

Australian Food and Agriculture Taskforce

The Australian Food & Agriculture Taskforce, comprising CEOs and Board members from across the value chain, presents this position paper to accelerate the transformation toward a more thriving, resilient food system.

The paper outlines a path to unlock Australia's potential to become a true food superpower. It articulates the actions required by each of the actors in the value chain – farmers, food processors, retailers, tech companies, financiers, and government – and calls for greater public and private collaboration to address the challenges of the interconnected food system at pace and at scale.

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Land of Plenty | Transforming Australia into a food superpower



Quality food is fundamental to human survival – and it helps shape the health of a nation and its national identity.

In this sense, Australia is blessed. We have an abundance of land and a high-quality food production system that feeds about 75 million people through domestic and export markets.¹ On the back of a food system that employs more than 2,366,000² people and contributes \$187 billion annually to the national economy,³ there is a clear opportunity for Australia to become a food superpower and build a second engine of economic growth that mirrors the resources sector.

However, there are critical challenges to address – farming in an era of climate change, sovereign capabilities to secure reliable and affordable food for our nation, and increasing exports in a new geopolitical environment. None of these challenges are insurmountable, but each demands deep thought and decisive action.

This is why we have established the Australian Food and Agriculture Taskforce, an independent body comprising 14 exceptional leaders from across the entire Australian food value chain. These leaders see a bright future for Australia, and are well positioned to help accelerate the transformation towards a thriving, climateresilient food system.

Over the past 12 months, the Taskforce members have volunteered to investigate the necessary food-industry reforms and advocate priority actions. Their personal pledges, captured at the end of this position paper, underline a collective commitment to realise a food vision for Australia that will need considerable industry and government input if it is to be achieved.

We see this as a critical bipartisan strategy for the future prosperity of Australia that demands a laser-sharp focus, significant investment and robust enablement strategies over many years. We see this as critical for the future prosperity of Australia.

Towards this aim, we have been inspired by peer countries that have demonstrated the benefit of a national approach and an aligned value chain. These global examples of best practice include:

- Singapore's '30 by 30' initiative, a food-security plan to grow 30% of the nation's food locally by 2030⁴
- the development of New Zealand's dairy industry into a strong global competitor⁵
- the clear and purposeful strategies and structures that have driven the success of the Dutch and Danish food and agriculture systems.⁶⁷

Each of these countries started with fewer natural strengths than Australia. We can learn valuable lessons from their transformation.

I would like to thank each of the Taskforce members for their exceptional commitment and contribution to this work. Working with them has been both inspiring and a pleasure. I also commend Deloitte for its leadership on the Taskforce and contribution as our knowledge partner, all undertaken on a pro bono basis.

We are proud to put forward the recommendations in this report that give Australia a real chance to achieve its goal of being a food superpower. The recommendations are a product of a rigorous consultation process and are designed to provide a roadmap for collaboration across the system and between the private and public sectors to achieve this bright food future for Australia.



Mark van Dyck Taskforce Chairman, Group CEO and Managing Director Domino's Pizza Enterprises

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WHY TRANSFORMATIVE CHANGE IS NEEDED

Australia's food system is at a tipping point.

Drawing on a vibrant history as an agricultural production powerhouse, the nation has long enjoyed a respected position in the global food market for delivering significant economic benefits, showing resilience in the face of harsh climate conditions, and flourishing despite being one of the least-subsidised and most remote systems in the world.

However, there are forces at play that challenge this position. This includes the increasing frequency and severity of climate events, trade tensions, a shifting geopolitical environment and the evolution of global markets at different speeds fuelled by regulation and government subsidies, creating an unequal playing field.

Without change, new investment and a coordinated approach that propels the sector's evolution, Australia's food system faces the prospect of falling behind its international competitors. The sector is at risk of not just stagnation, but a loss of resilience, global relevance and economic strength.

A thriving food system has the potential to provide Australia with a stronger economic engine, help deliver on our net-zero and worldleading nature-repair aspirations, and offer food security and affordability, not just for the next 10 years but for generations to come.

There is an opportunity to leverage the food system's strong foundation and Australia's natural advantages to step on to a new pathway and become a true world leader, that showcases its resilience and innovative methods and technologies.

Transformative change is required on three fronts:

- Climate-smart practices
 - Sovereign supply chains
 - Global markets and competitive positioning



This is well within reach, but it will require transformative change on three fronts:

- Climate-smart practices lift the adoption rates of practices that improve on-farm resilience, yield and biodiversity.
- Sovereign supply chains strengthen supply-chain sovereignty and foster innovation to increase resilience, grow value-add and stimulate circularity.
- 3. Global markets and competitive positioning – diversify export markets and strengthen Australia's competitive position by enhancing the value of 'Brand Australia'.

Transformative change in a complex, interconnected system will require a concerted and coordinated effort. Each actor – farmers, food processors, retailers, tech companies, financiers, and government – must play their part, however value chain collaboration will be critical to transform at scale and at pace.

THE OPPORTUNITY FOR AUSTRALIA

1. Climate-smart practices

A thriving food system starts on the farm. The aim is to create a resilient food production environment that can withstand climate shifts and shocks, such as droughts and bushfires. A resilient, thriving farm and food production system should be highly efficient in its use of water, fertilisers, and pesticides, deliver healthy yields and margins, sequester carbon and restore nature.

Transitioning to such a food system cannot be done without transforming land use and management practices. Many Australian farmers have already begun to lead this transition. Harsh climactic conditions, water scarcity, and poor soil health necessitated the adoption of practices such as managed grazing and regenerative agriculture. For this reason, Australian farmers are already global leaders in the use of several climate-smart practices.

Nevertheless, there is great imperative and opportunity in continuing to scale climatesmart land management across agricultural land in Australia. To better understand the potential benefits of scaling, Deloitte have conducted quantitative analysis to estimate the directional opportunity from the adoption of land sector carbon farming methodologies and climate-smart agricultural practices, as well as nature positive land management practices which improve the condition of on-farm nature. The analysis (see Appendix B) suggests that if an additional 20% of Australian farmers adopt land sector carbon farming methodologies and climate-smart agricultural practices, by 2030 Australia could:

- increase the gross margin of farmers by 22% – the equivalent of \$6.1 billion to \$6.9 billion
- reduce its yearly national greenhouse gas (GHG) emissions by a range of 4% to 9% via emissions-reduction initiatives and sequestration

- increase the area of habitat for native biodiversity by a range of 3% to 7%
 -4.6 million -9.3 million hectares
- improve the soil health across 4% of Australia's agricultural land -13.3 million hectares
- generate \$350 million in additional net revenue for farmers from carbon markets.

This is a material economic and natural capital benefit that the nation should pursue.⁸



Uniquely Australia

Climate smart land management and farming practices have the potential to deliver yield, resilience, and nature benefits anywhere in the world. Australia, however, is in a unique position to benefit, given:

- it is the home of the world's oldest continual culture, with Indigenous Australians holding extensive knowledge of the land and how we can maintain and care for its health
- the sheer quantity of land, along with our coastlines and oceans, offer the potential to contribute disproportionately to carbon sequestration, with further upside when we consider options such as seaweed farming
- Close to 85% of the Australian landscape is 'natural' land, some of which is, or could be, used for food production if land management practices to retain soil moisture were applied⁹
- Australia is home to 10% of the world's biodiversity. It means we have a lot to lose, but also a lot to gain if we protect and enhance nature. In contrast to other continents with smaller landmass – which could result in farming competing with native biodiversity – it is more feasible for agriculture to coexist with nature in Australia. In that sense, Australia is a lucky country and carries great responsibility for the world.

2. Sovereign supply chains

As a net exporter, Australia sends approximately 70% of its produce overseas.¹⁰ Statistics like these could make it hard to see food security as a relevant issue for Australia. Yet the ongoing trend in offshoring, coupled with the rising levels of imports of processed foods, means our local food system has become less resilient to global shocks and thereby less reliable. Furthermore, the high cost of food relative to income means Australia tops Deloitte's Food Frugality Index out of the 20 nations surveyed, so whilst we have a plentiful supply of food there are many who cannot afford to buy what they need.

Recent global events such as the COVID-19 pandemic highlighted the vulnerabilities in the food supply chain. In Australia, critical input materials including fertilisers, pesticides, herbicides, fuel and machinery are mostly sourced from overseas. During the pandemic, supply availability of agricultural inputs reached a critical low with only 10% of vessels arriving in their expected time windows throughout 2020-21,¹¹ and input costs soared by as much as 547%.¹² The challenges in the Australia's food supply throughout this period were not limited to agricultural inputs. They extended into labour, equipment, ingredients, and imported processed foods. The impact global disruptions can have on domestic production capacity, on-farm yields, shelf-availability in supermarkets and food prices in Australia.

Strengthening sovereign capabilities across the food value chain can improve food security and temper price shocks, but where and when Australia produces or processes food onshore must be carefully considered. Trade-offs will need to be made. Sovereign capability of production and processing should only be built where Australia has an advantage, where it is cost competitive, and where value can be created. Examples include processing that is reliant on fresh inputs and where proximity to farm matters, or where provenance-based brand premiums can be created such as in categories like wine, dairy and meat. Onshore processing might also be beneficial where smart technologies can replace expensive labour, or where circular practices can offer a viable substitute for critical imports. Biofertiliser or biofuel created out of waste products and biomass are examples of such circular substitutes, and high value ingredient inputs used in food manufacturing as trace elements and specialist packaging and films required for food and beverage packaging that build local resilience.

The imperative for greater sovereignty is material for Australia. Applied selectively, strategic investment in our sovereign capabilities across onshore production and processing, smart technologies and food innovation, can improve reliability of our food supply, increase economic value add and lower emissions through shorter supply chains.

Applied selectively, strategic investment in sovereign capability can improve reliability of food supply, increase economic value add and lower emissions.

3. Global markets and competitive positioning

Australia's brand in global food markets has strong foundations. Our food is considered safe, green, clean and of high quality, and our on-farm management and innovation are leading edge. The nation has a unique food and agriculture story to share, but this story and the value Australia offers the world is not widely understood, nor cohesively summarised for international markets.

The lack of a consistent narrative and a way to share reliable data on farm practices, emissions and nature impact is diminishing Australia's ability to be competitive on a global scale. A survey amongst Australian primary producers indicates that 44% of farmers feel Australia is losing its global competitiveness.¹³

The opportunity exists for Australia to secure its strong position and grow its premium value in export markets, by investing in its brand narrative and supporting data to underwrite the claims.

Given its strength in innovation, it also has the potential to diversify its exports beyond produce into value added products and food and agricultural technologies. A stronger, evidence-based brand Australia that incorporates knowledge and intellectual property can have a material impact on economic contribution and resilience.





RESH STAR

The three keys to unlocking Australia's food system

The Taskforce sees **3 keys** to unlock the full potential of Australia's food system to become the next superpower. These keys include an increase in the adoption of climate-smart farming, a strengthening of sovereign supply chains, and a stronger, more diversified export strategy. It recommends **11 actions** to be taken.

THE RECOMMENDATIONS

Key 1: Climate-smart farming practices

Financing

Co-funding and incentive programs | Build programs to be offered by valuechain partners, including processors and retailers, to support farmers, producers and graziers with upfront transition costs associated with accelerated adoption of climate-smart practice.

Climate-smart Farming Transition Advance scheme | Construct a patient capital funding scheme for farmers, producers and graziers to address the financial challenges associated with the timing of benefit realisation as they transition. This scheme leverages industry and government funds.

Tax policy and incentives | Develop and implement tax incentives for producers and food manufacturers to accelerate the adoption of additional climate-smart practices and decarbonisation initiatives.

Data and standards

Standardised measurement and reporting | Create a single national open-source framework for climate and sustainability requirements, which builds upon Australia's existing frameworks, such as the Australian Agriculture Sustainability Framework, and recognises local best practice.

Climate-smart food certification | Design a robust verification and certification process that builds trust and differentiates Australian produce and food products in global markets.

Central data exchange platform | Build a platform to facilitate efficient and consistent data collation and sharing for natural capital, greenhouse gas emissions and product traceability. This could be achieved by enhancing the existing Australian Agricultural Data Exchange initiative.



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Transforming a complex and interconnected food system at pace and at scale requires close coordination across the value chain, including effective public and private collaboration. The taskforce recommends the establishment of a food system coordinating body to

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EM COOPORTING Key 2: Sovereign supply chains

National food system strategy | Design deliberate strategies and investments to improve supply chain resilience and food security to enhance sovereign capability.

Manufacturing and regional precincts | Invest in food and input manufacturing precincts and scale innovation centres with universities and CSIRO to accelerate circular economy business models.

Key 3: Export markets

Export market diversification | Strengthen our competitive positioning in key export markets, and diversify beyond food products into intellectual property, bio- and agriculture technologies.

Communication tools | A digital platform that provides food exporters with a cohesive, fact-based brand narrative. This includes a repository of key artefacts and high-quality digital marketing assets that showcase Australia's leading-edge practices and technologies.

facilitate this collaboration and enable action. Similarly to other successful markets, its remit could include the development of climate and sustainability standards, strategic direction and priority setting to guide funding, and the provision of communication tools for exporters.

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Relevant food value chain actors



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Processors/retailers



Government



Ag/Food/Climate tech



Farmers

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Image: Treasury Wine Estates

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Increa sing the adoption of CLIMATE-SMART FARMING PRACTICES

Challenging climate conditions, along with low levels of subsidies, have long fuelled Australia's on-farm innovation. Operating in this environment necessitates the adoption of climate-smart practices.

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While current adoptions levels are relatively high, continuing to scale climate-smart land management across agricultural land in Australia will have significant social, environmental and economic benefits.

To understand what is required to achieve adoption at scale, Deloitte surveyed Australian primary producers to gain insight into the barriers and enablers associated with implementation of climate-smart practices, as well as any associated benefits and detriments of their use.

The survey clearly demonstrates that Australian producers, across farmers and graziers, have extensive experience in the adoption of critical climate-smart practices, especially managedgrazing and regenerative agriculture activities.

The on-farm benefits of climate-smart practices are widely recognised. As a result of such practices, 70% of primary producers have reported increased resilience, including drought resilience; 63% have reported environmental benefits, including increased habitat and presence of native species; and 52% have reported productivity benefits, including increased yields.¹³ Improving the condition of nature on farms has the potential to increase the gross margin of farmers by 22% - the equivalent of \$6.1 billion to \$6.9 billion.



Proportion of Australian farmers & graziers currently implementing climate-smart land management practices

Source: Deloitte 2024 Australian Farmer Survey (see Appendix A)

Barriers to implementing new climate-smart practices



Source: Deloitte 2024 Australian Farmer Survey (see Appendix A)

There is, however, a growing concern that the onus for the food-system transformation has been unfairly placed on primary producers. To further ramp up the adoption of climatesmart practices, the broader food system and value-chain partners must be part of the solution.

More specifically, the system as a collective will need to address two key barriers to adoption:

1. Up-front transition costs and time lag in benefits realisation

Of those surveyed, 61% of primary producers indicated that cost is a barrier to them implementing new climate-smart practices. 51% who have adopted climate-smart agriculture practices reported that they had to make compromises with regard to productivity or finances, and 75% indicated that financial assistance, compensation, or recognition of their investment would enable them to implement new climate-smart practices on their farms.¹³

Benefit realisation timeframes are another key concern for producers. It takes time for farming systems and the environment to adjust to alternative or regenerative practices. It could take up to several years before soil health and biodiversity improves to a point where lower synthetic inputs are required, costs to produce a product are reduced, and higher yields and profits can be realised. Some farmers even experience a productivity dip as they transition to new farming practices.

This represents a significant obstacle. It can be financially challenging for producers to trade through a period of low productivity – when cashflow and profitability may also drop – and affect their ability to satisfy interest and debt repayments and meet supply commitments.

In such a scenario, patient low-cost financing could support and encourage producers to bridge the productivity and profitability dip during the transition period.

2. Difficulty and time required for data collection and exchange

The survey also clearly highlighted challenges with climate and nature data collection, measurement and sharing. Close to 55% of respondents cited data collection and exchange as an issue, which is exacerbated by complexities and inefficiencies associated with a lack of standards, measurement tools and frameworks. Producers can find themselves in a position where they are required to provide climate or nature data to a number of players - processors, retailers and financiers - using different formats, methods and data points. The time it takes, as well as the confusion around the frameworks and tools to use, have been identified as significant barriers to adoption.

61% of primary producers indicated that cost is a barrier to adopting climate-smart practices.

Source: Deloitte 2024 Australian Farmer Survey (see Appendix A)

Indicative economics of transition to regenerative farming practices

Profit build up and payback period: farmers profit (\$/year)



Note: The above model is **indicative and based on international data**. In different geographical contexts and agricultural production systems, the level of additional investment to adopt more regenerative practices and specialised equipment will vary by commodity, leading to potential differences in the projected profit gap.



CO-FUNDING AND FINANCIAL ASSISTANCE

While the responsibility to deliver farm level change sits largely with landowners, the full value chain relies on, and will benefit from, the transition.

Currently, there is limited burden-sharing between players such as manufacturers, transport and logistics operators, retailers and financiers that will support changes in farm activity to meet the value chain's collective and individual climate goals. Many organisations have ambitious climate and environmental targets set for 2030, leaving a mere six seasons to plan, deploy and achieve significant change. Time is of the essence.

To accelerate adoption and support the transition, co-funding or financial assistance will be required. This could include financial incentives from value-chain partners such as retailers or processors; financial assistance from government in the form of grants or tax benefits; and the provision of helpful financial instruments from private investors and financial institutions such as banks and insurers.

Recent analysis of 79 large global food and retail companies, collectively worth more than US\$3 trillion in market capital, shows close to two thirds of companies mention regenerative agriculture initiatives in their disclosures. Yet only 8% have allocated budgets to financially support the transition and incentivise uptake of climate smart practices among producers in their supply chains.¹⁴ Examples of processors leading the way in incentive programs include Arla Foods and Tyson.

Adopting climate-smart practices often comes at a cost to farmers, which value chain participants can't expect the farmer to bear alone.

Mark Wiessing

Rabobank Regional Head Australia and New Zealand



Case studies

Arla Foods | Emissions cuts

When it comes to international examples of companies taking decisive action to cut on-farm emissions, Arla Foods is a standout.

The Danish-Swedish multinational co-operative is the fourthlargest dairy food company in the world, and it earmarks an annual commitment of €500 million (about AUD\$826 million) in incentives for farmers when they perform strongly in relation to environmental, social and governance (ESG) goals and emissions cuts.¹⁵ Through its Arla FarmAhead[™] Sustainability Incentive model, the company has undertaken a life-cycle assessment baseline of all supply farmers and provides them with advice on emissions reduction levers and benchmarking data to inform their actions. Farmers receive a premium on their milk payments when they demonstrate improvements across a range of environmental measures, including emissions reductions. Arla Foods' intention is to triple its rate of Scope 3 emissions reductions on-farm to meet the company's 2030 Science Based Targets Initiative (SBTi)-endorsed 30% emission reduction target, while also minimising purchased carbon offsets from outside its supply chain and enabling their retail customers to bring their support to the program.¹⁶

Tyson Foods | Beef bonus

An example of value chain partners incentivising emissions reduction is the Tyson Foods Climate-Smart Beef value chain program, which supports its 2050 net-zero target. Tyson Foods collaborated with its American farm suppliers, The Nature Conservancy and the Environmental Defence Fund, to enable the measurement, monitoring, reporting and verification of the Brazen Beef brand and its promise to customers of achieving a 10% reduction in GHG emissions from farm to a retail-ready product. Under the Tyson Climate-Smart Beef program, farmers are supported to access and adopt emissions-abatement practices that lead to lower carbon emissions intensity protein, which reduces Scope 3 emissions through the supply chain.¹⁷





There is an emerging preference amongst leading food and beverage brand owners to support their farm suppliers as they measure and reduce their on-farm emissions and enhance environmental outcomes, thereby insetting carbon emissions reductions within their food value chain. They often will also bring in their retail customers to amplify this support. However, a key consideration for food and grocery companies, and financial institutions that lend to the sector, is ensuring there is an understanding of how to account for the Scope 3 emissions reductions related to activities they have incentivised, in their reporting.

The Greenhouse Gas Protocol (GHGP) is the leading international framework for greenhouse gas (GHG) accounting. Its draft Land Sector and Removals Guidance (LSRG) protocol aims to standardise how organisations account for and report GHG emissions and removals from land management, land-use change, and biogenic products and related activities. The protocol is expected to be finalised in quarter 1 of 2025. Incentivising climate-smart practices and accounting for the interventions using an inventory accounting approach is still relatively nascent. Nonetheless, companies are progressing their efforts to estimate GHG emissions by identifying priority regions and commodities; understanding the challenges related to their sourcing regions; and creating plans for implementing Scope 3 reductions.¹⁸

Incentives from value-chain players should be presented in tangible terms that lead to realisable economic advantages for farmers, and recognise the support that value-chain partners have contributed towards emissions reductions. One method of achieving this is through inset credits within a value chain, as an alternative option to farmers having to sell carbon offsets (which means the credit is often acquired by heavy-emitting industries outside the food system, and can involve long periods of land-use restrictions). Inset credits are effectively a tool to incentivise producers to reduce their emissions, as they reward the introduction of climate-smart farming practices and are tied to on-farm emissions reduction.

The creation, purchase, and sale of these are typically done through an independent credits developer and verifier who will work with the off-takers of the credits – value-chain players that can then identify and track emissions to ensure their accounted for in their Scope 3 inventory.

Supporting value-chain 'insetting', however, requires a significant level of coordination, investment and measurement reporting and verification. The positive, though, is that the insetting mechanism could enable participants to reduce emissions within the value chain faster, provide additional optionality for food producers not wishing to engage in the carbon offset path, and potentially be extended to support value chain collaboration on naturepositive food-production systems. At the same time, SBTi's Corporate Net-Zero Standard requires that companies reduce their base-year emissions by at least 90% by 2050 and neutralise the residual emissions by purchasing carbon removal credits at netzero.¹⁹ To achieve this, an organisation needs to reduce most emissions within its value chain.

Simply put, there is no shortcut to cutting emissions. Only through working together with partners in the food supply chain to fund abatement of the heaviest emissions can we achieve emission reductions while also improving trust, traceability and food security.

We need new models of patient capital to support farmers as they increase adoption of climate smart farming practices, assembling capital from value chain actors to support farmers through the transition period will be key.

Ben van Delden

Climate and AgriFood Partner, Deloitte Australia

Climate-Smart Farming Transition Advance Scheme

In addition to co-funding, patient low-cost financing could support and encourage producers to bridge the productivity and profitability dip during the transition period. A patient-capital model that leverages other players in the value chain can be an effective mechanism by which producers' financial capacity can be extended.

Currently, due to the risk profile of the agriculture sector – namely volatility linked to seasonality, biosecurity and climatic variability – it is complicated under commercial debt-financing arrangements to support landholders who voluntarily reduce their productivity during the transition to climate-smart farming practices.

Government has a role to play in supporting farmers and producers through these periods of low productivity. For example, Government could establish a registered climate-smart farming transition funding program. Such a mechanism could enable government to support Australia's national emissions reduction targets, as well as food security and natural capital, by supporting the climate-resilience activities of the agriculture sector. The flow-on benefit of such a move is that it could help Australia meet its 2030 commitments to the Paris Accord, the Global Methane Pledge and the Kunming-Montreal Global Biodiversity Framework.

Government funds can be put to work to provide low or no-interest capital to support farmers through the transition window. Such a funding arrangement could include capital contributed by other interested parties in the supply chain such as retailers, banks, insurers, NGOs and philanthropic foundations which are also committed to the climate agenda.

Under this initiative, those in the downstream value chain, including processors and retailers, account for lower emissions intensity products in Scope 3, Category 1 (purchased goods and services). Through the same approach, upstream participants such as fertiliser producers account for the use of the lower emissions intensity products sold in Scope 3, Category 11 (use of sold products).



Seven steps on the path to a Climate-Smart Farming Transition Advance Scheme



If farmers were to exceed their forecast emissions reductions or natural-capital improvements under the plan, they could be rewarded with partial forgiveness of the Climate-Smart Farming Transition Advance they have received.

Under this model, government and other patientcapital providers would align their interests with those of the participating farmer, grazier or producer in the successful adoption of climatesmart farming practices. The capital pool could be recycled in perpetuity to support further abatement and nature-positive outcomes that would reinforce Australia's position as a leading climate-smart agrifood-producing nation.

Finally, a comprehensive database of soil health, emissions, farm productivity and biodiversity would be built as part of monitoring this scheme, which would enable more informed policy decision-making to support the nation's food producers and the nature-repair market. Governments around the world are increasingly funding climate-smart agricultural practices, particularly on-farm initiatives. This is putting Australian producers at a competitive disadvantage in getting our produce into markets that are increasingly demanding evidence of emissions reductions and naturepositive production methods.

Existing funds such as the \$500 million within the \$15 billion National Reconstruction Fund,²⁰ additional \$519 million over the next 8 years for the Future Drought Fund²¹ and the annual ~\$318 million Regional Investment Corporation funding²² could be used to fund a Climate-Smart Farming Transition Advance model in Australia, noting that it should be supported by policy mechanisms for thresholds for repayment, measurement, reporting and verification of activities, outcomes and profitability.

Climate-smart tax policy options for government

To encourage adoption of climate-smart practices, an effective lever that government can pull is the introduction of tax policies relating to the adoption of additional climatesmart practices and decarbonisation initiatives for food manufacturing and agricultural sector participants. Tax concessions such as an instant asset write-off, and accelerated depreciation or deductibility benefits, can stimulate adoption of new practices.



Historically, tax breaks have covered elements such as fuel tax credits; accelerated deduction for expenditure related to water facilities; replacing fencing and fodder storage; and rebuilding certain farm infrastructure after major natural disasters such as bushfires and floods. In such cases, participants were entitled to have certain expenses related to recovery from these events fully deducted in the year of expense.

Government could consider extending tax policy to proactively support farmers to undertake climate-smart farming and naturepositive initiatives. This could include providing taxable income concessions or asset write-offs for farm businesses undertaking climaterelated farming practices which improve climate resilience and biodiversity, and which reduce CO₂e emissions through the adoption of abatement initiatives or regenerative farming practices. This could be extended to full deductibility on agritech and foodtech purchases by farmers, producers and graziers.

Tax incentives could also be applied further downstream in the value chain. Food industry manufacturers are facing the challenge of rising input costs, from labour, ingredients and utilities, and cost of living pressures are constraining ability to pass these on to customers, all whilst needing to invest to decarbonise manufacturing operations. An opportunity exists to offer tax relief to encourage accelerated adoption of technologies that improve resource and energy efficiency and accelerate the decarbonisation of the manufacturing sector; improving both the profitability and environmental impact of the food manufacturing sector. Time-limited tax relief for the uptake of climate-smart practices would require evidence that such actions directly contribute to national and sectoral decarbonisation targets.

Open-source framework for **MEASUREMENT, REPORTING AND DATA EXCHANGE**

Today's climate and nature reporting landscape is fragmented, lacks coordination and is considered inefficient, unreliable and uncompetitive on a global level.

Varied methods for capturing sustainability and emissions data are used, resulting in duplication, inefficiencies and inconsistencies. Data flow through the value chain is disparate and problematic. Farmers and value-chain partners report data multiple times, in different formats, to different actors. This is particularly challenging for small to mediumsized farmers and graziers who are carrying a disproportionate administration burden.

Australia also lacks a robust verification framework, which is creating confusion in domestic and international markets. It is undermining credibility, limits perceived value and is hurting farmers' and organisations' ability to access finance for climate-related projects.

As national regulations become mandatory, it is crucial that all actors along the food value chain can report efficiently and confidently on sustainability metrics.

A consistent open-source measurement framework, a central technology solution for data exchange and a consistent approach to verification is needed to ensure the process is efficient, reliable and globally competitive. Implementing such measures not only simplifies reporting but also unlocks greater collaboration across the value chain, as well as funding opportunities, by providing a clear path to measure and validate return on investment.

Setting up an open-source measurement and reporting framework

Through a targeted collaboration effort involving all value-chain members, Australia could establish national measurement standards and a reporting approach suitable for diverse landscapes.

This approach will need to consider the needs of each food system player, the accessibility of measurement tools, and different sustainability and carbon-certification frameworks used by key customer markets. The measurement framework could then be adapted to amplify Australia's unique strengths, filling any gaps with purpose-built elements that effectively capture and communicate these strengths. The framework will need to be designed in consultation with government to ensure alignment with the Australian Sustainability Reporting Standards (ASRS) and the Australian Agricultural Sustainability Framework, while also considering international guidelines such as the European Union's Corporate Sustainability Reporting Directive (CSRD) and the Independent Standard-Setting Body (ISSB). This will help maintain international market access and reduce future duplication in reporting requirements.

The framework could lay the groundwork for future data collection and permissioned sharing, enabling best-practice reporting and verification. This foundation will open the way for new revenue opportunities such as private investment, or participation in carbon markets.

Ongoing, long-term reporting on emissions-related data is essential. Users could submit a monitoring plan as part of their registration in Australia's climate-smart food program. These plans would detail the data and parameters being assessed, along with monitoring practices, procedures and personnel involved.

Continuous monitoring of relevant data, based on the principles of the Greenhouse Gas Protocol (GHGP) and the Land Sector and Removals Guidance (LSRG), can help track emissions reductions and removals. This data could inform annual monitoring reports to the Australian Food System Coordinating Body, verifying that emissions meet or exceed the commodity emissions intensity pathway set through the SBTi's Forestry, Land and Agriculture Guidance (FLAG). These reports could be published on the body's website, offering public visibility and transparency. Sustainability standards group, Gold Standard, follows a similar approach, making monitoring reports publicly available, which builds trust among consumers and retailers.

Providing trusted datasharing tools to support sustainability claims

To ensure efficient and reliable data flows, Australia could look to establish a central data exchange platform to support the open-source measurement framework for natural capital, GHG emissions, and product traceability data movements through the chain. This service would enable the efficient and confident exchange of trusted points of evidence about a product with supply chain participants, better meeting the Scope 3 emissions reporting requirements of government, retailers and financial service providers, and facilitating participation in the Australian Government's intended nature-repair market.

This could be achieved by enhancing the existing Australian Agricultural Data Exchange project initiated by several research and development corporations (RDCs), state and federal governments, and science and research bodies, so that its functionality is scaled to support the recommended use cases noted above.

Creating an aligned Australian certification framework

To succeed in creating an aligned Australian certification framework, it is essential to develop a model that is applicable to the Australian agriculture and food industry and builds confidence in our climate-smart and naturepositive production techniques. Educating customers and consumers to have confidence in the framework and its integrity is also crucial. The framework should be relevant to customers' sustainability desires and support access to the data they require. Additionally, clear communication of the value that the climate-smart agrifood certification creates for producers is necessary. Frameworks should be easy to understand and communicate, such as the AgCarE approach developed by AgForce Queensland.

> 55% of farmers who were surveyed cited difficulty in collecting data to measure, report and verify impacts as a key barrier to implementing new climate-smart practices on their farms.

Verifying a commodity's alignment

Developing a product certification requires a robust verification process to ensure that commodities meet the requirements of a standardised approach. This process could be conducted by a verifying body at least once every five years, adapting to updated measurement approaches based on new information, as outlined by SustainCERT's Verification Requirements for Value Chain Interventions.²³

Verification procedures for similar frameworks include detailed field visits and desk reviews to collect and assess data on key parameters such as fertiliser usage, crop yields, livestock population and energy consumption. Quality assurance measures validate the accuracy of collected data and can be supported by innovative technologies that measure soil carbon. Verification provides assurance around reported emissions intensities and confirms that users are performing GHG inventory accounting in adherence to GHGP-LSRG principles. Those principles recommend this assurance for all GHG programs to ensure reported emissions reductions, or removals, follow the principles of conservativeness and permanence.

Maintaining climate-smart product certification

Once a climate-smart commodity is verified, an independent body should confirm product certification. Certified products could be labelled for consumers and retailers, similarly to Fairtrade labels, which communicate compliance with their standards.

A digital product-certification mechanism could be supported by the data exchange platform. This would enable participants in the food system to transfer data on their consistently measured product claims and footprint under an Australian Climate-Smart Food Certification standard. Additionally, the certification status of any commodity could be made subject to public appeals and complaints managed through the Australian Food System Coordinating Body, ensuring accountability and reinforcing the credibility of the entire certification process. Certified commodities could be recertified at least every five years to maintain product claims and support continuous reductions in emissions intensities in alignment with the SBTi FLAG pathway.¹⁹

Sharing the burden across the value chain

Having an open-source standardised framework supported by an independent verification body and data exchange is the ideal end-state. Whilst there is an urgent need to mobilise behind this ambition, it will take time to put in place. In the interim, valuechain partners should look to standardise where appropriate and support farmers with data collection.

Banks could look to align methods of measuring the impact on nature and emissions from capital invested in the food and agriculture supply chain. This consistency across the financial services sector could be driven by initiatives like those from the Australian Banking Association, ensuring that investments are directed towards genuinely sustainable practices.

Australian retailers and food processors could work with farmers and producers to support measurement and data collection. International examples of successful collaborations include Carlsberg Breweries' measurement of regenerative agriculture certification for barley supplies,²⁴ Arla Foods²⁵ and FrieslandCampina's²⁶ measurement of the environmental impact of their dairy farm suppliers, and Red Tractor's²⁷ assessment of farm supply-chain compliance.

Strengthening sovereign SUPPLY Cp and fostering innovation

The ongoing trend in offshoring and the rising levels of imports of value-added foods means that our local food system has become less resilient to global shocks and trade disputes.

Applied selectively, strategic investment in our sovereign capabilities across onshore production and processing, smart technologies and food innovation can create a more reliable and circular food supply, while increasing economic value-add and lowering the industry's carbon footprint.



Many of Australia's critical input materials including fertilisers, pesticides, herbicides, fuel and machinery are sourced from overseas.

For the fertilisers used in Australia, the proportion manufactured overseas is as high as 80%.²⁸ Disruptions caused by recent global events exposed just how high the cost of this dependency is. And these dependencies go well beyond agricultural inputs into labour, equipment, and processing capability.

Given the relative high cost of manufacturing and labour in Australia, produce is often shipped overseas to be processed, only to end up back on Australia's supermarket shelves. Not only does this lengthen the supply chain with a likely increased carbon footprint of the product, but the global risk exposures go up. It could also mean Australia misses the opportunity to capture the full value that is created throughout the process. Sovereignty of food supply chain in Australia deserves a rethink, given how inextricably linked food security is to national security.

While food supply sovereignty is guaranteed to drive greater resilience, it does not mean Australia will unquestionably benefit from bringing critical inputs and value-add onshore. Australia's ability to be cost competitive will have to be carefully considered, and investments in technological innovation and automation will be critical to ensuring potential economic benefits are realised.

The type of onshore production or processing that could be advantageous for Australia includes:

 manufacturing that is knowledge and capital intensive, rather than labour intensive (e.g. genetics, biotech, automation and agritech, given Australia's high labour costs and skilled labour shortages)

- processing that is reliant on fresh and perishable primary production inputs and where brand can add value (e.g. wine, dairy and some horticulture and meat that as fresh, unprocessed products would deteriorate before they reached offshore markets)
- processing that promotes circularity through innovative alternative inputs or products (e.g. biofertiliser to substitute synthetic fertiliser, and biofuels to substitute diesel use and reduce energy costs, trace elements for inclusion in food manufacturing and specialist packaging materials for food and beverage goods).

Like other markets such as the United States and the European Union, Australia could benefit from a national critical input and food manufacturing strategy to improve resilience and drive premium value in areas where Australia can forge a competitive advantage.

The need to address this at a national level has already been acknowledged by the government of Australia through the establishment of the Future Made in Australia agenda,²⁹ which aims to maximise the benefits of domestic industrial and economic transformation.

A dedicated Food System Infrastructure Fund could bring together a range of existing capital to finance the development of onshore capability. This could include allocation of existing government funds such as the \$224.9 billion Future Fund,³⁰ the \$22.7 billion Future Made in Australia Fund³¹ and the \$500 million within the National Reconstruction Fund,²⁰ however superannuation and insurance sector investment could also be attracted into such a fund.

In addition to channelling larger capital flows, a well-articulated food manufacturing strategy could drive cross-agency coordination of research and development activities' funds and innovation grants directed to priority areas.

Food security and **MANUFACTURING STRATEGY**

MANUFACTURING/ INNOVATION HUBS and regional precincts

Price-competitive and circular onshore manufacturing relies on the rapid scaling of innovation, smart technologies and regional-level material flow data to enable the optimal use of local resources.

> One of the areas into which a Food System Infrastructure fund could consider channelling funding is regional manufacturing precincts and circularity innovation hubs.

> Regional precincts offer an opportunity to unlock economic value and invigorate Australia's regional and rural communities.³² Precincts such as the Peel Food Innovation Precinct³³ in Western Australia and the TURBINE Food and Beverage Manufacturing Precinct³⁴ at the Sunshine Coast Industrial Park in Queensland are designed to support value-added manufacturing and retail-ready, shelf-stable packaging and distribution of fresh produce to key airfreight export markets.

> Likewise, industrial manufacturing hubs such as the Parkes Special Activation Precinct³⁵ in NSW support circular manufacturing and resource-recovery initiatives.

Regional precincts drive collaboration and joint investment between all three tiers of government and within a particular location to promote economic development that would not otherwise happen without government intervention (or what we call place-based intervention).³²

The establishment of regional precincts would result in two key benefits:

- Shortened supply chains reduce the supply-chain volatility; lower the carbon footprint; and contribute to local economies while supporting food security for Australia.
- 2. Value-added product manufacturing focused innovation and development of circular economy applications; accelerate regional industries to decarbonise and develop new valueadded low-emission industries.

Furthermore, Australia could look to scale successful innovation and circularity centres such as the Centre for Circularity³⁶ in Bega and the Charles Sturt University Global Digital Farm³⁷ in Wagga Wagga, both of which showcase and accelerate innovation transfer and adoption. The nation could also demonstrate agri-practices and technology advancements across Australia through a national network of smart farms, allowing producers to engage with low-emissions energy solutions for farms and gain access to soil carbon-enhancement trials such as the Cool Soil Initiative³⁸ at Charles Sturt University.

Innovation hubs and precincts - global and local examples

For graziers, producers and farmers to take up climate-smart agriculture technologies and practices, there needs to be greater access to working demonstrations of these solutions and trials.



Farm of the Future | The Netherlands

At Wageningen University & Research in the Netherlands, the Farm of the Future program has been testing circular agriculture techniques for multi-species interspersed cropping to reduce dependence on pesticides and improve biodiversity and soil health. Producers and major seed and grain companies are collaborating to test yield impacts of regenerative and circular agriculture techniques.³⁹

AgriPark | Australia

In Australia, AgriPark, at Australia's largest regional university, Charles Sturt University, is an example of an innovation ecosystem in the heart of the NSW Riverina that is dedicated to agricultural research, curated collaboration and sustainable production. Since its launch in 2016, AgriPark has tackled some of the big issues facing regional Australia, including improving the digital literacy of our future industry leaders, demonstrating and validating new on-farm technologies, and researching soil and carbon emissions solutions. AgriPark is also the home of a 1600-hectare commercial farm. This Global Digital Farm is integrated with the Commonwealth Nations Smart Farm Network, and helps share access to insights and technology trialled on smart farms across countries such as Canada, New Zealand and England.⁴⁰





The Bega Circular Valley | Australia

The Circular Valley program in Bega is a regional circularity initiative born from the Black Summer bushfires of 2019. It heightens community awareness about the need to improve environmental resilience and promote sustainable economic opportunities in the primary sector. Recognised by the United Nations, this food system project has attracted international attention. This unique industry and community-led movement is sponsored by the Regional Circularity Cooperative, whose foundation members come from local, national and international industry, state and local governments, community members, research organisations and universities to invest in accelerating circular interventions on farms and beyond. One of the foundational projects of the Bega initiative is the building of the National Centre for Circularity, which will support knowledge exchange and showcase circular solutions across a variety of regional industries. It will also provide insights on regional material flow and natural capital monitoring.⁴¹

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Australia's brand in global food markets has strong foundations. Our food is considered safe, green, clean and of high quality, and our on-farm management and innovation is leading edge. There is an opportunity to build on these foundations and strengthen our brand through a cohesive, fact-based story, as well as diversifying our export markets by expanding beyond food products into intellectual property, bioand agriculture technologies.

44% of Australian farmers believe Australia is losing its competitiveness on the global stage.

Source: Deloitte 2024 Australian Farmer Survey (see Appendix A)





EXPORT MARKET DIVERSIFICATION

Australia has been on a journey to invest in trade relationships and diversify its export markets.

Over the past five years it has improved its economic resilience and grown its relevance in key markets such as the Association of Southeast Asian Nations (ASEAN), India, Japan and South Korea. However, there is more than can be done to strengthen Australia's positioning and grow its export value.⁴²

Australia has demonstrated it's ability to operate resilient food and agricultural systems across six challenging climatic zones which can experience bushfires, floods and droughts in a single year. The knowledge, techniques and solutions Australia has developed can be considered world leading and could be valuable to trade partners as their environments change and affect their food-production systems.

Codifying and marketing Australia's climatesmart farming techniques, along with local agritech and biotech solutions, could increase export earnings from intellectual property (IP), research and technology as well as strengthen bilateral and geopolitical relationships. Codifying and marketing Australia's climate-smart farming techniques, along with local agritech and biotech solutions, could increase export earnings as well as strengthen bilateral and geopolitical relationships.

Furthermore, Australia has a world-leading carbon program monitoring framework. Marketing the maturity of our carbon market framework, alongside our extensive future potential for delivering land-based carbon sequestration, offers the opportunity to market our carbon market to foreign capital, which will be chasing verified high-credibility carbon credits during the next decade. As international entities seek trusted verified carbon projects, Australia is well placed to meet these needs.

Maximising this potential however requires a deliberate food system export strategy supported by a coordinated execution approach.



Australian agricultural, fisheries, and forestry exports from the world 42

BRAND NARRATIVE AND SUPPORTING TOOLS

Australia has a unique food and agriculture story to share.

This story and the value Australia offers the world is not widely understood, nor cohesively packaged in way that would allow Australia to strengthen its position in international markets.

Australia could learn from countries such as New Zealand, Ireland, the Netherlands and Denmark, which have all adopted a collective approach to developing a common narrative. In addition, they provide the evidence and tools that allow exporters and governments to secure access and amplify their strongholds in markets that need and value their products and know-how.

A national brand narrative needs to encapsulate a set of identified strengths. These should be embedded into a repository of key artefacts and high-quality digital marketing assets, including engaging content and virtual tours, that can be used to showcase Australia's leading-edge techniques and technologies and amplify the story of this value with international customers.

Source: Australian Bureau of Statistics

The need for greater coordination and **PUBLIC AND PRIVATE COLLABORATION**

Transforming a complex and interconnected food system at pace and at scale requires close coordination across the value chain, including effective public and private collaboration.

> Transforming a complex and interconnected food system at pace and at scale requires close coordination across the value chain, including effective public and private collaboration.

Australia's current food system is highly fragmented. It comprises over 100,000 food producers and food manufacturing businesses, more than 250 representative organisations and industry bodies, 9 departments of agriculture, 42 universities, 15 research and development corporations^{43 44} and a wide range of farmer groups, retailers and financiers.

At present, there is no overarching body to unify these entities, nor is there a common strategic ambition that could be leveraged to channel efforts and funding to priority areas to maximise impact. Australia could learn from leading countries around the world including New Zealand, the Netherlands and Denmark, where coordinated approaches have positioned these nations as leading food innovators. These countries have set up public-private partnership (PPP). leadership constructs to facilitate collaboration and coordination around critical topics and investments. Establishing an Australian Food System Coordinating body should be a first step to enabling action today and into the future.

Food Nation Denmark | A landmark PPP

Food Nation is a public-private partnership group that represents Denmark's national food and agriculture story, generating international awareness of its innovative and sustainable food production. This PPP was established by the Danish government in partnership with private organisations, unions and companies from across the nation, and includes iconic national brands such as Arla, Carlsberg Group, and Danish Crown. Food Nation acts as a gateway to Denmark for international customers, facilitating connection and collaboration between businesses, and equips Danish food players with a 'toolbox' of assets that allows them to clearly demonstrate their product value, innovative solutions and know-how. The PPP also has a physical footprint with two visitor centres that tangibly demonstrate the nation's food story.⁴⁵



The focus of the food coordinating body will be to drive the mobilisation and/or delivery of the key recommendations outlined in this position paper. More specifically:

1. Climate-smart practices

- supporting an open-source framework for national standards in climate-smart food production ensuring accountability and reinforcing the credibility of the entire certification process
- creating a Climate-Smart Farming Transition Advance scheme and verification of baseline position on entry of farmers into scheme
- support provision of data exchange services to enable food supply chain sustainability and GHG emissions data to be verified, collated, and exchanged through supply chain partners.

2. Strategic direction setting

- contributing to a national food strategy as recommended by the 2023 Australian Senate report on Food Security
- provide guidance on the allocation of government funds based on strategic priorities.

3. Brand Australia – supporting tools

 developing a cohesive Australian agrifood story and set of communication tools to bolster the sustainable and trusted foodproduction attributes of our national brand in global markets (digital portal with supporting data, artifacts, and resources).

Government has a key role to play in the establishment of the coordinating body, as well as active representation alongside industry on the board of the Australian Food System Coordinating Body. The Taskforce recommend government contribution of seed funding to enable the establishment, and foundational tasks of the coordinating body, as part of a multi-pronged funding model.

This is an opportunity for leadership. By uniting as a coordinated food system and rallying behind the recommendations, Australia can become a true food superpower.

The time to act is now.

Taskforce PLEDGES

Commitment to realising Australia's future as a food superpower

As a taskforce we are committed to being drivers of change, and leading by example. Both individually and as a collective, we are taking action to create a new exciting future for Australia. It is our hope to inspire others to join us in delivering this vision.



ALASDAIR MACLEOD

Executive Chair, Macdoch Group

My goal: Championing resilient businesses that take advantage of natural capital strengths

At Macdoch, we believe that Australia can be a global leader in building natural capital, and thereby lead the transition to a lowcarbon, climate-resilient future. We demonstrate this in different ways. First, we own farming operations that practise what we preach, by building resilient businesses that are also developing their natural capital. Second, we develop tools that help other farmers build natural capital which may, or may not, be monetised through carbon and emerging biodiversity markets. Third, through our associate business, Impact Ag Partners, we are helping develop pathways for outside capital to invest in agriculture with these values in mind.

Through the Macdoch Foundation, we are championing sustainable land-management practices. One such initiative is Farming for the Future, a flagship research program that aims to demonstrate the relationship between farm profitability and the state of that farm's natural capital, thereby showing that there is a direct financial incentive to invest in nature.

My focus:

- advancing the conversation about climate, nature repair and investment in natural capital to help farmers build more resilient businesses and access natural capital markets. We showcase this work at the annual Wilmot Field Day on one of our properties in the New England Tablelands
- through the "Farming for the Future" project, we raise the awareness of the importance of collecting Natural Capital Data and how this can help farmers optimise on-farm decisions, and access better financing opportunities and supply chains
- we hope to further enhance the policy discussion around how the Food and Agriculture sector can make a positive contribution to key national objectives, such as Climate Change, Nature Repair and building resilient rural Communities. Through Macdoch Foundation, we regularly attend Global convenings such as the UN Climate Change Conference (COP), NY Climate Week and the recent Global Nature Repair Summit in Sydney.

We need to be able to provide the transparency in our supply chains and show that the food we are producing is enhancing, and not damaging, <u>natural ecosystems</u>.

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My goal: Driving sustainable solutions from farm to table

Contributing to sustainability and collaboration across the food system is something I'm particularly passionate about. In my current roles, I am championing industry initiatives that address critical environmental challenges, promote circular solutions and nurture innovation.

At the forefront of these endeavours is the Cool Soil Initiative, a pioneering partnership that works closely with farmers to test and validate management practices related to soil health. By mitigating greenhouse gas emissions on-farm and supporting the sustainability, productivity and profitability of farming enterprises, the initiative exemplifies the kind of actions I am passionate about as we generate positive environmental impacts from paddock to product.

I am also proud of the work we are doing in the industry through the AFGC. For example, the National Plastics Recycling Scheme is facilitating a new and advanced recycling industry in Australia that can turn used soft plastics into new food-grade packaging.

My focus:

- ensuring a bright future for Australian food manufacturing by driving innovation and capability building, as the Chair of the Australian Food and Grocery Council board
- collaborating across the value chain to drive change at scale, through programs such as the Cool Soil Initiative, and contributing to the Australian Food System Coordinating Body to ensure we have a connected, world-leading and sustainable Australian-led food system
- creating purpose-led solutions that respond to the needs of Australian consumers, including bringing industry together to focus on developing circularity in packaging and product manufacturing processes.

In my current roles, I am championing industry initiatives that address critical environmental challenges, promote circular solutions and nurture innovation.



ANTHONY HOLME

Cha<mark>ir, Australia Food and Grocery Council,</mark> Managing Director, Kellanova ANZ I am passionate and remain focused on identifying, advocating and promoting sustainable practices across the industry to secure a strong future for Australia's food system, with the UN sustainability goals in the viewfinder.



My goal: Advocating for productivity and sustainability in Australian agriculture

Throughout my career in Australia's food and fibre industries, I have dedicated myself to initiatives that reflect my commitment to productive, resilient and ideally sustainable and communityaccepted agricultural practices conducted in a work-safe manner.

With more than 45 years of hands-on leadership roles in agriculture across five states, I have been continually initiating or driving projects that improve productivity to enhance sustainable agricultural production. With the three top priorities in the United Nations sustainability goals being 'no poverty', 'zero hunger' and 'health and wellbeing', I see increased productivity from reduced inputs within sustainable food-producing businesses as a clear pathway.

As a non-executive director of Cattle Australia, I am able to advocate to governments and promote projects that enhance sustainable grassfed beef production in Australia while supporting farmers and communities.

Cattle Australia has been a front-row participant in the Federal Government's Carbon + Biodiversity Pilot Program, which is now recognised globally for its innovative approach to rewarding producers for on-farm biodiversity stewardship. The pilot programs seek to demonstrate that 'environmental markets', which reward landholders for such things as carbon and biodiversity outcomes, can provide a real way to diversify, and potentially boost, farm income.

My focus:

- promoting projects that can identify animals with superior performance but with reduced inputs and lower emissions, and replicating at scale
- supporting projects that identify crops and feedstocks for alternative energy production that do not compete with food production, and maintain parity returns for growers
- advocating to enhance global trade access and parity while bolstering formal food secure systems at home
- identifying and implementing the incorporation of energy systems and biodiversity program options into traditional but non-foodproducing areas of our agricultural lands.

DAVID FOOTE

Non-executive director, Cattle Australia, Craig Mostyn Group, Angel Seafoods, 40 South Dairies, DF Agrifood Advisory

BARRY IRVIN

Executive Chairman, Bega Group, Chairman, Regional Circularity Cooperative, Giant Steps, Southern NSW Innovation Hub

My goal: Taking the lead with circular innovation

The Bega Group and I are dedicated to leading by example and sharing our culture of innovation, sustainability and knowledgesharing with the food industry. I am proud of the way our company has grown into a global player, while championing initiatives that contribute to the sustainability of agricultural production.

Through the Bega Circular Valley initiative, we aim to demonstrate the benefits of the circular economy and change the way people think about reusing and recycling, and reducing waste. The Bega Circular Valley 2030 program has set a bold vision to establish the Bega Valley Shire as a global leader in circular economies by 2030. By identifying and enabling the implementation of projects, we aim to stimulate a regional circular marketplace that serves as a model for others operating not just in the region, but worldwide.

A key component of this vision is the establishment of Australia's inaugural National Centre for Circularity, which is scheduled to open in 2026. This innovation hub fosters collaboration and knowledge exchange to drive the adoption of circular practices nationwide.

My focus:

- promoting a culture of innovation and knowledge-sharing
- driving the adoption of circular practices nationwide, with Bega Group and the Regional Circularity Co-operative
- advocating innovation to tackle drought and support regional communities.

B.A. Im

As the Independent Chair of the Southern NSW Innovation Hub, I am championing userdriven innovation to combat drought and facilitate transformational change in regional communities.

HOLLY KRAMER

Chair, Woolworths Group Board Sustainability Committee; Non-Executive Director, Woolworths, Fonterra, ANZ Bank

My goal: Catalysing sustainable change across the supply chain

I am passionate about driving climate and nature resiliency across the food system, which will require a new level of commitment and collaboration beyond what exists today. In my non-executive director roles, I am in a privileged position to identify the challenges and opportunities and the need to work together – along with government, industry bodies and other key players in the ecosystem – to drive meaningful change.

As part of Woolworths' newly SBTi-aligned Scope 3 emissions commitments, we will work with all suppliers in our value chain to help drive a fair and just transition. Among our many initiatives to date, we have worked to reduce food waste upstream and within our operations.

We are investing in programs that foster regenerative practices, and we are working with suppliers to baseline their emissions. I am also active in other parts of the ecosystem, including as a director of Nbryo, an Australian bio-digital company pioneering reproductive technology in beef and dairy herds.

My focus:

- · helping companies with their sustainability journey
- accelerating generational change in agricultural productivity while reducing methane emissions and promoting sustainable farming practices
- leveraging various roles to help drive and support the recommendations of the Taskforce.

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In my role as Chair of the Woolworths **Group Board** Sustainability Committee, I am proud to have driven initiatives aimed at reducing the company's carbon footprint and promoting environmental stewardship, with the goal to become net carbon positive by 2050.

The common denominator in agricultural evolution, we believe, is the relentless march of technology.

My goal: Fostering innovation and supporting agriculture

Fundamentally, I am motivated by a passion for supporting a thriving agriculture sector through the financing of innovative tools that enhance how we produce, distribute and consume food. I want to accelerate innovation and empower purpose-driven entrepreneurs to deliver impactful solutions to the industry.

As a specialist investor, I value strategic partnerships and the tangible benefits of collaboration. In my roles at Cultiv8, we have intentionally cultivated a collaborative ecosystem across the supply chain, facilitating the exchange of expertise and support to drive innovation and technology adoption.

Whether supporting startups focused on climate adaptability, data connectivity, or automation, our mission is clear – to fund technologies that foster a productive, sustainable and profitable food system. What excites me most is the incredible people in which we have invested and the potential of the technologies they are bringing to the sector. These founders are deeply committed to supporting a productive agricultural system, bringing new ideas and approaches.

My focus:

- mentoring and supporting agri-food tech startups, leveraging technology that balances tomorrow's needs with today's farming realities
- developing new financial products to unlock sector-specific opportunities, collaborating with key value chain stakeholders to deliver measurable and actionable impact
- promoting the growth and of regional communities to foster opportunities and diversification of local economies.

JONATHON QUIGLEY

Co-founder, SparkLabs Cultiv8 and Cultiv8 Funds Management

MARK VAN DYCK

Taskforce Chairman, Group CEO and Managing Director Domino's Pizza Enterprises

My goal: Leading the charge for change

The food and beverage industry has been a core part of my career. I am passionate about food systems and their impact on health, and I have long been committed to sustainability and climate action.

As the Asia-Pacific Region Managing Director for Compass Group, I led a business that delivered more than 400 million meals a year, underscoring my understanding of the enormous impact that food can have. In that role, I drove initiatives to reduce emissions across Compass Asia's operations and value chain, cut food waste and redesigned food offerings to promote healthy and planetpositive choices.

A strong focus on procurement and supply chains also reflects my ambition to support sustainable agricultural practices and animal welfare, along with traceability from paddock to plate.

My focus:

- ensuring the recommendations of the Taskforce are maximised in terms of awareness, adoption and impact
- building stronger food and agriculture interdependency, and thereby trade in Asia-Pacific, especially through the establishment of bilateral initiatives with Japan and Singapore to support food security.

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I am passionate about food systems and their impact on health, and I have long been committed to sustainability and climate action.

My goal: Leveraging global solutions for local impact

Across my banking career, I have been fortunate to have had direct involvement with the food and agribusiness sector across five continents. Through Rabobank, I am committed to leveraging that global knowledge and my relationships to support transformative solutions within the Australian food system.

At the heart of my approach is a dedication to helping farmers grow because, in so doing, we help create livelihoods, we help create wealth, we help strengthen rural communities, and we help feed the world.

In bringing best practices from around the globe to Australia, we complement Australia's own best practices. At the same time, we can help empower the entire agribusiness value chain, through climate and nature transitions, to create a more collaborative and resilient agricultural sector.

In cooperation with stakeholders such as government, academia and industry bodies, Rabobank supports several initiatives in the search for relevant financial and other solutions to support Australia's farmers and their value chains.

My focus:

- · strengthening rural communities and helping farmers grow
- supporting our farmers with innovative financial solutions for their transitions
- building a sustainable, resilient and globally competitive food and agriculture system in Australia.

In bringing best practices from around the globe to Australia, we complement Australia's own best practices.

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MARK WIESSING

Regional Head, Rabobank Australia and New Zealand



We're not just shaping the future of food; systemwide transformation empowers everyone in the supply chain and drives progress that benefits all Australians.

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My goal: Orchestrating food innovation and sustainability

I have long been passionate about the advancement of food innovation, sustainable production and manufacturing. During my career, I have also backed several public initiatives, with respect to system leadership, as well as research and development, to drive the evolution of agriculture and food in Australia.

Throughout my tenure in various leadership roles, including as Chair of Wine Australia and Chair of Meat And Livestock Australia, I have pursued initiatives that not only drive innovation within specific sectors, but also have broader implications for Australian agriculture. During my time at Wine Australia, for example, the organisation developed the Wine Australia ESG Investment Plan, a strategic blueprint designed to future-proof the Australian grape and wine sector through sustainable practices and investments. This ambitious plan also serves as a model for collaboration and co-investment that benefits the broader agricultural landscape.

I see that the future growth in agriculture and food is about bringing both sectors closer together with a national food policy, and eventually a Food Minister at both Federal and State and Territory levels. The growth of the manufacturing sector, using agricultural inputs, is the future of our food-ingredients export growth. The development of leadership to deliver these outcomes is vital for Australia.

My focus:

- driving food and agriculture innovation systems in Australia
- forging connections across industries and driving progress for the food and agriculture system.

DR MICHELE ALLAN AO

Chancellor, Charles Sturt University, Chair, Wine Australia & Smart Sat CRC ROBERT SPURWAY

Managing Director and CEO of GrainCorp

My goal: Pioneering sustainable solutions in agriculture

I have long believed in the potential of the agricultural and foodproduction sectors to advance our nation's sustainability goals and help solve the environmental issues we face.

In my role at GrainCorp, I have advocated for consistency, clear definitions, standards and tools in climate-smart agriculture and, together with our team, we are driving progress toward these goals through several key initiatives and partnerships.

Our GrainCorp Ventures team has invested in a range of businesses that are bringing sustainable technology to the sector. We were proud, for example, to be one of the first companies to invest in FutureFeed, a CSIRO-backed startup dedicated to reducing methane emissions from cattle, as well as increasing production with seaweed-based feed supplements.

GrainCorp is also working with other grain supply chain participants to trial best practice solutions that can lower the carbon emissions of a canola crop from the paddock to the plate. Through our leading initiative GrainCorp Next, we are working with growers, industry and customers to incorporate practices that will drive emissions down in a traceable and sustainable way.

GrainCorp has partnered with industry super-owned IFM Investors and leading energy company Ampol to explore the feasibility of a renewable fuels supply chain in Australia, powered by agricultural feedstocks. With growing recognition of 'drop-in' fuels that can materially reduce hard-to-abate transport sector emissions, this is an exciting opportunity for farmers to play their part in our nation's shift to net zero.

My focus:

- identifying and sharing best-practice examples of sustainable agriculture that deliver results for farmers and the planet
- continuing to share and advocate for the opportunities that the Taskforce will bring alongside good national policy in Australia
- partnering with and investing in companies that are taking distinct action to implement high-impact practices across the value chain.

We believe that Australian agriculture can play a significant role in decarbonising the transport sectors.

Hobert ! April

Professor ROY GREEN AM

Special Innovation Advisor, University of Technology Sydney, Chairman, Port of Newcastle, Advanced Robotics for Manufacturing (ARM) Hub, Non Executive Director CSIRO, SmartSat CRC

My goal: Pioneering innovation for resilient agriculture

I am on a mission to champion initiatives that leverage cutting-edge technology to address pressing challenges. In this context, I am also passionate about the power of innovation and its role in the food and agriculture system.

Across my positions, including board roles with the CSIRO and SmartSat CRC, I harness my experience in government, the private sector and academia to drive transformative change and propel the food sector to a more dynamic future. Specifically, during my tenure as Chair of the Advanced Robotics for Manufacturing (ARM) Hub, we have been instrumental in supporting business solutions with far-reaching impacts.

By exploring the huge potential of automation, the team is pioneering research and technology development that not only addresses labour shortages, but also enhances the ability of industries to adapt and thrive in a rapidly changing environment.

My focus:

- diversifying Australia's narrow trade and industrial structure and creating the jobs and industries of the future through various roles in advisory forums, media advocacy, policy research and the practical application of this strategy in a range of firms and organisations
- accelerating the deployment of technological change and innovation across the food and agriculture system to address the interconnected challenges of the net-zero energy transition and the need for greater economic resilience and complexity in the context of the Future Made in Australia plan
- building the best, most efficient and most sustainable food and agriculture system in the world by establishing a coordinating focus in government and facilitating deep collaboration between industry and researchers in place-based innovation ecosystems.

By embracing automation and robotics, we're not just enhancing efficiency; we're building resilience and future-proofing our food system.

V Con m

I am passionate and committed to advocating and enabling investment in the agriculture sector and in the communities in which they are located to deliver sustainable outcomes across the industry to secure a strong future for Australia's farmers and producers.

Any Alahar

My goal: Driving and supporting a sustainable and vibrant agriculture sector

I am a passionate and committed advocate for farming, agriculture and rural and regional communities. My passion is embedded in the need to recognise the role farmers and producers play in feeding and clothing consumer around the world and here in Australia, by their ongoing sustainability. When I say sustainability, I mean financially resilient, environmentally efficient and socially minded. The achievement of our collective goals will be realised only by working together. At the NFF we provide a national platform that unites stakeholders across the supply chain to deliver a coordinated and clear voice that leads the sector to develop, support and drive innovation and policy adoption.

My focus:

Australia's natural capital allows us to be some of the most sustainable and competitive farmers on the planet. It gives us a unique position to capitalise on:

- advocating and representing farmers in the important conversations that are and need to be had in relation to sustainable production, climate, natural capital that will help farmers be more profitable, more resilient and continue to be trusted and valued by the community and consumers
- making sure agriculture, farmers and their communities are
 embedded in the conversations and developments and remain
 recognised as they key stakeholders that are building Australia's
 vibrant and optimistic future as a respected agricultural
 production powerhouse in the global market, that delivers
 a significant economic contribution at the local, regional
 and national level
- identifying and enabling appropriate investment in rural and regional communities that provides opportunity for complimentary innovative energy systems ,and biodiversity initiatives that delivers tangible and longterm benefits for Australian agriculture.

TONY MAHAR

Chief Executive, National Farmers Federation

Deloitte.

At Deloitte, we believe the future of food should be sustainable, regenerative and resilient. Achieving this requires leaders across industries to show courage and collaboration. Together with clients and alliances, Deloitte is helping to transform the food ecosystem. We are committed to bringing our advisory, technology and influence to meeting the challenges of addressing climate change and biodiversity loss while improving food security for a growing population.

Globally, we have made substantial investments in the capability of our people and the development of technology solutions to improve climate smart practices, and here in Australia through our three Deloitte Carbon Forest properties we are working hard on reaching net zero emissions by 2030.

Our focus

We deliver on our commitment to build a better Future of Food through:

Shaping the debate

We use our voice and influence in global and local climate and food forums. Examples include our role as a long-standing strategic partner of the World Economic Forum where we contribute to thought leadership and partake in initiatives to accelerate and scale the adoption of climate-smart agriculture.

We support policy development through our active participation in the Taskforce For Nature Related Disclosures (TNFD) where we co-developed a risk management and disclosure framework that enables companies to integrate nature into decision making, and World Business Council for Sustainable Development where we co-developed circular economy measurement metrics and protocols.

We also bring expertise and economic research to key climate forums including COP29 to shape the debate and mobilise action.

Connecting ecosystems

In addition to our founding partner role on the Australian Food and Agriculture Taskforce, Deloitte is a founding member of the Climate Leaders Coalition, a group of 44 Australian CEOs committed to support the aims of the Paris Agreement.

Deloitte co-established the Climate Governance Initiative Australia alongside the Australian Institute of Company Directors to mobilise, educate and equip directors with the skills and knowledge necessary to address climate change at the board level.

We are active contributors to the Sustainability initiatives of key industry bodies including Australian Food and Grocery Council and frequently offer Executive Study Tours to connect clients around the world working to transform and decarbonise food production.

Investing in technology solutions

We leverage our deep technology and innovation capability to bring climate solutions to the food industry.

Solutions include satellite and IoT sensor enabled sustainability and climate monitoring, such as our PRISM remote sensing climate service, carbon monitoring tools such as Clear Carbon[™], computer vision tools like AI4Animals to improve animal welfare, GreenLight solution for emissions monitoring, and GreenSpace Tech solution for monitoring global climate tech enhancements.

Together with our clients and alliance partners, we make deliberate investments to create a technology enabled future of food.



Building a food system that advances our planet, people and economy is what drives me and our passionate Deloitte food teams every day.

Vanessa Matthijssen National Exec and Consumer Industry Leader, Deloitte Australia, Future of Food Leader, Deloitte Asia Pacific



I am dedicated to championing circularity and technology innovations that transform our food system so it enhances the environment and addresses our food security challenges.

Ben van Delden Climate and AgriFood Partner, Deloitte Australia

APPENDIX: RESEARCH METHODOLOGY

Appendix A: Farmer survey

This appendix summaries the methodology and approach Deloitte used to conduct the 2024 farmer survey.

Methodology

The survey and analysis referenced throughout this paper were conducted to support the findings and recommendations in the position paper. The objective of the survey was to understand current adoption rates of on-farm climate-smart practices and the key factors informing adoption, including benefits and detriments of implementing the practices currently in place, as well as barriers and enablers to implementing new practices.

Approach

The survey was an online quantitative survey and comprised a mix of open- and closed-ended questions. A sample size of 225 farmers across Australia participated in the research. The Taskforce is immensely grateful for the time and insight the producers contributed.

The survey consisted of a list of questions pertaining to the following categories:

- demographics
- level of adoption of climate-smart practices, and intention to implement new practices in future
- · benefits and detriments experienced from implementing climate-smart practices
- · barriers and enablers to adopting additional or new climate-smart practices
- participation in grant programs, carbon credit programs, sustainable agriculture methods and certifications.



Commodities produced on-farm

Commodity coverage is depicted in the chart alongside. Research was conducted nationwide, though it should be noted that several respondents had farming properties in multiple states, and that many respondents utilised "mixed cropping grazing" and, therefore, produce more than one type of commodity on their properties.

Appendix B: Impact opportunity modelling

This appendix summarises the key inputs and assumptions used in the impact opportunity modelling and analysis.

Climate estimate inputs and assumptions

a. Greenhouse gas (GHG) impact of land sector carbon farming – assumptions are based on a spatial analysis conducted by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) into the potential future supply of offsets from land sector carbon farming in Australia, using Emission Reduction Fund (ERF) methodology activities. This analysis includes estimates for the total suitable area in hectares and total carbon sequestration potential per year of six ERF methodologies. Figures used reflect 'economically constrained' area and sequestration potential, determined as relating to area where methodologies are both technically feasible and economically viable, assuming a carbon price of \$30 tCO₂e⁻¹.

ERF methodology	Total suitable area (Ha) ⁴⁶	Total potential carbon sequestration (tonnes of CO ₂ e/year) ⁴⁶
Permanent plantings: Reforestation by environmental block plantings	560,000	16,040,000
Permanent plantings: Reforestation by mallee block plantings	62,000	1,230,000
Plantation forestry: New plantation establishment	981,000	31,200,000
Farm forestry: Plantations for harvest	880,000	12,540,000
Human induced regeneration of native forest	22,500,000	37,000,000
Savanna fire management	39,400,000	1,480,000

b. GHG impact of climate-smart land management practices – assumptions related to emissions reduction potential of select climate-smart land management practices are based on the metaanalysis of scientific literature conducted by Project Drawdown, which includes estimates for the carbon reduction and sequestration potential of four practices per hectare per year.

Practice name	Practice description	Climatic region	Average emissions reduction (tonnes of CO ₂ e/ha/year) ⁴⁷
Conservation agriculture	Includes practices such as cover cropping and reduced tillage to enhance biosequestration.	Tropical-humid	0.78
		Tropical semi-arid	0.61
		Temperate/boreal-humid	0.38
		Temperate/boreal-semi-arid	0.25
Nutrient management	More efficient usage of fertilisers through optimising application to match plant needs.	N/A	0.49
Tree intercropping	Agroforestry systems that grow trees together with annual crops in a given area at the same time.	N/A	1.7
Managed grazing	Practices that sequester carbon in grassland soils by adjusting stocking rates, timing and intensity of grazing.	Tropical-humid	0.67
		Tropical semi-arid	0.64
		Temperate/boreal-humid	0.48
		Temperate/boreal-semi-arid	0.63

Note: Numbers are based on a global meta-analysis of ~ 10-30 academic studies aggregated for each figure, and are not necessarily representative of the carbon reduction and sequestration potential of these practices in Australia.

Total land area which is suitable for scaling these climate-smart land management practices over ('suitable area') has been spatially calculated. This is estimated with reference to total land where the practice might be applicable, as determined by current land use, excluding land where the practice may already be in place.

	Assi	Cuitable		
Practice name	Current land use ⁴⁸	Area where practice may already be in place	area (ha)	
Conservation agriculture: reduced tillage	Cropping & horticulture	65% of area, reflecting proportion of farms already engaged in practice of minimising tillage or cultivation. ⁴⁹	15,010,065	
Conservation agriculture: cover cropping	Cropping & horticulture	53% of area, reflecting proportion of farms already engaged in practice of using cover crops, inter-row crops, mulching or matting, or other ground cover. ⁴⁹	20,156,373	
Nutrient management	Cropping & horticulture	68% of area, reflecting proportion of farms already engaged in practice of using cover crops, inter-row crops, mulching or matting, or other ground cover. ⁴⁹	20,677,989	
Tree intercropping	Cropping & horticulture	Land with woody vegetation $^{\rm 50}$ and trees. $^{\rm 51}$	23,782,730	
Managed grazing	Grazing	62% of area, reflecting proportion of farms already engaged in practice of cell, strip or rotational grazing. ⁴⁹	145,329,525	

- c. Projected business as usual emissions the model leverages baseline scenario emissions projections published by the Australian Government.⁵²
- d. Practice Adoption Rate the model seeks to understand the impact of land sector carbon farming methodologies and climate-smart practices if an incremental 20% of farmers adopted those practices (on top of the number of farmers already using these practices). To replicate projected real world adoption, a logistic curve was applied, with maximum (20%) practice adoption being reached within six years.
- e. Learning Curve Ramp Up to account for the time it takes for farmers to learn to effectively employ land sector carbon farming methodologies and climate-smart practices and for the soil to adapt, the model assumes that outcomes progressively materialise over a period of five years. Hence, farmers realise 20% of total carbon reduction and sequestration and profit per hectare in year 1, 40% in their year 2, 60% in their year 3, 80% in their year 4 and 100% in year 5 and onwards.
- f. Estimates emissions reduction range a range is presented for the GHG emissions and habitat cover estimates to account for potential overlap in land sector carbon farming methods and climate-smart agricultural practices. The upper range is the sum of the estimates for the carbon farming methodologies and the climate-smart agricultural practices. The lower range represents the lowest estimate between these two portfolios of activities, which is the estimate solely for land sector carbon farming methods. The cumulative effect of these practices is likely to exceed the low range but be less than the upper range as the practices are not completely additive.

Nature estimate inputs and assumptions

a. Proportion of agricultural land area with measurable soil health improvement – the model assumes a given number of years of climate-smart practice usage before the soil's health is considered "measurably improved," and analyses this across agricultural land and grazing land.

The soil's diminishing capacity for sequestering carbon was accounted for by applying a 2% decreasing marginal rate of CO_2 equivalent sequestration potential per hectare per year over time, based on expert interviews.

- **b.** Hectares of new habitat for native biodiversity the model assumes that scaling the following land sector carbon farming methodologies and climate-smart practices over land previously used for agricultural purposes results in the creation of an equivalent area of new habitat for native biodiversity:
 - · permanent plantings: reforestation by environmental or mallee plantings
 - human induced regeneration of native forest
 - tree intercropping.

Proportional increase in habitat cover is calculated as the hectares associated with the above practices divided by the total area of forest in Australia, which is determined to be 133.6 million hectares.⁵³

Economic estimate inputs and assumptions

a. Change in gross margin from on-farm natural capital improvement – assumptions are based on research conducted by Farming for the Future, which includes estimates for the mean change in gross margin per hectare from on-farm natural capital improvement. Numbers are based on data collected from 113 livestock (grazing and mixed cropping grazing) farms across New South Wales, Western Australia, Victoria, and South Australia. These sampled farms are considered to be representative of farms present in the broader study area. Results were analysed separately for three different 'types' of farms evident in the dataset.

Total land area which is suitable for scaling these results over ('suitable area') has been spatially calculated. This is estimated by obtaining total agricultural land in the research regions, mapped using Natural Resource Management (NRM) regions. To divide area into one of the three farm types, level of canopy cover is used as a proxy, as canopy cover is one of the key characteristics used to distinguish farm types which can be spatially determined.⁵⁴

Region	Farm type	Level of canopy cover ⁵⁰	Mean change in gross margin (\$/ha) ⁵⁴	Total suitable area (ha)
Central and Tablelands	1	Low canopy cover	97	9,090,893
	2	Moderate canopy cover	78	958,279
	3	High canopy cover	-9	2,815,006
South east region	1	Low canopy cover	115	14,230,125
	2	Moderate canopy cover	45	764,341
	3	High canopy cover	188	3,174,119
Western region	-	-	225	16,643,673

The upper range estimate of a AU\$6.9 billion change in gross margin from on-farm natural capital improvement is calculated by multiplying total suitable area for each region and farm type by the mean change in gross margin, and presumes on-farm natural capital improvement on all agricultural land in the studied regions.

The statistic of a 22% change in gross margin from on-farm natural capital improvement is calculated by determining the current value of agricultural commodities produced per hectare for each NRM Region within the applicable NRM climatic clusters using ABS estimates and calculating the mean change in gross margin using weighted averages for each region. The weighted mean change is then multiplied by the sum of the gross value of agricultural commodities produced in each region to return the lower range estimate of a \$6.1 billion change. This calculation uses the regional value of agricultural production as a proxy for gross farm margin in the region.

Figure 1: Map of NRM regions covered by analysis



Region	NRM Region code	NRM Region label	Value of agricultural production per hectare (\$/ha) ⁵⁵	Weighted mean change in gross margin (\$/ha)	Weighted mean change in gross margin (%)
Central and Tablelands	101	Central Tablelands		72	17%
	102	Central West	416		
	109	Northern Tablelands			
South east region	105	Murray		125	14%
	110	Riverina			
	111	South East NSW	889		
	203	Glenelg Hopkins			
	206	North Central			
	207	North East			
	602	North			
	603	South			
Western region	501	Northern Agricultural		225	35%
	502	Peel-Harvey			
	503	Perth	638		
	505	South Coast			
	506	South West			

- **b.** Participation in carbon markets additional revenue from participation in carbon markets is calculated with reference to the following assumptions:
 - the model accounts for a three year period before farmers are eligible to claim carbon credits
 - costs associated with planning, registering, reporting and auditing a project is assumed to be 25% of project revenues, with a 2% annual decrease in cost as expected improvements in cost-effective measurement technologies materialise.

The carbon market price is based on central estimate projections of ACCU market prices out to 2030 (real A\$ per ACCU).⁵⁶

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