

WHITE PAPER

Assessing the market's appetite for Australian cattle benchmarks and risk transfer

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Executive summary

In February 2020 Meat & Livestock Australia (MLA) commissioned Agree Commodities Pty Ltd (AgRee) to produce a White Paper describing the Australian cattle industry's awareness, willingness to change and appetite for improved price risk management, with a focus on relevant benchmarks and the viability of a derivatives market to allow for risk transfer. A series of three 'roundtable' discussions were convened via video link with strong participation from all sectors of the red meat supply chain and complementary service sectors, including finance, industry groups and professional services.

Discussions were focused around four central themes:

1. **Consensus:** "Does industry consensus exist around the value of benchmarks and price risk management?"
2. **Obstacles:** "Where does the industry see obstacles to the creation of benchmarks and the adoption of derivative-based price risk management?" "Would the industry contribute to overcoming these obstacles?"
3. **Preconditions:** "Under what conditions would the industry actively engage in a livestock pricing derivative market?"
4. **Expectations:** "Given MLA's areas of expertise and competency, and role in the red meat and livestock industry, what expectations does the industry have in MLA supporting the creation of benchmarks and facilitating the development of a livestock pricing derivative market?"

While there was a wide range of awareness around risk management, the general sentiment was that there is industry-wide value to improved understanding of risk management, price transparency and associated price-risk transfer tools and close-out mechanisms. Participants recognised that risk factors, such as drought, dependency on export markets and biosecurity, were increasing in the sector, and that benchmarks and risk transfer tools could help mitigate against such risk factors.

Participant contributions were used to substantiate alignment between the red meat and livestock industry's strategic goals and industry growth objectives stated within the White Paper. Structural and cultural obstacles that need to be addressed were identified, including improved knowledge and application of new business models – as they relate to physical sales and supply agreements that observe benchmarks, and the concept of price risk transfer (hedging). A critical starting point to capture the value on offer to the industry is the creation of benchmarks that reflect prices paid across all sales channels, particularly latter stage cattle transactions.

Data visualisation innovations and risk transfer examples from adjacent agricultural industries were well received and illustrated to participants the value of innovation, price transparency and risk transfer. This value stems from more predictable and stable earnings, enterprise value uplift and wider access to capital, as well as the wider benefits of a more collaborative, modern and orderly market system, such as environmental, social, mutual obligation, innovation and market access benefits.

International experts emphasised the important role of government to ensure trust, but the consensus amongst domestic participants was that ideally progress in this area should be driven by commercial operators. Participants indicated that MLA should act as a facilitator by further improving industry awareness of risk and the interrelationship between supply, demand and price metrics and how this may translate into new physical supply agreements and demand for price transfer tools. MLA's existing role in publishing market indices could be leveraged to support any benchmark/indicator required.

Recommended next steps include:

1. **Risk awareness:** The creation and adoption of a series of risk frameworks, standards and scorecards by which the industry might improve risk culture and accountability
2. **Data:** Active engagement with existing (and future) MLA initiatives to address market transparency issues in the latter stage cattle market, primarily through data-sharing
3. **Risk transfer:** Feeder futures contract design and implementation.

Abstract

This White Paper has been developed to provide an independent assessment of the Australian cattle industry's approach towards price data and benchmarks, as it relates to livestock price risk management and the potential value of benchmarks and risk transfer to the sector.

The Paper recognises that price transparency and stabilising income streams and/or input costs across many other industries adds measurable value to economic outcomes, including uplift in enterprise value, access to capital and environmental, social and governance (ESG) standing. It should also be noted that considerable resources are currently being deployed by other stakeholders in relation to agriculture and fresh food supply chain transparency, risk management and drought resilience, including by state-based departments of agriculture and fisheries, the federal Department of Agriculture, Water and the Environment, the current Agriculture Minister, the Australian Competition and Consumer Commission and the National Farmer's Federation (NFF).

With the backdrop of a the COVID-19 pandemic and recently announced industry growth objectives, this paper seeks to identify vulnerabilities and outline the clear value to the industry of improved benchmarks and price risk management. The willingness of key players in the industry to contribute to overcoming obstacles to data sharing and adoption of risk transfer strategies is addressed, along with potential ways to resolve these obstacles, including the use of technology. MLA recognises that any changes to price data collection, benchmark creation and risk transfer development must be commercially driven and this paper, specifically, does not provide any expert opinion, direction or recommendation around the specific design, development and adoption of more sophisticated risk management tools. Such efforts must be industry-led and recommendations are made to assist this process.

The industry was asked four central questions:

1. **Consensus:** "Does industry consensus exist around the value of benchmarks and price risk management?"
2. **Obstacles:** "Where does the industry see obstacles to the creation of benchmarks and adoption of derivative based price risk management?" "Would the industry contribute to overcoming these obstacles?"
3. **Preconditions:** "Under what conditions would the industry actively engage in a livestock pricing derivative market?"
4. **Expectations:** "Given MLA's areas of expertise and competency, and its role in the red meat and livestock industry, what expectations does the industry have in MLA supporting the creation of benchmarks and facilitating the development of a livestock pricing derivative market?"

The White Paper has been created as a joint effort between MLA and an independent consultant with knowledge of the beef cattle sector, technology innovation and successful risk management adoption in other industries globally. It has been developed through an extensive industry consultation process that included a series of three separate roundtable/webinar discussions with experts from around the world and multiple separate interviews with leading industry stakeholders.

Above all, it should be recognised that the White Paper was commissioned by MLA on behalf of the industry to help inform its strategic decision making and that the carriage of any recommendations made in the paper, and their associated timeframes, remains in industry hands.

Background

In February 2020 MLA commissioned Agree Commodities Pty Ltd (AgRee) to produce a White Paper describing the Australian cattle livestock industry's awareness of price risk management, willingness to change and appetite for improvement, with a focus on relevant benchmarks and the viability of a potential derivatives market to allow for risk transfer.

The development of this White Paper involved:

- Creation of Terms of Reference
- Identifying key knowledge leaders and experts (>90) across all parts of the red meat supply chain, industry bodies, financial services, commodities trading and agribusiness professional services – drawn from both Australia and overseas
- Detailed consultations, via a series of three interactive webinar discussions, with these key industry participants, eliciting feedback around four central questions
- Preparation of this White Paper.

White Paper Key Principles

This White Paper is guided by several Key Principles:

1. Understanding and communicating of economic market forces (via access to price data) underpins risk management.
2. Managing price risk enhances enterprise value.
3. Innovation and risk management are interlinked.
4. Technology-enabled and commercially led design leads to effective decision making.
5. Collaboration will identify benefit for all across the supply chain.
6. Efficient and orderly markets are enabled by price transparency.
7. Implementing risk management best practice improves access to capital.
8. Recommendations and any further contribution of MLA should be industry-led.
9. Government regulation should be avoided by industry leaders.

Additionally:

- The role of AgRee and MLA is to participate as facilitators.
- Not all recommendations are practical in the near-term and may require further adoption of complementary advances in education, data/technology, design/tools and business models in order to make use of new data, systems and tools.

Price risk management: an introduction

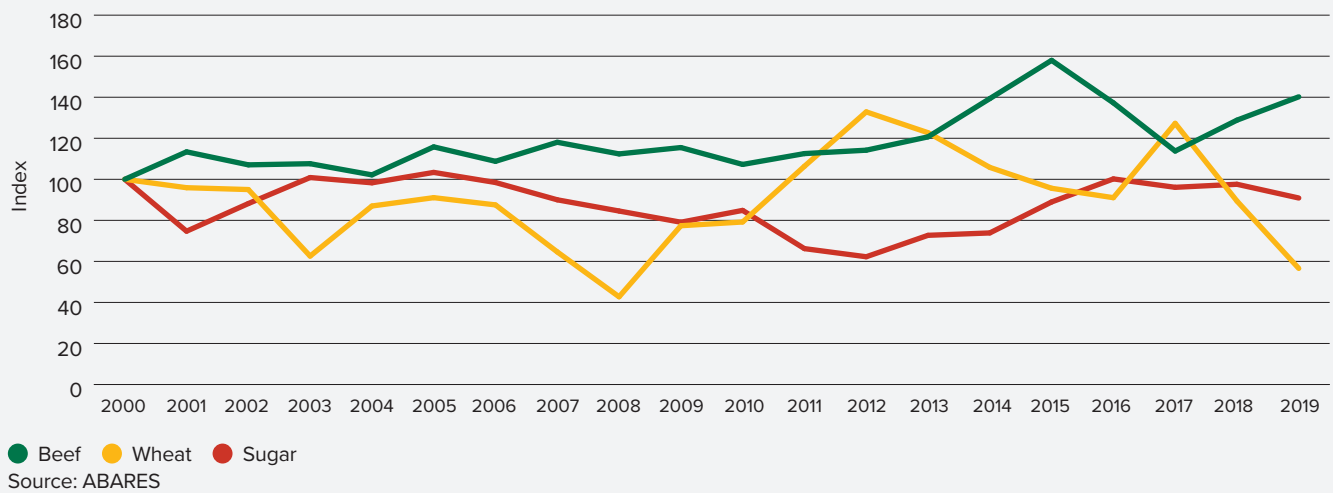
Price risk management, or ‘hedging’, is the process of protecting the value of your business from the impact of commodity price fluctuations. By planning for future scenarios, it can help to minimise any adverse changes in prices, and so capitalise on positive movements. In doing so, price risk management can help with long-term business planning and investment, decisions relating to production/herd management and managing day-to-day cash flow. Less risk means more resilience and peace of mind for stakeholders.

Beef production is a complex and risky activity. Heightened climate variability, increased dependence on volatile international markets, the ever-present biosecurity risks and many other risk factors mean a focus on risk management and resilience is becoming a critical matter for the industry to consider.

Whilst Australia possesses a comparative natural advantage in breeding and fattening cattle, it also has a range of structural competitive advantages that can be leveraged to help achieve further global competitiveness relative to, for example, South American producers. Proactive use of our strong property rights/legal system, stable banks, market makers, education, technology and communication offer the industry an opportunity for appropriate wider adoption of risk management to deliver the associated positive impacts around enterprise value, access to capital and ESG.

Domestically, the industry is under scrutiny around market transparency, particularly given the growth in the industry over the last 20 years relative to the overall economy and its potential for further economic contribution.

Figure 1: Australian exports, indexed (Index: 2000=100)



The deregulation of the cotton, wheat and sugar markets was a ‘sudden change’ that has resulted in these primary producers facing more choice in marketing and price risk management decisions over the last 30 years. This deregulation triggered the development of more farm-level risk management understanding and has benefited industry resilience.

The beef cattle sector has not undergone any significant regulation or structural change and is consequently more vulnerable to issues related to poor price signals and transparency, such as difficulty in making informed drought feeding decisions, lack of forward price signals exacerbating herd volatility, access to capital and risk management products, and increasingly large margin swings between producer and processor, with associated processing plant shutdowns.

Price risk management and international livestock markets

Price data recording and futures contracts were generally seen as one of the cornerstones of a strong industry by leading international participants in the webinar series. However, an obstacle identified by webinar participants is the challenges the US industry is facing despite plentiful data and two liquid futures contracts. The market in the US has evolved, for very understandable reasons, towards an increase in contractual vertical integration between feed yards and packers, which has significantly reduced the amount of negotiated cattle trade. The industry now recognises this and is trying to find a way to voluntarily increase the percentage of negotiated trade; and at the same time some groups are trying to get the government to mandate a minimum level of negotiated trade. Futures need cash trade data as a feedback loop to help keep the market in line (converge) as they come to final settlement (feeders) or delivery (fat cattle).

A second problem the US has seen recently is a misunderstanding of the role of futures. There has been some feedback that futures are not tracking the cash market, but in most cases this is based on a flawed understanding of how futures work. Futures project where the cash (physical cattle) market will be at settlement or during the delivery period. Some look at the spot market 90 days before that time and cannot understand why futures are not the same price; i.e. there is a need for further education around term structures and price risk management generally.

Key lessons from the US are:

1. **Convergence:** Need industry to set minimum level (~30%) of negotiated cattle trade and get closer to the customer to ensure buy-side interest – leading to convergence between cattle and beef prices at delivery.
2. **Data:** Set a critical minimum percentage of benchmark cattle to be appropriately reported/recorded to ensure benchmark is representative e.g. 30%+ arm's-length cash sales, such as saleyard transactions or other negotiated cattle trade sales.
3. **Education:** It took many years for the futures and options market to reach appropriate liquidity and, as per international risk standards, continuous improvement is integral to ensure the system can cope with current and future industry risks factors.

International Standards on risk

Systematic, structured and timely management practices are a key driver of enterprise performance. ISO31000 Risk Management Guidelines stipulates Principles, Frameworks and Process to manage risk.

The International Standards Organization (ISO31000) considers 'value' within risk management to have five key components: decision making, planning, policy, performance and resource allocation, all subject to continual improvement.

There are four ways a business can deal with risk, including:

1. **Avoiding risk:** Potentially making sub-optimal decisions e.g. sell cattle now given there are no forward price indicators and paddocks are getting dry.
2. **Treating risk:** Taking steps to control the likelihood or consequence of a risk, e.g. moving towards vertical integration.
3. **Transferring risk:** Passing risk on to another, e.g. insurance policy or hedging price risk.
4. **Accepting risk:** Considering scenarios that might occur and responding with strategies to manage or mitigate these scenarios if they do arise, e.g. emergency capital raising.

The difference between good decision making and poor or sub-optimal decisions is having the right information (data and processes) to base a decision on. Where trusted data, process and risk transfer tools are in place, there is more choice around decision making, and significant value can be added to an individual enterprise and an industry as a whole.

Risk factors relevant to primary production include:

- Climate variability, e.g. drought
- Dependency on individual supply chains and single markets, e.g. inputs or specialist end markets
- Treating farming as a lifestyle, lack of focus
- Low-end profit streams
- Lack of diversification.

Improved benchmarks and future prices on cattle (term structure), and the transparency/market signals and risk transfer this would create, would assist positively with most of these vulnerabilities. Further, domestic and international consumers and supply chain partners need to be able to trust Australia's responsible production and commercial practices.

Better resilience can be achieved by:

1. Improved business management, with risk planning a key aspect of such management and decision making. Adoption of a risk management plan, use of risk transfer tools and accountability
2. Improved financial literacy – accounting, financial and commodity market functioning e.g. basis risk.

Price risk management in the Australian cattle industry

The beef cattle sector has grown and changed significantly in the 20 years since the development of the Eastern Young Cattle Indicator (EYCI) and associated price risk management initiatives. The key changes have been the increase in notional value and the geographic concentration of risk.

Major changes over the last 20 years:

- Export driven growth – 300% increase in beef exports
- Tripling of the feedlot sector – 88% concentrated in southern Queensland and northern NSW
- Greater reliance on individual international markets – market access is an increasing risk
- Ever-increasing biosecurity risks
- Stronger regulatory and ESG expectations of global consumers and investors
- Further concentration of processing capacity accentuating the 'wine glass' industry structure, where there are many producers, few processors and many consumers.

Figure 2: Notional value of grainfed cattle turnoff

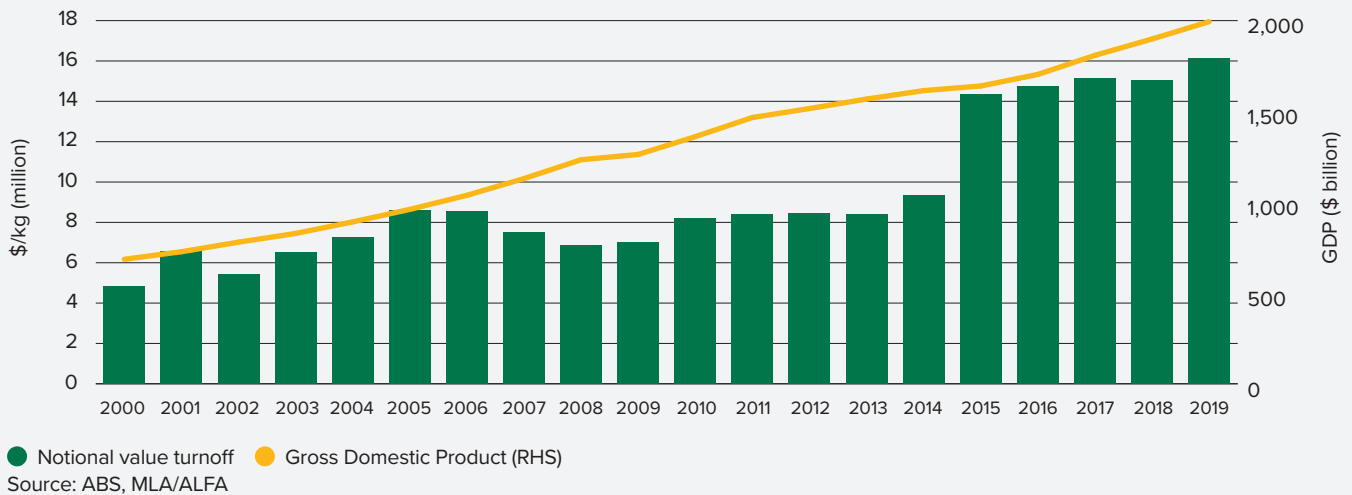
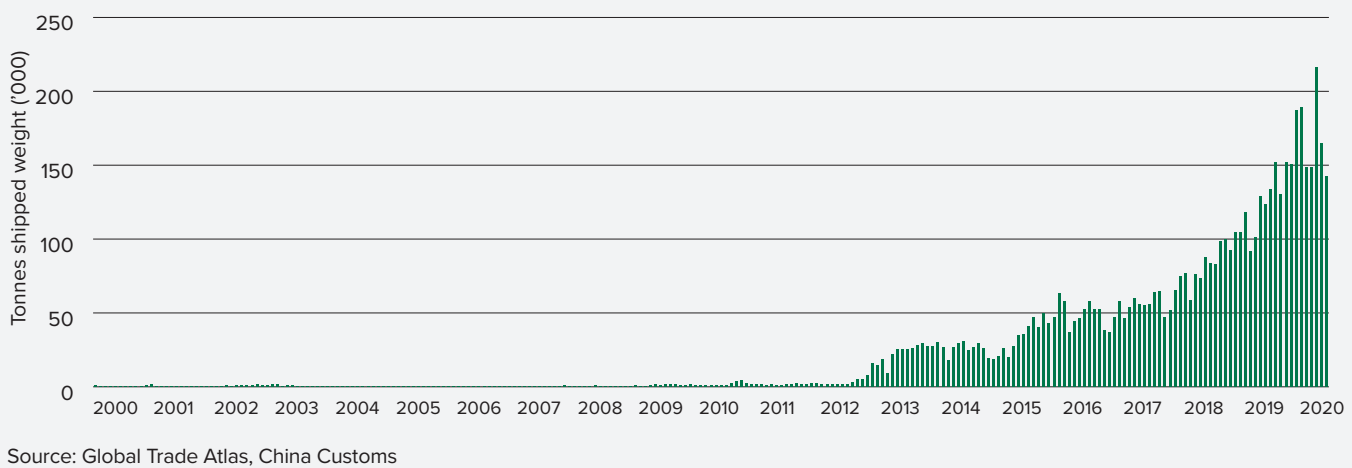


Figure 3: China beef imports – monthly



Considering these major changes and trends, it is clear appropriate resource allocation should be assigned to risk management in the cattle sector to ensure the industry is prepared for future challenges and more generally for continual improvement. Stronger, more resilient supply chains would allow for increased likelihood of achieving national, industry and individual farm objectives.

Price risk management and inward investment

Data availability and risk transfer are major influences in attracting foreign investment into any industry. Investors will always be drawn to opportunities that offer the greatest likelihood of return and will avoid placing funds into scenarios of 'known risk and unknown reward'. Many studies, including those by the likes of Deloitte and ANZ bank,¹ have identified a capital gap in the Australian agriculture sector. There is a clear need to diversify the sources of capital supporting Australian agriculture, including attracting international investors; this need would be well-supported by price transparency and a wider adoption of price risk management.

Australian red meat and inward investment

According to the Department of Foreign Affairs and Trade (2019), annual Foreign Direct Investment (FDI)² inflows to Australian agriculture are running at approximately 2% of the required investment, suggesting much more FDI will have to be facilitated, and sources diversified.

1 ANZ Bank, Farming for funds: 'How do we pay for Australian agriculture?', November 2016 <https://bluenotes.anz.com/posts/2016/11/farming-for-funds-how-do-we-pay-for-australian-agriculture>

2 Deloitte, 'Investment in Australian agriculture: bridging the gap between status quo and ambition', August 2019. [https://www2.deloitte.com/au/en/pages/consumer-industrial-products/articles/investment-australian-agriculture-bridging-gap-between-status-quo-ambition.html#:~:text=In%202018%2C%20and%20across%20all,billion%20in%20direct%20foreign%20investment.&text=In%20the%20five%20years%20to,Australian%20inflows%20\(Figure%202\).](https://www2.deloitte.com/au/en/pages/consumer-industrial-products/articles/investment-australian-agriculture-bridging-gap-between-status-quo-ambition.html#:~:text=In%202018%2C%20and%20across%20all,billion%20in%20direct%20foreign%20investment.&text=In%20the%20five%20years%20to,Australian%20inflows%20(Figure%202).)

In 2018, the House of Representatives Standing Committee on Agriculture and Water identified a range of barriers to FDI, including:

1. Lack of knowledge (or experience) within the sector
2. Non-existent, or insufficient, performance data
3. Lack of diversity in business structures
4. Volatility of commodity markets and the sector more broadly
5. Liquidity constraints.

Reminder of White Paper Principle 1:

Understanding and communicating economic market forces (via access to price data) underpins risk management

Greater (price) data capture, market transparency and risk transfer would significantly assist overcoming these barriers by, respectively:

1. Closing the ‘knowledge gap’ and so allowing for comprehensive analysis of potential investment opportunities³
2. Driving productivity growth through increased access to market data, by a wider range of industry participants⁴
3. Allowing new business structures that enhance resilience, including the *separation of pricing and supply*, enabled via useful commercial cattle benchmarks and/or futures contracts
4. Lowering income-stream volatility
5. Improved stability of earnings leading to greater acceptance of agricultural production assets by debt and equity markets, including wider participation in stock exchanges and other liquidity platforms (e.g. traded bond markets).

Lowering barriers and so attracting wider investment (including FDI) in Australian agriculture (including the diversification away from debt), will not only help expand production, but also drive productivity growth through global relationships, e.g. off-take agreements and technology innovation.

Price risk management and innovation

Price risk and innovation are increasingly interlinked. Both stem from a proactive business mindset, enabling continuous improvement and targeting sustained long-term ‘value-add’. The capital investment in innovation can be underpinned by risk transfer of the core business, providing a platform for vertical integration and diversification activities.

There are significant parallels between positive innovation and risk culture. A positive risk (and innovation) culture will possess the following characteristics:

- **‘Tone at the top’:** Engaged leaders with a vested interest in the success of the wider industry working to create a culture of cohesion and mutual benefit
- **Quality of discussions:** Actively seeking to incorporate a wider range of opinions and expert inputs
- **Accountability:** Holding system participants accountable via performance frameworks
- **Outcome focus:** Aligning efforts towards industry/national priorities
- **Collaboration:** Identifying shared long-term priorities that maximise the potential of competitive advantage
- **Communication:** Clearly defined *roles and accountabilities* around communicating internally and externally
- **Awareness:** Agreement around the key barriers and constraints to achieving the collective vision, thus providing the transparency necessary to encourage continuous improvement.

According to Ernst & Young’s (EY’s) report *Agricultural Innovation* (2019):⁵

“ the foundations of agricultural innovation – data, physical infrastructure and the regulatory environment – are not adapted to the needs of the future. Agriculture is becoming increasingly digitised and existing data is highly disaggregated and inconsistent. There is opportunity to strengthen capability to better inform decision making and increase the speed of innovation and adoption.

Feedback from the roundtable discussions indicates that the beef cattle industry is genuinely interested in adopting new and different business practices, provided the associated benefits are readily understood. Participants claimed that they are constantly improving practices to drive their own productivity and profitability.

3 Recommendation 1: Raise awareness of the value of risk management.

4 See Appendix 1: Value created by data, innovation and risk management in adjacent sectors.

5 Ernst & Young, *Agricultural Innovation: A National Approach to Grow Australia’s Future*, 2019, www.agriculture.gov.au/ag-farm-food/innovation/vision-for-agricultural-innovation

Australian red meat and innovation

Modernisation through data capture and sharing in the Australian red meat and livestock sector is a strong desire of both government and industry in relation to biosecurity, food safety and traceability. Similarly, there is enormous potential for value adding in collaborative price data recording, appropriate sharing for the creation of benchmarks and risk transfer.

Australia's innovation culture is generally considered risk-averse and there is a need to encourage and support a culture of entrepreneurship/collaboration, an appetite for risk and transformational innovation.⁶ In the EY report just mentioned, the University of Technology Sydney and the Department of Industry, Innovation and Science stated that the agriculture, forestry and fishing industries were found to be the lowest performing when assessed on overall management capabilities in Australia (66% below the top-performing sector). In digital management capability, agriculture was flagged as the lowest-performing sector.

Innovation capabilities would be enhanced by collaboration within and across agriculture sectors. Cross-pollination would allow for conversion of research into commercial outcomes, including transforming ideas into cutting-edge technology and better risk management outcomes.

Red meat sector growth objectives and potential value of risk management

There are many examples in the agriculture sector domestically and internationally that substantiate the 'hard' (e.g. enterprise value uplift) and wider 'soft' (e.g. ESG) dollar value of risk management. Examples from adjacent industries (agricultural machine production data analytics, grain production risk and sugar price risk management) are provided in Appendix 1; these demonstrate enterprise value uplift of around 25% is achievable from pre- to post-risk transfer.

The notional value of beef cattle nationally is twice that of the national wheat, cotton and sugar crops combined.

Taking the Appendix 1⁷ examples of Tully Sugar (income/price risk hedge) and GrainCorp (production/volume risk hedge), and making the assumption of a similar uplift in enterprise value of 25% from pre- to post-risk transfer, the potential value uplift to the Australian beef cattle sector is in the billions of dollars, given the beef cattle sector's proportionately larger size and similar price and production risk profiles to the examples. Even an enterprise value uplift of 5–10% would be a multibillion-dollar value add to the industry. This assumes data availability, risk transfer tools available, business model adaption and education/adoption is effectively executed by the industry.

Reminder of White Paper Principle 2:

Management of price risk enhances enterprise value.

An obstacle identified in the webinar series and private conversations was the transaction cost of futures and OTC hedging. Similar to house insurance facilitating cheap bank term debt, income stream hedging can provide access to more favourable terms in debt and equity markets, leading to significantly higher enterprise values; i.e. once the benefit to enterprise value and other wider benefits (covered below) are considered, the nominal transaction costs of income stream hedging are not significant.

The agriculture sector, through the National Farmers' Federation (NFF), has consistently promoted the headline objective of lifting farm gate output ('AUD100bn by 2030', from ~AUD59bn today). The Red Meat Advisory Council (RMAC), in its report *Red Meat 2030*⁸ is also looking to 'double value, triple access to capital'.

To achieve these growth objectives, government and industry-wide leadership needs to recognise the clear evidence that shows the connection between data availability, effective risk management and access to capital and growth – all stemming from culture.

Price risk management and industry sustainability

There is a strong ESG element to the adoption of more comprehensive risk management, including the creation and observation of a beef cattle futures term structure. Future price bids and offers for a major beef cattle type (e.g. Angus feeder) would provide more visibility to a predominantly grass-based industry, allowing for more informed grazing, drought feeding and environmental management.

For example, if a feeder cattle futures market was in carry (contango), i.e. prices in the future are higher than spot, it would encourage a grazier who was drought feeding to continue (not sell). Whereas if the term structure⁹ was in decline (backwardation), i.e. prices in the future are lower than spot, it would encourage the grazier to sell.

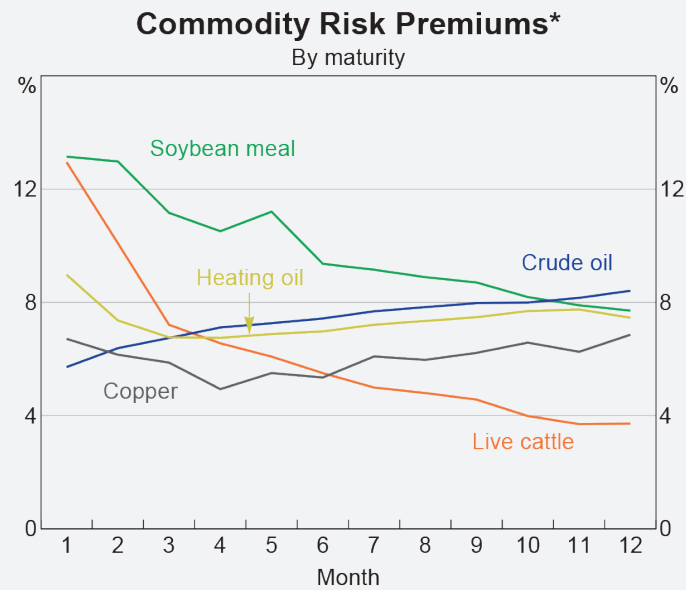
6 Ernst & Young, *Agricultural Innovation*, 2019.

7 Appendix 1: Value created by data, innovation and risk management in adjacent sectors.

8 redmeat2030.com.au

9 The 'term structure' of a market is the curve created by charting futures prices.

Figure 4: Commodity risk premiums



* Average annualised excess returns from buying a futures contract and settling it at expiration; sample period 1986–2014

Sources: Authors' calculations; Pinnacle Data

Chart source: Reserve Bank of Australia, Bulletin, March 2016

It was universally understood across the roundtable discussions that the wider benefits of a more stable earnings profile and forward price transparency (metrics) would include:

- More informed herd-management decisions, including drought feeding
- Assistance with succession issues
- Continued access to capital, insurance, government benefits and discerning markets, in terms of market signals and orderly practices
- Greater ability to benchmark other initiatives (e.g. Meat Standards Australia [MSA]) and innovate, including best practice and environmental programs
- Benefits to delinking physical supply and price, allowing new pricing models for contracting supply and so offering more stable and predictable throughput and margins (grazier, feedlot, processor, employees and other stakeholders)
- Transparency benefits of a newly created benchmark and/or futures contract in latter stage cattle also offers transparency benefits to adjacent cattle stages, types and locations
- Linkage between risk, uncertainty and personal wellbeing, in terms of better managing risk as a starting point.

“A feeder cattle futures term structure would...help business planning, including – reflection on outcomes, herd stability/rebuilding, margin and cashflow analysis, risk management, strategy, drought management, succession and resilience...”

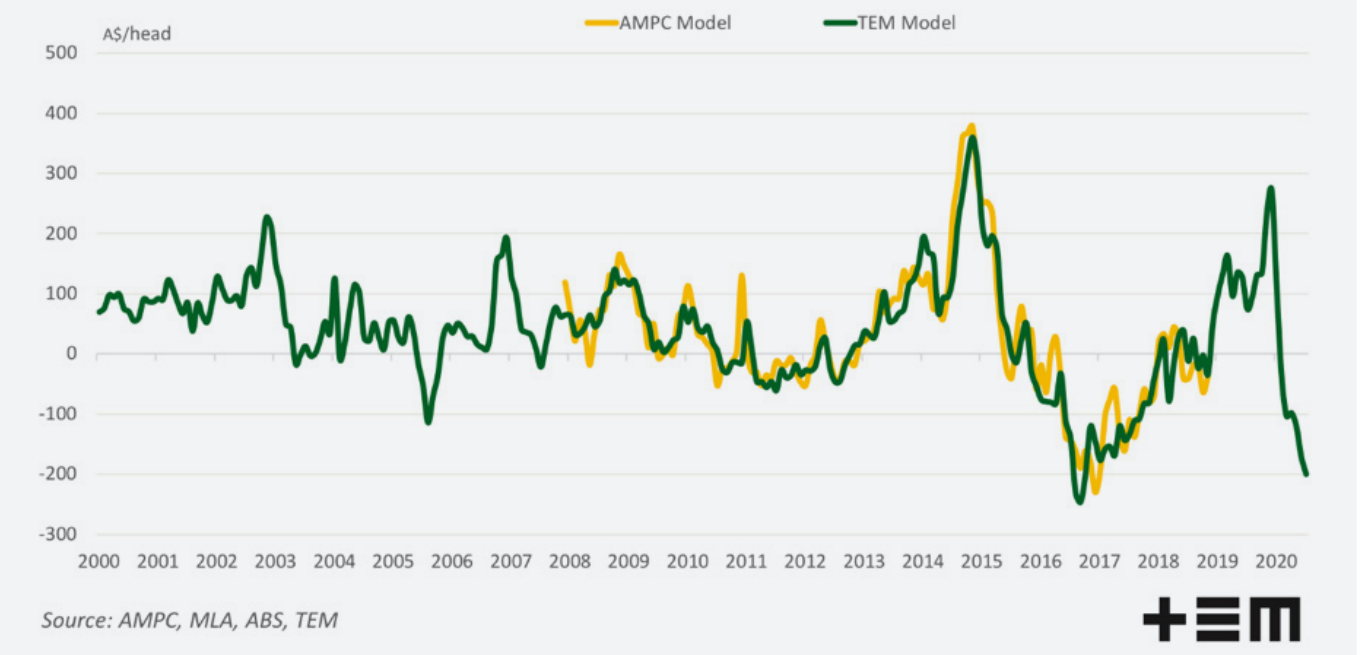
Sarah Becker, Becker and Co (Queensland).

Production transparency and resilience

A good understanding of the supply of livestock and carcase volumes (throughput) is essential for any industry participant to better assess both current and future supply of red meat, and so better predict impact upon price and manage throughput at critical supply chain points, such as processing plants. Australia has very high comparative costs to operate processing plants¹⁰ – and the processors have the greatest access to price data, which could ultimately lead to a more orderly market.

¹⁰ www.ampc.com.au/2019/03/Cost-to-Operate-and-Processing-Cost-Competitiveness

Figure 5: Beef processor margin



As shown in the above chart, on a modelled basis, the beef processing margin in Australia is highly volatile, highs/lows are increasing and overall trending down. Industry-accepted benchmarks for latter stage cattle and the use of such benchmarks in adapted or new business models would allow for improved price signals within the supply chain, risk transfer and more orderly throughput planning.¹¹

Other studies have identified that real-time, relevant data capture, objective analysis and feedback enables risk profiling, and that up-to-date processes and systems in this respect will help meet regulatory requirements.

Improved supply chain management and risk transfer would also better insulate the industry from shocks. Scenario planning and assessing how shock scenarios affect the beef cattle supply chain and exacerbate existing stresses, as well as the risks and vulnerabilities which arise as a consequence of a shock can begin with war gaming.¹² Shocks effecting production might include:

- Health, including human health, animal plant health and associated biosecurity concerns
- Drought and natural disaster: bushfires, floods and severe storms
- Geopolitical
 - international political actors and interests
 - trade, regulation and policy
- Technology
 - positive disruptive effects of innovation
 - failures including outages and cyberattacks, and poor administration/management practices.

Reminder of White Paper Principle 3:

Innovation and risk management are interlinked.

The increasing risk of shock events is increasing the pressure on supply chains to become more transparent and accountable¹³ by:

1. Identifying critical supply chain intervention points.
2. Creating data-driven tools to support resilient businesses and communities.
3. Building trusted supply chains via data, mitigation tools and digital technologies.

¹¹ Recommendation 3.

¹² Appendix 4: Black swan war game prompts –scenario simulations.

¹³ www.agriculture.gov.au/ag-farm-food/innovation/national-ag-innovation-agenda

Reminder of White Paper Principle 4:

Technology-enabled and commercially led design leads to effective decision making.

Much of the transparency around livestock supply is currently facilitated by MLA in conjunction with industry partners and Commonwealth government agencies.

One extreme biosecurity risk example was studied in 2013 by CSIRO's Foot and Mouth Disease Report¹⁴ **"...losses in income that have been estimated to reach between \$71–16 billion for Australia** depending on the size and duration of the outbreak."

Price risk management and market transparency

A market where prices accurately reflect the relationship between supply and demand is considerably more efficient, stable and sustainable. When price moves in response to change in consumption (demand) the suppliers are incentivised to move investment and production from lower-margin goods to those that return the most profit.

For example:

If consumers are paying more for a leaner cut of beef, then the quicker that increased demand is communicated back through the supply chain via price movements, the quicker livestock producers can make the decisions to turn-out animals that deliver on those leaner cuts.

Conversely, an increased supply of livestock entering the supply chain (as seen during recent drought times) should translate into more affordable red meat for consumers. Subsequently, consumers purchase more red meat, absorbing the increased supply and thus providing a stabilising influence upon price levels.

The central pivot around which this swings is the ability for all market participants to easily see changes in demand, supply, and subsequently, prices (i.e. **market transparency**). Greater market transparency builds confidence that price offers the best indication of where to allocate resources and thus lowers the business risk of livestock/beef production.

Webinar contributors readily admitted that the Australian beef 'supply chain' has never been a simple market to enter, and has never delivered an easy profit, with several senior participants characterising it as 'adversarial'. To some extent, all supply chain relationships are adversarial, with players naturally seeking to gain advantage. This motivation develops strong commercial relationships and, in the right circumstances, assists in driving innovation.

Reminder of White Paper Principle 5:

Collaboration will identify benefit for all across the supply chain.

However, the industry also has a reputation for poor market transparency, particularly around livestock price reporting. The perceived inability of the industry to support greater transparency is often interpreted as a major cause of poor and uncertain economic returns, uncertainty in production planning, resource mismanagement, lack of professional investment and lack of engagement in managing price risk.

Slaughter and carcass volumes

- **MLA** conducts a weekly voluntary survey of a sample of Australian meat processors, which then supports a weekly summary report. The survey captures 70–80% of the Australian red meat production column, though being non-mandatory it experiences fluctuations around timeliness and completeness.
- Up until June 2020, the **ABS** conducted a monthly mandatory survey of all Australian meat processors, of both slaughter numbers and carcass production. Though suffering from a six-week time lag the survey provided a highly accurate baseline. Unfortunately, due to resource constraints within the ABS, this is now to be a quarterly survey, severely reducing production transparency to the detriment of the industry.

Feedlot production

- **MLA** partners with the Australian Feedlot Association (**ALFA**) every quarter to collect and assess the capacity and turn-off of the Australian feedlot sector. This data supports the insight delivered within the quarterly 'Lot feeding brief'.

Industry projections and reports

- **MLA** publishes 'Industry projections' quarterly. This report provides a comprehensive outlook on the cattle industry, including forecasts for the national herd, cattle and beef supply and exports over a five-year horizon. Data underpinning the projections is driven by voluntary surveys and previously mentioned ABS data.

14 www.agriculture.gov.au/abares/news/media-releases/2013/fmd

Demand transparency

It is now fully understood by all participants across the red meat supply chain that they are operating within a consumer facing industry. As such, it is the consumer that drives demand across the industry and a better understanding of their purchasing behaviours supports transparency and the desire for 'story-telling' by the demand side of the market.

MLA provides an extensive and comprehensive series of resources to aid all members of the industry appreciate the impact of the consumer and so aid demand transparency, including:

- Considering that over 70% of Australian red meat is exported, demand is driven by international markets. MLA routinely researches and publishes insights into the drivers of red meat consumption in these foreign markets (Japan, Korea, North America, Greater China, EU and UK, South East Asia, the Middle East and North Africa).
- Additionally, foreign trade policy, including trade barriers, influences demand for Australian red meat. MLA maintains a steady flow of information to the industry to ensure that the market understands the impact of changes in 'global access'.
- The remaining 30% of Australian red meat is consumed domestically, and MLA invests heavily in better understanding the consumption patterns of the industry's largest market. The results of this research are constantly being relayed to the industry through insights, presentations and information programs.

Price transparency

Whilst a strong understanding of demand and supply market forces contributes to the performance of a competitive and profit-seeking marketplace, their value is substantially reduced without being able to directly observe their relationship to 'prices paid'.

Reminder of White Paper Principle 6:

Efficient and orderly markets are enabled by price transparency.

Presently the responsibility for promoting livestock price transparency lies primarily with MLA's National Livestock Reporting Service (NLRS).

The NLRS's prime mandate is to record, collate and report livestock transaction data, primarily from 'publicly accessible' saleyards around Australia. Unfortunately, the proportion of livestock (especially processor-bound cattle) being transacted via saleyards has steadily dropped over the past decades in favour of direct-to-processor sales, either via contracted supply agreements or over-the-hooks (OTH) sales. Anecdotal evidence suggests that less than 20% of prime beef cattle now move through the saleyard, with this percentage considerably lower in and around the Queensland and NSW feedlot sector, which represents 88% of cattle on feed.

Unlike other comparable beef-producing nations (particularly the US) there is no legislated obligation on the part of buyers or sellers to report prices paid for livestock (saleyard or direct). Subsequently the only insight that the industry has into the other 80+% of cattle transacted are the processor OTH grids used to guide producers' expectations as to the carcass value of cattle delivered for slaughter. It is important to note that these grids are not contractually binding, are liable to be amended in response to changing circumstances and that processors are not obliged to make them publicly available.

Thus, if it is accepted that a clear view of the fundamental market forces is necessary for effective management of the risk associated with price volatility, then there are a series of challenges that the Australian red meat and livestock industry will need to address. Increased maturity across the industry in collecting and digitally managing data, including MLA placing 'data sharing' as central to its 2025 strategy, may offer a ready solution to these market failings.

Reminder of White Paper Principle 9:

Government regulation should be avoided by industry leaders.

Price risk management and Australian livestock markets

Whilst price data recording and risk transfer is not available in all markets, where it is, it is an enduring and well-utilised characteristic of 'developed' international beef markets and trade. The countries that participate typically demonstrate a stronger appreciation for modern price risk management strategies and have greater resilience in the face of adverse price movements and shocks. In the international (non-Australian) markets there are several benchmarks and broker markets utilised in the trade for live cattle and beef:

- US futures – CME live cattle, CME feeder cattle – benefit US graziers; lot feeders lock in margins
- Yellow sheet data for trimmings, e.g. 90CL – benefits producers and traders of trimmings into the US market
- Broker markets, e.g. South America's physical broker market for grassfed prime cuts – benefit international traders of grass-fed beef globally.

Australian red meat benchmarks

In Australia, the lack of industry-accepted benchmarks for live cattle and processed meat is an issue not just for spot sales but also for the development of forward pricing, risk transfer and inward investment.

The EYCI, developed almost 20 years ago, has historically been the industry benchmark for live cattle. It focuses upon southern and earlier stage cattle types where there is reasonable saleyard activity and market transparency. The EYCI has been losing relevance in recent years as the volume of latter stage cattle sold via the saleyards has been trending downward; reportedly, 90% of cattle sold 12 years ago versus 20% (and declining) today.

“...EYCI does not tell us anything...not just culture...industry dying to get a cattle derivative...”

Bryce Camm, President ALFA

Presently there exists no industry-accepted benchmark for latter stage cattle, which are increasingly being sold on a bilateral basis or are part of a vertically integrated production system. The current absence of price data around these selling channels makes such an indicator impossible to calculate.

Reminder of White Paper Principle 7:

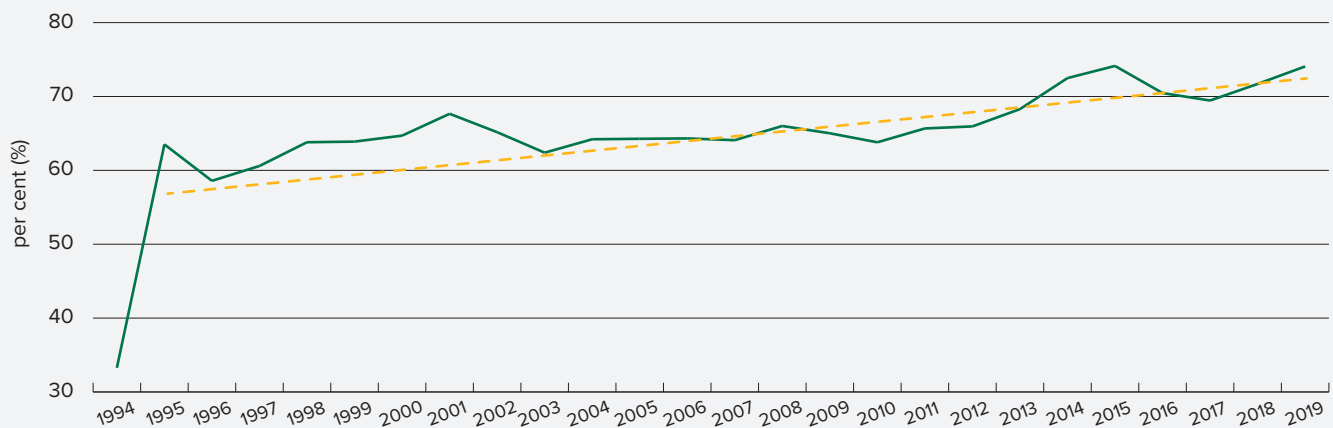
Risk management best practice improves access to capital and achieves industry objectives.

“With my multiple trips to Australia...when I try to baseline...I have always been in an ‘absolute quandary’ [about] how Australian producers are able to function in today’s environment...”

Don Close, Global Beef Specialist – Food and Ag Research, Rabobank, USA

The US exports only around 10% of its beef production, so it is therefore less vulnerable to international markets and shocks. In contrast, the Australian beef cattle sector is increasingly exposed to international markets and associated shocks.

Figure 6: Beef exports as a share of production



Source: DAWE

Australian livestock/red meat derivative history

Australia has experienced ‘mixed’ success in creating and trading livestock derivatives; presently there are no exchange-traded instruments available. In around 2004 the Sydney Futures Exchange (now incorporated into the ASX) offered a cash-settled futures contract based on the EYCI. The lack of activity (i.e. poor liquidity) resulted in it being delisted in late 2009.

The failure of this contract was reportedly the result of:

1. A lack of buy-side interest, possibly resulting from the contract specification being derived from too early a stage to be of value to end users or processors
2. A general lack of understanding about the role such derivatives play in risk mitigation and a lack of applied derivative experience in those promoting the contract
3. A hesitancy by the target stakeholders to incur reputational risk in being ‘first adopters’.

More recent attempts to establish new benchmarks for the domestic sector have been hampered by a lack of industry coordination, incomplete data and cultural gaps in innovation and risk management.

An alternative to derivative-based risk transfer is the use of bilateral contracts. The existence of long-term physical purchase and supply contracts is also rare, due to:

1. Lack of physical benchmarks to *separate pricing and supply*
2. *Reluctance to share data*, leading to a lack of price transparency
3. *Fear of missing out* on the upside should market conditions change
4. Too busy 'in the business' rather than 'on the business', leading to a lack of willingness to change.

Reminder of White Paper Principle 8:

Recommendations and any further contribution of MLA should be industry-led.

Price risk management supports the Australian red meat and livestock industry's strategic vision

The strategic vision of Australia's red meat and livestock industry is well detailed and readily accessible via both RMAC's *Red Meat 2030*,¹⁵ and MLA's *Strategic Plan 2025*.¹⁶

There is close alignment between the principles of 'price risk management' and the industry's desired outcomes. The overwhelming benefit of improved price risk management is not derived from monetary profit drawn from a hedge; rather, the ability to 'lock in' a margin is an enabler of resilience and, for example, access to cheaper capital and associated enterprise uplift. In this sense, it is very clearly aligned with industry objectives "to foster the long-term prosperity of the Australian red meat and livestock industry".

The resilient platform that would result from a more transparent and better risk managed marketplace would include:

1. A more orderly physical supply chain, where benefits include herd, stakeholder margin and processor workforce stability
2. Increased access to capital and innovation
3. Associated uplift in outcomes of ESG analysis.

Price risk management supports the four major strategic goals of the red meat and livestock industry

1. Doubling the value of Australian red meat sales

- Addressing the 'big complex challenges' requires shared and standardised industry value measures, such as commonly accepted price values, which easily identify, quantify and communicate the potential of investment. Representative price benchmarks and standardised forward price contracts (as proposed here) would assist in creating these values.
- A latter stage benchmark would better facilitate disintermediation, bringing the **customer** closer to the producer, creating **trust** and value through meaningful relationships, the sharing of stories and feedback.
- Similarly, latter stage cattle benchmarks would assist new **innovations** such as MLA's Natural Fall project – adding value to low value carcass products.
- Reducing the risk associated with short to medium term price volatility increases the attractiveness of the industry to **investors**.
- Macroeconomic trends associated with ESG (e.g. carbon), food security, quality, global demand and **improved productivity** become more visible and have a heavier weighting in decisions around the allocation of capital.
- Widely accepted benchmarks would complement existing MLA programs and research outcomes by offering a **value** by which to compare premiums. For example, MSA could benchmark their product's 'price' premium against an actively used latter stage cattle benchmark.

2. Tripling the value of industry capital

- Access to capital would enable **investment** in expansions, increasing volume.
- Offers a simpler value proposition resulting from increased access to capital, enterprise value uplift and **ESG**.
- More predictable **rate of return on investment**.
- Biosecurity events would be less damaging on **people** and **communities** if downside price protection was available.
- More **trusting** and robust supply chain structures increase the **sustainability** of the industry.

¹⁵ rmac.com.au/misp2030-staging/wp-content/uploads/2019/10/RedMeat2030.pdf

¹⁶ www.mla.com.au/globalassets/mla-corporate/about-mla/documents/planning--reporting/Strategic-Plan-2025.pdf

- Benchmarks and risk management, initially focused on the controlled environment of the feedlot sector (as suggested in the webinars), would open up considerable **investment**.

“If...greater degree of certainty around pricing outcome...change credit assessment significantly...open whole new range of customers to provide capital to.”

Greg Noonan, GM StockCo Strategic Agrifinance

3. Decrease in carbon emissions

- Potential for **environmental** benefits from a ‘whole of industry’ transformational change stemming from benchmarked **marketing systems** that also improve marketing, energy mix, market access and increase margins through embedded carbon value and embedded cost
- Link between carbon and access to capital, e.g. “Net Zero **Investment Framework**”
- Culture to be future focused, including **collaboration** with adjacent industries to inform today’s decision making on risk and carbon through financial modelling
- Foster the long-term prosperity of the industry – carbon is a by-product of beef production that will become its own commodity, creating opportunities for collaboration and **investment**
- Mutual obligation and **ESG** factors such as drought management, term and access to government support, physical and financial markets
- Alignment with MLA Principles: connect, bold, impact and continual improvement
- Role of government.

4. Becoming the trusted source of the highest quality protein

- Increase the **ESG** profile of the industry e.g. drought feeding decisions
- Stability of employment for **people** and **community**, through better allocation of resources
- Acceleration of data and knowledge transfer – competitive, prosperous and **sustainable**
- Anticipating future issues – innovation requires data, physical infrastructure and a conducive regulatory environment
- Producer and **livestock** at ‘heart’ of MLA’s decisions and **investments** – informed and empowered producer decision making by interpreting and using data
- A modern commercial risk platform to empower the sector’s **markets systems** to contribute to national objectives e.g. Federal Department of Agriculture, Water and the Environment, RMAC and the NFF.

Notwithstanding the clear alignment to industry objectives, the remaining challenge is how to adapt the industry to make price reporting, risk transfer and risk management generally an ‘integral part of the process’ for the industry, particularly in how producers and processors interact. Similarly, the valuable data and stories not making it through to consumers and vice-versa. A starting point is to solve the price data issue and concurrently look further into separating pricing and supply by agreeing a list of acceptable close-out mechanism alternatives between derivatives and physical sales (close-outs are further detailed in Recommendation 3).

Industry contribution

The roundtables (webinars) were structured to guide the contribution of leading industry participants around four central questions:

1. **Consensus:** “Does industry consensus exist around the value of benchmarks and price risk management?”
2. **Obstacles:** “Where does the industry see obstacles to creating benchmarks and adopting derivative-based price risk management?” and “Would the industry contribute to overcoming these obstacles?”
3. **Preconditions:** “Under what conditions would the industry actively engage in a livestock pricing derivative market?”
4. **Expectations:** “Given MLA’s areas of expertise and competency, and its role in the red meat and livestock industry, what expectations does the industry have of MLA in supporting the creation of benchmarks and facilitating the development of a livestock pricing derivative market?”

1. Consensus

In selecting and inviting industry participants to the roundtable series, it was essential to capture representation from across all sectors of the beef ‘production’ supply chain and also from those sectors that support and provide non-production expertise, such as financial and professional services. All participants, to varying degrees, appreciated the importance of and theoretical application of price data and price risk management. Examples and knowledge provided from adjacent sectors were widely welcomed and helped provide perspective and awareness.

Participants easily voiced their opinions around industry systems, structure and practices that led to a perceived lack of price data and transparency, thus contributing to avoidable market risk-related inefficiencies and vulnerabilities.

A consistent message from participants was their desire to see improved connections across the supply chain that would flow from improved price signals provided by 'relevant' and representative benchmarks, with a focus on the end customer and the integrity of the whole supply chain.

Additionally, there was strong consensus amongst high-value consumers (including ASX-listed Australian retail chains, e.g. Coles) and financiers (including ASX-listed major banks such as NAB) that ESG is a major and pervasive trend that would be supported by improved price transparency. Improved price risk management might help support traceability, fair trade practices, animal welfare, environmental management and carbon reduction.

Outcome

Industry representatives were unanimous in voicing the benefits they saw to the industry from the introduction of transparency and the access to proven price risk management strategies and tools this would bring. This sentiment was displayed from representatives from across all sectors of the supply chain.

2. Obstacles

Market transparency

Across the three roundtable sessions, contributors identified how poor risk awareness and market transparency imposed a major constraint on past and future attempts to manage price risk. In particular, producer representatives identified the difficulty in comparing current spot prices across different selling avenues. Those who had participated in prior efforts to develop price derivatives (~20 years ago) assigned significant blame to a lack of derivative experience in the design of indices and futures markets and to poor price transparency for their failure. Participants were universally aware of the *ACCC Cattle and beef market study*, published in March 2017,¹⁷ and general sentiment was that whilst MLA has made efforts to address relevant recommendations, the underlying structural deficiencies have not been addressed and that latter stage cattle price data, where beef cattle risk concentration is greatest, is in decline. Consensus was that current industry systems, structure and practices are a result of, or lead to, lack of data and transparency, and that this is an obstacle to efficient spot sales and risk transfer activity.

One senior global beef expert contributor from a major international financial services provider (with extensive experience in servicing the agricultural sector) expressed incredulity about how producers in the Australian red meat and livestock industry were able to function effectively in the absence of the strict government legislation and regulatory oversight in the US, which is less vulnerable to international markets – only around 12% of beef is exported. He suggested that only with the onset of mandatory price reporting in 1999 was the US beef industry able to create the long-term stability that comes from stronger competition, and that trust between producer and packer was improved following mandated price reporting. However, in response there was general agreement by participants that further government oversight or regulation should only be a final resort.

Reminder of White Paper Principle 9:

Government regulation should be avoided by industry leaders.

MLA was recognised as the trusted source of what price information was available, although the shrinking proportion of livestock moving through saleyards (the prime source of NLRs price reporting) was highlighted. Participants recognised the subsequent growing risk associated with making business decisions based upon incomplete information. Generally, participants were unaware of any ongoing efforts by MLA to address this issue, nor of the importance of a central industry data repository in MLA strategic plans – though the MLA Strategic Plan 2025 had yet to be published.

Lack of understanding and change resistance

Industry participants were generally in agreement as to what obstacles would need to be resolved for progress to be made in creating an effective market in livestock price hedging instruments. Beyond credible data to identify and measure risk, cited obstacles included knowledge/awareness, systems and hedge mechanics (close-out).

Participants felt there was a 'general' lack of awareness in the industry around how it would 'work for them' in practice and the wider value of risk management, including uplift in enterprise value. Increase in tolling (brands) increases the need for risk education but is an obstacle given that title and risk are not transferred to allow for price recording.

While most participants, particularly those with experience outside the Australian beef cattle production and processing sector, possessed a strong knowledge of how derivative markets worked domestically and overseas, there was widespread concern around understanding in the wider industry.

Webinar participants saw too little industry-wide acceptance of the value of data, analysis, trading, intangible/knowledge value and the potential of 'big data', artificial intelligence (AI) or the 'internet of things (IoT)'. Other industries and countries are successfully using 'big data' in production (e.g. AgDNA), commodity trading and sales. For example, US commodity trading firms actively use Australian production data freely available from MLA in devising international physical trade and price hedging strategies. When informed of the creation of the MLA-sponsored central industry data repository, participants expressed interest, but voiced a hesitancy as to its

¹⁷ www.accc.gov.au/focus-areas/market-studies/cattle-and-beef-market-study

near-term value in assisting with spot and forward decision making.

Competitive advantage – ‘adversarial supply chain’

The sentiment expressed by participants was that the processes, systems and wider culture at processor and trade level did not support the transparency required for improved price risk management, including the creation of derivatives or insurance products/mechanisms. The ‘territorial view’ of market data was recognised as offering a measurable commercial benefit for processors, but consensus was this increased producer and processor margin swings, and negative impacts on industry sustainability. This situation also prevents offers being taken up by producers from major balance sheet lenders and market makers to the sector, which could be a competitive advantage relative to other major beef producer exporters.

Diversity in production models

The wide variety of production models and ‘destinations’ of red meat was considered an obstacle to the design of a derivative (or benchmark) that might gain wider support across the industry, including the buy-side. Similarly, some considered the desire voiced in MLA’s Strategic Plan 2025, to transition from commodity to high value, to be at odds with benchmarks and price risk efforts.

Various senior industry figures, including breeder and breed societies, questioned how standardisation and risk transfer align with ‘high value’ initiatives. As described in this project and White Paper, participants recognised that risk management is critical for any export-dependent industry, seeking to plan for a short- to medium-term shock e.g. planning and managing drought, biosecurity, trade disputes or geopolitical impacts.

Contributors did suggest that servicing concentrated ‘regional’ opportunities might be helpful, e.g. start with the ‘controlled environment’ of the feedlot. The CEO of a major northern producer indicated that, despite the geographic and potentially grade differential to their herd, there would be value in a more transparent feeder market focused on southern Queensland.

Outcome

Roundtable participants identified two classes of obstacles to their adoption of improved price risk management strategies. Firstly, industry awareness and culture; secondly, the pervasive lack of transparency surrounding market price recording and accurate production/supply information.

3. Preconditions

It was universally agreed across the three roundtable discussions that the design and marketing of any price derivatives would be a major determinant in adoption and success. A contributor who presently manages a major national agency business identified that achieving any acceptance or adoption by the industry would require that products be simple and easily understood. Both industry advocates and international standards would suggest that independent, trusted and knowledgeable people be allocated resources to design products suited to the Australian industry and participant profile. Both a major global meat trader and a processor general manager acknowledged the sugar and grain examples given in the webinars and that, in this regard, external expertise is needed.

When discussion turned to the necessary transparency around market transactions, both participants and facilitator agreed that it is not the aspiration of the Australian industry to emulate a US model. Given the historical investment, participants advocated for the industry to adapt MLA’s existing platforms and systems to better cater for price reporting and risk transfer e.g. NLRS and MSA. Participants with exposure to the processing sector agreed the adversarial supply chain and poor collaboration needed to be addressed, i.e. value of greater and more stable throughput to processor in exchange for a value-creating data-sharing strategy.

Participants were unanimous that traditional ‘conservative’ ways of addressing risk and innovation were not sufficient to address new challenges. The head of commodity trading for a premier lender to the sector recommended careful consideration of data integrity and technology in providing the platform for a liquid two-sided market. No participants questioned the potential of more transparency and risk transfer to deliver enormous value to industry and consumers.

Outcomes

Across the three roundtable discussions, contributors needed to observe well structured, easily understood price risk management products underpinned by extensive due diligence by knowledgeable persons and market price transparency before they felt comfortable actively engaging. Participants suggested that a professional approach to data and risk management may, in the near future, become a precondition of access to capital, access to insurance, access to high-value discerning markets and to attract quality human capital.

4. Expectations

Contributors, in particular large beef cattle producers, saw MLA playing a ‘lead’ role in researching risk vulnerabilities across the red meat supply chain, including price risk across livestock and beef. Several participants suggested MLA explore the use of the National (Industry) Data Platform, as an opportunity to collate wider price data (including NLRS and MSA), to develop more inclusive ‘deeper’ benchmark alternatives.

As the roundtable discussions progressed, stakeholders developed a stronger appreciation of the value MLA could deliver via transformational change around data capture and the resulting knowledge transfer across the supply chain that would enable intelligent decision making and risk transfer. Participants repeatedly reinforced the importance of transparency and risk transfer’s role in being ‘consumer centric’ and acting in the interests of the long-term prosperity of the whole industry by fostering a risk culture that

enhances profit, sustainability and global competitiveness. It was noted that MLA may need to visibly demonstrate its commitment to data integrity given global insurers are currently using EYCI data in live insurance contracts, based on comments from a London-based commodity insurance CEO participant. These sentiments would appear to be well supported by MLA's *Strategic Plan 2025*.

Participants from across the supply chain agreed the industry needed to resolve clear shortcomings in price data, education and the adoption of insights/analytics. Such change would work to mitigate the impact of market disruptions (e.g. processing plant shutdowns) and major geographic arbitrage opportunities that are considered the opportunity cost of the current system. It was acknowledged that most in the industry are busy 'in the business', so it is MLA's role to work 'on the business' and devise effective risk awareness and adoption strategies.

In support of these opinions, stakeholders with experience outside the industry encouraged the industry (and MLA) to recognise the wider implications of price data and the term structure of major cattle benchmarks on ESG outcomes, for example carbon, access to finance, mutual obligation to Government, personal and animal wellbeing, industry-wide employment stability and regional community benefits.

Levy payer participants feel MLA focuses predominately upon small, science-based research and design projects and might contemplate a more balanced approach that incorporates a stronger business risk focus and cross-sector collaboration.

Outcomes

Industry participants were unanimous in supporting commercially driven and supported solutions. MLA is expected to play a lead role, acting as facilitator, in re-balancing its research efforts in favour of risk and market systems innovation to deliver value to levy payers. Participants are looking for commercially based outcomes in terms of delivering on the promise of trust and compliance of data, and skills and confidence to use data for decision making – as per MLA's *Strategic Plan 2025*.

Recommendations

Following from the industry's contribution across the roundtable series, three complementary but discrete recommendations have been identified. Through collaboration across the industry, these recommendations provide an opportunity to build resilience and progress towards:

- More informed decision making to stabilise financial, physical and ESG industry performance
- Stronger linkage between producer and consumer
- The transfer of market risk to willing, creditworthy counterparts
- Access to new capital inflows.

Recommendation 1: Raise awareness of the value of risk management

Develop a knowledge base across the industry to better understand and evaluate alternative approaches to risk management. The goal is to better equip and future-proof the industry with respect to climate variability, labour and skills shortages, market or supply chain disruption, environmental sustainability, shifting consumer preferences, global markets and global competition.

Actual recommendation

Conduct an industry-wide risk assessment (based on international standards) to highlight producer and processor-level policy gaps and opportunities.

Development of:

- 1.1 Risk principles, framework and process – aligned to recognised international standards (ISO31000)¹⁸
- 1.2 An industry-developed risk scorecard – to identify areas of weakness and opportunities
- 1.3 A processor 'model' to be kept updated collaboratively by MLA/Australian Meat Processor Corporation (AMPC) – allowing for better industry-wide appreciation of global price signals.

Rationale

- 1.1 This recommendation aims to build capacity with respect to the industry's approach to risk in order for it to adapt – leadership, investment structures, governance, funding and culture, and be compatible with a rapidly changing world and increasingly technology-enabled environment. Based on international standards, to de-personalise this project for the industry, the risk framework can identify weaknesses and opportunities in four main quadrants:
 - Identify and assess
 - Measure and model

18 www.iso.org/iso-31000-risk-management.html

- Monitor and report
- Compliance and policy.

The risk framework can also help to create awareness and alignment across government policy, providing procedures to support risks the industry cannot manage itself.

Producer-level upside and value from implementing better risk systems (principles, framework and process) stems from lower funding costs (bank and non-bank), lower insurance premiums, addressing present and future mutual obligations and continued access to discerning physical agri-food markets by, for example, highlighting trends and related risks pertinent to traceability, supply chain blockages and health risk plans. The ‘hard’ elements of climate risks, commodity prices and financial markets are a useful segue to approach the ‘soft’ elements of personal and mental wellbeing. The project would be designed to trigger change and action from a reactive mindset (post-risk event) to one that is proactive and adaptive. A prototype risk plan could be piloted as a final stage of this project before wider adoption takes place.

- 1.2 A scorecard could be developed from the risk framework (above) and should include assessment relative to local and global peers on data and innovation, price risk alternatives, supply variability, production costs, quality, education, data and collaboration culture.
- 1.3 The processor ‘model’ would support informed industry-wide discussion and communication. This model would also allow for better industry-wide appreciation of global price signals, and the value of throughput and stability of throughput. Constructing the income stream of this model may also lead to creating an index reference point that could be used in cut-out risk transfer, or at least highlight gaps that would achieve this in the medium term.

Industry benefit and strategic alignment

Value can be derived from these recommendations in multiple ways:

- Creating a framework to address major challenges and identify opportunities
- Promoting a culture of innovation in risk management and sustainability
- Providing a platform to stimulate the development of skills and confidence around data-driven decision making
- Bringing social benefits relating to health, financial wellbeing, empowerment and happiness
- Being scalable across other agricultural sectors
- Aligning with other live projects relating to meat industry modernisation, transparency, digital transformation and risk management
- Supporting MLA’s *Strategic Plan 2025*.

Implementation, timeframe, challenges and opportunities

The best outcomes would be achieved through a partnership between a major professional services firm, a relevant Cooperative Research Centre (e.g. Food Agility) and risk specialists with a demonstrated track-record in the commercialisation of risk management and innovation.

It is anticipated that, depending upon scope, creating these three tools, would require between six and 12 months. The project would best follow a phased approach, starting with a pilot.

As benefit could possibly extend across the wider red meat industry and vested government departments, there would be strong potential to attract funding from multiple government programs, including the Future Drought Fund. The major foreseeable challenge is that some stakeholders may perceive that they benefit from the status quo.

Recommendation 2: Expand development of data-sharing to improve market transparency

Data-driven transformation and the adoption of digital transformation programs is now a major driver of change across Australia’s red meat supply chain. The industry is very quickly applying technologies and practices that place data as central in identifying opportunities for production efficiencies, traceability, customer preferences and quality improvements. This modernisation should also extend to timely and relevant price transparency.

Relevant price data will be the catalyst for innovation in business models and price risk management adoption within existing business models, and will deliver enormous value to the industry in the form of enterprise value uplift, and wider social and environmental benefits.

MLA is supporting this evolution by explicitly placing data- and insight-driven decision making as a strategic focus in its Strategic Plan 2025 and creating a culture that looks to share data across every point in the supply chain. MLA is prioritising investments that allow for the seamless transfer of information through an Industry Data Platform (IDP).

Success will be defined by the adoption of a data culture wherein the supply chain (including producers) perform their decision making in an environment of greater transparency (including price) and so deliver greater certainty of outcomes.

Actual recommendation

- 2.1 That industry continues to act upon the recommendations of the *ACCC Cattle and beef market study (2017)*.¹⁹
- 2.2 That industry actively collaborates with MLA in those programs of work established to address the concerns and ‘blockers’²⁰ to data sharing as identified in the initial studies around the establishment of the IDP.²¹
- 2.3 That the red meat processing sector engage with MLA to further the development of a Single Processor Data Feed²² that seeks to apply a consistent process that all MLA programs could leverage to receive and process carcass data, including referencing to relevant pricing grids.

Rationale

- 2.1 Adopting the recommendation of the Commonwealth government agency specifically tasked with oversight of Australian industry’s competitive environment is a prudent practice and demonstrates good corporate citizenship.
- 2.2 The P2D Project: Accelerating Precision Agriculture to Decision Agriculture (2017)²³ identified the opportunity to add some \$2.9 billion in value to the Australian red meat and livestock industry by enabling the sharing of data (including market data such as actual process paid) within the supply chain. Improving the exchange of data will enable supply chain stakeholders to use data better, gain access to insightful analytics and unlock opportunities for transformational products and services (such as structured price risk management instruments, e.g. to underpin access to finance for expansion, innovation or diversification).

To realise this opportunity, MLA is demonstrating the necessary leadership through the creation of the Digital Value Chain Strategy and, integral to this, the development of an IDP.
- 2.3 Processors presently deliver carcass data to MLA and Integrity Systems Company in a variety of ways, including automated delivery between systems, manual file upload through the web site, and even file transfers. Development of a Single Processor Data Feed will not only contribute to addressing existing challenges around i) supporting and funding disparate delivery processes; ii) data quality and security; iii) transfer timeliness and robustness; and iv) duplication, but will also provide the necessary volume and completeness to successfully aggregate and ‘anonymise’ pricing data and so address the long-held sensitivity around sharing commercial pricing data.

Industry benefit and strategic alignment

With wholesale adoption of a pragmatic and value-driven approach to data sharing, benefits extend far beyond the potential for stronger management of price risk. As such, the recommendations here offer the greatest opportunity for industry-wide benefit.

Specifically, the recommendations drive straight to instituting a major core principle of efficient and sustainable marketplaces – price transparency. Ensuring that the market forces of supply and demand are effectively communicated across the supply chain is the role of ‘price’. The swifter that price reacts to changes in demand or supply, the sooner that producers, processors, retailers etc. can shift resources to maximise revenue – and minimise unnecessary cost and negative externalities.

Subsequently data (in particular, price) transparency clearly underpins the red meat and livestock industry’s strategic imperatives, which require informed business decision making and the allocation of limited resources and capital.

Implementation, timeframe, challenges and opportunities

Much effort has already been invested across the industry in researching and defining the value of expanded data sharing, as evidenced by the MLA programs mentioned. The creation of the MLA IDP is underway now²⁴ and industry engagement will commence in the near-term. The MLA Market Information program is actively looking to expand on its market price and indicator service offerings in accordance with ACCC recommendations, and the industry can support this with feedback and active contribution.

Larger corporate industry participants are pursuing their own digital transformation programs in order to benefit from those efficiencies previously discussed. The greatest opportunity (and challenge) will be to align those private and public efforts (via data governance standards) to ensure that maximum benefit is returned by a modern, demand-driven supply chain.

Recommendation 3: Create a futures contract with the highest value impact

Objective: Feeder futures contract design and implementation strategy

Feeder futures design and implementation was the clear and logical starting point based on evidence-based data and feedback from the webinar series. To add further utility and liquidity to the contract it could potentially be used as an index for finished cattle with

19 www.accc.gov.au/publications/cattle-and-beef-market-study-final-report

20 Appendix 4: Concerns and blockers to data sharing across industry.

21 [projects-ishare.mla.com.au/projects/j14970/Reports/V.DIG.1900 FINAL Report - 4 October 2019.docx](http://projects-ishare.mla.com.au/projects/j14970/Reports/V.DIG.1900%20FINAL%20Report%20-%204%20October%202019.docx)

22 [projects-ishare.mla.com.au/projects/j15453/Reports/V.DIG.1902 Final Report.docx](http://projects-ishare.mla.com.au/projects/j15453/Reports/V.DIG.1902%20Final%20Report.docx)

23 www.farminstitute.org.au/P2Dproject

24 As at August 2020.

appropriate basis and or escalators added within supply contracts with processors. The contract would also act as a 'barometer' for other beef cattle types of similar grade/specifications and location.

Actual recommendation

An industry-led approach is recommended, to seek 'skin in the game' from both the buy and sell side – as well as relevant stakeholders, such as agency businesses, market makers, financial institutions and exchanges.

The roundtables identified stakeholders with knowledge of and access to data for benchmark creation, futures contract creation and mechanisms for graziers, feedlots and processors to participate in pilot trades. As identified in the roundtables, cattle risk concentration is centred around the feedlot sector, the majority of which is in Queensland/NSW; therefore, the focus is on a feeder contract, with data derived in order to be of use to this high-value part of the industry initially.

The contract could be data-based index (e.g. an Angus index or Angus + Angus–equivalent index) or, if this is not possible or not desirable, a deliverable contract.

As outlined within the White Paper and Recommendations 1 and 2, a strategy needs to be carefully developed for data collection (auditable, credible etc.) and/or effective delivery logistics, with tight quality-control standards, considering the local lack of experience with futures contracts, and to create a meaningful linkage to the end user.

In the early stage of listing, extensive training for risk management education should be carried out, to avoid a lack of industry participation and to ensure convergence. Effective close-out mechanisms must be in place. A close-out mechanism ensures there is no timing mismatch or slippage between exiting a derivative position and entering a physical sale (or the pricing of a basis/supply contract).

Rationale

Adoption of a known and proven method to manage risk, build resilience and enhance access to capital. Based on the data and feedback from the webinars, the time is right to push further into derivative risk transfer, given:

1. Increased notional value at risk, increased concentration of this risk around the feedlot sector and heightened number and volatility of risk factors
2. The right industry and derivative specialists who understand the latest market trends and how emerging technologies can be used to create competitive advantages across the sector are willing to assist and have a demonstrated commercialisation track-record in adjacent industries
3. Obstacles have been identified and can be removed to resolve the data/benchmark issues, paving the way for a useful benchmark or delivery mechanism to provide transparency and risk transfer. Learning from historical obstacles/mistakes locally and overseas will ensure the contract is a success
4. Communication technology, systems, financial market product application and education have considerably advanced since the last MLA-sponsored EYCI futures initiative.

Industry benefit and strategic alignment

Benefit to industry:

1. More stable and predictable income
2. Access to lower cost and new/external sources of capital, leading to enterprise uplift
3. Ability to separate pricing and supply – allowing for new business models such as contractual vertical integration on more flexible pricing terms. Allowing for new pricing models, particularly with price-sensitive consumers. Ability to explore pricing that is indicative of the quality and standard influenced by production practices and demand
4. Create a baseline for continual improvement in Pricing Grids to ensure they reflect market expectations for premium products or discounts
5. Transparency of spot and future prices, allowing for informed decisions on herd management, having a range of valuable benefits to production systems
6. Feedlot sector is a 'bridge from north to south', implying price signals will benefit northern producers
7. A well-recorded and repeatable process, so that further benchmarks and derivatives can be created once this feeder contract is orderly and liquid.

Strategic alignment:

- Manage margins more effectively
- Increase access to capital
- Provide enterprise value uplift
- Meet industry-wide objectives and aspirations around integrity, continual improvement and recognising the value of risk management, as described in the body of this report

- Supply market signals for seasonal, climate and drought decision making, and related ESG considerations that may impact market access
- Identify mutual benefits between stakeholders and government – may attract funding from Future Drought Fund etc.
- Provide a tradable, transparent and respected benchmark, including to help maintain price related market access risks e.g. trade disputes around subsidies or anti-dumping
- Prove a process for risk management initiatives, which can then be extended to other underlyings, such as:
 - OTH, to allow for crush hedges (margin between OTH and feeder)
 - Cut-out index based on customs (e.g. ABS) data, to allow for crush hedges
 - Trimmings index better representing Asian trade prices.

Implementation, timeframe, challenges and opportunities

With adoption and extension considered from inception, this recommendation relates to an initial '90-day sprint' to establish industry buy-in and define the specs of a feeder futures contract – breeds/specifications, location, delivered instrument or data-driven index instrument.

Key implementation elements:

Validate: Starting with a buy-side and with a focus on delivery to the regions, survey buy- and sell-side participants to validate a viable contract specification.

Co-design: Pull together a collaborative team of stakeholders to design the contract, with a focus on a two-sided market and access to market makers, liquidity and balance sheets.

Capability: Outline an education program on using benchmarks to separate pricing and supply. Consider the best platform (exchange) to host the contract, considering successful history in supporting agricultural futures and the potential for access to liquidity.

Invest: Identify entities to put 'skin in the game' for the design and construction of the contract.

Test and learn: Simulate trial trades.

Scale for impact: Focus on buy-side (including end users), speculative community (including spread trade opportunities as seen in wheat and other underlyings) and new technologies and platforms to deliver access to commercial and non-commercial participants.

Challenges

1. Industry education and willingness to change
2. Lack of awareness around the risk and reward of boutique and vertically integrated beef supply chains versus the benefits of a more homogenous and fungible approach to beef production where demonstrated benefits in adjacent industries can be transferred and adopted
3. Entrenched systems, practices and culture around price data collection and sharing.

Opportunities

1. Create a more sustainable industry.
2. Attract capital from a wider range of sources, on improved terms.
3. Create significant enterprise value uplift and wider benefits that are well in excess of the cost associated with transparency and risk transfer.

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Appendix 1: Value created by data, innovation and risk management in adjacent sectors

Examples to illustrate potential value to the beef cattle sector

Innovation example: Production data/decision making – AgDNA.com

Queensland origin start-up, now successfully exited to machinery multinational CNH Industrial, is an example of the value of data analytics and visualisation. AgDNA take machine-generated data and deliver meaningful output metrics to farmers to enable them to better make production decisions.

“Compared to today’s conventional farming practices, we expect to enable some 20% productivity gains throughout the entire crop cycle in all key application types: Fleet, Field, and Farm,” Laura Overall of CNH Industrial (commenting on the impact of the acquisition of AgDNA, September 2019)

Financial example: GrainCorp ‘producer collar’ on production variability (production risk management – grain receivables)

Insurance-company derivative based on Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) data to protect against (drought) grain receipt income. This structure provides a guaranteed income buffer against poor harvests when dry seasons undermine grain yields; conversely, in good harvest seasons, GrainCorp pays the insurer a cash settlement. The announcement of this structured deal led to GrainCorp shares rallying ~25% or ~AUD500,000,000. Originally structured by Long Term Asset Partners and Goldman Sachs, this simple derivative achieves predictable and stable earnings, enabling lower cost finance and higher leverage – leading to a re-rating in GrainCorp’s equity value, demonstrating that with appropriate data, planning and process, **effective risk management is recognised by the market as having hard dollar value.**

Figure 7: Graincorp equity price



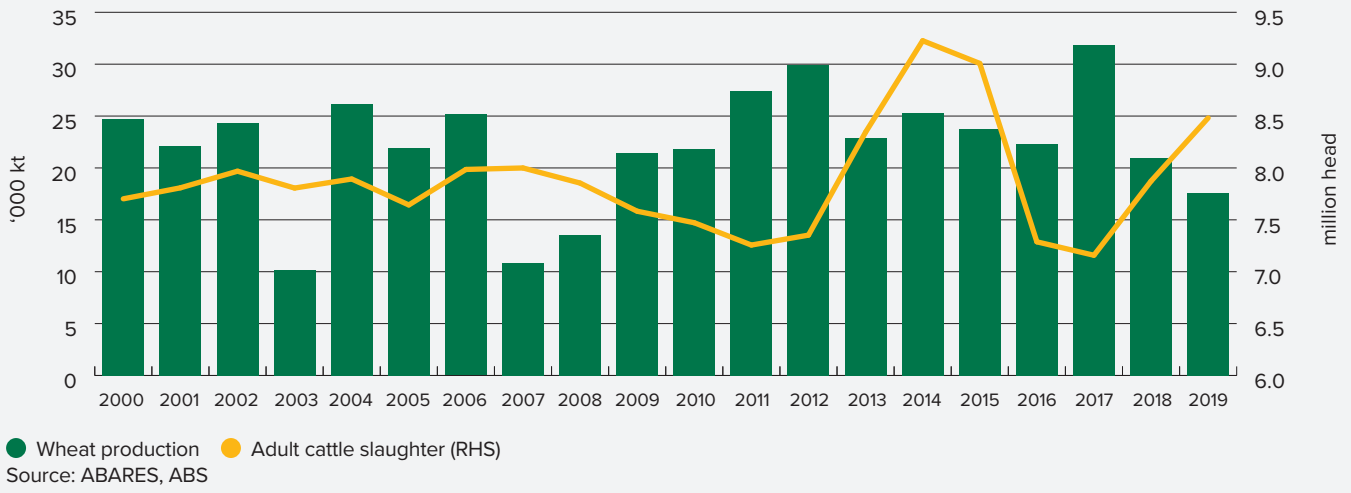
Could insurance and derivative structures also stabilise income and add value to beef cattle producers and processors?

The deployment of these powerful structures faces the following obstacles:

- Data capture and access
- Financial literacy e.g. basis risk
- Development of human resources, platforms and products
- Access to credit lines to enable ‘selling upside optionality’ to fund ‘downside protection’, i.e. enabling zero-cost structures, rather than, for example, the current high premium cost of insurance products
- Adoption, particularly due to industry structure, entrenched practices and culture.

The chart below illustrates similar production variability between wheat production and cattle slaughter, to substantiate the direct relevance of the GrainCorp example.

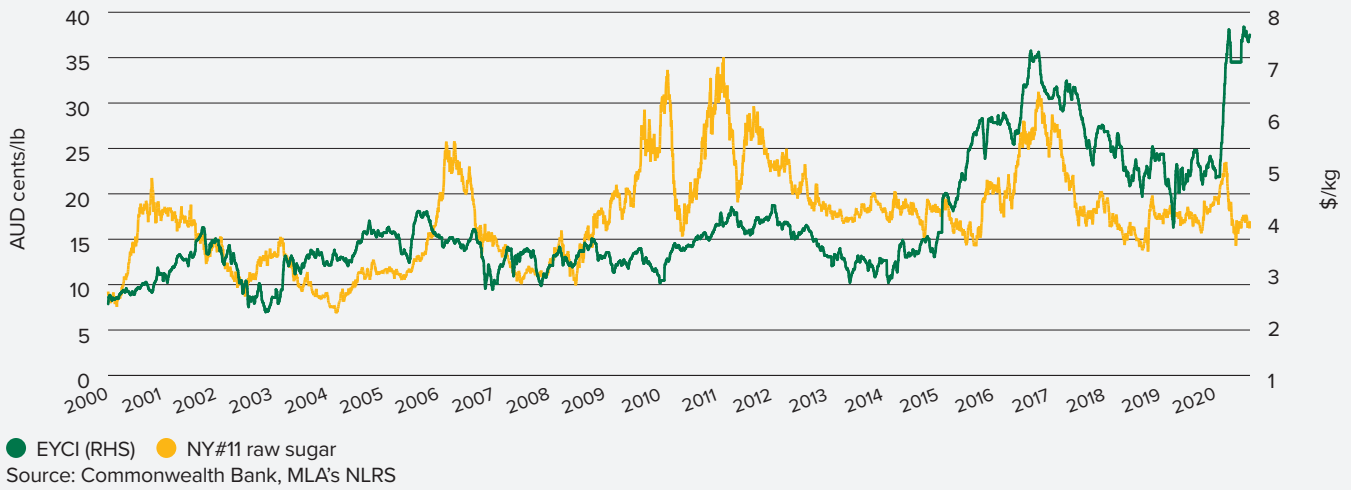
Figure 8: Australian wheat production v national adult cattle slaughter



Cultural example: Price risk management – Tully Sugar Mill

The Tully board were culturally very conservative (similar to the beef cattle sector and associated boards), it was not until their corporate executives properly analysed the scenarios and positive impact a more stable income stream would have on their business and community that they fully appreciated the value proposition and agreed to execute a comprehensive risk transfer strategy. In other words, a conservative culture, once educated, is a hedging (risk management) culture. (See Tully Sugar testimonial below). Interestingly, the volatility of AUD/ICE#11 sugar and the EYCI over the last 20 years is similar.

Figure 9: AUD raw sugar v EYCI



Tully Sugar testimonial

“The Queensland sugar industry operated under a single-desk marketer until deregulation around 15 years ago. Decisions around finance and price risk management of raw sugar output [were] largely centralized downstream of the mill. The original state-wide sugar pool typically returned season average results. Soon after deregulation, the Tully Sugar board was approached to hedge (by John Reeve, CBA) and, following a period of education, executed a series of long-dated sugar swaps that protected our income stream above our cost of production. We remain active in this risk management activity – it has helped the mill maintain a clean balance sheet and added to the resilience of growers, mill, other stakeholders and the community.”

Gerry Borgna, Board Member, Tully Sugar Limited, May 2020

Appendix 2: Register of quotes and general observations

Across the roundtable events, feedback and responses were sought from industry contributors around four central themes:

1. “Does industry **consensus** exist around the value of benchmarks and price risk management?”
2. “Where does the industry see **obstacles** to the creation of benchmarks and the adoption of derivative-based price risk management?” and “Would the industry contribute to overcoming these obstacles?”
3. “Under what **preconditions** would the industry actively engage in a livestock pricing derivative market?”
4. “Given MLA’s areas of expertise and competency, and its role in the red meat and livestock industry, what **expectations** does the industry have of MLA in supporting the creation of benchmarks and facilitating the development of a livestock pricing derivative market?”

The following sections offer a comprehensive sample of this feedback and observations of contributor sentiment.

Consensus

- “In an ‘absolute quandary’ as to how producers can function...increasing exposure (dependence on global trade) and risk but...no baseline...” Don Close, Global Head Animal Protein Research (specialising in beef cattle globally), Rabobank
- “...EYCI does not tell producers anything...less commodity flavour/brand focus...not just culture...industry dying to get cattle derivative...” Bryce Camm, President ALFA
- “Customers want more data to tell story of farmer and establish new pricing platforms” David Carew, Supply Chain Specialist, MLA
- “Culture issue...do not see how it works for them” Don Mackay, Chairman, RMAC
- “Fear of missing out on price upside” Don Mackay, Chairman, RMAC
- “Uncertainty can affect personal wellness and performance. Stigma and reluctance to address risk has wider impact than purely financial. However risk, [which] causes uncertainty, can in the most part be addressed effectively” Rupert Bryce, Director, Performance Strategies
- “...disconnect that is occurring between Australian cattle prices – currently the highest in the world – and the potential revenue available in the current COVID-impacted global beef market.” ‘JBS Dinmore plant shutdown’, *Queensland Country Life*, 29 May 2020
- “...better risk culture is needed for succession and resilience...” Sarah Becker, James Becker & Co. Accountants and Chair of Beef 2021 Committee

Obstacles

- “If...greater degree of certainty around pricing outcome...change credit assessment significantly...open whole new range of customers to provide capital to.” Greg Noonan, GM StockCo Strategic Agrifinance
- “...resilience will be a major determinant of sustainability of the industry...Identified that there is poor industry adoption of available risk tools and facilities” Rupert Bryce, Director, Performance Strategies
- “Contract design – benefits and detriments to index or deliverable futures. Very keen to help if there is industry demand. Need creditworthy counterparty. Risk transfer is cornerstone of a strong industry” Tim Andriessen, Global Head of Agri Commodities, Chicago Mercantile Exchange (CME)
- “...need for new sources of capital...seen as high-risk investment...future performance subjective, so known risk but unknown reward...” Geoff Birchnell, Head of Strategy, Palgrove/NZ Super
- “...linkage between feedlots and China markets for outside capital...” Andrew Simpson, Bindaree Beef (processor)
- “Look to experience of outside industries such as progress in Australian sugar industry on price risk...” (implying off-take and/or price risk first, then access to capital will come) Andrew Simpson, Bindaree Beef (processor)
- “...Need for financially trusted data...dwindling saleyard data...75% of Queensland cattle transactions are private (direct)” Connor FitzGerald, General Manager Fulton Market Group
- “Absolutely keen to support risk management. Stability and consistency of pricing equally important as competitive pricing. Beef large part of burger cost” Connor FitzGerald, General Manager, Fulton Market Group
- “Customer increasingly interested in Full-sets” David Carew, Chief/Supply Chain Specialist, MLA
- “...cost of entering price risk transfer solutions at a transactional level may be a perceived barrier...” Wade Hansen, National Head of Agri Assurance, Ernst & Young
- “A feeder cattle futures term structure would...help business planning, including – reflection on outcomes, herd stability/rebuilding, margin and cashflow analysis, risk management, strategy, drought management, succession and resilience” Sarah Becker, James Becker and Co.

Preconditions

- “...best place to start is in controlled environments...” Don Mackay, RMAC Chairman
- “...start with sections...concentrations...Queensland feeder...” (referring to the feedlot sector) Bryce Camm, President ALFA

- “Definitely see opportunity to offer to clients and vendors. Having success on other risk management tools such as insurance and water. Need to make offering simple and understandable” Andrew Slatter, Head of Agency, Nutrien Ag Solutions
- “Needs to be functioning before entering – depth, liquidity, multiple participants (producer, consumer, speculator...not cost too much...Due diligence needs to be careful. NAB very interested.” John Watson, Global head of commodity trading, NAB
- “...link with end customer...whole supply chain...‘what decisions as an industry are reducing value?’... help value chains by optimising timing...” Phil Green, Managing Director, Greenleaf Enterprises
- “...need for heavy level of government involvement (CFTC, CME, USDA) as 3rd party source of trust is important...Mandatory price reporting good and healthy...trust and confidence...” (repeatedly emphasised) Don Close, Global Head Animal Protein Research (specialising in beef cattle), Rabobank
- “...with some education (e.g. basis risk) the sell-side (producers) would be ‘strong on’...EYCI could be improved...” Rob Herrmann, GM Mercardo

Expectations

- “Red meat sector seen as a ‘Laggard’ on risk management by most participants, particularly those with experience outside the industry.” “Education and awareness are paramount. MLA is trusted brand. MLA should ‘put this risk project on steroids’. Cattle industry could go from being a Laggard to an Early Adopter of Risk Management best practice with MLA support.” “Information flow needs a rethink...Accelerate risk management in red meat (cattle)...Stakeholder groups keen to help...Plug into government and farmer...” Tony Eyres, Pottinger (Leading NFF Financial Market Risk Project)
- “Lack of price data coordination...to innovate, create benchmarks and risk transfer...education and risk culture in parts of the supply chain remains an issue because it is not seen as a ‘whole of industry priority.’” “...given the demonstrated value on offer and opportunity to lever unique domestic competitive advantages and global relationships...resources should be directed to make a risk culture, including price transparency, more of a clear win–win for willing participants...” John Reeve, AgRee Commodities, Managing Director
- “MLA (as levy recipient) should take the lead in delivering value for levy-payer.” “...producers are Gamblers...not enough metrics...small, large, intra-industry scale changes needed...stand beside government...part of market not government...” Will Wilson, Producer and AgForce Cattle President

General observations of contributor sentiment

- Not enough is being done to manage risk.
- Risks are increasing – since this project started, the COVID-19 pandemic struck, creating major volatility in financial and physical markets.
- Lack of data and lack of transparency is hampering ability to attract investment and manage risks.
- Working too much ‘in the business’ and not enough ‘on the business’, i.e. planning for risk, marketing and strategy.
- Not enough planning is being done as to how the industry is mitigating future risks.
- Mindset is most important thing to get set – enjoying the lifestyle, passion and associated motivation are more important than sophistication.
- Overstocking in the hope of rain and at the risk of land degradation. Is this a result of conditions that banks have set, e.g. stocking levels and loan servicing obligations?
- A short-term approach to grazing that expects more and more from the soil, exacerbated by a lack of forward price signals.
- Rewarding risky behaviour due to lack of risk oversight e.g. grazing on marginal grass cover and moisture profile in the hope that it rains, given the knowledge that insurance or governments provide benefits (socialised support) or lack of structured contacts to underpin cattle throughput management by processors, leading to retrenched workforce requiring social security payments.
- Inflection point for drought declaration (parameters) could be more realistic given changing climate; highlights issues around preparedness and/or lack of scale.
- Technology adaption and business innovation is difficult without reliable, high speed, symmetrical data connectivity. Investment assistance would be welcomed to enhance technology beyond the farm gate ‘on farm’ and leading to the farm gate.
- Wide recognition of lack of data and data analytic services, e.g. visualisation and arranging data in a useable format – such as financial, production, commodity data to assist decision making.
- Global competitors are adopting new technologies for data analytics and high-speed data connectivity in order to improve value chains and profitability of farming. Precision and Digital Agriculture opportunities and threats need to be better understood by the farming community and supported by appropriate connectivity infrastructure.
- As data about farming product location, growing conditions, and real-time monitoring of forward contract deliverables (i.e. provenance of production) becomes a key differentiator, the speed of network linkages will need to quadruple over the next three to five years.
- Derivative benefits and value need to be better understood. Producers feel that they are already overwhelmed with compliance and question the need to complete more paperwork to benefit someone outside their business. They do not want the derivatives to be ‘used against them’ by ‘computer trading’.
- Importance of avoiding market distortion, e.g. transactional subsidy.

- Access to information and easy to read information e.g. long-range climate/weather forecast, business planning, financial cashflows and assumptions (cattle futures term structure).
- Mental health overarches all aspects of climate resilience, including preparation, sustainability, resilience and risk management.

Appendix 3: Concerns and blockers to data sharing across the industry

The following table summarises 11 blockers and concerns expressed by different nodes in the red meat and livestock value chain concerning the current status of data sharing.

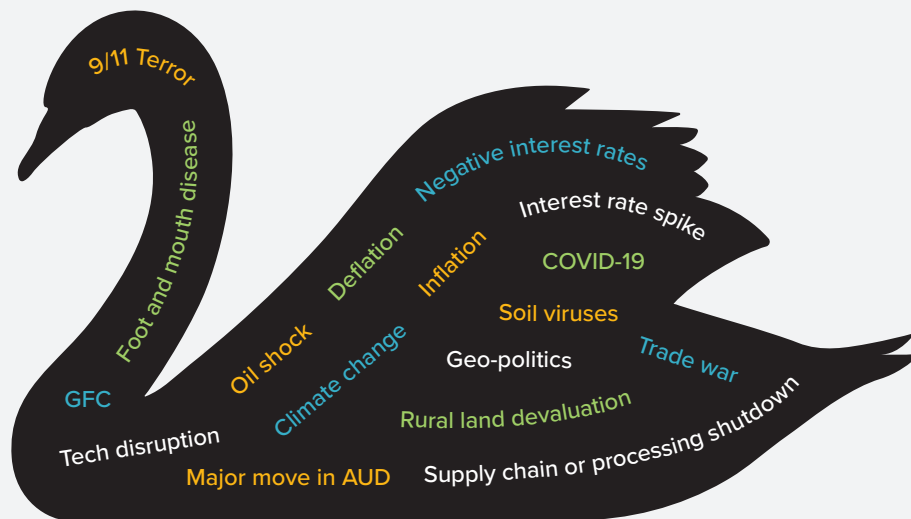
Blockers	1	The lack of integration between IT systems in the value chain and the corresponding high effort of data sharing.
	2	Lack of availability of IT services and support.
	3	Lack (or lack of understanding) of commercial drivers for data sharing and the value it can create in terms of innovation and risk transfer.
	4	Lack of availability of desired data, difficulty of accessing datasets and a fear of lack of reciprocation if data is shared.
	5	Poor connectivity and integration between IT systems and data capture tools.
	6	Vertically integrated companies or those with in-house capability for research and development and data analytics reduces the need for data sharing or access to analytics.
	7	Limited clarity as to how sharing data would drive performance improvement throughout the value chain – no shared sense of common goals.
	8	Lack of relevant capability or expertise to derive value from data.
Concerns	9	Poor data quality as a result of manual data capture and entry, or subjective measurements.
	10	Lack of an industry code of conduct defining data sharing and ownership protocols and guidelines.
	11	Lack of trust in aggregated information and datasets.

The issues above relate to the capability and capacity of nodes to utilise a data platform effectively and an absence of data governance standards. Setting data governance standards will be a critical step in creating trust and confidence amongst data originators, data providers and data users to adopt an IDP.

Appendix 4: Black swan war game prompts – scenario simulations

A 'black swan' is an event that comes as a surprise and has a major effect...

Figure 10: Examples of 'black swan' events



For example, consider the impact of a particular negative event on the supply chain of your business – either input or output/ commodity supply chains.

Acronyms

ALFA	Australian Lot Feeders' Association
AMPC	Australian Meat Processor Corporation
ESG	Environmental, social and governance
EY	Ernst & Young
EYCI	Eastern Young Cattle Indicator
FDI	Foreign direct investment
IDP	Industry Data Platform
MLA	Meat & Livestock Australia
MSA	Meat Standards Australia
NFF	National Farmers' Federation
NLRS	National Livestock Reporting Service
NSW	New South Wales
OTH	Over-the-hooks
RMAC	Red Meat Advisory Council
US	United States



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