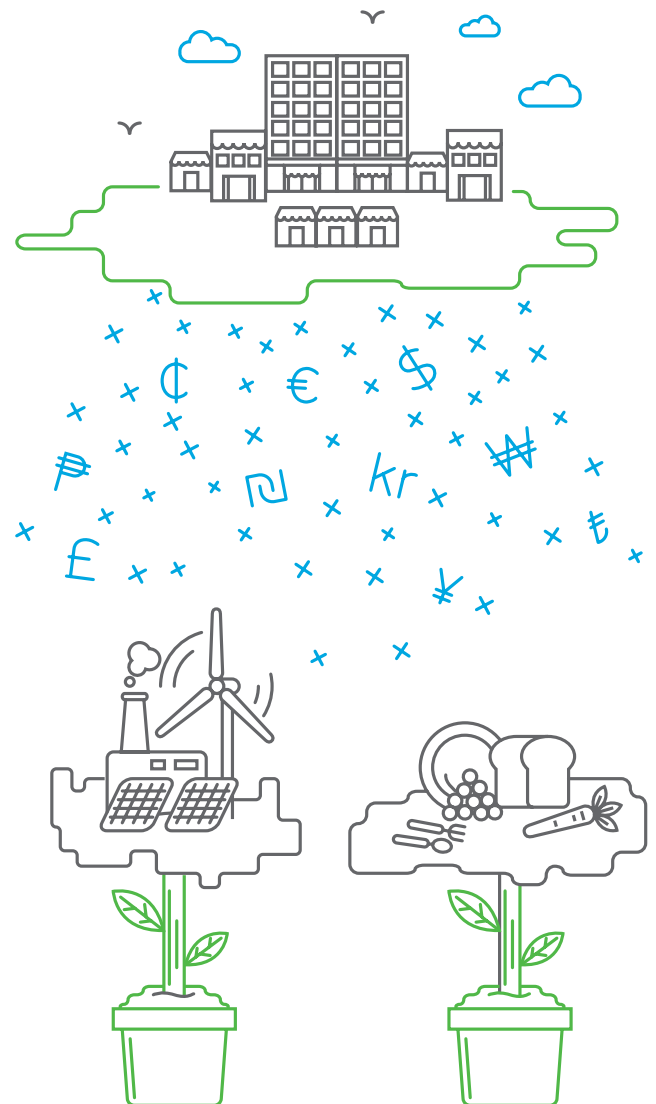
As well, there were big increases in input costs like fertiliser and the cost of and availability of casual labour. Kalfresh's farms largely escaped any major flood damage in March 2022 but some of its suppliers suffered considerable infrastructure losses, Mr Gorman said.

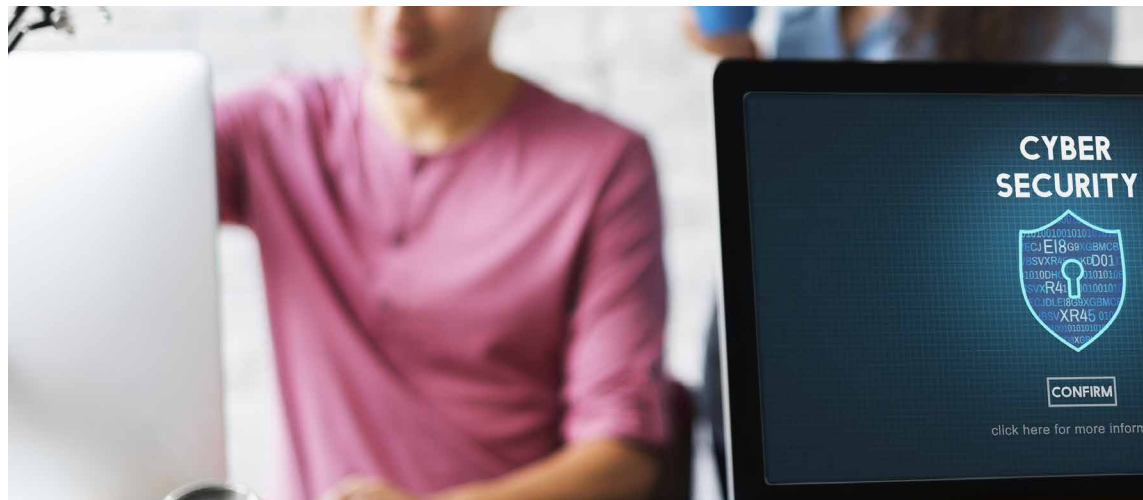
Kalfresh, in partnership with the Queensland Department of Agriculture, is focused on automating more of its operations to reduce its reliance on labour, reducing its use of chemicals and reducing soil compaction by using lighter working equipment and employing zero or low tillage techniques.

Automated pivot irrigation, also used to distribute low cost organic fertiliser, is another strategy that has been deployed to reduce compaction.

From a retail perspective, Kalfresh has added value by offering consumers packaged vegetables that don't conform to normal specifications.

Kalfresh has also partnered with the Queensland government to develop an integrated agricultural industrial precinct on a 40 hectare site at Kalbar, 85km south west of Brisbane as a hub for food manufacturing businesses to process and package vegetables ready for market.





THE RISE OF CYBERSECURITY CONCERNS

As with most industries across Australia and the wider global community, cybersecurity continues to be a high priority and ever-growing concern for all producers and businesses involved in the agricultural sector. As businesses become increasingly connected, more processes are digitised, placing them at risk from cyberthreats. On a foundational level, a lack of robust cybersecurity measures risks disrupting systems like payroll, email and online communications, and even online ordering or invoicing.

In addition, the rise of technology adoption across production also introduces new security concerns for farmers. GPS tracking introduces the potential for foreign threat actors to track crop production, as well as to potentially target and take connected machines and vehicles offline with advanced ransomware and disruption ware. As the technology used across the sector continues to advance and adoption rates accelerate, the risk of cyberattacks also increase, making cybersecurity a critical consideration for Australian agribusiness.

Ashwin Pal, director of cyber security and privacy risk services at RSM said, "When it comes to agribusiness, cybersecurity, and even an understanding of IT (information technology), hasn't really been a strong point with the sector.

"In the manufacturing sector they make stuff and use technology to do it. They don't necessarily have that strong appreciation of how to secure things and as a result, they fall victim to cybercrime.

"Agribusiness is not too dissimilar. But I would argue it's in a slightly more difficult position because there's even less understanding.

"If you couple that with the cybersecurity threat getting worse, it creates a problem.

"We're seeing more and more cases of rip-off ransomware. The idea behind it is to lock somebody's system up by hacking into the IT network and infect it so it can't be operated and try and get money out of it. Or try and break into somebody's

system so you can actually steal either, confidential data, be it customer information or intellectual property.

"A lot of agribusinesses are investing heavily in what we call the Internet of Things (IoT) technology, sensors and automated machinery, which can be remotely operated.

"If these are actually deployed, without being secure, it produces an opportunity for cyber criminals to do nefarious things.

"I would actually argue that 80 to 90% of small to medium businesses that make up the agribusiness sector probably don't have a good handle on this, which represents a significant population.

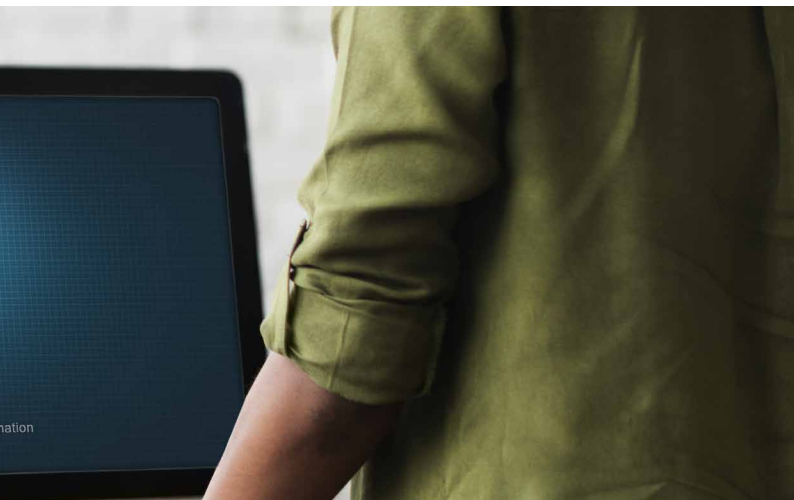
"But what is also important is to make sure that organisations before they actually deploy these technologies, think about security as part of the deployment process.

"A good idea would be to make sure that security is built within the project itself so the technology is being rolled out securely."

Fraser Cuthbertson said, "Cyberattacks are a threat to the agricultural sector. Even if individual producers and farmers aren't targeted, the sector can be challenged by breaches of organisations and industries that work on the periphery, including third party institutions that manage payments and other daily processes.

"Cybersecurity has almost become the number one priority for many producers, and disaster recovery is also a major consideration. It's critical for everyone working in the agricultural sector to understand the risks, and what steps they can take to mitigate these risks. Every property, every site needs to be checked thoroughly to ascertain how disruptions can be counteracted and sites can be brought back online after a cyberattack. There must be a strategy in place, or agricultural producers could face significant disruptions and damages. Even if the immediate plan is to do nothing, which could be a valid approach, it's important to think this plan through in detail before committing."

Matthew Rutter said, "Having a good, robust process around assessing and predicting risk is critical, as is understanding what to do to mitigate risk. Agricultural producers and



businesses must invest in cybersecurity, or they'll wear the consequences; there's no room for complacency.

"It's crucial that businesses spend time on risk management, and invest funds and resources into preparing and structuring businesses to be resilient around major events or threats to continue to operate. The pandemic has highlighted this issue in many ways and, while cybersecurity may have fallen off the radar in place of more immediate concerns for some, it needs to be core to business practices moving forward."

Wessel Oosthuizen said, "While the Australian agricultural sector is, understandably, primarily focused day-to-day on issues such as rainfall or changing export markets, cybersecurity still has a critical place and needs to be carefully considered. As technology advances and producers accelerate their adoption of automated vehicles and other solutions, cybersecurity risks will only increase, and must be managed and controlled more tightly to ensure no one can gain unauthorised access to equipment or data."

"The increased use and reliance on data-driven applications and technologies also introduces new cybersecurity concerns, both for producers and equipment manufacturers, as well as other organisations involved in the sector. As such, it's critical that producers and manufacturers work with their networks, including smaller dealers or suppliers, to ensure that systems and security measures are 100% up to date to help protect the supply chain from beginning to end as much as possible."

THE NEED FOR COMPREHENSIVE SUCCESSION PLANNING IN 2022 AND BEYOND

In addition to cybersecurity and risk management, agricultural producers increasingly need to consider what stage they are currently at in terms of succession planning, and what steps must be taken to help prepare agribusiness for the future beyond 2022. For many producers and growers, the COVID-19 pandemic has helped highlight or accelerate some of the challenges they may already have been facing.

Matthew Rutter said, "The world is going through a major shake-up which is hard to predict; however, this creates great

opportunities for Australian agribusinesses to reposition themselves and ensure they're better prepared for the future. In broad terms, to achieve success, farmers and producers must be able to adapt and change their business models as rapidly as possible to identify and take advantage of opportunities quicker than anyone else. Succession planning is a crucial part of this."

While generational ownership has long been a pillar of succession planning for Australian agribusiness, private, family-owned farms face a number of barriers. One primary challenge is the perception of the agricultural labour force in the eyes of younger generations of farming families.

Nick Ruddenklau said, "There's a disconnect between the agricultural industry and more mainstream, metropolitan areas that continues to grow, both within the wider public view and within farming families. For some, the perception remains that farming and agricultural production is the same as it was 100 years ago. Stories about farms being remote, isolated places that require hard, long days of manual work for low returns continue in perpetuity, which is causing issues for how businesses within the sector operate. As a result, there's fewer people around to learn the skills needed to manage agricultural production, and people aren't seeking opportunities the way they have done previously."

Wessel Oosthuizen said, "Historically, generations of families would have learned how to manage a property from their childhood and been primed to take over the family farm in adulthood; however, this is no longer the case for many privately-owned properties. A lot of today's farmers enrol their children in private schools and boarding schools in city centres, which makes a big difference as younger generations are increasingly exposed to greater options. As a result, we see growing numbers of younger family members stepping away from farming and moving into other industries, greatly impacting succession planning."

While private, family-run farms make up a key part of the Australian agricultural industry, they aren't the only type of properties or producers in the sector. And, they aren't alone in the challenges faced in terms of succession planning.

Wessel Oosthuizen said, "Many private farms are still generational, and might involve granddad, dad, and two-

to-three sons successfully working together and actively growing the business. However, this isn't the case for all producers. When it comes to succession planning, private, family farms tend to face two options: get out or get into it. For those that end up with no one within the family to hand properties down to, the only real solution is to sell to someone bigger.

"In these cases, often the most immediate solutions are to expand and work with neighbouring farms for their buy-in, or to sell to foreign investors. While both are viable solutions, it's critical that owners and operators of local farms invest the time and resources into identifying which solution is best for their property well in advance of succession being an immediate need."

Succession planning does not have a one-size-fits-all solution; every farm, property, and business is different. As a result, comprehensive planning is crucial to ensuring the continuation and success of the Australian agricultural industry. This includes owners and operators assessing all potential opportunities and taking steps to ensure a clear path is in place for the future of the business and property.

Nick Ruddenklau said, "Succession planning is one of the most essential elements within the agricultural industry; it can go really well, or it can go terribly, especially for private, family-run farms. It can be disconcerting to see families falling out because of poor succession planning, so it's essential to have open communication between all parties and a clear understanding of what people want to achieve."

Matthew Roesner said, "The level of investment in farming land is growing and this will only continue to increase into the future, particularly when it comes to foreign investors. While this can help provide a necessary alternative path for some producers in terms of succession planning, there needs to be a strict level of oversight from the Australian government to limit, where necessary, the amount of foreign ownership, as well as to better manage the integrity of the supply chain."

Tony Girgis said, "Within the past five years or so, we've seen acquisitions and transactions in the dairy industry that are mostly driven out of Asia, and in particular from Chinese investors, including Brownes Dairy. One of the key challenges surrounding foreign investment in Australian agriculture is the different perceptions of the industry that exist between the Australian public, local producers, and international investors.

"Local producers and investors wanting to buy or consolidate properties tend to look for at-cost purchases. Comparatively, foreign investors, and particularly those from China and more broadly across Asia, are more willing to put money behind these investments. This should make foreign investment welcome where it makes sense."

Foreign investment presents a significant challenge to the Australian agricultural industry, both in terms of future proofing the local industry, with regard to labour and exports, as well as in terms of security for the industry and its wider economic and strategic national importance.

Tony Girgis said, "Local investors will typically look to short term horizons and make changes to processes and operations based on the next few years. Comparatively, foreign investors typically have much longer investment horizons."

Matthew Roesner said, "The risk of selling large tracts of land to foreign investors mean that multinationals do, on occasion, hold properties and sell them on for profit, leading to degraded or mismanaged land. One way of helping the local agricultural industry to be more competitive, and to stimulate growth across the industry—while still maintaining the integrity of the supply chain and agricultural land—is to encourage domestic superannuation funds to invest in farmland, along with other smaller, local investors. The Australian government must look to incentivise local investors more to help maintain domestic ownership over critical production regions."

Despite the influx of foreign owned companies buying up Australian farms, the National Farmers Federation estimates that 88% of Australian farmland is still owned by family farms.

CBRE agribusiness managing director, David Goodfellow said the best model that has traditionally worked well in agriculture was to own and operate a farm. "And obviously that's why family farming still survives. The reality is that families will always run a more efficient business." He said large institutional investors, both domestic and foreign, were now favouring a hybrid model, where a tenant paid a normal rent plus a small premium, but in return for that premium they got a percentage of the capital gain over the life of a 10 year lease.

Mr Goodfellow said the biggest rises in rural land values began in 2014 with an influx of Chinese investment, which was followed by increased demand and prices for commodities.

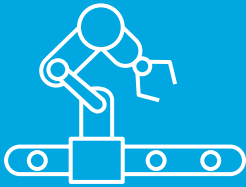
The drought put a hold on farm values but with better seasons over the past two years, higher commodity prices and more corporate interest there was enormous optimism in the market now, he said.

According to Rural Bank's 2021 Farmland Values report released, the overall median price of Australian farmland has grown at a compound rate of 10.6% over the past five years, making it harder for new entrants. Mr Goodfellow said continued price rises were partly reflected on demand outstripping supply.

The improved outlook for agriculture was also leading to a new generation very optimistic about agriculture.

Established farming families, motivated by low interest rates, better seasons, high commodity prices and a better long term outlook, also had the cash to buy a second farm to support the next generation.

Mr Goodfellow predicts more lease arrangements in future with institutional investors who see rural land as "a safe place to park money".



SECTION 3: Future considerations

ENVIRONMENTAL, SOCIAL AND GOVERNANCE CONSIDERATIONS FOR THE FUTURE OF AGRIBUSINESS

As with most industries, there's a growing need within Australian agribusiness to adhere to more stringent compliance measures. Central to this are the changing elements within environmental, social, and governance (ESG) sectors across agribusiness and their impacts on farming and growing practices and processes across the board.

From an environmental standpoint, farmers and businesses across the agricultural industry must take steps to update their practices to meet the Australian government's commitment to achieving net zero carbon emissions by 2050. Part of this involves moving to more sustainable production systems, as well as investing in more carbon-neutral practices, and working with more environmentally friendly vehicles and machines.



To date the National Farmers Federation and the Federal government have pledged to support a zero emissions target including agriculture by 2050 but with caveats notably excluding methane emissions from ruminant animals like cattle, the worst offender.

The latest technologies available, offer some hope that methane emissions can be dramatically lowered by up to 70–80% through commercialising asparagoipsis an anti-methanogenic seaweed which is already underway and when harvested can be added to feedlots and lick blocks for graziers.

Some major agribusiness companies have also committed to net zero emission targets as have agricultural sectors like the grains and livestock industries.

The Federal government in March 2022 pledged to give farmers a tax break worth \$100 million selling carbon credits and biodiversity certificates into farm management deposits scheme, to help farmers average their incomes, in return for The National Party's support for net zero by 2050 target.

Wessel Oosthuizen said, "While the Australian government has committed to achieving net zero by 2050, it's not yet been regulated or made a legal requirement in the agricultural industry, meaning farmers can decide when and how to change their practices to be more sustainable. And, while it is essential to the future of the industry that producers take steps to eliminate damaging practices, it comes at a financial cost.

"Tier 4 engines are currently the most sustainable and environmentally friendly engines available within the agricultural industry. However, it is also currently up to AU\$30–40,000 more expensive to invest in a Tier 4 unit and, until this is regulated, many farmers will continue to choose the more cost-effective option. To encourage investment, there will need to be a big drive within the industry to phase out Tier 3 and previous machines in preference for Tier 4, either through regulations or with the help of government incentives."

Fraser Cuthbertson said, "ESG presents many benefits to the agricultural sector within Australia, particularly in industries like forestry. These can range from one extreme such as mechanical or automated harvesting, which saves on labour costs and ensures proper fertilisation and water usage, to the other extreme where forestry residue can be turned into biofuels. Forestry has an essential role to play in terms of reducing carbon emissions as well. Innovation is critical to help identify new ways that trees and their by-products can be processed to ensure every part of a tree is used and then replaced.

"On the other hand, there are lots of barriers involved in developing more sustainable practices within the industry that, at times, can feel like money being thrown at solutions without solutions being thought through with the right amount of detail. One of the biggest challenges is around education. There's currently a disconnect between governments and the different drivers and views that exist around plantation investments. This needs to be addressed and solved to help bring forestry into the future, and to identify new ways of making the industry more sustainable."

In addition to environmental considerations, producers and farmers face increased pressure to meet compliance measures across a multitude of factors, including employment, production, distribution, and more. From a social standpoint, the rise of conscious consumerism especially has pushed the industry to invest more in more ethical trade and labour arrangements.

Matthew Roesner said, "There's been a rise in the amount of reporting that is required of producers in recent years to demonstrate ethical trading and growing practices. This is also required on a more granular level, especially in the rise of consumers wanting to understand more about provenance and where their produce comes from.

"This is only going to grow as the numbers of conscious consumers increase. While this adds another layer of complexity to production, it also presents a significant benefit for the agricultural industry. By reporting on provenance, agricultural producers can help to engage more directly with consumers, and to help educate the public on the agricultural industry and its practices."

Matthew Rutter said, "Sustainability is arguably one of the most essential elements of the agricultural industry. We must engage in sustainable practices to ensure we can continue to produce goods for generations to come, or the industry will, in essence, cease to exist. The risk of a purely corporate agricultural industry is that it's driven by profit.

"Part of the emerging drive towards ESG is the opportunity it presents for agribusiness to rethink the structures of their organisations, to create something more sustainable that will achieve its goals within the guidelines that ESG concerns dictate, while continuing to be profitable at the right point in the supply chain."

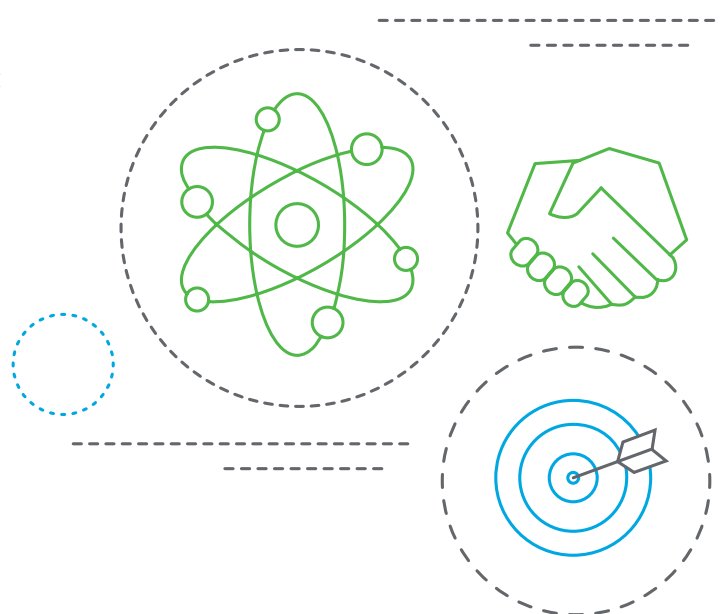
Shane Kay said, "There's certainly been a push within the industry in recent years to remove unscrupulous employers and raise the profile in regards to ethical employment. To help keep across this, it's essential for producers to engage the services of dedicated compliance officers to help audit ethical trade and labour practices, especially as they continue to grow and expand.

"From a labour perspective, this is absolutely essential for any producers that work with skilled seasonal or migrant workers. There are cases within the industry where seasonal workers have been taken advantage of or treated poorly in the past. While this is a problem in and of itself, the knock-on effects for the rest of the industry are significant, in that one instance of poor treatment could lead to a negative perception of the industry as a whole, further exacerbating the labour market challenges that already exist."

Nick Ruddenklau said, "One of the challenges with ESG is how it works hand-in-hand with other barriers facing Australian agribusiness, such as changing export and labour markets. Everything has a flow-on effect. Take live exports, for example: to stop live exports, we need to be able to process onshore. However, the labour market challenge is such that it's difficult to staff existing abattoirs, let alone find the capacity to staff more abattoirs to help eliminate live exports. It's the foundational problems that must first be overcome to help ease obstacles in the future and in other areas of agribusiness."

He lists as critical, staff engagement surveys, measuring job satisfaction levels, and working hard to offer a more flexible workplace to "really drill into what keeps people in jobs".

On the push for zero carbon emissions by 2050, RSM's Ross Paterson acknowledges that farmers are keen to be part of the solution with the proviso that they don't necessarily see themselves as being the solution to other industries that are looking for agricultural land to be used to offset carbon emissions.





RESEARCH AND DEVELOPMENT

The COVID-19 pandemic has highlighted the need for the Australian agricultural industry to review and assess its current position and identify opportunities for growth and investment that will help to strengthen its position in years to come. Central to this overhaul of the industry is the need for increased research and development in fields that will help to futureproof the sector, including technology.

While many agricultural producers already invest in advanced technologies, there is room for continued investment across the industry to help streamline systems and processes, letting producers work smarter and more efficiently to achieve greater yields.

Wessel Oosthuizen said, "Even now, there are very few farmers that don't already use controlled traffic across their properties, and this has been made possible by advances in the technology in the equipment they use for production. However, there are still steps to be taken to really harness the power of technology to achieve even greater production levels. For example, automation will become a more entrenched technology in the industry over the next five or 10 years.

"We've also started to see interest grow in the use of autonomous vehicles, which we expect to continue to increase over the coming years. To help support this growth, paddocks will need to be more clearly mapped out and digitally recorded, and more cameras will need to be integrated with equipment to ensure obstructions don't get in the way. In addition, we can already see a number of instances where two pieces of equipment can be steered and controlled by one worker concurrently, such as harvesters or tractors and a chaser, and this is expected to increase within the next five to six years."

As discussed earlier in this report, the types of technologies integrated across farming practices will also impact on the labour market in the coming years, as more technologically skilled workers will be required to support the use of some technologies. However, by leveraging technologies such as drones, satellite imagery, or similar, agricultural producers can gain access to a supporting labour market that operates remotely out of cities across the country or even internationally, without needing to rely on a local labour market.

Shane Kay said, "Technology can only go so far without involvement from the industry. As more producers and workers get more involved with agtech, further advancements can be made more quickly for the direct benefit of the wider industry. We're one of three orchards currently involved in a national project with the University of New England (UNE) studying the use of remote sensing from fixed-wing aircraft and satellites to make crop forecasting more accurate, by predicting how many tonnes of produce will be harvested based on imagery.

“By using a spectrum of sensors that monitor chlorophyll, temperature, and other variables, we can monitor each individual tree in the crop and run algorithms across the collected data for an estimate of what production will be. While there may still be some groundwork required to calibrate imagery, ultimately the use of technology will help to streamline and automate this labour-intensive task, which will alleviate pressure from workers on the property by automating these tasks, but it can be conducted remotely, giving us access to specialist labour forces outside of the region.”

Despite the benefits that advances in technology can and will provide to farmers and agricultural producers, some remain hesitant to engage with new solutions.

Matthew Roesner said, “One thing we’ve seen is that technological advancement can be a concern for farmers; when you talk about technology and innovation, some will turn off and not listen. Over the past five years, we’ve seen numerous innovative start-ups looking for new industries to disrupt and capitalise on for profit, and agriculture is one of them. However, many of these technologies are developed and looking for a problem to solve, rather than being purpose-built to help the agricultural industry. This needs to change in order to engage more farmers in the conversation.

“Ideally there needs to be more oversight from the industry into what products are being developed and what people are selling, as well as increased possibility for farmers and other industry experts to get involved in the development. Grower group conferences and dedicated field days present great opportunities to connect the agricultural industry with the technology experts, and we need to see more of that.”

THE FUTURE OF AGRIBUSINESS IN AUSTRALIA

As discussed earlier in this report, the COVID-19 pandemic has, in many cases, forced the Australian agribusiness industry to diversify its export markets and grow trade relationships with new and emerging networks, including key Asian markets such as India, Korea, and Japan. In addition to identifying new and emerging export markets, agricultural producers and farmers may also harness the opportunity to diversify their portfolios and invest in new areas of production to meet new areas of demand. This will be a critical step in securing the industry’s future success and its contribution to the wider Australian economy.

Nick Ruddenklau said, “Agribusiness can be a risky endeavour, especially for producers that are solely focused on profitability. We’ve seen contemporary livestock producers diversify into cropping to harness that profitability; however, profitability can bring more risk and volatility with it. Crops like wheat, barley, and canola, for example, are essential world commodities, and they’re at the mercy of a world commodity market with fluctuating exchange rates, worldwide cycles, and governments that dictate how they are traded.

However, while potentially volatile, diversification brings significant opportunities to agribusiness by helping to build strong, more variegated property portfolios for agricultural producers.”

Fraser Cuthbertson said, “As the pandemic has demonstrated, there’s a need for agricultural producers to take steps to secure their future. While changing labour and export markets may only be considered a temporary setback, the repercussions for businesses that don’t take steps to diversify could be catastrophic. External factors like climate change and a shifting social conscience for consumers will also continue to affect the industry, forcing many producers to diversify and look for more sustainable production lines to stay in business.”

However, the challenge for many producers is finding the time and resources to diversify into other areas of production. In particular, the pressures placed on current agricultural production by labour shortages also impact on research and development and future planning for many Australian agribusinesses.

Beyond the individual needs of farmers and producers, another concern for Australian agribusiness as a whole is the need for better education around the sector.

Fraser Cuthbertson said, “The Australian agricultural industry is not without its obstacles. There is some media coverage, especially around the impact of climate change, foreign investment, and changing export markets, though that’s only scratching the surface. There needs to be more engagement between the agricultural sector and the wider Australian public.”

Nick Ruddenklau said, “Even concepts like genetically modified crops can be better explained. The wider public might incorrectly recognise this as the industry spraying crops top to bottom with chemicals or mutating produce, rather than the actual purpose of accelerating plant breeding. Farmers and producers are getting better as a collective at telling the story. There are good groups working to share information across social media, and we all share and engage with Australians at local and regional agricultural shows. However, there’s always more that can be done to show and facilitate change in attitudes. The discussion, education, and awareness are lacking from the wider public conversation, and this must change to help protect the future of agribusiness.”

Whilst challenges exist around labour, succession funding and investment, opportunities include the use of new technologies to improve yield, demonstrate provenance of product and to generate new markets.

Furthermore, the opportunity to develop greater value add in the supply chain through tailored or innovative products in non-traditional markets and new vertical markets increases value to investors in the agribusiness sector.



Australian agribusiness beyond 2022

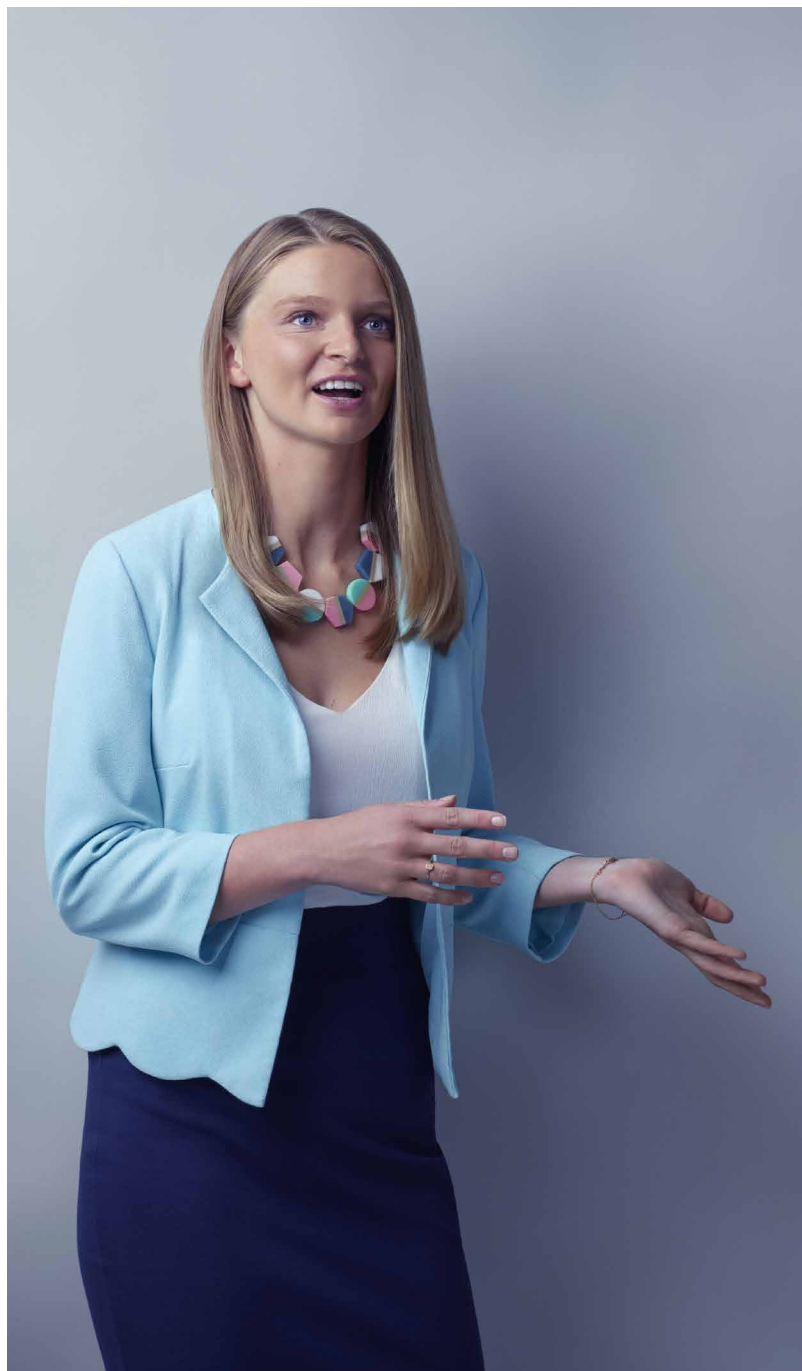
Like many industries, the Australian agricultural sector has experienced significant disruption over the past two years. Between labour shortages and a changing political climate impacting on Australia's export markets, as well as the supply chain being hindered by COVID-19-related delays and restrictions, Australian agriculture is in a precarious position. However, despite the challenges the industry faces, there are a number of opportunities that producers are looking to that will help to future-proof agricultural businesses in 2022 and beyond.

As discussed in this report, Australian farmers, producers, and organisations within the wider agricultural and supporting industries are in a good position to make strategic decisions that will help to strengthen their operations for future production. By harnessing the power of new and emerging technologies, as well as diversifying production and export markets among other opportunities, agricultural producers and farmers can ensure they are better prepared for the future of the industry.

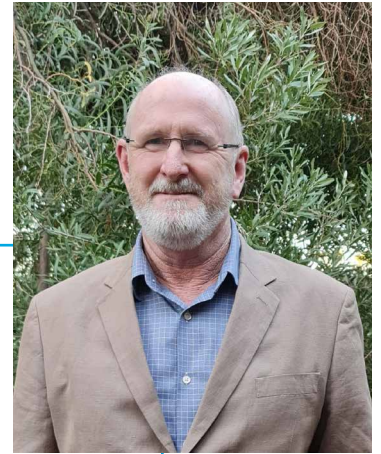
"In these increasingly complex and uncertain times, more so now than ever, Australian agribusinesses need to remain strategically nimble and adaptive whilst retaining a keen focus on opportunities presenting through innovation and emerging technologies."

Matthew Beevers, RSM

Leveraging automation and AI technologies in particular can help to alleviate the pressure many producers face as a result of the changing labour market, it can also help agricultural businesses to improve their levels of compliance and streamline operations across the board. In addition, technologies can be used to help mitigate ESG challenges and ensure producers can meet the industry's emissions targets.



We spotlight some of the agribusiness specialists featured in this report

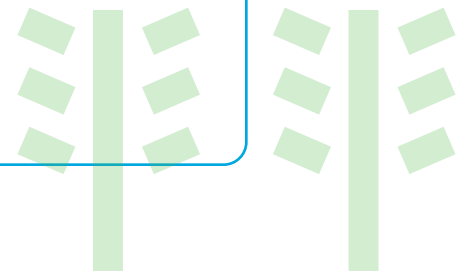


MOORA CITRUS

Shane Kay, CEO

Moora Citrus is an innovative horticulture project in the Wheatbelt region of Western Australia. The orchard produces oranges and mandarins, with a focus on delivering fresh eating citrus into the local market across nine months of each production year. Spanning 212 hectares of trees, the project is a fully integrated operation, through production, packing and marketing of citrus for supply to both domestic and many export markets.

Business type: **Citrus Orchard**
Number of employees: **Up to 70 in season**
Years in operation: **17**
Location: **Moora, Western Australia**



EPASCO FARMS

Nick Ruddenklau, Farm Manager

Located in Western Australia's Esperance region, EPASCO Farms has been owned by the Springorum family since 1980. The 14,500-hectare EPASCO Farms is a mixed farming enterprise, comprising 50% Merino sheep, 25% Angus cattle, and 25% cropping including a rotation of canola, wheat, and barley.

Business type: **Mixed livestock and cropping farm**
Number of employees: **8-12**
Years in operation: **40**
Location: **Esperance, Western Australia**



AUDEMARS CONSULTING

Tony Girgis, Principal

Founded in 2015, Audemars Consulting provides investigative and strategic advice to private equity during the pre-acquisition due diligence phase and post-acquisition performance improvement. Principal, Tony Girgis, consults with organisations within the industrial and manufacturing space including agribusiness, bringing with him significant first-hand industry experience as the former managing director and chief executive officer of Brownes Dairy.

Business type: **Management Consulting**
Number of employees: **2**
Years in operation: **7**
Location: **Melbourne, Victoria**

ROESNER

Matt Roesner, Technical Director

Roesner Pty Ltd is a modern manufacturing company located in Western Australia which has been operating in Australia since it was founded in 1900. Roesner designs and manufactures products and components for harsh agricultural applications. Its products are built with precision and designed to last, ensuring a high standard of manufacturing and a high level of customer satisfaction. Roesner's flagship product, the Marshall Multispread all-purpose fertiliser spreader, is well known among Australian farmers for its build quality, ease of use, and precise operation.

Business type: **Equipment manufacturing**
Number of employees: **22**
Years in operation: **122**
Location: **Harvey, Western Australia**

AFGRI EQUIPMENT AUSTRALIA

Wessel Oosthuizen, Commercial Director

AFGRI Equipment is a provider of premium new and used agricultural equipment, tailored to meet the machinery needs of its customers. AFGRI Equipment is a John Deere dealership group; however, it also supports other franchises including Kuhn, Manitou, Bourgault, Equaliser, Horsch, Croplands, Graiking, MacDon, Midwest, Gason, Marshall, Fieldquip, Agrowplow, and more, to continue to meet the needs of its customers.

Business type: **Agricultural and construction machinery dealerships**

Number of employees: **435**

Years in operation: **AFGRI first invested in Australia through acquisition in 2004**

Location: **Head office in Perth with dealership locations throughout Western Australia**



GERALDTON FISHERMAN'S CO-OPERATIVE (GFC) | Matthew Rutter, CEO

The Geraldton Fishermen's Co-operative (GFC) has been operating in Western Australia since 1950, supplying Western Rock Lobster (crayfish) to customers worldwide under the Brolos brand. GFC is owned and run by fishermen shareholders and members, supported by its member-elected board of directors.

Business type: **Western Rock Lobster processing and exploration**

Number of employees: **257**

Years in operation: **72**

Location: **Geraldton, Western Australia**



THE PENTARCH GROUP | Fraser Cuthbertson, CFO

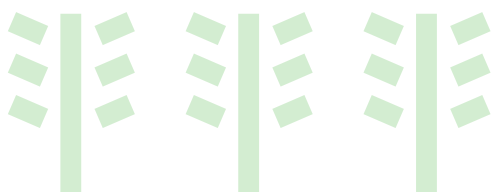
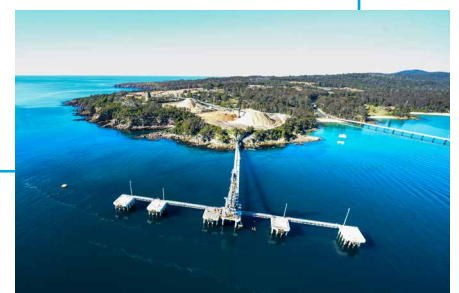
Since 1984, the Pentarch Group has used its specialised skill base across its Pentarch Forestry and Pentarch Agricultural brands to grow and diversify its commercial enterprises. The Forestry division is involved in sawmilling, timber manufacturing, pallet production and timber residue briquette manufacturing for the domestic market. This division is also involved in the harvesting, haulage, chipping and whole log exporter of plantation and naturally grown certified timber from Australia and New Zealand to the Japanese, Chinese, Korean, Indian and Middle Eastern markets. The agricultural division's activities include the growing, processing and export of animal fodder and grain products to domestic and international markets including China, Japan, Korea and the Middle East. With the support of research and development, the Pentarch Group continues to identify new market opportunities in the industries in which it operates to secure greater control of aspects of the supply chain while providing broader trade options for its partners and customers.

Business type: **Forestry and Agriculture**

Number of employees: **600**

Years in operation: **50**

Location: **Southbank, Victoria**





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Shane Kay

CEO, Moora Citrus

Matthew Roesner

Technical Director, Roesner

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Principal, Kidder William

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Director, Restructuring & Recovery

Keiran Sullivan

Director, Business Advisory

Tim Pittaway

National Director, Climate Change and Sustainability Services

Steve Elias

Principal, R&D tax



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