

19 December 2023

Australian Government
Department of Agriculture, Fisheries and Forestry

Via online Submission [Agriculture and Land Sectoral Plan | Have Your Say - Agriculture, Fisheries and Forestry](#)

Dear the Hon Murray Watt, the Hon Tanya Plibersek, and the Hon Chris Bowen,

Re: Goulburn Broken Catchment Management Authority (CMA) submission to the Agriculture and Land Sector Plan

Thank you for the opportunity to respond to the Agriculture and Land Sector Plan to help the Australian Government and its partners consider ways to reduce emissions in each sector (not only agriculture and land) and opportunities for collective action that supports decarbonisation. Taking forward looking and strategic action on climate change is critical to supporting Australian farmers and land managers to farm into the future. This will create legitimate and organised opportunities for agriculture to be involved in positive action.

As one of Australia's key NRM regional providers, the Goulburn Broken CMA recognises the criticality of working with industry, governments, community and directly one-to-one with farmers to meet the challenges of Australia's low emissions future. CMAs have tirelessly worked for decades with partners, including landholders, to plan and implement policies and projects that assist in managing natural capital and balancing the need for economic, environmental and social sustainability.

We strongly advocate for the development of sector plans to be informed by local and regional engagement and adaptive delivery to ensure the plans are robust, ambitious, achievable, and accepted. Further, that opportunities for agriculture and land contribute to the whole-of-economy goals, in a way that supports industry growth, productivity, sustainability and resilience, including environmental resilience. This is achievable through the NRM regional delivery model whereby we have regionally based planners, scientists and extension professionals that support and connect community action through the full footprint of Landcare and farming systems groups, to regional, industry and government initiatives. Further to this, we coordinate regional and local scale partnership agreements, and this year drew commitment from 38 key catchment stakeholders to work together to achieve the agricultural and environmental goals of the catchment.

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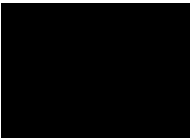
As part of our work supporting agricultural industry to uptake place-based relevant sustainable agricultural practice, we actively seek opportunities for producers, private and public land managers to deliver carbon storage together with nature outcomes; contributing to Australia's commitment to address biodiversity decline, while also improving soil quality, water retention and building climate resilience.

It is also critical for national initiatives to link to existing regional plans for land, water and community (e.g. Regional Catchment Strategies/NRM Plans, Regional Drought Plans, and Land and Water Management Plans) to add value to existing regional delivery programs and guide effective investment and coordinated extension. Therefore, our recommendation for decarbonisation plan investment and delivery is that it utilises the existing regional networks and delivery model to collaborate and coordinate regionally specific information delivered by key stakeholders and linked to a national learning forum.

Further feedback regarding the Plan is provided below. Noting that we have also provided feedback (6/12/23) to the Future Drought Fund and are actively involved in the Nature Repair Market engagement, both of which will be significant investment streams linked to this Plan.

I have also attached our detailed responses to the questions listed for public submission to enable specific issues to be clear and look forward to a positive response.

Sincerely,



Chris Cumming
CEO, Goulburn Broken CMA

1. *What are the opportunities to reduce emissions and build carbon stores in agriculture and the land? What are the main barriers to action?*

We identify the following opportunities to reduce emissions:

- Develop alternatives to fossil fuels for electricity and powering farm machinery.
- More extension and potentially incentives or loans to assist infrastructure upgrades, for manure management practices and opportunities in intensive agriculture systems to increase adoption, noting existing opportunities for example through ACCUs.
- Incentivise or pay for N₂O inhibitors for nitrogen-based fertilisers.
- Invest in green energy for fertiliser production, including solar nitrogen fertiliser production (in conjunction with industry sector plan).
- Research into CH₄ inhibitors and application in broad acre grazing, e.g. feed additives and their delivery, early-life programming, genetics, as well as alternative and complementary pasture and forage species that reduce CH₄ production in the rumen.
- Fence and revegetate livestock farm dams (irrigation farm dams are lower emitters of methane and therefore lower priority for reducing emissions).

We identify the following opportunities to increase carbon stores:

- Revegetate waterways, public land including local government and crown land reserves and wetlands, farm dams and marginal farmland. The co-benefits to biodiversity and natural capital are significant. There are also market-based blue and teal carbon opportunities.
- Complete a full lifecycle/carbon balance analysis of increasing soil fertility and improving cropping/grazing species by measuring the emissions and sequestration balance, including emissions intensities and livestock turnoff time (emissions subtraction) in the case of livestock grazing.
- Innovate ways to increase species diversity and complexity in pasture-based and annual and perennial cropping systems, the aim being to increase above- and below-ground organic matter contribution to soil to increase carbon turnover and soil organic carbon accumulation.

We believe the main barriers to action for farmers are:

- Lack of knowledge of emissions accounting.
- Complexity and perceived risk of participating in markets.
- Access to trusted advice.
- Lack of a financial driver / market.
- Cost/return on investment.
- Lack of research/evidence.
- Options for e.g. 3NOP don't exist in broadacre grazing.
- Concerns over the integrity of schemes.
- Concerns over leakage, including whole of supply chain participation.
- No common form of measurement or efficient method to demonstrate change globally.
- Liability of sequestration schemes (e.g. on title/25-year permanence).
- Concern over political cycle, i.e. potential short-term consequences for programs/schemes /methodologies.

2. *How can we progress emission reduction efforts while also building resilience and adapting to climate change?*

We acknowledge that these two issues cannot effectively be separated; emissions reduction is required to address climate change, while resilience is required to continue farming and land stewardship in climatic conditions we're already committed to. At the same time, many emissions

reduction technologies and practices have co-benefits of increased efficiency or productivity potential. Some examples include precision application of nitrogen fertiliser, improved pasture species or animal genetics for better weaning rates and earlier turn off, energy capture from manure management. To deliver emission reductions we need investment in research, development, extension, and infrastructure.

Investment in emission reductions on farm, increasing carbon capture opportunities, extension for drought preparedness, and climate resilience needs to be coordinated and not siloed, e.g. through Climate-smart Agriculture, the Future Drought Fund. Furthermore, emission reduction efforts must sit within the context of current approaches to farm and regional planning and informed land management decision making. There are many existing extension programs supporting farmers to consider whole farm decision making. Decarbonisation programs and efforts should utilise existing regional plans, knowledge, and extension platforms, to value add to what is happening as siloing will duplicate and confuse land managers and could lead to poor, or no, investment decisions.

3. *Are there initiatives or innovative programs underway that could be applied or expanded on at a national scale?*

- Agriculture Victoria's On-Farm Carbon Emissions Action Plan pilot
- Carbon and Biodiversity pilot
- Environmental Markets Leadership Program, NSW LLS
- The community-driven Shepparton Irrigation Region Land and Water Management Plan 1990 – 2050. This plan has been successful for more than 30 years gbcma.vic.gov.au/downloads/Media_Releases_News_Items/30-years-done.pdf in coordinating and leading community and government investment in integrated natural resource management at a regional scale. Measurable outcomes and positive environmental impacts have been achieved over a generation by partners working together and staying the course within an adaptive framework.
- Greenhouse Gas Accounting tools, i.e. SB-GAF, D-GAF, C-GAF, are adopted and refined for better end-user experience and adoptability, e.g. web-based with automatic updates as new data becomes available to the models. The tools should enable year on year comparisons through tracking results and auto-updating when new metrics/formulas are included. Industry coordination to adopt one tool, with all the science behind it, should be supported.

4. *How can the Australian Government bring together existing effort and new initiatives into one coordinated plan?*

Refer also to question 2.

There are 2 components of this, first planning, and second, the implementation plan. In planning, the Australian Government could coordinate NHT Climate-Smart Agriculture, Carbon Farming Outreach Program and Future Drought Fund investment nationally to deliver coordinated and collaborative outcomes for research, development and extension, bridging theme and industry silos.

Nationally coordinated and collaborative outcomes are delivered through implementation led by regional networks. In implementation, the role of regional NRM bodies is to bring together the plethora of policy, plans, initiatives and funding opportunities of industry and government into regional plans that cascade to real action at the farm scale. These actions are considerate of regional specifics, conditions, and community values and priorities because at ground level agriculture and land management is a system and considerations cannot be siloed. Regional NRMs

can only do this because we have extensive regional knowledge and connections, and a comprehensive understanding of land management. It has taken us 25 years to build the platforms, knowledge and connections to do this successfully and is not a model that can be quickly replicated.

5. *What are the most important options to be further adopted or supported, looking in the short- and longer-term?*

Most important options to be adopted or supported:

- Ruminant methane (short- and long-term).
- N₂O in cropping (crop residue and fertiliser) (short-term).
- Green/renewable energy production of nitrogen fertilisers (short-term).
- Renewable electricity for high-use sectors/infrastructure, e.g. cool stores, dairies, irrigation (short-term).
- Alternative fuel to diesel for heavy machinery (short-term).

Short-term:

- Manure management – reduce emissions and harvest e.g. energy and/or nutrients from waste.
- Coat urea with urease inhibitors at no cost to farmers, e.g. Australian Government could claim emissions avoidance ACCUs to pay for it.
- Invest in research using technology such as Zelp to measure accurately methane emissions from ruminants in different climate/feed/pasture systems. Accurate measurement equals accurate monitoring.
- Revegetation of areas suggested in Question 1 for multiple co-benefits.
- Increase organic matter returns to soil – benefits to increasing biological activity in increased soil carbon, increased water holding capacity, work towards meeting needs of peak phosphorus and reduce input and emissions cost of using synthetics.

Longer-term:

- Adoption of methane inhibitors, e.g. 3NOP, through extensive grazing businesses, e.g. research water-stable compounds, bolus delivery, early life programming.
- Research cost and environmentally effective pasture improvement (through diversification and increasing number of grazing species) for methane inhibition in rumen.
- Research into methanogens and what environmental conditions they need to thrive.

6. *What are the practical solutions to increase uptake?*

Extension and technical support in the form of one-on-one and peer-supported learning are required to support farmers to adopt. Support needs to come from independent and trustworthy sources, such as regional NRM bodies and state government agencies. Regional place-based delivery has been a tried and trusted method of increasing farmer uptake of new practices for decades, examples include no till farming, rotational grazing, irrigation modernisation, soil testing, pasture improvement, revegetation, and soil conservation.

7. *How do you see the agriculture and land sectors contributing over the medium and longer-term? What are the opportunities to deliver emission reductions in parallel with wider goals?*

Farmers, land managers and industry bodies recognise that agriculture has a significant role to contribute to reducing emissions. This is made clear through endorsement of Australia's

economy-wide target, industry specific targets, and surveys of farmers conducted by, for example Farmers for Climate Change and AgriFutures Australia, where farmers have called strongly for effective mechanisms to collaborate across industry and supply chains and for consistent, trustworthy advice. At the same time, respondents recognise there will be an opportunity to access support to increase carbon stored in soil and vegetation resulting in increased productivity and resilience through investment in decarbonisation of agriculture and nature stewardship. At this point, increasing farm productivity and resilience is the primary driver for farmers to invest in carbon sequestration and emissions reduction practices, given the path to monetise emissions reductions and nature stewardship is not yet clear.

Examples of parallel goals include fencing and revegetating livestock farm dams to reduce emissions, increase carbon storage, and improve water quality, biodiversity and habitat on farm. This initiative could be supported by the Nature Repair and/or Carbon Market to deliver multiple outcomes. Manure management whereby emissions are captured from intensive manure sources and utilised for energy production on-farm lead to reduced emissions and energy use from the grid and an opportunity to return the waste (organic material) back to farm.

Emission reduction in agriculture will come from commitment to researching, developing and delivering farm-ready technologies and practices. While net emissions may increase if industry productivity goals are met, agriculture will continue to cycle carbon and nitrogen in the production of food and fibre, and with introduction of emissions accounting, emissions intensity is likely to decrease as practices are adopted and refined.

8. *How can the Australian Government better support agriculture and the land sector to:*

a) drive innovation

Innovation is the result of engaging and listening to farmers about their ideas, supporting researchers and peer-to-peer learning groups to develop and test technologies and gather evidence. This is done effectively through coordinated and collaborative place-based networks, information from which is shared and interacts at broader scales. This process needs funding that is allocated to research and community learning, including demonstration trial support, coordination of site visits and workshops, and networking to share results/information.

It's also important to think globally and make use of existing learning/industry investment. For example, addressing ruminant methane has been identified as having a fast and significant impact on greenhouse gas emissions. For example, working in with northern hemisphere farmers/scientists to leverage their findings and practices for barn/feedlot systems; while in Australia, we should focus innovation of delivering methane reduction in rangeland grazing systems as our biggest source of ruminant methane, and agriculture, emissions.

b) build capacity

Building capacity requires a place-based approach, which is based on a comprehensive understanding of the entire region including groups and capacity, is reflective of existing regional plans for land, water and community (e.g. Regional Catchment Strategies/NRM Plans, Regional Drought Plans and Land and Water Management Plans) and adds value to existing delivery programs in the regions. Program delivery has lost sight of the effectiveness of this model in recent history and has resulted in siloed, competitive and patchworked nature of implementation and success. Programs need to be collaborative not competitive. With funding support, the extension and engagement model exists in state and regional bodies, and an experienced

workforce is there to support its delivery. This workforce needs to grow along with knowledge of new practices, with resources coordinated back to collaborative and integrated regional centres of delivery.

There's a long and demonstrated history of NRM Regions building capacity of land managers through coordinated and integrated catchment management focussed on delivery of Research, Development and Extension; whereby whole farm decision making for example, through whole farm plans, considers integrated outcomes for soil health, climate resilience, building soil carbon, adapting to low emissions future and increasing productivity. This is achieved via key catchment stakeholders working together to deliver the agricultural and environmental goals of the catchment. This process ensures that farm level decision making is linked to regional plans that consider place, including regional carbon capability and vulnerability.

c) ensure the system enables emissions reductions?

To enable emissions reductions, the system requires incentives, either grants, return on investment or productivity gains. Adding emissions accounting and reduction requirements will be a cost to producers without accompanying financial incentive.

The system also requires methodology to measure and verify (at scale and efficiently) emissions and emissions reductions. Integrity in accounting systems and market schemes, including avoiding leakage is also required, as is collaboration and coordination at all scales (local to global).

9. What new initiatives could the Australian Government design that would support emissions reduction and carbon storage in agriculture and land emissions reductions and help ensure a productive, profitable, resilient and sustainable future for agriculture and land sectors?

- New data and technology need to be inserted into existing and strengthened Research, Development and Extension services in a national collaborative approach that is delivered regionally.
- Emissions standards could support reducing fossil fuel use as would phasing out the diesel rebate.
- Support Traditional Owner's land management to reduce intensity (emissions) of bushfires through implementation of ecological and Traditional Owner knowledge in land management.
- Advocating for Australian farmers being recognised in international commodity markets for demonstrated carbon efficiency, nature and land stewardship and sustainable practices.
- Make it easy for farmers to change and use incentives. Put in penalties for not changing.

10. A consistent and trusted approach for assessing and reporting emissions is often raised as a barrier to reducing emissions. Is there a role for the Australian Government in addressing this concern, and how can producers and land managers be supported?

Integrity is critical in emissions accounting and reporting, otherwise we're wasting money trading air. Farmers and industry have large and valid concerns over leakage, which must be addressed through a consistent national system/approach that is valid and supports international trade. An Australian Government regulatory body is a mechanism to achieve this. We also need effective use of technology for ease of measurement.

11. *What skills, knowledge and capabilities do you think producers and land managers need to implement change? What information and data would help them make decisions about emissions reductions and sustainable land management in the short and longer-term?*

For emissions accounting, farmers need to know which accounting tools to use and how to use them, along with trusted and connected agency delivery of evidence-based information. To do this they need to know what records to keep/access and how to input data. Record keeping templates that align with other initiatives, e.g. sustainability frameworks, Livestock Production Assurance, and production goals could be useful here. We need to reduce the scatter gun siloing of carbon information extension, including from general extension with no point of truth or comparison of options available to farmers.

For emissions reductions, farmers need knowledge of and connection to new technologies and practices to determine what skills to develop to implement selected practices. The selection process will be informed by integrated farm management information that considers their farm goals, their industry targets and requirements and trading options.