2030 Roadmap

Australian Agriculture's Plan for a $100 Billion Industry

National Farmers Federation

Leading Australian Agriculture

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Foreword

Australian agriculture plays a unique role in Australian society. It is both a major economic driver and the lifeblood of our regional and rural communities. It is an industry underpinned by innovative and resilient individuals who run their businesses in an increasingly complex and challenging environment. My overwhelming experience of those members of our agricultural communities is they take on these challenges with positivity and determination.

As a predominantly export focused sector, Australian agriculture has experienced significant growth over the past decade, which has boosted farm gate returns to more than $60 billion in 2016-17. This growth is in part due to continued and extended access to international export markets, but also due to our world class production systems underpinned by cutting edge research and development and a reputation for clean and green products.

To maintain this competitive advantage the Australian agricultural industry must continue to think strategically, work collaboratively and exhibit strong leadership that will drive it towards the vision of this Roadmap – to exceed $100 billion by 2030.

I commend the National Farmers' Federation (NFF), along with its members and other industry stakeholders involved in charting this Roadmap, for pulling together to articulate the steps required over the coming decade to ensure a strong and sustainable future for Australian agriculture.

I look forward to working closely with NFF and industry across the board to ensure that government and industry form an even stronger bond, based on a shared vision, that ensures a legacy for our industry, economy and community.

Hon. David Littleproud MP
Minister for Agriculture and Water Resources

Australia's agriculture sector has a bright future. Just how bright will depend on how well we capitalise on our strengths and opportunities.

To ensure our food and fibre production is sustainably profitable, industry must be guided by a strong plan focussed on the financial, human, natural resource, infrastructure and research capital that drives it.

We know that in the coming decades agricultural trade - both domestic and export - will continue to drive employment and wealth creation in our regional and rural communities. With this in mind, never has 'brand Australia' been more important.

The continuing strength of our brand - synonymous with high quality and safe food and fibre - requires us to capitalise now on what we do best, whilst challenging ourselves to continually innovate and improve into the future. This is increasingly important as we strive to meet the growing expectations of our community and customers, both in Australia and globally. Increasingly, they want food and fibre which has been produced in a clean, sustainable and ethical manner.

Whilst industry will drive this innovation and improvement, government must provide the policy guidance, the tools, and the support needed to fulfil the sector's aspirations. And to achieve success, we must work together in a collaborative manner to both overcome the challenges and to make the most of the opportunities.

The 2030 Industry Roadmap, developed by the NFF in conjunction with key industry stakeholders, will be a crucial tool in assisting this collaborative relationship. I congratulate the NFF and industry on driving this initiative and look forward to working with its membership to reap the rewards that will come from a strategic and forward-looking approach to Australian agriculture as we move towards 2030.

Hon. Joel Fitzgibbon MP
Shadow Minister for Agriculture, Fisheries and Forestry

> **...the Australian agricultural industry must continue to think strategically, work collaboratively and exhibit strong leadership...**

Our Vision

To exceed $100 billion in farm gate output by 2030.

Industry Values

Unified

Our strength and success are built on a commitment to collaboration and partnership. We navigate challenges and engage our stakeholders as an industry.

Sustainable

A commitment to sustainability is at the core of our industry's culture. Healthy people and environments are a key measure of success.

Roadmap Pillars

Pillar 1.

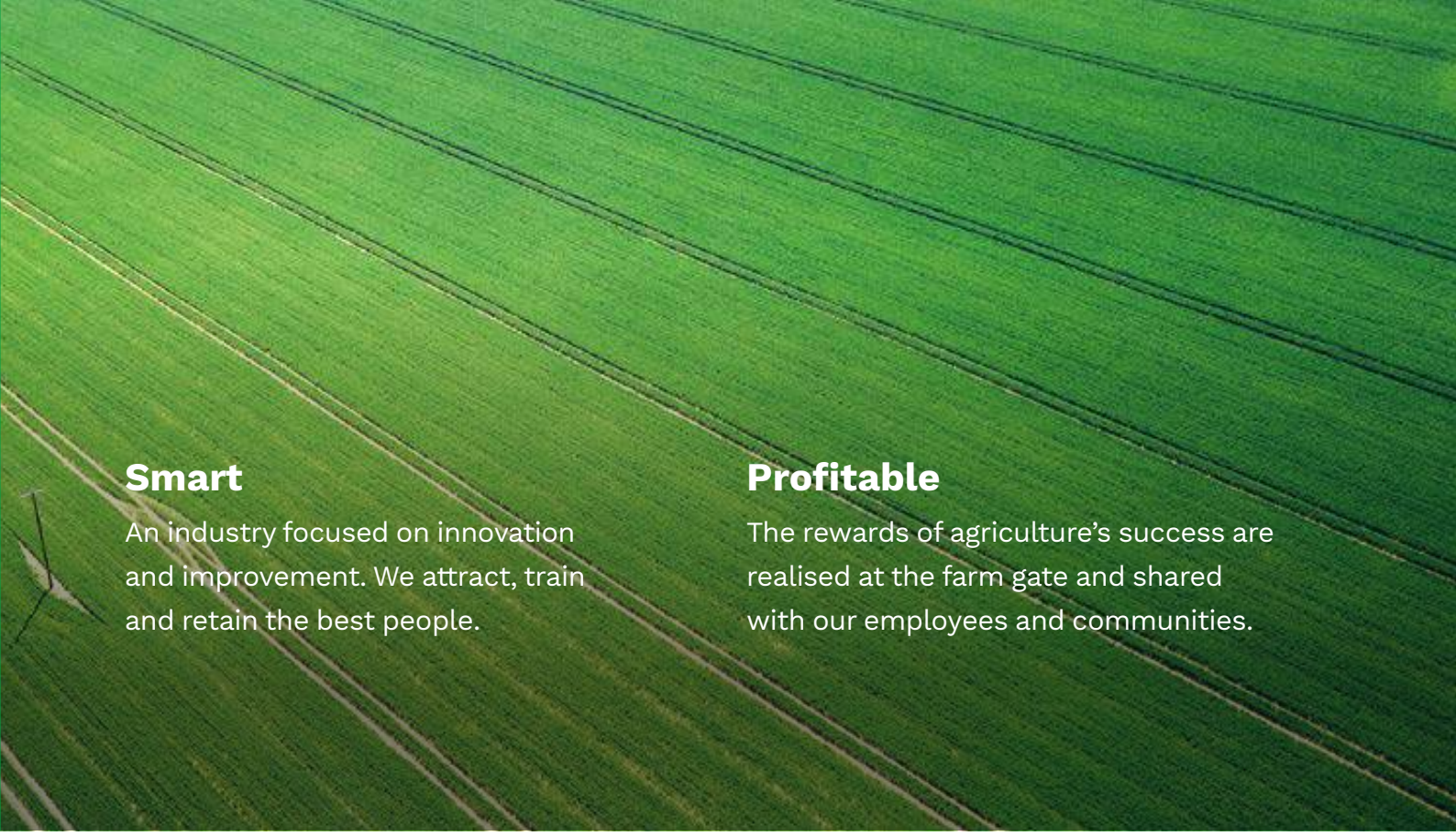
Customers and the Value Chain

- Agriculture is ranked Australia's most trusted industry.
- Australia's freight cost per tonne-kilometre is competitive with major agricultural exporting nations.
- An average tariff faced by agricultural exports of 5%.
- A 50% reduction in agriculture exports experiencing non-tariff barriers each year.

Pillar 2.

Growing Sustainably

- The net benefit for ecosystem services is equal to 5% of farm revenue.
- Australian agriculture is trending towards carbon neutrality by 2030.
- Halve food waste by 2030.
- A 20% increase in water use efficiency for irrigated agriculture by 2030.
- Maintain Australia's total farmed area at 2018 levels.



Smart

An industry focused on innovation and improvement. We attract, train and retain the best people.

Profitable

The rewards of agriculture's success are realised at the farm gate and shared with our employees and communities.

Pillar 3.

Unlocking Innovation

- Australia becomes a Top 20 nation for innovation efficiency.
- Every Australian farm has access to infrastructure and skills to connect to the Internet of things.
- Australia's farm energy sources are 50% renewable by 2030.

Pillar 4.

People and Communities

- Double the number of tertiary and vocational agriculture graduates.
- Increase the available work force by 25%.
- Achieve gender parity in the agricultural workforce, and double the number of women in management roles.
- A mean score of 5 for Physical Capital sub-measure in the Regional Wellbeing Survey.
- Zero farm fatalities.
- Close the gap between the psychological wellbeing of farmers and the broader community.

Pillar 5.

Capital and Risk Management

- 90% of family farms have documented business plans, including succession plans.*
- 90% of Australia's farmers employing multiple financial tools to manage risk.
- Year on year increase in equity investment in Australian farm businesses.

*Metric updated during the Roadmap refresh completed in 2019.

About this Roadmap

This Roadmap began with a central vision: to make agriculture Australia's next $100 billion industry by 2030.

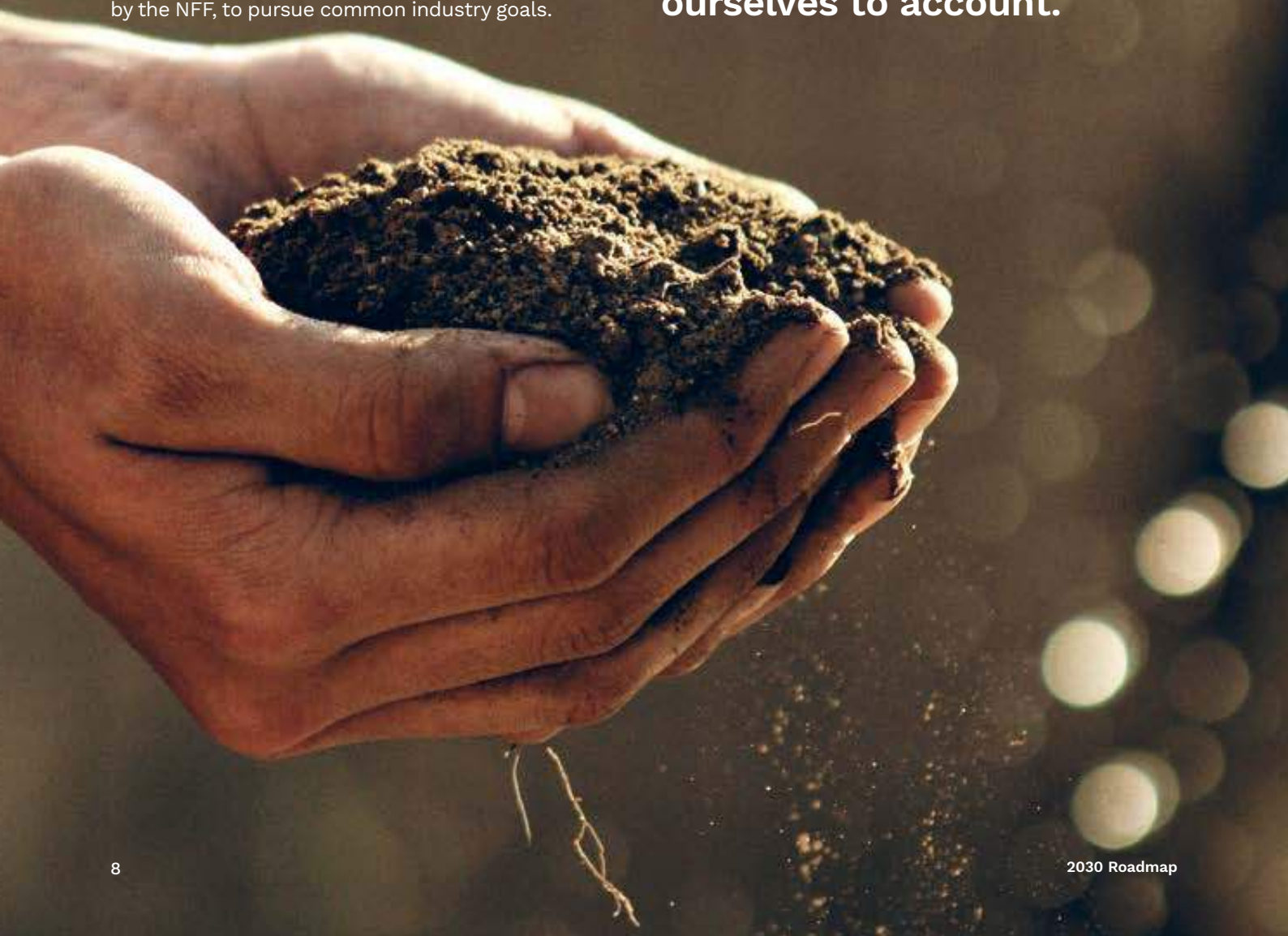
We recognised that delivering on this ambition required a gutsy plan with the support and endorsement of all stakeholders. We needed a roadmap for agriculture's next decade.

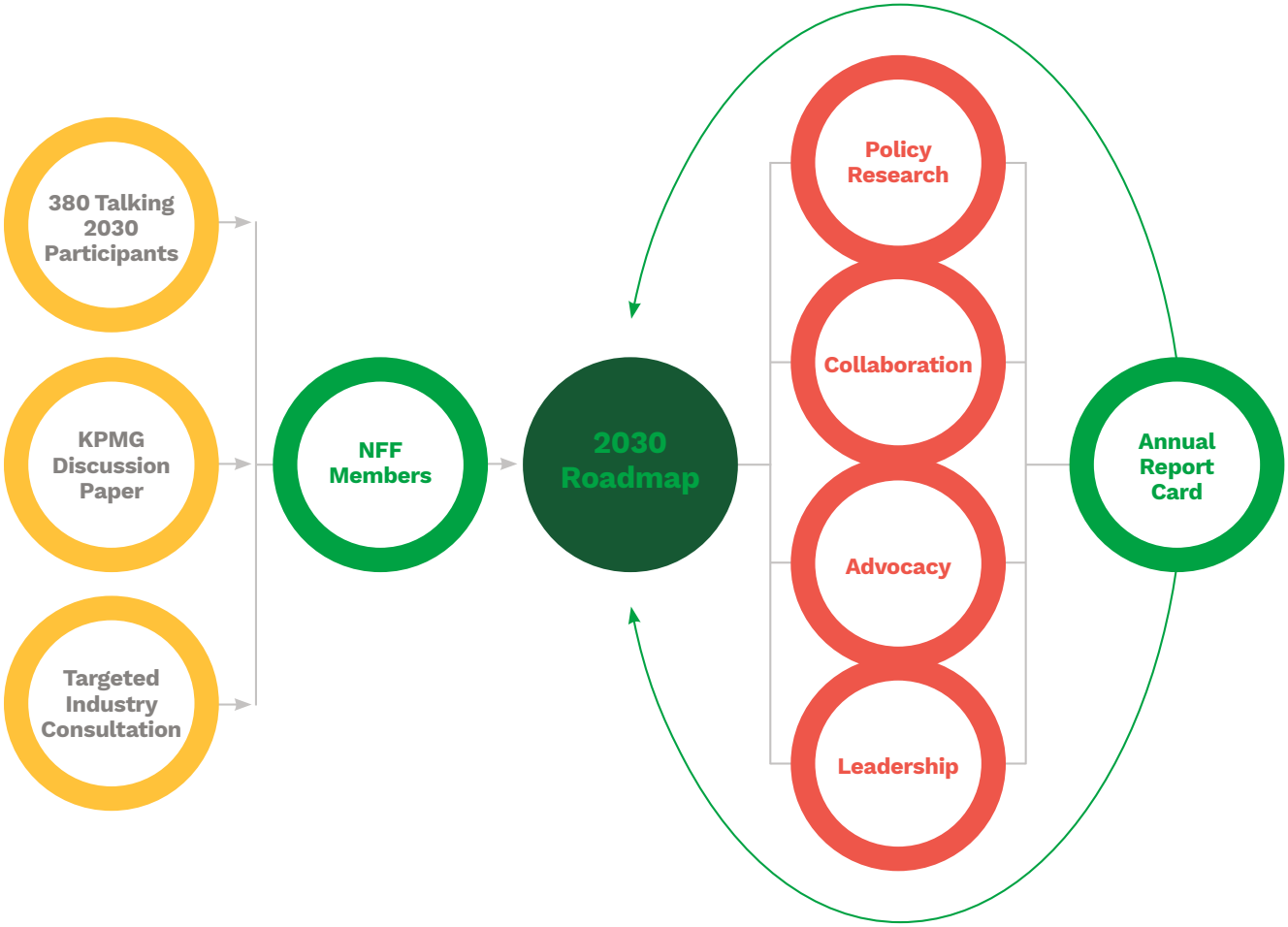
What follows is the result of exhaustive consultation with leaders right along the agricultural value chain: farmers, researchers, agribusinesses, educators, the community, government and more.

This 2030 Roadmap lays out where we want to head, and how we intend to get there.

It will form the basis of a collaborative effort, led by the NFF, to pursue common industry goals.

> **This document now becomes the yardstick by which we measure our success, and hold ourselves to account.**





Consultation

The NFF led a 6-month consultation effort to inform the Roadmap. It began with a Discussion Paper which distilled insights from leading experts, before commencing a nationwide roadshow, where we spoke to over 380 farmers and other industry experts to field their views. As we consolidated this feedback, we engaged regularly with industry stakeholders and experts to ensure the ideas we're putting forward are credible and impactful.

NFF Member Oversight

The 2030 Roadmap carries the full endorsement of he NFF's member organisations, who reviewed and provided input on this plan throughout its development.

Our members – through our representative structures – will continue to play a critical role in the future of this Roadmap.

2030 Roadmap

A consolidated plan for industry - articulating our aspirations for 2030, along with practical actions and metrics for success.

The Roadmap extends well beyond the headline growth target of $100 billion to provide a vision for communities, the environment and more.

Some actions are within the control of the NFF, many will require us to collaborate and partner to achieve the aspirations of this plan.

Implementation

The NFF will lead a collaborative approach by all stakeholders to progress the Roadmap agenda. The NFF will invest in policy research to build the evidence base for key changes, and partner with industry participants to promote and adopt new ideas. We will call for Government to embrace this plan, by developing a National Agriculture Strategy which commits all levels of government to a proactive agenda for the agricultural value chain.

Annual Reporting

The NFF will report annually on key industry trends and progress against the Roadmap metrics. This will provide an opportunity to hold ourselves and other stakeholders to account. We will also review the content of the Roadmap at the same time, and tweak it as appropriate to ensure it remains relevant.

Situational Snapshot

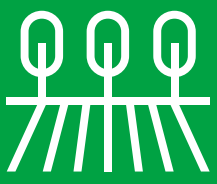
Australian agriculture has enjoyed a period of substantial growth in the last decade – surpassing $60 billion in farm gate output for the first time.

To achieve our vision of $100 billion by 2030, we must continue to build on our achievements to date, capitalise on new opportunities and find innovative solutions to those challenges that threaten the future growth of our sector. This Snapshot sets out the foundations on which our vision is built.

Our Farms

85,000
farm businesses in Australia

99%
WHOLLY AUSTRALIAN OWNED



Our farms provide
93%
of our domestic food supply

The average farmer is
FIFTY SIX YEARS OLD
17 years older than the average Australian worker

agricultural businesses

manage
51%
of Australia's landmass

Our Industry

The total value of Australia's agricultural production for **2018-2019 forecast** to be

$60BN

remaining above the **10 year average of $56bn.**

Price growth has been responsible for

90% of growth

in farm gate output since 2010.

Agriculture, forestry & fishing

= 2.4% of Australia's GDP

with the whole agricultural supply chain totalling

12%

Australia Invests

$3.3BN

in rural research and development annually but ranks only 76th globally for innovation efficiency.

Agriculture employs

250,700

Australians

Between 1996–2016, Agriculture has **reduced greenhouse gas emissions intensity by**

63%

however increasing climate variability will require further reductions.

Our Global Markets

Increasing Competition

from traditional and new competitors

Total agricultural exports **forecast for 2018-2019**

$47BN

70%

Accounting for 70% of agricultural production value

Australia's Top Markets

China
European Union
Japan
Indonesia
Korea
United States

Recent trade deals with China, Japan and Korea – have created new opportunities

Australia's farms remain among the least subsidised in the OECD (second only to New Zealand).

2030 Megatrends

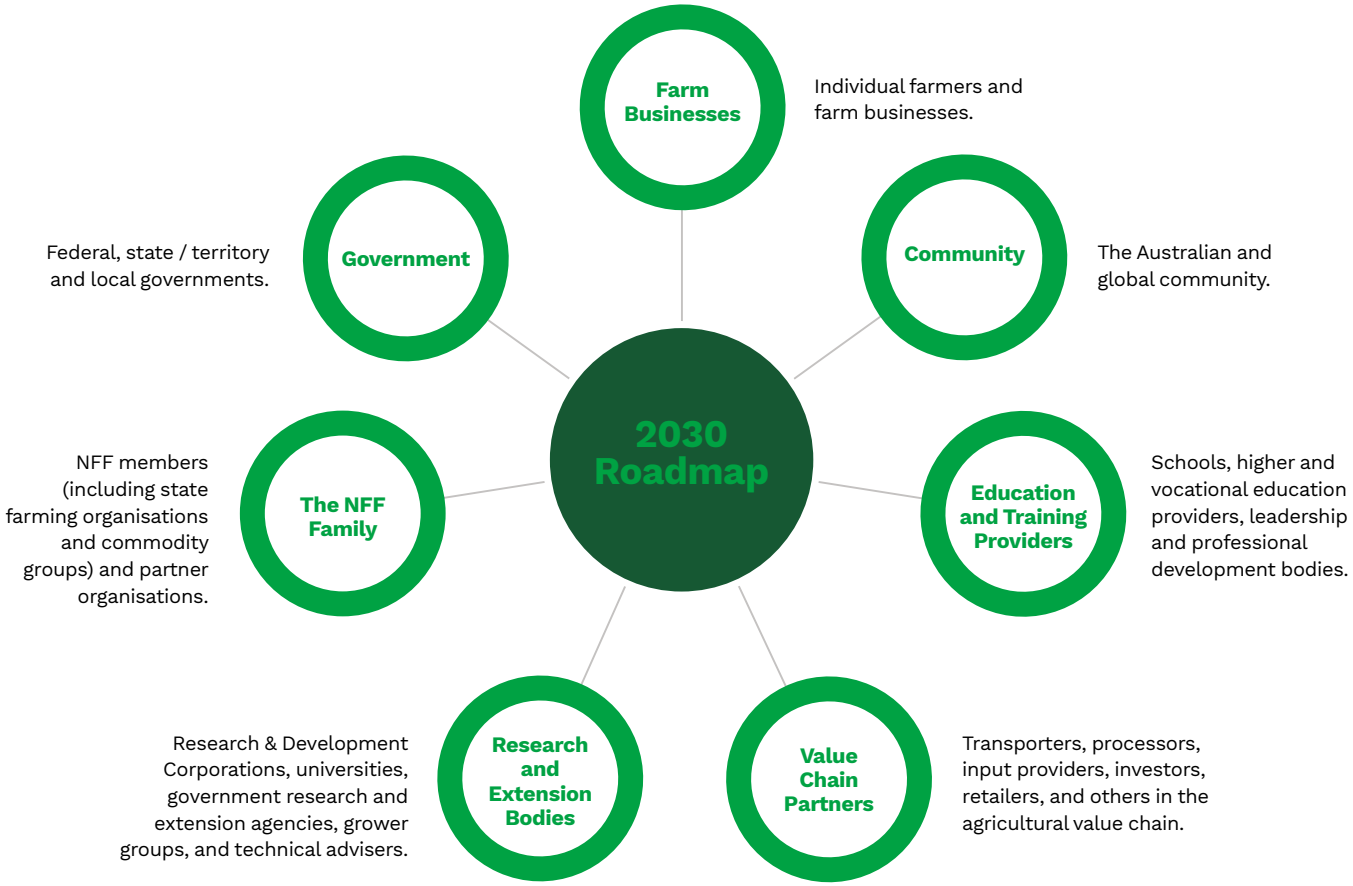
DRIVER	OUTLOOK	ASSESSMENT	INSIGHT
Unprecedented Demand	Burgeoning global populations and incomes – particularly on our Asian doorstep – will fuel demand for food and fibre in years to come. Improved market access will position Australia to service that demand, amplifying our geographic advantage.	STRENGTH	• The global population is expected to reach 9.7 billion by 2050. *CSIRO* • Projected 54% rise in food demand by 2050. *FAO*
Heightened Expectations	Environmental, health, and welfare considerations will increasingly sway purchasing decisions. Meeting these expectations presents opportunities to build on our competitive advantage. It also increases reputational risks if expectations are not met.	OPPORTUNITY WEAKNESS	• 88% of Chinese consumers research products before purchasing (compared to 84% globally). *Kantar TNS* • More than 300 companies faced activist demands in 2014 alone. *McKinsey*
Disruptive Technology	Digital and genetic technologies promise to unlock new waves of productivity growth across the sector. Automation will continue to improve quality of life for farmers, while reshaping the sector's skills needs.	OPPORTUNITY	• Australian agricultural output volumes are projected to rise by at least 50% by 2050, in line with long term productivity trends. *ABARES* • Full adoption of digital agriculture could yield $20.3bn by 2050. *AFI*
Responding to Climate Change	Climate change will play a major role in Australian agriculture's next decade, exacerbating climate risk while creating diverse new income opportunities. Australia's policy response can position us as a global leader in low emissions agriculture. Done poorly, our policy response could saddle farm businesses with additional costs.	OPPORTUNITY THREAT	• 2.7% - the projected yield impact on Australian agriculture due to climate change by 2050. *World Bank* • By 2050 the carbon market could provide income of $40 billion to the land sector (with particular opportunities for agriculture). *CSIRO, 2018*
Consolidating Communities	Environmental, health, and welfare considerations will increasingly sway purchasing decisions. Meeting these expectations presents opportunities to build on our competitive advantage. It also increases reputational risks if expectations are not met.	THREAT WEAKNESS	• 35% → 65% - population shift of Australians living in our capital cities between the start of the 20th century and now. *CSIRO, 2018* • Regional city populations have tripled to 21% in the same period. *CSIRO, 2018*
Fierce New Competition	Competition will intensify as developing nations modernise their farming practices and supply chains. Competition will also arrive from non-traditional sources, as alternative proteins stake out a larger portion of the market. Meanwhile, global forces threaten to disrupt the established rules of international trade.	THREAT	• $US500m → $US4bn – change in Beef exports from Brazil from 2000 to 2014. *ABARES* • 60% → 40% - drop in Australia's market share for wheat exports to South East Asia from 2012 to 2017. *Rabobank*

This 2030 Roadmap lays out where we want to head, and how we intend to get there.

Industry Collaboration

Achieving the vision of this Roadmap will require the energy and commitment of all the stakeholders referenced below.

The NFF will look to deepen its collaboration with the stakeholders referenced here, as part of a broad partnership approach to achieving our vision for the industry.



> **For us to reach $100 billion, collaboration between every part of industry and government will be critical**
>
> Talking 2030 Participant

Pillar 1.

Customers and the Value Chain

It's 2030. Australia is banking the dividends from a decade of smart investment in agricultural transport infrastructure, which has driven down the cost of reaching key markets.

Value added food products have fueled a resurgence in Australian manufacturing, thanks to incentives which seeded dedicated precincts across the country.

Technology has changed the way we trade –making market access seamless, safe and streamlined -and providing clear market signals to guide industry investment.

The brand of Australian agriculture stands for quality and integrity, and commands a premium price to match.

At every step on this journey, we have engaged our customers –giving them a transparent insight into the way we farm and meeting their changing expectations.

Maintaining trust and support is critical. We need to invest in programs and technologies which inform and engage our end customers.

Talking 2030 Participant

Pillar 1. Customers and the Value Chain

INSIGHT	ASPIRATION	ACTIONS	IMPACTS	METRIC
83% of Australians describe their connection with agriculture as 'distant' or 'non-existent'. *NFF*	**1.1** **The agricultural value chain has deep engagement with its customers, based on trust and transparency.**	**1.1.1** Grow or establish industry initiatives to improve two-way communication with the community, including a strategy to educate the public about agricultural practices and advise industry where practice change is needed.	• Greater reach and impact of industry communications • Industry understands and responds to community expectations • Shared respect and understanding • Customers are more informed about Australian farming practices	Agriculture is ranked Australia's most trusted industry.
		1.1.2 Establish a consistent brand for Australian agricultural products.	• Recognised and trusted 'Brand Australia' • Increased collaborative marketing spend	
		1.1.3 Build on existing traceability and labelling systems to improve the integrity of product information provided to the community.	• Improved understanding of provenance and production attributes • Product integrity and biosecurity as a competitive advantage • Labelling laws which help consumers make fact based decisions on imported or 'alternative' foods	
Road, rail and port-based freight movements are expected to double between 2010 and 2040. *BITRE*	**1.2** **Our value chain provides a competitive connection to global markets, and delivers clear market signals to guide paddock-to-plate investment.**	**1.2.1** Establish Regional Agriculture Deals to provide a multi-government framework for physical infrastructure investment and regional development policy.	• Depoliticise regional economic development • Evidence-based decisions incorporating local knowledge • Coordinate efforts of three tiers of government	Australia's freight cost per tonne-kilometre is competitive with major agricultural exporting nations.
		1.2.2 Map strategic transport infrastructure for Australian agriculture to identify cost reduction opportunities.	• Reduced value chain bottlenecks • Lower transport and logistics costs • Improved global competitiveness	
		1.2.3 Introduce consistent national transport regulations.	• Harmonised transport rules across state and territory borders	
		1.2.4 Establish food manufacturing precincts in key growing regions with access to export facilities.	• Increased value-adding • Increased employment in food manufacturing	
		1.2.5 Implement value chain technologies and processes that inform prices and strengthen market signals.	• Increase product value • Market driven production systems • Meet and anticipate customer needs	

INSIGHT	ASPIRATION	ACTIONS	IMPACTS	METRIC
70% of Australia's total agricultural production is exported overseas. *ABARES*	**1.3** **Australia has world-leading market access, and the capacity to maximise the economic benefits.**	**1.3.1** Champion efforts to open new markets, reduce tariffs and increase quotas for Australian produce.	• Access to high value markets • New market opportunities • Higher farm gate returns	An average tariff faced by agricultural exports of 5%. A 50% reduction in agriculture exports experiencing non-tariff barriers each year.
		1.3.2 Work with government to establish globally accepted product certification processes.	• Reduced non-tariff barriers	
		1.3.3 Support global technology platforms that link the value chain (including the farmer) to customers and help better utilise our existing trade agreements.	• Greater value chain integrity • Higher value for exports	
		1.3.4 Reinforce the importance of domestic biosecurity.	• Greater industry and public awareness of biosecurity	

Pillar 2.

Growing Sustainably

It's 2030. Australia's farms lead the world in environmentally - friendly practices.

Investment in research and market-based incentives has made the entire agricultural value chain carbon neutral.

Sustainability is an integral part of the industry's culture, and individual businesses judge their own performance using the triple bottom line approach.

Farmers are recognised by the community as trusted and proactive stewards of Australia's landmass.

A collaborative and evidence-based process has delivered lasting resolution to disputes regarding water and land access. As a result, the operating environment for farmers is more stable and predictable.

Politicisation of environmental laws presents an ever-present risk for our business. We need a genuine partnership approach between all parties to restore stability.

Talking 2030 Participant

Pillar 2. Growing Sustainably

INSIGHT	ASPIRATION	ACTIONS	IMPACTS	METRIC
An ecosystem services approach has been adopted by the EU, UK, US, Canada and New Zealand. *World Resource Institute*	**2.1** **Farmers continue to embrace sustainable farming methods as part of a coordinated national framework that drives productivity and profitability, while recognising and rewarding environmental stewardship.**	**2.1.1** Implement a cross-sectoral Agricultural Sustainability Framework.	• Implementation of Agricultural Sustainability Framework by 2025	The net benefit for ecosystem services is equal to 5% of farm revenue.
		2.1.2 Establish a government-backed Environmental Stewardship Fund, aimed at seeding a marketplace for private sector investment.	• Investment in a conservation tax instrument • Biophysical asset management balances production with conservation • Remuneration for positive environmental contributions • A natural capital accounting system • An active market for private investment in on-farm stewardship	
		2.1.3 Support the introduction of 'Green Loan' commercial bank products which reward sustainable farming practices.	• Reduced financing costs for best practice farms	
By 2050 the carbon market could provide income of $40 billion to the land sector (with particular opportunities for agriculture). *CSIRO*	**2.2** **Australian agriculture has cemented a competitive advantage and productivity gains by embracing a carbon neutral approach.**	**2.2.1** Develop a trajectory approach for each commodity to work towards carbon neutrality whilst maintaining productivity and profitability.	• Plans in place for all major commodities by 2025	Australian agriculture is trending towards carbon neutrality by 2030.
		2.2.2 Enhanced public investment in research that delivers on-farm carbon abatement and productivity outcomes.	• New tools and support for carbon neutral outcomes • Individual farm carbon footprints are assessed, and solutions identified • Substantial abatement in ruminant animals' methane production	

INSIGHT	ASPIRATION	ACTIONS	IMPACTS	METRIC
National water use is expected to double by 2050. *CSIRO*	**2.3** **Smart water policy has improved the health of our waterways, made our farms more productive, and made our regional communities more resilient.**	**2.3.1** Implement water reform policy that is sustainable, productive and profitable.	• Water delivery enhances iconic environmental sites. • Water access allows sustainable agricultural intensification and expansion.	A 20% increase in water use efficiency for irrigated agriculture by 2030.
		2.3.2 Develop evidence-based environmental, community and production targets.	• Transparent and comprehensive water markets operate.	
		2.3.3 Advocate for infrastructure projects that ensure productive water capture and use, particularly in Northern Australia.	• Increased water infrastructure for productive and profitable agriculture. • Alignment with National Water Initiative principles	
Land used for farming in Australia has declined from 500 million hectares (65 per cent of the country's landmass) in 1973 to 406 million hectares (53 per cent total landmass) in 2015. *AgriFutures*	**2.4** **We have stemmed the loss of productive farm land, improved the health of our landscapes, and brokered lasting co-existence arrangements with other landholders.**	**2.4.1** Implement an evidence-based and cross-sectoral Biodiversity Strategy.	• Biodiversity Strategy implemented by 2025	Maintain Australia's total farmed area at 2018 levels.
		2.4.2 Adopt land use strategies that balance the needs of competing industries, while limiting any impacts on agricultural land and water resources.	• Protect agricultural land and water assets • Well-resourced science to inform planning decisions • Global food and fibre needs recognised in land use prioritisation	
		2.4.3 Partner with indigenous landholders on a sustainable Native Title regime.	• Native Title uncertainties resolved • Agreed principles for co-existence • Co-operation on land use planning	
Up to 25 per cent of all vegetables produced don't leave the farm. *National Food Waste Strategy*	**2.5** **Australia has halved food waste, and significantly reduced the number of Australians facing food insecurity -thanks in part to a proactive partnership with the agricultural value chain.**	**2.5.1** Support the introduction of a National Food Security Strategy.	• Fewer Australians facing food insecurity	Halve food waste by 2030.
		2.5.2 Fund R&D into better utilisation of on-farm food loss streams.	• Waste diverted to new income streams	
		2.5.3 Explore tax incentives that fairly recognise food donations across the value chain.	• Increased tax incentives for charitable donations	

Pillar 3.

Unlocking Innovation

It's 2030. Australia is a world leader in cutting edge science and technology that improves the quality of our products and reduces their cost of production.

Our longstanding network of Research and Development Corporations are setting a new standard for collaboration and return on investment.

Meanwhile, digital technology powered by next generation wireless networks has transformed the way we farm, unlocking significant on-farm revenue and savings.

All the while, our customers remain informed and supportive of the way technology is being used.

> **Innovation has always underpinned our competitive advantage. We need to ensure our industry's culture and structures can keep up with an accelerating pace of change.**
>
> **Talking 2030 Participant**

Pillar 3. Unlocking Innovation

INSIGHT	ASPIRATION	ACTIONS	IMPACTS	METRIC
Australia ranks 76th globally for innovation efficiency, and last in the OECD for research collaboration. *Global Innovation Index*	**3.1** **Public and private R&D efforts work seamlessly to translate world-class research into tools and services which give Australian agriculture a competitive edge.**	**3.1.1** Renew and extend existing cross-sectoral R&D strategies to grow the size and impact of both public and private R&D.	• Frameworks for beneficial collaboration • Reduced duplication and improved efficiency • Increased private R&D investment • Better monitoring and evaluation frameworks • Greater return on public investment	Australia becomes a Top 20 nation for innovation efficiency.
		3.1.2 Foster an R&D investment environment that quickly turns research into commercial tools and services.	• Higher innovation efficiency • Innovation export opportunities • Accelerated productivity gains	
		3.1.3 Invest in the capacity of digital and human networks to share and promote new practices and tools.	• Strong local grower groups • Easy online information access • Improved access to new science	
		3.1.4 A fit-for-purpose regulatory environment that manages risk without hindering access to safe technologies.	• Science based regulation • World class access to technology	

INSIGHT	ASPIRATION	ACTIONS	IMPACTS	METRIC
AFI predicts full adoption of digital agriculture could yield $20.3 billion.	**3.2** **The agricultural value chain is highly digitised, with the benefits of new technology shared fairly among participants.**	**3.2.1** Internet connectivity with adequate speeds and data allowances to every Australian farm at a reasonable price.	• Public investment to combat market failure • Increased private investment • Internet of Things available to all farms • Adequate speed, data and price	Every Australian farm has access to infrastructure and skills to connect to the Internet of Things.
		3.2.2 Build the industry's capacity to take advantage of connectivity and digital farming practices.	• Improved capability • Greater adoption of digital agriculture	
		3.2.3 Support frameworks for seamless exchange of industry data across the value chain.	• Industry well positioned to take advantage of data analytics	
		3.2.4 Ensure farmers have ultimate control of their data and the value derived from it.	• Clear rules for farm data management • Fair share of value for farmers	
		3.2.5 Ensure spectrum rules don't unreasonably inhibit on-farm network extension.	• Greater network coverage	
Energy (including electricity generation and transport) accounts for more than 70% of Australia's greenhouse gas emissions.	**3.3** **The agricultural value chain has reduced its reliance on fossil fuels, in favour of biofuels and renewable sources of electricity that are affordable and reliable.**	**3.3.1** Back policy reform for the electricity and transport sectors.	• Grow demand and supply for new energy sources • Affordable, reliable energy	Australia's farm energy sources are 50% renewable by 2030.
		3.3.2 Support transition to renewable and decentralised energy sources, including piloting off-grid renewable energy precincts based on Regional Agriculture Deals. *See 1.2.1*	• Reduced greenhouse gas emissions • Reduced transmission losses • Supportive market measures for off-grid and feed-in energy	
		3.3.3 Invest in research to commercialise new energy crop varieties and waste to energy opportunities.	• Affordable fossil fuel alternatives • New farm income sources	
		3.3.4 Champion EV-friendly regional towns and cities.	• Electric vehicles viable for regional Australians	

Pillar 4.

Capable People, Vibrant Communities

It's 2030. Agriculture is recognised as a rewarding and aspirational career choice for people of all skill levels and backgrounds.

We attract and develop people to match the needs of our sector and we adapt to the shifting needs of the future. They are leaders, critical thinkers, technical experts, those who work with their hands and more.

Our reputation for workplace excellence attracts phenomenal human talent from Australia and around the globe.

As a result, regional Australia continues to offer an enviable lifestyle with access to essential and cultural services

Our industry has so much to offer a generation that wants a meaningful career, work-life balance, housing security and a healthy lifestyle – we just need to tell that story!

Talking 2030 Participant

Pillar 4. Capable People, Vibrant Communities

INSIGHT	ASPIRATION	ACTIONS	IMPACTS	METRIC
The job market for graduates of tertiary agriculture qualifications is five times larger than the supply of graduates. *ACDA*	**4.1** **There is a clear career pathway to attract workers and develop their skills, with tailored streams for new entrants through to seasoned professionals.**	**4.1.1** Publicise the compelling rationale for a career in agriculture.	• Agriculture is a career of choice	Double the number of tertiary and vocational agriculture graduates by 2030.
		4.1.2 Apply an agriculture lens to school and tertiary education curricula.	• All Australians are exposed to agriculture	
		4.1.3 Establish a nationally consistent, 'trade-equivalent' job brand for skilled farm workers.	• Pool of qualified, skilled labour • Greater clarity skilled on-farm roles	
		4.1.4 Grow professional development, leadership and mentoring opportunities for employees and business owners.	• Continued opportunities for development • A strong pool of industry leaders	
Australian agriculture faces an immediate labour shortfall in excess of 101,000 full time equivalent workers. *AFI*	**4.2** **We have robust and sustainable mechanisms to access labour from Australia and around the world.**	**4.2.1** Establish an 'Ag Gap Year' program to get young Australians to try their hand at agriculture.	• Introduce agriculture at key career decision point	Increase the available work force by 25%.
		4.2.2 Create pathways for unemployed Australians to find on-farm work.	• Reduced unemployment in regional communities	
		4.2.3 Tailored agricultural and regional visa pathways to replenish the domestic labour market.	• Streamlined access to global labour	
		4.2.4 Proactive steps to stamp out any exploitation of farm workers.	• A positive experience for farm workers	
Women comprise 41% of the agricultural workforce, 18% of management roles, and only 2.3% of CEO positions. *WGEA*	**4.3** **A career in Australian agriculture is an accessible aspiration for all.**	**4.3.1** Conduct an annual agricultural diversity 'audit' to benchmark our diversity and measure improvement.	• Better data to measure our progress	Achieve gender parity in the agricultural workforce, and double the number of women in management roles.
		4.3.2 Promote initiatives that facilitate inclusion of underrepresented communities in the agriculture industry.	• More diverse industry leadership • Access to a larger pool of workforce talent • A workforce that better represents the Australian community	
		4.3.3 Work with indigenous leaders to grow opportunities for Aboriginal and Torres Strait Islander people in agriculture, including within industry leadership.	• Reduced disadvantage in indigenous communities • Attract new labour and skills • Better representation of indigenous agriculture	

INSIGHT	ASPIRATION	ACTIONS	IMPACTS	METRIC
The share of Australia's population living in capital cities has almost doubled since the start of the 20th century, while the share for large regional centres has tripled. *BITRE, 2014*	**4.4** **We live in strong regional communities that are home to: world class education and health facilities; culture and entertainment; and a diverse economy.**	**4.4.1** Ensure every regional economic development plan includes agriculture and value chain industries.	• New economic opportunities for regional communities	A mean score of 5 for every Physical Capital sub-measure in the Regional Wellbeing Survey.
		4.4.2 Complement existing regional plans with the Regional Agriculture Deals approach. *See 1.2.1*	• Integrated economic plan for agriculture	
		4.4.3 Build leadership capability and regional development 'literacy' and practice.	• High performing regional leaders	
		4.4.4 Champion provision of urban-equivalent infrastructure.	• Great schools in rural and regional communities. • High speed connectivity • Access to health services • Safe roads and communities • Access to retail, financial and professional services	
41 workers were killed on Australian farms in 2017. *Safe Work Australia* Psychological distress is 28.9% more common among farmers than other members of the community. *Journal of Rural Health*	**4.5** **Australian farms have embraced a culture of safety, dramatically reducing workplace injuries and eliminating on-farm fatalities. A coordinated effort has improved the physical and mental health of industry participants.**	**4.5.1** Partner with government and manufacturers to improve the safety of high-risk farm equipment.	• Safer vehicles and machinery • Fewer deaths and accidents	Zero farm fatalities. Close the gap between the psychological wellbeing of farmers and the broader community.
		4.5.2 Invest in initiatives that improve physical health, reduce isolation and tackle depression and other mental health problems.	• Improved productivity • Reduce farmer suicide rates • Improve wellbeing and life expectancy	

Pillar 5.

Capital and Risk Management

It's 2030. Australian farm businesses have become increasingly sophisticated in their approach to governance, risk management and planning for the future.

Every farm businesses has a clear strategy for managing the inherent risks of farming, including an expanded role for insurance, and business models which share production risks along the value chain.

Our farm businesses are investment-ready. The proliferation of alternative ownership models has exposed the industry to new capital pools from Australia and overseas.

As a result, the industry has begun making up its capital shortfall. We've done this by attracting new investors, while also strengthening our partnership with providers of debt finance.

> **The shift has started, with more businesses adopting benchmarking, boards, and expert business advisors. The impact of this on our business has been profound.**
>
> **Talking 2030 Participant**

Pillar 5. Capital and Risk Management

INSIGHT	ASPIRATION	ACTIONS	IMPACTS	METRIC
Rural debt is now nearly six times more than it was 52 years ago with banks providing 96% of the $69.5 billion of farm credit. *RBA*	**5.1** **Farm businesses have embraced new governance models -helping them better plan for the future, manage risk, and increase profit.**	**5.1.1** Champion producer peer review boards and benchmarking groups to inform farm business decision making.	• More rigorous business decision-making • Improved productivity and returns	90% of family farms have documented business plans, including succession plans.*
		5.1.2 Support cross-sectoral capacity building initiatives for financial literacy, leadership and corporate governance.	• Stronger business leaders • Better financial literacy	
		5.1.3 Continue to promote proactive succession planning.	• Minimise capital withdrawal • Maximise knowledge transfer • Engage a new generation	
Australian agriculture faces a capital shortfall in excess of $159.5 billion if we're to pursue a trajectory of aggressive growth. *ANZ*	**5.2** **Investors are lining up to inject capital into Australia's agricultural businesses, based on demonstrated returns and a supportive policy environment.**	**5.2.1** Explore and promote alternative ownership models that complement traditional debt financing.	• Higher rate of equity partnerships • Increased capital for growth and succession	Year on year increase in equity investment in Australian farm businesses.
		5.2.2 Enhance the ability for agricultural businesses to source overseas capital (without compromising our national interests).	• Access to global investors	
		5.2.3 Invest in creation of robust and timely investment performance data.	• Greater transparency • Focus on performance	
		5.2.4 Understand and address barriers to institutional investment in farm land as a commercial property asset class.	• Improved liquidity • Greater institutional investment and subsequent leasing opportunities	

*Metric updated during the Roadmap refresh completed in 2019.

INSIGHT	ASPIRATION	ACTIONS	IMPACTS	METRIC
Agriculture is more volatile than any other sector of the Australian economy.	**5.3** **Innovative tools to reduce the inherent risks of farming are used by every Australian farm business - supported by consistent and well administered government risk management policies.**	**5.3.1** Educate industry about financial risk management options (including income and multi-peril crop insurance, swaps and futures) and support ideas to improve their availability and affordability.	• Increased productivity • Reduced risk • Global competitiveness	90% of Australia's farmers employing multiple financial tools to manage risk.
		5.3.2 Promote stability in government risk management policies such as: income averaging; Farm Management Deposits; taxation; and introduce a comprehensive national drought policy.	• Certainty • Greater self-reliance	
		5.3.3 Explore best practices for Long Term Agreements which share risk along the value chain.	• Greater price certainty • Shared production risks • Opportunities for two-way capital investment	

Structuring Ourselves for Success

Talking 2030 uncovered clear and consistent views about the way the agriculture industry is structured. We must act to address the concerns of our constituents in the coming decade.

The diversity and geographic spread of the farm sector is represented in our industry structures. The complexity and inefficiency of those structures was a strong and recurring theme in our consultation for this Roadmap.

Feedback from all corners of industry suggested that overcoming this complexity was a threshold issue which would determine the success of our Vision.

This feedback was most acute in relation to farmer representative organisations, but applies broadly across other industry structures.

This does not necessarily spell the need for wholesale structural change, though it is sensible to continue to review our structures' fitness-for-purpose over time.

Instead, a staged approach starting with cultural change; improving formalised collaboration; and moving to consolidation where appropriate is suggested.

Cultural Change
A shared commitment to break down industry silos and proactively share information and ideas.

Collaboration
Agile structures to capitalise on shared opportunities, plus formalised sharing of resources where appropriate.

Consolidation
Greater impact from consolidated scale - maximising resource efficiency.

Where to from here?

We have laid down our plan for the future, but now the hard work truly begins.

Agriculture is already on a journey of growth. If we did nothing but remain on the current trajectory, farm gate output would likely exceed $80 billion come 2030.

Such growth is not insignificant, but as is agriculture's trademark, this Roadmap proposes that we push the envelope, challenge boundaries, and welcome disruption.

However, optimism and bold ideas alone won't get us to $100 billion. The real fuel needed for this journey is teamwork.

We're calling on Government to play a central role in this Roadmap, by stepping up with a National Strategy for Agriculture that commits Federal, state and local governments to a clear growth agenda.

The NFF will continue to resource the research and advocacy needed to move this agenda forward.

This Roadmap will be a dynamic guide, able to re-routed and revised as needed. It will also form the basis of an annual report card from the NFF – holding us all to account for our progress.

Here at the NFF, we're excited to get started.

We hope you'll join us on the journey!

Fiona Simson
President
National Farmers' Federation

Tony Mahar
Chief Executive
National Farmers' Federation

Pillars in Action:
Delivering on 2030

Pillar 1.

ASPIRATION 1.1
Building Trust

Australian agriculture faces a significant challenge regarding community sentiment. Whilst regularly included in the top 10 most trusted professions in Australia, our industry is also faced with issues that may erode community and consumer trust and support.

NFF, in conjunction with its members and other key industry stakeholders, has commenced development of a national framework for building community trust, which will be supported and informed by the learnings of other institutions, such as the Centre for Food Integrity in the United States.

Key concepts

- The development of a body or mechanism that develops and maintains trust;
- An independent framework that supports unbiased information and ideas; and,
- Acknowledgement that there is genuine benefit in understanding and addressing community sentiment.

Delivery of this national framework will provide a suite of tools to build trust and develop genuine engagement between our industry, our customers and our community.

ASPIRATION 1.2
Regional Agriculture Deals

Currently, fragmented sources of public and private investment have no coordinating strategy at the regional level. By setting clear priorities at the regional level, and committing governments to policies and investments that complement those priorities, we can better support private sector investment and growth.

Key concepts

- Regional Agriculture Deals (RADs) are a binding agreement between Federal, state and local governments;
- A RAD will define the agricultural value chain priorities for a region, and commit all tiers of government to policies and investments which support those priorities; and,
- Regions will be defined by shared agricultural production systems and value chains –cutting across local government areas as needed.

This model builds upon the UK City Deals approach which has recently been adopted in Australia.

RADs will deliver a more focused and stable policy environment for private investment, grounded in detailed local consultation.

Pillar 2.

ASPIRATION 2.1

Market-based Instrument for Biophysical Assets

Australian farmers currently manage 51% of the Australian landmass, with 94% already actively undertaking some form of natural resource management, highlighting the significant environmental stewardship role that farmers play as a part of their day-to-day business. They are governed in this role by the Environmental Protection and Biodiversity Conservation (EPBC) *Act 1999.*

Delivery of the EPBC is undertaken via a mix of regulation, enforcement and compliance within a complex framework that often leaves farmers confused about their responsibilities and feeling they carry the burden of environmental public good at their own cost. To ensure greater ongoing environmental conservation there is a significant need to reconsider the tools provided to farmers and land holders, specifically the development of a market-based instrument for biophysical assets.

Key concepts

- Consideration of successful mechanisms in use overseas, including the Payment for Ecosystem Services (PES);
- Use of voluntary agreement that provides a stewardship payment in return for agreed management regime designed to protect high conservation value environments; and,
- A shift towards a partnership arrangement between the farmer and government, creating clarity and stability, along with a greater incentive to protect.

ASPIRATION 2.2

Embracing Carbon Neutral by 2030

In 2015 Australia signed the Paris Agreement, committing to a reduction in 'emissions by 26-28 per cent below 2005 levels by 2030, which builds on our 2020 target of reducing emissions by five per cent below 2000 levels.' Australia is not only bound by our commitment to the Paris agreement, but by the growing expectations of our community and customers about our environmental credentials.

As a sector that contributes 13 percent to Australia's greenhouse gas emissions, Australian agriculture has a role to play in meeting our climate responsibilities and moving towards a 2030 carbon neutral goal.

Key concepts

- Strong focus on carbon neutral technologies that provide a competitive advantage for existing products;
- Develop new markets, domestic and export, that benefit from innovative carbon neutral technology;
- Collaboration across all of industry to make the greatest gains from the adoption of the latest research and development;
- Enhanced partnerships with private institutions, government and other industries outside of agriculture; and,
- Development of an Agricultural Sustainability Framework to integrate strategies across the whole of agriculture.

Pillars in Action:
Delivering on 2030

Pillar 3.

ASPIRATION 3.2

Managing Farm Data

Improved on-farm connectivity and the proliferation of new digital farming technologies will produce volumes of data about our farm businesses. As this pool of data grows, it will become increasingly valuable.

Our global competitors are already at work on frameworks that ensure the value of this data is maximised, and shared fairly across the value chain.

Key concepts

- Building on the solid foundation provided by the Precision to Decision project;
- Establishment of a national agricultural data management policy;
- Leadership by the NFF, to ensure a farmer-first approach to data management; and,
- Rules which clearly articulate industry expectations of service providers in the digital agriculture arena.

This approach is similar to that taken by industries in the United States and New Zealand, where industry has set clear ground rules to ensure farmers maintain confidence in how their data is managed, and the value of digital agriculture is maximised.

Pillar 4.

ASPIRATION 4.1

Nationally Consistent, 'Trade-equivalent' Job Brand for Skilled Farm Workers

Australian agriculture faces an immediate labour shortfall of more than 101,000 full time equivalent workers. An option to stem this trend is the development of a nationally consistent, 'trade-equivalent' job brand for skilled farm workers.

Key concepts

- Job titles: that are aspirational and can be clearly identified, allowing for branding for promotion;
- Job descriptions: that clearly articulate the skill requirements, roles and responsibilities required to undertake the role;
- Formal training: provided through frameworks such as Vocational Education and Training or universities;
- Programs aimed at a range of potential employees: from school leavers through to niche groups such as 30-40's career changers and FIREs (Financial Independent Retired Early);
- Regional development: housing availability, access to education and training, along with other support mechanisms for agricultural employees employed in regional and remote areas; and,
- Cross commodity and industry initiatives that are nationally consistent: aimed at delivering secure, full time roles in what can be traditionally seasonal, short-term contract roles.

Pillar 4.

ASPIRATION 4.2

Regional Migration and Ag Visas

The continued growth required to drive Australian agriculture towards $100 billion requires a sustainable and stable workforce that ensures access to both skilled and non-skilled labour.

NFF has been advocating for the creation of a visa specifically tailored to agriculture, which operates under the working title of the 'ag visa'.

Key concepts

- **Portability:** ensuring employees are not tied to one employer;
- **Accreditation:** providing a minimum level of work place requirements (for example, Occupation Health and Safety); and,
- **Flexibility:** allowing benefits to flow to both employer and employee.

NFF recognises the need to balance short term labour initiatives, such as the ag visa, with regional and rural community development that provides long term labour, including the Rural Regional Migration Initiative developed by the Regional Australia Institute.

The initiative is aimed at ensuring retention and community cohesion through locally-led migration strategies that assist workforce needs. Specifically aimed at low-populated and resource constrained towns, the strategy considers the services required to support migrants moving to regional areas.

Pillar 5.

ASPIRATION 5.2

Attracting New Capital

Australian agriculture requires $159.5 billion in new capital to fund its growth ambitions. Traditionally, our farm businesses have relied almost exclusively on debt financing for capital.

While debt finance will continue to play an important role in years to come, we must also position ourselves to take on new investors – including through equity investment.

To do this, we need to make our farm businesses investment-ready by introducing structures and financial management practices that make our farms an attractive destination for capital.

Key concepts

- Adoption of alternative ownership models, including joint ventures, shared farming arrangements, equity partnerships, offtake structures, sale and leaseback, and corporatisation;
- Better industry-led investment performance metrics to standardise the language of farm business investment; and,
- Improved financial literacy, performance measurement and governance capacity.

Contributors and Acknowledgements

The 2030 Industry Roadmap could not have been developed without the invaluable contributions of our Talking 2030 participants, NFF Partners and expert industry stakeholders. We thank you for your support and look forward to continuing this journey with you as the Roadmap is implemented.

Roadmap Partners

In 2017, Telstra became a strategic partner of the NFF –providing its endorsement of our vision for a $100 billion farm sector.

Under this partnership, Telstra has lent its resources and expertise to the Roadmap process.

Telstra's support has enabled us to travel right around Australia, connecting with our stakeholders and hearing their views on the future.

Telstra's commitment extends beyond the release of this document. Together, we have established a special fund to further the research and advocacy needed to bring this Roadmap to life.

KPMG is the official consulting partner of the NFF.

Throughout this process, the NFF has worked closely with KPMG's agribusiness experts to capture cutting-edge thinking and ideas.

This began with the Discussion Paper authored by KPMG, continues with this Roadmap which has been refined and finalised by KPMG, and will now move into a research partnership to build on the ideas identified in this paper.

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