RED MEAT ADVISORY COUNCIL

DISCUSSION PAPER:

AGRICULTURE, LAND AND EMISSIONS

DECEMBER 2023

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Introduction

The Red Meat Advisory Council (RMAC) and its members welcome the opportunity to provide a submission to the Department of Agriculture, Fisheries and Forestry (DAFF) discussion paper on the development of the Agriculture and Land Sectoral Plan, which will form part of the Australian Government's Net Zero 2050 plan.

RMAC is Australia's only policy leadership and advisory forum made up of producers, lot feeders, processors, manufacturers, retailers and livestock exporters, representing the entire red meat supply chain from paddock to plate. RMAC members are the following prescribed industry representative bodies under the *Australian Meat and Live-stock Industry Act 1997* (AMLI Act):

- Australian Livestock Exporters' Council,
- Australian Lot Feeders' Association,
- Australian Meat Industry Council,
- Cattle Australia,
- Goat Industry Council of Australia, and
- Sheep Producers Australia.

Australia's red meat and livestock industry is comprised of more than 74,000 businesses and collectively services 25 million Australians and over 100 export destinations every day with safe, high quality and nutritious red meat. The red meat and livestock sector is uniquely positioned to be part of the solution to Australia's climate challenges. We remain committed to playing our part to make sure the industry has a sustainable, low carbon future that is profitable, productive and rewards the red meat supply chain for the environmental work they undertake on their properties and in their businesses.

Overarching position

- **The red meat and livestock industry plays a critical role in producing food** that provides millions of people across the globe with essential nutrition that, unlike other sectors, **cannot be transitioned away from**.
- A **balanced approach to emissions reduction** acknowledging the role our supply chain plays in domestic and global food security, the management of our landscapes, the cyclical nature of biogenic methane emissions, and the social and economic costs of emissions reduction on the rural and remote communities in which our producers live and work is necessary.
- The Federal Government's **decarbonisation pathways must be realistic** in terms of their expectations of emission reductions from the red meat and livestock sector and that **agriculture is not contributing disproportionately to off-setting other sectors emissions**.
- The Australian red meat and livestock industry, Australian Government and commercial partners have **already invested greater than $180 million** and is making great progress towards achieving its carbon neutral by 2030 goal, but significant **financial support and strong partnerships between industry and government are still required** to support the research, commercialisation, and adoption programs necessary to reduce emissions.
- Further significant decreases in emissions are unlikely to be achieved in the red meat and livestock industry without **prioritising specific activities that target enteric methane**. There is much more work needed to be done to apply feed additives and innovations across our production systems in a **practical, profitable and resilient way**.

- An **industry led approach to setting, tracking and achieving emissions reduction targets** for the red meat and livestock sector is working and must continue to be the endorsed model moving forward.

The Australian red meat and livestock industry's emissions reduction goals

- As an industry operating in a global marketplace, our industry goals must keep pace with that of our global competitors and the expectations of our customers. That's why, in 2017, the Australian red meat and livestock industry set an aspirational target to be carbon neutral by 2030 (an initiative known as CN30).
- Achieving CN30 is a key indicator of success in the Red Meat 2030 strategic plan and was established with guidance from CSIRO to drive investment into research, development and adoption initiatives to reduce industry emissions and send a clear signal to consumers about our industry's commitment to climate action.
- Importantly, CN30 was intended to be achieved by focusing on the 'win wins' and remaining consistent with the broader red meat industry strategic goal of doubling the value of red meat sales by 2030[1]. This means not making concessions or taking actions that compromise the sector's long-term productive capacity or profitability (e.g. decreasing livestock numbers or implementing other punitive measures).
- Meat & Livestock Australia (MLA) has since developed the CN30 Roadmap in consultation with the broader red meat industry. The Roadmap is a science-based plan that defines carbon neutrality in the Australian red meat industry, explains why industry has set the target, the work areas where industry will focus on between now and 2030, and how the industry can execute those work areas. Since 2017, MLA has co-invested $180 million in CN30 with plans to invest a further $150 million before the decade is out.
- Using information primarily from the 2020 Australian National Greenhouse Gas Inventory (NGGI), the total greenhouse gas (GHG) emissions attributed to the red meat industry were 51.25 Mt of CO2-e GHG in the year 2020[2]. This is a 6.4% decrease compared to 2019 and a 65% decrease compared to the baseline year of 2005. The red meat industry's emissions represented 10.3% of national total GHG emissions in 2020.
- Despite these impressive results, the red meat industry acknowledges the transition towards low emissions will require significant challenges to be addressed. This will require major additional investment and strong partnerships between industry and government to support the research, commercialisation, and adoption programs necessary to reduce emissions. While novel feed supplements present a promising emissions mitigation technology for the red meat sector, realising the emissions reduction benefits from new innovations like these technologies across the industry will take time and investment.
- It is important to emphasise that an industry led approach to setting, tracking and achieving emissions reduction targets for the red meat sector is working. Therefore, any further emissions reduction targets from livestock production (especially methane) need to be considered carefully by both government and industry in terms of the social, economic and environmental benefits and costs associated. The Australian red meat industry is already doing the heavy lifting and needs to be supported via partnerships and funding (i.e. carrot vs stick). At the same time, the

[1] Red Meat 2030
[2] Greenhouse Gas Footprint of the Australian Red Meat Production and Processing Sectors 2020

Australian red meat industry should not be expected to carry an unfair burden to achieve national net zero targets nor should our sector's critical role in underpinning domestic and global food security be undermined.

- Methane stemming from ruminant animals' natural digestion process is the red meat industry's main contribution to GHG emissions. But often overlooked is the fact that the industry's CO2 emissions are not new to the atmosphere, unlike other sectors emissions, such as fossil fuel extraction.
- Enteric methane is part of a natural – or biogenic – carbon cycle. The plant matter (grasses etc) that ruminant animals' digest has absorbed atmospheric CO2 via photosynthesis to grow. The methane formed and emitted is broken down into CO2 and water after about twelve years. Grass then absorbs the CO2 through photosynthesis, ruminants eat the grass, and the cycle continues infinitum. This means the CO2 is not new to the atmosphere. In contrast, methane released from fossil fuel extraction stems from CO2 that has been stored underground through geological processes over millions of years and when it breaks down into CO2 and water, it is adding new CO2 to the atmosphere. This means that GHGs, including methane, generated by burning fossil fuels and their impact on our climate is far more destructive than methane emissions from livestock.
    - It is for this reason that the IPCC recommend a slightly lower GWP100 methane emissions factor of 27.0 for biogenic methane versus 29.8 for fossil-sourced methane.
- For our sector it is important that the unique differences with livestock methane are widely acknowledged. Because of the short-lived nature of methane, there is a strong scientific case indicating that methane levels do not need to reach 'net zero' to achieve Paris Agreement temperature targets. This is why targets are now being set for methane reductions of 47% by 2050 (New Zealand Climate Change Response Act), 40% by 2030 compared with 1990 (California SB-1383 Short-lived climate pollutants bill), and 30% by 2030 compared with 2020 (Global Methane Pledge). These levels of methane reductions are compatible with climate stabilisation.

Achieving a climate neutral position

- The Australian red meat and livestock industry's CN30 target means that industry aims to generate net zero GHG emissions from red meat production and processing by 2030. The word 'carbon' is used in this case to represent all greenhouse gases (carbon-equivalent).
- In contrast, climate neutral is temperature-based, rather than a GHG emissions target and is aligned with the Paris Agreement which aims to strengthen the global response to the threat of climate change by limiting the rise in global average temperature to well below 1.5°C above pre-industrial levels.
- CSIRO modelling suggests that that the Australian red meat industry can achieve a temperature-based target (aligned with the Paris Agreement) for our industry earlier than 2030[3].
- Climate neutrality for the Australian red meat industry is measured using metrics such as GWP*, radiative forcing footprints and absolute methane rather than GWP100. GWP* takes short-lived gas removal from the atmosphere into consideration and Radiative Forcing Footprint reflects the influence that a particular GHG has on the balance of incoming and outgoing energy in the earth-atmosphere system.

[3] Pathways to climate neutrality for the Australian red meat industry

- The Federal Government's decarbonisation plan should incorporate our industry's progress towards climate neutrality so that we can share our successes, including when we cease to have impact on temperature rising and when we begin to go over and above achieving no additional impact on warming.

Key opportunities to reduce emissions and build carbon stores

Enteric methane

- Further significant decreases in GHG emissions are unlikely to be achieved in the red meat industry without specific activities that target enteric fermentation. The importance of this challenge is highlighted by the fact that enteric fermentation is the single largest source of red meat industry emissions (78.8% of total emissions).
- The most promising opportunities for our industry to address this challenge are:
    - Feed additives (that decrease methane output and improve productivity) and/or co-compounds (such as probiotics) that can be added to feed additives to improve efficacy in terms of methane reduction and productivity improvement.
    - Genetic technologies to up or down regulate production of animal, plant, or microbial proteins involved in the production of enteric methane or productivity.
    - Use of devices to capture and convert methane at the source.
    - Development of more cost-effective methane measurement technologies to reduce research costs.

- However, concerns around costs, efficacy, and productivity of methane mitigating additives need to be addressed and significant work is still required to develop products and methods to deliver additives to livestock in various geographies and production systems, such as extensive grazing systems where the vast majority of livestock reside.
- Increasingly, as larger studies emerge globally and in Australia we are seeing evidence that inhibition of emissions in ruminants with feed additives does not transpose into improvements in productivity of animals (such as increased liveweight gain or milk production). This challenges the longstanding hypothesis that direct inhibition of methane in ruminants would translate to increased productivity and performance. There are many years of R&D required globally to understand basic rumen biology and methane inhibition mechanisms that result in beneficial productivity outcomes.
- Importantly, all initiatives need to be incentivised to ensure supply chain participants embrace these technologies with enthusiasm. Potential incentives to accelerate adoption include:
    - Tangible commercial returns for red meat producers.
    - Mechanism for generating carbon credits to improve returns on investment.
    - Government incentives in recognition of the public good of producing less methane.

Carbon storage in the land

- Agriculture could continue to deliver substantial sequestration via regeneration or tree planting, but this may result in land use conflict and a requirement to reduce livestock numbers (and ultimately food and fibre production) to meet targets. Further, at a large scale, this would result in significant implementation costs. It is not clear if the economics and long-term impacts on production volume from implementing revegetation across very large areas of grazing land (significant land use change) have been considered in detail.

- It should be noted that the red meat industry has been the single biggest contributor to emissions reduction since the 1990s, primarily due to the land clearing legislation imposed on farmers to meet Kyoto Protocol emissions reduction targets. As a result, the red meat industry has previously lost property rights and productive capacity so that emissions from other industries could keep growing to meet that nation's Kyoto targets.
- Soil carbon is an opportunity, though grazing management alone is unlikely to be sufficient to result in long term increases in soil carbon unless it involves additions of legumes, new fertiliser regimes, and other interventions. A lack of understanding/acceptance of the relationship of climate/rainfall with soil carbon storage (which is contributing to the integrity questions), and the ability to generate significant volumes of carbon credits on degraded land, is encouraging producers to delay their improvement activities until they can maximise their potential return.
- Carbon storage below the land surface must be carefully considered, particularly where it could upset the delicate balance that ensures red meat sector's productivity and viability. Proposals currently being investigated, such as injecting liquid CO2 into underground aquifers, have the potential to significantly reduce the CO2 emissions for non-agricultural sectors, though potentially at the cost of short and long-term red meat industry productivity and viability. This emphasises the need for comprehensive cross-sector strategies that promote emission reduction and improve sustainability, without compromising Australian agriculture's ability to produce food.

What our industry needs

a) Research and Development Funding

- Additional funding for agricultural research and development is urgently required. The emissions challenge in agriculture is too large and complicated to be solved with the existing funding arrangements, which need to cover all other areas of agricultural supply chains.
- Ongoing and new funding for research to identify adoptable delivery methods for feed supplements in grass-fed production systems.
- While the red meat and livestock industry acknowledges that the Australian Government has continued to take a supportive approach to emissions reductions from agriculture, it could be argued that government investment has historically been weighted towards supporting the decarbonisation activities of other sectors of the economy. This needs to be reorientated so that agriculture is placed on equal footing to other sectors in terms of government support and assistance (e.g. energy/renewable energy sector).
- In Australia, around $20 billion in additional capital must flow into the nation's food and land use system to meet Australia's net-zero target. A failure to effectively allocate sufficient capital to the agriculture sector in the near term will increase the cost of Australia's transition to a low-emissions future economy in the long run[4].
- A transition to a sustainable global food system represents an incredible opportunity to drive progress against climate change. However, a sustainable food system transformation remains chronically underfunded, making up only approximately 4% of global climate finance. To overcome this financing gap, it has been suggested that climate investment in global food

[4] All systems go: Transforming Australia's economy to grow (Deloitte Access Economics) https://news.nab.com.au/wp-content/uploads/2022/07/AllSystemsGo.pdf)

systems must increase by 15 times the current total climate finance investment of $20 billion (per year)[5].

b) Coordination

- Better national and global coordination of research and development activities being conducted by countries and organisations aiming to develop new emissions reduction technologies is required. This would enable mapping of activities to avoid duplication and fast track research and development by fostering a "divide and conquer", rather than the current fragmented approach.
- This could be achieved by the Federal Government establishing a steering committee to conduct a scoping study of all the national and global bodies conducting activities to reduce livestock net emissions, conducting a gap analysis of the activities, assigning tasks to appropriate bodies based on their strengths. For example, Australia is well-placed to try and solve delivery of additives to grazing animals because of our sophisticated research and development structure, status as a developed country, export volumes, and ability to prioritise emissions reduction.
- This knowledge could be shared with many other countries with similarly harsh climates and extensive grazing systems, whose research priorities are more aligned with providing adequate nutrition to their communities.
- The Government should invest in technology required to ensure that methane emissions from all sources can be accurately quantified and reported in the NGGI.

c) Adoption and Extension

- The rate of adoption in agriculture is slow compared to other sectors due to a number of factors including high market volatility, short and long-term climate variability, labour shortages and limitations related to implementing new technologies, and concerns about potential return on investment.
- Measuring and accounting for GHG emissions within the red meat and livestock sector is not widespread practice and technology supporting its measurement is relatively new. This is a rapidly evolving space, with numerous tools on the market. However, it remains difficult and expensive to measure GHG emissions (and carbon sequestration) on-farm. At the same time, Australian red meat producers deal with a broad range of conditions that vary considerably across time and space. For this reason, carbon accounting at the individual farm level is disconnected from emissions calculations at the industry level. Investment is needed to encourage the ongoing development of carbon accounting tools and to facilitate greater adoption (via agricultural extension).
- While the red meat sector should continue to receive recognition for its gains obtained through past and future vegetation management, a decision tool for trees on farm should be developed to enable producers, who are considering tree planting, to make decisions on costs, configurations and locations of trees they should be planting to balance and optimise potential production and other environmental benefits (e.g. wind belts).
- Awareness of data input requirements and ability to document, store, and use these to demonstrate baseline performance and improvement over time is also needed.

[5] *Climate Finance - Funding Sustainable Food Systems Transformation (IFPRI)* https://gfpr.ifpri.info/2022/05/11/climate-finance-funding-sustainable-food-systems-transformation/

d) Innovation

- Solutions that reward ideas/start-up activities that can be rapidly progressed to viable commercialisation, and a rapid patent review with equitable royalty agreements and appropriate purchase prices, are needed.
- An environment where researchers can take risks and not be penalised for failure, while being supported to pursue options with the greatest potential for success, is needed. This could mean enabling fast-fail approaches for research and development, making it less financially risky to fund blue sky innovation, but doing so in a way that we can quickly identify winners and do not penalise failure. This would also allow support of subsequent stages (development) so that the technology can progress to adoption as efficiently as possible.

e) Incentives

- Incentives are required to drive the adoption of emission reducing innovations, particularly where there is not a commercial return or markets are in early stages of development. This includes incentives for producers to provide data demonstrating their emissions position through the supply chain. Currently, producers are being asked to provide this information at their own (significant) cost, with uncertainty around whether they may be penalised if they show a decrease in annual performance due to factors beyond their control (such as extreme climate events or a yearly increase in their herd or flock size).
- Australian Carbon Credit Unit (ACCU) scheme methodologies that can enable carbon credit income for use of new technologies would greatly assist in improving the commercialisation and, therefore, adoption of new technology and innovations.
- Undertaking cost benefit analysis of new technologies, including the ability to generate ACCUs and other market/supply chain incentives, would help producers make decisions about adopting emission reduction technology in the short and long term.
- Government driven support for the adoption of methane reducing feed additives until producers can make a commercial return on their investment in this evolving market environment would provide the necessary incentive for producers.
- There is a perceived lack of willingness of consumers to pay for low emissions products at scale. Financial and behavioural modelling should be undertaken to anticipate shifts in consumer sentiment about sustainable/carbon neutral red meat products and their willingness to pay premium prices.

f) Regulatory support

- Industry needs clear assurances that there will be no additional taxes or charges placed on the Australian red meat and livestock industry.
- Our targets need to be achievable and our impact on the climate accounted for correctly.
- Avoid regulating sector emissions reduction targets as this may only limit the growth in innovation we have seen in the red meat and livestock industry.
- Prioritise development of Emissions Reduction Fund (ERF) methodologies that encourage adoption of feed supplements and other technology to reduce livestock emissions.
- Provide clear assurance that the use of feed supplements to reduce livestock emissions does not expose Australian exporters of red meat products to additional risks in relation to importing country maximum residue limits or tolerances.

- Reduce the regulatory burden, duplication, cost and complexity for producers, by ensuring a harmonised and coordinated approach as states/territories pursue their own targets and agendas.
- Minimise the compliance burden placed on businesses that may have data, capability, and technological limitations.

g) Education and Awareness

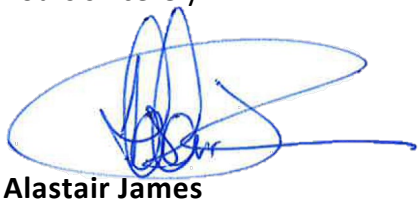
- The impact of biogenic methane from livestock production on the climate needs to be better understood in public and policy domains. Much of the pressure to reduce methane emissions from red meat production has come from non-government organisations and activist groups influencing the public. These groups have their own agendas and have spread misinformation that is not based on scientific evidence.
- The government should support industry to deliver public education initiatives that combat misinformation about livestock production and help people understand the most effective changes they can make to their lifestyle to reduce their impact on the climate. Cattle, sheep and goats didn't cause the problem – but our industry is absolutely part of the solution.
- Emission reductions from the red meat and livestock industry need to be considered in a holistic context, which includes consideration for the importance of the broader nature positive objectives being set at industry, national and global levels. Our livestock producers are custodians of close to half Australia's total landmass and they deserve recognition for the vital role they play in caring for Australia's landscapes, managing trees and vegetation, minimising invasive pests and weeds and building healthy soils and watercourses.

Conclusion

To ensure a profitable and resilient future for the red meat industry, RMAC supports a balanced approach to emissions reduction that acknowledges the role our producers play in global food security, the management of our landscapes, the cyclical nature of biogenic methane emissions, and the social and economic costs of emissions reduction on the rural and remote communities in which our producers live and work.

RMAC and its members look forward to continuing to assist DAFF with this important consultation process, that will help shape the pathway towards a sustainable, resilient, low emissions future for the nation. If there are any queries about this submission, please do not hesitate to contact me on 0428 776626 or ceo@rmac.com.au.

Yours sincerely



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On behalf of:

ALEC Australian Livestock Exporters Council · ALFA Australian Lot Feeders' Association · AMIC Australian Meat Industry Council · CA Cattle Australia · GICA Goat Industry Council of Australia · Sheep Producers Australia