# Australian Beef
Sustainability Framework

Annual Update
2022

About this Update

This Annual Update reports the Australian beef industry's sustainability progress against 53 identified priority indicators. The reporting boundary, shown by the dashed line, covers the actions of the Australian beef value chain, including farms, saleyards, feedlots, transport, processing, and live export.
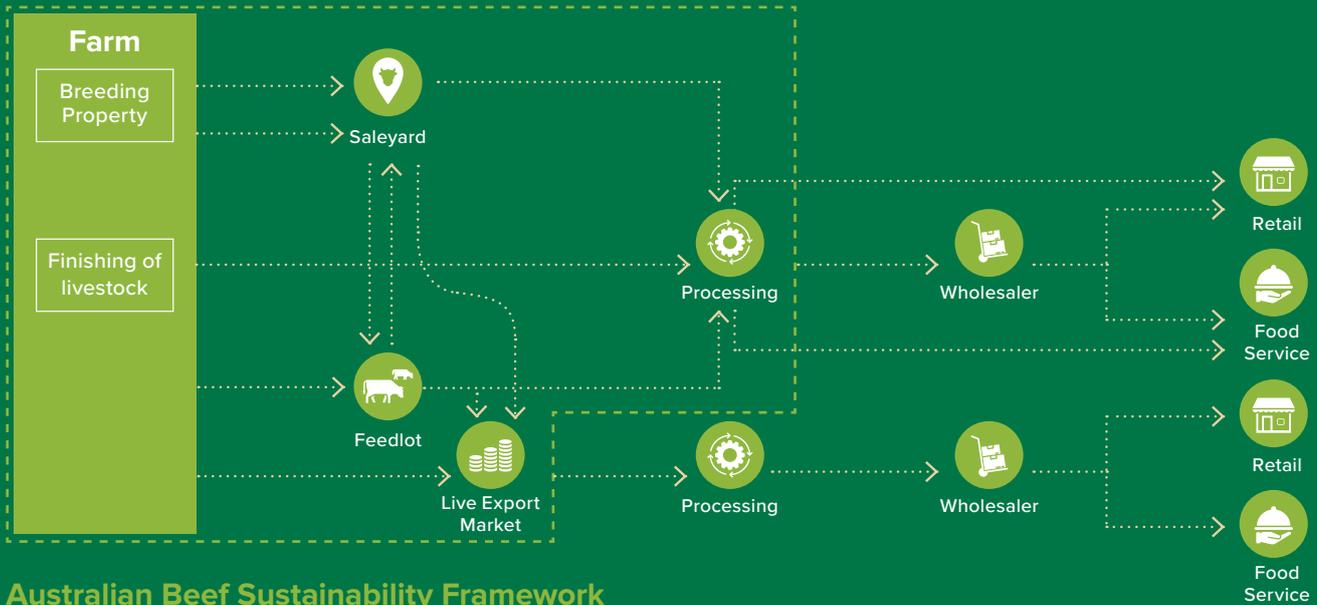
Australian Beef Sustainability Framework

The Australian Beef Sustainability Framework (ABSF) reduces risks and leverages opportunities by managing what is most important to stakeholders inside and outside the Australian beef industry. 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.

Cover image by Amy Holcombe.

Contents

Highlights

Animal husbandry

Producers using pain relief for animal husbandry procedures has increased to 35%.

Greenhouse gas emissions and capture

The Australian beef industry has continued to reduce its net CO_2e emissions since 2005, recording a reduction of 58.21% in 2019.

Forests, woodlands and grasslands

Native vegetation regrowth has seen the area of forest on Australian grazing properties increase from 12.94% in 2004 to 15.32% in 2020.

Processing and stock handling practices

Australian cattle producers continue to demonstrate a high degree of good agricultural practice, with the National Residue Survey recording a 99.6% compliance.

Biodiversity

7.6 million hectares of cattle-producing land – an area larger in size than Ireland – set aside for conservation or protection purposes.

Soil health

79.6% of NRM regions achieved healthy groundcover thresholds, further protecting our soils and ecosystem services.

Food Waste

2.39 million tonnes of food waste was recovered along the supply chain in 2021, diverting this from landfill.

Biosecurity

Australia's robust traceability systems have ensured Australia remains free from exotic diseases, and increases responsiveness to biosecurity threats.

Climate change resilience

Climate adjusted farm productivity has increased, showing producers are adapting to climate change impacts.

Challenges

Lingering COVID impacts

Global disruptions have placed pressure on supply chains, creating labour shortages, delays and increasing costs.

Natural disaster

Parts of Australia suffered severe droughts, fires, and floods, displacing many and requiring urgent change in grazing schedules, creating challenges for rebuilding.

Biosecurity

Outbreaks of diseases in neighbouring countries have thrown the industry's biosecurity measures into the spotlight.

Accurate Data

Sourcing reliable and robust data has been a key challenge for the industry to verify its continuous improvement towards sustainability.

Resourcing for adoption

Limited resources and capacity are available to meet the demand for carbon neutral training and required adoption rates.

RMAC
Chair's Letter

John McKillop

**Independent Chair
Red Meat Advisory Council**

The Australian red meat industry's strategy plan, Red Meat 2030, is guided by a vision of doubling the value of Australian red meat sales as the trusted source of the highest quality protein by 2030. Sustainability is absolutely integral to both increasing sales and trust.

The ABSF has used a comprehensive process of consultation and market intelligence to identify the environmental, social and economic issues that are most important to stakeholders inside and outside the Australian beef industry. We are listening to our stakeholders, and we are responding appropriately. By strategically managing what is important to the people who impact our industry's success, we are more likely to grow markets and build trust. We need to acknowledge areas we can do better, and explain our plans to improve.

The ABSF is a whole-of-industry framework. To be effective, it must become part of how everyone in this dynamic industry does business. We are relying heavily on our people within our industry to lead us, and drive us, through continuous improvement in all facets of red meat production.

On behalf of the industry, I want to thank the outgoing chair of the Sustainability Steering Group (SSG), Tess Herbert, for her tireless work over the past three years in progressing the ABSF. During Tess's time, stakeholder consultation has increased, data quality has improved, and our commitment to transparency has strengthened.

With Tess stepping down, we welcome Mark Davie as the new chair. Mark and the SSG are driving a concerted and growing effort to have individuals, companies, industry bodies and our partners outside the industry work together to build a thriving Australian beef industry that strives to continuously improve the wellbeing of people, animals and the environment.

This is only possible with the dedicated SSG, which has been appointed to lead the industry with their expert knowledge and experience. The industry must have faith and trust in our people to lead us through the challenges we face, and to duly celebrate our successes. The Red Meat Advisory Council is thankful for the tireless work and advice the SSG provides the industry, and encourages greater utilisation of the members' knowledge and wisdom.

The 2022 Annual Update is a timely reminder that we need to be accountable not only for our successes as an industry, but also for our impacts. We need to see the opportunities before they are there, lead with our innovation, and show the world how successful we are.

John McKillop

Independent Chair
Red Meat Advisory Council

ABSF
Chair's Letter

Mark Davie

Chair, SSG
Director, Keppel Brand

I am excited to present my first Annual Update as Chair of the Australian Beef Sustainability Framework – to provide an important yearly closeup of the sustainability successes of our industry, opportunities for improvement and to demonstrate our commitment to caring for animals, land, people and community prosperity.

I wish to thank the outgoing Chair Tess Herbert for her work steering the ABSF over her three-year term, and her dedication to this important initiative.

There are now a number of global sustainability initiatives demanding our attention, including commitments on global deforestation, an increased focus on carbon emissions, and biodiversity. It is my fervent belief, if we do not engage with these initiatives and relevant stakeholders, they will engage us when major customers are required to report against them. As we did with foresight in setting a goal of carbon neutrality for the industry by 2030 (CN30), we have an opportunity to lead.

The mechanism is the Australian Beef Sustainability Framework.

The ABSF currently defines sustainability for the beef industry and tracks performance across key indicators. But to drive our sustainability story, we need industry to step up and define a nature-positive environmental goal to focus our research and development efforts and build an evidence base.

CN30 is already winning hearts and minds. We must now be even more ambitious, define our goal for vegetation management and resource how we are going to solve this issue in an open and transparent way.

We must demonstrate the good we already do and the role active management plays in driving quality environmental outcomes.

Once we truly start to measure environmental indicators on the ground, we can optimise practice change to deliver greater environmental benefits and greater productivity on farm. This will also build a suite of indicators for the ABSF to report whole-of-industry sustainability performance. I can imagine a future where the ABSF is providing a real-time dashboard across some key indicators.

The sustainability of the beef industry matters to every Australian because we are custodians of 50 per cent of the landscape, we act as a carbon sink, help enhance our environment, increase biodiversity and drive productivity to securely feed a hungry world.

Thank you for taking the time to read the ABSF Annual Update. We are excited to celebrate the performance of our industry as we continue to track progress across our supply chain.

Mark Davie

Chair, SSG
Director, Keppel Brand

Industry Profile

FARM

23.5 million cattle in Australia. All cattle in Australia are born and raised on pastures (June 2020).

FEEDLOT

6% of the Australian cattle herd in feedlots at any one time.

SALEYARDS

3,545,775 cattle transacted in saleyards, **796,133** in AuctionsPlus (2021).

LIVE EXPORT

771,931 cattle exported (2021).

PROCESSING

2.1 million tonnes carcase weight of beef (2020).

PEOPLE IN THE INDUSTRY

52,410 agricultural businesses involved with cattle (2019-2020).

195,800 red meat and livestock industry direct employees (2019-2020).

90% of red meat employees living in rural areas (2016).

VALUE OF THE INDUSTRY

$69.9 billion red meat turnover (2019-2020).

$9.6 billion red meat exports (2019-2020).

Small global herd
1.6% of the global cattle herd in 2019

Big global exporter
World's second largest beef exporter in 2020

Vital to the economy
2% of GDP in FY20 (red meat and livestock)

Markets
Profile

The Australian beef industry's largest single customer is Australia's own domestic market, with per capita consumption in 2020 averaging 23.4kg and accounting for 48% of sales by volume.

In 2020, Australia exported 1 million tonnes of beef shipped weight, with the top three beef export destinations in volume terms being Japan (26% of total exports), USA (20%) and China (19%).

Netherlands **0.5%**

China **19%**

Hong Kong **0.7%**

United States **20%**

United Kingdom **0.2%**

Middle East **3%**

1% Saudi Arabia
0.9% UAE
0.2% Kuwait
0.2% Qatar

South Korea **15%**

Canada **1.3%**

Vietnam **1%**

Thailand **0.6%**

Papua New Guinea **0.3%**

Japan **26%**

New Zealand **0.2%**

Singapore **0.9%**

Malaysia **0.8%**

Indonesia **5%**

Philippines **2%**

Taiwan **2%**
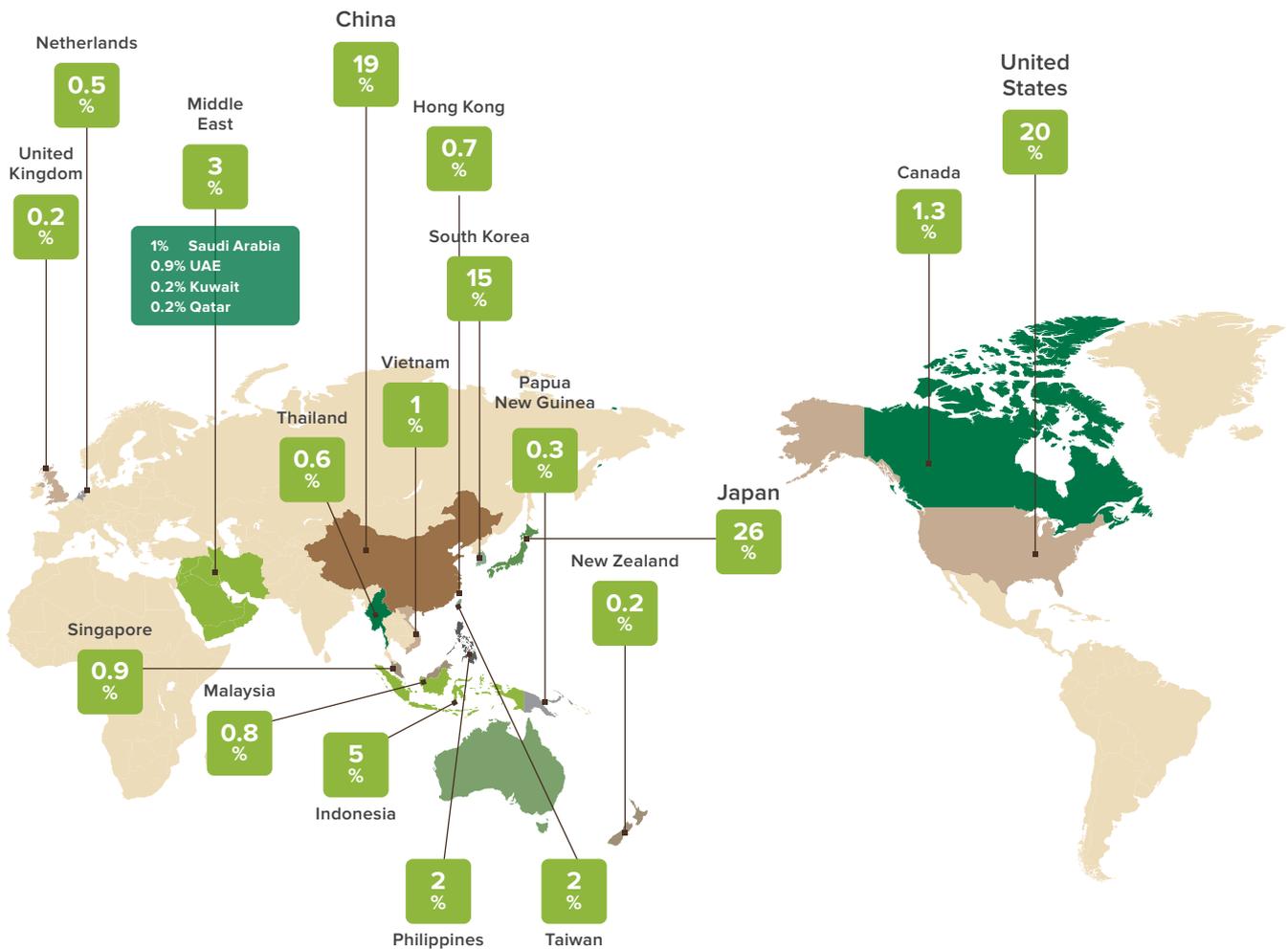
Trusted Australian Beef

Australia's red meat integrity system ensures the livestock industry can stand by what it sells. Incorporating on-farm assurance and livestock traceability, the red meat integrity system protects the disease-free status of Australian red meat and underpins the marketing of our product as safe, natural, ethically produced, and able to be traced right through from property of birth to processing.

Integrity Systems
red meat customer assurance

Integrity Systems Company (ISC) is funded by the industry and responsible for delivering this world leading red meat integrity system.

## 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.

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 combines with NLIS to provide evidence of the food safety status of every animal as it moves through the supply chain.

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 grain-fed 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 ensuring effective oversight.
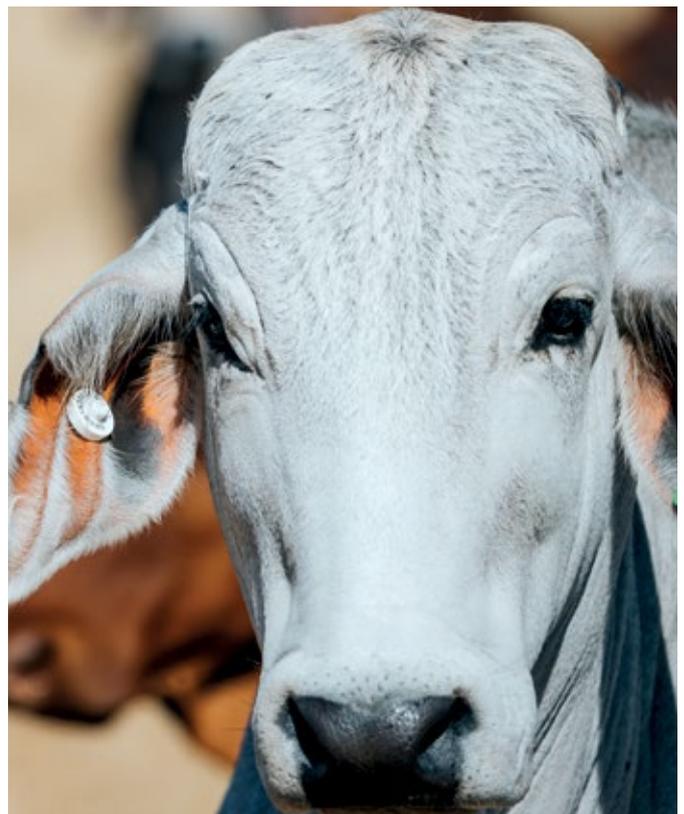
Operating Environment

INCREASING PRIORITY FOR CLIMATE ACTION.

The importance of the Paris Agreement's 1.5°C warming target was reiterated at the 2021 COP26 conference. The industry showed real leadership by setting a target to be carbon neutral by 2030. This target is industry's contribution to reduce expected climate impacts including lower rainfall in southern Australia, and more severe droughts and floods, and also meets customer and consumer expectations.

INCREASING NEED FOR EVIDENCE BASED SUSTAINABLE AGRICULTURE.

The EU 'Farm to Fork' program and due diligence laws will dramatically increase scrutiny of the on-farm sustainability impacts of products exported to the EU. A rise in the profile of "regenerative agriculture" and Modern Slavery legislation is also increasing the need for robust and reliable data that's interconnected across the value chain to accurately demonstrate the industry's sustainability credentials.

COMMUNITY TRUST IN AGRICULTURE VITAL.

AgriFutures Australia research has revealed public trust in rural industries is now driven primarily by environmental responsibility, responsiveness, and value to Australia. The ABSF is an important tool to demonstrate global sustainability leadership, how industry is responding to community expectations, its environmental responsibility, and the value it creates for Australian communities.

RENEWED FOCUS ON BIODIVERSITY.

Biodiversity impacts are likely to attract similar scrutiny to climate change impacts in the near future. The Taskforce for Nature-Related Financial Disclosures, the UN Food Systems Summit, and the COP26 pledge to halt and reverse forest loss and land degradation by 2030 are just some of the developments industry is monitoring.

EMERGING TECHNOLOGIES.

Technologies such as remote water monitoring, satellite land condition data, pasture growth models and electronic collars for monitoring reproductive status have the potential to improve productivity, safety, environmental management and other aspects of beef production. For many farms, a major barrier to adoption is connectivity.

GOVERNMENTS INCREASING SUSTAINABLE AGRICULTURE FOCUS.

The Australian government's agricultural stewardship package includes support to reduce net greenhouse gas emissions, increase biodiversity protection and create an Australian Agriculture Sustainability Framework.

TWO SPEED INDUSTRY PROFITABILITY.

Record high livestock prices are benefitting producers but placing pressure on processors and creating challenging trading conditions. A high Australian dollar is also creating challenges for exporters.

LINGERING COVID IMPACTS.

Global disruptions have placed pressure on supply chains, creating delays and increasing costs. COVID-19 has continued to cause issues with travel, transport, and accessing resources and labour.

GLOBAL MEAT CONSUMPTION INCREASING.

Over the past 20 years, total global consumption of meat has been steadily increasing at an average annual rate of 1% for beef.

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

1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	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	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	17 PARTNERSHIPS FOR THE GOALS	

Global Beef
Sustainability Alignment

**GLOBAL ROUNDTABLE FOR®
SUSTAINABLE BEEF**

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 is a member of the GRSB, and provides resources and expert advice to the organisation. In 2021, the GRSB released three global goals to be reached by 2030:

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**

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 Sustainability Steering Group (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, Financers, Investors, Governments, Non-Government Organisations and Media.

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, 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.

- **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.

- **Events**
  ABSF representatives frequently present at events and online webinars to engage both internal and external stakeholders.

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

- **Digital engagement**
  » The ABSF LinkedIn page has 1,616 followers, an increase of 53% over the previous year.
  » Twitter followers of 2,135 is a 13% increase.
  » Bimonthly eNews subscribers have increased to almost 500.

WHAT OUR EXTERNAL STAKEHOLDERS SAY

The Australian Beef Sustainability Framework is a vehicle for communicating continuous improvements in animal welfare along the beef supply chain. RSPCA Australia has been represented on the Consultative Committee since its inception in 2017 and has encouraged the Framework to be bold and ambitious with its targets while ensuring that transparent, robust and reliable data underpin the measures of success. Along with strong environmental stewardship and human health credentials, being able to demonstrate good animal welfare will be key to achieving a more sustainable, high value beef sector.

Australian beef is a crucial topic to address in RBI's sustainability journey. Engaging with the ABSF has helped us to understand the industry and how it is transitioning towards a more sustainable future. The ABSF is a valuable platform facilitating the connection between farmers, processors and buyers so that the necessary collaboration can take place to drive meaningful change.

We value our long term relationship and engagement with MLA and the Australian Beef Sustainability Framework. These types of frameworks provide us with an industry based view of forward intentions, key priorities and progress made for parts of Australia's Agricultural industry. Importantly, it also allows us to continuously review how we keep in step with market, industry and our customers' needs.

Coles is proud to have been a part of the Australian Beef Sustainability Framework since its inception in 2017. We have an ambition to become Australia's most sustainable supermarket, with a sustainability strategy centred on reducing our environmental impact, and working together with our producers, supplier partners and the broader community. We believe that our participation is an important step in achieving our goals while supporting this unified industry initiative.

At AAM we are firmly focused on producing beef sustainably and progressing towards more efficient and sustainable production. The ABSF is a tangible way for the beef industry to track this progress and work together. The beef industry must ensure it is meeting its own expectations as well the expectations that this framework provides to ensure the transparency that investors, consumers and customers are craving.

We have used the ABSF to inform the indicators we have included in our own sustainability framework for our broader business.

Additionally, the website case studies are a useful way to learn from other beef producers.

As one of Australia's largest purchasers of beef, Woolworths Group believes strong collaboration is the most effective tool in achieving a more sustainable future for our beef industry. Woolworths Group has been an active participant in the framework since its inception. The ABSF allows us to engage and collaborate with a variety of stakeholders across the supply chain, working with suppliers, government, primary producers and other corporate and NGO partners to enhance the sustainability credentials of the Australian beef industry for the future.

McDonald's believe sustainable beef production has the opportunity to play an important role in a food system that not only protects the environment and contributes positively to a thriving global food system but also helps rehabilitate and enhance ecosystems around farms through better soil health, improved water management and increased biodiversity. We are working with stakeholders globally and remain committed to accelerating sustainable beef production.

The Australian Beef Sustainability Framework provides valuable feedback and insights as we continue to invest and work collaboratively to advance action aligned with the framework's priorities.

WHAT OUR EXTERNAL STAKEHOLDERS SAY (continued)

Rabobank

The Australian Beef Sustainability Framework provides a valuable forum for beef industry participants to discuss and track performance on a range of sustainability priorities. Rabobank has been involved with the ABSF since its inception in 2017. We find it an important forum to share the progress on sustainability programs that we and other members of the beef supply chain are considering or implementing. By sharing this information it helps to coordinate activities, reduce duplication and work in the best interests of the whole industry. As we and other members of the beef supply chain work through this transition phase we believe the ABSF provides a valuable mechanism to share, develop, align and track progress on sustainability and it supports Rabobank on its mission to help reach the ambitions of our clients and the industry at large.

HOW THE ABSF IS BEING USED

GREENHAM

The Australian Beef Sustainability Framework (ABSF) laid the foundation for the development of Greenham's new Beef Sustainability Standard (GBSS). Strengthening Greenham's existing on-farm programs and brand suite, the GBSS was developed in response to growing market demand for robust and transparent sustainability credentials.

Aligned with the four themes identified in the ABSF, the GBSS provides a practical set of key indicators and measures to both enhance and showcase the Greenham supply chain's sustainability credentials.

The ABSF provides the blueprint for the Australian red meat industry to meet the changing expectations of customers, and better support producers to weather the challenges posed by changing climatic conditions.

N A P
NORTH AUSTRALIAN PASTORAL COMPANY

NAPCo was founded in 1877 and has quietly grown to establish a world-class herd of 200,000 cattle and a landholding of over 6.1 million hectares. Sustainability has always been a core value, and is a major factor in our success to date. Our approach is to set science-based targets and provide authentic, measurable reporting against those targets, to international standards. In this journey, we value our engagement with the Australian Beef Sustainability Framework and recognise the importance it plays in our industry.

STOCKYARD

At Stockyard, we take a holistic approach to managing our sustainability because like all agricultural businesses, we are first and foremostly land custodians and secondly producers. We use the Australian Beef Sustainability Framework (ABSF) and the Carbon Neutral 2030 strategy to underpin our sustainability practices. This put us in a unique position to partner with Commonwealth Bank for the very first sustainability-linked loan for Australia's agricultural industry. The loan sets out clear parameters that will see our business stretching towards sustainable outcomes in emissions reduction, animal welfare and people wellbeing. The structure will provide savings in interest costs if we meet targets, and if we don't, there are penalty costs. The parameters of this loan, as well as our own internal targets and that of the ABSF helps us measure against key markers of sustainability. This will help bring us closer to achieving these industry targets and allow Australia to continue its reputation for producing superior beef in a clean, green environment.

TEYS

At Teys, our team works hard towards environmentally sustainable best practices across all our operations, and we do our best to not only make positive changes within our business, but to both support and leverage sustainable change across our industry.

We draw on the Australian Beef Sustainability Framework as we strengthen our sustainability commitment and continue to invest in areas that will make a difference - so that we are doing well by doing good.

The synergies of the ABSF are evident as we constantly refine our approach and continue our journey towards a more sustainable future.

The Australian Beef Sustainability Framework

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

BEST ANIMAL CARE

- Animal Husbandry
- Biosecurity
- Processing Practices
- Livestock Transport
- Health & Welfare

ENVIRONMENTAL STEWARDSHIP

- Biodiversity
- Soil Health
- Groundcover
- Balance of Tree & Grass Cover
- GHG Emissions & Carbon Capture
- Water
- Waste

ECONOMIC RESILIENCE

- Climate Change Resilience
- Productivity
- Profitability
- Market Access

PEOPLE & THE COMMUNITY

- Food Safety & Quality
- Nutrition
- Work, Health & Safety
- Labour Practices
- Community Contribution
- Diversity
- Antimicrobial Stewardship
- Capacity Building

CHANGES FROM PREVIOUS REPORTING PERIOD

There have been some changes to how the ABSF reports against these priorities, based on a 2021 materiality assessment and an in-depth review of data to ensure the industry is demonstrating its sustainability credentials on robust evidence.
This work has seen the following indicators removed

- Percentage awareness of the Australian Animal Welfare Standards for Saleyards and Depots: poor data quality

- Number of powered vehicles and trailing equipment which operate under TruckSafe Animal Welfare: not possible to trend

- Average cost of cattle processing per head: a one-off study without plans to be replicated

- Market Access Index: replaced with a new indicator that aligns with Red Meat 2030

- Number of days per year soil covered by vegetation / soil health / water quality: insufficient data

- Land managed by beef producers for conservation outcomes through formal arrangements: no data

- Producer confidence in having the information, tools, technologies, and resources to be able to adapt to change over time: the regional wellbeing survey had ceased to ask the question

- Percentage of product exported that a market found unacceptable in terms of food safety-related indicators: only one market had data, and the reasons may be beyond the control of the industry.

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, of if the data has remained steady.

● = Improvement

● = Decline

● = Steady

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

Best Animal Care

The health and wellbeing of animals is entrenched in the Australian beef value chain and one of the greatest priorities of our industry. In 2021-22, MLA invested $5.3 million in research, development, and adoption programs to ensure best practice animal welfare and to continually identify and develop ways to improve.

The best animal care theme of the ABSF was developed with the five domains of animal welfare in mind and continues to be one of the most important demonstrators of industry's commitment to sustainable practices.

INDUSTRY POSITION

THE AUSTRALIAN BEEF INDUSTRY:

- Recognises cattle as being able to feel and perceive the world around them, and supports the five domains of animal welfare to underpin best practice.

- Recognises that Australian law and other industry standards 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 national 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 through-chain animal welfare practices.

- 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
Freedom from hunger and thirst

Environment
Freedom from discomfort

**Health**
Freedom from pain, injury and disease

Behaviour
Freedom to express normal behaviour

Mental State
Freedom to have subjective feelings and experiences

Animal Husbandry

Standards of practice consistent with Australian regulations and standards, and with international best practice, including appropriate action to minimise pain (including euthanasia, injury and disease).

Indicator	Data	Trend
1.1 Percentage of industry using pain relief for invasive husbandry practices	**35%** (2021)	🟢
1.2 Percentage of polled calves born in seedstock herds	**73.3%** (2020)	**N/A**

DATA EXPLAINED

1.1. Source: MLA Project: E.SUS.0005.

The Australian beef industry is committed to the pursuit of non-invasive replacements for surgical procedures. Until those are available, the industry aspires to 100% use of pain relief for these procedures by 2030. These procedures include dehorning, disbudding, castration, and spaying. The 2021 data shows a 5% increase on the 2020 data.

1.2. Source: ARCBA

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. These figures can be expected to be expressed in the Australian commercial cattle herd with approximately a 5-year lag. This is an increase from 68.3% in 2010, and from 60.1% in 2000.

SNAPSHOT OF ACTIVITIES

Tailored animal welfare strategies for extensive production

A number of animal wellbeing practices are more challenging to execute on extensive properties at scale. This project will address two of the big, complex challenges facing Northern Australian livestock production systems – transitioning from horned to polled genetics, and prevention and managing infectious reproductive diseases in extensive cattle value chains. Challenges experienced in managing large herds across large land mass requires tailored solutions to ensure cost effective, efficient implementation and on-going management. This four year project is co-funded by the Australian Agricultural Company (AACo) and MLA's Donor Company to facilitate producer research, extension and adoption of pain relief for husbandry procedures by 2030.

Novel wound treatment strategies for dehorning of mature cattle

There is demand from the industry to better address pain management for dehorning. Dehorning mature cattle, while not a common practice, can cause pain and distress. In some circumstances current treatment options for mature cattle can fail to adequately ameliorate the pain associated with dehorning, and the potential for bleeding, infection and flystrike that often occurs post-operatively. This project will deliver a multi-disciplinary and collaborative approach to developing novel dehorning wound treatment strategies in response to a huge demand from beef producers for options to address these problems while the polled herd transition occurs.

Biosecurity

15 LIFE ON LAND

Managing the risk of infectious diseases, invasive pests or weeds to safeguard the industry, environment and people.

Indicator	Data	Trend
2.1 Percentage of Australian cattle properties covered by a documented biosecurity plan	**83%** (2021)	🟡

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 cattle producers audited in 2021, 83% of PICs had a documented biosecurity plan. The remaining 17% were required to provide a plan or face being withdrawn from the LPA, which would prevent livestock being sold from that property.

SNAPSHOT OF ACTIVITIES

Lumpy skin disease

The threat of lumpy skin disease (LSD) virus to the Australian beef industry has increased dramatically following detection in early 2022 in Indonesia. The virus was isolated to Africa, 10 years ago, but it has spread rapidly across Europe and Asia, despite efforts to slow its movement.

The heightened threat this disease now poses to Australia has seen the industry and government move quickly to conduct research for diagnostic testing and vaccine manufacture at one, strict quarantine establishment. The Australian Government is working collectively with industry to increase vector surveillance disease detection, and industry and scientific experts are currently reviewing the Australian Veterinary Emergency Plan (AUSVETPLAN)[1],

Australia's nationally agreed approach for responding to LSD is to ensure that Australia is prepared to manage risks associated with an outbreak.

Foot & Mouth Disease

There were 1,247 cases of Foot and mouth disease (FMD) confirmed in four provinces of East Java, Indonesia in 2022. Indonesia is in the process of determining the serotype present so that appropriate vaccine can be ordered. The close proximity of Indonesia and its important bilateral trading partnership is a reminder that industry must adhere to all traceability obligations, including ensuring all documentation is correctly completed and on-farm biosecurity plans are updated.

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, bovine spongiform encephalopathy (mad cow disease), contagious bovine pleuropneumonia, and rinderpest.

[1] https://animalhealthaustralia.com.au/ausvetplan/

CASE STUDY

Dr Tracy Sullivan

President of the Australian Cattle Veterinarians Group

Policy Councillor on the Cattle Council of Australia

A LEADING livestock veterinarian has pointed to human and animal disease outbreaks over the past two years as a salient reminder of the contributing force biosecurity is to the sustainability of the Australian beef industry.

Dr Tracy Sullivan owns and operates Australian Veterinary Semen Morphology, is President of the Australian Cattle Veterinarians Group and Policy Councillor on the Cattle Council of Australia. She said biosecurity could not be overlooked as one of the most important measures of industry's ability to operate in a way that protects the health and wellbeing of people, animals and the planet.

"Biosecurity is critical to keeping a step ahead of our threats and preventing infection or minimising the spread, while reducing the negative impacts on animal wellbeing, productivity and sometimes human health," Dr Sullivan said.

"Holistic sustainability is only achieved through maximising productive efficiency in a humane and ethical manner, while maintaining and improving our natural resources.

"Through facing the threat of diseases, opportunities have arisen for the Australian beef industry to focus on our surveillance on a national and individual farm level.

"Increasing biosecurity awareness, reviewing our processes, and correcting our shortfalls will minimise the impacts of new and all existing disease. Research opportunities to enhance diagnostic processes and improve vaccine technologies will have a flow through potential to improve the management and prevention of multiple exotic and endemic diseases."

Dr Sullivan said disease-free status provided the best chance for Australian livestock producers to optimise the health of their animals while protecting both the wellbeing of Australian citizens and access to global markets.

Longer-term, Dr Sullivan said there was the biosecurity risk of new disease-carrying vectors entering the country, the emergence of new exotic diseases, increased virulence of existing diseases and the risk of antibiotic resistance.

"My top tip for beef businesses is to develop a considered biosecurity plan and implement changes – and repeat new practices until they become routine. Your local cattle vet can also help tailor a plan to your enterprise," she said.

"It's also important to remember to report anything unusual. False alarms are important to national biosecurity as they serve to prove our freedom from disease."

Processing Practices

The processing of animals at facilities consistent with Australian regulations and domestic and international standards.

Indicator	Data	Trend
3.1 Percentage of cattle processed through an establishment accredited under the Australian Livestock Processing Industry Animal Welfare Certification System (AAWCS)	**97.49%** (2021)	🟢
3.2 Percentage of cattle processed in compliance with the Exporter Supply Chain Assurance System (ESCAS)	**100%** (2021)	🟡

DATA EXPLAINED

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

AAWCS is an independently audited certification program to demonstrate compliance with animal welfare standards from receival of livestock, to the point of humane processing. Australia's 50 AAWCS-accredited processing facilities represented 97.48% of the total slaughter for cattle in Q4 of 2021.

More info: **https://aawcs.com.au/**

3.2. Source: Department of Agriculture, Water and the Environment

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.

DAWEs consignments and non-compliance data were used to develop this indicator. There were three investigations involving cattle throughout 2021. All three investigations are still in progress, as are the four outstanding investigations from 2020. Currently, 100% of exported cattle were compliant with ESCAS. Once the remaining investigations are completed, the updated percentage compliance will be reported in due course.

SNAPSHOT OF ACTIVITIES

AAWCS Review

The AAWCS was reviewed by the Animal Welfare Committee, comprised of representatives from state and federal governments, the scientific community, animal welfare organisations, such as RSPCA and Animals Australia, as well as technical experts and industry representatives. The System sets out requirements for the welfare of livestock during processing to enable establishments to demonstrate fulfilment of the regulatory requirements covering the welfare of livestock and ensure good animal welfare outcomes.

INDUSTRY INSIGHT

Mark Harvey-Sutton

CEO - Australian Livestock Exporters' Council

It's now been over a decade since the Australian Government introduced the Export Supply Chain Assurance System (ESCAS).

This regulatory system was created in response to an expectation from the Australian community of increased traceability in international supply chains, greater accountability of exporters and assurance that the welfare of animals was being upheld in global markets.

The industry works to continuously improve the supply chain, with exporters investing millions of dollars into ESCAS supply chains over the years, through customer animal welfare training and livestock handling, infrastructure upgrades, expert advice, and technology implementation.

Australia is unique in this regard, being the only country that closely scrutinises and manages traceability and best practice animal welfare outcomes in international markets. This has led to transformative improvements in animal welfare outcomes for Australian livestock, as well as an indirect improvement for local animals processed through ESCAS supply chains.

While no system is perfect, and there have been isolated incidents over time, ESCAS has been widely accepted and successful as a result of a genuine partnership with our customers. The demand for Australian livestock has continued to be strong and this is testament to the strength of these relationships, and the quality of livestock Australian producers deliver.

Livestock Transport

Handling procedures in transport consistent with Australian regulations and standards, and with international best practice on animal health and welfare.

Indicator	Data	Trend
4.1 Total mortality rate of cattle exported on sea voyages	**0.11%** (2020)	🟡

DATA EXPLAINED

4.1. Source: Department of Agriculture, Water and the Environment

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 1,224 cattle mortalities from 1,082,207 head exported in 2020. There were no reportable incidents between 1 January and 30 June 2021.

SNAPSHOT OF ACTIVITIES

Live export real-time monitoring

The livestock export industry has developed technology to monitor livestock and collect animal welfare data on ships – a first for any livestock industry in Australia – and will use it to meet new reporting requirements. The data will allow researchers to refine recording systems and welfare thresholds, to help identify what levels are considered acceptable or unacceptable for each indicator.

Live export welfare research

The number of animals in a pen, the condition of their bedding, and the amount of ammonia in the air can all have an impact on welfare. A long-term project partnership has been established between the livestock export industry and the University of New England to take a holistic approach to research into these topics. The research will allow industry to understand how stocking density, bedding and ammonia production by sheep and cattle can be managed to improve livestock health and welfare.

Road transport

The Australian Meat Processor Corporation (AMPC) is conducting research into stress levels of animals during road transport. This research will quantify how stress may be impacted by road transport to provide a baseline study on the forces involved in the transport of livestock to processing establishments.

CASE STUDY

TRANSPORTING LIVESTOCK SAFELY – NO MATTER WHAT

From floods to fires to COVID disruption, 2022 has already presented extreme challenges, creating widespread disruption to the national livestock supply chain.

Frasers Compliance Manager and TruckSafe* Animal Welfare Vice Chair, Athol Carter, says it's been a year like no other for transporting livestock. However, these events have also allowed the industry to stress-test transport processes, and pinpoint key aspects needed to transport livestock safely.

Here are Athol's top tips.

COMMUNICATION IS KEY. "The more you communicate and talk to each other, the easier the job is. If you've made a truck booking in advance and there's imminent weather, please be contactable – it's all about working together and sharing the right information from the start."

STAY ALERT. "Producers need to be vigilant about monitoring local routes for their transporters, to alert them to events such as flash flooding. Sometimes producers need to be our eyes and ears locally, and we'll make a call on you to run the roads and check things for us prior to going there – or even during – those predicted rainfall periods."

PLAN AHEAD. "You should have an emergency plan should the worst-case scenario pop up, especially for finished cattle and sheep going to processing out of the paddock and feedlots. Transporters also need to take into account driver rest, amenities and refuelling facilities if the journey is significantly increased due to the weather. If the last few years have taught us anything, it's to be adaptable."

PREPARING LIVESTOCK. "Preparing livestock for their journey in line with MLA's 'Is the animal fit to load?' guide is key to ensuring animals reach their destination safely. Well prepared animals travel better and are prone to less stress-related or animal welfare issues – if in doubt, leave it out."

Health & Welfare

Livestock health and welfare including application of the five domains: nutrition, environment, health, behaviour, and mental state.

Indicator	Data	Trend
5.1 Percentage awareness of the Australian Animal Welfare Standards for Cattle	**99.9%** (2021)	🟢
5.2 Percentage compliance with National Feedlot Accreditation Scheme (NFAS) Animal Welfare Requirements	**99.5%** (2021)	🟡
5.3 Percentage of feedlot capacity with access to shade	**58.9%** (2021)	**N/A**
5.4 Vaccination rates for clostridial diseases	**77%** (2021)	🟡
5.5 Percentage/Number of producers undertaking low stress stock handling training	**17.8%** (2021)	**N/A**

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 AAWCS, and audits show an extremely high level of awareness of this.

5.2. Source: NFAS Audits

The NFAS is an independently audited quality assurance scheme for the Australian beef feedlot industry to demonstrate continual improvement, particularly in relation to cattle welfare and the environment, while guaranteeing the safety and integrity of grain fed beef.

In 2021 there were 366 audits conducted, and two nonconformances were raised against the Animal Welfare element of NFAS.

5.3. Source: ALFA

In November 2020 the Australian Lot Feeders' Association announced a shade policy which seeks all cattle in Australian feedlots having access to shade by 2026. The policy position reflects the sector's proactive and forward-thinking approach, ultimately assisting in the long-term viability and profitability of the industry. The policy will ensure we continue to foster a progressive approach to business operations and demonstrate our collective commitment to the welfare of the cattle in our 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, improve livestock health, improve meat quality for the consumer, and improve occupational health and safety.

SNAPSHOT OF ACTIVITIES

Lifetime Animal Wellbeing Index (LAWI)

In an MLA-funded project, CSIRO is exploring approaches to objectively describe lifetime animal wellbeing. Researchers have engaged extensively with stakeholders, conducted a comprehensive review of existing frameworks and assurance schemes from around the world, and used this information as background for a workshop with a diverse group of research providers. Identified priorities from this workshop were to leverage existing data, to be comprehensive, pragmatic and to ensure stakeholder needs are met. The project will conclude in August 2022.

Animal welfare standards consistency

Industry is seeking greater harmonisation of evidence-based animal welfare practices, through development and progression of the Australian Animal Welfare Standards and Guidelines for Livestock at Processing Establishments. The national livestock processing standards are anticipated to be finalised around mid-2023.

Reducing risk of heat stress

Since its development in 2002, the heat stress risk assessment (HSRA) tool used to assess – and reduce – the risk of heat stress on livestock export voyages has become highly sophisticated. The tool now considers factors such as the type, age and weight of cattle, the ventilation system of vessels, and the weather expected along the route.

The HSRA tool's latest update in 2021 included shifting the software and its underlying parameters to an online platform which can be updated as new data becomes available, making it easier for exporters to identify how many animals of each type can safely be loaded for a specific voyage.

The latest review of the Australian Standards for the Export of Livestock (ASEL) prompted a recommendation that HSRA be used for every voyage crossing the equator. Industry is now working to update the weather data in the model and to understand what is required to apply the tool in other markets.

CASE STUDY

FEEDLOT SHADE PAYS FOR ITSELF

As one of the oldest feedlots in the country, it's no surprise that innovation, animal and staff welfare, and the end consumer are at the forefront of operations at Killara.

Located west of Quirindi on the Liverpool Plains of New South Wales, Killara Feedlot was developed in 1969 when the Australian feedlot industry was just starting to emerge, and since then the Elders-owned facility has expanded to a 20,000-head capacity.

Part of the operation's enduring success has been the installation of shade structures, a process which began almost 20 years ago and now sees all pens have shade erected, allowing all cattle under their care to have access to shade 365 days of the year.

General Manager Andrew Talbot said they wouldn't be able to run a feedlot of that size, in that part of the country, without shade.

It's without doubt a significant undertaking and capital investment, but one which Andrew believes is imperative to animal welfare and business success.

Key to ensuring the investment is maximised, Andrew says, is doing the research beforehand and carefully choosing the direction the shade structure will run.

"The whole area of pen isn't shade. What we try to do is have a slight tilt on the shade to allow the sun to throw a larger shadow.

"Shades we find here work better when they're north-south, not west-east, and as the sun moves from the east to the west it allows the shade to be thrown possibly two to three times as big as the shade structure itself."

Ultimately, Andrew said there are positives and negatives to shade structures of any type, but in the end "it's all about animal welfare".

"That's why so many more companies are now investing in shade technology for feedlots. New developments are seeing some southern feedlots use shedding or like in our case, exploring permanent shade structures that are waterproof, allowing pens to stay dry but still ensuring airflow.

"It's an interesting time with a lot of things to consider, but fundamentally it's about caring for the cattle and ensuring our cattle can handle heat events and still continue to perform.

"I have no doubt shade is fundamental to cattle welfare, which is why we have decided to be proactive and meet community and customer expectations, and at the same time have a more sustainable and profitable business."

Environmental Stewardship

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 stakeholders inside and outside of industry to achieve efficient and sustainable production that respects the environment, protects the welfare of animals, and contributes to the strength of communities.

INDUSTRY POSITION

The Australian beef industry has shown that well-managed natural resources and livestock production are not mutually exclusive. In fact, healthy environments are intrinsically linked to the prosperity of agricultural businesses.

Complementing this, the Australian red meat industry is committed to achieving carbon neutrality by 2030 (CN30).

CN30 sends a clear message to global customers and consumers that the Australian red meat industry is serious about addressing greenhouse gas (GHG) emissions and is a global leader in progressing the sustainability of agricultural production.

Biodiversity

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

15 LIFE ON LAND

Ensuring the conservation and enhancement of plant and animal species, genetic diversity, and natural ecosystems. This includes controlling and minimising the spread of invasive non-native species.

Indicator	Data	Trend
6.1 Percentage of cattle producing land managed for biodiversity outcomes through active management	**43%** (2021)	🟡

DATA EXPLAINED

6.1. Source: ABSF Producer Survey

This figure represents the area of land where on-farm management activities 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

Accurately measuring biodiversity across a landscape is notoriously difficult, and there is currently no agreed, consistent way to do this.

As part of the Carbon Storage Partnership, MLA and Queensland University of Technology have commenced research into accounting for biodiversity as a co-benefit associated with grazing management. Acoustic sensors are being installed at 10 producer sites across Australia to enable animal sound recording for ecological information such as species absence/presence, population density, population structure, community structure, landscape architecture, animal phenology, reproduction period, migration period, species interactions or ecosystem functions.

In addition, MLA is leading the creation of an online tool for grassfed beef producers to verify their biodiversity credentials on-farm. The tool forms part of the Environmental Credentials of Australian Grassfed Beef project, designed to grow trust in Australian grassfed beef and fostering practice change. The concept under development is illustrated below. The project is funded through a grant from the Australian Government Department of Agriculture, Water and the Environment through the National Landcare Program Smart Farming Partnerships program.

New revenues for managing biodiversity

Industry has actively encouraged graziers to participate in Round 2 of the Carbon + Biodiversity Pilot, to be run in six Natural Resource Management regions. The Carbon + Biodiversity Pilot uses a market-based mechanism to provide additional payments to farmers who undertake plantings for carbon sequestration and work to maximise the biodiversity benefits from this activity by planting a mix of species — and looking after that vegetation.

LAND FOR CONSERVATION

There is 7,600,000 ha of cattle producing land set aside for conservation or protection purposes. This is 2.33% of total grazing land, and larger in area than Ireland. Industry is well aware conservation of significant sites is important, and is trying to find the correct balance of land set aside and land used for production*.

*Source: https://www.abs.gov.au/statistics/industry/agriculture/agricultural-commodities-australia/latest-release#data-download

CASE STUDY

First generation Central Queensland cattle producers, Adam and Jacynta Coffey run a pretty tight ruler over every decision they make. It has to make a positive return and it has to increase their productivity and profitability, because they don't have capital reserves to fall back on.

The Coffeys bought into the industry six years ago, purchasing a two-and-a-half thousand hectare failed hardwood timber plantation, outside Miriam Vale in

Central Queensland. They set about transforming it into a grazing property amidst three years of extreme drought.

The Coffeys have demonstrated profit and productivity go hand in hand with ecological outcomes: boosting organic matter and soil carbon and synchronising stocking rates with pasture density and rest periods has significantly improved their productivity and drought resilience.

Soil Health

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Soil health including responsible fertiliser use, soil nutrients, soil loss, ability of soil to retain water and carbon, and the quality of topsoil.

Indicator	Data	Trend
7.1 Percentage of cattle producers adopting practices to improve soil water retention	**64%** (2021)	**N/A**
7.2 Levels of soil carbon sequestration	No national data exists at this point in time. The industry is continuing to investigate methods to accurately report this.	

DATA EXPLAINED

7.1. Source: ABARES

It's difficult to find one indicator which can showcase soil health at a national scale. The ABSF utilises the ABARES Drought Survey to demonstrate 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 top soil, or undertaking conservation-tillage practices. This data is for all broadacre farms. Work is underway to disaggregate the data.

7.2. Source: TBC

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 is a relatively new technology, and trials are currently 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 is a barrier to adoption. The Australian Government is focused on cost reduction initiatives.

SNAPSHOT OF ACTIVITIES

National Soil Strategy

MLA is participating in the Implementation Committee and associated working groups of the Commonwealth's National Soil Strategy, released in May 2021. The Strategy represents a commitment by all levels of Australian governments over the next 20 years, and sets out a preliminary investment framework for the next five years to achieve high level goals and objectives. The National Soil Strategy will support land managers to understand and improve soil health. Improvements in soil health that increase soil organic matter may also contribute to the industry's net zero emissions by 2030 target.

Industry soil strategy

MLA has engaged the CRC for High Performance Soil to develop an investment strategy for soil-related research, development, extension, and adoption to inform future priorities for soil investment and industry impact along the value chain. The project will define a set of key soil indicators and measures for soil function for red meat producers and stakeholders. It will advise MLA on the practical application of these indicators for different agro-ecological zones and production systems to help graziers make decisions, encourage adoption of appropriate soil management practices, and use indicators to report progress within the Australian Beef Sustainability Framework.

IMPROVING SOIL ACIDITY

There are 24 million ha of agricultural soils exhibiting a subsurface soil acidity problem in south-eastern Australia. The loss to agricultural production from soil acidity is estimated to be $1.6 billion annually across Australia. In 2021, 62% of producers were undertaking practices to improve soil acidity levels (eg. lime application).

Groundcover

Ground cover is a key indicator of land condition and refers to pasture plants, native species, and plant and tree leaf litter, that can protect the soil surface from erosion.

Indicator	Data	Trend
8.1 Percentage of natural resource management regions achieving healthy groundcover thresholds	**79.6%** (2021)	🟢

DATA EXPLAINED

8.1. Source: CIBO Labs – E.SUB.0007

This calculation is based on 43 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 2021, as some areas were beginning to break drought, but many were still suffering below average rainfall. Further information on the thresholds are 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

Pasture biomass measurement

Sustainable grazing practices that support livestock businesses to improve productivity through effective feedbase management are a high priority across all regions. Technology advancements now enable all producers to measure feedbase more accurately using remote monitoring data, however connectivity, technology know-how and interpretation of data are some of the barriers to adoption of these opportunities. This research project will commence with a pilot to test remote monitoring data before delivering a service that can provide regular, accurate data for every red meat producer.

Balance of Tree and Grass Cover

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Change in vegetation types associated with beef or feed production, including losses and gains of forests, woodlands and grasslands.

Indicator	Data	Trend
9.1 Percentage of national forest cover gain	**0.62%** (2019-20)	**N/A**
9.2 Percentage of national forest cover loss	**1.24%** (2019-20)	**N/A**
9.3 Percentage of national woodland cover gain	**3.00%** (2019-20)	**N/A**
9.4 Percentage of national woodland cover loss	**1.71%** (2019-20)	**N/A**

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 2019 to 2020 across grazing properties. To put this in perspective, the net change in national woody (forest and woodland) cover extent was -0.11%. At this stage, without regionality and context, these figures are difficult to interpret, and it is unclear if they represent an improvement or decline for this priority. The ABSF is continually investigating how healthy vegetation levels for each region can be represented in this national indicator.

We do know, however, that Australia was suffering from extreme drought in 2019-20, and Eastern Australia was decimated by wildfires in early 2020. This is likely to have impacted gains in woody cover, and potentially increased losses.

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.

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

Industry has encouraged participation in the Commonwealth's Enhancing Remnant Vegetation Pilot, a scientifically robust on-ground trial that aims to improve existing native vegetation on farms and will test biodiversity protocols developed by the Australian National University. Successful farmers would receive payments to manage and enhance significant remnant native vegetation on-farm.

Reforestation

The National Carbon Accounting System (NCAS) was established by the Australian government to provide complete carbon accounting and projections capacity for land based (agricultural and forestry) activities, to report against its international (Kyoto) and national commitments. It is the only system providing nation-wide measurements.

The Queensland Government's State Landcover and Trees Study (SLATs) tracks changes in woody vegetation at a Queensland specific level.

- Australia has the second largest net gain in forest area over the period 2010–2020 among all OECD countries, according to the Food and Agriculture Organization of the United Nations' (FAO) Global Forest Resource Assessment 2020.

- Eastern Australian grazing properties in QLD, NSW, ACT, and VIC increased forest from **18.52% in 2004 to 22.15% in 2019**. Over the past 10 years, there has been an **annual average net forest increase of 2.19% on grazing land.**

- The Australian Government Greenhouse Inventory Report shows that Australian forest area has expanded to the area there was in the early 90s.

- The SLATS data identifies clearing which is unlikely to be permanent conversion of primary forest into grazing land, but the effective management of regrowth. SLATS data also defines a forest as 10% canopy cover, inconsistent with any Australian definitions or the *Vegetation Management Act 1999.*

- These numbers also count forest restoration activities such as weed management and tree thinning when both of these practices are of an ecological benefit. It also does not account for tree loss due to drought.

- A limited amount of clearing in Queensland is "unexplained" and potentially illegal (~0.04% of forested area p.a.). However, actions by the Department of Resources ensure that these forests are restored and not permanently converted to other land uses.

GHG Emissions & Carbon Capture
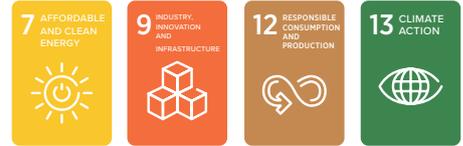
Overall greenhouse gas emissions profile associated with beef production. This includes the generation, mitigation, and sequestration of emissions (e.g. rumination, energy consumption, vegetation management, feed sourcing, sequestration, and soil carbon).

Indicator	Data	Trend
10.1 Percentage total CO_2e reduced by beef industry from a 2005 baseline	**58.21%** (2019)	🟡
10.2 Net emissions: Mt of CO_2e emitted by the beef industry	**48.58Mt** (2019)	🟡
10.3 kg CO_2e emitted per kg liveweight when raising beef	**12.6kg** (2019)	🟢
10.4 kg CO_2e emitted per tonne HSCW when processing beef	**397kg** (2020)	🟢
10.5 Percentage CO_2e captured and reused in processing	**5.8%** (2020)	🟢
10.6 Carbon sequestered in on-farm vegetation (Mt CO_2e)	**20.887** (2019)	🟡

DATA EXPLAINED

10.1 Source: CSIRO – B.CCH.1016

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. Large reductions are a result of land use and land use change and forestry. Enteric methane emissions was also down in 2019 due to the reduced herd caused by drought. 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.1016

Annual emissions have decreased by 9.4 Mt CO_2e since 2018, with the reduction driven by a decrease in emissions from grasslands. This reduction in emissions is associated with a reduction in the area of woody vegetation and forest which has been cleared. There has also been a small reduction in methane emissions from enteric fermentation associated with a decrease in cattle numbers during 2019.

10.3 Source: MLA Project – B.CCH.2109

Data was taken from a 2019 Life Cycle Assessment (LCA) to assess all emissions associated with grazing, feedlotting, and associated activities of cattle production.

10.4 Source: AMPC – V.MFS.0448

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. Work is being undertaken to increase renewable energy use in the sector.

10.5 Source: AMPC – V.MFS.0448

Methane and other gases are able to 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.1016

The cattle industry is able to sequester carbon in on-farm vegetation to reduce net CO_2 emissions, and draw atmospheric carbon. This amount is down on previous years, most likely due to the severe drought most of Australia was experiencing in 2019.

SNAPSHOT OF ACTIVITIES

To deliver activities outlined in the CN30 Roadmap, MLA has driven two collaborative partnerships, the Emissions Avoidance Partnership and Carbon Storage Partnership. The value of investments contracted in the partnerships to date is $48m, with $21m additional expected to be contracted by June 2022.

EMISSIONS AVOIDANCE PARTNERSHIP INVESTMENTS	CARBON STORAGE PARTNERSHIP INVESTMENTS
• development of feed additives that inhibit methane production in cattle, such as 3-NOP and Red Asparagopsis • technologies for delivering these additives to grazing animals, such as via water supply and in lick blocks • development of genetics tools for selection of low methane animals • development of legume-based high quality pastures.	• technologies to build carbon in soils • lower cost soil carbon measurement and management technologies • development of practices to include trees on farms in ways that benefit livestock production.
Recent MLA research has reported 3-NOP can inhibit methane production by up to 90% in feedlot cattle. Work is now underway to investigate whether 3-NOP can be used as a viable methane reduction strategy in Australian grazing systems, including if calves fed the additive receive any lasting reductions in enteric methane production over their life. 3-NOP, which trades as Bovaer® was approved for use in the EU in February 2022 and should be approved for use in Australia in the near future. Industry is working towards the commercialisation of these products.	MLA has achieved some excellent results in its investigation of increasing carbon storage. One research site looking at pasture optimisation techniques to build soil carbon and deliver ecosystem services found water use efficiency almost doubled. Put simply, using simple practices turned rainfall into biomass and soil carbon at almost twice the rate of the buffel grass control paddock.

To download the CN30 Roadmap, please visit **www.mla.com.au**

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[2]), which combines the radiative forcing from current year emissions and historical emissions remaining in the atmosphere.

Climate neutrality is an important step towards carbon neutrality. The Australian sheep industry has already achieved a Climate Neutral position, and the beef industry isn't far behind.

Water

| 6 CLEAN WATER AND SANITATION | 12 RESPONSIBLE CONSUMPTION AND PRODUCTION | 14 LIFE BELOW WATER |

Water use by source and consumption, particularly in areas of water scarcity and for feed production. This also includes water efficiency and water quality.

Indicator	Data	Trend
11.1 Litres of water used per kilogram of liveweight for raising cattle	**486 L/kg** (2019)	🟢
11.2 Kilolitres of water used per tonne HSCW when processing beef	**7.6 kL/t** (2020)	🟢

DATA EXPLAINED

11.1. Source: MLA – B.CCH.2109

Data was taken from a 2019 LCA that assessed resource usage associated with grazing, feedlotting, and associated activities of cattle production. This figure is inclusive of cropping irrigation, pasture irrigation, livestock drinking water, and associated supply losses - predominantly 'green water'.

11.2. Source: AMPC – V.MFS.0448

The 2020 water use intensity of 7.6 kL / t HSCW is a 13% reduction from the 2008/09 figure of 8.7 kL / t HSCW.

SNAPSHOT OF ACTIVITIES

Modernisation of wastewater treatment & bio-resource recovery

An AMPC project is driving a circular economy approach to recovering wastewater. The project is developing an interactive digital design for modular wastewater treatment to assist red meat processors transition from wastewater treatment facilities to resource recovery plants. The project also focusses on ensuring environmental compliance and reducing overall carbon footprint, achieved through reduction of nutrient emissions and diverting waste from landfill to the production of bio-energy and other bio-resources.

Advanced water-recycling trials

AMPC delivered the first containerised microfiltration, ultrafiltration, reverse osmosis water recycling unit to a meat processing plant in Queensland in 2022 as part of a pilot project to recycle water for non-potable uses. The project aims to help build confidence and capability around creating low-cost Class A recycled water for re-use in plant heating and cooling systems, and further drive down water intensity.

GREEN – BLUE – GREY WATER

When measuring water use, it's important to understand the differences between green, blue, and grey water footprints.

• Green water is water from precipitation that is stored in the root zone of the soil and evaporated, transpired or incorporated by plants – think green grass.

• Blue water is water that has been sourced from surface or groundwater resources and is either evaporated, or incorporated into a product – think blue lakes.

• Grey water is the amount of fresh water required to assimilate pollutants to meet specific water quality standards – think grey waste water.

Waste

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
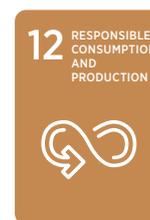
Solid and liquid waste streams from across the value chain. This includes food waste and packaging.

Indicator	Data	Trend
12.1 Kilograms of solid waste per tonne HSCW when processing beef	**11.9kg** (2020)	🔴
12.2 Tonnes of food waste recovered along the supply chain	**2.39m** (2021)	N/A

DATA EXPLAINED

12.1. Source: AMPC – V.MFS.0448

This indicator refers to all forms of waste when processing beef. The 2020 data is higher because:

- 2015 data is based on solid waste only that was sent to landfill; the 2020 Environmental Performance Review reported a much wider scope of wastes.

- COVID has seen a big increase in non-recyclable products like face masks, gloves and wipes going to landfill.

12.2. Source: FIAL 2021 National Food Waste Baseline

The beef industry works tirelessly to ensure as much of the beef carcase 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. This baseline study was done as part of the Australian Government's commitment to halve food waste in Australia by 2030.

SNAPSHOT OF ACTIVITIES

Whole of beef supply chain waste mapping and interventions

An Australian Food Cold Chain Council study estimated 155 thousand tonnes of meat, valued at $670 million, is wasted each year pre-retail by poor cold chain control. Research will quantify this waste more accurately, identify the root causes of waste in the supply chain, and propose solutions that can be adopted by industry. We estimate this project can reduce pre-retail waste by 15%. Reducing waste will also reduce greenhouse gas emissions per kg of beef.

Consumer refrigerator data, behaviour and waste reduction for red meat

Meat date labels set by retailers are based on conservative consumer fridge data from 20 years ago. As a result, an estimated 26% of households throw away meat each week based on the date label alone – without knowing sight, smell or taste can also be used to test food is safe to be consumed. This project will provide a baseline on consumer refrigerator performance and behaviour and the data will be used to assist industry including retailers and regulators to revaluate the very conservative Best Before dates. Reducing food waste, without compromising food safety, is a major opportunity to reduce GHG and resource intensity in all food supply chains.

$ Economic Resilience

The industry's Red Meat 2030 strategic plan aims to increase revenue from ecosystem services by 2030 when compared to a 2020 baseline, 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.

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.

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.

INDUSTRY POSITION

Red Meat 2030, which sets the high-level strategic direction of the red meat industry, identifies that economic resilience can be improved by:

- Identifying and developing remuneration mechanisms for the delivery of ecosystem services provided by industry, including biodiversity, carbon sequestration, pest and weed management

- reducing tariff and quota barriers to trade

- reducing non-tariff barriers to trade

- building on the existing approach to biosecurity and food safety

- promoting investment in industry

- remaining competitive within global markets. The industry aims to see capital investment in the industry tripled by 2030 compared to a 2020 baseline.

Climate Change Resilience

2 ZERO HUNGER

13 CLIMATE ACTION

Responding to a changing climate (including extreme events) through adaptation initiatives. This priority focuses on the industry's ability to operate in different climatic seasons.

Indicator	Data	Trend
13.1 Climate adjusted average annual growth rate in Total Factor Productivity - compared to the base year of 100 (1988/89)	**118** (2019-20)	🟢

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, 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.

Climate adjusted TFP of 118 indicates an 18% increase on production for the 2019-20 when compared to 1988-89.

SNAPSHOT OF ACTIVITIES

Extreme climate event forecasting

The Forewarned is Forearmed (FWFA) project is providing the agricultural sector with the first ever forecasts of extreme climate events for the weeks to months ahead.

Red meat producers are familiar with forecasts of above or below average temperature and rainfall. Now, the Bureau of Meteorology is responding to requests to inform farmers if temperature and rainfall forecasts are extremely higher or lower than average. A red meat Industry Representative Group is providing input to the Bureau of Meteorology to design forecast products that are user-friendly and provide input to short term operational decisions (1-7 days) influenced by weather forecasts, tactical decisions (weeks and months ahead) influenced by seasonal climate forecasts and long term strategic thinking (years to decades) that uses historical climate data and climate change projections.

This MLA supported project is funded through the Australian Government Department of Agriculture, Water and the Environment as part of its Rural R&D for Profit program and project partners.

Productivity
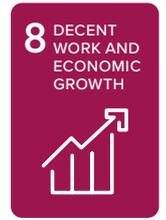
Farm and processor output value, cost of production, nutrient density, and resource efficiency (i.e. consumption of natural resources energy, water, waste and land use).

Indicator	Data	Trend
14.1 Total Factor Productivity - compared to the base year of 100 (1977/78)	**109** (2019-20)	🟡
14.2 Cost of beef produced on Australian farms	**731 c/kg AUD** (2020)	🟡

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

- the same amount of output being produced using less input.

A national TFP of 109 shows production efficiency increased 9% 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

BeefLinks

BeefLinks is a four-year research partnership with producers, researchers, businesses and state agencies that aims to develop a greater understanding of opportunities to enhance productivity and value along the WA red meat supply chain, in line with consumer expectations of beef production.

One current BeefLinks project has demonstrated effective containment of animals within virtual fences in the remote regions of the Pilbara. Virtual fencing — an animal-friendly system that uses collars and wireless technology to confine or move animals without physical fencing — has the potential to improve livestock productivity and landscape health in large rangelands properties by allowing targeted grazing, keeping cattle away from sensitive areas of the landscape, or moving cattle more efficiently and safely when mustered. Emerging technologies to monitor behaviour, movement and grazing times, which can all influence productivity, may also be integrated with virtual fencing technology in the future.

Northern Breeding Business (NB2)

NB2 is focused on improving reproductive efficiency of the northern breeding herd through three key pillars:

1. **Feedbase** – optimising feed production for a breeding herd in a cost-effective manner

2. **Herd management** – enhancing breeding herd performance through improved systems and genetics

3. **Sustainability** – exploring issues related to managing the rangeland and the environment.

Six pilot producer groups have been engaged across northern Australia with plans to have 250 beef businesses participating by 2026.

SNAPSHOT OF ACTIVITIES

Leucaena Projects

The most productive and sustainable legume to incorporate into grass pastures for northern Australia is Leucaena, as it can double productivity and profitability, when compared with the performance of improved grass pasture alone. New estimates from an MLA-supported Queensland Department of Agriculture and Fisheries project estimates that up to 27.3M ha of land in northern Australia could viably support Leucaena-grass pasture grazing systems. The current planted area consists of about 130,000 ha.

MLA has invested in a number of Leucaena projects, including trialling a sterile Leucaena variety which will allow beef producers to take advantage of improved productivity while protecting the natural resource base and preventing weed spread. Field trials are currently underway.

CASE STUDY

Biodiversity and productivity go hand in hand at Mt Ringwood Station, south of Darwin, where good land and livestock management techniques designed to lift productivity have also seen the local Gouldian Finch population flourish.

Mt Ringwood owner Markus Rathsmann says a focus on breeder productivity and reducing mortality rates has meant lower stocking rates can be run with a high return.

"Good animal husbandry and business practices can lead to good environmental outcomes at the same time," he said.

"A key part of improving productivity on the heavily leached soils is a feed supplementation program to ensure adequate phosphorus, minerals and protein are available for the increasing percentage of the herd that are lactating."

"We also burn this country earlier in the season than previously. This produces a cooler burn, which has made a real difference to the native pastures and biodiversity here when stimulating pasture growth," says Mr Rathsmann.

"A station like Mt Ringwood has some robust biodiversity attributes, and this combined with beef production provides that sustainable funding model through agriculture required to maintain the ecosystems."

Profitability

| 2 ZERO HUNGER | 8 DECENT WORK AND ECONOMIC GROWTH | 10 REDUCED INEQUALITIES |
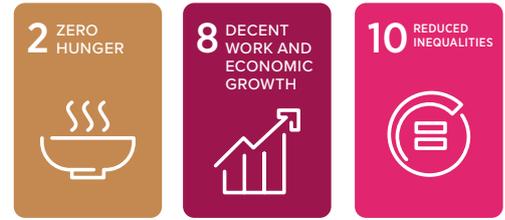
Profitability along the beef value chain defined by the industry rate of return and its relationship to overall operator livelihood.

Indicator	Data	Trend
15.1 - Farm business profit at full equity (expressed as rate of return) - including and excluding capital appreciation - all, and top 25%	**ALL PRODUCERS** **Including / Excluding** **3% / 0.6%** **TOP 25%** **Including/Excluding** **7.3% / 3.6%** (5 year rolling average 2016-2021)	●

DATA EXPLAINED

15.1. Source: ABARES

This is a five year rolling average ending FY2020-21. 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

Beef producer profitability survey

The average rate of return (excluding capital appreciation) of Australian beef farms was below 1% in 2020/21, following two years of negative rate of return due to severe drought. Average rate of return for beef farms is expected to reach 2% in 2021/22 – the highest level in five years - reflecting favourable seasonal conditions and strong cattle prices.

Average beef farm profits were $100,561 in 2020/21, supported by high cattle prices and a lower reliance on fodder.

Analysis of regulation in the livestock export industry

Livestock exporters must comply with substantial regulatory requirements set by the Australian government. These are outlined in the Export Control Act 2020, the Export Control (Animals) Rules 2021, the Australian Standards for the Export of Livestock (ASEL) and the Exporter Supply Chain Assurance System (ESCAS).

The Australian livestock export industry supports regulatory requirements and prioritises the health and wellbeing of animals. This project will analyse the significant business costs (time, labour, regulatory fees) associated with ensuring compliance, and explore opportunities where the costs incurred by livestock exporters could be better aligned to address risks and improve efficiency across the supply chain. It will also provide recommendations and guidance on implementing reforms to ensure a modern regulatory and certification framework for the livestock export industry that upholds animal welfare and allows Australia to be cost-competitive with other exporting countries with less stringent requirements.

Market Access

2 ZERO
HUNGER

17 PARTNERSHIPS
FOR THE
GOALS

Market access and barriers to trade, including both tariff and non-tariff trade barriers.

Indicator	Data	Trend
16.1 Costs of technical trade barriers on beef exports	**$1.7bn** (2021)	🟢
16.2 Percentage value share of Australian beef and live cattle exports covered by one or more preferential trade agreements	**91.1%** (2021)	🟢

DATA EXPLAINED

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

Technical trade barriers such as the use of import permit restrictions, failure to grant export clearance, or unnecessary phytosanitary rules represent significant costs on Australian beef exports. This updated figure represents a 15% decrease in the same technical trade barrier costs captured in a 2017 survey. While this reduction is a small step in the right direction, the cost of new barriers that have emerged since 2017 are not included in this data.

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

Preferential (or free) trade agreements provide access to a market beyond what is granted via the World Trade Organisation. While these negotiated agreements have significantly reduced the tariff and quota barriers Australia faces in export markets, in some cases a preferential trade agreement may still retain a (reduced) or transitional trade barrier.

SNAPSHOT OF ACTIVITIES

Free trade agreements (FTAs)

While the vast majority of Australian beef exports now enter markets under preferential terms, the building blocks of the rules-based global trading system are being undermined by growing geopolitical tensions and renewed calls for protectionism. In this environment, future multilateral trade reform via the World Trade Organisation appears more remote, and, by extension, negotiating high-quality FTAs is more critical.

The signing of the Australia-United Kingdom Free Trade Agreement (A-UK FTA) at the end of 2021 marked a significant step to restoring access to what had been a key market for Australian beef exports. Once ratified, the A-UK FTA will deliver a ten-fold increase in tariff-free Australian beef access to the UK in year one. This will transition to tariff and quota-free trade over a fifteen-year period.

FTA negotiations are ongoing with the European Union and were launched with the United Arab Emirates in 2022. While the recent signing of the Australia-India Economic Cooperation

and Trade Agreement (AI-ECTA) improved access for some red meat products, negotiations are ongoing for a Comprehensive Economic Cooperation Agreement.

Ongoing challenges

Australian beef exporters have benefitted from some technical trade barriers being alleviated in recent years – notably, extensions to the required shelf life on imported chilled and frozen beef into key Middle Eastern markets – as a result of industry research and advocacy. However, other barriers and trade frictions have emerged and, in many instances, been exacerbated by the challenges of COVID-19. Of note, a string of Australian beef export establishments have been suspended from China – the largest buyer of beef on the global market – for various technical reasons over the last two years.

In addition, the heightened spread of animal disease around the world highlights the importance of robust biosecurity measures and livestock traceability systems to maintain access to markets.

People & Community

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.

INDUSTRY POSITION

The industry wants people to see being part of the Australian red meat and livestock industry as attractive now and into the future. By 2030, the industry aims to increase training and upskilling rates to ensure we have the skills we need, and to increase the diversity of our industry to make it a more inclusive place to work.

This will be achieved by:

• Attracting and retaining good people

• Developing skilled and capable people

• Enabling practice change

• Providing a safe and healthy workplace across the supply chain.

The industry also wants people to feel good about eating Australian red meat. By 2030, industry wants our customers, consumers, and communities to recognise the vital role our industry plays in food production and food security, and trust us to deliver high value, high quality products.

This will be achieved by:

• Educating and advocating for Australian red meat

• Responding to our audience

• Positioning red meat as a protein of choice

• Identifying high-value opportunities.

Food Safety & Quality

2 ZERO HUNGER

8 DECENT WORK AND ECONOMIC GROWTH

All aspects of food safety, quality, product integrity, and traceability consistent with standards.

Indicator	Data	Trend
17.1 National Average MSA Index	**57.62** (2020-21)	🟡
17.2 Overall compliance with the National Residue Survey Australian and International Standards for Cattle	**99.96%** (2020-21)	🟢

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. The system is based on almost 1.2 million consumer taste tests by more than 171,000 consumers from 11 countries and takes into account all 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 carcase. It is a consistent benchmark which can be used across all processors, 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

Improving cold chain monitoring

Incorrect storage temperatures in warehouses and transportation can lead to a shorter shelf life than expected for chilled beef products. MLA has brought together domestic and export suppliers, data logger manufacturers, and scientists from the University of Tasmania to provide real-time visibility to prove what is happening to product in the supply chain and how much poor temperature control has reduced shelf life. As a result, some exporters have seen a 95% reduction in the number of claims by customers for poor temperature control. Many more consumers can now be guaranteed a great eating experience because integrity of the cold chain has been improved.

Increasing MSA adoption

In 2020-21, the MSA program achieved a major milestone, with MSA graded cattle now representing more than half of the national adult cattle slaughter, at 53%, up from 46% in 2019-20. For MSA-registered beef producers, the program delivered an estimated $157 million in additional farm gate returns for the year.

CONSUMER SENTIMENT

In 2021, 60% of Australian domestic consumers considered Australian beef to be full of flavour, and 47% believe it was of a consistently high quality. Additionally, 61% of domestic consumers trusted the safety of Australian beef. This represents an increase of 1% for both flavour and safety from 2020, and a decrease of 1% for quality.

CASE STUDY

UNLOCKING VALUE FROM MSA DATA

Running 4,000 head of Brahman and Brahman-cross cattle across nearly 18,000 hectares near Banana in Central Queensland, Robert and Melinee Leather, along with their son Adam and daughter in-law Chloe, have found MSA feedback invaluable in tracking the performance of their livestock.

"We've been successful in using our MSA data to identify the impact nutrition has on the performance of our cattle, and we monitor carcases coming off different feed sources," Melinee said.

"Analysing data from 2016-19, it was clear that MSA dropped during dry spells.

"Combined with things like low stress stock handling and selecting animals on temperament, we graze animals across a mix of buffel, bluegrass, Mitchell grass and Leucaena to get the best results we can, regardless of season."

The next step Melinee believes can drive vast improvement is being able to track MSA scores for individual animals.

"We know that we can get animals returning a really good MSA score, but with a herd of our size it's difficult to pinpoint the genetics of that animal," Melinee said.

"We're hoping to be able to follow this on an individual animal level in the future, so we can use genetics that we know will perform."

Nutrition

2 ZERO HUNGER

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

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

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.

Its is an excellent source of 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 low in sodium.

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

SNAPSHOT OF ACTIVITIES

Nutrition communications

MLA has published a series of reports that provide direction for nutrition communications about the consumption of Australian red meat in a sustainable diet. The findings, based on Australian evidence, suggest:

- Adoption of new technologies and better production practices as outlined in the ABSF has the greatest potential to reduce the environmental footprint of Australian beef.

- Avoiding food waste by eating Australian beef in healthy, balanced meals in line with dietary guidelines is a practical way to recommend its consumption in a sustainable diet. The reports and research underpinning the findings, as well as nutrition resources for promoting the benefits of Australian beef in healthy, balanced meals are available on the MLA Healthy Meals website.

Red meat three to four times a week

Eating serving sizes of lean red meat ranging from 100 to 200g (raw weight) in healthy, balanced meals three to four times a week is a practical way to enjoy recommended amounts in a healthy diet. The Australian Dietary Guidelines recommend 455g per week, cooked weight, equivalent to 650g per week, raw weight.

Feeding the World

In 2021, Australia continued to play a pivotal role in supplying a nutrient-rich source of dietary protein to the world, delivering beef for approximately 32.3 billion meal portions of red meat.

Work, Health & Safety
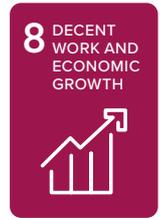
Healthy and safe conditions for people in the industry (including mental health, occupational illness, and exposure to chemicals).

Indicator	Data	Trend
18.1 Notifiable fatalities (five-year totals)	Farms - **34** Feedlots - **1** Processing - **3** (2016-2020)	🟡
18.2 Lost time injury frequency rate (number of claims per million hours worked)	Farms - **12.9** Processing - **16.5** (2018-2019)	🟡
18.3 Global Life Satisfaction Index	**76.6** (2020)	🟡

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 work day) 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 76.6 for graziers compares to the overall Global Life Satisfaction for Australia of 70.4.

SNAPSHOT OF ACTIVITIES

Farmsafe Australia launches a new strategic direction

Farmsafe Australia has released its National Farm Safety Education Fund Strategy, aimed at significantly reducing injuries and fatalities in agriculture by 2030. The Strategy calls for collaborative industry action across a range of work, health and safety impact opportunities. Five key impact opportunities have been identified as targets for further investment:

• Leadership and Cultural Change

• The Next Generation of Farmers

• Physical and Psychological Wellbeing

• Industry Endorsed Training and Continued Learning

• Evidence and Incentivisation.

Farmsafe Australia will report annually, through the Safer Farms Report, to measure performance against the Strategy and to ensure delivery of programs and initiatives that genuinely increase safety on farm.

New standards for quad bikes

Quad bikes are a major contributing factor to farm accidents. From October 2021, all general-use model quad bikes must at the point of sale have an operator protection device (OPD) that is either fitted into the bike or integrated into its design. They must also meet the minimum stability requirements of lateral stability and front and rear longitudinal pitch stability.

CASE STUDY

MENTAL HEALTH A CRITICAL STEP TO IMPROVING FARM SAFETY.

Farmsafe Australia is shining a spotlight on the importance of adopting more effective and supportive farming practices that improve the safety and well-being of farmers and their communities.

Farmsafe Chair, Charles Armstrong, has encouraged members of farming communities to seek help from family, friends, and colleagues during challenging times or periods of significant stress.

"It is a common characteristic for farmers to put up a strong facade when they are experiencing social or financial difficulty. While Australians take pride in our successes, we can also neglect our own mental and physical well-being when stress sets in," Charles said.

Farmsafe Australia says families naturally tighten their already stretched financial budgets during times of hardship. Upgrades to farming equipment and routine maintenance may be overlooked and combining this with stress-induced distraction frequently results in farm-related injuries or fatalities.

"We must take active steps to dispel the stigma associated with mental health issues and support each other to speak up when we feel overwhelmed with the stresses associated with working and living on a farm. By failing to improve understanding of mental and physical health on farms, we will subsequently fail to improve safety and well-being which is directly correlated."

For more information on farm safe practices visit **www.farmsafe.org.au**.

Labour Practices

8 DECENT WORK AND ECONOMIC GROWTH
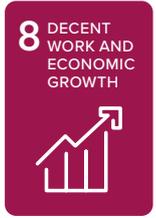
Labour practices and fair work for all workers including: freedom of association, safeguarding seasonal and casual workers, and freedom from modern slavery.

Indicator	Data	Trend
19.1 Fair Work Ombudsman Compliance Notices Issued (ANZSIC class Beef Cattle Farming (specialised)).	**6** (2020-21)	N/A

DATA EXPLAINED

19.1. Source: Fair Work Ombudsman

The Fair Work Ombudsman (FWO) is responsible for promoting compliance with Australian workplace laws, educating 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 52,410 agricultural businesses involved with cattle in Australia in 2020/21, six compliance notices were issued.

SNAPSHOT OF ACTIVITIES

Commitment to Prevent Workplace Sexual Harassment

The NFF Members' Council adopted the Industry Commitment to Preventing Workplace Sexual Harassment in May 2021. This document represents the agricultural sector's firm, zero-tolerance stance on workplace sexual harassment. Its principles will form the basis of planned future actions intended to understand, identify and prevent sexual harassment on farms and in other agricultural workplaces. Accordingly, the NFF and its Members commit to an approach based on the following principles:

- Recognition of and respect for the rights of each individual under the law

- Adoption of patterns of behaviour that are courteous, respectful, and which promote appropriate boundaries between individuals

- Promotion of a culture of mutual care and respect within workplaces

- Zero tolerance for criminal and/or sexual misconduct.

Industrial Relations

The NFF represents the farming sector in annual wage decisions, ongoing workplace relations reforms, workforce deregulation and flexible workplace relations, and works actively to address the chronic labour shortage in regional Australia.

Community Contribution

8 DECENT WORK AND ECONOMIC GROWTH
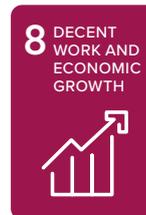
Contribution the industry has nationally and regionally on Australian communities, including Indigenous engagement (e.g. economic value, direct employment).

Indicator	Data	Trend
20.1 Total people employed directly or indirectly in the red meat and livestock industry	**444,800** (2020)	🟡
20.2 Beef farming, feedlot, and processing Gross Domestic Product	**$12.99bn** (2019-2020)	🟡
20.3 Getting involved in the community index	**3** (2020)	🟡

DATA EXPLAINED

20.1. Source: MLA State of the Industry Report 2021

A total 195,800 people were directly employed in the industry, in addition to a further 249,000 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 2021

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 3.0 for graziers compares to the overall Australian score of 2.7. This is most likely due to the reduction in community events during the COVID-19 pandemic.

SNAPSHOT OF ACTIVITIES

Community Heroes

Each year, ALFA presents the Community Heroes Award to recognise and reward those feedlots that are actively nourishing their local communities and environment. Past winners have undertaken initiative such as:

- Outreach and engagement with local indigenous groups, schools, aged care, disabled groups

- Working with local council to improve parks and recreation facilities in the area

- Working with local clubs or show society to improve facilities for greater attendance

- Donating cattle, staff, feed etc to local initiatives such as competitions, camp drafting etc

- Flexible working arrangements so that staff can contribute to a local community initiative.

TRUST IN FARMERS

Australian consumers have greater trust in Australian farmers, than they do engineers, teachers, lawyers, and journalists. In 2021, farmers were scored 72 on the spectrum of trust, equivalent to scientists, and just below doctors on 76.

CASE STUDY

OBE ORGANIC RECONCILIATION ACTION PLAN

OBE Organic, Australia's oldest organic beef marketing company owned by family farmers in the fabled Channel Country, is one of just a handful of agribusiness to have a Reconciliation Action Plan (RAP).

RAPs provide a simple framework, based around core pillars of relationships, respect and opportunities, for organisations to take meaningful action to advance reconciliation with Aboriginal and Torres Strait Islander peoples.

OBE Organic's first RAP was endorsed by Reconciliation Australia in 2017. A working group including Joyleen Booth, a Wangkangurru woman and an OBE Organic producer from Murnpeowie Station in South Australia and Amy Brooks, a Wulli Wulli woman who has over fifteen years' experience in the Australian beef and food industry, adapts RAP templates to support the company's strategic plan.

Joyleen and Amy say RAPs benefit Indigenous Australians and the organisations that use them.

"I think RAPs are fantastic," says Joyleen. "OBE Organic has learnt so much in the reconciliation journey. I don't mind if other businesses don't have a RAP, but given the contribution of aboriginal stockmen and stockwomen to the development of the pastoral industry – why wouldn't you want to acknowledge that? Why wouldn't you want to use a simple process that signals to others you want to learn and show respect?"

"RAPs create an inclusive space for Indigenous Australians within industry," says Amy. "They are a critical element necessary to sustain inclusion efforts and highlight to Indigenous Australians that their respective employer or future employer has taken meaningful action to advance reconciliation."

OBE Organic Managing Director Dalene Wray makes clear that while having a RAP is something she sees as the right thing to do, it also creates a better workplace.

"A RAP requires you to have policies and programs in place to make your workplace more inclusive, and to be more aware and respectful of Australia's Indigenous culture," she says. "The thing is, if you take steps to make a more welcoming workplace better for Indigenous peoples, the same steps make a workplace better for everyone. Having a RAP is probably one of the most powerful things you can do to support the overall diversity of your organisation."

Or as Joyleen puts it: "The better we understand each other, the more respect we show, the kinder we will be. There is a real gap in Australia and real problems that can only be solved by a concerted effort. Having a RAP is a way of taking serious action, but ultimately having a RAP is good for everyone."

Diversity

| **5** GENDER EQUALITY | **8** DECENT WORK AND ECONOMIC GROWTH | **10** REDUCED INEQUALITIES |

Ensuring non-discrimination, inclusivity, gender diversity, cultural and religious diversity, and Indigenous people.

The industry acknowledges the importance of a culturally and religiously diverse workplace, and the benefits this brings to a sustainable industry. Measurement of these attributes is not currently possible, however the Australian beef industry is committed to an inclusive workplace.

Indicator	Data	Trend
21.1 Percentage of women and men in the workforce	Beef Farms - **41.9 % women, 58.1% men** Beef Feedlots - **N/A** Processors - **28.3% women, 71.7% men** (2021)	🟡
21.2 Age breakdown of the workforce	**18-24: 12.2%** **25-34: 13.7%** **35-44: 14.2%** **45-54: 16.9%** **55-64: 22%** **65+: 21%** (2021)	N/A
21.3 Percentage of Indigenous employment in the workforce	**2.1%**	🟡

DATA EXPLAINED

21.1. Source: Workplace Gender Equality Agency

While there are limitations with the accuracy of data for this indicator due to current sample sizes, these results show a steady increase in the female representation in farms and processors. Feedlot specific data is currently unavailable.

21.2. Source: ABSF Producer Survey

Without five-yearly ABS census data being available, data for these indicators has been sourced from the producer survey. We recognise this is not the most accurate data, and these results should only be used as an estimate until the 2021 census data is available.

21.3. Source: ABSF Producer Survey

This data comes from the producer survey, where respondents indicated that 97 of 4,627 employees were of Aboriginal or Torres Strait Islander heritage. We recognise this is not the most accurate data, and these results should only be used as an estimate until the 2021 census data is available.

SNAPSHOT OF ACTIVITIES

Indigenous employment

For specialist beef farms in the Northern Territory, Indigenous employment accounted for 10.7% of the total employment, while in north west Western Australia, it was 15%.

CASE STUDY

NT REAL JOBS PROGRAM

An example of the beef industry increasing capacity amongst Indigenous Australians is the Pastoral Real Jobs Program, operated by the Northern Territory Cattlemen's Association (NTCA).

Through the program, NTCA has provided training and job opportunities to more than 250 Indigenous people, providing them crucial life skills to secure employment within the industry.

Alice Springs-born Lenita Nellie Pepperill Turner, 18 was selected to participate in the 2021 Pastoral Real Jobs Program.

Ms Turner said a vocational course at school that involved horse work inspired her to seek out career opportunities within the pastoral industry.

"I've taken a great interest in station work, and I want to gain more knowledge and work on stations to see how they operate," she said.

"I hope the Real Jobs Program will give me the skills I need to make a career for myself within the cattle industry and I want to show other young women that the cattle industry has opportunities for everyone. I am hoping to become a good role model for my sisters so they follow my footsteps into the industry."

CASE STUDY

MEAT BUSINESS WOMEN

Meat Business Women (MBW) is a women's advocacy networking group founded in the United Kingdom and brought to Australia in 2018 by the Australian Meat Industry Council (AMIC) as part of its commitment to support and encourage women to join our industry

MBW provides networking events, conferences and mentoring courses for all women working within the post farm-gate meat supply chain, including processors, wholesalers, retailers and smallgoods manufacturers.

Its objectives are to:

• Develop the image, culture and landscape of the meat industry to make it more attractive to female talent

• Nurture new female entrants into the sector through networking, education and mentoring

• Skilfully improve networking.

Antimicrobial Stewardship

Maintaining the efficacy of antimicrobials through judicious use, to abate adverse effects in humans and animals.

Indicator	Data	Trend
22.1 Percentage of feedlots covered by an antimicrobial stewardship plan	**62%** (2021)	🟡
22.2 Percentage of compliance with antibiotic Maximum Residue Limits	**99.9%** (2020-21)	**N/A**

DATA EXPLAINED

22.1. Source: AUS-MEAT Antimicrobial Survey 2021

The Antimicrobial stewardship guidelines for the Australian cattle feedlot industry are included as a requirement of the National Feedlot Accreditation Scheme (NFAS), which has been in operation in the Australian feedlot industry for more than 25 years. NFAS was the first Quality Assurance program to be developed for Australian agriculture and is independently managed by AUS-MEAT.

22.2. Source: National Residue Survey

Targeted animal product residue monitoring programs – such as antibiotics – are designed to meet particular 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 antimicrobial stewardship guidelines

The feedlot industry has always taken a proactive approach to the utilisation of antimicrobials. In 2018 the industry was one of the first in the world to launch formal guidelines to preserve the efficacy of these important tools to effectively manage animal health and wellbeing. Since the release of the guidelines, the industry has been able to report a consistent increase in the implementation of the voluntary stewardship guidelines.

From 1 January 2022 the guidelines became mandatory: an auditable requirement of NFAS, the feedlot industry's critical oversight and compliance program.

Measurement of antimicrobial use

Measurement of antimicrobial use plays an integral role in their effective management. MLA has developed a tool for antimicrobial usage that allows producers to record the antibiotic product names and pack sizes, and the number and size of animals they have, to accurately calculate antimicrobial use. Work is now being done to encourage adoption across all beef raising systems so that a comprehensive measure of antimicrobial use can be made.

Antimicrobials and the environment

The role of the environment in the spread of antimicrobial resistance is essentially unknown. The beef industry, in conjunction with other animal industries, with funding from DAWE, is exploring the ability of the industry to reduce antimicrobial resistance risks on-farm and in feedlots. Guidelines to mitigate resistance development in farms and feedlots will be an outcome of this project.

Capacity Building

13 CLIMATE ACTION

Attraction of workers, training and development, and succession planning within the beef industry.

Indicator	Data	Trend
23.1 Number of traineeships and apprenticeships enrolled and completed	Commenced/Completed (2021) Farms - **1816 / 659** Feedlots - **49 / 25** Processing - **3914 / 1325**	🟢
23.2 Percentage of industry workforce with a higher education qualification	**36.5%** (2021)	🟡
23.3 Number of participants undertaking MLA, LiveCorp, AMPC, or Peak Industry Council training	**10,468** (2021)	**N/A**

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: ABSF Producer Survey

This data comes from the producer survey, where respondents indicated that 1,690 of 4,627 employees held higher education qualifications.

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

Feedlot TECH

The Australian Lot Feeders' Association (ALFA) has been working to provide the Australian feedlot sector, its businesses and current and prospective employees with clear career pathways for the attainment of skills through training, professional development and support networks.

Launched in October 2021, Feedlot TECH will assist the feedlot sector to attract, retain and grow the capacity of the feedlot workforce. Feedlot TECH is an online training hub that provides access to feedlot-specific training, career pathways, resources, skills and professional development opportunities specific to the Australian cattle feedlot sector.

Producer training

In 2020-21, 8,258 producers engaged in MLA adoption programs, impacting over 4.4 million head of cattle and 72.9 million hectares of agricultural land. An example of the benefits comes from producers participating in the Profitable Grazing Systems Program, who reported that on average they received an additional annual net benefit of $18/ha as a result of their learned experiences.

Animal Welfare Training in Indonesia

The Indonesian Animal Welfare Officer's Forum (Forum AWO) is a network established *'to ensure animal welfare in the Indonesian cattle industry'*. The network is a volunteer run collaboration of importers of Australian Cattle, Feedlotters & Exporter staff active in the Indonesian supply chain. The network spans 13 regional zones across Indonesia, represented by over 100 members.

The FAWO runs on the ground training sessions and workshops to educate and improve skills of supply chain participants in relation to animal welfare, livestock handling and Australian regulations. The Forum also acts as a network to connect the supply chain by sharing information and building relationships, to ensure continuous improvement in animal welfare outcomes for Australian livestock.

CASE STUDY

TRAINING BOOSTS PROFITABILITY

Operating an extensive beef enterprise in the remote west Kimberley region of WA is not without its challenges, but Anne Marie Huey and her partner Mike De Long are making incremental changes to improve their bottom line.

Anne Marie and Mike run 'Dampier Downs Station', a 265,000ha cattle property geared to the live export market.

Anne Marie credits participating in MLA's Business EDGE course with helping her to improve her business skills to drive the profitability of the business. Business EDGE is a two-day financial and business management training workshop for producers who want to improve the efficiency and profitability of their business.

"Mike and I are really focused on the cattle side of our business and I also have a strong background in natural resource management, but we needed to strengthen our business management skills," Anne Marie said.

"By attending MLA's course we were able to better focus on the profit drivers of our station and make changes to maximise our bottom line."

The first thing Anne Marie did after attending the Business EDGE course in Broome was to reorganise their financial statements to drill down and work out where the money was going in and out.

"Through this process I realised that a few days spent realigning a small section of our main trucking road would enable us to send an extra trailer of sale cattle out at a time.

"While this had always been on the to-do list, the business analysis highlighted how a small outlay now will save time and money in the future."

Sustainability Steering
Group Activities

With the foundational framework, five annual updates now released, and the latest materiality assessment, the ABSF is well placed to assist the Australian beef industry reach the Red Meat 2030 goal of doubling the value of red meat sales as the trusted source of high quality protein.

To continue progressing the ABSF and ensure continuous improvements towards a more sustainable industry, the SSG developed their three year workplan through to 2024. In consultation with stakeholder expectations, the workplan focuses on five key outcomes:

1. The ABSF is a driving force for practice change

2. Our customers are championing our product

3. The entire supply chain knows the ABSF

4. There is ethical investment in Australian beef

5. Australia is a verified sustainability leader.

CONFIDENCE IN INDICATORS, DATA, AND TRENDS

The beef industry is continuously evolving to adopt proactive, transparent, and co-ordinated approaches to drive continuous improvement and meet customer and community expectations. As part of this process, the SSG has reviewed and refined the indicators and data available in the ABSF, relevant to the 24 priorities. This activity has allowed for an increase in confidence and trending of the data presented. In 2022, the SSG has reported on 98% of the ABSF indicators, with the expectation all indicators will have data in 2024.

GOALS FOR ALL PRIORITIES

The SSG sees setting targets as a natural progression, and the ABSF is in the position to support the process of target setting in order to take the ABSF from a report card to a stronger commitment to sustainable improvement.

The ABSF's mandate is to help guide industry action on sustainability. Targets will 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 and outperform global goals. The SSG will collaborate with industry to ensure industry sets the agenda and takes control of the process, and that targets are endorsed with an aligned plan to achieve them.

STOCKTAKE OF WHICH STAKEHOLDERS USE THE ABSF

Major producer, processor, supermarkets, food service and value chain businesses and investment groups are utilising the ABSF and aligning their own sustainability processes to it, because it is specifically tailored to the beef industry and articulates what the supply chain wants. The SSG is aware of a number of organisations and stakeholders using the ABSF, but will seek this coming year to understand how it is being used, by who, and why, in order to ensure it continues to meet our customers and stakeholders need.

WORK WITH EXTERNAL VERIFICATION PROGRAMS

There are currently numerous verification programs in development to provide mechanisms for producers and supply chains to demonstrate their sustainability credentials. These are being led by industry bodies, non-government organisations, independent customers and supply chains, and collaborative partnerships. While not a function of the ABSF, the SSG will work with these external programs to ensure alignment and consistency where possible with the industry led ABSF.

Utilising the priorities within the ABSF derived from the materiality assessment, will assist the verification programs in working with industry to achieve agreed outcomes and benefits. It will also help ensure there are no competing priorities or actions between programs.

Governance +
Principles

Approve			Red Meat Advisory Council			
	CATTLE COUNCIL OF AUSTRALIA	ALFA	AMIC	ALEC AUSTRALIAN LIVESTOCK EXPORTERS COUNCIL	SHEEP PRODUCERS AUSTRALIA	GICA

Direct	Sustainability Steering Group					

Consult	CATTLE COUNCIL OF AUSTRALIA	ALEC	ALFA	AMIC	Consultative committee	Industry forum	Technical experts

Support	mla (fund and manage)*	AMPC	LIVECORP	Government departments	Data custodians	Research institutions	Industry representative bodies

Adopt best practice	Producers	Processors	Feedlots	Transporters/Live exporters

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

Australian Beef Sustainability Framework

The Framework principles are:

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

Sustainability Steering Group

MARK DAVIE
Chair, SSG Director,
Keppel Brand

CARL DUNCAN
Chief Sustainability Officers,
Teys Australia

MELINEE LEATHER
Owner/Manager,
Leather Cattle Company

DR MICHAEL MAXWELL
Partner, HFW

KARI MOFFAT
Animal Welfare Assurance
Manager, AUSTREX

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

JENNY O'SULLIVAN
Mixed farming owner and operator,
Principle Agribusiness

JOCK WHITTLE
Head of Asset Performance,
Macquarie Group

Materiality

In 2021 a Materiality Assessment identified 24 topics to be adopted in the ABSF (which was first released in 2017). 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.
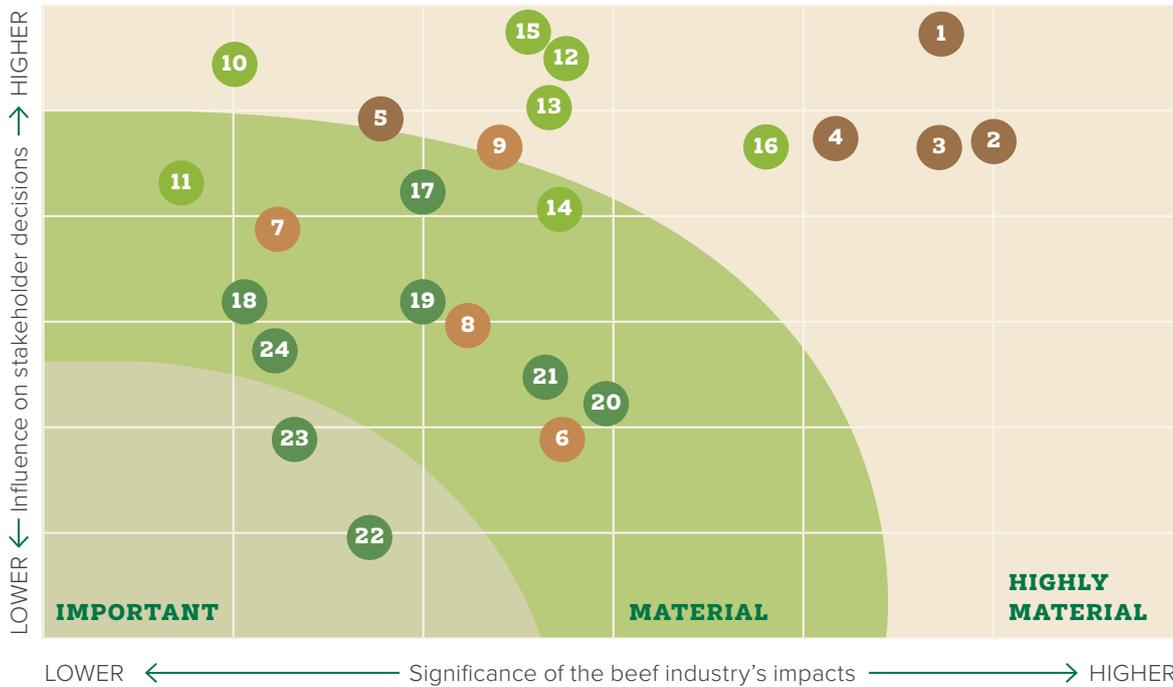
BEST ANIMAL CARE

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_2e

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.

References

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.

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