2020 State of the Industry

Implications for the Australian Agriculture Sector

Agribusiness Australia

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Foreword from the Chairman

Why is it important to take stock of the state of the Australian agriculture sector as we enter a new decade?

There is a lot to celebrate about the Australian agriculture sector and the role it plays as a pillar of the Australian economy. As leaders in the sector, there is a responsibility for all of us to take ownership of the areas of opportunity and innovation that will improve the profitability and sustainability of the sector. Also, as guardians of the sector, we need to assess our aspirations for the sector, and we need to consider the barriers to our ability to achieve our aspirations.

It is important to take stock of the state of the sector as we enter a new decade. Without an understanding of our current sector position, we have limited opportunity to understand our future path to truly achieving critical milestones successfully.

This report looks to shed some insight into what opportunities there are for the sector to increase growth and investment throughout the entire supply chain to achieve the target of $100 billion (AUD) of farm gate production value by 2030. An increase in production to $100 billion (AUD) is vital, but only part of the story of the future of the Australian agricultural sector. Along with production there needs to be an increase in profitability across the sector. The combination of production and profitability will see the sector prosper and continue to be a cornerstone of the Australian economy. The sector needs substantial capital investment to achieve growth in both production and profitability. Without a significant increase in capital, the long term future of the sector domestically and in the global market will falter, and other nations will increase their market share at the expense of Australia. The roadmap to achieving this goal clearly emphasises the critical role of capital. Further, all of this must be achieved sustainably.

The foundation of the report and the overall aim of increasing capital throughout the sector are rooted in several forces. From a supplier perspective, the sector needs to have competitively priced capital investment opportunities. Along with this, there is a need for highly skilled and professional service providers throughout agribusiness – from on-farm to finance,

machinery to technology and innovation – the need for highly qualified professionals will be a defining factor of the long term success of the sector. The threat of new entrants to the market is low at the level and quality that the Australian agricultural sector produces; however, there is an increasing threat from other nations that have lower costs of production (and often heavily subsidised or supported) and are rapidly improving their quality. These competing exporters are also able to take advantage of Australia's variable climate to ensure their supply is constant, further eroding Australia's market share. Along with these emerging competitors, some well-established competitors are also looking to grow their market share. South America in general and Brazil in particular will provide a challenge to the growth and profitability of the Australian agricultural sector.

Beyond the like for like competition in export and domestic markets, there are threats of substitution of traditionally produced agricultural products. Examples include intensively climate-controlled fruit and vegetables and synthetic meats. The emergence of mass-produced competitively priced synthetic meat products may challenge some of our traditional red meat sectors but offer plant-based agriculture the opportunity to grow specific inputs, the ability to produce multiple sector's productivity and profitability will be vital. Consumers' preferences are constantly changing, and middle-class wealth continuous to grow around the world. These changes in demand are creating increased segmentation of our markets. Whether vegan products, organic, sustainably sourced, healthy options, or a multitude of other categories, the sector must adapt and look to this increasing segmentation for growth, profitability, and sustainability. Not only domestically, if Australia can be a sector leader in embracing these segments, it would also allow Australia to differentiate itself based on its competitive advantages.

This report looks at many factors in the current agribusiness climate – from the implications of the Belt and Road initiative and Brexit to the rise of South America, from challenging weather conditions to biosecurity threats. It discusses the opportunities for transport and infrastructure, AgTech and innovation, global trade deals, commodities versus niche products, and the growth and development of human capital.

Although there is a roadmap that has set the path towards the target of $100 billion (AUD), there needs to be a substantial national plan for the advancement of the agricultural sector. This plan needs to be collectively driven by the three tiers of government with consultation and buy-in from all aspects of the sector. Although the $100 billion (AUD) is an excellent aspirational target, there may be cause to look at the more in-depth economic trends and analysis to see if the target is what the sector should be working towards or whether the ten-year timeframe is the correct period to achieve it in.

The purpose of this report, as provided by Agribusiness Australia, is to assist the whole sector as it enters the new decade to identify some of the critical challenges it faces, and some of the potential opportunities for growth. Agribusiness Australia will continue to strongly advocate for the sector and stimulate debate to improve business opportunities for growth and greater prosperity of the Australian agriculture sector.

Mark Allison
Chairman, Agribusiness Australia

Executive Summary

As Australian agriculture sector enters a new decade, it is an opportunity to take stock and reflect on how the sector is tracking against the sector set targets of; growing the value of Australian agricultural production to $100 billion (AUD) by 2030, and increasing the long term profitability of the sector. This growth target cannot be considered in a vacuum and instead must be considered in the Australian and global context together with all impacting forces.

Having undertaken the shared goal of growing the value of Australian agricultural production to $100 billion (AUD) by 2030 in 2017, the sector needs to grow on average 4% per annum to achieve this growth target. As of March 2020, Australia's agricultural sector was valued at $59 billion (AUD).[1] An average growth rate of 4% per annum is required (between 2017 and 2030) to reach the growth target.[2] A 4% growth rate currently puts the sector $4.2 billion or 6.3% below required trend growth, although this gap narrowed from 6.9% last year. The figure of $100 billion (AUD) by 2030 refers to pre-farmgate components, yet there is substantial reason to look at the value-added post-farmgate to find an increase in productivity and profitability along with pre-farmgate advancements. In fact, it will be impossible to achieve $100 billion (AUD) without substantial growth in post-farmgate output.

Image 1: Underpinning drivers in the industry using Porter's Five Forces model

Returning to the trend needed to achieve the target productivity output requires not only having to recover from drought but also be able to reclaim lost market share. For example, within the beef export markets to Asia, in particular China; Australia has lost market share to countries in South America and North America.[3] Hence, it will not be enough just to get back to the pre-drought productions levels, Australia will have to regain market share.

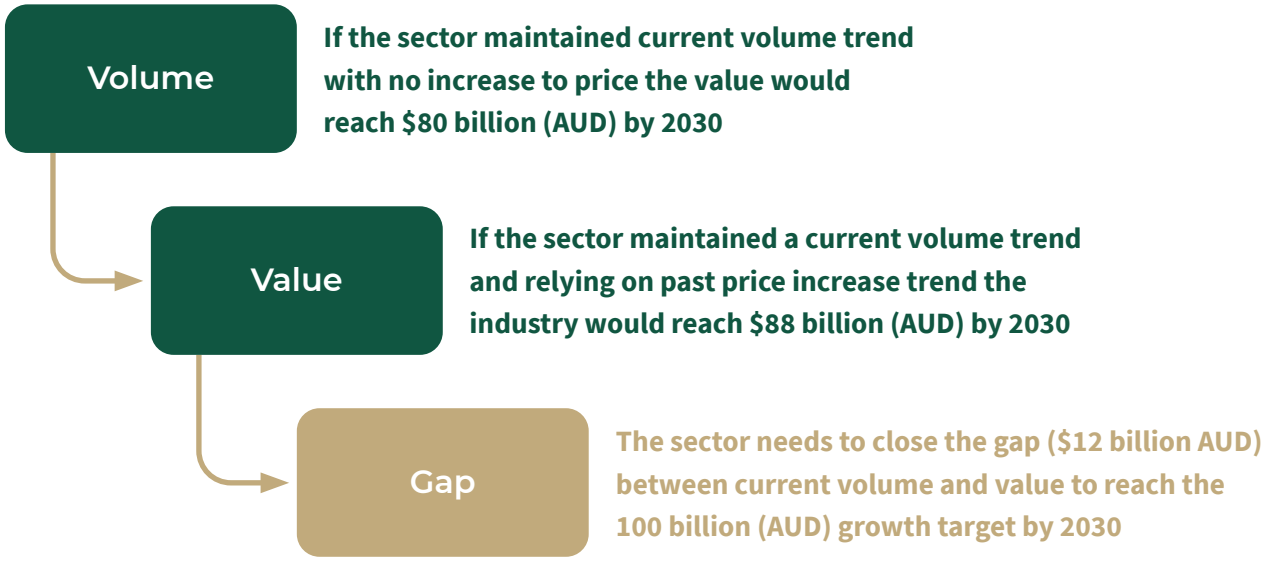


Figure 1: Future outlooks to reach $100 billion (AUD) (Source: Department of Agriculture, Water and the Environment, 2019. Tough choices for a prosperous & resilient agriculture sector)

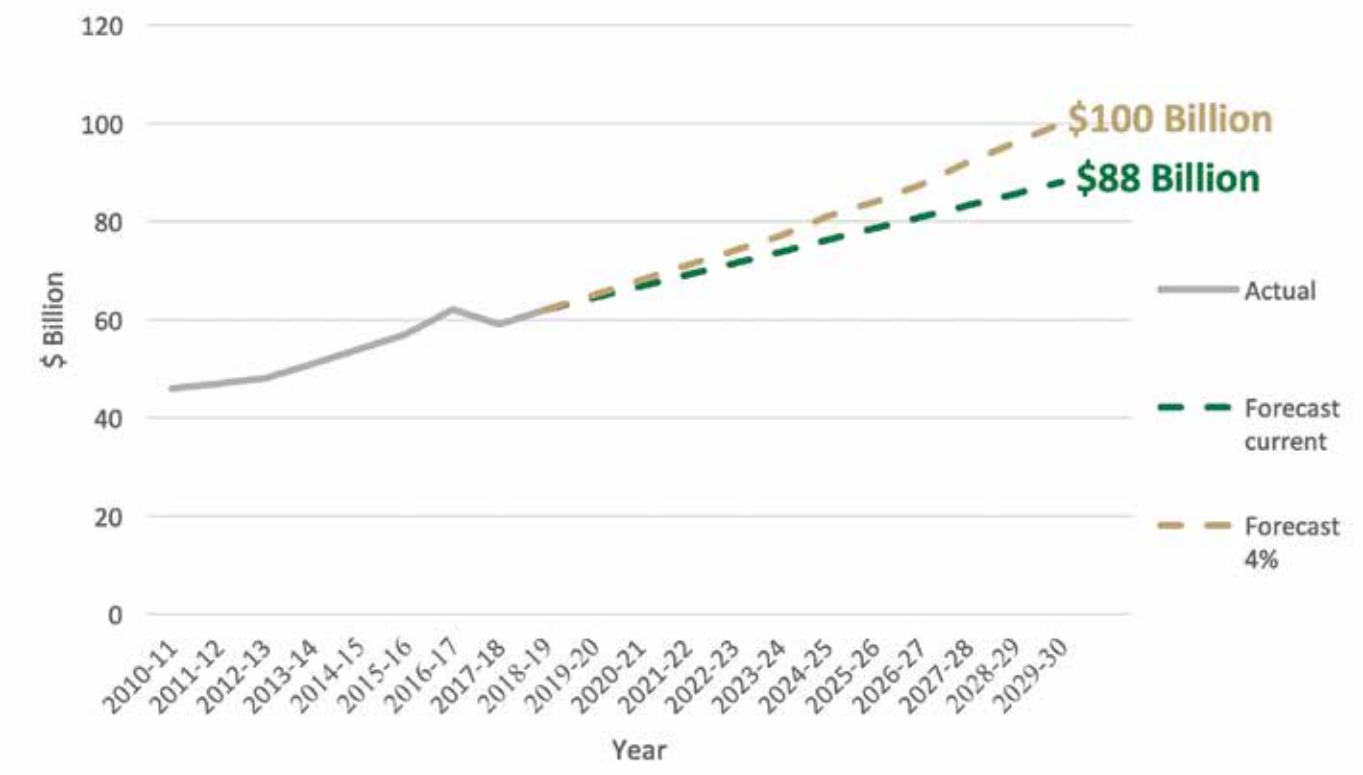


Figure 2: Total value required growth vs do nothing trendline (Source – Australian Bureau of Agriculture and Resource Economics and Science)

As we enter this new decade, the sector can consider what is working, where the challenges are, and what the global state of play is. Some key questions that have been observed about the sector pre and post-farmgate are:

Is the sector competitive globally?

What effects will global geopolitical issues, such as Brexit and Belt & Road Initiative have?

What role will South America play in the next decade?

What impact does Environmental, Social, Governance risk management have in sustainability?

And most importantly – What are the opportunities and learnings that can be undertaken to meet the target set by sector?

COMPOSITION OF SECTOR PRODUCTION

The Australian agriculture sector has a $59 billion (AUD) production composition, with beef and wheat as the key contributors to the Australian agriculture sector.

The production value of wheat in 2018-19 was $6.21 billion (AUD) while beef was valued at $11.284 billion (AUD).[4] Wheat contributed to 9.98% of total agricultural output, whilst being 48.80% of all grain,[5] oilseeds and pulses output. Beef's contribution to the whole sector was 18.14% overall and made up 51.34% of all livestock output value.[6] In terms of understanding historical growth and identifying areas of future growth, wheat saw an overall average negative growth of -0.64% between 2010-11 to 2018-19.[7] Conversely beef saw an overall average positive growth of 6.4% during this same time period.[8]

Demand arises from multiple factors; demand of wheat and beef are driven by different factors and it is evident that wheat has trended more in line with global population growth which averaged at 1.16% over the same time period.[9] Beef is a commodity that tends to be consumed in countries with higher or growing GDP and more significant or growing middle classes. As a result, higher average growth of beef production value has shown similar trends with countries that have an increasing middle class such as China; during this same period China's GDP has grown at 10.77%.[10] Other products have seen strong average growth during the same period and could hold opportunities to further improve the sector. Products such as wool have grown 69% from 2010-11 through to 2018-19 and can continue to grow.[11]

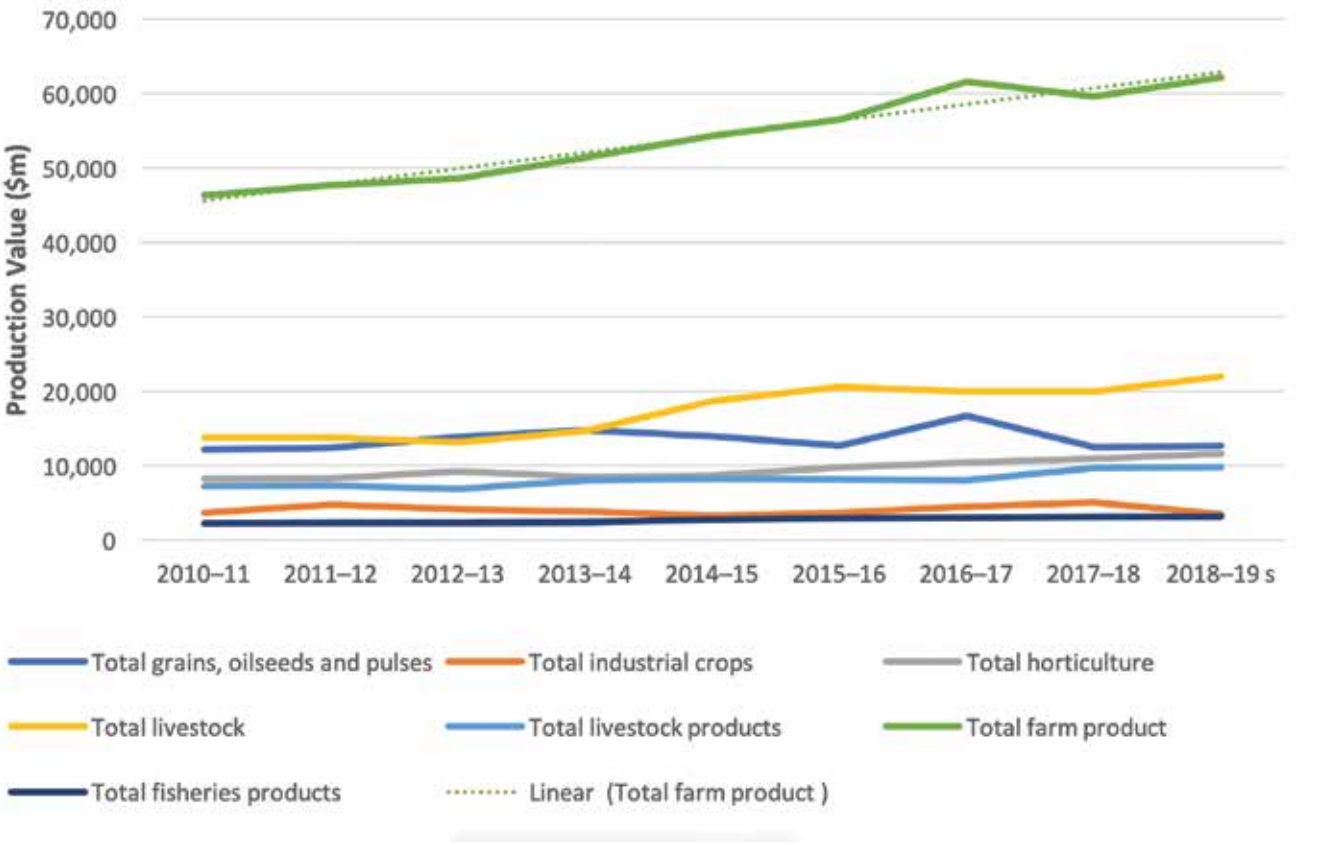


Figure 3: Production Values 2010-2019 (Source: Australian Bureau of Agricultureal and Resource Economics and Science, Agricultural Commodities - Septemer 2019)

Horticulture has also proven to be a strong growth sector, having increased overall by 20% since 2010-11, whereas cropping has reduced by -7% in the same period.[12] A heavy lifter within the horticulture sector that has contributed strongly to this growth has been fruit and nuts, with an increase of 7.88%.[13] These other products may hold the key to the overall target growth of 4% per annum, as other commodities like wheat are reliant on factors such as population which limit growth opportunity.

Beyond the major commodities that make up a significant portion of the sector's production in livestock and cropping, aquaculture has also seen some solid growth across the same period. Although aquaculture only comprises 5.16% [14] of the overall production, there have been some standout products that have grown over the last decade and can continue to have solid growth to contribute towards the sector target.

During this period, Salmonoids have seen a growth of over 102% and are a standout growth product across the entire sector.[15] Salmonoids were one of only seven products to see growth above 100% from 2010-11 to 2018-19.[16]

Salmonoid products play a significant role within the Tasmanian agriculture/aquaculture sector and is an in-demand growth sector. Salmonoid production needs to double by 2030 to meet increased demand;[17] this demand and production growth will play a crucial role in the overall production growth required to achieve the sector 2030 target. While Australia doesn't have a large fishing and aquaculture sector by global standards, like salmoniods, other niche products within the sector are capable of significant growth, including rock lobster, prawns and tuna.

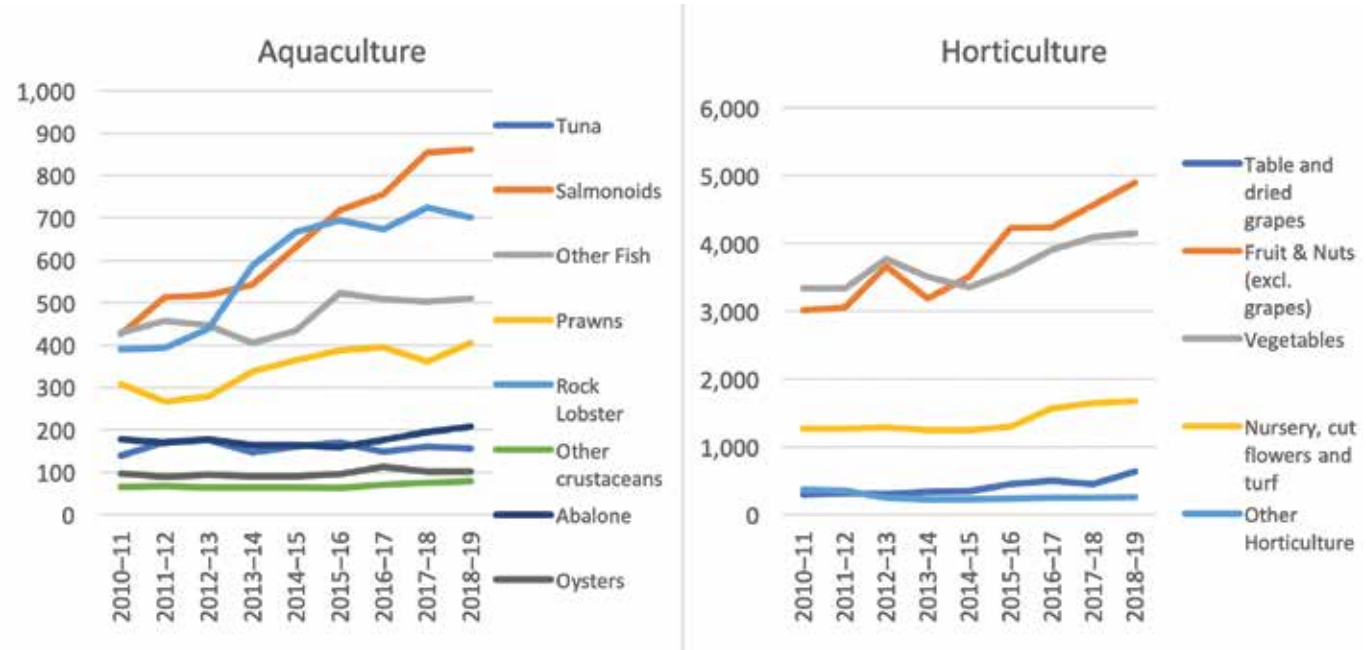


Figure 4: Niche Products - Aquaculture and Horticulture growth (Source: Australian Bureau of Agricultureal and Resource Economics and Science, Agricultural Commodities - Septemer 2019)

The composition of productivity output from farms consists of larger farms contributing the majority of output growth with smaller farms tending to remain stagnant in terms of growth. The distribution of farms and their geographic contribution currently has New South Wales (NSW) with the most significant percentage of Australia's total farms with over 26,124 farms comprising of a total of 53,438,094 hectares.[18] However, in terms of the total farming area, Queensland represents the largest total with 127,550,908 hectares.[19] In terms of output by farm size throughout the industry, larger farms contribute more than 55% of total farm output.[20] These farms have receipts of greater than $1 million (AUD), this is in contrast to these size farms contributing only 22% of total output four decades ago.[21] Whereas farms with receipts between $200,000 (AUD)and $1 million (AUD) contributed to over 50% of the total output in 1978-79 today these sizes farms make up around 30% of total output.[22]

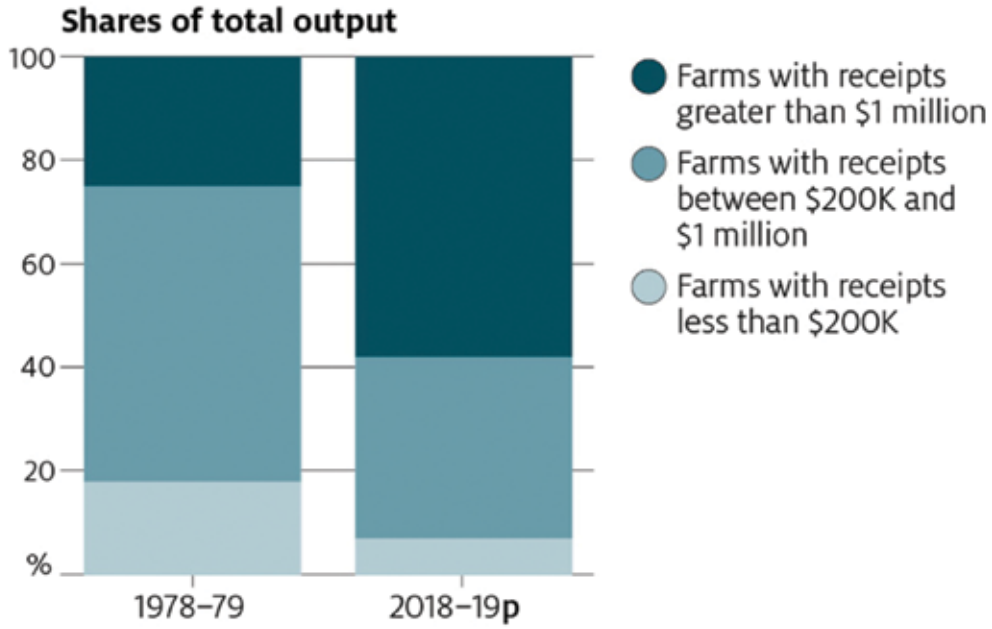


Figure 5: Percentage of total output by farm size (Source: Department of Agriculture, Water and the Environment, Snapshot of Australian Agriculture 2020)

The growth of the sector must be taken in the context that exports account for two-thirds of Australian agricultural sector production. Australia relies on the world for exports. In contrast, there is no global reliance on Australian production for agriculture products.[23] An understanding of history, demographics, and geopolitical situations is crucial to the growth of the Australian agricultural sector in the global value chain. When looking at the historical output, growth price has been a significant contributor to the increase in overall sector value.

The table below shows the primary commodities that makeup farm-gate output value, and year-on-year growth – considerable volatility is evident.

The rest of the reports set out critical factors for the sector, and aims to discuss the potential opportunities for the sector to enjoy ongoing success in line with our shared target.

	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17	2017–18	2018–19
Total Farm ($m)	46,376	47,752	48,652	51,464	54,387	56,554	61,647	59,581	62,208
		2.97%	1.88%	5.78%	5.68%	3.98%	9.01%	-3.35%	4.41%
Aquaculture ($m)	2,247	2,305	2,386	2,473	2,764	3,019	3,058	3,141	3,207
		2.57%	3.52%	3.64%	11.77%	9.22%	1.29%	2.73%	2.10%
Livestock Products ($m)	7,237	7,381	6,892	8,043	8,224	8,140	8,088	9,719	9,798
		1.99%	-6.63%	16.70%	2.26%	-1.02%	-0.64%	20.16%	0.81%
Livestock ($m)	13,804	13,797	13,188	14,723	18,740	20,622	20,011	20,007	21,979
		-0.05%	-4.42%	11.64%	27.28%	10.05%	-2.96%	-0.02%	9.86%
Crops ($m)	25,336	26,574	28,572	28,699	27,423	27,791	33,547	29,855	30,431
		4.89%	7.52%	0.44%	-4.45%	1.34%	20.71%	-11.01%	1.93%
Industrial Crops ($m)	3,734	4,801	4,130	3,902	3,253	3,694	4,529	5,058	3,489
		28.60%	-13.98%	-5.51%	-16.63%	13.55%	22.61%	11.66%	-31.02%
Grain, Pulses ($m)	12,148	12,466	13,927	14,800	13,943	12,697	16,714	12,529	12,726
		2.62%	11.72%	6.27%	-5.79%	-8.94%	31.64%	-25.04%	1.58%

Table 1: Contribution to overall value by commodity and average change year-on-year
(Source: Australian Bureau of Agricultural and Resource Economics)

New World – Where we fit?

The Australian agriculture sector is currently in a period where it faces a unique set of challenges; a global market that is more competitive than ever, and ongoing climactic challenges such as drought and bushfires.

Throughout the supply chain there are numerous drivers at different points that shape the landscape of the sector. This report will highlight several aspects of the current landscape but “our world” is not limited to just these discussed.

- Our Global Competitiveness
- The Belt & Road Initiative
- Brexit Implications
- The Emergence of South America
- Variability in Climate
- Biosecurity Challenges

OUR GLOBAL COMPETITIVENESS

In the current global landscape, Australia has lost a competitive edge in the sector and has seen a decline in the global export market share. Driven by decreasing productivity and increasing global competition, the Australian agriculture sector is continuing to lose market share in global agriculture exports. Over the period from 1996 to the end of 2014, the value of global agricultural trade has grown at an average compound annual growth rate (CAGR) of 7% per annum.[24] Over the same period, the value of agricultural imports by nations in Central and South Asia, Africa, and the Middle East have grown at a rate of over 14% per annum.[25] Yet over the same period, the value of Australian agriculture exports has only increased by an average of 5.2% per annum – Australia is slipping in market share and competitiveness.[26] To assist in analysing the current competitiveness, this report has broken it into pre and post-farmgate.

From 1996 to 2004

7% The value of **global agricultural trade** has grown at CAGR of 7% per annum.

14% The value of agricultural **imports** by nations in Central and South Asia, Africa, and the Middle East have grown at a rate of over 14% per annum.

5.2% The value of Australian agriculture **exports** has only increased by an average of 5.2% per annum.

Pre-farmgate

There has been substantial reporting and data on the value of Australia's agricultural production and profitability at a pre-farmgate level. In general, raw commodity prices dictate the value of production and pre-farmgate as the volume produced is easily traced.

There has been a considerable slowdown in Australia's productivity since the 1970s when it peaked at almost 2% across all broadacre crops.[27] Australian agricultural productivity growth rates have effectively been close to 1% in the decades that followed, while the agricultural productivity growth rates of other comparable nations have been in the range of 1%-3% per annum.[28] One factor that is frequently raised is the level of Australian public investment in agricultural research and development (R&D). Given the known lag times between R&D investment and productivity growth (between 15 and 30 years),[29] it is reasonable to suspect this may be a factor in the stalled productivity growth being observed in Australia.

Private investment has also been stagnant in the Australian agricultural sector compared with significant capital investments in other countries such as the United States of America (US). According to Deloitte, the sector traditionally sources capital from debt and retained earnings from farm operators,[30] which is currently around $35 billion (AUD), yet this level of debt has remained unchanged over the last decade.[31] It is unlikely capital investment will be able to increase from these sources, and Australia will need to look to other sources to increase capital investment. The sector requires an increase of $250 billion (AUD) in investment to achieve the 2030 target of $100 billion (AUD) in production.[32] The current capital sources of farm debt and retained earnings may be able to contribute half of this amount over the next decade; however, this will still leave a shortfall of $125 billion (AUD).[33] Australian agricultural sector is not seen as an attractive investment option for domestic investors due to volatile and unpredictable factors such as weather. This image will need to change if capital investment targets are to be achieved by 2030.[34]

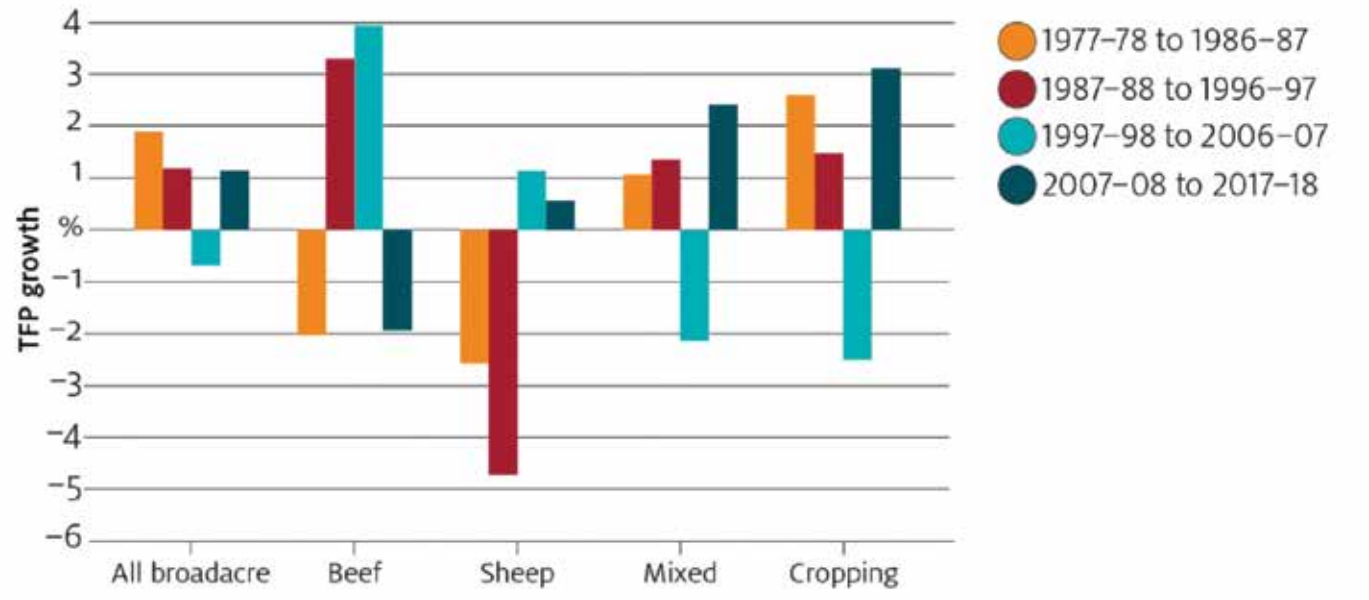


Figure 6: Total factor productivity growth, average annual changes, by broadacre industry, Australia, 1977-78 to 2017-18 (Source: Australian Bureau of Agricultureal and Resource Economics and Science)

A focus on risk management throughout the supply chain and identifying opportunities within the sector that align with Socially Responsible Investing (SRI) according to Environmental, Social and Governance (ESG) factors will improve the sector's image from an investment point of view. The opportunities for ESG risk management in the sector will be explored later in this report. Productivity and profitability in the supply chain will contribute significantly to the growth of the sector and have significant implications for the growth of the sector before the farm gate.[35]

Beyond the challenges of private investment, in the global context, the availability of funds for R&D is relatively small. The majority of agricultural R&D occurs through government and sector owned Research & Development Corporations (RDCs)[36] – in conjunction with research institutions such as Universities. Evidence suggests in order to be competitive globally, the sector is currently relatively under-resourced from a R&D capital investment viewpoint.[37] Such a shortage has allowed other nations such as Brazil to further advance R&D within the sector and become competitive against Australia. The agriculture R&D funding ecosystem controlled by the three tiers of government is approximately $1 billion (AUD) per annum, not including levies supplied by growers.[38] This money includes matched funding for RDC's, applicable from the Commonwealth Scientific and Industrial Research Organisation (CSIRO), CRC grants, R&D for Profit, applicable block funding for Universities, and State Government agricultural investment.

In simple terms, Australia has a relatively small revenue-based funding for pre-farm gate R&D compared to our major global competitors.

Questions for the Australian agriculture sector to reflect on:

Where can Australia find the additional $250 billion (AUD) in private investment for the sector?

How important is Environmental, Social and Governance (ESG) factors in the future of agricultural business investment?

Post-farmgate

The value added to the productivity and profitability of the sector post-farmgate is substantial and vital to the progress and growth of the sector. The opportunities post-farmgate has to add to the growth of production and profitability is substantial. Post-farmgate also has more options to find growth opportunities that are not necessarily limited to commodity prices. There is also a significant opportunity to increase the reporting capabilities of post-farmgate data, contributing to the overall value of the sector and its profitability. As an improved, more transparent, efficient and detailed data reporting of post-farmgate will highlight which sectors have the opportunity for further growth and which are performing well. In other countries, investment in post-farmgate agribusiness advancement has shown that values can be multiple times higher than pre-farmgate. Many of the major production agribusinesses in Australia also add value to their output post-farmgate. The key to achieving productivity and profitability targets over the next decade may lie within the post-farmgate sector more than pre-farmgate – as pre-farmgate tends to be constrained by raw commodity prices. The opportunities to value add and multiply value post-farmgate should be heavily considered in any future strategic planning in the growth of the overall sector.

Inefficiencies with transport and infrastructure in the sector have had significant effects on Australia's ability to be as competitive on the global stage. For some agricultural commodities, the cost of transport from farm gate to an overseas market can exceed 40% of the value of the product.[39] These high transport costs are impacting Australia agriculture's competitiveness, not just for primary producers but throughout the value chain. Much of Australia's transport infrastructure was constructed in the first half of the 20th century. While some infrastructure has been upgraded, there has been considerable underinvestment and retirement of aging facilities in other areas.[40] The inefficiencies and lack of investment in modern infrastructure is impacting the entire value chain, not only the cost to primary producers, agricultural logistics companies are feeling the effects of the lack of investment in infrastructure as well. Inefficiencies directly impact the amount of time it takes to transport goods, meaning that logistics companies are potentially missing out on more significant opportunities to transport higher volumes and at greater frequencies,[41] thus creating higher operating costs and therefore diminishing potential returns. The need for increased investment and capital in transport and infrastructure for the Australian agriculture sector is critical to achieving profitability and productivity improvements in the supply chain.

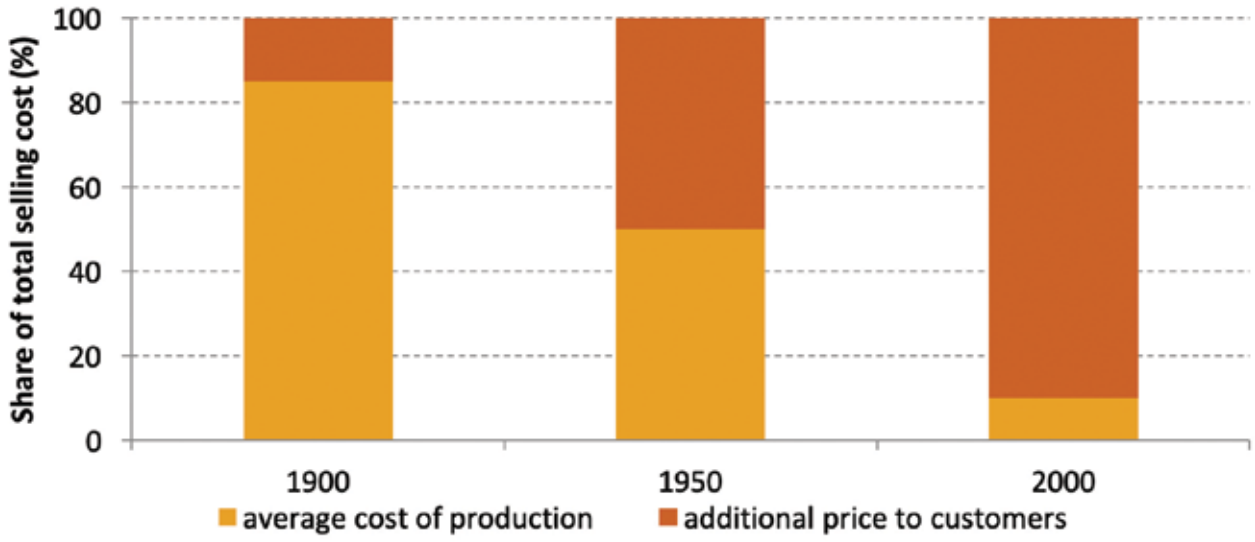


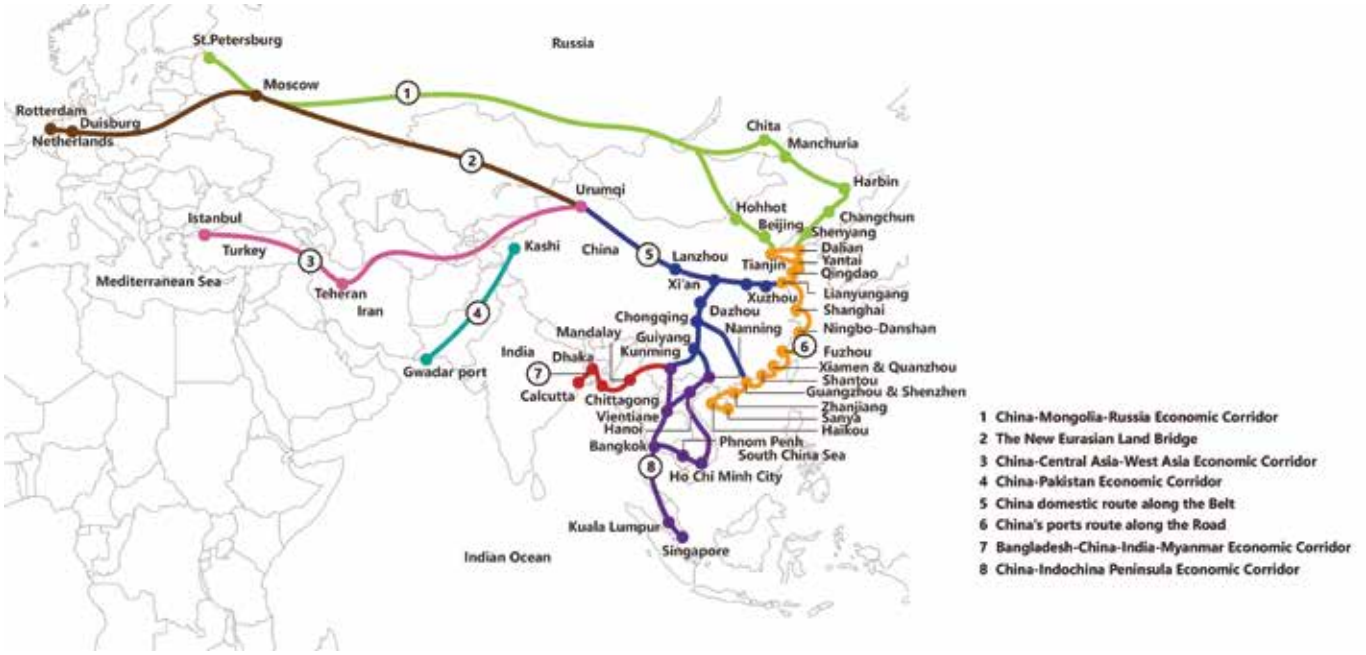
Figure 7: Value of production pre & post-farmgate by % (Source: Department of Agriculture, Water and the Environment)

Since 1900 the percentage of value add to a commodity post-farmgate has increased from 15% to above 85%.[42] Post farmgate businesses now can determine the value of raw commodities as it moves past the farm gate. Yet, there is limited data available and reporting in place to be able to identify where exactly the value is being added post-farmgate, for comparison between sub-sectors within the sector, and along with difficulties associated with comparing Australia's post-farmgate contribution to the sector's overall production and profitability with global competitors such as Brazil and the US.

However, Australia is still competitive globally; production growth is still occurring in the Australian agricultural sector, and export markets are still solid due to beneficial Free Trade Agreements with the US and South-East Asian nations, which other exporting countries do not have.[43] Agricultural production has increased over the past two years at an increased rate, with 2018-19 seeing a 4.4% increase compared with 2017.[44] The sector and government's challenge is to turn these observations into opportunities and understand our world while driving change and innovation to continue to be a global exporting force.

Questions for the Australian agriculture sector to reflect on:

- **How competitive is the Australian agricultural sector post-farmgate?**
- **Should more post-farmgate data be recorded and shared to allow for more valuable benchmarking on global competitiveness?**
- **How significant is the value add component post-farmgate?**
- **Is Australia's post-farmgate value add competitive with other nations post-farmgate value add?**



Map 1: The B&R Six Economic Corridor (Source: Australia-China Belt & Road Initiative)

THE BELT & ROAD INITIATIVE

With the commencement of the Belt and Road Initiative (B&R) through Asia and into Europe, Australia has seen huge potential in the opening up of new trade routes, investment opportunities, and market diversification. The B&R is aspiring to promote greater long-term regional cooperation and physical connectivity between China and its trading partners. Just as the ancient Silk Road opened up trading opportunities to regional economies centuries ago, the introduction of the B&R is bringing this into the modern era, with substantial economic potential to unlock. The B&R has the potential to have a profound economic and trade effect on Australia's immediate economic region as well as on a large portion of global trade. The physical infrastructure that is involved with the B&R includes road and rail across Eurasia, pipelines, and increased connectivity via sea ports. Also, there is the prospect of fibre optic undersea cabling to create a digital silk road and prospective artic silk road and maritime silkroad.[45]

While there are substantial opportunities for Australia to take advantage of this new modern trading route, competition is growing from other en-route B&R countries. Australian grain growers are experiencing increased market share competition with countries like Kazakhstan that are seeing increased exports. The Black Sea region's market share of wheat increased to 37% in 2017/18.[46] Though China's investment and introduction of the B&R, China has been able to bring Asia to Europe and can link Eurasian trade economics to their trade advantages. The "land-bridge" that has been constructed through central Asia is opening up export markets such as the Kazakh grain market which is an obvious threat to Australia's exports if Australia does not capitalise on having some involvement with the B&R. The opening of a "maritime silk road" is endeavouring to open up a link of sea ports through South China Sea and beyond.[47] One of the new B&R sea lanes that have opened up is from New Zealand directly to China,[48] Australia is yet to sign on to create a sea lane that is classed as part of the B&R initiative. Significant transport time benefits are occurring due to the connections the B&R are opening up, transit times have reduced by up to 50%, with containers taking 12 days to make the journey from China's eastern seaboard to London.[49] Previously this journey would have taken double that time if it was transported via sea or would have been double the cost if air freight was used.[50] Not only will this benefit China, for Australia it will bring all of Europe closer to Australia through this new trading route.

Economic Impact Examples

The B&R initiative is already showing global economic benefits, with $3.5 billion (USD) being generated with the Yiwu – Madrid railway line between its opening in November 2014 and October 2018.[51]

Between 2013 to 2018 goods traded between China and related B&R countries have exceeded $6 trillion (USD). This is an unprecedented global trade front that encourages greater trading opportunities throughout China, ASEAN and Central Asia.[52]

There are some significant opportunities to expand trade and play a vital role in the growth of the B&R. However, like with any major global trade advancement, this initiative does need to be approached with some caution and assessment of the risks. The US's National Security Strategy "claims that the B&R is predatory economics",[53] citing the reservations stemming from heavy debts, projects below the US infrastructure standards, and a lack of transparency.[54] When assessing what role the Australian agriculture sector can play in the B&R these factors contribute to any ESG risk assessment.

Australia's challenge is to identify how to utilise the B&R, and what emerging markets are available. The Australia-China relationship will be vital to any utilisation of the B&R, however this initiative does not limit trade relations to just China. There is a huge potential to utilise this modern silk road to unlock trade with Eurasian nations that are not big trade partners in 2020. As Australian agriculture is currently 6.3% below the trend growth required to achieve the sector target of $100 billion (AUD) by 2030, global trade opportunities like the B&R are paramount to the success in this sector.

Questions for the Australian agriculture sector to reflect on:

- **Where can the sector look to invest to optimise the use of new trade routes and networks?**
- **What level of involvement should Australia and the agricultural sector have in the development and utilisation of the B&R?**
- **Do the improvements in IP protection, transparency and governance of the B&R initiative projects provide greater confidence for investment and participation?**
- **Should geopolitical alignments constrain mutually beneficial partnerships between the Australian agriculture sector and China?**

BREXIT IMPLICATIONS

> *"(Australia is going) …above and beyond the status quo we are working to open new opportunities for Australian exporters, businesses and farmers."* [55]
> *– Senator Simon Birmingham, Minister for Trade, Tourism and Investment, Jan 2019*

Brexit is one of the biggest geopolitical uncertainties affecting global trade in modern history. After two years of uncertainty and two elections, the United Kingdom (UK) officially left the European Union (EU) on the 31st of January 2020. The UK will entirely leave all current EU trade agreements on the 31 December 2020 with a "Brexit deal" of newly negotiated bilateral and multilateral agreements.

The Australian Government has been working to ensure that the Australian agriculture sector is not adversely impacted through the Brexit transition period. On 18 January 2019, two bilateral agreements were signed between Australia and the UK.[56] These two agreements were the *Agreement on Trade in Wine* and the *Agreement on Mutual Recognition in Relation to Conformity Assessment, Certificates and Markings between the Australian and British Governments.*[57] These agreements strengthen the trade relationship between Australia and the UK and ensure greater alignment of goods traded.

One action already flagged by the EU is that existing agricultural World Trade Organisation (WTO) tariff-rate quotas will be "split" between the UK and the EU.[58] The Australian Government has identified that this will include Australia's country-specific quotas for a range of products including beef, cheese, and sugar. According to the Department of Agriculture, Water and the Environment, the "Australian Government is currently negotiating with the EU and the UK seeking compensation as a result."[59] This is an ongoing dialogue and the outcomes of these discussions would not be known for a while.

Even though this is a time of trade uncertainty in Europe, Australia is in a strong position to come out favorably. Senator Simon Birmingham, the Minister for Trade, stated that "(Australia is going) … above and beyond the status quo we are working to open new opportunities for Australian exporters, businesses and farmers."[60] This sentiment shows that the Australian agricultural sector has a once in a generation opportunity to push for increasingly favourable trade deals with a post-Brexit UK and Europe. With new trade deals in the European market becoming a reality of "our world", the focus needs to be on achieving a favourable outcome for the Australia agriculture sector to see continued production and export growth.

Questions for the Australian agriculture sector to reflect on:

- **Does the Australian agricultural sector need to diversify exports to the EU due to "split" in WTO quotas?**
- **Can the Australia agriculture sector obtain a higher percentage of the post-Brexit UK market?**
- **Are there opportunities for the Australian agriculture sector to export other areas of the sector, such as AgTech post Brexit, along with commodities?**

THE EMERGENCE OF SOUTH AMERICA

One of the most significant emerging competitors for the Australian agricultural sector is the South American agricultural sector, especially beef exports from Brazil.

Since 2000, South American beef exports have more than tripled in valued to $175 billion (USD) in 2014.[61] This dramatic increase in South American exports has led to a decrease in market share of Australian exports, especially in Asia. The advantages in South America that have driven this increase in market share have been more open market access as a result of improved disease control and the lifting of trade bans,[62] and lower export supply costs primarily due to on-farm productivity, in part attributed to low labour costs.[63] These advantages have had the most noticeable impact on Brazilian and Paraguayan exports.[64]

Brazil has seen a 25% increase in cattle herd between 2000-2014, with this continuing to trend upwards.[65] Brazil has the second-largest cattle herd globally and is four times larger than the second largest in South America, Argentina.[66] This dramatic increase in herd size has allowed Brazil to enter the Chinese market. The growth of herd size is in line with the rise in the value of the South American export market. With Brazil having established itself in the Chinese market and creating greater competition to the Australian exports, Brazil has now been granted access to export into Indonesia as of 5 August 2018.[67] Australia needs to consolidate its position in the ASEAN region (Brunei, Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam) in order to continue to supplement the Chinese export market, and hence achieve critical success by working towards the sector target of 4% growth per annum.

A major difference in the focus of the Australian beef sector compared with the Brazilian beef sector is the export focus. Australia produces beef with exporting as a priority, this allows importing nations such as China to look at Australia as a reliable option for beef. Brazil has an inward domestic focus where beef production and exports are dependent on the domestic market.[68] If the domestic demand for beef in Brazil increases, then the amount available to export significantly decreases. This is a point of difference that Australia can draw upon when striving for greater growth and market share. Australia also has a significant geographical advantage with its proximity to Asia and shorter transport times. Australia has also proved that it is an agile exporter and has adapted to the variabilities of climate and geography. Australia has a great use of intensive and high rainfall finishing systems, especially a significant focus on feedlots for finishing. This allows for Australia to ensure that livestock is reaching exportable weight without the need to fully depend on climactic conditions all year round. There is an opportunity to continue to differentiate Australia with other nations by improving and innovating sophisticated, sector-wide climate and production variability forecasting. Through providing our trading partners with greater supply chain predictability and certainty it will be favourable in retaining and growing our current trading partners and potential trading partners for Australian exports.

Size of cattle herd per country (million head)

27.2
in Australia[69]

53.5
in Argentina[70]

232
in Brazil[71]

12
in Uruguay[72]

13.8
in Paraguay[72]

Outside of the Brazilian beef sector, the nation also contributes a considerable amount to the production of agricultural products such as sugar, coffee and soybeans. Brazil is currently producing 50% of the world's sugar,[74] whereas in Australia, sugar comprises 5.2% of total agricultural exports. One of the most significant assets that Brazil has is the favourable climate and more abundant freshwater supply that allows for two or more harvests a year.[75] Some of these factors Australia is unable to compete with, such as the amount of available freshwater. However, the broader sector can look to exploit the advantages Australia does have, including its geography and positive political trade relationships.

With a targeted strategic approach to providing reliable, high quality, disease-free beef to the Asian market, Australian agriculture can look to differentiate itself from South America and continue to target the growing Chinese middle class as they look for higher grades of red meat and protein. Although the ever-growing production and increase in market share coming from South America is a reality of "our world", Australia is poised to continue its growth with a focus on reputable, high-end, and high-quality beef to Asia.

Questions for the Australian agriculture sector to reflect on:

Can the Australian agriculture sector achieve a premium for a higher quality of Australian produce compared with the South American produce?

Are there opportunities to work with the South American agriculture sector for mutual advancement?

VARIABILITY IN CLIMATE

Dorothea Mackellar coined the iconic phrase, "I love a sunburnt country…of droughts and flooding rains."[76] This has always been synonymous with Australia, however with challenging weather conditions such as droughts and bushfires increasing in severity and frequency, how is the Australian agricultural sector adapting? In 2019 and the beginning of 2020 there were some of the worst bushfires on record with fires encompassing large parts of New South Wales, Queensland, South Australia (especially Kangaroo Island) and Victoria causing more than 6.3 million hectares to be burnt.[77]

For the Australian agricultural sector, this has been an extremely challenging and harrowing time. The former Federal Agricultural Minister, Senator Bridget McKenzie, confirmed livestock losses were over 100,000 animals.[78] Throughout the supply chain, this has a direct impact on their livelihood and will have a dramatic knock-on effect on Australia's ability to produce at its current level and to work towards the sector target of 4% growth per annum whilst the recovery efforts are ongoing.

The Bureau of Meteorology has studied Australia's rainfall and the ongoing drought conditions. Analysis of rainfall deficiencies for the first nine months of 2018 indicates that 49% of agricultural land in south-eastern Australia experienced one in twenty year drought conditions, compared with 81% of agricultural land at the height of the 2002-03 drought.[79] Annual average rainfall in many regions of southern and eastern Australia has decreased since the 1950s,[80] whereas annual average rainfall increased in much of northern Australia since the 1950s.[81]

Australian agriculture sector adapting to a challenging climate

- **Reduced number of livestock and allowed pasture regeneration after drought**
- **Drought resistant vegetation as livestock feed**
- **Modern crop farming techniques to prosper during drought**

With this change in rainfall distribution across the continent, producers have looked to diversify their practices and what they produce. Graziers have adapted and innovated to reduced rainfall by altering the number of livestock kept on the farm, and also not restocking after drought to allow pastures to regenerate.[82] Other producers have looked to drought-proofing their farms to be able to adapt to shortages in water availability. Some sheep producers have brought in native vegetation such as saltbush which is extremely drought resistant and a source of feed for their sheep.[83] Grain growers have turned to modern farm management methods and working with others throughout the supply chain to prosper during drought, with techniques such as soil management (to retain more moisturiser from rainfall), crop rotations and diversification, and extending their crop selling window to take advantage of more price opportunities.[84]

The challenges posed by a changing climate and the conditions it brings will not only affect primary producers but will be felt through the value chain and into investors and capital flows. The implications of these climatic conditions mean that the financial sector of agribusiness will begin putting increased focus on accurately pricing risk, risk mitigation, and diversification. The Australian agriculture sector will have to commit to signal to our customers changes in output earlier to allow time to adjust and therefore reduce "risk premiums" in purchasing and investment decisions. Business identifying and adapting to these changes will ensure continued market confidence and confidence in the sector.

Questions for the Australian agriculture sector to reflect on:

How significant will the impacts of the 2019/20 bushfires be on the growth of the Australian agricultural sector?

Given average rainfall, is there sufficient planning and policy in place for water supply within the sector?

What opportunities are there for advancement in technology and practices to combat changing climate conditions?

BIOSECURITY CHALLENGES

Whilst Australia has processes and policies in place to limit and prevent any risk of disease spread amongst livestock or throughout crops, the threat of disease affecting the production throughout the sector value chain is ever-present.

The effect disease can have on the sector is both ecological and economical. If the disease is found in Australia, then the impacts on the production, exports and the economy are felt throughout the value chain. Conversely, disease affecting other nation's agricultural sector can benefit Australian exports with an increase in demand and higher prices.

In late 2019 citizens of the city of Wuhan in China were beginning to be diagnosed with the newly discovered novel Coronavirus (COVID-19).[85] The disease started to spread rapidly from Wuhan and cases were starting to be reported across the globe including multiple cases in Australia.

This virus originated from animal to animal transmission, and then in wet markets in Wuhan it was transmitted from animal to human.[86] Although no Australian exports have been found to be carrying this virus, the repercussions of the spread had dramatic effects on certain exports and caused a direct hit to production value. The WA rock lobster sector felt the full force of the coronavirus control protocols when China ceased importing WA rock lobster.[87] Exports to China are vital to the WA rock lobster sector with 98% of production making its way to China.[88] On the 26 January 2020 the price for rock lobsters plummeted to $0 per kilogram.[89] Although the prices have since increased, there will likely be significant long-lasting economic impacts on the sector, even once China begins accepting Australian rock lobster again. With a number of cities throughout China in quarantine to limit the spread of the coronavirus, a significant drop in demand for all goods has occurred.

By March 2020, China has taken a number of actions to restart its economy as the outbreak seems to slow. Factories across China started slowly reopening. At least eight provinces and regions downgraded their emergency levels, loosening the most draconian restrictions on movement to allow people to leave their homes and return to work.

Australia is in an early stage of managing the impact of the COVID-19 on the economy with several measures in place. The Government has warned the impact of COVID-19 on the economy and people's lifestyles may last for six months or even longer. As leaders of the sector, we need to be aware of and take proactive actions in responding to the potential negative impact the COVID-19 brings to us: input supply chain reduction, movement into economic recession, and general price decrease due to the decline in consumer demand.

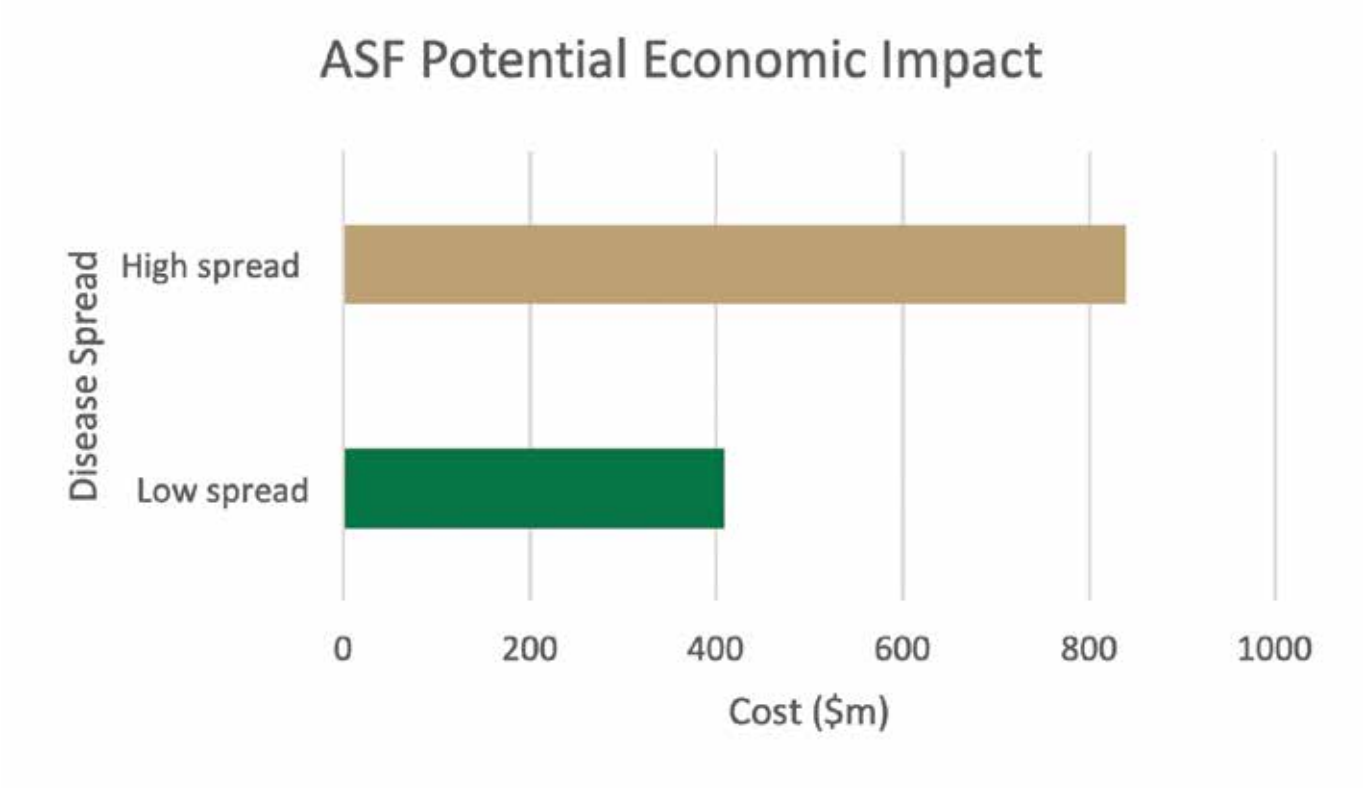


Figure 8: African Swine Fever potential economic impact (Source: Deloitte)

Another example of the very real threat to Australian agriculture is African Swine Fever (ASF) as it currently is affecting pig stocks throughout Asia and Europe. It saw exceptional spread when it arrived in China and the disease has decimated global pig numbers.[90] The presence of this disease is a double-edged sword for the agricultural sector in Australia. As a result of the reduced number of pigs in China it has driven demand up for Australian pork and beef. Australian exporters have been able to charge higher prices as a result of the shortage, and as ASF is not present in Australia, the assured quality of the meat supplied is also having a positive effect.[91] The economic impact of this disease is that year-on-year exports to China were up 115% with a 20% price jump.[92] The implications of this increased demand means that the increased cash flow into the pork sector can be reinvested into the sector to ensure future growth once the disease is back under control globally.

However, if ASF does reach Australia's shores then the pork sector could take a significant hit. The Australian Government through the Department of Agriculture, Water and the Environment is investing $66.6 million (AUD) into preventing and detecting ASF in Australia.[93] Some of the measures include more biosecurity officers and detector dogs, new x-ray machines for testing in Sydney and Melbourne, and importantly in an economic sense – market access negotiations are continuing so that trade can continue if there is an outbreak in Australia.[94] A major concern with the ability to control an outbreak is that if ASF was able to penetrate the feral pig population, the disease could spread far and wide.[95]

Not only will Australia's biosecurity be compromised the economic and business effects will be devastating. In a scenario where it is controlled and the spread of disease is low, there is likely to be an economic impact on the sector of $409 million (USD) lost throughout the value chain.[96] In a worst-case scenario with a high spread of disease the economic modeling shows that the sector could expect a loss of around $839.5 million (USD) across the value chain.[97] The damage ASF would do to the pork sector and the agricultural sector as a whole would last well into the decade and would make it extremely difficult to reach the 2030 sector target even with pigs making up a small percentage of the whole sector.

The threat of disease infiltrating Australian agriculture has greater impacts and implications than just before the farmgate. Significant effects on the economy, investments and businesses throughout the supply chain would occur.

Questions for the Australian agriculture sector to reflect on:

Is the Australian agricultural sector doing enough to prevent disease outbreak?

What medium and long term economic impact will COVID-19 have on the sector?

Our Vision – Opportunities for the Australian Agriculture Sector

Having established the current landscape of "our world", there are some challenges that confront the sector in achieving the target of $100 billion (AUD) in production by 2030. There are some exciting opportunities for success across the entire sector in achieving the target.

"Our vision" is to achieve this target by driving capital investment, unlocking new markets and opportunities for the Australian agriculture sector to take a holistic approach across the whole supply chain to achieve critical success.

- Attracting New Investment
- ESG and Sustainability
- Transport Opportunities
- AgTech and Innovation
- Harnessing Global Trade Deals
- Commodities vs. Niche Markets
- Fragmented Markets
- Attracting the Right People

ATTRACTING NEW INVESTMENT

One of the major factors in achieving critical success in productivity and profitability is ensuring that there is a push to obtain increased investment to both on and off-farm from domestic and foreign sources. The focus of attracting new investment in the future will be to improve governance. There are three areas to attract capital in; **operational excellence, financial management, and governance.** The Australian agricultural sector succeeds in achieving the first two areas however, there needs to be improved capability in the governances of the sector to entice greater capital investment. The importance of the role that governance will play in the success of capital flows into the sector over the next decade is paramount and requires a concerted sector effort to adhere to world-leading governance. In Agribusiness Australia's view, there is considerable work needed in the governance of agribusiness to be in a position to attract capital investment.

Australian Agriculture Investment Scorecard

Figure 9: Agribusiness Australia's sector scorecard

The Australian agriculture sector has historically drawn significant foreign investment both up and downstream. For example, four of Australia's six major marketing and grain-handling companies are foreign-owned and collectively account for nearly 60% of wheat exports.[98] It is a similar story for red meat, sugar cane and dairy, where foreign investors have a significant stake in Australian processing capacity. The focus of investment has primarily been towards the end of the supply chain and advancements in the processing phase of production. There has been a distinct lack of foreign investment in the primary production stage of Australian agriculture. In the five years to 2018, annual Foreign Direct Investment (FDI) inflows to agriculture averaged $260 million (AUD).[99] This is just 0.6% of total Australian FDI inflows. As is evident, to achieve the 4% per annum growth target, there needs to be substantial investment downstream in the primary production phase of Australian agriculture.

Reflecting on this lack of primary production phase investment raises some questions. The Australian agriculture sector can boast desirable traits that should appeal to foreign investment, such as being a world-leading producer, addressing global trends and challenges, having a track-record of innovation, a thriving AgTech and FoodTech sector, and as well as being an ideal test market and strong government support for R&D sector-wide. For Australia to achieve the sector target set for 2030, there needs to be an annual investment of $12.5 billion (AUD) through diversified sources.[100] Further investment in agriculture in Australia throughout the supply chain is required to achieve critical success. However, with foreign investment and ownership comes a community sentiment that Australia is losing control of its agricultural sector not enhancing it. Studies have found that community sentiment towards foreign ownership and investment tends to be more consistent and on a long-term basis, meaning that it takes longer to shift this sentiment.[101]

The challenge for the sector is to ensure that both foreign investments are encouraged and nurtured, whilst working at the community level to ensure this investment is understood as a truly beneficial thing for the sector in terms of creating jobs and wealth. Through studies, it has been shown that Australians are cautious about the idea of foreign investment and ownership, yet still can appreciate that this investment will lead to growth.[102] Any investment should be informed by the requirements of both the regional communities dependent upon agriculture and processing, as well as the capital vehicles required to make it happen.

There are further opportunities for financial growth within the sector through venture capital investment. Venture capital funds and firms have identified areas in the sector to invest an influx of capital to. AgTech sees significant investment from venture capital funds with venture capital investment of $1.7 billion (AUD) in 2017.[103]

From that base of investment in 2017, there was an increase of another $600 (AUD) million more invested in the first 5 months of 2018.[104] Investment in innovation will open up more opportunities for efficient production throughout the supply chain along with the potential of reduced costs through innovation. The outcome of this would see the value of production increases and can help the sector achieve the 2030 target. As mentioned earlier in this report, one of the main sources of capital in the sector is retained on farm earnings. With further investment in innovation, there are considerable opportunities to increase farm earnings that are retained, and this in turn can increase the percentage of capital can contribute towards the $250 billion (AUD) increase needed by the sector by 2030. Along with this, increased earnings would allow agribusiness to take on higher debt with lower risk.

Concurrently to this private investment in the agricultural sector, the current RDC structure needs to be modernised to better adapt to competitors and disruptors if the sector is to achieve critical success and increase growth. RDCs were established by the Australian Federal Government in 1989 and as of January 2020 fifteen RDCs are operating.[105] The former Minister for Agriculture, Senator Bridget McKenzie, announced the creation of an advisory body to provide options on reform opportunities for the Australian agricultural R&D system by early this year. In July 2019, the Red Meat Advisory Council (RMAC) released a white paper on the future of the RDCs in the red meat sector.[106] This white paper suggested the review of the current RDC model and recommended that "three new streamlined and unified sector bodies" be established.[107] Recent reviews across the RDC model have identified possible ways to modernise the system such as reduced duplication of effort between RDCs, increase investment in cross-sectional R&D, and greater levy-payer involvement to drive on-farm R&D uptake. The sector should also look to opportunities with international linkages. Due to the revenue for R&D in Australia being limited, utilising international research undertakings through the likes of joint ventures will see the R&D revenue go further. The key to improving the return on investment (ROI) is looking to invest R&D revenue from levies and government matched contributions into strategic projects and channels, along with joint ventures.[108]

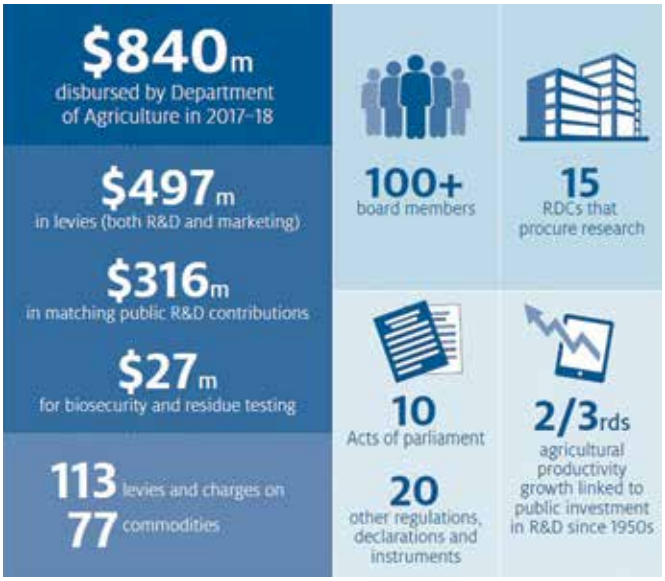


Figure 10: Summary of current RDC structure (Source: Department of Agriculture)

There is a substantial discrepancy between the levels invested in R&D by Australian RDCs compared with foreign companies and government, and further investment in the R&D space in Australia is required. International Lifesciences companies such as ChemChina owned Syngenta are investing upwards of $1.3 billion (USD) in R&D in the advancement of crop development and yields.[109] This is compared with an RDC such as the Grains Research & Development Corporation (GRDC) reporting a total of $174 million (AUD) spent towards R&D in 2018-19.[110] This significant financial disadvantage to the sector in Australia means other nations are advancing their industries at a faster rate due to higher investment in R&D.

Levies play a vital role in the development of the sector. The more that is produced by the sector, the more transactions that occur throughout the supply chain, and the amount of investment through levies increases. With greater investment coming from levies, the R&D developments that occur will continue to help the growth of the sector and brings the 2030 target closer. The crucial component of R&D coming from levies is the need for all levy payers throughout the supply chain to see positive ROI and that these levies are being used to better the agricultural sector and increase the overall value.

The focus on strategic investment in R&D through RDC and commercial partners should not just be limited to the conceptual phases and the underlying research. There needs to be a focus on where the opportunities lie for greater commercialisation partner and opportunities with research and joint ventures. This is another channel in which capital can grow and further commercial and private investment can enter into the sector – ensuring greater productivity and profitability. Not only can the sector attract greater investment through the commercialisation of R&D products, through licensing and commercialisation agreements, it also can look to become a leader in the advancement of innovation. These agreements and royalties would also contribute greater revenue and therefore capital to grow the sector towards the 2030 target.[111]

There are clear opportunities to foster and encourage growth in investments throughout the agricultural sector along with intelligent and strategic use of current investments. As part of “our vision” for the Australian agriculture sector, the required $12.5 billion (AUD) per year is crucial in the critical success of the sector target.

Questions for the Australian agriculture sector to reflect on:

How does the Australian agriculture sector source and encourage greater international investment throughout all aspects of the supply chain?

What role does the current RDCs structure play in the future of the Australian agriculture sector?

Should all RDCs be combined into a portfolio (commodity) based entity with significantly reduced administration costs and enhanced efficiency with being able to focus on a single national RDCs strategy for the Australian agriculture sector?

ESG, RISK AND SUSTAINABILITY

Sustainability and Socially Responsible Investing (SRI) will be significant factors in the future of capital flows into the Australian agricultural sector and which sectors are targeted for growth in line with these factors.

The foundation of SRI is based around three key factors – Environment, Social, Governance (ESG).[112] Over the past decade ESG has risen in prominence and the influence it exerts on investment decisions in the agriculture sector and the greater financial investing sector. Originally it was seen as a gauge that had little influence that only some took notice of. However, in 2020 ESG is becoming better defined and is now entering "must-have" territory for companies to account for these factors.

The concept of ESG and SRI ensures that risks for investors and businesses are mitigated or, at a minimum, identified and there is awareness of these risks. From an agribusiness perspective, identifying ESG related risks and the opportunities presented by ESG is crucial for business resilience.[113] When it comes to ESG and investment risks, Australia's agricultural sector has a strong reputation of quality, maturity and safety. These factors are a significant advantage and something that Australia should look to leverage when encouraging future investment throughout the sector.

ESG is more important than ever in the operation of agribusinesses and will contribute considerably to the critical success of the advancement of the sector. Businesses that implement and adhere to ESG risk management will see greater opportunities for investment into the next decade as stakeholders focus more on these factors. ESG is being seen by a number of Boards and Executives as a competitive point of difference and advantage. The framework set out around ESG is deemed quite broad, and this allows funds and firms to compete with different ESG approaches.[114] Businesses are increasingly needing to assess risks and the impacts of ESG related factors, however there is a need to look at these ESG related risks "beyond traditional, internal business activities and assets".[115] A business anywhere along the supply chain from primary producer to an agribusiness financer needs to start identifying ESG risks throughout the entire value chain and even outside of traditional agricultural risks. For example, the impact social media has on the sector, which previously would not have been considered.[116]

Risk management and mitigation have always been the focus of any successful or growing business. In the current business landscape, this has developed further to also include understanding and incorporating risks. Some of the most pressing ESG related risks, as identified by a severity/likelihood metric, are; regulation, water, extreme weather events, land degradation and inefficient production practices.[117]

Increasing consumer demands for ESG and sustainability are examples of the increasing market segmentation opportunities. This should be seen by the Australian agriculture sector looking for opportunities for growth as a good area of opportunity. Segmentation increases opportunities for differentiation and value-adding opportunities. With an established foundation and strong supply chain; the opportunities that ESG brings to segmented markets is one that the sector needs in order to become a global leader in the global segmented markets. Not only will it ensure that the sector can capture increased market share via segmented markets, but it highlights the importance and focus the sector puts on ESG, sustainability and risk mitigation.

Not only do investors and key stakeholders prioritise ESG factors, consumers as stakeholders are also starting to take ESG factors into account when choosing products. Along with the list of risks above, another identified risk is changing consumer trends. Consumers' needs are forever evolving, but with a focus on greenhouse gas emissions contributed by the agricultural sector, it is highlighted more than ever.

The Australian agricultural sector contributes around 16% of total greenhouse gas emissions,[118] yet only makes up 2.7% of the nation's GDP.[119] Consumers are making decisions based on many of these factors. For the Australian agricultural sector both the emissions and consumer decisions are risks that are related to ESG. Consumer-driven ESG factors along with sustainability are affecting not only how products are produced and what products are consumed, but also how they are purchased. Accessibility, ease of use and technology are also affecting how the end of the supply chain looks like. The traditional supermarket model is in decline with different technologies opening up new opportunities and is disrupting the distribution and sale of produce as we know it.[120] New types of technology-driven consumer preferences such as UberEats, and Amazon Go (still being piloted in the US) are factors that are contributing to how the sector looks in the future. These new channels that are open to consumers are creating risks but also opportunities for the sector to innovate and be a world leader in the acceptance and mutual benefit these new channels offer.

The commercial value of ESG segmentation

There have been some significant commercial outcomes for identifying ESG segments in the Australian agriculture sector. The commercial outcomes of this include;

- **New path to market bypassing traditional supply chains and supermarkets**
- **Premium positioning**
- **Partnering with an established platform**
- **More than an ESG box ticking exercise**
- **Capturing greater margins by reducing supply costs**
- **Increased traceability due to less touch points in the supply chain**

Sustainability is born out of multiple ESG factors as there is an environmental component of the use of all resources. Socially the current global perspective is that the agricultural sector needs to manage corporate social responsibility to ensure that sector practices are sustainable, and regulation and internal governance will determine how sustainability will be enhanced. Investment in AgTech innovation is allowing for producers throughout the supply chain to implement sustainable practices and processes.[121] Stakeholders are also expecting businesses that they invest in will prioritise sustainability and practices that account for ESG risks.[122] Australian agribusiness should also look to implement sustainable practices to ensure they meet buyers' expectations, adhere to regulatory standards and improve their reputation as well as the reputation of the sector.[123] The agriculture sector globally and in Australia does not currently have a positive image relating to sustainability, so any efforts throughout the value chain will contribute to an improved sector image.

Governance and regulation will continue to play a crucial role in how agribusinesses function within the boundaries of managing ESG risks. The importance of transparent corporate governance will continue to be a focus for stakeholders as the sector works towards increasing production to the 2030 target. Overall, ESG and the management of risks associated with this form of the risk assessment will be pivotal for the future growth of the sector. Australian agribusiness that embraces this form of thinking and utilise it will see greater opportunity for advancement, investment and innovation than businesses that do not.

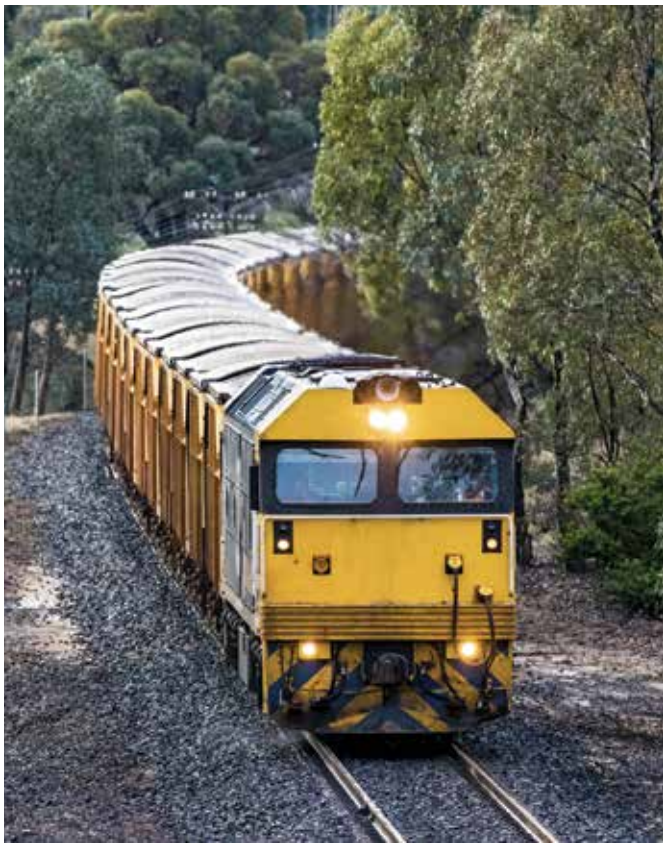
Questions for the Australian agriculture sector to reflect on:

- **How vital is ESG risk management to the future of agribusinesses and the Australian agriculture sector?**
- **What does best practise sustainability look like in the Australian agriculture sector?**
- **Can productivity, profitability and sustainability coexist?**

OPPORTUNITIES FOR TRANSPORT AND INFRASTRUCTURE

By unlocking further advancements in infrastructure and technology for transportation domestically and internationally, the Australian agricultural sector will be able to see significant growth from reduced transport costs coupled with the ability to transport higher quantities of produce at once.

This will not just see a benefit on farm but throughout the entire agricultural supply chain, with processors being able to reduce the time taken from receiving stock to processing and then transporting to the domestic market or transporting to export ports to access international markets. Advancements would also lead to benefits for logistics companies by allowing these companies to acquire more business as trucks, trains and ships become available to take more trips or increased weight. Infrastructure investment in transport will play a significant role in achieving the target of $100 billion (AUD) by 2030.



Investment and developments need to focus on the entire freight network (road, rail, ports) with different types of infrastructure developments required to maximise efficiency.[124] Investment in road projects such as strategic bypasses around bottlenecks in key corridors will be vital in finding these efficiencies. Bypasses have already been proven to have a direct impact on increasing value to the production by reducing costs due to decreased transit time.[125] The introduction of the Toowoomba Second Range Crossing (TSRC) saw the bypassing of Toowoomba and meant trucks avoided 18 sets of traffic lights.[126] With this bypass introduced, there was a decrease of up to 108,850 trailers transiting through central Toowoomba whilst the use of the TSRC increased to 110,000 trailers.[127] Overall this example of investment in targeted road infrastructure has created an annual transport cost saving for the sector of $5.4 million (AUD) by utilising this corridor.[128] Road infrastructure is vital for all types of commodities produced; however it is especially crucial for beef transport throughout its value chain as the majority of beef livestock is transported by road.[129] This is supported by the case study of the TSRC as beef was the commodity that saw the largest annual saving in transport costs,[130] primarily as Central Queensland beef transport utilised this route to move livestock to abattoirs and through to Brisbane for exporting. Network congestion is one of the major causes of bottlenecks and therefore inefficiencies within the supply chain,[131] investment in bypasses and increased network standards is paramount to seeing the sector grow at the required 4% per annum rate.

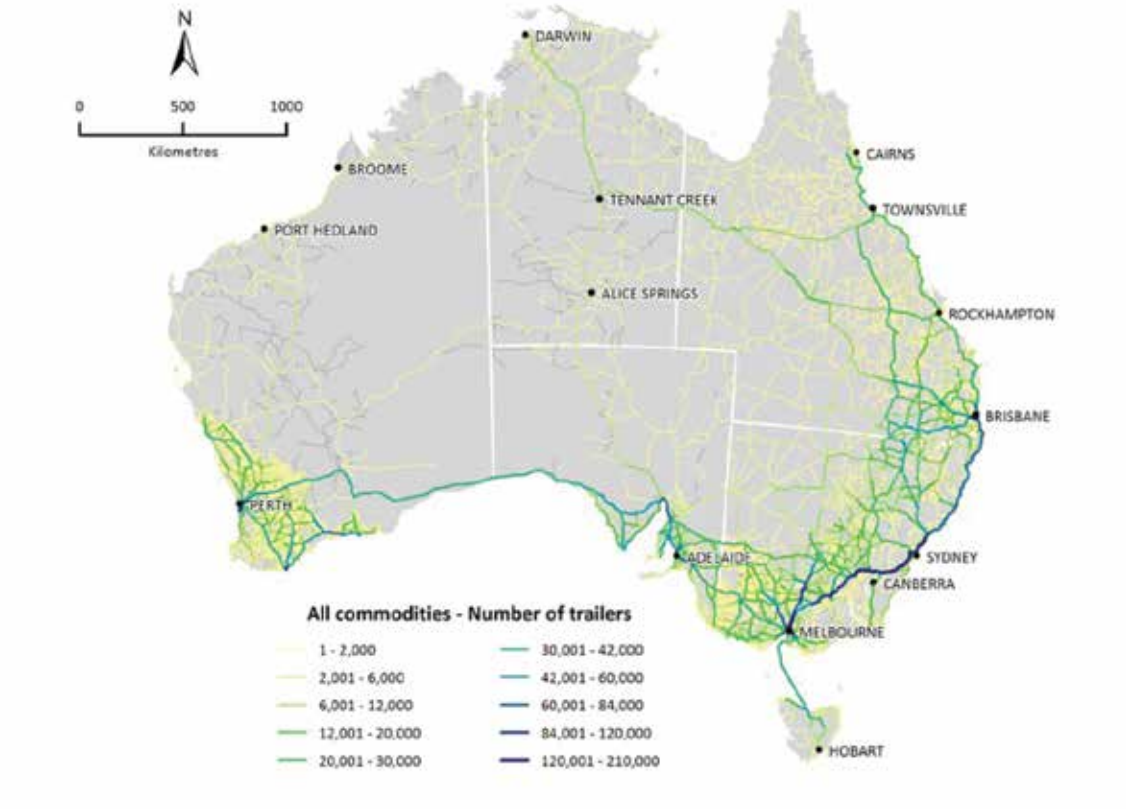


Image 2: Annual Trailer freight flow map (Source: CSIRO TraNSIT report)

Along with the investment in road infrastructure that fixes bottlenecks and other infrastructure inefficiencies, there is an opportunity to change regulations to allow higher mass limits in certain commodities transported. The CSIRO conducted a study which focused on milk transported between Mt Gambier to Melbourne via Warrnambool which found that, just in this particular corridor, an increase of allowed mass per A-Double vehicle from 68.5 tonnes to 74.5 tonnes would equate to a reduction of transport costs by $3.1 million (AUD) annually.[132] With a reduction in transport costs, the sector would see a higher production value margin and hence more available capital to be used.

Road infrastructure is not the only opportunity for investment and innovation along the supply chain, and there is considerable opportunity to improve the infrastructure towards the end of the supply chain in Australia with bottlenecks forming at terminals and ports.[133] Terminals have been identified as having significant opportunities to foster growth by investing in infrastructures such as better storage capacity for peak seasons, improved in-loading and out-loading capacity.[134] Further opportunity in this phase of the supply chain involves introducing new technologies at ports for produce and livestock that are being exported. Automated port technology would see the use of robotics to control and manage the ports.[135] Automation has started to be used in some ports such as Patrick's Botany Bay which has utilised automated stacking cranes operated from a remote control station.[136] The introduction of automation will see a more efficient way of delivering terminal services and reduce supply chain costs over time.[137]

There are also opportunities to harness international infrastructure projects to put Australia in a better position globally. One of the major benefits of Australia's geography is the proximity to Asia, compared with the Americas and Western Europe. The average distance for a ship trading from Darwin to Shanghai is around 3048nm (taking around 12 days) compared with a trip between Los Angeles and Shanghai which is around 5637nm (taking just under 20 days).[138] This geographical advantage is something Australia should be looking to utilise when building stronger relations with Asian trading partners. As mention previously in this report, the opening of the B&R trading route is an opportunity to connect Australia with more of the Asian region. Along with physical road and rail infrastructure in Asia, the B&R also encompasses increased maritime trading to ports throughout the South East Asian region. Coupled with increased infrastructure development in Australia and these advancements in Asia, the Australian agriculture sector could harness its geographical advantage to create greater efficiencies and export at a higher volume and frequency. Through leveraging positive trade relations in the area, there is further opportunity to increase market access by being able to export with greater efficiency.

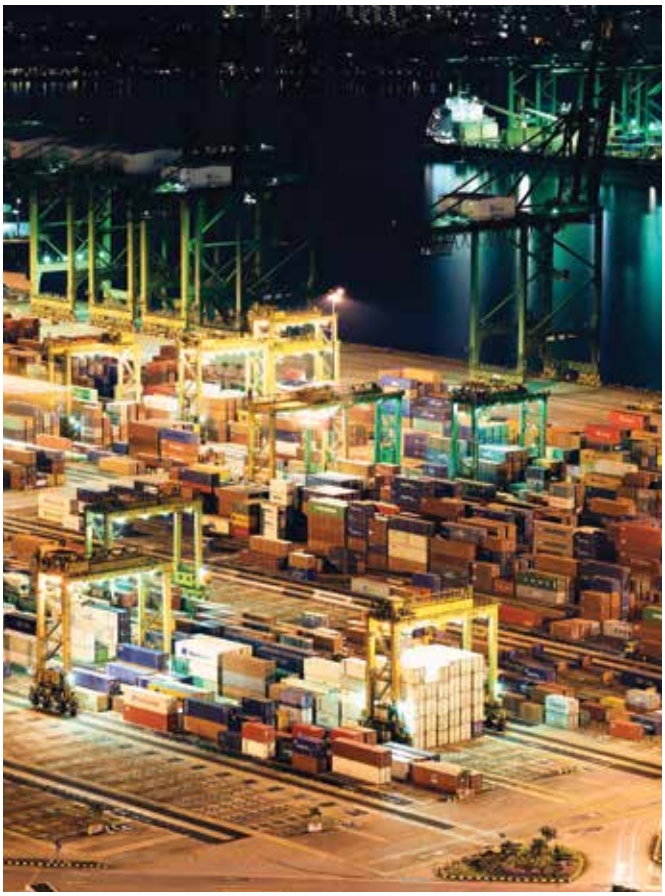
The opportunities for the sector to bring in investment to infrastructure and transport technologies would see a significant reduction in long term operational costs while improving transport times and increasing capacity to deliver commodities to the export and domestic market. To achieve the sector target by 2030 "our vision" sees these opportunities as vital to growing the entire sector.

Questions for the Australian agriculture sector to reflect on:

Where are the priority infrastructure investment opportunities to increase supply chain efficiency?

What level of automation should there be in the innovation of the supply chain?

Is it possible to take a whole supply chain approach by commodity (ie grain, beef, horticulture etc.)?



AGTECH AND INNOVATION

Some significant strides have been made in technology for the agricultural sector is allowing for increased profitability and production growth in all aspects of the supply chain. As mentioned previously in this report there are opportunities with automation in the transportation phase of the supply chain which will see increased efficiencies, already being trialed in ports such as Botany Bay. However, this is just one example of how technology can play a vital role in the growth of the Australian agricultural sector. Not only is there already tangible implementation within the AgTech sector, with initiatives being trialed, there is also significant interest and groundswell in what the future of AgTech holds. In February this year, two AgTech focused conferences were held – EvokeAg in Melbourne and AdvanceAg in Adelaide, which saw an attendance of 1,400 and 300 respectively. This level of interest in the AgTech space is extremely encouraging for agribusinesses operating in this space and should spur further developments, trials and overall AgTech entrepreneurship. The challenge remains to ensure productivity, profitability and sustainability outcomes through this innovation adoption.

On-farm AgTech has been trailed for broadacre cropping and livestock farming and has seen some impressive results. The use of affordable agile robotics is being used on grain farms to monitor and control weeds which has a result of precise weed control whilst using fewer herbicides.[139] Not only are robots able to achieve higher precision and consistency with jobs such as weed control, they can also operate for extended periods of time compared to humans, allowing the farm to be working 24 hours every day. These robots can also allow for jobs such as this to be repeated every three weeks while being cost-effective compared with a couple of times a year.[140] With this AgTech innovation, crops become more profitable as weeds are controlled before they spread allowing for the soil moisture and nutrients to be utilised by the actual crop.[141] Another on farm example of utilising AgTech is the utilisation of sensors and computer systems to constantly monitor all conditions such as soil, water and weather to better understand what the farm needs at any given time. This allows for precision farming and a greater yield each season.[142]

There have also been multiple trails on potential technology improvements for use in feedlots as well. A prototype automated robotic feed delivery truck was piloted at the Bindaree Beef Group's Myola Feedlot in 2019.[143] The benefits of this technology were that accurate feeding was ensured throughout the entire feedlot. By ensuring that feeding is accurate for each cattle, the carcase weight once processed will be consistent,[144] whereas inaccurate feeding creates inconsistent carcase weights at slaughter. Automation of this nature also ensures that there is increased efficiency across the feedlot allowing workers to focus on other jobs.

Beyond the paddock and the feedlot, technology has been used in processing facilities to provide accurate mapping of carcase composition. Dual Energy X-Ray Absorptionmetry (DEXA) is being used at multiple processing plants to identify the meat, fat and bone composition of each carcase so that processors can make more informed business decisions about what to use each carcase for.[145] DEXA technology also provides feedback to producers regarding the composition of the livestock sold to processors allowing for further precision farming.

The impact that AgTech will on the sector's growth is expected at CAGR of 24% by 2024[146] globally with the Asia Pacific being the fastest region for growth of use.[147] This is a significant opportunity for the Australian agricultural sector to be at the forefront of this growth. With an increase in the use of artificial intelligence (AI) and AgTech throughout the sector, there will be labour jobs that will be replaced. Deloitte predicts that the introduction of AI and AgTech could replace $32.4 billion worth of human labour and services in the sector.[148] There will however be new and different jobs created on the back of AI requiring different skill sets to become part of the Australian agricultural sector.

There is substantial opportunity for this sort of technology along with others on and off-farm to increase the efficiency and value of production. As identified, throughout the supply chain, there are many and material opportunities to implement technological innovations to increase the value of production. Whether before planting a crop or all the way through to efficiencies during transportation domestically or internationally. Flow on effects from the use of technology is not just limited to on-farm either. By trailing and utilising this technology it allows new businesses creating technology to play a significant role in the future of the Australian agriculture sector and opens up greater investment opportunities throughout the supply chain which is crucial for "our vision" to succeed. The Australian agriculture sector needs to become a global AgTech leader and innovator to achieve the desired sector growth.

Questions for the Australian agriculture sector to reflect on:

Where are the opportunities for investment in AgTech innovation?

What is the importance and relevance of developing a flourishing AgTech ecosystem in Australia?

How can the triple objective of productivity, profitability and sustainability be achieved?

HARNESSING GLOBAL TRADE DEALS

The Australian agriculture sector is renowned for offering a superior, higher quality, traceable products throughout the sector. With this reputation, Australia needs to continue to work with foreign governments in negotiating and strengthening trade agreements such as Free Trade Agreements (FTAs) and other bilateral and multilateral agreements that remove barriers for Australian exports so they can remain competitive.

Within the current global landscape and greater globalisation, Australia is in a position to take advantage of its global reputation and strong relationships with many countries. Australia currently has 12 FTAs[149] (see table to the right) which has seen significant market access improvements as a direct result of these FTAs.[150] The most recent FTA signed was the Indonesia-Australia Comprehensive Economic Partnership Agreement (IA-CEPA) which was ratified by Indonesia on the 6th of February 2020. There is significant importance with the ratification of the IA-CEPA as Indonesia is the fifth-largest export market for Australian agricultural products.[151] The outcomes of the IA-CEPA include the elimination of tariffs on live cattle which will see male feeder exports from Australia rise to 700,000 heads by the sixth year of the agreement.[152] Also included in the IA-CEPA is the removal of tariffs on frozen beef, sheep and goat meat, elimination of tariffs on honey, some tariffs on fruit and nuts, and guarantees access to the Indonesian market for 500,000 MT of feed grains.[153] With the elimination of tariffs and greatly improved market access to Indonesia opening up over the next decade, this will play a positive role in the growth of the agricultural sector.

There are several FTAs that have concluded but are not in force as yet. These FTAs are with Hong Kong, Peru and numerous Pacific Islands under the *"Pacific Agreement on Closer Economic Relations (PACER)"*.[154] Once these FTAs are functioning, there will be immediate benefits to producers in Australia as this will create greater market access in substantial markets.

Current Free Trade Agreements[155]

- → **Australia-New Zealand (ANZCERTA)**
- → **Singapore-Australia (SAFTA)**
- → **Australia-United States (AUSFTA)**
- → **Thailand-Australia (TAFTA)**
- → **Australia-Chile (ACl-FTA)**
- → **ASEAN-Australia-New Zealand (AANZFTA)**
- → **Malaysia-Australia (MAFTA)**
- → **Korea-Australia (KAFTA)**
- → **Japan-Australia (JAEPA)**
- → **China-Australia (ChAFTA)**
- → **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)**
- → **Indonesia-Australia Comprehensive Economic Partnership Agreement (IA-CEPA)**

Brexit has created many questions around what future trade looks like for Australia with the UK and the EU. This is an opportunity to strengthen ties with the UK and have a favourable FTA with a post-Brexit UK. A prospective FTA is currently being negotiated with the UK with a focus on removing barriers to trade in goods along with modernising the rules that govern trade in goods, services and investment.[156] The UK Prime Minister Boris Johnson has reinforced the priority both Australia and the UK put on an FTA stating that he wanted an FTA with Australia to be one of the "first four" negotiated.[157] A mutually beneficial FTA between Australia and the UK would see a substantial boost to Australia agricultural exports. Currently UK is Australia's largest export market in volume terms, accounting for approximately 28% of total exported wine volume in 2017.[158] The FTA with the UK will still take some time to be brought to life due to EU rules which state that the UK may not commence FTA negotiations until Brexit is ratified.[159] There are also ongoing negotiations with the EU for a FTA that will unlock a market of half a billion people and a GDP of $18.7 trillion (USD) for Australian exports.[160] "Our vision" sees the UK and EU markets as a substantial opportunity for export growth and product diversification.

Not only is there an opportunity to establish new FTAs with countries and regions that Australia isn't trading within its current capacity, but also there should be a greater emphasis on reviewing and amending existing FTAs and identifying opportunities to renegotiate. The key areas that need to be considered if an FTA is being renegotiated while ratified are amending unfavourable thresholds currently in place and protocol requirements that could be reviewed. There is an opportunity to be proactive in creating greater market access through continuous review of FTAs and encouraging ongoing negotiation talks to modify and amend FTAs in place.

Continued advocacy for the opening up of access to these markets and future unexplored markets will be vital in the success of the Australian agriculture sector's growth and prosperity and will ensure the sector is competitive in offering a higher quality product at a higher price. Harnessing global trade deals is paramount in the critical success of the growth of the sector.

Questions for the Australian agriculture sector to reflect on:

- **What benefits can the Australian agriculture sector leverage from the Australia-UK FTA for the sector?**
- **Are there unidentified opportunities for new FTAs?**
- **Are there unidentified threats from FTAs currently being negotiated with competitive countries?**
- **How can current FTAs be improved or leveraged more for the advantage of the Australian agriculture sector?**

COMMODITIES VS. NICHE MARKETS

In an ever-changing global export market with factors such as an increasing middle class in China, and further developments in countries in South-East Asia and Europe, it is now the time to reflect on the composition of Australian exports. In particular, what is the best combination of focus and investment; is it on the higher percentage commodity markets such as beef and wheat? Or should there be a bigger focus on nurturing and growing global niche markets such as alcoholic beverages, dairy, wool? Unlocking the answers to these questions will allow for "our vision" to achieve critical success.

The export of beef and wheat accounts for around 27%[162] of Australia's agricultural exports, with the next four biggest exports (meat (non-beef), wool, alcoholic beverages, sugars/molasses/honey) adding up to the next 25%.[163] It is evident that beef and wheat are the key commodities that Australian agriculture exports, however can these commodities grow considerably more? One of the challenges with increasing these commodity exports is dealing with trade distortions in global agriculture.[164] In markets that are experiencing trade distortions Australian products are experiencing price volatility and importing government-driven production decisions.[165] There are opportunities to increase exports to emerging and growing wheat and grain markets such as Bangladesh, Chile, India, Mexico, Pakistan, and Saudi Arabia.[166]

As previously discussed in this report, these opportunities are being created through negotiations with these countries to improve market access which will see a direct increase in the value of the commodities being exported. "Our vision" is to see Australian agriculture experience continue to grow in these commodity markets to ensure that the sector achieves the 4% per annum production growth. Without strong commodity exports in beef and wheat this target will unlikely be reached.

There is further opportunity to see strong growth in niche, smaller export markets. Which, if growth across a range of products is steady, will see significant growth in the overall production within the sector. Exports of products such as Australian wine have seen a significant increase in markets such as China, where the drinking population has increased to 52 million which is double what the market was seven years ago.[167] The opportunity in a market such as China is that per capita grape based wine is at 0.9 litres per head.[168] Through strategic and targeted investment and marketing there could be an opportunity to increase this number. Looking at a market such as Hong Kong where wine consumption is 5.0 litres per head, it is evident there is significant room for growth in China when analysing similar cultural regions.

Top 10 Agricultural Exports by percentage[161]

Beef	Wheat	Meat (exc. beef)	Wool	Alcholic Beverages
16.6%	10.9%	8.0%	6.8%	5.2%

Sugars, Molasses & Honey	Vegetables	Dairy	Live animals (exc. seafood)	Fruit & Nuts
5.2%	5.1%	5.0%	4.2%	3.9%

Other comparatively smaller products such as wool, which amounts to 6.8%[169] of agricultural exports, represent another opportunity of a niche market produce that can looked to expand and grow and play a vital role in "our vision".[170] Over the past few years, wool production has begun to trend upwards after several years of lower growth. Wool exports to China are extremely strong and there was positive growth in wool exports between 2015-2017, increasing by over 16 thousand tonnes during this period.[171] With a continued increase in production and positive trends, wool is another niche market which can make an impact on future growth in the Australian agricultural sector. Horticulture in Australia has also shown to be a significant area of product growth seeing up to a 40% rise in production over five years up until 2017-18[172]. Horticulture has seen produce trade reach $2.8 billion (AUD) in the 2017-18 financial year.[173] Fruit, nut and vegetables are the segments of horticulture that are seeing such impressive gains. With horticulture being one of the most substantial growing areas of the sector, there is a sizable opportunity to utilise the growth and encourage greater production and export to contribute to the 4% per annum growth required to reach the 2030 target.

As highlighted previously, there are significant opportunities that are being created from ESG and sustainability factors. There is a growing demand for sustainable products with a focus on neutral carbon footprint from a large segment of the market; and this demand aligns with the Environmental component of ESG. By approaching the sector, innovation and investment through this lens a large number of segments present themselves for businesses to take advantage of and be a global leader in these segments. The growing demand for plant-based meat substitutes is a market that agribusinesses throughout the supply chain can see not as a threat, but as the next big opportunity.

Overall it will be a matter of finding a balance between a continued reliance on beef and wheat to show strong growth, whilst looking for intelligent opportunities to grow exports in niche markets. The question remains, what is the right composition for high yield and sector growth over the next decade?

Questions for the Australian agriculture sector to reflect on:

What is the best combination of focus and investment? Is it on the higher contribution commodity markets such as beef and wheat to ensure minimum cost and competitive quality, or the value-added niche exports?

Which niche markets show the most significant opportunity for growth?

Can Australian agribusiness manage a multi-focussed approach?

FRAGMENTED MARKETS – AN UNTAPPED OPPORTUNITY?

Following on from the questions posed about commodity markets versus niche smaller markets the next logical questions are whether to focus attention on growing the already large export markets, such as China and the US, or whether there is a greater reward in identifying fragmented markets to grow, such as the emerging ASEAN market.

Australia's economy is closely tied with the economy of China, with a third of overall Australian exports[174] and almost 20% of agricultural exports[175] going to China. When China's economy is growing and strong the benefits are felt in Australia, however when China's economy slows down or potentially fails, it will directly impact Australia and will be felt throughout the agricultural sector as seen with the effects of the coronavirus on WA rock lobster value. Continued growth in the Chinese economy and an ever-growing middle class throughout China will have benefits for Australian producers and exporters. With China being such a significant component of Australian exports, it is a relationship that needs to be nurtured and prioritised even if diversification of export markets increases. China has shown to be investing further in long term infrastructure which will only see Australian opportunities grow, with initiatives such as the B&R throughout central China and beyond. Domestic Chinese investment in these types of infrastructure projects will mean that the Chinese export market needs to remain a priority.

This reliance on the Chinese economy for Australian exports raises the question, should Australia look to further diversify where it exports? Would a fragmented market such as the ASEAN market or South America be more sustainable options and act as an economic shock absorber if the Chinese economy slows down? What are the implications for Australian agriculture?

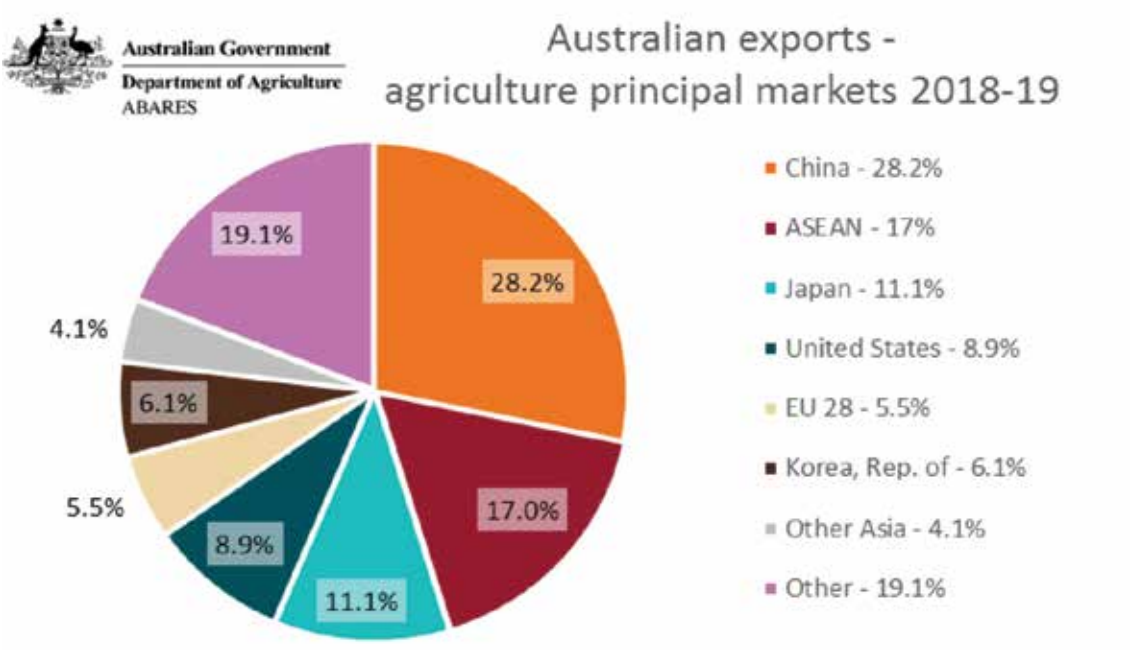


Figure 11: Australian Exports by country (Source: Australian Bureau Statistics, International trades and Services, Australia, cat. No. 5368.0, Canberra)

The Business Council of Australia has urged the Australian Federal Government to investigate diversifying trading partners and finalise negotiations on several FTAs.[176] By diversifying trading partners and looking into fragmented markets it will allow Australia's economy to be "more resilient, and less vulnerable to global changes".[177] The implication for agriculture in Australia is that with potential fragmented markets opening up there is an opportunity to see real growth in major agricultural commodities and niche markets alike. There are established fragmented markets such as the ASEAN market which Australian agriculture has already taken advantage of. Currently, Australia exports $2.25 billion (AUD) in wheat to the ASEAN region and $1.09 billion (AUD) in live animal exports.[178] ASEAN is a perfect example of how Australia can harness a fragmented market. With the introduction of the IA-CEPA with Indonesia, a step towards a diversified export market has occurred. The reduction in tariffs and market access guarantees will ensure that through trade with Indonesia, there is more of a buffer against the fluctuations in the Chinese economy.

The focus for new FTAs has been on a post-Brexit Europe and UK, and what trade will look like for Australia. However, there are other markets that could offer substantial growth. South America is noticing slower economic growth, in part to the ongoing trade tensions between the US and China.[179] South America looks to the US for a substantial portion of trade, with China only recently becoming a major trading partner in beef exports.[180] Australia has had an FTA (ACl-FTA) with Chile operating since 2009 which saw the elimination of almost 92% of tariff lines of up to 97% of goods traded.[181] Negotiations with Peru for an FTA (PAFTA) were completed, and an agreement signed on 12 February 2018.[182] The implications of the PAFTA once in force include the elimination of tariffs on beef within five years,[183] more sugar market access for Australia sugar, and dairy farmers will be able to compete with local competitors in Peru.[184]

The South American case is a prime example of how looking to a fragmented market (Chile & Peru) can unlock opportunities for agriculture in Australia. With the introduction of the PAFTA a framework has been set to continue to look to South America as a viable trading option with other countries within the continent as potential trading partners.

Questions for the Australian agriculture sector to reflect on:

What can the Australian agriculture sector do to make the most of this emerging fragmented market?

Will embracing these markets propel the agricultural sector towards 4% production growth per annum over the next decade?

Who is responsible for developing this more sophisticated strategy, the Australian agriculture sector or the Australian government?

ATTRACTING THE RIGHT PEOPLE

"Our Vision" of the future of the Australian agricultural sector will only succeed by attracting the highest calibre people to the workforce while developing and retaining the current workforce. Australian farmers are getting older, with the average age of Australian farmers at 52.[185] The national average for all other occupations is 12 years below this at 40.[186] There needs to be a focus to not only bring a younger workforce to agricultural businesses but work towards encouraging a younger workforce to look to work in regional centres and as primary producers. Farmers are five times more likely to be still working over the age of 65 when workers of the same age in other professions are considering retirement.[187] As of 2016, only 24% of the agricultural workforce was under the age of 35.[188]

The sector needs to look at ways to encourage school leavers and professionals looking to retrain to look at agricultural qualifications as a viable career option. The number of students studying agricultural degrees has "virtually halved" in the past decade.[189] The reality of this means there are now vastly more agribusiness jobs than qualified graduates, an unwanted imbalance. A potential opportunity for the sector is to look at working closely with secondary and tertiary educational institutions to market regional agricultural work as a realistic career pathway. This is the challenge for "our vision" as younger workers who might have once worked on-farm are now lured into more lucrative careers off-farm and out of the sector.[190] The sector should look to encourage both workers based in regional centres and city base workers to choose primary producing and other roles within the value chain as a strong career option.[191]

52 years old – The average age of Australian farmers

Farmers are likely to work until over 65 years old

24% – Under the age of 35 in the agricultural workforce

Program enrolments in agriculture-related qualifications have decreased over the 2015-18 period, particularly from 2017-18.[192] The key occupations in demand for qualified workers are: Mixed Crop and Livestock Farming, Agricultural, Forestry and Horticultural Plant Operators, and Crop Farming.

At the unskilled end of the workforce there are processes in place to fulfill the labour demand. Through working holiday visa programs (subclass 417) there is a legislative framework in place to provide a regional labour force.[193] To achieve success with the challenge of providing a qualified workforce to regional centres and primary producers, is there potential for a similar legislative framework to be implemented at an international student level? In South Australia, the state government currently offers to sponsor international students after finishing their studies to live and work in the state for a further two years.[194] Could the agricultural sector look at extending that sponsorship to bring international students to regional centres after their studies are complete?

The Australia agricultural sector needs to look at how to best regenerate an aging workforce to be able to achieve the sector target set. Without the foundation of a qualified, high calibre workforce, the longevity of the sector and the long-term success over the next few decades will struggle as the projected employment numbers reduce by over 9,000 of the next few years.[195]

Questions for the Australian agriculture sector to reflect on:

Could the Australian agricultural sector look at extending that sponsorship to bring international students to regional centres after their studies are complete?

Is there potential for a similar legislative framework to be implemented at an international student level for visa sponsorship?

Should farmer succession planning be a national good priority with appropriate financial support programs developed to encourage smooth and viable generational change?

Should agribusiness human capital management and regional and rural community development be considered hand in hand?

Next Steps

By understanding “our world” and the role the Australian agriculture sector plays within the domestic and global markets the sector can now look to the future and work towards “our vision” and continue to focus on what ongoing success looks like for the sector.
The tangible and trackable target of production reaching $100 billion (AUD) by 2030 sets the roadmap of where the sector is heading.

A key next step is to provide a platform for the participants of the Australian agriculture sector to start a discussion around key areas and questions. Hence the sector can begin to understand how best to achieve critical success in this overall goal. It is vital to bring primary producers, downstream sector, representational organisations, RDCs, CSIRO, Universities, State and Federal governments together to develop a long term, detailed, directed, outcomes-based transformational plan that will actively drive innovation, investment, policy and strategy across the sector.

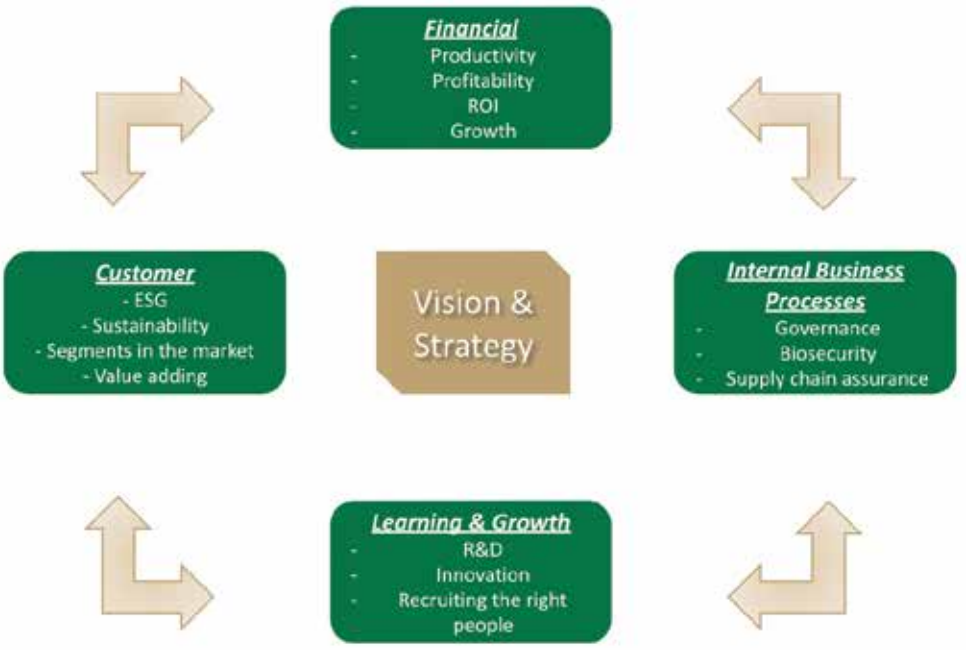


Image 3: Harvard Business School Scorecard to assess the factors involved in the growth of the industry

A critical outcome of this engagement should be shaped around a holistic approach to increasing the productivity, profitability and sustainability encompass growth and opportunity both domestically and on a global scale with areas of opportunity in:

Attracting new domestic and foreign investment whilst investing intelligently throughout the supply chain;

Embracing ESG risk identification and management and sustainability;

Optimising the use of technology in the agricultural sector;

Investing in infrastructure for efficient transport, logistics and communications;

Harnessing global trade deals especially FTAs;

Finding the right balance between commodities and niche markets;

Identifying fragmented markets to diversify Australia's trade; and

Finding ways to attract qualified, high calibre workforce

The Australian agriculture sector can achieve critical success in the ambitious targets set within the sector and prosper through the next decade and beyond. The challenge is on everyone in agriculture and agribusiness to take these opportunities, innovate, invest and succeed.

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