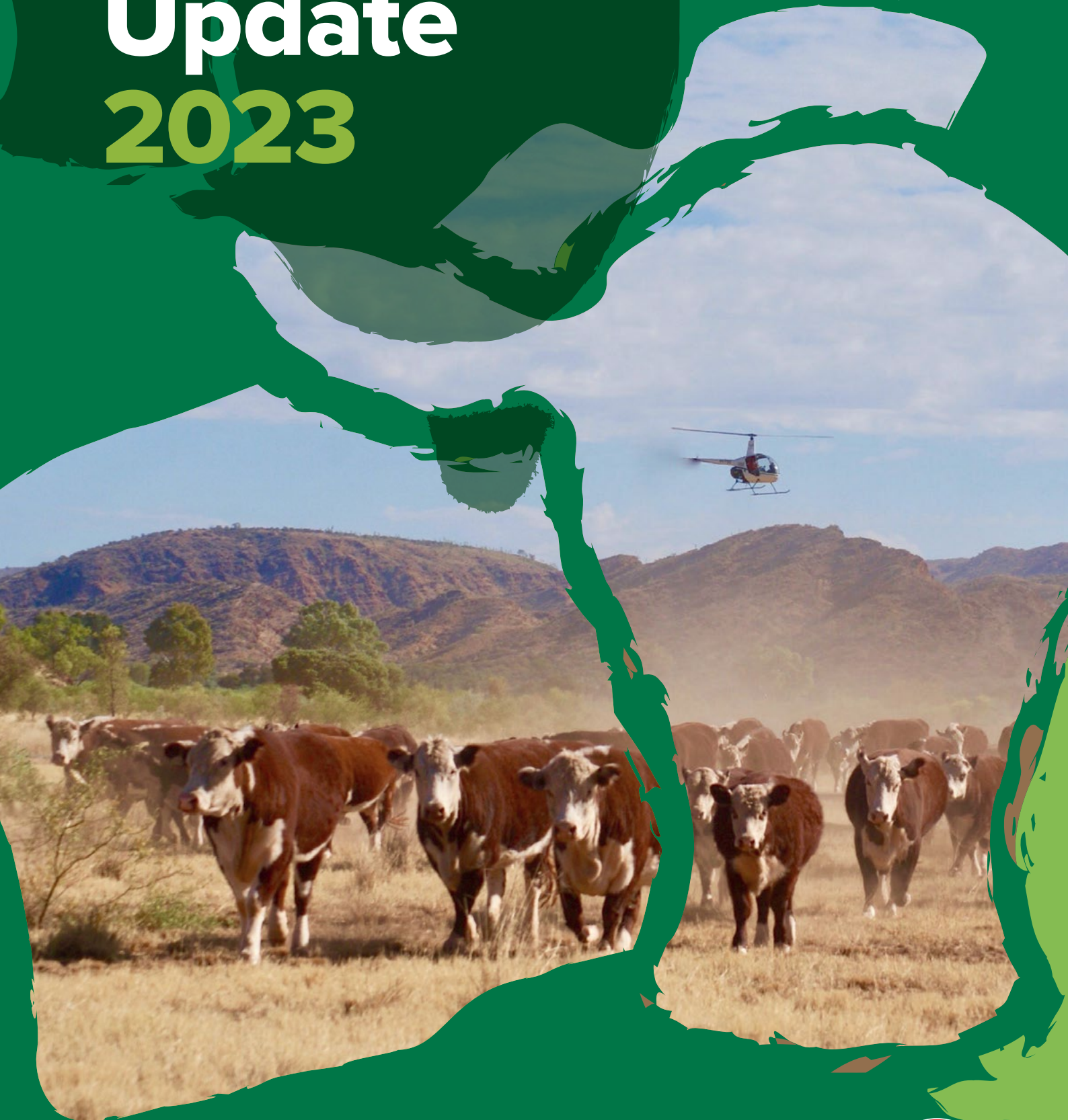




**Australian Beef**  
Sustainability  
Framework

# Annual Update 2023

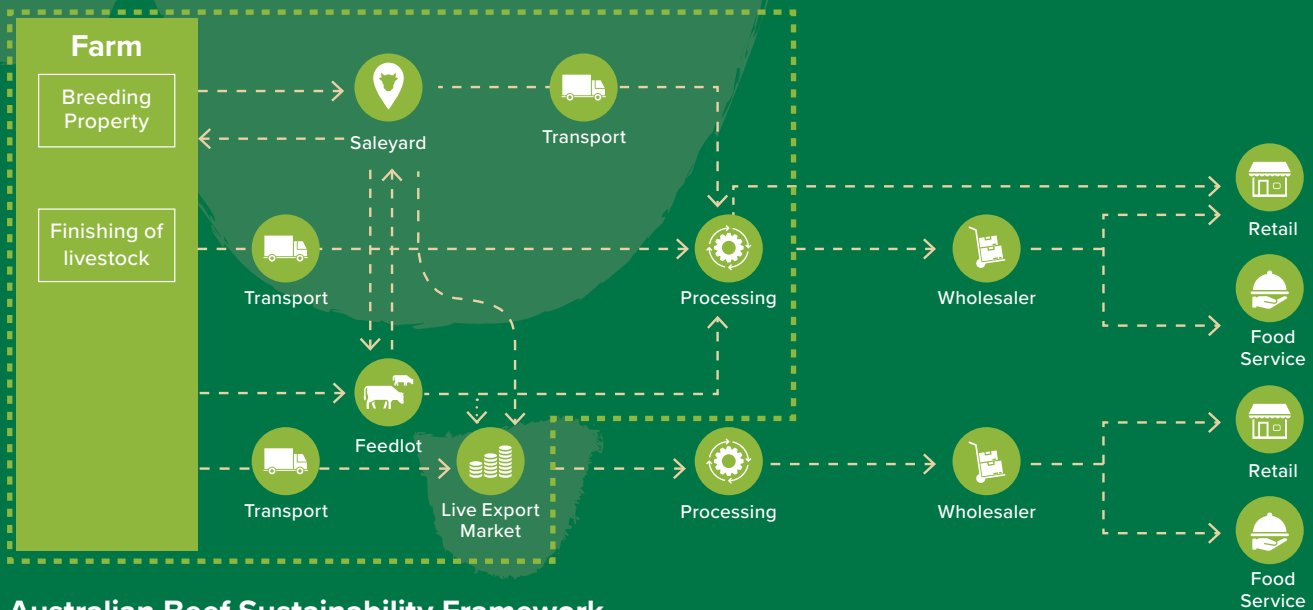


RMAC

# About this Update

The 2023 Annual Update has been prepared with reference to the GRI Standards, specifically the applications of GRI principles, general disclosures and material topics, as well as GRI 13: Sector Standard for Agriculture, Aquaculture and Fishing and the topics considered to be highly material by the Australian Beef Sustainability Framework. The reporting boundary, shown by the dashed lined, covers the actions of the Australian beef value chain, including farms, saleyards, feedlots, transport, processing, and live export.

Unless otherwise stated, this report presents information for the period of 1st July 2022 to 31st May 2023.



## Australian Beef Sustainability Framework

The Australian Beef Sustainability Framework (ABSF) reduces risks and leverages opportunities by managing what is most important to stakeholders, as identified in the materiality assessment undertaken in 2020 (Page 74). It shows our intent to be accountable and to accurately tell the Australian beef story.

### It aims to:

- » Promote industry transparency and progress to customers and the community
- » Inform industry investment for continuous improvement in areas most important to our industry and stakeholders
- » Help protect and grow access to financial capital
- » Foster constructive relationships with external stakeholders to work collaboratively with the industry.

### The ABSF does not:

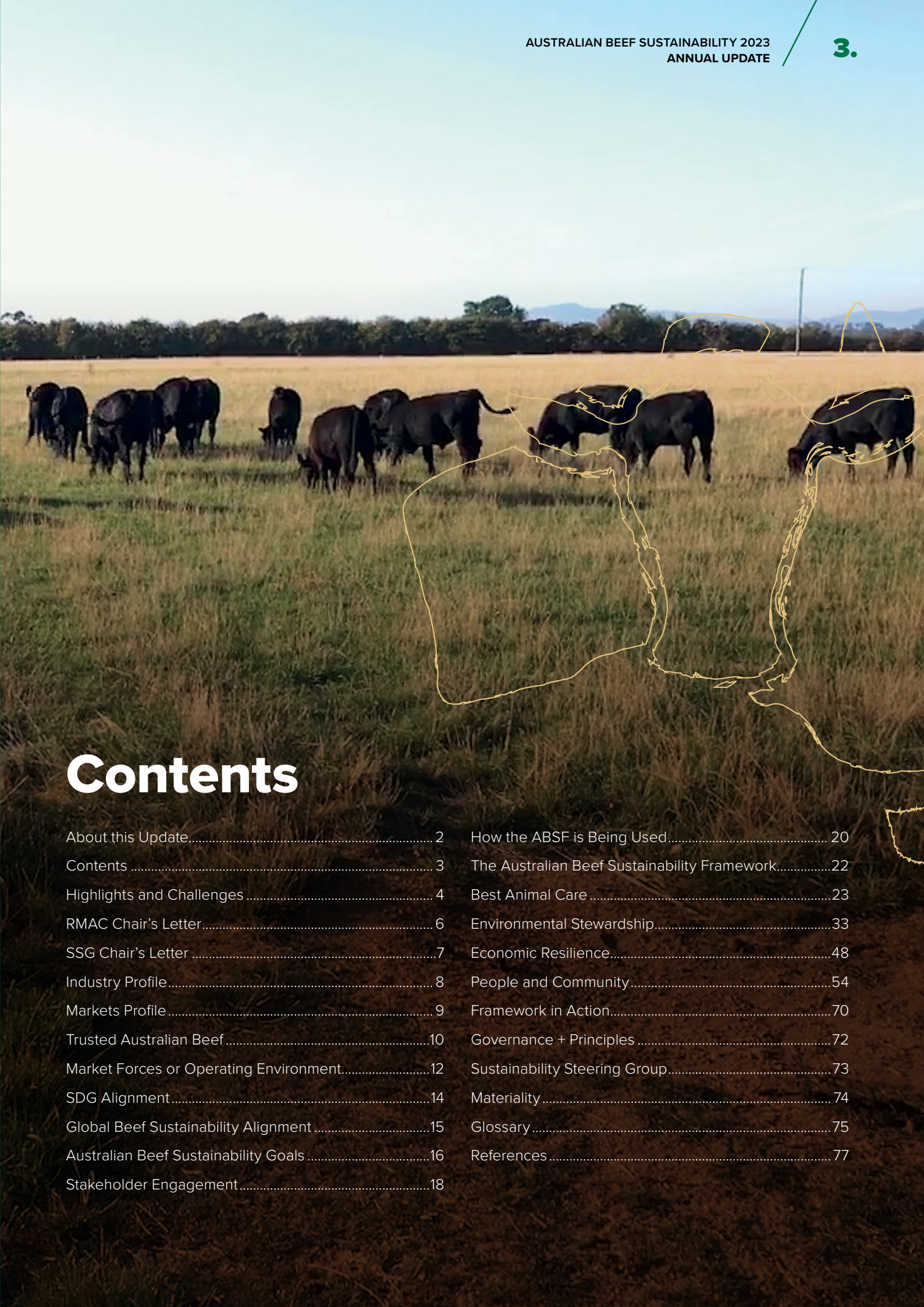
- » Establish or endorse measurement systems at an individual business level
- » Provide an accreditation or certification system
- » Endorse prescriptive management practices
- » Create additional work for individual businesses.

## Sustainability

Sustainability is the production of beef in a manner that is socially, environmentally, and economically responsible. We do this through the care of natural resources, people and the community, the health and welfare of animals, and the drive for continuous improvement.

## Vision

A thriving Australian beef industry that strives to continuously improve the wellbeing of people, animals and the environment.



# Contents

|   |    |   |    |
|---|----|---|----|
| About this Update.....                      | 2  | How the ABSF is Being Used.....                   | 20 |
| Contents .....                              | 3  | The Australian Beef Sustainability Framework..... | 22 |
| Highlights and Challenges .....             | 4  | Best Animal Care .....                            | 23 |
| RMAC Chair’s Letter.....                    | 6  | Environmental Stewardship.....                    | 33 |
| SSG Chair’s Letter .....                    | 7  | Economic Resilience.....                          | 48 |
| Industry Profile.....                       | 8  | People and Community.....                         | 54 |
| Markets Profile .....                       | 9  | Framework in Action.....                          | 70 |
| Trusted Australian Beef.....                | 10 | Governance + Principles .....                     | 72 |
| Market Forces or Operating Environment..... | 12 | Sustainability Steering Group.....                | 73 |
| SDG Alignment.....                          | 14 | Materiality .....                                 | 74 |
| Global Beef Sustainability Alignment .....  | 15 | Glossary .....                                    | 75 |
| Australian Beef Sustainability Goals .....  | 16 | References .....                                  | 77 |
| Stakeholder Engagement.....                 | 18 |   |    |

# Highlights



Working with industry and government departments, we have ensured **strong barriers** are maintained at biosecurity borders.



The A-UK FTA entered into force, delivering **significant increase in tariff-free beef** access to a key market.



In 2020, the Australian beef industry has **reduced its net CO2e emissions by 64.1%** since 2005.



Provision of support to Indonesia for management of Foot and Mouth Disease (FMD), including **\$5.9 million** for vaccinations, in addition to extensive industry contribution.

# Challenges



Australia was subjected to fires, floods, and areas of drought, requiring urgent changes in grazing schedules and creating challenges for rebuilding.



Record high prices for cattle as the herd continued to rebuild proved a challenge for processors, leading to lower than average throughput and reduced efficiency.



**43.7% of grazing land is being actively managed for biodiversity, including weed and pest management, prescribed burning, revegetation, soil remedy works, and fencing riparian areas.**



The total mortality rate of cattle exported on sea voyages has more than halved in two years, reaching a **record low of 0.05%** in 2022.



Carbon sequestered in vegetation on red meat properties reached its highest recorded amount since 2015, **sequestering 28.42 Mt CO<sub>2</sub>e.**



**400 litres** of water is used per kilogram of liveweight gain, down **18%** over the most recent five years, and **73%** lower than 1985.



With unemployment at historical lows of 3.5%, sourcing labour in the agricultural sector - specifically processors - has been difficult.



Energy prices are expected to increase by 20-30% in 2023 putting considerable strain on the red meat supply chain, especially the processing sector.



The discontinuation of the ABS agricultural census will reduce visibility of data, impacting transparency, trust, and decision making.

# RMAC Chair's Letter



**John McKillop**

Independent Chair  
Red Meat Advisory Council

**The red meat and livestock industry is more engaged in sustainability than ever before. This is in recognition that, as an industry, we need to determine our own future and the Australian Beef Sustainability Framework (ABSF) provides us with the ability to track our progress towards achieving the ambitious sustainability goals set in 2019 as part of the Australian red meat and livestock industry's strategic plan, Red Meat 2030. Sustainability is a core pillar that drives nearly every facet of industry activity.**

Through the ABSF, we have a clear pathway forward and continued and enhanced reporting enables the industry to be proactive and equipped to respond to any negative, or inaccurate, rhetoric that comes our way. Our continued reduction in global greenhouse gas emissions and ongoing improvements in vegetation management and care for our animals is a case in point.

The red meat and livestock industry is a good news story. Nutrient-dense Australian red meat is an important part of a healthy diet, a great source of protein, iron, zinc, and other important nutrients essential for growth, development, and life in general. It is why the industry's sustainability credentials are collated and communicated, like in this ABSF Annual Update, so we can all help share the good news.

A sincere vote of thanks must go out to the ABSF Sustainability Steering Group members, now and over the years since the ABSF's inception, who have led the progressive thinking behind the ABSF and its ongoing maturity as a framework. It is beyond clear that we cannot afford to be complacent with the status quo and, as such, we must applaud those who are leading the way without being pushed. It will soon be the only way to operate.

The 2023 Annual Update shows our sustainability journey as an industry. By recognising our impacts and defining a pathway forward using innovation and ingenuity, we can ensure our ongoing success both here in Australia and globally.

A handwritten signature in black ink that reads "John McKillop". The signature is written in a cursive, flowing style.

**John McKillop**

Independent Chair  
Red Meat Advisory Council

# SSG Chair's Letter



**Mark Davie**  
Chair, SSG  
Director, Keppel Brand

**In 2023 the Australian Beef Sustainability Framework has come of age. Attention on sustainability is acutely focussed and has matured beyond carbon. We had rigorous engagement at our consultative committee meetings like never before.**

This year's Annual Update tracks our journey to date. There are positives, but what most stands out to me are the differing timelines on data; much of our data is a rear-view mirror of our past efforts. Our carbon reporting is immensely positive, but complicated because it reflects a single point in time where our methane emissions would have been significantly reduced by drought destocking. If we had carbon figures they would have offset this with a loss of carbon through the drought. The future will soon reflect the reverse; increased methane through restocking, and increased carbon stocks through sequestration. We need better data, through investment in metrics, and investment in science to underpin better metrics.

RMAC tasked the ABSF to facilitate the process for creating sustainability targets for the beef supply chain. Our role was to work with industry to identify the critical sustainability priorities of the moment, explore metrics and assess targets. Since its inception, the ABSF has been identifying material issues and key metrics to track progress on sustainability. We have built a map, or picture, of sustainability across our supply chain. Goals will direct this journey and map out a path to progress. But most importantly, it will be progress based on industry-led solutions.

This project has been broad, including background research on how other frameworks approach goal setting, industry interviews, expert interviews, consultation meetings, online forums and surveys. It defined a process to set key high level goals for all our SMART targets to sit beneath. It was also very clear that this is complex and of most importance to our process is setting the right targets and ensuring industry support. Excitingly, industry has finalised our goals, but our work plan for targets will continue.

Our goals will guide industry's investments in improving sustainability. If we get the metrics right we get the outcomes that balance a quadruple bottom line - Planet, People, Profit and our Purpose - food security and feeding people. We can also achieve our fifth bottom line - Position - and become the global leader in sustainable beef production.

Thank you to the members of the SSG for continuing to provide your time and expertise to the report and Jacob Betros for your level of care and efforts to be across a broad subject matter. Thank you to the RMAC Chair, John McKillop, Board and CEO Alastair James for your continued support.

**Mark Davie**  
Chair, SSG  
Director, Keppel Brand

# Industry Profile

## FARM



**24.4 million** cattle in Australia in June 2021, up 3.9% from 2020. All cattle in Australia are born and raised on pastures.

The farm sector accounted for **34%** of industry value chain turnover (2020-21).

## FEEDLOT



**2.8 million** cattle turned off from Australian feedlots in 2021, down 3% from 2020.

A record high number of **1.27 million** cattle were on feed in March 2022.

## SALEYARDS



The Eastern Young Cattle Indicator (EYCI) reached a record high of **1,191c/kg cwt** in January 2022. As of May 2023, it had returned to 685c/kg.

**3,784,496** cattle were transacted through saleyards (2021-22).

## PROCESSING



**5.9 million** head of cattle were processed in 2022, down 16% from 2020.

**1.9 million** tonnes carcass weight of beef and veal in 2021, down from 2.1 million in 2020.

## LIVE EXPORT



**584,123** cattle exported (2022).

Live export of cattle and sheep had a value of **\$1.2 billion** (2021-22).

## PEOPLE



**90%** of industry workforce live in rural and regional areas.

**191,700** direct and **239,000** indirect employees in the red meat and livestock industry.

**53,556** agricultural businesses involved with beef cattle.

## VALUE



**\$67.7 billion** red meat and livestock turnover (2020-21).

### Small Proportion of Global Herd

1.5% of the global cattle herd (2020)

### Big Global Exporter

World's fourth largest beef exporter (2021)

### Strong Domestic Consumption

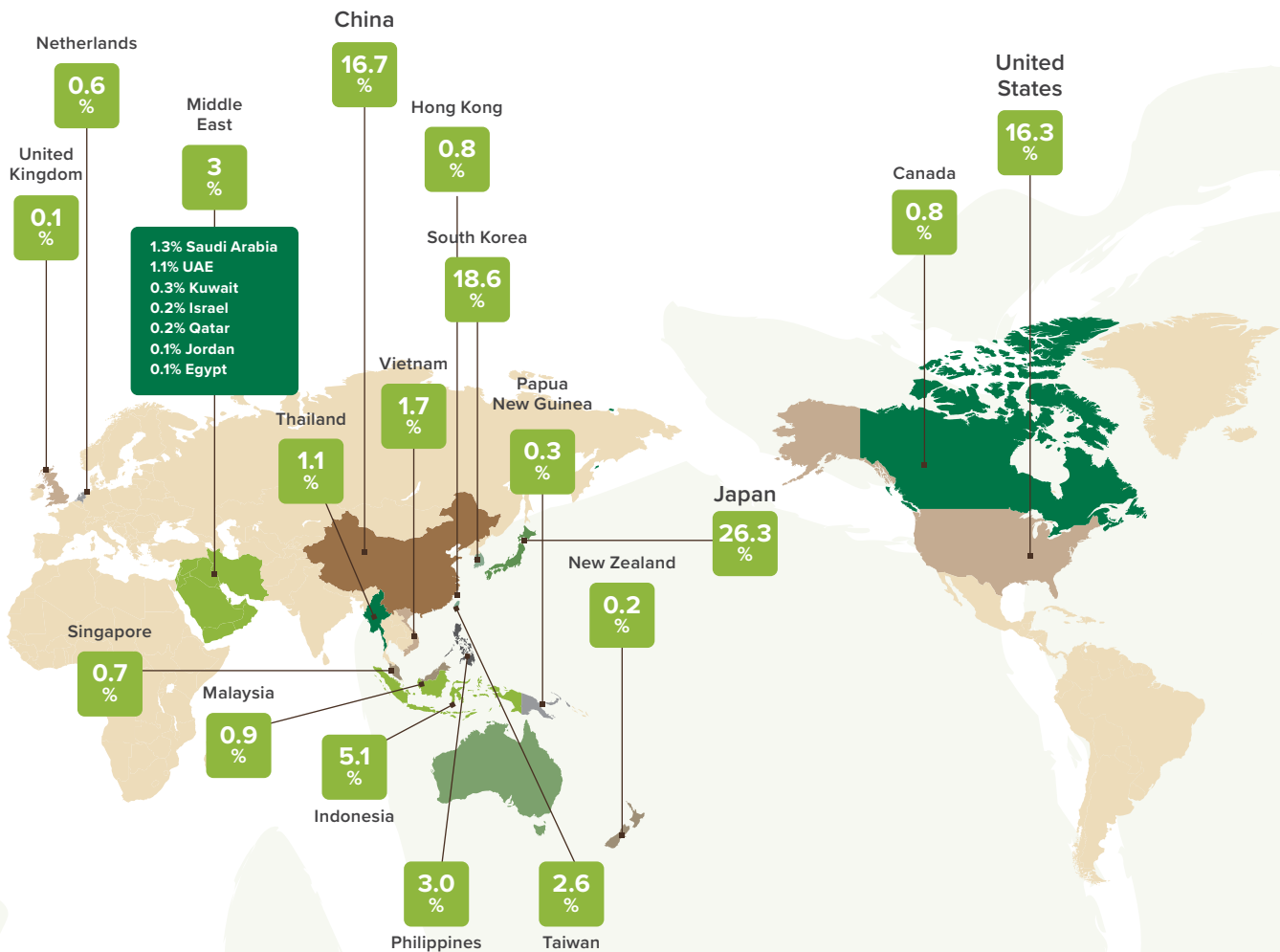
Australia remains our number one market.



# Markets Profile

Over the past 20 years, global consumption of meat has grown, with beef and veal increasing at an average annual rate of 1%. Australians are amongst the world’s largest consumers of beef (7th) with per capita consumption in 2021 averaging 19.2kg, factoring for the majority of the recommended 23.6kg of red meat intake per year. This domestic consumption represents the largest single market for the Australian beef industry.

In 2021, Australia’s top three beef export destinations (in volume terms) were Japan (233,820 tonnes swt, or 26% of total exports), South Korea (165,054 tonnes swt, or 19% of total exports), and China 148,358 tonnes swt, or 17% of total exports).



Australian beef exports by volume (2021).



# Trusted Australian Beef

## On-Farm Assurance – Livestock Production Assurance (LPA) program

The LPA is an on-farm assurance program, providing evidence of livestock history and on-farm practices when transferring animals through the value chain. The requirements of LPA underpin market access for Australian red meat, providing customer assurance around food safety and ethical production. An LPA National Vendor Declaration (NVD) combines with the National Livestock Identification System (NLIS) to provide evidence of the food safety status of every animal as it moves through the supply chain.

## National Vendor Declaration (NVD)

The LPA NVD communicates the food safety and treatment status of every animal, each time it moves between properties, to saleyards or processors. NVDs are a legal document that are key to Australian red meat traceability and market access, and act as movement documentation throughout the value chain. All declarations must be supported by accurate farm records. This is a pledge that the meat has been produced safely and ethically on-farm, and meets biosecurity requirements.

## Identification & Traceability – National Livestock Identification System (NLIS)

NLIS is Australia's system for the identification and traceability of cattle. The NLIS combines three elements to enable the lifetime traceability of animals: a visual or electronic ear tag; a Property Identification Code (PIC) for identification of physical location; and an online database to store and correlate the data.

## National Feedlot Accreditation Scheme (NFAS)

The National Feedlot Accreditation Scheme (NFAS) is the feedlot industry's quality management system which underpins the integrity of certified grain fed beef. The NFAS was Australia's first agricultural quality assurance scheme and has been operational for 28 years. NFAS underpins the Australian feedlot industry's reputation for producing high-quality grainfed beef that meets food safety, animal welfare, and environmental requirements. The Feedlot Industry Accreditation Committee, comprised of State Government, industry and AUS-MEAT representatives, oversees the management of the Scheme.

## Exporter Supply Chain Assurance System (ESCAS)

If an exporter wants to export feeder or slaughter livestock, they must apply to the Department of Agriculture, Fisheries and Forestry to have the supply chain in the importing country approved, provide details of the supply chain including feedlots, depots, or abattoirs, and ensure all livestock are handled and slaughtered in the importing country in accordance with the approved ESCAS.

Handling and slaughter of livestock in the importing country must be in accordance with World Organisation for Animal Health (WOAH) animal welfare recommendations. The ESCAS animal welfare standards are based on these recommendations.

The ESCAS application must include evidence the arrangements meet these standards, including information about facilities, transport arrangements (including discharge from the vessel for livestock arriving by sea), and processes. This applies to all feedlots, depots, and abattoirs.



## Australian Livestock Processing Industry Animal Welfare Certification System (AAWCS)

---

AAWCS is an independently audited certification program used by livestock processors to demonstrate compliance with the industry best practice animal welfare standards from receipt of livestock, to the point of humane processing. AAWCS makes a significant contribution to whole-of-chain animal welfare outcomes, as there is a requirement in the Standard for processors to have animal welfare provisions in their arrangements with livestock suppliers and transporters. Certified establishments can demonstrate they are meeting, and indeed exceeding, Australia's minimum mandatory animal welfare standards, as the Standards meet existing minimum legislative requirements, international requirements, and a number of commercial requirements.



# Market and Regulatory Forces

## Methane Pledge

---

In October 2022, the Australian Government signed the Global Methane Pledge, a collective ambition among signatory countries to reduce methane emissions by 30% by 2030. The pledge does not require reduced herd sizes and will not legislate taxes or levies to reduce livestock emissions.

## COP15 / COP27

---

For the first time, the United Nations Climate Change Conference of the Parties (COP27) included an 'Adaptation through Agriculture' theme day and a Food Systems pavilion. Long-time delegates noted a stronger presence of international agricultural and farming organisations and a greater acknowledgement of agriculture as fundamental to both food security and the climate solution. Other key messages included farmers having many of the answers to address climate variation, and farmers needing to be engaged and part of policy decision making.

The United Nations Biodiversity Conference (COP15) ended with a landmark agreement to guide global action on nature through to 2030. COP15 resulted in the adoption of the Kunming-Montreal Global Biodiversity Framework (GBF) on the last day of negotiations. The GBF aims to address biodiversity loss, restore ecosystems, and protect indigenous rights. The plan includes concrete measures to halt and reverse nature loss, including putting 30% of the planet and 30% of degraded ecosystems under protection by 2030, and controlling the impact of invasive species by 50%. The end goal is for natural capital to be factored into national economic measures. To support these goals, a sustainable government funding model will be needed for invasive species management including in national parks, state forests and local reserves.

## Nature Positive

---

The Department of Climate Change, Energy, the Environment and Water released the Nature Positive Plan in December 2022, guided by three fundamental principles:

1. The need to better protect Australia's environment through outcomes-focused regulation.
2. Faster decision making to de-risk investments and promote sustainable economic development.
3. Commitment to an independent Environmental Protection Agency with regular reporting towards environmental goals and publicly accessible data.

## TNFD

---

The Taskforce on Nature-related Financial Disclosures (TNFD) is developing and delivering a risk management and disclosure framework for organisations to report and act on evolving nature-related risks. The aim of the TNFD is to support a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes. To date, more than 1,000 organisations across 54 countries have signed on to the TNFD.

## SBTi

---

The Science Based Targets initiative (SBTi) Forest, Land and Agriculture (FLAG) Guidance provides the world's first standard method for companies in land-intensive sectors to set science-based targets that include land-based emission reductions and removals. The guidance enables companies to reduce 22% of global greenhouse gas emissions from agriculture, forestry, and other land use. This includes reducing at least 72% of emissions no later than 2050. Over 5,000 companies globally have are now taking action through the SBTi.

## TCFD

Through widespread adoption, financial risks and opportunities related to climate change will become a natural part of companies' risk management and strategic planning processes. As this occurs, companies' and investors' understanding of the potential financial implications associated with transitioning to a lower-carbon economy and climate-related physical risks will grow; information will become more decision-useful; and risks and opportunities will be more accurately priced, allowing for the more efficient allocation of capital. The Taskforce on Climate-related Financial Disclosures (TCFD) released climate-related financial disclosure recommendations designed to help companies provide better information to support informed capital allocation.

## Sustainable Lending

Established in April 2023, the Net Zero Banking Alliance (NZBA) brings together a global group of banks committed to aligning their lending and investment portfolios with net-zero emissions by 2050. The NZBA represents more than 40% of global bank assets. Signatory banks are setting intermediate targets for 2030 or sooner. Australian banks have initiated sustainability-linked and Agri Green Loan products.



# SDG Alignment

The 17 United Nations Sustainable Development Goals (SDGs) provide an urgent call for action by all countries to work toward a shared blueprint for peace and prosperity for people and the planet, now and into the future.

By understanding how the United Nations' Sustainable Development Goals (SDGs) align with the ABSF, the Australian beef industry can better illustrate how it is contributing to sustainability in a global context. The below diagram depicts which SDGs align with the ABSF. Adjacent to each ABSF priority heading in this update are the associated SDGs aligning to it.

The ABSF addresses SDGs 2 (zero hunger), 5 (gender equality), 6 (clean water and sanitation), 7 (affordable and clean energy), 8 (decent work and economic growth), 9 (industry, innovation and infrastructure), 10 (reduced inequalities), 12 (responsible consumption and production), 13 (climate action), 14 (life below water), 15 (life on land), and 17 (partnerships for the goals).

## SUSTAINABLE DEVELOPMENT GOALS



# Global Beef Sustainability Alignment



The ABSF is a member of the Global Roundtable for Sustainable Beef (GRSB), which envisions a world where beef is a trusted part of a thriving food system in which the beef value chain is environmentally sound, socially responsible, and economically viable.

The GRSB mission is to advance, support, and communicate continuous improvement in sustainability of the global beef value chain through leadership, science, and multi-stakeholder engagement and collaboration. The ABSF provides resources and expert advice to the GRSB.

In 2021, the GRSB released three global goals to be reached by 2030 which Australia has aligned with

- 1. ANIMAL HEALTH AND WELFARE:** provide cattle with an environment in which they can thrive through best practices
- 2. CLIMATE:** reduce the net global warming impact of beef by 30%
- 3. NATURE POSITIVE:** ensure the beef value chain is a net positive contributor to nature

More information: [www.grsbeef.org](http://www.grsbeef.org)

## Australian members of the GRSB include:

- » Australian Agricultural Company
- » Belvedere Agriculture
- » Cattle Australia
- » Meat & Livestock Australia
- » Mt Brisbane Droughtmasters
- » WA Regenerative Livestock Producers
- » Comgroup
- » Harvest Road
- » Woolworths Group
- » Certified Sustainable
- » Organic Systems & Solutions
- » The University of Queensland

Members also include a number of global companies operating in Australia such as McDonalds and Rabobank.

In November 2022, the GRSB convened the Global Conference on Sustainable Beef. This four-day event brought together a global network of like-minded individuals with an interest in powering a future of beef sustainability. Read more about the Conference on Page 71.

# Australian Beef Sustainability Goals

The Red Meat Advisory Council instructed the SSG to assist industry in developing goals and targets as part of the 2021-2024 SSG Workplan, in order to take the ABSF from a report card to a stronger commitment to sustainable improvement. This directive was seen as an effort to support the goal setting efforts that have been underway since 2019.

Goals and targets provide a tangible pathway for industry to meet consumer and community expectations. Progress against targets will provide proof of our continuous improvement to stakeholders, and how we can achieve global goals. The SSG collaborated with industry, to ensure industry set the agenda and controlled the process. The annual industry forum was a critical step in finalising the goals.

## Process



### Framework Evolution

- » Materiality assessment
- » Established themes and priorities
- » Measuring indicators
- » Telling our story

01



### Interviews & briefings

- » Peak Industry Council, State Farming Organisations, Rural Research & Development Corporation interviews
- » 34 subject matter expert and value chain stakeholder interviews

03



### Review and Finalisation

- » Industry forum and consensus
- » RMAC Approval

05



### International benchmarking

- » Four goal setting initiatives and disclosure frameworks analysed
- » Four international beef frameworks
- » Sustainable Development Goals








### Consultation

- » Consultative Committee with 90 committed stakeholders
- » Five online grassroots forums
- » 280 survey respondents

04








**The Australian beef industry is committed to the following five goals:**

|   |   |
|---|---|
|  <p><b>Best Animal Care</b></p>          | <p>The Australian beef industry is guided by the five domains of animal welfare. The industry provides all cattle with an environment in which they can thrive in accordance with these domains.</p>                    |
|  <p><b>Environmental Stewardship</b></p> | <p>By 2030, the Australian beef industry will demonstrate its net positive contribution to nature.</p>  |
|  <p><b>Climate</b></p>                   | <p>The Australian beef industry will achieve net zero greenhouse gas emissions across its production and processing sectors by 2030.</p>  |
|  <p><b>Economic Resilience</b></p>       | <p>The value of Australian beef industry products and services doubles from 2020 levels by 2030 resulting in a profitable and resilient industry.</p>   |
|  <p><b>People &amp; Community</b></p>   | <p>The Australian beef industry is trusted, attractive to a diverse workforce, a source of pride and belonging, and makes a positive contribution to the food security of Australian and international communities.</p> |

The industry understands that targets are an imperative feature of goals to demonstrate real progress towards the overarching goals, and work is not complete until targets are set. Through the ABSF, industry can further demonstrate the progress being made by setting meaningful targets against key indicators. With increased confidence in data and trends, targets will be based on evidence, carefully considered, and be ambitious, and achievable.

The industry will prioritise target setting over the next year which follow the SMART principle: specific; measurable; attainable; relevant; and time bound.

|                 |  |  |
|-----------------|--|--|
| <p><b>S</b></p> |  <p><b>SPECIFIC</b></p>   | <p>Target a specific area of improvement</p>   |
| <p><b>M</b></p> |  <p><b>MEASURABLE</b></p> | <p>Quantify or suggest an indicator of progress</p>                                    |
| <p><b>A</b></p> |  <p><b>ATTAINABLE</b></p> | <p>State what results can realistically be achieved, given available resources</p>     |
| <p><b>R</b></p> |  <p><b>RELEVANT</b></p>   | <p>Determine if the goal is in alignment with your values and long-term objectives</p> |
| <p><b>T</b></p> |  <p><b>TIME-BOUND</b></p> | <p>Specify when the result(s) can be achieved</p>                                      |

# Stakeholder Engagement

The ABSF engages a wide range of people who have an interest in the beef industry and who can affect or be affected by it.

Engaging with these stakeholders ensures the ABSF is measuring, reporting, and addressing the issues the industry and community are interested in, and which genuinely influence the sustainability of Australian beef production. These relationships help the ABSF SSG and industry representatives make informed decisions, and allow the ABSF to provide stakeholders with the information they need to make better decisions.

## OUR STAKEHOLDERS

Industry stakeholders include peak industry councils, state farming organisations, rural research and development corporations, beef producers, beef processors, live exporters, and lot feeders.

External stakeholders include retailers, food services, financiers, investors, governments, non-government organisations (NGOs) and media.

## OUR AUDIENCE



## HOW WE ENGAGE



### Consultative Committees

The Consultative Committee is an invaluable reference group for the ABSF. It includes representatives from Australian and international retailers, banks, investors, NGOs, beef industry groups, government, and researchers. Consultative Committee forums are held twice a year to share information, identify emerging issues and opportunities, and obtain valuable input and feedback from stakeholders. This year saw record attendances at both forums.



### Industry Forum

An annual industry forum is held to ensure ongoing engagement and ownership of the ABSF by the industry. The ABSF must represent the views of the industry to be an effective customer and consumer-facing framework. This year's forum focused on the development of the sustainability goals.



### Events

ABSF representatives frequently present at events and online webinars to engage both internal and external stakeholders. Forums and meetings with representative groups, whose membership base extends to both internal and external stakeholders across the value chain, enable the ABSF to reach a broader audience.



### Stakeholder meetings

ABSF representatives meet regularly with stakeholders through formal briefings, stakeholder committee meetings, or informal meetings.



### Digital engagement



The ABSF LinkedIn page has **2,409 followers**, an increase of **33%** over the previous year.



Twitter followers of **2,197**, with over **6,300** impressions.



Bimonthly eNews subscribers have increased to almost **630**.

# How The ABSF is Being Used

## Pilot project shows resources and training key to adoption of sustainable on-farm practices

**In a commercial first, Victorian-based beef processor, Greenham has applied the Australian Beef Sustainability Framework to its grassfed supply chain and delivered a new product to market, along with financial incentives and ecological benefits to the farm gate.**

The Greenham Beef Sustainability Standard (GBSS) is a practical set of indicators to enhance and showcase sustainable practices across the company's supply chain, developed in response to growing market demand for robust and transparent environmental credentials.

Greenham Supply Chain Manager, Jess Loughland said before rolling out the optional standard to Greenham's accredited grassfed NEVER EVER supply chain - consisting of approximately 4,000 cattle producers - they first needed to put the GBSS' practicality, on-farm value, and efficacy to the test.

With support from project partner, Meat & Livestock Australia (MLA), the third-party audited GBSS was piloted in 2022 with 21 cattle producers from a range of production systems across southern Australia.

Producers were audited against the Standard to establish a baseline and identify opportunities, facilitated via a webinar and on-farm meeting, then set a target of five months to implement the standard.

Key findings from the pilot included:

- » Accessible and user-friendly training, tools, and templates to support producers measure and record activities and progress are a key to adoption.
- » 82% of respondents said implementing the standard on-farm was not cost-prohibitive, with some commenting that it provided structure and a timeline to already planned activities and budgets.
- » 76% of respondents rated the GBSS as a four-out-of-five or five-out-of-five for practicality.
- » Some requirements in the GBSS overlap with other industry accreditation programs across wool, cropping and dairy.
- » Benefits to farm productivity, market access, actionable steps towards CN30 and best practice management, farm resilience and connection to end markets and consumers were among the main drivers for accreditation.

## Finding the right balance

**Following repeated long-term enquiries from customers to deliver a product with scientifically backed sustainability credentials, development of the GBSS started with a working group of Tasmanian cattle producers to ground the standard in the realities of southern Australian beef production.**

“Our goals were two-fold: to deliver consistent premium-quality beef raised in a manner that aligns with our customer’s values; and to drive adoption of best practice management to protect the land and communities in which we operate for future generations,” Ms Loughland said.

“It was also important to us that our program reflected broader industry priorities and provided producers with a clear path to contribute to CN30.”

Ms Loughland said the standard was structured in three tiers, “aiming to take producers on a journey”.

Tier one prioritises education and planning and sets a baseline for sustainable management, while tiers two and three focus on continuous improvement, striving for optimum ecological health and carbon neutrality.

With endorsement from Certified Humane®, beef produced from accredited Tier 2 properties is eligible for an on-pack Certified Regenerative® label, underpinning Greenham’s

suite of premium brands including Cape Grim and Bass Strait Beef in the US market.

“We wanted to provide producers with an accessible starting point with clear opportunities for improvement and a focal point on the horizon to work towards,” she said.

“For us and our customers, it’s not about immediate perfection. Everyone is starting from a different baseline with unique business, infrastructure and environmental factors that need to be taken into consideration.”

The GBSS will be incrementally rolled out over the next two years providing another option for Greenham cattle suppliers.

For more information about the GBSS and Greenham’s commitment to sustainable beef production, visit [greenham.com.au](https://greenham.com.au).



# The Australian Beef Sustainability Framework

The Australian beef industry is committed to a transparent, sustainable pathway of best practice through the value chain. The ABSF tracks performance of the industry against a series of indicators under four themes: Best Animal Care; Economic Resilience; Environmental Stewardship; and, People and the Community. Within these themes the industry has identified 24 priority issues.


|   |   |   |   |
|---|---|---|---|
|  <p><b>Best Animal Care</b></p> <ul style="list-style-type: none"> <li>» Animal Husbandry</li> <li>» Biosecurity</li> <li>» Processing Practices</li> <li>» Livestock Transport</li> <li>» Health &amp; Welfare</li> </ul> |  <p><b>Environmental Stewardship</b></p> <ul style="list-style-type: none"> <li>» Biodiversity</li> <li>» Soil Health</li> <li>» Groundcover</li> <li>» Balance of Tree &amp; Grass Cover</li> <li>» GHG Emissions &amp; Carbon Capture</li> <li>» Water</li> <li>» Waste</li> </ul> |  <p><b>Economic Resilience</b></p> <ul style="list-style-type: none"> <li>» Climate Change Resilience</li> <li>» Productivity</li> <li>» Profitability</li> <li>» Market Access</li> </ul> |  <p><b>People &amp; The Community</b></p> <ul style="list-style-type: none"> <li>» Food Safety &amp; Quality</li> <li>» Nutrition</li> <li>» Work, Health &amp; Safety</li> <li>» Labour Practices</li> <li>» Community Contribution</li> <li>» Diversity</li> <li>» Antimicrobial Stewardship</li> <li>» Capacity Building</li> </ul> |
|---|---|---|---|

## Changes From Previous Reporting Period


There has been one change to the indicators the ABSF uses to report against the priorities. Following feedback from industry and stakeholders, work has begun to implement a domestic transport indicator. The inclusion of Indicator 4.2 shows industry's commitment to transparency in this area.

## Trends

Each indicator's historical data has been analysed to determine if it is significantly trending between 2017 and the most recently available data. A 75% confidence interval has been applied to determine if there is an improvement or decline, or if the data has remained steady. Each indicator has a data source, and more information on the source can be found in the References.

 = Improvement, or maximum limit reached

 = Decline

 = Steady

**N/A** = Data is unable to be trended, or is a new indicator



# Best Animal Care

## Australian Beef Industry Goal

The Australian beef industry is guided by the five domains of animal welfare. The industry provides all cattle with an environment in which they can thrive in accordance with these domains.

## The Australian Beef Industry

- » Recognises that Australian laws are the minimum expectations of the industry.
- » Supports the continuous improvement of animal welfare based on science and supports and invests in alternatives to invasive animal husbandry techniques.
- » Recognises the need for punitive action against any individual or organisation knowingly contravening a jurisdiction's animal welfare legislation and/or the Australian Animal Welfare Standards.
- » Supports the Australian Animal Welfare Standards and Guidelines for Cattle and the incorporation of the Standards component into jurisdictional regulations.
- » Supports and promotes the industry's "Is the animal fit to load?" Guide and its periodic revision, and the National Standards for the Land Transport of Livestock.
- » Encourages greater transparency with the community regarding welfare practices across the supply chain.
- » Supports and advocates for the use of low-stress stock handling techniques when handling livestock.
- » Continues to lead the world in livestock exporting standards.

The Five Domains of Animal Welfare is an internationally recognised standard for optimal animal health and welfare. It provides a means of evaluating the welfare of an animal, or group of animals, with a strong focus on mental wellbeing and positive experiences.

### The five domains are:



#### Nutrition

Availability and quality of feed and water.



#### Environment

Atmospheric and environmental conditions.



#### Health

Presence or absence of a disease and injury.



#### Behaviour

Restriction or expression of behaviour.



#### Mental State

Subjective feelings and experiences.



# Animal Husbandry

| INDICATOR |   | DATA                   | TREND |
|-----------|---|------------------------|-------|
| 1.1       | Percentage of industry using pain relief for invasive husbandry practices | <b>35%</b><br>(2021)   | ●     |
| 1.2       | Percentage of national studbook genetically polled                        | <b>71.9%</b><br>(2022) | ●     |

## Data Explained

### 1.1. Source: E.SUS.0005

This data comes from a survey commissioned by MLA in 2022. When undertaking invasive animal husbandry procedures (dehorning, disbudding, castration, and spaying) 397 respondents from 1,138 stated they use pain management. A new survey will be conducted in 2024.

The Australian beef industry is committed to the pursuit of non-invasive replacement for invasive surgical procedures. Until those are available, the industry aspires to 100% use of effective and appropriate pain mitigation for those procedures by 2030.

### 1.2. Source: Australian Registered Cattle Breeders Association

Polled cattle contain a genetic trait preventing the growth of horns. Horns can cause injury to other cattle and to people, and are often removed by disbudding, dehorning, or tipping. This is not needed for polled animals. This figure is based on the 12 largest breeds in Australia and can be expected to be expressed in the Australian commercial cattle herd with approximately a five-year lag. This is an increase from 66.2% in 2010, and from 56.8% in 2000.

## Snapshot of Activities

### Polled Program

Dehorning is the process of removing or stopping the growth of horns in livestock. It is common practice in the livestock industry, and it is done to improve animal welfare by reducing the likelihood of livestock injuries and so that livestock are easier and safer to handle, and reduces the need to undertake invasive husbandry procedures. Australian Agricultural Company (AACo) - which manages 6.5 million hectares of land - has several guidelines on the best approach to dehorning within the business, namely striving to do this when animals are as young as possible to minimise pain and stress, and by providing pain relief medication where required.

Wagyu cattle have traditionally been bred with horns, so this is a necessary procedure within AACo operations. However, significant time, investment, and resources are being directed into finding a solution to eliminate de-horning altogether.

AACo's Breeding and Genetics team have developed a program to breed polled cattle through targeted selection of breeders that will produce calves without horns. This is a medium-term project anticipated to run for the next five to 10 years. AACo is starting to see preliminary results in their Wagyu and Composite herds, and it is expected this positive trend to continue moving forward. The lessons learned from a program of this scale will be able to be implemented industry wide.





# Biosecurity

| INDICATOR |   | DATA                 | TREND                                 |
|-----------|---|----------------------|---------------------------------------|
| 2.1       | Percentage of Australian cattle properties covered by a documented biosecurity plan | <b>86%</b><br>(2022) | <span style="color: yellow;">●</span> |

## Data Explained

### 2.1. Source: LPA Audits

To meet the requirements of the Livestock Production Assurance (LPA) program, each Property Identification Code (PIC) must have a formal, documented Farm Biosecurity Plan. Of the 5,045 cattle producers audited in 2022,

86% of PICs had a documented biosecurity plan. The remaining 14% were required to provide a plan or face being withdrawn from the LPA.

## Snapshot of Activities

### SE Asia Biosecurity Project

MLA has partnered with the Federal Government to deliver an 18-month, \$2m biosecurity support project in Indonesia. The project will support Indonesia's biosecurity capability to combat recent outbreaks of LSD and FMD and assist in maintaining market access for the live export trade, benefiting Australia's exporters and producers that are reliant on these markets.

The goal of this project is to increase Indonesian lot feeders' capacity to manage exotic disease incursions and grow their ability to meet Indonesian Government requirements for safe livestock production, transport and processing.

#### Objectives:

- » Protect Indonesian feedlots and facilities from LSD/ FMD incursions and subsequent trade disruption via the provision of technical biosecurity support, so they can continue to buy and sell livestock, sustain their livelihoods, and avoid large financial loss.
- » Develop appropriate tools, resources, and strategies to empower and enable local commercial operators to understand and effectively manage disease challenges to their businesses.

- » Develop and implement a data collection and reporting system that captures feedlot cattle movement, vaccination rollout progress, and demonstrates compliance with the Government of Indonesia's disease management requirements and regulations.
- » Instil confidence in the Indonesian government that the feedlot and abattoir sectors have the collective ability to trace and verify livestock, including the ability to: identify vaccinated animals; report the disease status of livestock; report stock-on-hand; and minimise disease spread.
- » Improve regional food security through improved biosecurity and response measures in neighbouring countries such as Indonesia.

### Foot and Mouth Disease

Of approximately 55 million livestock in Indonesia, there were 570,137 confirmed cases of FMD in 2022. More than five million cattle were vaccinated in 2022 alone. The close proximity of Indonesia and its important bilateral trading partnership is a reminder that industry must adhere to all biosecurity practices, such as traceability, documentation, and on farm biosecurity plans.

## Snapshot of Activities

### AUSVETPLAN

Animal Health Australia (AHA) manages the development and review of the Australian Veterinary Emergency Plan (AUSVETPLAN) on behalf of its members. AUSVETPLAN contains the nationally agreed approach for the response to Emergency Animal Disease (EAD) incidents in Australia.

Effective responses to EAD incidents require planning at national, state, territory, and local government levels. They also require the involvement of animal health authorities, livestock and affiliated industries, organisations in affected communities, and emergency management organisations. AUSVETPLAN has been developed and agreed upon by governments and relevant industries in non-outbreak times to ensure a coherent, efficient, and effective EAD response can be implemented consistently across Australia with minimal delay.

As part of the continual review of disease-specific manuals, AUSVETPLAN released a response strategy in January 2023 containing the nationally agreed approach for the response to an incident – or suspected incident – of FMD in Australia. An updated strategy for LSD was released in August 2022.

Both of these plans are already in the process of being updated again, and the revised versions are expected to be published in late 2023.

### mRNA Vaccine Projects

MLA has partnered with NSW Department of Primary Industries (Elizabeth McArthur Agricultural Institute) to develop vaccines for exotic (Lumpy Skin Disease (LSD), Foot and Mouth Disease (FMD) and endemic (Border Disease and Pestivirus) using messenger RNA (mRNA) technology. The aim will be to develop vaccine constructs that have been tested for efficacy and safety and submit these to the Australian Pesticide and Veterinary Medicine Authority (APVMA) such that they can be registered for either emergency, in the case of exotic diseases, or commercial purposes. The development of these vaccines, as well as the scientific platform that provides a sovereign capacity to produce vaccine for potentially several other endemic diseases, will help protect the red meat industry from the impact of a disease incursion or costly endemic disease.



## Free Of Exotic Diseases

Australia continues to be free from the World Organisation for Animal Health (WOAH) Official Diseases. These include exotic diseases such as Foot and Mouth Disease, Lumpy Skin Disease, Bovine Spongiform Encephalopathy, Contagious Bovine Pleuropneumonia, and Rinderpest.





# Processing Practices

|     | INDICATOR   | DATA                  | TREND |
|-----|---|-----------------------|-------|
| 3.1 | Percentage of cattle processed through an establishment accredited under the Australian Livestock Processing Industry Animal Welfare Certification System (AAWCS) | <b>97%</b><br>(2022)  | ●     |
| 3.2 | Percentage of cattle processed through an Exporter Supply Chain Assurance System (ESCAS) accredited establishment   | <b>100%</b><br>(2022) | ●     |

## Data Explained

### 3.1. Source: MLA, Aggregated slaughter numbers from accredited establishments

AAWCS is an independently audited certification program used by Australian livestock processors to demonstrate compliance with industry best practice animal welfare standards, from the receipt of livestock, to the point of humane processing. Australia's 50 AAWCS-accredited processing facilities represented 97% of the total slaughter for cattle in 2022.

### 3.2. Source: Department of Agriculture, Fisheries and Forestry

Australian Exporters who export livestock under feeder and slaughter protocols are required to have an ESCAS in place. This covers animal welfare, control and traceability through the supply chain, and independent auditing.

DAFF consignments and non-compliance data were used to develop this indicator. There were no investigations involving cattle throughout 2022. There is still one investigation ongoing for 2021. Currently, 100% of exported cattle were compliant with ESCAS. Once the remaining investigations are completed, the updated compliance percentage will be reported.

## Snapshot of Activities

### Producer Feedback

All Australian red meat processing establishments must operate to AS4696:2023 – Australian standard for the hygienic production of meat and meat products for human consumption.

Making progress and raising standards across the industry with regards to animal welfare is everybody's responsibility.

OBE Organic has taken the initiative to provide prompt feedback from the processor to the producer in order to better monitor and improve animal welfare on-farm and throughout the supply chain and assist with identifying areas that relate to animal handling or management at the processing facility, during transport, or on the producer's property.

These feedback sheets not only provide a snapshot of the performance of the carcass at slaughter, but they also compare to long term averages from that property and the broader cohort of suppliers to OBE Organic.



# Livestock Transport

| INDICATOR |   | DATA   | TREND                                 |
|-----------|---|--|---------------------------------------|
| 4.1       | Total mortality rate of cattle exported on sea voyages          | <b>0.05%</b><br>(2022)   | <span style="color: yellow;">●</span> |
| 4.2       | Total mortality rate of cattle on domestic road transport (TBC) | Work has begun with the domestic transport industry to develop this indicator, with data collection methods currently being finalised. |                                       |

## Data Explained

### 4.1. Source: Department of Agriculture, Fisheries and Forestry

Every six months, the Australian Minister for Agriculture must table in Parliament a report that includes livestock mortalities on every sea voyage. The report is compiled from information provided to the Department by the ships' masters, as required by the Export Control Act 2020. This data indicates there were 316 cattle mortalities from 584,123 head exported in 2022.

### 4.2 Source: Under Development

The domestic transport of cattle is an integral component of the Australian beef industry supply chain. A concerted effort was initiated in 2022 to engage with the livestock transport industry to develop a mechanism for reporting cattle transport movements domestically.

This indicator will be reported against in 2024.

## Snapshot of Activities

### Open Innovation Pipeline

The concept of Open Innovation, which involves looking to other sectors to leverage existing technology or ideas, has been implemented by the livestock export industry to identify and trial potential solutions to common challenges sooner, compared to the traditional research process.

Problem statements to drive innovation have been developed to guide a series of global technology scouts/scans to identify novel solutions and technology which may be adopted or adapted for the industry.

The focus areas for 2023 are enabling: automatic counting and weighing of cattle as they are loaded and unloaded from ships; monitoring of ammonia and other gas levels on ships; automatic identification of 'shy feeders' to allow for early intervention; better flooring options; and ways to store fodder and bedding on board for multiple voyages.

### The Livestock Export Supply Chain

An animated video on the livestock export supply chain is now available, showing the journey from Australian farm to overseas destination and outlining the regulations which apply on ships and in market. It is the latest in a series of educational resources produced to help the broader community understand more about the industry's practices and performance.



### Transport Hub

MLA is developing an online Transport Hub to become a new home of content regarding the transport of livestock across the nation. The objective is to create a one-stop shop that has information ranging from the practical and hands-on to the scientific, and bring transport into our supply chain conversation so we can identify opportunities and challenges, as well as gaps, in research and extension. Millions of animals are moved around the country each year. It is hoped reporting on the numbers transported will be integrated into the ABSF, to demonstrate a high level of transparency and the shared responsibility of all value chain stakeholders, as well as industry success.

## Case Study

### Shipboard connectivity brings real-time monitoring closer

Ship owners and exporters are enthusiastically adopting technology which solves the issue of poor connectivity on livestock export ships, opening the way to greater use of automated sensors to monitor environmental conditions.

Many have been using automated loggers for some time to collect information such as temperature and humidity. However, until now, this process required someone to walk around each deck to find a strong enough signal to download data to a handheld device, taking them away from their main role of caring for the livestock.

Effective wireless transmission of data is difficult within the ships because of the amount of steel used in construction of the vessels, particularly on the livestock decks. There are also limitations on installing electrical wiring, so batteries are often required, and any devices must be able to cope with livestock and thorough biosecurity washdowns after every voyage.

A global scout for solutions used in other industries resulted in trials of technology developed by Norwegian-based Scandinavian Reach Technologies (ScanReach) to enable Internet of Things (IoT) applications specifically in marine environments such as ships and oil rigs.

It uses a series of 'nodes' to automatically collect and transfer data from sensors throughout the ship and deliver it to a central computer on the bridge, in real time, via low-energy radio mesh technology integrated with Bluetooth.

Being able to aggregate data and review it in real time makes it possible to set up alerts when certain conditions – like increasing temperatures – are met, so the situation can be managed before it becomes an issue.

The technology has now been installed on at least nine livestock export ships, providing opportunities for real-time decision making.



(Credit: The Livestock Collective)



# Health & Welfare

| INDICATOR |   | DATA                    | TREND      |
|-----------|---|-------------------------|------------|
| 5.1       | Percentage producer awareness of the Australian Animal Welfare Standards for Cattle                 | <b>100%</b><br>(2022)   | ●          |
| 5.2       | Percentage compliance with National Feedlot Accreditation Scheme (NFAS) Animal Welfare Requirements | <b>88.02%</b><br>(2022) | ●          |
| 5.3       | Percentage of feedlot capacity with access to shade   | <b>63%</b><br>(2022)    | ●          |
| 5.4       | Vaccination rates for clostridial diseases  | <b>77%</b><br>(2021)    | ●          |
| 5.5       | Percentage/Number of producers undertaking low stress stock handling training                       | <b>17.8%</b><br>(2021)  | <b>N/A</b> |

## Data Explained

### 5.1. Source: LPA Audits

Healthy animals are a priority of Australian beef businesses and it is important stakeholders are assured livestock are cared for humanely and ethically. The LPA animal welfare section is based on the requirements of the Australian Animal Welfare Standards and Guidelines for cattle, and audits show an extremely high level of awareness of this.

### 5.2. Source: NFAS Audits

A total of 342 audits were completed in 2022. Industry recognises that this represents an increase compared to the previous year 2021 where conformance was reported as 99.5%. Notwithstanding, this increase was anticipated as the areas of non-conformance primarily related to new requirements that came into effect as of 1 January 2022. These areas have been a focus point for education and awareness through the NFAS Communications activities conducted throughout the year.

### 5.3. Source: ALFA Survey

In November 2020, the Australian Lot Feeders' Association announced a shade policy, seeking all cattle in Australian feedlots have access to shade by 2026. The policy position reflects a proactive and forward-thinking approach, ultimately assisting in the long-term viability and profitability of the industry – and a commitment to the welfare of cattle in lot feeders' care.

### 5.4. Source: MLA Project E.SUS.0005

When used correctly as part of a property health plan, vaccines can help prevent common endemic livestock diseases, leading to improved animal health, welfare, and productivity. Vaccines may also be used as part of industry biosecurity programs to limit the spread of, or help eradicate, emergency animal diseases.

### 5.5. Source: MLA Project E.SUS.0005

Low stress livestock handling is important to farming enterprises. It helps to reduce livestock stress, and improves livestock health, meat quality for the consumer and occupational health and safety. The data for 5.4 and 5.5 comes from a survey commissioned by MLA in 2022. A new survey will be conducted in 2024.

## Snapshot of Activities

### AACo AHW Certification

Certification opens markets, commands price premiums, and provides a framework to drive improvement in performance. There is a gap in certification for Animal Health and Welfare (AHW) in northern Australian rangelands. In November 2021, AACo made a commitment to develop an internationally recognised animal health and welfare certification standard for extensive beef production.

Since then, AACo have initiated work with industry partners to develop an internationally recognised voluntary AHW certification for extensive beef production. This certification will provide a structure to drive innovation and improvement in the already high AHW standards and practices of our industry in northern Australia.

### New Frontiers in Animal Care

The majority of industry investment aligns with the seven focus areas highlighted below, allowing for a concerted effort in animal health and welfare.



## Snapshot of Activities

### Treatment guidelines for cattle at sea

A livestock export ship is a unique environment for managing animals' health and welfare. With the assistance of experienced shipboard veterinarians, the industry has developed guidelines to help stockpersons identify and treat conditions commonly encountered by cattle at sea. The booklet outlines signs and symptoms, and the best options for treatment on board a ship, while highlighting the importance of personal safety and the responsible use of veterinary drugs.

### Lifetime Animal Wellbeing Index

The objective of this project was to scope out the design for an approach to describe lifetime animal wellbeing in the red meat industries. This necessitated understanding stakeholder needs, use cases, existing animal welfare frameworks, existing data sources, the knowledge gaps and R&D required, and a value proposition. The proposed industry wellbeing assurance program could be established using animal measures routinely collected by industry but brought together and reported on following the development of key enabling technologies. MLA has completed the research in this project, and are now in consultation with Peak Industry Councils on how this tool can be leveraged by industry participants.

## Case Study

### The Immune Ready Guidelines – A Cross Industry Collaboration To Improve Vaccination Uptake And On-Farm Biosecurity

The ongoing risk of endemic diseases in the cattle industry drove the establishment of a working group to consider vaccination guidelines to reduce the risk of disease transfer while cattle are traded through the supply chain. The Australian Cattle Veterinarians, a special interest group of the Australian Veterinary Association, brought together a working group of veterinarians representing a range of cattle production systems - dairy, beef, feedlots, live export, academia, and pharmaceutical. The goal for the group was to define the criteria of core vaccines and risk-based vaccinations, and then apply these criteria across different classes of cattle, and in some instances geographical regions, to create the vaccination guidelines that suited different trade markets within the vast diversity of cattle production systems in Australia. The group-based criteria on existing frameworks from established vaccination guidelines in the US and UK.

#### The outcome

The commitment now from the Australian Veterinary Association (AVA), the Australian Cattle Vets (ACV), key industry bodies Meat & Livestock Australia (MLA), Animal Health Australia (AHA), Cattle Australia (CA), Dairy Australia (DA), and Australian Lot Feeders Association (ALFA), as well as the animal health companies Zoetis, Coopers, and Virbac, is to adopt and promote adherence to the National Cattle Health Declaration (NCHD) and these guidelines.

Additionally, the commitment was to evolve the program and guidelines as, and when, needed to address increasing or changing risks including:

- » New emerging diseases.
- » When existing diseases pose a greater threat or their geographic distribution changes.
- » If the virulence of an endemic disease changes.
- » When new and emerging technologies develop that enable a higher level of diagnosis and/or prevention and treatment of the disease.

### The NCHD and the Immune Ready Guidelines

The Immune Ready Guidelines are underpinned by the NCHD. These declarations are a way for producers to provide information about the health status of the cattle they are selling and their vaccination status. Buyers should ask vendors for a declaration and use the information provided to determine the health risks associated with the animals on offer.

When sellers utilise the Immune Ready Guidelines logo, they agree to provide the NCHD verifying the health status of the animals advertised.

#### Learn More

Immune Ready, in conjunction with the NCHD, is a powerful tool in minimising preventable cattle disease with continuity across the supply chain. Learn more here:







# Environmental Stewardship

## Australian Beef Industry Goal

**By 2030, the Australian beef industry will demonstrate its net positive contribution to nature.**

**By 2030, the Australian beef industry will achieve zero net emissions across its production and processing sectors.**

## The Australian Beef Industry

As managers of approximately half the Australian land mass, beef producers are some of the nation's most important environmental custodians and are acutely aware of their responsibility to care for our natural assets.

To do this, they use best-practice grazing management to balance the requirements of beef production with protecting biodiverse ecosystems and managing areas of high conservation value. The Australian beef industry aims to collaborate with internal and external stakeholders to achieve efficient and sustainable production that respects the environment, protects the welfare of animals, and contributes to the strength of communities.





# Biodiversity



| INDICATOR |   | DATA                    | TREND |
|-----------|---|-------------------------|-------|
| 6.1       | Percentage of cattle producing land managed for biodiversity outcomes through active management | <b>43.73%</b><br>(2022) | ●     |

## Data Explained

### 6.1. Source: ABSF Producer Survey

This figure represents the area of land where on-farm management activities directly contribute to positive environmental and biodiversity outcomes. The measured activities align with the sustainability recommendations

from government agencies, regional NRM organisations, and other land management groups. These results include both environmental management and active grazing management such as fencing, spelling, and water access management.

## Snapshot of Activities

### Accounting for Biodiversity

Multiple methods of biodiversity measurement are being explored to generate biodiversity data through the CN30 Carbon Storage Partnership (CSP). These include generating codified information from qualitative survey data and the use of acoustic technologies. Furthermore, the Environmental Credentials for Grassfed Beef project is developing a questionnaire to allow primary producers to demonstrate how they're managing for biodiversity through their livestock and land management practices.

### Farming for the Future

This project is a partnership between MLA, the Macdoch Foundation, Integrated Futures, Heuris, and PWS. The goal is to design, build, and test a completely novel, prototype platform and decision-making framework that will link on-farm natural capital measures with benefits for farm businesses to deliver long-term economic, environment, and social benefits, and provide a 'diagnostic' tool to inform farm business decision making. The project will enable large-scale adoption of technologies and practices for Australian red meat producers to increase revenue derived from natural capital management. This project addresses the decline in natural capital in Australia's grazing lands and the associated risk of reduced customer, consumer, and community sentiment towards the red meat industry as a contributor to natural capital decline.

### Nature Repair Market

The Australian Government is working to establish a new national voluntary nature repair market, to support landholders to restore and protect nature. The nature repair market will recognise landholders who restore or manage local habitat and grant them biodiversity certificates which can then be sold to other parties. These activities may include:

- » Improving or restoring native vegetation through activities such as fencing or weeding.
- » Planting a mix of native species.
- » Protecting grasslands that provide habitat for endangered species.

The market will operate in parallel with the carbon markets, so landholders can get certificates from carbon projects that create biodiversity. The Clean Energy Regulator will regulate the market to help align carbon and biodiversity markets and make participation in both schemes easier for landholders. Industry is working closely with government to ensure that this program has a robust framework behind it to ensure the best outcomes for producers, our landscapes, and the community.





# Soil Health

12 RESPONSIBLE  
CONSUMPTION  
AND  
PRODUCTION

| INDICATOR |   | DATA  | TREND                              |
|-----------|---|---|------------------------------------|
| 7.1       | Percentage of cattle producers adopting practices to improve soil water retention | <b>46.86%</b>   | <span style="color: red;">●</span> |
| 7.2       | Levels of soil carbon sequestration   | No national data exists currently. The industry is continuing to investigate methods to accurately report this. |                                    |

## Data Explained

### 7.1. Source: ABSF Producer Survey

It is difficult to identify a single indicator that expresses soil health at a national scale. The ABSF has utilised its producer survey to fill the current gap on understanding the percentage of cattle producers adopting practices to improve soil water retention such as increasing organic matter and keeping the soil covered, implementing wind breaks to reduce evaporation from topsoil, or undertaking conservation-tillage practices. This is a different data source and sample from last year, which may explain the decline.

### 7.2. Source: Under Development

Soils are the world's second-largest reservoirs of carbon. Plants and grasses remove carbon dioxide from the atmosphere and store it in the soil. Technologies and methodologies to measure carbon sequestration are a relatively new, and trials are underway to verify scientifically sound methods which allow the industry to calculate the amount of carbon stored through farming practices at an enterprise and national scale. Current costs of soil testing for carbon are a barrier to adoption. The Australian Government recently announced measures in the budget to improve access to soil health data.

## Snapshot of Activities

### Healthy Soils Hub

MLA launched the Healthy Soils Hub, to assist producers in getting their soil into shape to optimise pasture and feedbase production. The hub includes information on how to undertake a soil test and interpret the results. It also assists producers in identifying signs of soil constraints visible from the paddock. Indicators in plants and pasture

such as patchy growth, discolouration, sward composition, and weed burden can be used to recognise and diagnose underlying soil problems. The hub can be viewed at the



## Case Study

### David and Elizabeth Hill

David and Elizabeth Hill run a second-generation beef breeding and fattening business on “Clarkwood” at Clarke Creek, in Queensland. David’s parents drew the block as part of the Brigalow area 3 scheme in 1970.

The family has historically focused on efficiently breeding quality cattle, and the productive nature of their Brigalow country was a key factor to their success. David’s parents were able to survive the beef slump of the 1970s by gradually developing the property to the point where the cattle turned off were able to reliably fetch a premium in the market of the day.

When David and Elizabeth took over management of ‘Clarkwood’ productivity had started to decline, despite the focus on quality breeding. They found the cattle’s ability to reach their full genetic potential was being hampered by the nutritional decline of pastures, while there were also concerns the rain often didn’t go as far as it once did.

The family became involved in a Queensland government project called ‘Managing for Climate’, with soil testing used

to determine what measures could help address the drop in productivity. Planting legumes was tried but did not lead to the improvements in productivity that were needed, which encouraged David and Elizabeth to consider the role of soil health.

The couple extensively researched how soil health could lead to productivity improvements and implemented measures that were adapted to their property. They were excited to find there were many more benefits to be had, such as increased fertility and increased water-holding capacity which reduced runoff and decreased the risk of erosion. More exciting at the time was the realisation that carbon sequestration in the soil could also be an added benefit.

While the journey has focussed on quality and productivity to maintain profitability, the potential for environmental improvements such as biodiversity and resilience of the soil – making it better able to handle climate variability – should add to the sustainability of the family business into the next generation and beyond.





# Groundcover

12 RESPONSIBLE  
CONSUMPTION  
AND  
PRODUCTION

| INDICATOR |  | DATA                    | TREND |
|-----------|--|-------------------------|-------|
| 8.1       | Percentage of natural resource management regions achieving healthy groundcover thresholds | <b>68.52%</b><br>(2022) | ●     |

## Data Explained

### 8.1. Source: CIBO Labs – E.SUB.0007

This calculation is based on 37 of the 54 NRM regions achieving regionally appropriate healthy ground cover threshold for the late dry season (September as per available imagery). For rangeland regions in semi-arid parts of Australia, the threshold is 50% groundcover. This increases to 70% for coastal and tropical regions, and 80% for high-rainfall regions. This data is for 2022, as some areas were responding to fires, and others

succumbing to floods. The significant regional variability in rainfall across the large semi-arid regions also resulted in declines in ground cover.

Further information on the thresholds is available from: Leys JF, Howorth JE, Guerschman JP, Bala B, Stewart JB 2020, *Setting targets for National Landcare Program monitoring and reporting vegetation cover for Australia*, NSW DPIE.

## Snapshot of Activities

### Australian Feedbase Monitor

The Australian Feedbase Monitor went live on 30 November 2022. Through MyMLA, all red meat producers in Australia can use the world-leading national pasture biomass prediction service. This is a 'living model' to reliably estimate pasture biomass based on time-series satellite imagery, and data collected to train the models, to adequately represent the pasture types and conditions important to grazing management decisions. The tool:

- » Increases ability to monitor and report on ground cover and pasture status and trends, avoiding environmental or welfare issues in grazing enterprises.
- » Increases consumer confidence in the environmental stewardship of cattle producers.

Currently, approximately 1,800 red meat producers have accessed the tool.





# Balance of Tree and Grass Cover



| INDICATOR |  | DATA                      | TREND      |
|-----------|--|---------------------------|------------|
| 9.1       | Percentage of national forest cover gain   | <b>0.95%</b><br>(2020-21) | <b>N/A</b> |
| 9.2       | Percentage of national forest cover loss   | <b>1.24%</b><br>(2020-21) | <b>N/A</b> |
| 9.3       | Percentage of national woodland cover gain | <b>3.17%</b><br>(2020-21) | <b>N/A</b> |
| 9.4       | Percentage of national woodland cover loss | <b>2.61%</b><br>(2020-21) | <b>N/A</b> |

## Data Explained

### 9.1 to 9.4. Source: CIBO Labs – E.SUB.0007

The ABSF convened an Expert Working Group to develop these practical, evidence-based measures, and reported against them for the first time in 2019.

Based on satellite imagery, these indicators represent national forest/woodland gain and loss from 2020 to 2021 across grazing properties. To put this in perspective, the **net change in national woody (forest and woodland) cover extent was an increase of 0.06%**. These figures can be difficult to interpret without regional context. The ABSF is continually investigating how healthy vegetation levels for each region can be represented in this national indicator.

These figures are for 2020-21, where much of Australia was beginning to break drought and still responding to bushfires. Of significant note is that forest on grazing land has increased by almost 780,000 hectares, coinciding with an increase in the national herd. This demonstrates the mutually beneficial relationship between livestock production, and the management of natural resources.

Further, the removal of primary vegetation is at a historic low of 0.43%. The area of forest on Northern Australian grazing properties (QLD, NT, WA) in 2021 reached its highest level since monitoring began in 1991 - accounting for almost 55 million hectares.

The Balance of Tree and Grass Cover monitoring is unique in that it tracks net changes, considering both clearing and regrowth, enabling a more accurate capture of vegetation management. This is further supported by the latest data from the **United Nations Food and Agriculture Organization, ranking Australia as Number Two for reforestation with an average net gain in forest area between 2010-2020 of 446,000 hectares per year (Food and Agriculture Organization of the United Nations' (FAO) Global Forest Resource Assessment 2020).**

These figures clearly articulate the role beef production has in effectively managing Australia's landscape, and ensures we are global leaders in vegetation management. Understanding the reforestation rates is often underutilised in the public domain, and the ABSF is committed to demonstrating industry's continual improvement in vegetation, grassland, and landscape management.



## Definitions

|             |  |
|-------------|--|
| Forest      | Woody vegetation with >20% canopy cover reaching 2m high with a minimum area of 0.2ha. |
| Woodland    | Woody vegetation with 5-20% tree canopy cover  |
| Groundcover | Non-woody vegetation, such as grassland  |
| Primary     | Refers to forest or woodland present in 1988   |
| Regrowth    | Native vegetation recurring on an area of land that has been previously disturbed      |

## Snapshot of Activities

### Enhancing Remnant Vegetation Pilot

Together with the Carbon + Biodiversity Pilot, the Enhancing Remnant Vegetation Pilot is trialling ways to pay landholders for improving biodiversity on their properties, with an aim to help develop a biodiversity market to encourage environmental improvement on private land. The pilot looks at managing native vegetation using locally adapted management protocols developed by the Australian National University in consultation with Natural Resource Management (NRM) organisations.

### Steak and Wood

This project will examine silvopastoral systems (systems incorporating trees and livestock grazing) in sub-tropical and tropical systems, and identify opportunities for carbon neutrality, livestock productivity, and environmental service benefits.

Sub-tropical and tropical silvopastoral-suitable land in Queensland and northern NSW will be examined for potential to:

- » Mitigate GHG emissions.
- » Maintain economic stability across agro-ecological zones via income diversification and improved productivity.
- » Sustainably use previously unproductive land.
- » Improve animal welfare.
- » Improve on-farm biodiversity.

The overall objective of this project is to quantify the productivity and ecosystems services of silvopastoral systems as a potential pathway for emissions reduction in livestock grazing enterprises.

The project is also designed to provide the data required to develop decision support tools for producers on the species, numbers, configurations, and locations of trees on-farm to deliver a carbon benefit. This data will be used in the carbon accounting framework (SB-GAF).







# GHG Emissions & Carbon Capture



MLA's CN30 Roadmap outlines four key work areas that provide a framework for CN30 investment activities: Emissions Avoidance; Carbon Storage; Leadership Building; and Integrated Management Systems. MLA continues to drive industry efforts to achieve CN30 through the Emissions Avoidance and Carbon Storage Partnerships. In addition, research contributing to CN30 is being conducted via MLA's Feedlot, Adoption, and Sustainability Programs. The investment in projects specifically contributing to CN30 across MLA's business units since 2017 exceeds \$140 million.

| INDICATOR |  | DATA                    | TREND |
|-----------|--|-------------------------|-------|
| 10.1      | Percentage total CO <sub>2</sub> e reduced by beef industry from a 2005 baseline | <b>64.07%</b><br>(2020) | ●     |
| 10.2      | Net emissions: Mt of CO <sub>2</sub> e emitted by the beef industry              | <b>45.21</b><br>(2020)  | ●     |
| 10.3      | kg CO <sub>2</sub> e emitted per kg liveweight when raising beef                 | <b>13.1</b><br>(2020)   | ●     |
| 10.4      | kg CO <sub>2</sub> e emitted per tonne HSCW when processing beef                 | <b>476</b><br>(2022)    | ●     |
| 10.5      | Percentage CO <sub>2</sub> e captured and reused in processing                   | <b>10.5%</b><br>(2022)  | ●     |
| 10.6      | Carbon sequestered in on-farm vegetation (Mt CO <sub>2</sub> e)                  | <b>28.42</b><br>(2020)  | ●     |

## Data Explained

### 10.1. Source: CSIRO – B.CCH.2301

The industry is continuing to make progress towards its CN30 target. This figure captures net emissions from beef and land use-related emissions. A baseline year of 2005 has been chosen, as it aligns with the Paris Agreement.

This metric is calculated through the GWP100 metric, a standardised practice recognised by the IPCC. Enteric methane emissions were the lowest recorded in 2020 due to the reduced herd size, emissions associated with electricity and fuels were also the lowest recorded, while carbon sequestered in on-farm vegetation was the highest recorded.

While the trend has been steady since 2016, this is a vast improvement since the baseline year of 2005.

### 10.2. Source: CSIRO – B.CCH.2301

Annual emissions have decreased by 3.53 Mt CO<sub>2</sub>e since 2019, with the reduction driven by a decrease in emissions from methane due to the lower herd size and increase in carbon sequestration in vegetation. This reduction in emissions is associated with a reduction in the area of woody vegetation and forest which has been cleared.

## Data Explained

### 10.3. Source: Integrity Ag & Environment – E.SUB.0010

This data came from the updated Life Cycle Analysis completed, revealing a 2.2% decline from the five years to 2015. The reduction is primarily associated with decreased enteric methane emissions. Emission intensity results for the historic trend period (1985-2015) were reanalysed, resulting in slightly higher reported impacts than previously estimated by Wiedemann et al. (2019), because of an update in the GWP100 factors applied. Some other changes, such as the revision in feedlot enteric methane prediction, moderated this increase.

### 10.4. Source: AMPC – Environmental Performance Review 2022

Like all manufacturing facilities, meat processing plants use energy – primarily from electricity, natural gas, coal, and diesel – to operate. Greenhouse gas emissions are released when this energy is used. This number has increased due to the low throughput of processing cattle, leading to reduced efficiency.

### 10.5. Source: AMPC – Environmental Performance Review 2022

Methane and other gases can be captured during wastewater treatment at processing facilities to create biogas that is then used in the facility. With more facilities adopting biohubs to generate renewable energy, the percentage will continue to increase.

### 10.6. Source: CSIRO – B.CCH.2301

The cattle industry can sequester carbon in on-farm vegetation to reduce net CO<sub>2</sub> emissions and draw atmospheric carbon. This amount is the highest recorded since 2005, most likely due to the increase in vegetative growth from the high levels of rainfall in 2020.

## Snapshot of Activities

### Emissions Avoidance

Feed additives and delivery mechanisms continue to be the major focus of emissions avoidance activities, with investment into developing methane breeding values for cattle and sheep and assessing the methane reduction potential of pasture mixes also being prioritised. Key activities through 2022-2023 include:

- » Establishment and initial field testing of 3-NOP and bromoform bolus, water dosing, and lick block technology.
- » Large-scale feedlot and grazing trials of 3-NOP and Asparagopsis.
- » Trials of direct measurement technology to quantify methane emissions from >8,000 cattle which will inform the development of Australian Estimated Breeding values for methane that will be included in currently available genetic selection indices.
- » Investigating novel pasture mixes for their ability to reduce methane and deliver productivity improvements.

### Carbon Storage

MLA continues to generate data to inform how to integrate trees and manage livestock and grazing for optimal carbon storage and productivity benefits on farm. Specific outcomes include:

- » A decision tool for integrating trees on-farm currently being tested with producers.
- » The demonstration of improved-water holding capacity on-farm with desmanthus pastures and time-controlled grazing, which may also result in improved carbon storage.

## Snapshot of Activities

### Leadership building

This work area aims to build awareness among red meat producers of how carbon flows through their production systems and how, through managing carbon flows and preventing losses of carbon through enteric methane and other emissions, they can achieve benefits via carbon opportunities, improved productivity, and other ecosystem services.

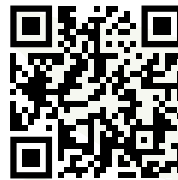
- » Carbon e-learning modules including video guides for using the SB-GAF calculator are now available through MLA's toolbox.
- » MLA's carbon calculator, which is built from SB-GAF and G-GAF is now available, enabling producers to understand their net emissions and emissions intensity across their livestock and grains businesses.
- » The CarbonEDGE deliverer's manual is now complete and participant resources are being developed, ready for the package to be piloted with producers in the second half of 2023.
- » The first CN30 PDS project has commenced in Western Australia. This project aims to use developing and existing resources to enable sheep and mixed farming producers to understand their emissions and make decisions about practices to introduce on-farm to reduce net emissions and improve productivity.

### Integrated Management Systems

The Integrated Management Systems project aims to develop frameworks enabling red meat producers to use data to report on their sustainability performance and be rewarded for doing so through participation in carbon markets and supply chain activities.

- » The IMS project team has published a paper on the use of legumes to achieve emissions reduction.
- » A draft meta-analysis has been developed for the use of 3-NOP to reduce enteric methane emissions from livestock businesses. This will underpin a new ERF methodology so producers can generate carbon credits through avoided emissions and pursue other supply chain opportunities.
- » The Environmental Credentials for Grassfed beef platform is due to be completed at the end of 2023 and will enable producers to use data to demonstrate their performance across carbon, biodiversity, ground cover, tree cover, and drought resilience and receive, tiered credentials that can be used to pursue a carbon neutral supply chain and carbon market opportunities.

Scan here for MLA's Carbon Calculator



## CLIMATE NEUTRAL

The Red Meat Industry's CN30 target aims to achieve net zero GHG emissions. In contrast, the goals of the Paris Agreement include temperature targets (such as to limit global warming to well below 2°C above pre-industrial levels) rather than net zero GHG reduction targets.

A new term for industry, Climate Neutral, describes the position of not causing additional global temperature rise. This is important for ruminant industries where methane represents the majority of GHG emissions, because methane is removed from the atmosphere at a much faster rate than carbon dioxide and nitrous oxide. This means that by reducing the amount of methane emitted to the atmosphere relative to a baseline year, industries

can reach a position where their methane emissions are not causing additional temperature rise.

Carbon neutrality is commonly measured using Global Warming Potential (GWP). It reports the integral of radiative forcing over a future 20 (GWP20) or 100 (GWP100) year time horizon following a pulse emission. Climate neutrality can be measured by alternative metrics including GWP\* (pronounced GWP-star), which assesses the future warming potential (compared to a baseline year) associated with a permanent change in the rate of a short-lived GHG (such as methane), and Radiative Forcing footprint (RF; reported in units of Watts per m<sup>2</sup>), which combines the radiative forcing from current year emissions and historical emissions remaining in the atmosphere.

## Case Study

### David Allen's family is getting value out of on-farm climate credentials.

David Allen describes himself as something of a Minister for Sustainability for his family's four properties on Victoria's basalt plains in the state's South-West. The third-generation cattle producer has handed over management of the properties to his son, Nick, so he can focus on the long-term sustainability on the 2,000 hectares the family runs.

His work is paying dividends to the family business, with their cattle eligible for premiums under the Coles Finest – Carbon Neutral brand. This has been achieved under a strategic management plan for low-carbon beef that both undertakes sequestration projects and cuts emissions on their properties.

David runs a soil carbon project accredited by the Clean Energy Regulator to build soil organic matter and increase organic carbon levels in the soil. The project involves spreading compost over the soil, some of which is made on-site. They use deep-rooted perennials and legumes to achieve as close to 100% ground cover as possible.

Dung Beetles were first introduced 20 years ago for the different seasons and the properties practice rotational grazing, with 150 paddocks that are grazed 25.8% of the year. Each year the Allen family also plants trees both for shelter and to sequester more carbon. This program has also delivered benefits to on-farm biodiversity, with planted trees connecting remnant areas and waterways, creating nature corridors.

At the same time, the Allen family is looking to cut emissions through reduced use of fossil fuels and lower methane emissions. Improved nutrition and genetics mean they can turn cattle off up to 40% earlier, while genetic selection also means an efficient cow herd with good fertility and growth rates, and no unproductive cattle retained.

Solar panels adorn three houses and sheds, along with another 10 arrays to operate for bores and dams and another 12 for electric fences. One system now produces solar credits and has eliminated emissions for that property.



# Water



| INDICATOR |  | DATA                      | TREND |
|-----------|--|---------------------------|-------|
| 11.1      | Litres of water used per kilogram of liveweight for raising cattle | <b>400 L/kg</b><br>(2000) | ●     |
| 11.2      | Kilolitres of water used per tonne HSCW when processing beef       | <b>8.3</b><br>(2022)      | ●     |

## Data Explained

### 11.1 Source: Integrity Ag & Environment – E.SUB.0010

This data came from the updated Life Cycle Analysis completed, showing a decrease of 18% from the five years to 2015. This calculation includes cropping and pasture irrigation, livestock drinking water, and associated supply losses. This is a 73% lower decrease in consumption in the five years to 1985.

### 11.2. Source: AMPC – Environmental Performance Review 2022

The 2022 water use intensity of 8.3 kL/t HSCW is a 9.2% increase from the 2020 figure of 7.6 kL/t HSCW. This number has increased due to the low throughput of processing cattle, leading to reduced efficiency.

## Snapshot of Activities

### Water Use Efficiency in Processing

Water use efficiency targets were reported in 68% of processing plants, with the use of submetering reported by 77% of plants. These results suggest water use efficiency is a focal area for improvement across the red meat processing industry. Good operating practices help to guard against wastewater contamination and subsequent treatment can limit harmful emissions to the environment.

Examples of new initiatives to improve water use efficiency include:

- » Participation in the Australian Meat Processor Corporation water metering program.
- » Recycling of water to secondary uses.
- » Flow-limiting nozzles on hand wash stations.
- » Trialling RO (reverse osmosis) system.
- » Installation of water-saving high-pressure cleaning system.



# Waste



| INDICATOR |  | DATA                   | TREND      |
|-----------|--|------------------------|------------|
| 12.1      | Kilograms of solid waste per tonne HSCW when processing beef | <b>12.7</b><br>(2022)  | ●          |
| 12.2      | Tonnes of food waste recovered along the supply chain        | <b>2.39m</b><br>(2021) | <b>N/A</b> |

## Data Explained

### 12.1. Source: AMPC – Environmental Performance Review 2022

This indicator refers to all forms of waste when processing beef. The 2022 data is higher because:

- » ongoing impacts of COVID-19 have seen a big increase in non-recyclable products like face masks, gloves and wipes going to landfill; and
- » the low throughput of processing animals led to reduced efficiencies

### 12.2. Source: FIAL 2021 National Food Waste Baseline

The beef industry works tirelessly to ensure as much of the beef carcass is utilised as possible. Recovery refers to any activity which diverts food waste from landfill and includes recovery of food production by-products such as hides. This ensures there is no food waste. 2.39m tonnes represents 100% of the food waste from the beef supply chain. This baseline study was done as part of the Australian Government's commitment to halve food waste in Australia by 2030.

## Snapshot of Activities

### Wastes to Profits

The Wastes to Profits project, led by MLA, was funded under round three of the Australian Government Department of Agriculture, Fisheries and Forestry's Rural Research and Development for Profit Program. The project brought together key stakeholders from across Australia's animal industries and technology, research, and development providers to deliver advanced technologies to convert wastes from intensive animal production (such as from feedlots), food processing, and municipal water treatment into fertilisers, feeds, chemicals, and energy products for use in agriculture.

A final report is now being compiled highlighting key findings from the four areas of research:

- » Assessing waste quantities, developing business models and pathways to adoption.

- » Development of technologies for improved waste management.
- » Development of technologies for production of nutritionally advanced feeds.
- » Development of technologies for production of fertilisers, chemicals, plastics, and energy products.

The benefits to the red meat industry include addressing key information gaps on waste composition and quantity, investigation of waste aggregation opportunities, and development of novel pre-treatment and waste processing strategies (such as mechanical, chemical, algal and enzymatic) to prepare wastes for value-adding both in laboratory scale and in pilot scale for some of the technologies in this project. MLA is now in the process of working with AMPC to drive the implementation and adoption stage from this work.

## Snapshot of Activities

### Waste Management in Processing

Approximately 30% of processing plants have a solid waste reduction target. These sites sent less waste to landfill per tonne Hot Standard Carcase Weight (HCSW) than sites without a target, suggesting a benefit from target setting. Examples of new initiatives to reduce waste to landfill included:

- » Using new pallet wrap with increased stretch enabling less plastic use overall.
- » Trialling a carton-stacking technique that eliminates the need for some plastic pallet wrap.
- » Direct printing to cartons to eliminate paper labels.
- » Further segregation of waste streams to facilitate recycling.

### Pre-Farm Gate Waste Management

Investment in a range of projects as part of AgriFutures Australia's Pre-Farm Gate Waste Program has delivered insight to inform strategies and investment across rural industries and set a baseline for future data collection to support waste management activities.

Australian agriculture, fisheries and forestry generated an estimated 9.8 million tonnes of pre-farm gate waste in 2020-21 comprising:

- » 9.55 million tonnes of organic material
- » 100,000 tonnes of plastic material
- » 163,000 tonnes of workshop material

Of the 9.55 million tonnes of organic material, livestock (including sheep, beef, goats, pigs, and poultry) accounted for 3.62 million tonnes which was entirely animal waste. However, organic material is often used beneficially on-farm, e.g., added to soil to improve soil health and reduce soil erosion risk.

Of the plastic material, the livestock sector accounted for 15,471 tonnes, predominantly due to protective film, and it is estimated the industry is responsible for 27,866 tonnes of workshop material waste, mostly tyres, batteries and oils.

Recommendations to reduce plastic material included replacing plastic ear tags with AI or injectable transponders and implementing a tag deposit return scheme. For further results and recommendations, scan the QR code





# Economic Resilience

## Australian Beef Industry Goal

**The value of Australian beef industry products and services doubles from 2020 levels by 2030 resulting in a profitable and resilient industry.**

## The Australian Beef Industry

For a beef business to be truly sustainable it is imperative a positive cash return is achieved to provide a strong foundation from which best practice animal welfare, land management, and other critical activities can be implemented, and the impact of more extreme seasonal conditions and weather events can be managed.

The industry's Red Meat 2030 strategic plan aims to increase revenue from ecosystem services by 2030 by addressing all the aspects of what makes our industry great: our people; our customers, consumers and communities; our livestock; our environment; our markets; and our industry systems.

Because we export over 70% of our production, we rely on open and predictable access to a diverse range of international markets. Unfortunately, our industry is confronted by high levels of regulation in many markets in the form of non-tariff barriers.

Our processors and exporters supply these markets with a wide range of products against tight specifications. From the highest value animals and cuts to the large range of co-products, our industry's sustainability depends on finding the highest returning margin market for each.







# Climate Change Resilience



| INDICATOR |   | DATA                    | TREND |
|-----------|---|-------------------------|-------|
| 13.1      | Climate-adjusted average annual growth rate in Total Factor Productivity - compared to the base year of 100 (1988/89) | <b>126</b><br>(2020-21) | ●     |

## Data Explained

### 13.1 Source: ABARES

ABARES estimates Total Factor Productivity (TFP) of Australian farms to measure the efficiency of the industry over time. This is very important data (see Productivity), but annual TFP numbers are heavily impacted by seasonal variability. Looking forward, the predicted impacts of climate change – including lower rainfall in southern Australia, and more severe droughts and floods – will obscure underlying trends in farm performance. Climate-adjusted productivity

aims to account for these climate change effects. It models the effect of climate conditions (such as rainfall and temperature) on TFP, and then calculates climate-adjusted productivity with the effects of climate removed. Increases in climate-adjusted productivity show an industry is increasing productivity despite the impacts of climate – it is adapting and showing resilience to climate change.

A climate-adjusted TFP of 126 indicates a 26% increase on production for the 2020-21 FY when compared to 1988-89.

## Snapshot of Activities

### Drought resilience adoption and innovation hubs

There are eight 'Drought Resilience Adoption and Innovation' hubs operating across Australia, with nodes covering 40 locations and involving 143 partners. The hubs roles are designed in collaboration with farmers to meet local needs including on-farm trials of transformational technologies and practices, training farmers in the use of decision support tools and upskilling farmers in innovation, entrepreneurship, and commercialisation. Critical to drought resilience is ensuring access to a diverse range of market options, including live export, feedlot and processor capacity.

### Independent Review of ACCU

The Australian Carbon Credit Unit (ACCU) scheme is an Australian Government scheme to remove greenhouse gases from the atmosphere or to prevent their emission. To achieve this, the scheme supports carbon farming initiatives leading to the allocation of one ACCU for each tonne of carbon abatement.

The independent review concluded the ACCU scheme arrangements were fundamentally well-designed, incorporating mechanisms for regular review and improvement, and recommended a number of changes to clarify governance, improve transparency, facilitate positive project outcomes and co-benefits, and enhance confidence in the integrity and effectiveness of the scheme.



# Productivity

2 ZERO HUNGER



8 DECENT WORK AND ECONOMIC GROWTH



| INDICATOR |  | DATA                          | TREND |
|-----------|--|-------------------------------|-------|
| 14.1      | Total Factor Productivity - compared to the base year of 100 (1977/78) | <b>129</b><br>(2021-22 FY)    | ●     |
| 14.2      | Cost of beef produced on Australian farms                              | <b>631 c/kg AUD</b><br>(2022) | ●     |

## Data Explained

### 14.1. Source: ABARES

Total factor productivity (TFP) is a measure of how efficiently outputs are produced using inputs. It is calculated as a ratio of weighted total output to weighted total input. An increase in TFP means an increase in production efficiency, which results from:

- » more output being produced using less or the same amount of input; and
- » the same amount of output being produced using less input.

A national TFP of 129 shows production efficiency increased 29% from the baseline year of 1977-78. This data is for beef farms only.

### 14.2. Source: ABARES

Containing the cost of producing beef relative to key competitors is an important factor in remaining internationally competitive and economically sustainable. As finished cattle prices in each country are volatile, depending on seasons, international demand, and exchange rates, the trend is more important than annual data.

## Snapshot of Activities

### Northern Breeding Business (NB2)

NB2 is driving productivity improvements in northern beef breeding businesses by engaging producers to participate in data collection to understand their business and inform peer-to-peer learning priorities. To date, the pilot program has engaged six groups comprising 46 businesses, most of which have collected their first year's data. Results from data collection will be used by the producers to better understand their feedbase and carrying capacity, herd mortality, production performance, and where improvements can be made for maximum impact.

One of these groups is working in association with the Indigenous Land and Sea Corporation aiming to increase capacity among indigenous cattle owners and managers,

and to improve productivity on indigenous-owned land. The group is also working with Animal Health Australia to use technologies such as virtual reality to increase understanding of biosecurity and animal health and welfare.

Other research investments the program is supporting in Northern Australia include the CalfAlive project in collaboration with University of Queensland and Central Queensland University. CalfAlive is focusing on the impact of nutritional interventions and environmental conditions on cow and calf mortality, with the aim of reducing calf wastage by 5% and herd mortality by 1%.

## Snapshot of Activities

### Leucaena projects

Leucaena (most productive and sustainable legume-grass pasture for northern Australia) has environmental and productivity benefits, with the potential to increase both daily gain and stocking rates. Leucaena is particularly attractive to northern producers where options to improve nutrition are limited. It is estimated there is up to 27.3m hectares of land in Northern Australia that could be suitable for planting, however barriers to adoption have included concerns around psyllid attacks and weed potential. To address these issues, projects are underway to further validate the performance of the psyllid-resistant 'Redlands' variety, which has the potential to generate \$61m-123m over the next 40 years across northern Australia by increasing the area able to support leucaena. Recent trials in North Queensland have demonstrated an average daily gain of 0.61 kg at a stocking rate of 0.44 AE/ha, compared with an average daily gain of 0.58kg/day at 0.34 AE/ha on improved pasture. The area suitable for leucaena is also being increased in WA and NT by the ongoing development of a sterile variety to address concerns over weed control, with field trials currently in progress. Other benefits of Leucaena include improved soil fertility by nitrogen fixation and cycling of organic matter; lowered methane emissions from ruminants, and increased carbon sequestration.

### Southern Beef Improvement

Investment in the Optimising Heifer Development project aims to improve whole herd productivity in southern beef systems. Heifers should conceive early in the mating period, calve unassisted, raise a viable calf, and re-breed within six weeks. This is referred to as "wet-and-pregnant-early" (WAPE). Only 65% of heifers joined in temperate production systems achieve WAPE status. An integrated research trial has focused on capturing genetic and environmental factors involved in first-calves-cows conceiving within six weeks with their first calf at foot which will improve overall herd efficiency and sustainability. The project is working with nine commercial beef enterprises across Tasmania, South Australia, New South Wales, and Victoria covering an area of more than two million hectares.





# Profitability



| INDICATOR |   | DATA  | TREND |
|-----------|---|---|-------|
| 15.1      | Farm business profit at full equity (expressed as rate of return)<br>- including and excluding capital appreciation<br>- all, and top 25% | <b>ALL PRODUCERS</b><br><b>Including / Excluding</b><br><b>15% / 3%</b><br><br><b>TOP 25%</b><br><b>Including / Excluding</b><br><b>19.3% / 5.2%</b><br><br>(Five year rolling average 2017-2022) | ●     |

## Data Explained

### 15.1. Source: ABARES

This is a five-year rolling average ending FY2021-22. This indicator shows both rate of return including capital appreciation (land value appreciation) and excluding capital

appreciation. Including capital appreciation accounts for growth in land value to more truly reflect the investment returns of the industry, while excluding capital appreciation gives a better picture of the underlying profitability.

## Snapshot of Activities

### ABARES Profitability Forecasts

ABARES forecasts the value of agricultural production to reach a record \$90b in 2023. The beef industry is expected to contribute over \$16b to this gross value of production figure – a record for the sector.

Due to favourable seasonal conditions and high livestock prices in the 2023 fiscal year, beef producers in Australia are expected to make an average profit of \$216,900 - a new record (and \$92,000 higher than 2022 profits). These higher profits helped boost the industry rate of return above 2%, the highest on record. Additionally, the value of capital assets held by the average beef farm in Australia exceeded \$10m for the first time – reaching \$10,989,000. This demonstrates beef producers are reinvesting their profits into improving their businesses.

Beef farmers are also building up their cash reserves for drier times. Farm Management Deposits (FMDs) are a cash-flow smoothing tool available to farmers. The aggregated value of FMDs held by beef producers nationally was over \$1.1b in February 2023. This is cash farmers have put away and can access later when seasonal conditions deteriorate.

### Overall Market Prices

After record highs at the end of 2021 and the beginning of 2022, cattle, sheep, and lamb prices have eased significantly. Three consecutive favourable seasons have allowed for extensive herd and flock rebuilding, however with this

rebuilding phase concluding an increase in supply to the domestic market is applying price pressure.

The high cattle prices of 2021 and 2022 have placed strain on feedlot margins, given a number of the cattle now being processed would have been purchased during this period. These are now being sold into softer market conditions and for prices much less than lotfeeders would have expected at time of acquisition.

### Indicator Review

In 2022 and 2023 MLA reviewed its price indicators. This process involved thorough consultation with peak industry groups, a survey of industry stakeholders and in-depth desktop analysis. The desktop analysis considered saleyard transactions on a category, weight, muscle, and fat score basis.

As a result of the review, several new indicators were developed, while others were updated or retired. The aim of the indicator review was to ensure MLA's indicators are accurate, reliable, and reflective of current market trends. By increasing the weights and expanding the fat and muscle scores, both the heavy steer and processor cow indicators have increased their throughput by over 1,000%.

MLA's new suite of indicators can be found here.





# Market Access



| INDICATOR |  | DATA                       | TREND |
|-----------|--|----------------------------|-------|
| 16.1      | Costs of technical trade barriers  | <b>\$1.695bn</b><br>(2022) | ●     |
| 16.2      | Percentage value share of Australian beef and live cattle exports covered by one or more preferential trade agreements | <b>90.3%</b><br>(2022)     | ●     |

## Data Explained

### 16.1. Source: Red Meat Market Access Indicators - MLA Internal Calculations

Technical or non-tariff trade barriers (NTBs) such as the use of import restrictions, labelling, failure to grant export clearance, or unnecessary sanitary rules can impose significant delays and additional costs on Australian beef exports. Alleviation of NTBs is therefore critical in improving international competitiveness.

Recent confirmation of the extension to and harmonisation of shelf-life for chilled and frozen beef in a number of Middle East destinations is an example of the benefits of removing an NTB impact.

### 16.2. Source: Red Meat Market Access Indicators - MLA Internal Calculations

Preferential (or free) trade agreements provide access to a market beyond what has been granted multilaterally via the World Trade Organisation. FTAs have significantly reduced the tariff and quota barriers Australia faces in export markets.

The percentage of preferential coverage fluctuates according to export destination volume/value in any particular year. New beef trade flows under the A-UK FTA are yet to be reflected in this coverage.

## Snapshot of Activities

### Free Trade Agreements

While 90% of Australian beef exports now enter markets under preferential terms, challenges remain in the global trading system as a result of ongoing geopolitical tensions and protectionist sentiment in some markets. In this environment, future multilateral trade reform via the World Trade Organisation continues to be remote, and, as a result, negotiating high-quality bilateral FTAs remains a critical element of industry's market competitiveness and diversification strategy.

The Australia-United Kingdom Free Trade Agreement (A-UK FTA) was signed at the end of 2021 and marks a significant opportunity for Australia to re-establish a presence in what historically was a key market for Australian beef. Following entry into force (31 May 2023) the A-UK FTA will deliver a significant increase in tariff-free (albeit quota constrained)

beef access in year one. This will transition to tariff, quota and safeguard free trade over a 15-year period.

FTA negotiations are ongoing with the European Union (launched in 2018) and it is hoped negotiations with the United Arab Emirates will commence soon – both of which have the potential to deliver further trade reform.

### Challenges

Despite the NTB and FTA gains, additional barriers and challenges remain, including the ongoing suspension of numerous beef export establishments in accessing some markets, and the heightened spread of animal disease around the world. The latter highlights the importance of robust biosecurity measures and livestock traceability systems to maintain access to markets.



# People and Community

## Australian Beef Industry Goal

---

**The Australian beef industry is trusted, attractive to a diverse workforce, a source of pride and belonging, and makes a positive contribution to the food security Australian and international communities.**

## The Australian Beef Industry

---

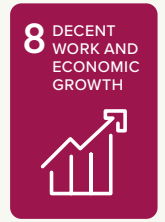
A safe, healthy, and capable workforce, together with prosperous and resilient regional communities, is essential to the sustainability of beef production.

The beef industry also supports human health across Australia and the world by providing safe and nutritious food, while increasing the prosperity of rural and regional communities. Our workforce also extends into our markets. All exporters have in-market staff which have been trained to uphold animal welfare standards, underpinned by industry training.





# Food Safety & Quality



| INDICATOR |   | DATA                          | TREND |
|-----------|---|-------------------------------|-------|
| 17.1      | National Average MSA Index  | <b>57.37</b><br>(2021-22 FY)  | ●     |
| 17.2      | Overall compliance with the National Residue Survey Australian and International Standards for Cattle | <b>99.96%</b><br>(2021-22 FY) | ●     |

## Data Explained

### 17.1. Source: MSA Annual Outcomes Report

Meat Standards Australia (MSA) was developed by the Australian red meat industry to improve the eating quality consistency of beef. To date the system is based on almost 1.3 million untrained consumer taste tests by more than 200,000 consumers from 13 countries and considers factors that affect eating quality from the paddock to plate. The MSA index is a single number (between 30 and 80) and standard national measure of the predicted eating quality and potential merit of a beef carcass. It is a consistent benchmark which can be used across all processors and geographic regions, and over time. It reflects the impact on eating quality of management, environmental, and genetic differences between cattle at the point of slaughter.

### 17.2. Source: National Residue Survey

The National Residue Survey (NRS) has been testing Australian cattle tissue samples for a range of pesticides, veterinary medicines, and environmental contaminants since the early 1960s. The program ensures beef exports satisfy Australian certification and importing country requirements; supports industry quality assurance initiatives and enables domestic meat processing facilities to satisfy state and territory government regulatory authority licensing requirements.

## Snapshot of Activities

### Increasing MSA Adoption

In 2021-22, the MSA graded cattle continue to represent more than half of the national adult cattle slaughter at another record of 55% in 2021-22, up from the highest proportion of 53% in 2020-21, with a record-equalling 95.5% compliance to MSA minimum requirements. For MSA-registered beef producers, the program delivered a record-estimated \$204 million in additional farm gate returns for the year.

MSA continues to undertake research that aims to make all cattle eligible for MSA including an expanded saleyard pathway with refeeding options, an expanded transport pathway to include long distance road and rail transport, as well as understanding the impacts on eating quality of feed additives used to reduce methane output from beef cattle. Recently finalised research on dairy beef demonstrated an equivalent eating quality of dairy steers to beef breeds across a range of finishing systems.



# Nutrition

2 ZERO HUNGER



Providing essential nutrition and food security including access to safe, sufficient and nutritious food.

| Nutrition Information*         | per 150g serve* |
|--------------------------------|-----------------|
| <b>Good Source<sup>^</sup></b> |                 |
| Protein                        | <b>34.3g</b>    |
| Iron                           | <b>3.1mg</b>    |
| Zinc                           | <b>6.7mg</b>    |
| Vitamin B12                    | <b>1.4µg</b>    |
| <b>Source<sup>^</sup></b>      |                 |
| Omega-3 fatty acids            | <b>48.2mg</b>   |
| Riboflavin (B2)                | <b>0.29mg</b>   |
| Niacin (B3)                    | <b>7.5mg</b>    |
| Pantothenic acid (B5)          | <b>0.54mg</b>   |
| Vitamin B6                     | <b>0.21mg</b>   |
| Magnesium                      | <b>38mg</b>     |
| Phosphorus                     | <b>328mg</b>    |
| Selenium                       | <b>16µg</b>     |

\* Average nutrition information per 150g serve raw weight of four major beef cuts.

<sup>^</sup> Foods that are a 'good source of protein' have more than 10g per serve; 'good sources' of essential nutrients have 25% or more and 'sources', 10% or more of the recommended daily intake (RDI) as defined for labeling purposes in the Australian Food Standards (1.2.7).

## Data Explained

Lean beef is a nutrition powerhouse. Naturally nutritious, a 150g serving (raw weight) of Australian beef contains 12 essential nutrients recommended for good health.

It is an excellent source of bioavailable iron and zinc – red meat has more iron and zinc than poultry and fish. Predominantly grass-fed, Australian beef is a source of omega-3.

Australian beef with low levels of marbling and trimmed of fat has less than 3% fat, around 1% saturated fat and is naturally low in sodium.



## Snapshot of Activities

### Nutritional Benefits of Australian Red Meat

MLA's "Nutritional benefits of Australian red meat" report provides key messages for promoting the sustainable consumption of red meat in a healthy diet.

**3 to 4** balanced meals a week is a practical way to eat recommended amounts.

Amounts recommended in the Australian Dietary Guidelines is equivalent to **650g** per person per week (raw weight)

Provides Australians with a great source of high-quality **protein, bioavailable iron and zinc**, and a source of omega-3 and vitamin B12.

Popular meals are a practical way to explain serving size, because the typical serving size ranges between 100 to 200g.

Purchase weight is a practical guide and is consistent with the way red meat is purchased and prepared (i.e. mince 500g, serves 4)

Insights suggest consumers need **'more than steak'** meal ideas to eat recommended amounts of red meat.

All beef cuts, including lean mince, provide **similar nutritional benefits.**

This report and nutrition resources for promoting the benefits of Australian beef in healthy, balanced meals are available on the [MLA Healthy Meals web site](#).

### Feed vs Food

Critics often argue that raising beef cattle takes up land that could be used to grow crops for human food, or that grain fed to livestock could be fed to humans. Recent research by Australia's CSIRO has debunked these claims\*



Australian grass-fed beef production systems contribute almost **1600 times** the human-edible protein they consume.



Australian grain-fed beef production systems contribute almost **twice the human-edible protein** they consume.



Grains fed to cattle in feedlots are **very low in human-edible protein** sources, while meeting nutritional requirements for cattle.

\*Thomas, D.T., Belestre, Y.G., Dominik, S., & Lehnert, S.A. 2021. Net protein contribution and enteric methane production of pasture and grain-finished beef cattle supply chains. *Animal*. 15(12) <https://doi.org/10.1016/j.animal.2021.100392>

## Snapshot of Activities

---

### The Dublin Declaration

Following the International Summit on the Societal Role of Meat in Dublin, more than 1,000 scientists across the world (including 63 from Australia) have signed the 'Dublin Declaration'. For nutrition, this included:

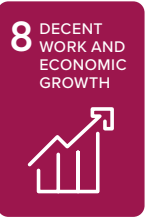
"Livestock-derived foods provide a variety of essential nutrients and other health-promoting compounds, many of which are lacking in diets globally, even among those populations with higher incomes. Well-resourced individuals

may be able to achieve adequate diets while heavily restricting meat, dairy, and eggs. However, this approach should not be recommended for general populations, particularly those with elevated needs, such as young children and adolescents, pregnant and lactating women, women of reproductive age, older adults, and the chronically ill. The highest standards of bio-evolutionary, anthropological, physiological, and epidemiological evidence underscore that the regular consumption of meat, dairy and eggs, as part of a well-balanced diet is advantageous for human beings."





# Work Health & Safety



| INDICATOR |   | DATA   | TREND |
|-----------|---|--|-------|
| 18.1      | Notifiable fatalities (five-year totals)                                    | <b>Farms – 32</b><br><b>Feedlots – 1</b><br><b>Processing – 3</b><br>(2017-21) | ●     |
| 18.2      | Lost time injury frequency rate (number of claims per million hours worked) | <b>Farms – 9</b><br><b>Processing – 17.1</b><br>(2020-21)                      | ●     |
| 18.3      | Global Life Satisfaction Index  | <b>76.1</b><br>(2021)  | ●     |

## Data Explained

### 18.1. Source: Safe Work Australia

The Work-related Traumatic Injury Fatality Data set is sourced from information from the media, workers' compensation data, fatality notifications from Australia's various WHS authorities and information in the National Coronial Information System. Five-year totals are used to avoid disclosing confidential and potentially identifiable information.

### 18.2. Source: Safe Work Australia

Lost time injury frequency rate (LTIFR) refers to the number of lost time injuries (injuries that occurred in the workplace that resulted in an employee's inability to work the next full workday) which occurred in a given period. The LTIFR is calculated across all livestock farms and meat processing due to data levels.

### 18.3. Source: Regional Wellbeing Survey

The Global Life Satisfaction score is calculated based on respondents rating their satisfaction with their 'life as a whole' on a scale of 'completely dissatisfied' (0) to 'completely satisfied' (10). Scores are multiplied by 10 to give an index of 0 to 100. The score of 76.1 for graziers compares to the overall Global Life Satisfaction for Australia of 71.4.



## Snapshot of Activities

---

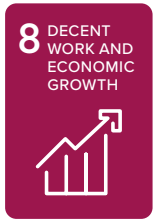
### NTCA Mental Health Workshop

In October 2022, the Northern Territory Cattlemen's Association (NTCA) partnered with the Royal Flying Doctor Service (RFDS) to deliver a Mental Health First Aid course in Katherine to provide practical skills for outback residents and workers to support family and friends. The two-day course helped to equip participants with the knowledge and confidence to recognise, connect, and respond to someone experiencing a mental health problem or mental health crisis. The Mental Health First Aid program is another element of the RFDS's broader Mental Health and Wellbeing Service, which provided more than 2,700 consultations across South Australia and the Northern Territory over the last 12 months.





# Labour Practices



| INDICATOR |  | DATA           | TREND |
|-----------|--|----------------|-------|
| 19.1      | Fair Work Ombudsman Compliance Notices Issued (ANZSIC class Beef Cattle Farming (specialised)) | 5<br>(2021-22) | ●     |

## Data Explained

### 19.1. Source: Fair Work Ombudsman

The Fair Work Ombudsman (FWO) is responsible for promoting compliance with Australian workplace laws. It educates about rights and responsibilities at work and can resolve workplace issues. Most of the time, breaches of the *Fair Work Act 2009* invoke a civil penalty

or fine. When an employer doesn't cooperate with a Fair Work Inspector to fix a breach, the FWO can issue a compliance notice instead of starting legal proceedings. Of the 53,556 agricultural businesses involved with cattle in Australia in 2021/22, five compliance notices were issued.

## Snapshot of Activities

### Voluntary code of conduct for the employment of migrant workers

AMPC has been working with industry for the past 12 months on the development of a voluntary code of conduct for the employment of migrant workers to support processors by underpinning its zero-tolerance view on the exploitation of workers, particularly migrants.

The code has been developed to support the sector through a certified and auditable set of guidelines which will assist in

the management, recruitment, and employment of migrants – a complex area for employers to navigate on their own. The guidelines will provide a consistent best practice for the onboarding of migrants across all processing plants and ensure migrants have a positive experience in the workplace.

This project forms part of AMPC's people and culture research and development strategy which by 2030 seeks to ensure the processing sector is seen as a diverse, safe, and attractive industry of choice for employment.



## Case Study

### Developing an innovative culture

Lachlan Teys, General Manager Operations for the Teys Beenleigh facility, recognised the need to optimise employee performance and culture, before developing a deliberate process of innovation to support growth. Escalation and delegation processes at times were suboptimal, with both supervisors and senior leaders often engaged in operational issues, leaving less time for strategic matters.

Some employees also showed concern about change and trying new things, which impacted performance and the ability to foster an innovative culture.

Teys engaged Response Group through the AMPC Innovation Culture Project in 2021 to help bring about the cultural transformation required to support innovation and creative thinking.

Response Group's work with Teys Beenleigh included the facilitation of strategic leadership workshops to:

- » Understand the current culture and start to craft the future desired culture.
- » Identify the levels of work, ensure clarity around what leadership looks like and where the lines of control and communication lie.
- » Develop a strategic framework designed to facilitate staff behaviour and improve employee-driven innovation.

After a successful workshop series, Lachlan was able to recognise and implement the following change of systems:

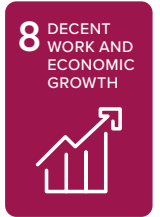
- » Reassign roles based on the supervisor's ability to handle certain levels of work.
- » Clearly define authority for supervisors and increase their involvement and accountability for business challenges and opportunities.
- » Allow job swaps that foster new perspectives from different employees.
- » Enable and empower employees to be more productive.
- » Implement work practices that encourage employees to discuss ways to improve.
- » Internalise new management habits that encourage employees to play an active role in the evolution of the business.

A change in mindset and behaviours often takes time. Lachlan reported that initially employees wanted to go back to their prior way of working. However, after implementing small, impactful changes over the course of six months he saw a noticeable shift to building a culture of exploration and collaboration. Direct outcomes included a productivity increase of 10% and a positive culture shift, resulting in a 48% decrease in employee turnover.





# Community Contribution



| INDICATOR |   | DATA                               | TREND |
|-----------|---|------------------------------------|-------|
| 20.1      | Total people employed directly or indirectly in the red meat and livestock industry | <b>428,000</b><br>(2020-21)        | ●     |
| 20.2      | Beef farming, feedlot, and processing contribution to Gross Domestic Product        | <b>\$13.5 billion</b><br>(2020-21) | ●     |
| 20.3      | Getting involved in the community index   | <b>3.2</b><br>(2021)               | ●     |

## Data Explained

### 20.1. Source: MLA State of the Industry Report 2022

A total 191,700 people were directly employed in the industry, in addition to a further 239,000 people in businesses servicing the red meat and livestock industry. The majority (90%) of meat and livestock industry employees live in rural and regional areas, assisting with decentralisation and not contributing to infrastructure pressures in capital cities.

### 20.2. Source: MLA State of the Industry Report 2022

Industry value add is the overall value of goods and services produced by businesses in an industry (also known as contribution to gross domestic product (GDP)).

### 20.3. Source: Regional Wellbeing Survey

The extent of a person's involvement in local community activities is a mean score from (1) 'never or almost never' to (7) 'all the time' taking part in community events. The score of 3.2 for graziers compares to the overall Australian score of 3. This is most likely due to the reduction in community events during the COVID-19 pandemic.

## Snapshot of Activities

### Mutual benefits

An economic analysis has reinforced the mutual importance of northern Australia and the live cattle export industry. The region contributed 74% of the farm gate value of the \$1.4 billion national trade in 2020-21 and accounted for 82% of all direct employment.

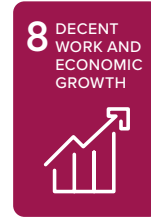
The success of the Northern live export cattle industry reflects Northern Australia's comparative advantages over both Southern Australian and other nations for this production system. These advantages are built on Northern Australia's low opportunity costs in relation to key factors, including geographic position and both the quality and quantity of Australian livestock. This intersects well with the relative strengths of export destination markets, particularly Indonesia where the comparative advantage is in processing Australian cattle imports.

### More to Meat

AMPC recently launched the More to Meat campaign, highlighting the important role of Australian red meat processors in the communities they operate in by informing the public about the national meat supply chain, and in particular, the processing industry's significant contribution to the national economy. Red meat processors are responsible for 138,000 jobs in 300 communities throughout the nation and provide locals with good, well-paid, safe work, and the opportunity for a career. They also support thousands of farmers and businesses nationally, from local butchers and supermarkets to trucking companies and trades.



# Diversity



| INDICATOR |  | DATA                 |                       |                       |                       |                       |                     | TREND      |
|-----------|--|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|------------|
| 21.1      | Percentage of women and men in the workforce         | 32.1%                | 67.9%                 | 33.7%                 | 66.0%                 | 29.2%                 | 70.8%               |            |
|           |  | <b>Beef farms</b>    |                       | <b>Beef feedlots</b>  |                       | <b>Processors</b>     |                     |            |
|           |  | (2021)               |                       |                       |                       |                       |                     |            |
| 21.2      | Age breakdown of the workforce                       | <b>9.5%</b><br>15-24 | <b>16.4%</b><br>25-34 | <b>16.1%</b><br>35-44 | <b>17.4%</b><br>45-54 | <b>19.2%</b><br>55-64 | <b>21.4%</b><br>65+ | <b>N/A</b> |
|           |  | (2021)               |                       |                       |                       |                       |                     |            |
| 21.3      | Percentage of Indigenous employment in the workforce | <b>2.1%</b>          |                       |                       |                       |                       |                     |            |
|           |  | (2021)               |                       |                       |                       |                       |                     |            |

## Data Explained

### 21.1 – 21.3. Source: ABS 2021 Census

Data from the Australian Bureau of Statistics 2021 Census has been utilised to re-state 2021 statistics. This is a more accurate source of information than the ABSF Producer Survey which is used in interim years. While Indigenous representation in the industry is the same and the age

distribution is comparable, there has been a reduction in women working on-farm, and an increase in female representation in processing. Feedlots were not previously reported. Census data shows that in 2021, there were 2,224 Indigenous Australians working in the beef value chain.

## Snapshot of Activities

### Pacific Labour Mobility

Pacific labour mobility is central to the Australian Government's commitment to building a sustainable beef industry.

It delivers jobs for Pacific and Timor-Leste workers, enabling them to develop skills. Pacific labour mobility also helps create strong links between people, businesses, and communities.

Pacific and Timor-Leste workers offer employers access to a diverse workforce, who contribute to the cultural and economic vibrancy of regional and rural communities across Australia. All workers are protected by the same workplace rights and laws as Australian workers and additional measures are in place to support the welfare and wellbeing of workers while they live and work in Australia.



## NT Indigenous Representation

For specialist beef farms in the Northern Territory, Indigenous employment accounted for 8.9% of the total employment.



## Case Study

### Warmijala Murrugurlayi Agriculture Program

On 31 January, 14 young people aged 16-24 from the Kimberley and Pilbara commenced training in the Warmijala Murrugurlayi (Rise up to Work) Agriculture program (WM). To begin training, a Welcome to Country was given, followed by a smoking ceremony and Cultural Immersion by Yawuru Elder, Di Appleby. The ceremony was a reminder that even the leaves from local trees are Country and are a chance for the students to ground themselves as they embark on a journey toward their own careers and being the caretakers of Roebuck Plains Station.

Support prior to commencement is provided to trainees from WM mentors, working in collaboration with employment service providers across the region to complete and organise clothing, equipment, transport, and accommodation; everything is a team effort.

The training program is delivered over eight weeks, the first of which is in Broome, while the remaining weeks are delivered on Gumaranganyjal (Roebuck Plains) Station where students are immersed in living and training full-time. In the previous four years, students haven't stayed on the Station and this experience of on-site living gives them a valuable lived experience; forming relationships and getting to know the land and work intimately.

The training involves completion of a 3rd Space Coaching and Mentoring intensive workshop, building personal development and leadership skills, and setting the framework for ongoing mentoring through positive

workplace relationships and communication. Additionally, students take part in a three-day livestock clinic with Steve Bourke of Horsepower Training. The clinic takes students into the yards to experience the interaction between people and livestock, learn important life skills and develop leadership potential.

With practical and hands-on knowledge comes the need for formal education and North Regional TAFE provides the students the tools to complete a Certificate II in Leadership. The course includes vocational training suited to agriculture, including horse handling, applying knowledge of horse behaviour, farm fencing and operating vehicles. Through the program, participants are supported by an Industry Lecturer, an Access Lecturer, a Training Support Mentor and two Murrugurlayi Indigenous Mentors.

The training program concluded on 24 March 2023. After training, students maintain a relationship with their WM mentor as they transition into employment. If and when necessary, individual training pathways are developed, and students have the opportunity to work towards a Certificate II in Agriculture or Rural Operations.

To ensure jobs are accessible for participants, Nyamba Buru Yawuru staff are working with WM partner, Kimberley Pilbara Cattleman's Association, which interacts with stations across the region.

Nyamba Buru Yawuru looks forward to seeing the students successfully complete their training and wishes them all the best in their further endeavours.





# Antimicrobial Stewardship

| INDICATOR |   | DATA                                       | TREND |
|-----------|---|--|-------|
| 22.1      | Percentage of feedlots covered by an antimicrobial stewardship plan | <b>Unknown</b><br>*Refer explanation below | ●     |
| 22.2      | Percentage of compliance with antibiotic Maximum Residue Limits     | <b>100%</b><br>(2021-22)                   | ●     |

## Data Explained

### 22.1. Source: NFAS Audits

The Antimicrobial stewardship guidelines for the Australian cattle feedlot industry are now included as a requirement of the National Feedlot Accreditation Scheme (NFAS), which has been in operation in the Australian feedlot industry for more than 28 years. The 100% data related only to beef feedlots accredited under the NFAS.

### 22.2. Source: National Residue Survey

Targeted animal product residue monitoring programs – such as antibiotics – are designed to meet management objectives or monitor potential chemical residues that could pose a risk for access to export or domestic markets. All animal product residue monitoring programs are designed, operated, and reviewed by the NRS.

## Snapshot of Activities

### Mandatory AMS Plans

Since 2016, the Australian Lot Feeders' Associations (ALFA) has placed an emphasis on understanding antimicrobials, the principles of antimicrobial stewardship and developing pathways for adoption within industry.

The Australian feedlot industry recognises that antimicrobials (antibiotics) are a vital tool in both human and animal medicine, a belief which led to the development of the world's first feedlot-specific Antimicrobial Stewardship Guidelines, published in March 2018. At this time, ALFA implemented an extensive communications and extension program including an online training platform to increase awareness of how to manage the benefits and risks associated with antimicrobial use. The response from industry was overwhelming, with approximately 62% of feedlots implementing AMS Plans on a voluntary basis by 2022.

In mid-2021, the industry announced that AMS would become mandatory within the industry's quality assurance system NFAS. The Standards ensures that AMS Plans are reviewed every six to 12 months, depending on the size of the feedlot, and are reviewed and signed off by a consulting veterinarian.

Now with all feedlots required to implement AMS Plans within a dedicated Animal Health module of the NFAS, the sector has fulfilled its commitment to ensure that antimicrobials are used judiciously and with oversight of a trained professional.

ALFA remains dedicated to preserving the effectiveness of antimicrobials, and to protecting human and animal health, by promoting responsible antimicrobial. Previous surveillance has reported levels of antimicrobial resistance in Australian cattle that are either absent or very low.

## Case Study

### McDonald's Antibiotic Policy for our Beef Supply Chain

McDonald's Antibiotic Policy for our Beef Supply Chain identifies its expectations and anticipated implementation plans with respect to antibiotic use in its beef supply chain while complying with local laws and regulations. The Policy is informed by McDonald's Vision for Antibiotic Stewardship (VAS) and follows global guidance from expert bodies such as the World Health Organization (WHO) and the World Organisation for Animal Health (WOAH). The Policy focuses on the following countries: Australia; Brazil; Canada; France; Germany; Ireland; New Zealand; Poland; the United Kingdom; and the United States, which accounted for more than 80% of the company's global beef supply chain in 2021.

Since implementing the Policy in 2018, McDonald's has established market-appropriate responsible use targets informed by significant research, pilot testing and collaboration with subject-matter experts.

Partnership and collaboration with stakeholders and suppliers will continue to be critical in helping to drive positive outcomes, as there is a lack of consistent processes, definitions, regulations, or thresholds for responsible use of antibiotics in beef across McDonald's top 10 sourcing markets. McDonald's intends to partner in the collection of data associated with global beef and dairy industries across all in-scope markets. This will help to gain understanding of use within its top sourcing markets and enable comprehensive assessment of antibiotics use across in-scope beef supply chains in the future. The company intends to leverage independent third parties to facilitate data aggregation, helping to drive positive behavioural change and transparency.

For more information on the McDonald's Beef Policy, please visit the Corporate McDonald's website.





# Capacity Building

13 CLIMATE ACTION



| INDICATOR |   | DATA  | TREND |
|-----------|---|---|-------|
| 23.1      | Number of traineeships and apprenticeships enrolled and completed                         | <b>(Commenced / Completed)</b><br><b>Farms – 1443 / 739</b><br><b>Feedlots – 67 / 15</b><br><b>Processing – 5377 / 1386</b><br>(2022) | ●     |
| 23.2      | Percentage of industry workforce with a higher education qualification                    | <b>22.4%</b><br>(2021)  | ●     |
| 23.3      | Number of participants undertaking MLA, LiveCorp, AMPC, or peak industry council training | <b>15,125</b><br>(2022)   | ●     |

## Data Explained

### 23.1. Source: National Centre for Vocational Education Research

There are limitations with the accuracy of the available data for this indicator. Codes for just beef cattle-related industries have been used where possible. Farming includes agriculture and rural operations without specialisations. Meat processing includes all meat for human consumption but excludes poultry. It is not possible to deduce how many relate specifically to processing cattle only.

### 23.2. Source: ABS 2021 Census

The ABS 2021 Census showed that 22.4% of employees have obtained a higher education qualification. This includes diploma and advanced diploma, bachelor degree, graduate diploma and graduate certificate, and postgraduate degrees.

### 23.3. Source: Red Meat Industry Bodies

Training events and courses are functions of MLA, LiveCorp, AMPC, and the peak industry councils.

## Snapshot of Activities

### BredWell FedWell

During FY23, MLA commenced piloting the renewed BredWell FedWell (BFWF) one-day workshop with beef producers. Pilot workshops were held in Phillip Island, Victoria, Alice Springs, and Northern Territory. BFWF has been a highly regarded training program for southern producers wanting to be introduced to the use of breeding values and nutrition practices in order to realise the full genetic potential of their herd. As part of an extensive review and updating of the training program in 2022, the workshop will now be offered to northern and southern Australian beef producers. The workshop will give commercial beef producers the opportunity to define their breeding objective, understand and use Estimated Breeding Values (EBVs), and develop a nutrition plan.

### Producer Training

In 2021-22 10,709 producers were engaged in MLA adoption programs, impacting over 7.1 million head of cattle and more than 150.3 million hectares of agricultural land. Beef producers who participated in EDGENetwork training programs reported an additional annual benefit of, on average, \$32/ha in northern production systems and \$5.81/ha in southern production systems.

## Snapshot of Activities

### ALFA Certified AWO online training

ALFA has pivoted to provide Industry with certified training in Animal Welfare Officer (AWO) skillset each year, with its new online course that will be delivered in alternate years to the in-person AWO training from 2023. The online training course, delivered by feedlot veterinarian Dr Paul Cusack and

ALFA's Technical Services Officer Jeff House, provides feedlot managers, supervisors, key training personnel and quality assurance officers with the most up-to-date knowledge and skills for the management, assessment, auditing, and on-the-job training of animal welfare within a feedlot operation.

## Case Study

### Building the next generation of shipboard stockies in Northern Australia

A collaboration between LiveCorp and the Young Livestock Exporters Network (YLEN) saw the training course for shipboard live export stockpersons held in Darwin for the first time in over a decade.

The course attracted young participants from across northern Australia and provided an ideal opportunity to boost capacity in low-stress stock handling of cattle and buffalo.

Northern Australia is a cornerstone of the country's live cattle export industry, contributing three quarters of its value, and providing employment throughout the supply chain.

LiveCorp Accredited Stockpersons (or stockies) are required on every livestock export ship out of Australia, to look after the animals on board and meet regulatory reporting requirements.

The practical training included cattle and buffalo handling components, held at Annaburroo Station and Berrimah Export Yards, and an opportunity to visit Darwin port to view a ship being loaded. The week-long course also has classroom sessions on regulatory requirements, animal health and treatments, and life on board.

The opportunity for young participants to network and build relationships was, as always, a highlight. Several former stockies joined the group for an afternoon, providing insights into their own career progression into other roles within export companies and the opportunities that exist in the industry.



Adrian Phillips, NT Buffalo Industry Council helped with the practical livestock handling sessions

# Framework in Action

## Global Agenda for Sustainable Livestock

---

**The Global Agenda for Sustainable Livestock (GASL/Global Agenda) is an international multi-stakeholder partnership (MSP) founded in 2011. GASL's mission is to enhance the livestock holder's commitment and investments in support of the 2030 Agenda for Sustainable Development. GASL brings people and institutions together to understand and recognise the main questions and challenges in the livestock sector, exchange expertise, and provide answers.**

The multi-stakeholder approach is more efficient and effective than the actions of single stakeholders. The Global Agenda comprises more than 100 partners from governments, multilateral organisations, the private sector, non-governmental organisations (NGOs), and the research community. One of GASL's main assets is its diversity of views.

The 12th MSP was held in Dublin in October 2022, with the Australian Beef Sustainable Framework represented by Jacob Betros, Melinee Leather, and Kari Moffat. Hosted by the Food and Agriculture Organisation of the United Nations, this meeting brought together 150 people from across 43 nations. This meeting highlighted the thing we have most in common is that we are all unique. Every nation has their own challenges, and where Australia can, we must assist other countries to not only drive their own sustainability journey but assist with ongoing food and nutrition security. It is vital to have open conversations at both a national and global level to ensure policy is not created in silos. The importance of science-based evidence and data is key to lobbying government on environmental policy in the future, including the important role that livestock plays in meeting global nutritional security and sustainable food systems.

There was also a good reminder about the importance of placing equal weighting on sustainability pillars (environment, social, economic), not just environment, which often becomes a singular focus.

Attendance at GASL was a valuable check-in, to compare where Australia sits in terms of sustainability goals with what other countries are doing in this space. There was alignment with other countries on similar emissions goals, which will be important in terms of research and development, and in opportunities to collaborate on common goals in the future.

The meeting also brought to attention Australia's privileged position in terms of the abundance of high-quality food and other relative advantages such as in equality, education, and access to resources. As engaged members of a global community, Australia recognises the decisions it makes as an industry and nation have a flow-on effect to countries in less privileged positions. There is a role as responsible global citizens and industry leaders to ensure this fact is kept in mind when making policy decisions.

## Global Conference on Sustainable Beef

**The critical role sustainable beef production must play in an equitable and healthy food system and the need for sustainability goal setting were two of the key take home messages for the Australian beef industry to emerge from the Global Conference on Sustainable Beef in November.**

Hosted by the Global Roundtable for Sustainable Beef (GRSB) over four days in Denver, Colorado, the Conference brought together stakeholders from beef supply chains throughout the world to share new information and discuss priority and emerging themes.

Australian speakers at the event included Australian Beef Sustainability Framework (ABSF) Sustainability Steering Group (SSG) Chair, Mark Davie, and Meat & Livestock Australia Manager – Beef Sustainability, Jacob Betros, as well as GRSB President and Tyson Foods Director of Sustainability, Ian McConnel.

Mr Davie, a Central Queensland beef producer and director of Keppel Brand food manufacturers, said discussions throughout the Conference highlighted the need for the beef industry to prioritise engaging in genuine conversations with customers and consumers.

He said simply telling the story of beef is not enough as only half of the target audience is listening. He suggested engaging in two-way conversations to not only share the good being done by Australian beef businesses, but also to understand how they are perceived and identify areas that need attention and investment.

The importance of goal setting was discussed with Mr David highlighting its importance in the Australian context in leading industry progress and engagement and noting there was increased focus from global supply chains on goal setting and development of sustainability metrics. He also stressed the need for science-based targets to be informed by the scientific research of the particular bioregion it is measuring.

The approach is an acknowledgement that production and environments across the world are highly varied and sustainability goals should recognise those differences to deliver the best outcomes for the environment and productivity in unique geographic settings.

Ian McConnel reiterated the power of goal setting in the global sustainability discussion saying the importance of livestock production to the food system is an emerging topic and the GRSB has been a platform for Australia's to demonstrate its ambitions and gain access to high-level, multilateral conversations.

With a diverse group of stakeholders represented over the four days, Mr McConnel said some key issues still required consensus across industry, such as deforestation and animal welfare.

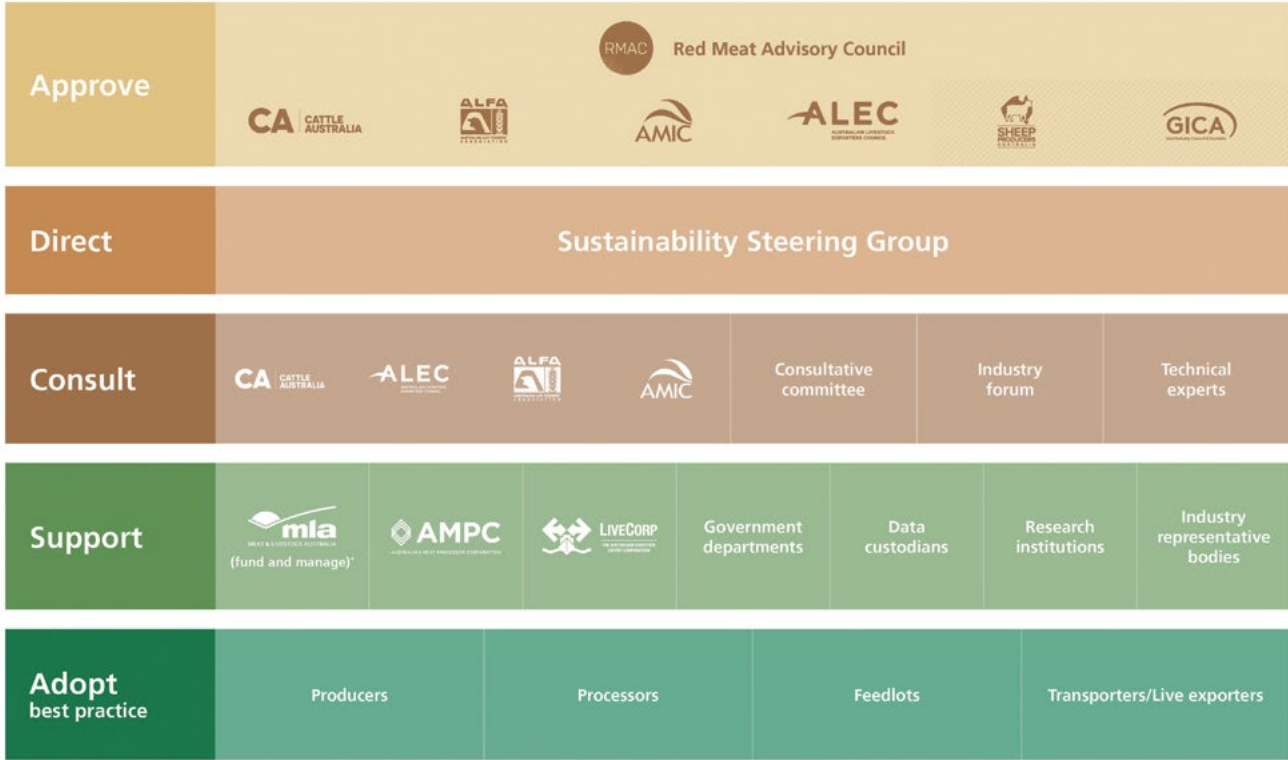
However, he said it was evident that there is alignment to achieving a net positive contribution to nature and the GRSB is filling an important role in enabling groups to gather and find common ground to allow progress to continue without creating a binary definition of sustainability that ruled some countries in, and some out.

Both Mr Davie and Mr McConnel referenced a quote delivered by Cameron Bruett, JBS Foods USA, during his address to conference delegates: "producing food is a privilege and doing it sustainably is an obligation".

Mr David said the ABSF and Australia are very well positioned in terms of the commitment and record on sustainability and are helping to lead the global work in the space. He also noted the commitment to continuous improvement and the need to invest in the right tools to measure progress and support an ongoing conversation with consumers.

Finally, the conference emphasised the vital role for beef in the nutrition of the global population and in addressing food shortages. In this respect, developed nations have a clear opportunity to assist other regions, especially those in the developing world such as Africa and South America, to improve sustainable beef production and provide healthy and nutrient-rich food.

# Governance + Principles



The Framework principles are:

|  |   |  |   |  |
|--|---|--|---|--|
|  |   |  |   |  |
| <b>Relevance</b><br>The priority is important to our customers, the community and the Australian beef industry, and is within the industry's scope of influence. | <b>Inclusivity</b><br>The constructive views of industry, customers, consumers, government and community groups as to how industry can continuously improve performance will be considered. | <b>Credibility</b><br>Decisions about themes, priorities, indicators and recommendations are grounded in evidence. They can, or have the potential to be, monitored and managed. | <b>Practicality</b><br>Indicators are realistic. The industry is able (within scope of influence) to make changes that represent value to the value chain through continuous improvement. | <b>Transparency</b><br>The industry can provide an open and honest picture of performance using the most appropriate data. |

\*As project funder and manager, MLA will advise RMAC and SSG on the budget in place for the ABSF.



# Sustainability Steering Group



**Mark Davie**

Chair, SSG  
Director, Keppel Brand and Cattlemen's



**Jacob Betros**

Secretariat, SSG



**Carl Duncan**

Chief Sustainability Officers,  
Teys Australia



**Melinee Leather**

Owner/Manager, Leather Cattle  
Company



**Barb Madden**

Co-Owner and Director of Corporate  
Affairs, Smithfield Group



**Dr Michael Maxwell**

Partner, HFW



**Kari Moffat**

Sustainability Manager,  
AAM Investment Group



**Trevor Moore**

Sustainability – Innovation –  
Environment, The Casino Food Co-Op



**Jenny O'Sullivan**

Owner/Manager Malabar Farm  
and Director of Victorian  
Livestock Exchange



**Jock Whittle**

Head of Asset Performance,  
Macquarie Group

# Materiality

In 2021 a Materiality Assessment identified 24 topics to be adopted in the ABSF. A materiality assessment is the process of identifying and prioritising a company’s or industry’s significant environmental, economic, or social impacts.

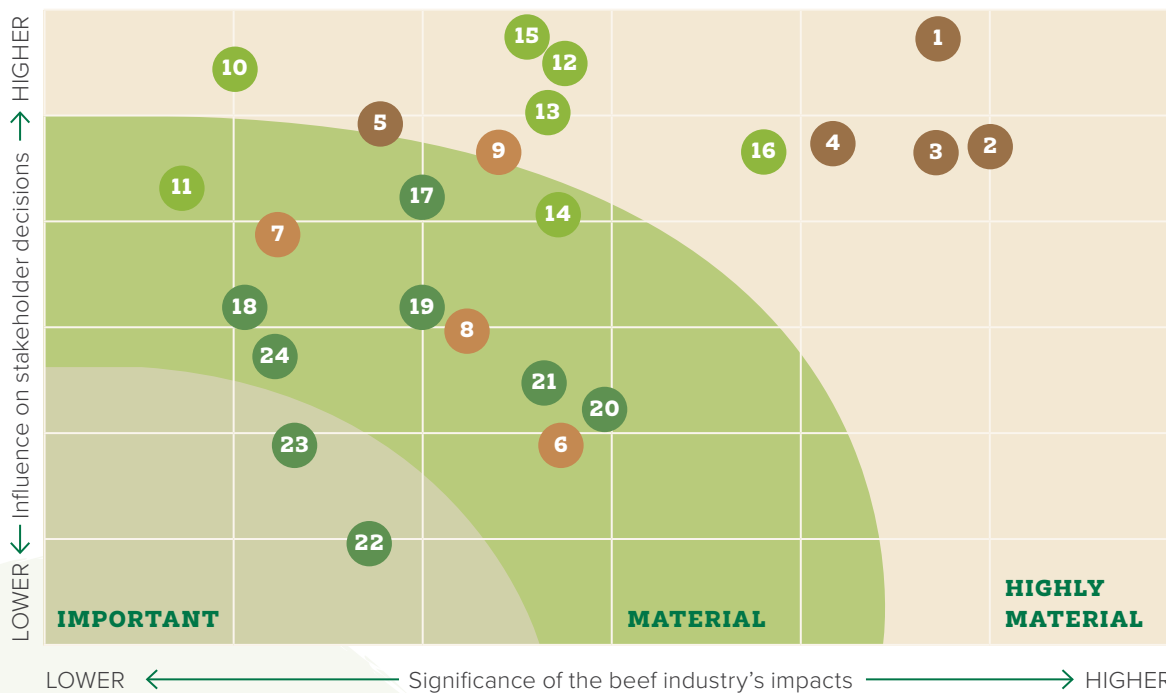
These impacts can be positive or negative. The identified list of significant or material issues is based on scientific literature, industry and social norms, the policy and regulatory architecture, and the views of stakeholders.

The identified material issues guide company or industry action to monitor, address and report on its sustainability impacts. Materiality is a core principle of sustainability reporting standards such as the GRI Standards (2016).

Guided by best practice, the materiality assessment prioritised these topics as highly material, material, or important according to two dimensions:

1. Significance of the industry’s economic, environmental, and social impacts.
2. Significance to, and influence on, stakeholder assessments and decisions.

The full Materiality Assessment Report is available at [www.sustainableaustralianbeef.com.au](http://www.sustainableaustralianbeef.com.au)



## Best Animal Care

1. Animal husbandry
2. Processing practices
3. Livestock transport
4. Livestock health and welfare
5. Biosecurity



## Economic Resilience

6. Productivity
7. Profitability
8. Market access
9. Climate change resilience



## Environmental Stewardship

10. Water
11. Waste
12. Soil health
13. Balance of tree and grass cover
14. Ground cover
15. Biodiversity
16. Greenhouse gas emissions and carbon capture



## People and Community

17. Food safety and quality
18. Diversity
19. Work, health and safety
20. Community contribution
21. Nutrition
22. Capacity building
23. Labour practices
24. Antimicrobial stewardship

# Glossary

## AAWCS

Australian Livestock Processing Industry Animal Welfare Certification System. An independently-audited certification program used by Australian livestock processors to demonstrate compliance with the industry best practice animal welfare standards.

## ABARES

Australian Bureau of Agricultural and Resource Economics and Sciences.

## ABS

Australian Bureau of Statistics.

## ALFA

Australian Lot Feeders' Association. The peak national body for the Australian cattle feedlot industry.

## AMIC

Australian Meat Industry Council. The peak council that represents retailers, processors, exporters and smallgoods manufacturers in the post-farm-gate meat industry.

## AMPC

Australian Meat Processing Corporation. The Rural Research and Development Corporation that supports the red meat processing industry throughout Australia. AMPC's mandate is to provide research, development and extension services that improve the sustainability and efficiency of the sector.

## Antimicrobial resistance

The ability of a microbe to resist the effects of medication that once could successfully destroy the microbe. Microbes include bacteria, viruses and other microscopic organisms.

## Canopy cover

The fraction of ground area covered by the vertical projection of tree crown perimeters.

## Carbon sequestration

A process of capturing and storing atmospheric carbon dioxide, which has the potential to mitigate climate change.

## Carcase

The body of an animal after being dressed (removal of head, feet, hide and internal organs).

## CN30

Initiative and target relating to the red meat industry becoming carbon neutral by 2030.

## Contagious Bovine Pleurpneumonia

A highly contagious infectious disease of cattle that attacks the lungs and thoracic membrane, with a high mortality rate.

## CO<sub>2</sub>e

Carbon dioxide equivalent, a standard unit for measuring greenhouse gas emissions.

## CSIRO

Commonwealth Scientific and Industrial Research Organisation. An Australian federal government agency responsible for scientific research.

## DAWE

Department of Agriculture, Water and the Environment.

## Dehorning

The removal of horns from cattle. It is a labour-intensive, skilled operation with important animal welfare implications, and is totally avoidable by breeding polled (hornless) cattle.

## ESCAS

Exporter Supply Chain Assurance System. An Australian Government regulatory program based on four principles: animal welfare, control through the supply chain, traceability through the supply chain and independent auditing.

## GDP

Gross Domestic Product.

## GHG

Greenhouse gas.

## HSCW

Hot Standard Carcase Weight. Used to describe the weight of an animal, particularly when the animal is sold directly from a farm to an abattoir.

## LCA

Life Cycle Assessment. A technique to assess environmental impacts associated with a product across a supply chain.

## Feedlotting

The process of feeding cattle on grain in a feedlot, where cattle are fed a high-protein grain-based diet to reach exact market specifications, before being supplied to processors.

## LPA

Livestock Production Assurance. The Australian livestock industry's on-farm assurance program covering food safety, animal welfare and biosecurity. It provides evidence of livestock history and on-farm practices when transferring livestock through the value chain.

## LPA National Vendor Declarations

A form that documents the movement of livestock when they are bought, sold or moved off a property. This form accompanies all such movements.

## Materiality

The principle of reporting against and addressing the industry's most material issues. These are issues with a direct or indirect impact on an organisation's ability to create, preserve or erode economic, environmental and social value for itself, its stakeholders and society at large.

## MLA

Meat & Livestock Australia. A producer-owned industry service provider that provides marketing and research and development services to cattle, sheep and goat industries.

## MSA

Meat Standards Australia. A grading system for meat that has met strict eating quality criteria.

## NFAS

National Feedlot Accreditation Scheme. An independently audited quality assurance scheme initiated by ALFA that includes quality assurance, welfare and other components.

## NLIS

National Livestock Identification System. Australia's system for identifying and tracing cattle, sheep and goats.

## NRM

Natural resource management. This refers to the protection and improvement of environmental assets such as soils, water, vegetation and biodiversity.

## WOAH

World Organisation for Animal Health. An intergovernmental organisation coordinating, supporting and promoting animal disease control.

# Glossary

## Paris Agreement

An international agreement under the United Nations Framework Convention on Climate Change, dealing with the mitigation of greenhouse gas emissions, adaptation to climate change, and climate change-related finance. The Paris Agreement commits members to the long-term goal of keeping the increase in global average temperatures to well below 2°C above pre-industrial levels, and to limit the increase to 1.5°C.

## Polled livestock

Livestock, including cows and bulls, born without horns due to the poll gene for which they can be selectively bred.

## Red Meat 2030

A 10-year strategic plan for Australia's red meat businesses, developed in consultation with industry and government.

## Rinderpest

An infectious viral disease of cattle characterised by fever, dysentery and inflammation of the mucous membranes.

## RMAC

Red Meat Advisory Council. A network of producers, lot feeders, manufacturers, retailers and livestock exporters that represent Australian beef, goatmeat and sheepmeat businesses from gate to plate.

## Safe Work

Safe Work Australia - An Australian government statutory body established to develop national policy relating to work health and safety and workers' compensation.

## TruckSafe

An independently-audited accreditation scheme for truck operators that ensures quality, safety and best practice. TruckSafe includes an animal welfare module.

## Woody vegetation

Plants that produce wood as their structural tissue and have woody stems, such as trees. For the Balance of Tree and Grass Cover, this includes Forests and Woodlands.



# References

- AgriFutures Australia, 2022, *Pre-farm gate waste management: Baseline data for the agriculture, fisheries and forestry sector*.
- AUS-MEAT Limited, 2023, *National Feedlot Accreditation Scheme (NFAS) Audits*.
- Australian Beef Sustainability Framework, 2023, *ABSF Producer Survey – A voluntary online survey with 2,525 responses*.
- Australian Bureau of Statistics, 2023, *2021 Census Data*.
- Australian Meat Processor Corporation, 2023, *2023-1002 – Environmental Performance Review 2022*.
- Australian Registered Cattle Breeders Association, 2023, *Polledness trends for calves born in seedstock herds from 2000 to 2022 for the 12 largest breeds in Australia*.
- CIBO Labs, Commissioned by Meat & Livestock Australia, 2023, E.SUB.0007 – *Australian Beef and Sheep Sustainability Framework – Vegetation mapping, reporting, and support*.
- CSIRO, Commissioned by Meat & Livestock Australia, 2023, B.CCH.2301 - *Greenhouse gas footprint of the Australian red meat production and processing sectors 2020*.
- Department of Agriculture, Fisheries and Forestry, 2023, *Australian Agricultural Productivity – Broadacre and Dairy Estimates*.
- Department of Agriculture, Fisheries and Forestry, 2023, *All Livestock Exports – Reports to Parliament*.
- Department of Agriculture, Fisheries and Forestry, 2023, *National Residue Survey results and publications*.
- Department of Agriculture, Fisheries and Forestry, 2023, *Exporter Supply Chain Assurance Systems (ESCAS) investigations*.
- Fair Work Ombudsman, 2023, *Compliance notices*.
- Food Innovation Australia Limited (FIAL), 2021, *The 2021 National Food Waste Baseline*.
- Global Reporting Initiative (GRI), 2022, *GRI 13: Agriculture, Aquaculture and Fishing Sectors 2022*.
- Health for Animals, 2022, *New Frontiers in Animal Care: The Innovations Shaping the Future*
- Integrity Ag & Environment, Commissioned by Meat & Livestock Australia, 2023, E.SUB.0010 - *Beef Industry trends analysis - 2020*.
- Integrity Systems Company, 2023, *Livestock Production Assurance Audits*.
- Meat & Livestock Australia, 2022, *Meat Standards Australia 2021-2022 Annual Outcomes Report*.
- Meat & Livestock Australia, 2022, *State of the Industry Report 2022*.
- Meat & Livestock Australia, 2022, *E.SUS.0005 – Project Proof*.
- National Centre for Vocational Research, 2023, *VOCSTATS*.
- Safe Work Australia, 2023, *Work-related fatalities*.
- Safe Work Australia, 2023, *Work-related injuries*.
- Thomas, DT, Belesté, YG, Dominik, S & Lehnert, SA, 2021, *Net protein contribution and enteric methane production of pasture and grain-finished beef cattle supply chains*, *Animal*, 15(12).
- United Nations, 2020, *The Sustainable Development Goals Report 2020*.
- University of Canberra, 2023, *Regional Wellbeing Survey Data 2021*.
- World Organisation for Animal Health, 2023, *Official Disease Status, March 2023*.







**Australian Beef**  
Sustainability  
Framework

**For further information please contact:**

**JACOB BETROS**

*Secretariat for the Sustainability Steering Group*

[jbetros@mla.com.au](mailto:jbetros@mla.com.au)

