

INSIGHTS FROM THE LAND

Regional champions and changemakers

How Australian farmers are
driving productivity and
future-proofing our industry.

July 2024



Contents

3

WELCOME

Welcome - Peta Ward

4

INTRODUCTION

State of Play - Agriculture in a shifting geopolitical climate

5

CHAPTER 1

Productivity the way forward

6

CHAPTER 2

Farmers adapting to future-proof their business

8

CASE STUDY

Nigel Corish - An eye for sustainability

10

CHAPTER 3

Reaping the benefits with productivity improvements

12

CASE STUDY

Joe Grose - Productivity & profitability go hand-in-hand

15

CHAPTER 4

Navigating the barriers

17

CASE STUDY

Andrew & James Pursehouse - At the forefront of innovation

19

CONCLUSION

Next frontier of productivity?



Welcome

Shining a light on the productivity strides farmers are continuing to make

One of the greatest privileges of my role is working across rural and regional Australia, meeting and spending time with our customers as we partner with them through the cycles and challenges of agriculture. At Westpac, our proud and long association with the agribusiness sector now spans 207 years, over which time we have continually borne witness to the tenacity and agility of farmers to evolve and grow their business.

In this, our latest Westpac Champions and Changemakers report, we focus on the productivity strides farmers are continuing to make to future-proof their business in an ever-changing environment. Commissioning new research to explore the actions of more than 230 young farmers across Australia, we take a look at the innovative management practices they are adopting and the associated productivity improvements they are achieving as a result.

There is no doubt the adoption of new and innovative technology is one of the big productivity drivers, as each generation combines technological advancements with the knowledge

of those before them. It is not a case of “this is how we have always done it”, instead we see this emerging generation of farmers apply their parents’ wise counsel, experience and support to new challenges, as they strive to uncover the next frontier and identify what will give them the edge.

Family farming businesses have always been unique in that sense, in that they are often multi-generational businesses. And it is that sense of custodianship and desire to pass on the farm in as good health as they received it, or in a lot of cases, better health, that has been the constant driver to adopt innovative management practices in light of new knowledge and changing economic and environmental conditions.

At Westpac, we have been a partner in this journey for many generations, and look forward to many more to come, as our nation’s farmers continue to play one of the most fundamental and important roles of all, feeding and clothing the world.

Peta Ward
National General Manager,
Westpac Regional & Agribusiness



Introduction

State of play - Agriculture in a shifting geopolitical climate

Australian farmers are operating in an increasingly volatile and ever-changing landscape, as the sector is inextricably linked with both global trade and global supply chains. This interconnectedness has been accentuated in recent times with the pandemic and conflict between Russia and Ukraine. During the pandemic we saw significant supply-chain disruptions drive up prices of goods and services, including agricultural produce. The Russia-Ukraine conflict has put even more upward price pressure on energy and food. More recently, the geopolitical conflict in the Middle East has seen global shipping prices rise, after falling to pre-covid lows, as the time to move cargo around the world has increased.

As a result, supply chains are rapidly evolving and where possible, countries are looking to reshore their production operations. Commodity markets are more volatile or disrupted. And food security has arguably changed permanently with shifting supply chains, disrupted markets and concerns around food security. For a long time, the world was accustomed to having access to a secure and relatively cheap food supply. However, we have seen rising geopolitical tensions add

to the cost of trade and create even more uncertainty.

This international uncertainty has clearly demonstrated the vital role farmers play in feeding and clothing the world. A role that is only going to increase, as the sector strives to sustainably feed a growing global population.

Domestically, we have seen recent positive gains in key export markets including barley, wine as well as the emerging opportunity of Australian beef to the United States. These recent gains are proof that our farmers are well-versed in navigating uncertainty and their agility in finding new opportunities and markets when they present themselves.

As Australian farmers navigate this global landscape, against a backdrop of broader sustainability objectives, continued investment in new and cutting-edge technology will be key to building on productivity and maintaining competitiveness in international markets.

This report drills down into some of the on-farm actions Australian farmers are applying to be more productive and sustainable in this ever-changing landscape, their appetite for change, and any barriers they need to navigate along the way.



Productivity the way forward

How Australian farmers are driving productivity and future-proofing their businesses

In this third edition of our Champions & Changemakers report, we explore the productivity strides made on Australian farms and showcase the practices farmers are increasingly adopting to further lift productivity and future-proof their business.

Taking direct insights from more than 230 of the key decision makers in farm businesses right across the country, via a survey we commissioned earlier this year, the results are telling. Not only are farmers taking decisive sustainability actions now, but many are reaping the rewards with productivity improvements from their changed practices.

While the survey identified some barriers standing in the way of further action, and these exist along the supply chain, we share the stories of some of Australian agriculture's laudable champions and changemakers to showcase how they have utilised technology and innovation to respond to these challenges and thrive with change.

Productivity on the up, but slowing

Productivity has long been the yardstick of Australian farm performance, measuring the efficiency of farms in

converting their inputs (such as capital, land, labour, resources and materials), into agricultural outputs.

Driven by a multitude of factors including the adoption of innovation and technology, structural change and management practices, government policy, research, development and extension (RD&E), use of natural resources, sustainability and climatic factors, [Total Factor Productivity \(TFP\)](#) on Australian broadacre farms, as measured by ABARES, has increased by an average annual TFP growth rate of 1%, since 1977-78. However, this rate of productivity growth has slowed from an average annual TFP growth rate of 2.18% (in the period from 1977-78 to 1999-2000), to an average rate of 0.6% in the years post 2000.

Productivity increasingly volatile

While annual productivity growth rates have slowed, volatility in productivity has increased, with [ABARES](#) attributing this to the “headwinds of price fluctuations and increasingly unstable climate conditions”. In light of this, innovation in genetic improvements and digital technologies are set to play an increasingly important role in achieving

on-farm productivity growth as farmers not only manage the vagaries of climate but implement measures to reduce their carbon footprint.

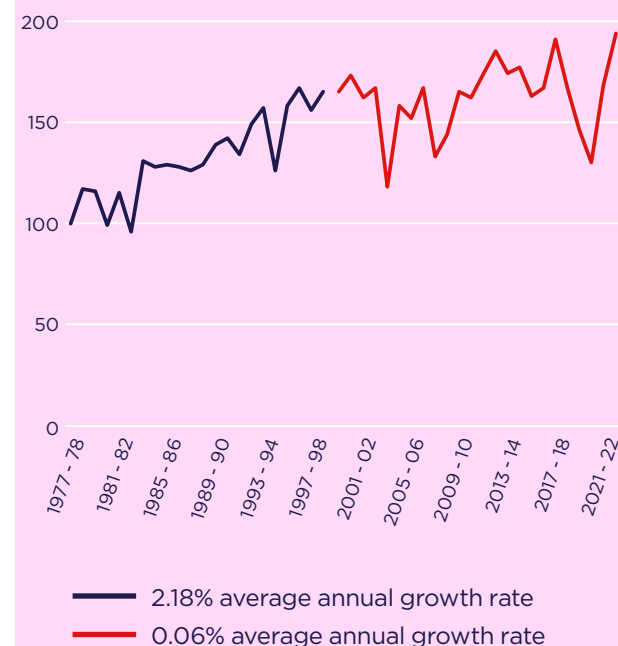
Research and development (R&D), in both the private and public sector, will be fundamental to supporting new technologies and production techniques, with 44.9% of farmers in the 2023 [National Farmers' Federation National Farmer Priorities Survey](#) calling on Government to commit more to R&D initiatives. While [AgFunder](#) research shows investment in Australian agrifoodtech startups fell by 24.5% year-on-year in 2022, albeit not to the same extent as the 44% drop, globally.

Against this backdrop of slowing, and volatile productivity, the next chapters will explore the actions farmers are taking to mitigate the impact of a more variable climate, and if these actions, have resulted in productivity improvements. Drawing on the survey results of farmers from across the nation, these findings will be brought to life through the actions and words of three profiled champions and changemakers who are continually adapting their practices by integrating new technologies and ways of doing things to sustainably grow their business.

OBSERVING A MOVING DIAL



Australian broadacre farm productivity, pre and post 2000, 1977 - 78 to 2021 - 22



SOURCE: Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES) Australian Agricultural Grazing Industries Survey (Updated July 2023)

Farmers adapting to future-proof their business

New research shows farmers are taking action

Farmers are long accustomed to operating in volatile and changing conditions – whether that be vagaries of the climate, markets, international trade or changing consumer preferences – and in this chapter we explore the on-farm actions being taken by farmers to productively manage their business.

Drawing on the survey results of more than 230 of the key decision makers in farming business across Australia, we drill down into some of the decarbonisation and carbon sequestration management practices farmers are adopting to increase their productivity.

Who is taking action?

In the survey, farmers were asked to provide insights on how they are minimising risks and maximising the opportunities of a more variable climate, with around 9-in-10 survey respondents (at 88%) already taking action or planning their course of action. Of which, 58% of those surveyed have taken action including biodiversity measures, soil carbon sequestration practices (such as increasing organic matter, riparian plantings and planting cover crops)

and decarbonisation actions (including integration of renewable energy sources, rotational grazing, and capturing methane to produce energy). While a further 30% are actively planning to take action, and 9% indicate they are open to the process.

By commodity, grain growers were found to be leading the way, with 68% taking action and a further 28% in the planning stages. Appetite was also strong amongst the nation's livestock producers, with 64% taking action to date and 21% poised for change.

Improved land management practices

The survey found around two-in-five farmers are actively adopting land management practices to absorb and hold more carbon in their soils via a raft of soil carbon sequestration measures. While a similar proportion of farmers are currently considering their course of action, or are open, to adopting these measures in the future.

The most common course of action taken to date, by 51% of respondents, has been the integration of diverse crop rotations ▶

ADAPTING TO FUTURE-PROOF



TAKING ACTION



POISED TO ACT

Livestock



Grains



Horticulture



Mixed Farming



What actions are they taking?

39%
Increasing use of renewable energy on-farm

38%
Methods to increase soil carbon or biodiversity

35%
Diversification to mitigate risk of lost revenue streams

33%
Reduced stocking rates / numbers, time to slaughter^a

31%
Mix of farming activities

25%
Seeking alt. revenue streams to support main enterprise

a. Including other animal productivity measures

to build the fertility and organic matter of their soils. While other commonly adopted management practices to enhance the soil's ability to sequester carbon include tree plantings, cover crops, perennial grasses, application of compost, manure and lime, and restoration measures to rebuild soil.

“Rotational grazing boosts soil carbon allowing us to produce more pasture with less rain”

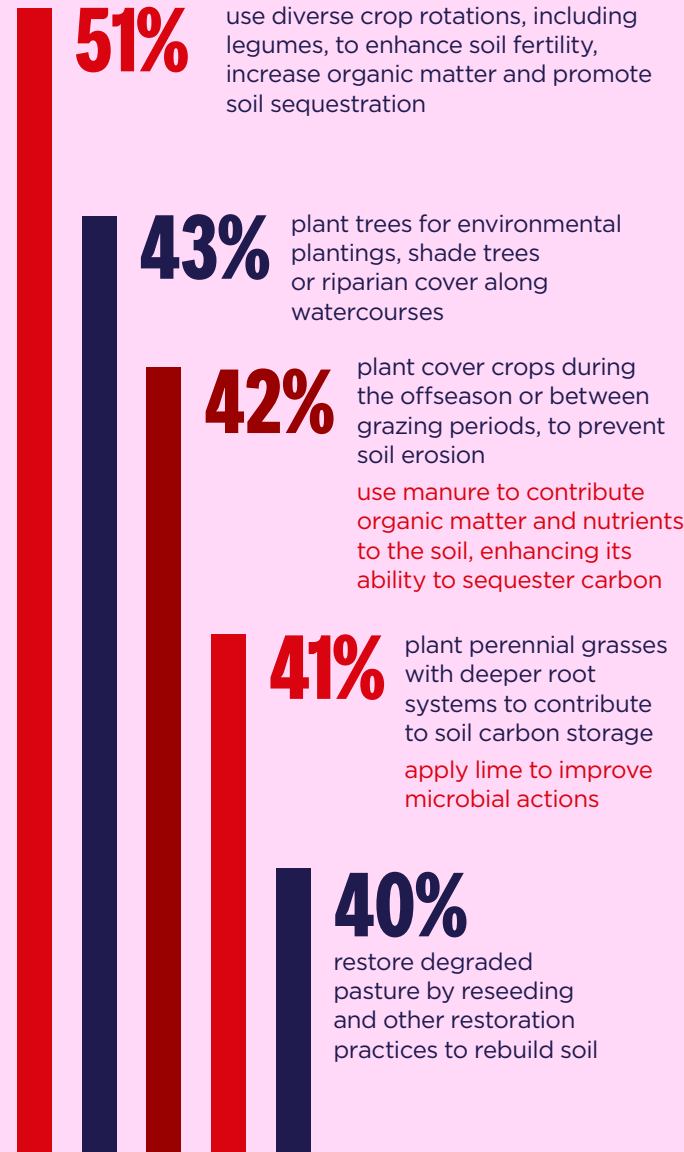
QLD grain producer, sequestration actions

Farmers are also decarbonising the way they grow food and fibre, with around a third to half, of all survey respondents taking various actions to reduce their greenhouse gas emissions; from generating more sources of on-farm renewable energy such as solar, wind and biogas, to implementing practices to minimise methane release.

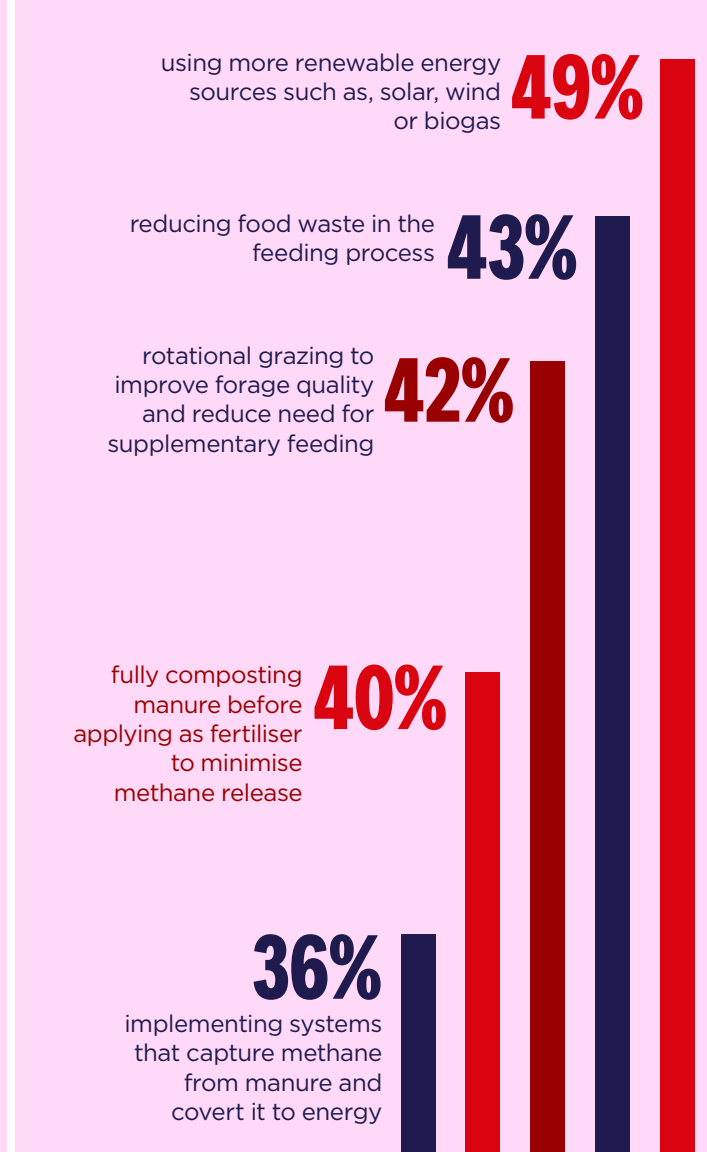
“Incorporating climate-resilient & drought-tolerant crop varieties that require fewer inputs and contribute to lower emissions”

NSW mixed farmer, decarbonisation actions

TOP FIVE SOIL CARBON SEQUESTRATION ACTIONS



TOP FIVE DECARBONISATION ACTIONS



An eye for sustainability

Nigel Corish, New Leaf Ag, Western Downs cropping enterprise

Nigel Corish's commitment to innovation is deep-rooted and at the heart of how he runs, and has grown, the family's multi-generational farming business, New Leaf Ag, based at Condamine on Queensland's Western Downs. It is this approach, that contributed to the Corish family taking out The Weekly Times Coles Farmer of the Year awards in 2024.

“Identifying problems, exploring possible solutions and make evidence-based decisions is the way I was taught to farm.”

Nigel Corish, New Leaf Ag, Western Downs, QLD

Nigel is a fourth-generation farmer running a dryland cropping enterprise spanning 4,000 hectares. Based on a five-year cropping rotation for wheat, barley, sorghum, peas and chickpeas, the enterprise also integrates 450 hectares of irrigated cotton and cereals into the mix.

While always holding a love for the land, Nigel says he hadn't always planned on farming.

“I originally planned to operate in a professional capacity as an agronomist, after graduating from university with a Bachelor of Applied Science,” he says. “But when I returned home after university in 2004, I realised the professionalism and opportunities in the family business”. In 2014, Nigel completed a Nuffield scholarship which changed the way he viewed farming and soil health.

In particular, Nigel says he was interested in looking at how synthetic nitrogen use could be reduced or eliminated from irrigated cotton. He applied the learnings from his Nuffield Scholarship, with his family's innovative-mindset and the support of a talented team of advisors and agronomists, to ensure they were “ahead of the game”.

“I believed farming did not have a future if it continued over-using synthetic fertilisers as the key strategy for enhancing productivity”. Instead, he saw that “getting productivity up and avoiding fertiliser reliance” required him to challenge traditional farming practices. So, he started to learn from others and shift the way he farmed to be more



Nigel Corish is the recipient of The Weekly Times Coles Farmer of the Year Awards, 2024.



holistic with a strong emphasis on soil health.

“What I wanted to do was improve productivity and be more sustainable both in a financial and environmental sense, as well as keeping the social licence to farm”, he says.

This has seen Nigel go on to become one of the first cropping farmers in Australia to develop a soil carbon project, which aims to optimise production and increase whole-farm profitability by building soil carbon and generating carbon credits from carbon sequestration.

To get to this point, Nigel has changed many things in his farming methods, emphasising “my biggest learning, so far, is the need to get everything right if you want to see improved soils as well as the productivity improvements”.

He has done a lot. Changing his farm from a monoculture environment, to practising crop rotations to get more nitrogen into the soil naturally, introducing cropper crops to the rotation, reducing soil compaction and disruption (using disk planters), and using less chemical by camera spraying.

Nigel has also undertaken contouring work to improve water infiltration into his soil. This includes a mapping exercise to get a 3D topography survey of his farm

to allow him to re-level their dryland cropping areas.

“This was a very expensive exercise, but I knew I had to get this right from the start to eventually make a difference.”

Nigel Corish, New Leaf Ag, Western Downs, QLD

Nigel says he also wrestled with getting the irrigation right. “The challenge for irrigated crops is to balance the risk of waterlogging the soil with too much irrigation, against placing crops under duress with too little water.”

Nigel says he uses on farm telemetry technology to provide continuous monitoring of soil moisture levels to ensure he neither waterlogs the soil, nor leaves it too dry. While he has also undertaken a reasonable amount of deep ripping down to 40 centimetres, to aid water infiltration and put down 10 tonnes to the hectare of non-synthetic manure.

The result of which, he says, has generated increases in crop yield.

“Over the last five years we have had about a tonne to the hectare improvement in grain production, from

2.5 to 3.5 tonnes previously, and a two bale per hectare increase in cotton production, from 12 to 14 bales.”

As well as these yield increases with fewer input costs, Nigel says his more sustainable approach to farming also brings environmental benefits and healthier soils. A “great feeling at harvest time”, he cites, “by providing the acknowledgement that he is a successful food producer, and he is doing it more sustainably”.

“I have no regrets about passing in a professional consulting career because it’s just a great feeling to be a farmer, a scientist, and a businessperson in a job that changes daily and brings challenges to be overcome,” he says.

The main challenge Nigel sees in the future starts with “weather and climate”, saying he has seen changes since he started farming 20 years ago.

“I have seen more severe and intense weather events, which I need to manage well to remain productive and profitable, so storing moisture in the soil is key in my opinion.”

Nigel also sees attracting an effective workforce to regional areas as being a growing challenge because of declining schooling and health facilities, the rising cost of farm inputs and the need to build

trust in the community that farmers are managing the land in a productive way.

Nigel’s position on innovation is an outcome of his own life journey, having lived with cerebral palsy since birth.

“I have always looked at managing even day to day living differently to others because we had to find new ways to do things if I wanted to be on the farm,” he says.

And, he says, he has approached his farming career in exactly the same way.

“Define the problem, look at all the workable solutions, find or help create the data to allow evidence-based decisions for the best path forward and then, do everything exactly right.”

Nigel Corish, New Leaf Ag, Western Downs, QLD

Reaping the benefits with productivity improvements

7 in 10 farmers cite productivity improvements from changed management practices

The survey highlighted that farmers are reaping the rewards as a result of positive actions to reduce emissions and improve natural capital, with more than three-in-five respondents citing productivity improvements as a result of their changed management practices.

In this chapter, we look at which sectors and class of farms are reporting the biggest gains, and examples of the productivity improvements that have been achieved. We then bring these results to life through the eyes of Joe Grose, one of the profiled champions and changemakers, who shares the management practices he has adopted and how management of soil fertility, pasture species and grazing have “led to a sustainable environment that increases productivity”.

The productivity wins

The survey found around two-thirds of respondents, at 67%, have achieved productivity improvements as a result of their on-farm actions - including water use efficiency, improvements in soil health, animal grazing management systems and reduced input usage

including labour - to mitigate the impact of climate variability on their business. While a further 19% cited the improvements as ‘occasional’.

Productivity improvements were particularly evident in larger-scale farm businesses*, with 71% reporting improved productivity as a result of their actions. While by commodity sector, horticulture reported the biggest upswing in productivity, at 75%, followed by 65% in grains and livestock, respectively.

Harvesting results through a raft of measures

The survey found around two-in-five farmers are actively adopting land management practices across many facets of their business including:

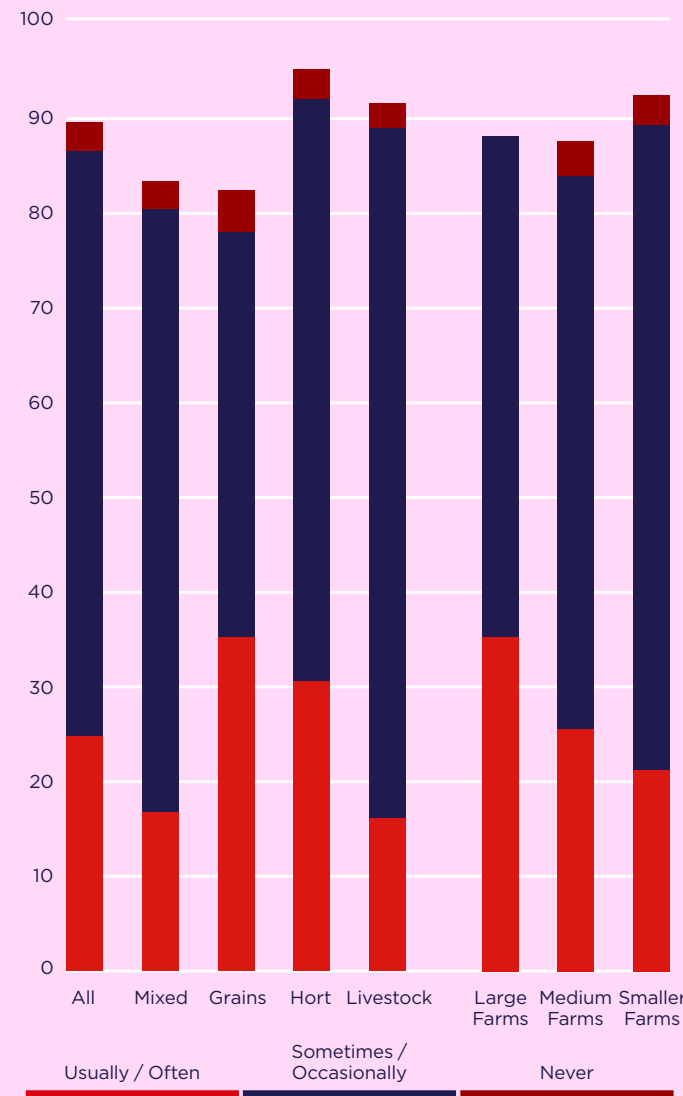
Water - Improved water storage, infrastructure and efficiency strategies including water recycling and riparian fencing.

“Efficient use of water through techniques like drip irrigation and soil moisture monitoring has led to water conservation ▶

PRODUCTIVITY IMPROVEMENTS



Productivity improvements are being implemented across industries and farm sizes^a.



a. Breakdown of farms by average annual revenue: Smaller farms \$350k - \$1m, Medium farms \$1m - \$3m, Large farms >\$3m

and improved crop productivity,” NSW mixed farmer

Crop and Pastures – New and different varieties (including GM), crop rotations, adapt farm management systems (ground/stubble cover, zero till, soil additives, soil drainage, contour mounding), molecular diagnostics, and inventory management.

“Implementation of sustainable farming practices such as crop rotation, cover cropping, and agroforestry, has contributed to improved soil health, reduced erosion, and enhanced long-term productivity,” NSW mixed farmer

Livestock – Rotational grazing, drought feeding management strategies, shade trees, protection from heat and cold, reduce stock numbers.

“Planted 100,000+ saltbush on farm, which has helped with lamb and ewe loss when lambing,” SA mixed farmer

Weed and Pest Control – Integrated pest management, mulching, enhance surveillance, netting of trees, more attention to weeds and pests.

“Better rotations have reduced inputs of insecticides,” SA grains producer

Energy – Renewable energy solutions, reduce waste and harness it for energy

production and feed.

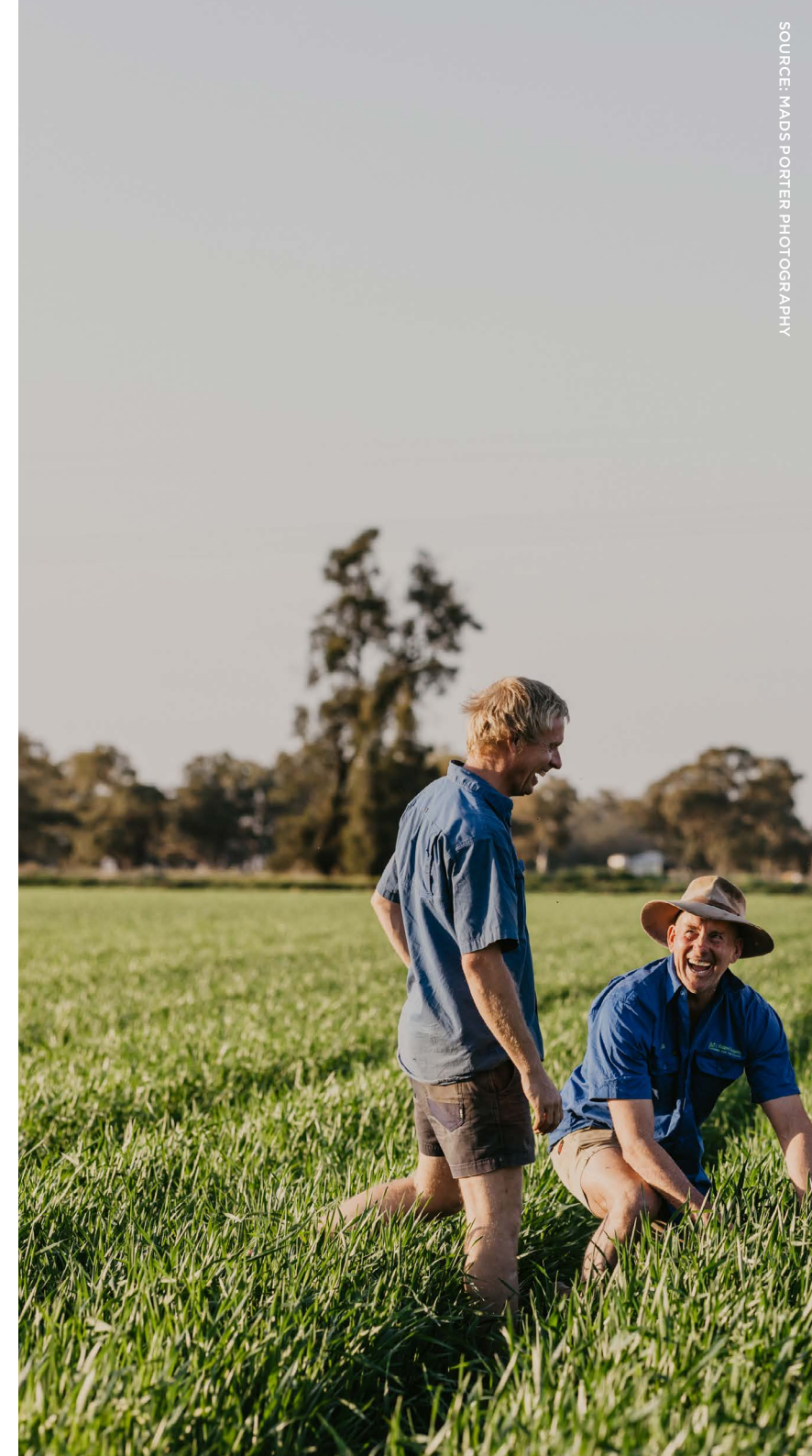
“Install solar panels or wind turbines to generate on-farm renewable energy, reducing reliance on fossil fuels for electricity,” NSW horticulturalist

R&D – Knowledge sharing and seeking advice on change strategies, undertaking studies to provide evidence for best ways forward, diversification of the supply chain, adoption of equipment and technology, risk assessments, investment, and change management.

“Use species able to better cope with extended dry/hot conditions,” NSW forester

Labour – Adjusting work hours, staff training, local community engagement.

“Establish staffing and drought response teams, develop drought response plans, consider funding and financing options,” VIC horticulturalist



Where productivity & profitability go hand-in-hand

Joe Grose, owner and founder, 3D Genetics, Inverell, North-Eastern NSW

Joe Grose's veterinary science background has fuelled a passion for genetics, which has seen him become a trailblazer in the beef industry through the development of his large-scale Wagyu breeding business, 3D Genetics, run on one of the country's most innovative SMART farms at "Pukawidgi" in north-eastern New South Wales.

An early pioneer of the Australian Wagyu industry, Joe started the business with five weaner heifers in 1997 – some of the first imported fullblood Wagyu cattle.

“We started with five cows and through embryo transfer, we built those five cows out to 1,000 breeding cows.”

Joe Grose, 3D Genetics, North-Eastern NSW

Run as the nucleus herd for 3D Genetics, supplying male Wagyu genetics to leading commercial beef producers across the country, the business is in the throes of expanding to 2,000 cows through the purchase and development

of its second 1,100-hectare property.

“We purchased the original block of 1,000 hectares six years ago when it was running the equivalent of 200 breeding cows – a very common stocking rate in our locality,” Joe says.

“With a focus on utilising composted manure to build organic matter and fertility in the soils, fencing and water infrastructure and grazing management we have been able to increase our stocking rate five-fold.”

The vast infrastructure improvements, including “180 kilometres of fence, 90 kilometres of underground poly pipe and 180 water troughs” have been complemented by satellite imagery to assist with grazing management plans – which sees the business plan out “every month, of every year, of every livestock class on farm” to supply pasture-based nutrition.

Combining the “thought processes of an efficient dairy farm in agronomy and grazing management”, the SMART farm concept at “Pukawidgi” utilises digital technologies such as sensors, drones



Joe Grose has been involved in the Wagyu industry for over 25 years owning and operating a Wagyu breeding herd

and farm software to collect and process farm data.

The productivity and efficiency gains have been significant with the “biggest change”, he says, being the “responsiveness of the pasture when we get a precipitation event”.

“We can literally grow pasture much more quickly than our neighbours. The moisture holding capacity of the light granite soils has changed as a result of the increased levels of organic matter, from both the manure and the grazing management practices.”

This has also seen the business mitigate the impacts of the “ever-increasing variability of climatic conditions”.

“Our increasing reliance on irrigation water and fodder conservation, increased productivity through soil fertility, pasture species and grazing management ensures we always have excess to normal requirements of fodder produced so we can continue to put that excess away for the inevitable next dry time.”

This was recently put to practice with the business hitting a dry period in the back half of 2023.

“We had 800 of those cows being fed a silage-based ration, which had been conserved on the farm, so we didn't have

to go out and buy external fodder in huge quantities to maintain the nucleus.

“Those cows do not know when there is a drought on, and that's our job to ensure they just hum along as if the weather doesn't change the outcomes for them.”

Ensuring there are “no hiccups” is fundamental to the 3D Genetics program.

“The nucleus herd, unlike a generic commercial beef herd, must be maintained no matter what the season throws at us.”

Joe Grose, 3D Genetics,
North-Eastern NSW

Based on the utilisation of whole of life and carcass data collected over 27 years of operation, Joe says their breeding objective is to “develop a fertile animal that can perform at an elite level in carcass quality attributes but can also grow much faster and more efficiently”.

Partnering with University of Adelaide for research, and employing an inhouse quantitative geneticist and software engineer, together with Joe's interest in molecular genetics, the team at 3D Genetics have made considerable inroads in their breeding program. ▶



CASE STUDY

“Through genetic selection our animals are now growing 35 per cent faster than they did ten years ago and have 50 per cent more marbling,” he says.

“We think within three generations (six years), we will have the ability of large-scale production of animals with markedly reduced feeding times whilst maintaining the top one per cent of marbling outcomes, heavier carcass weights and increasing loin cut yield.”

Able to measure this via their own Feed Intake station on “Pukawidgi”, the second largest facility in Australia, they are not only able to analyse the genetics of feed intake and feed efficiency, but “put some economics around the variation of these traits in the Australian Wagyu population”.

“An animal that eats 10 per cent less with the same performance means an increase in more than \$200 in overall profitability due to feed savings”, he says.

This not only “results in a more profitable animal” but also “produces less greenhouse gas emissions, per kilogram, of saleable meat”.

“By putting pressure on selection for both marbling and feed efficiency we have also moved where the animals are laying down fat”, by reducing the fat depots that are “of extremely low value” and

increasing the marbling fat and hence the profitability of the carcass.

Working closely with some of the major Wagyu boxed beef brands, Joe says their ultimate aim is ensure a “pull through” approach based on the wholesale value of the product going into the box.

“We try to add value at each stage of the supply chain,” he says. “So that the boxed beef businesses can be more profitable, and as a result have an ability to pay our commercial Wagyu producers to a level that increases their profitability.”

Joe says “openness to innovation and change in every aspect of the management and production cycle” has been core to their business success, but is imperative for the livestock sector more broadly.

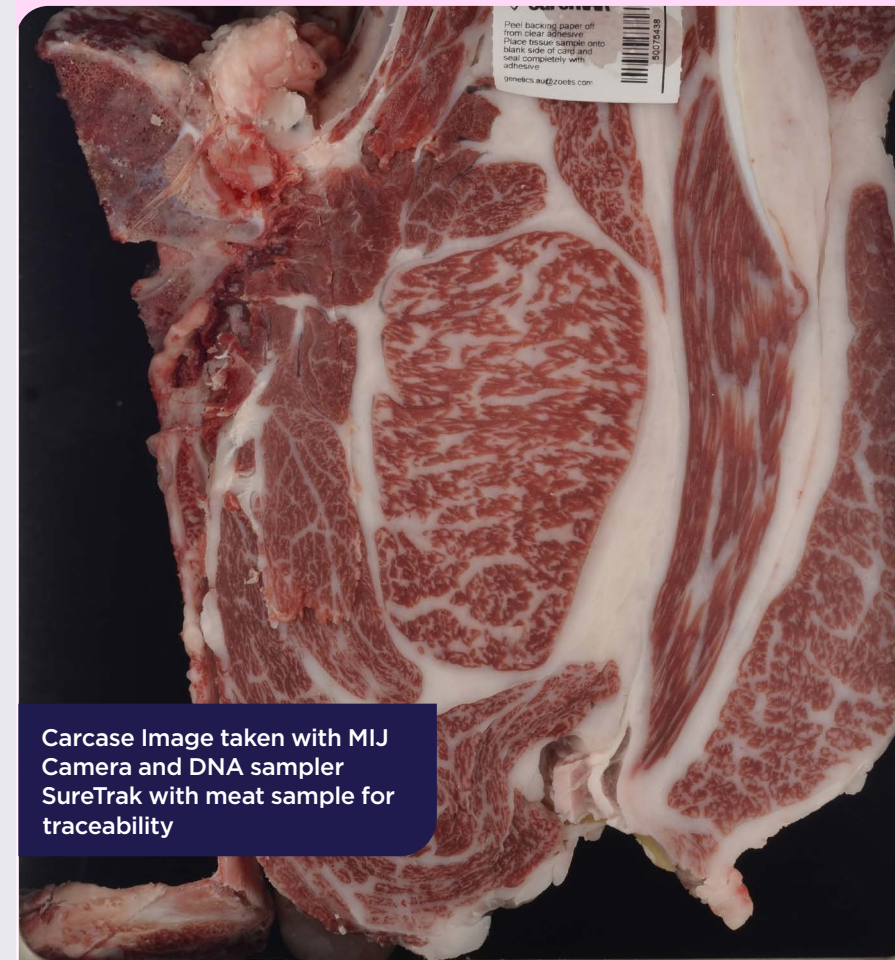
“It is sink or swim,” he says. “If Australian livestock producers want to continue in this line of business, they have to change what has been done traditionally and have strategies going forward.”

What I see generally in the industry is an increased uptake of strategies such as fodder conservation, sustainable grazing practices, maintaining sustainable stocking rates, things we didn’t see as commonly 10 years ago.”

Attributing the “extremes of weather”, over the last decade, as a “driver of innovation”.

“What I see generally in the industry is an increased uptake of strategies such as fodder conservation, sustainable grazing practices, maintaining sustainable stocking rates, things we didn’t see as commonly 10 years ago.”

Joe Grose, 3D Genetics,
North-Eastern NSW



Carcass Image taken with MIJ Camera and DNA sampler SureTrak with meat sample for traceability

Navigating the barriers

Uncertainty, cost and access to resources raised as inhibitors to desired further actions

The appetite to change, innovate and adopt integrated management practices has long been the cornerstone of many Australian farming businesses as they look to future-proof their business. Farmers are positive, have a can-do attitude and continue to demonstrate remarkable resilience and agility.

That said, the road to change can sometimes be met with obstacles, and in this chapter, we asked farmers to identify some of the current barriers and how they are navigating these.

Amongst the barriers; uncertainty, cost, and access to resources, were all raised as key inhibitors to desired further action and productivity improvements.

The largest cohort of farmers surveyed, at 31%, identified uncertainty as their barrier to action, or further action, in mitigating the impact of climate variability. Stating that they are 'waiting to see what other farmers do' and whether their actions work, before implementing changed management practices in their own business. The youngest cohort of survey respondents (18 to 29 years) were less likely to take this approach, at 28%,

compared to 31% of farmers in the next age group (30 to 40 years).

Meanwhile a quarter of farmers, at 25%, stated it requiring a 'complete rethink' of how they use their land as a barrier to further action. This was less of a consideration among the youngest demographic of survey respondents at 20%, compared to 31% in the 30 to 40 age-group.

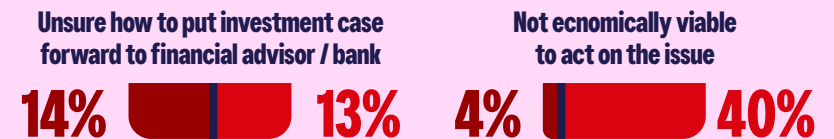
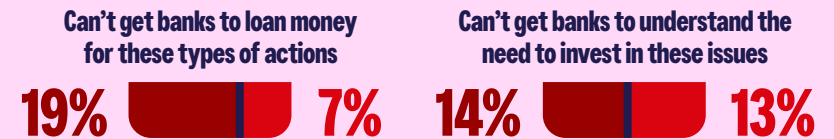
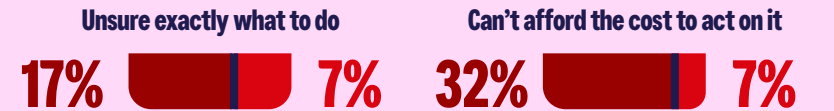
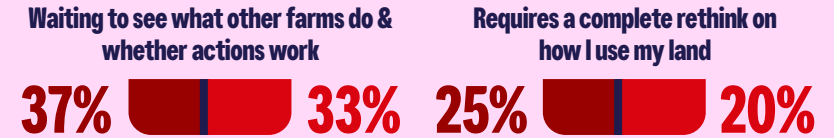
The 'cost' associated with taking action was also raised, by 22% of survey respondents, with this increasing to 32% amongst smaller farm businesses but less of a barrier for larger operations at 7%. Farmers also questioned the economic viability of acting, with larger businesses citing this as their biggest barrier at 40%, compared to the overall average response rate across all farming businesses of 14%.

Other issues raised included accessing resources through education and training at 19%, the availability of technology at 17%, and tailored advice for their enterprise at 16%.



WHAT ARE THE BARRIERS?

- **SMALLER FARMS^a**
- **LARGE FARMS^a**



a. Breakdown of farms by average annual revenue: Smaller farms \$350k - \$1m, Medium farms \$1m - \$3m, Large farms >\$3m

Along the supply chain

The transition to a low carbon future is not only driving the adoption of next generation land management practices, but driving the need for long-term value along the supply chain. To that end, we asked farmers to identify the supply chain challenges impacting their farm enterprise performance – with input costs and availability, logistical challenges, changing buyer needs, and access to markets being some of the key issues raised.

More than half of those surveyed, at 52%, reported the impact of supply chain issues on their operation as either significant, or considerable, with this rising to 71% amongst larger farm businesses^a. While 37% cited the impact as moderate and 8% as having an occasional impact.

By commodity, supply chain issues were more keenly felt among livestock producers and mixed farmers, with 58%, respectively, citing a significant/considerable impact on their business, while this dipped to 37% amongst horticulturalists.

The price of fuel was raised by two-in-five survey respondents, at 38%, as having an impact on their business – with this being particularly pronounced amongst grain growers at 52%. Rising costs were

a key concern across the board, with the associated financial pressure of rising input and business costs impacting 29% of respondents, and this increasing to 38% in horticulture.

Delays in procuring farm machinery as well as transport and logistic challenges were particularly noted by grain growers, raised by 44% in the grains sector.

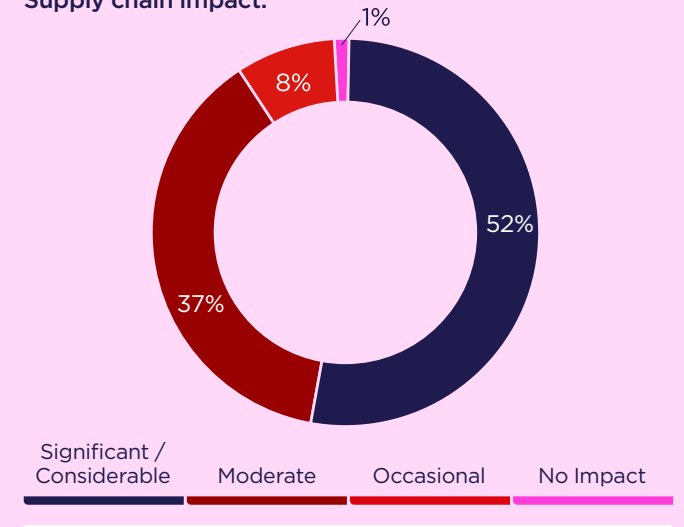
A quarter of farmers, at 26%, also raised difficulty in meeting changing buyer needs, for example supermarkets, with this rising to 32% among mixed farmers. While a similar proportion, at 24%, cited global relations and access to markets as having an impact on their business.

Availability of feed/fodder, as well as fuel was raised by 21% of respondents, while 20% raised supply chain issues around renewable energy technology.

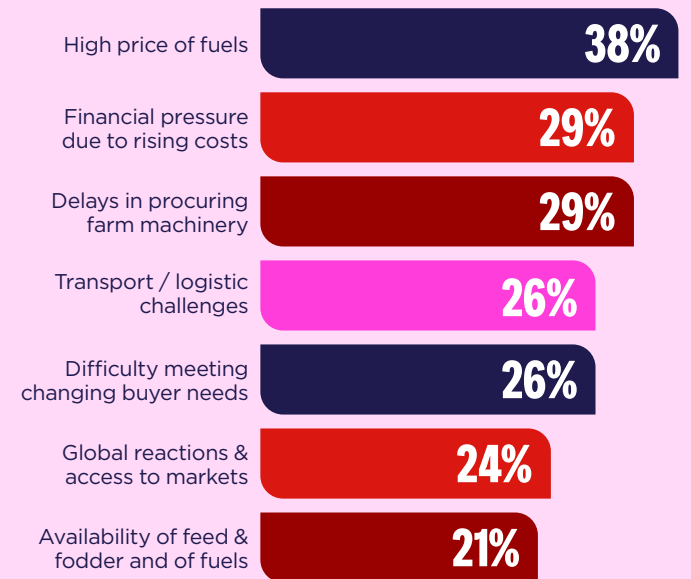
TRANSITIONING END-TO-END



Supply chain impact:



Main supply chain issues experienced^a:



a. Total sample n = 233 across small, medium and large farm businesses

At the forefront of innovation

Andrew and James Pursehouse, “Breeza Station”, family-owned cropping and grazing enterprise

The Pursehouse family’s continual commitment to innovation, which they regard part of their “DNA”, has been core to the successful growth of their multi-generational farming business, “Breeza Station”, on the Liverpool Plains of New South Wales.

Run by Andrew and Cynthia Pursehouse, along with their son James, they have been working on the health of the soil at “Breeza Station”, spanning around 5,200 hectares, for the past forty years. They see themselves as predominately croppers, with around one third irrigated and two thirds dryland cropping, on the heavy black soils of the area.

Black soils are inherently productive because of their ability to grow food and soak up water. However, their high level of soil productivity makes them prone to being degraded if not looked after, and looking after the soil on their land has been one of the driving passions for these farmers who grow cotton, corn, sorghum, wheat, durum, chickpeas, faba beans, canola and barley.

Andrew believes sustainability “comes easy if you are passionate about the

future of your land.” A belief that is well-ingrained.

“Dad’s always been at the forefront of what can be done. I guess I have inherited the same DNA”

James Pursehouse, Liverpool Plains, NSW

The outcome of this perpetual innovation around soil health, is a highly productive and profitable farming enterprise, where crop yields have doubled since the early 1990’s.

The list of early-adopted innovations is long.

Starting with a switch to minimum and no till in the late 1980s, growing legumes to reduce reliance on synthetic fertiliser (at a time when many thought faba beans couldn’t be grown in black soil), turning over machinery regularly to utilise emerging technologies like GPS enabled tractors to reduce compaction,



James and Andrew Pursehouse have been working on the health of the soil at Breeza Station, Liverpool Plains, NSW

CASE STUDY

retrofitting a self-propelled sprayer with optical spot spraying technology and now using an autonomous vehicle for optical spot spraying across the farm.

James explains “the autonomous vehicle will work 24/7 within its parameters, with a weather station on board that puts it to sleep when conditions aren’t right for spraying”.

As well as saving \$16,000, per spray, on chemical in just one 860-hectare paddock, James says “it removes one monotonous job from the team and only needs 2 to 3% of the chemical once used”.

In a world where staff can be “hard to get and keep”, the Pursehouse family also attributes their focus on innovation as one of the reasons their team of five permanent staff stay with them.

“They are constantly learning too and gaining skills that put them at the top of their game,” James says. “That’s why they want to stay.”

Other on-farm technological adoptions include an extensive network of soil moisture probes to manage irrigation scheduling, yield mapping, minimising synthetic fertiliser use by growing legumes and using manures, developing renewable energy powered bores, planting more trees, protecting the Mooki

River, and returning natural habitat.

Andrew and James are the first to humbly acknowledge that “everyone is doing this now and we’re nothing special”. But as James adds, “being a good farmer is a particular mindset”.

“It’s about being open to new things, being fussy and doing everything right.”

James Pursehouse, Liverpool Plains, NSW

“You need to work out the numbers, but mainly it’s about doing everything well,” he says.



The next frontier of productivity

Innovation and technology informing the way forward

A shifting landscape and advancements in technology and science are shaping the changes in management practices being adopted on Australian farms. Farmers have always been innovative, and it will be those that continue to innovate, and have appetite for trialling new ways of doing things, collecting data to drive decisions, and see opportunities in the face of change, that will continue to see our industry prosper and grow.

This report has shown Australian farmers are already well on the way, with nearly 9-in-10 of those surveyed looking at actions they can take to future-proof their business. Bringing to light, it is often not one measure that provides the 'silver bullet' but rather an integration of management practices across the operation - from improving soil health and increasing soil carbon, conserving moisture, animal health practices, and reduced reliance on inputs and energy sources.

The adoption of new and innovative technology is central to this, not only on-farm, but across the supply chain more broadly. Many have already embraced it, with AgTech no longer a buzz word as

smart sensors, data analytics and traceability technologies become more commonplace in the way farmers manage, monitor and collect real-time data on soils, water usage, crop health, animal welfare and weather.

Our three profiled champions and changemakers exhibit this thirst for innovation. Joe Grose's SMART farm using digital technologies to make objective decisions, has led to huge strides in the genetic make-up of the Australian Wagyu beef herd. Andrew and James Pursehouse's innovative mindset as early adopters of on-farm technology has created productivity gains and a reduced reliance on inputs. And Nigel Corish's approach to utilise data to make evidence-based decisions that has helped him build healthier soils, increase crop yields, and aid water infiltration while also becoming one of the country's first cropping farmers to develop a soil carbon project.

As the sector faces this next frontier of productivity; capitalising on technological advancements to unlock new opportunities, and being open to new research, ways of doing things, and striving for continuous improvements in management practices, will be key to shoring up a productive and profitable future.



About the research

The Westpac Intergenerational Farming Report surveyed 233 of the key decision makers on Australian farms across a broad range of commodity sectors, and geographic regions. Delving into the perspectives of the next generation of farmers, the survey compared the perspectives of younger farmers (18 to 29 years) and the next age bracket of Millennials (30 to 40 years) and was conducted between February 19 to March 4, 2024.

The study sample was drawn from Instinct and Reason’s young farmer database of approximately 10,000 farmers using an online survey. The survey lasted 12 minutes on average.

Respondents to the survey met the following criteria:

- Interviews were conducted with participants that identified as a main decision maker in the farming enterprise, but also asked if other family members, employees, or advisors participate in the decision-making process
- All survey participants declared their age as under 40 years
- Size of participating farming enterprises were classified by annual revenue produced by the farm, on average

- Four main types of farm businesses were included: Meat and live animals and livestock products; Grains, oilseeds and other broadacre crops; Fruit and vegetables and other horticulture; and Mixed farming. Those farming enterprises that didn’t identify with the above classifications, were reported as Other.

This research was conducted by Instinct and Reason, an independent market agency accredited with the Australian Data Insights Association (ADIA) and was carried out in accordance with the ISO 20252 standard.

233 Total number of farmers surveyed across rural and regional Australia.

Age	18 - 29 years	30 - 40 years
	47%	53%
Gender	Female	Male
	48%	52%



SAMPLE PROFILE

Who else participates in decision making? (total sample)*	%
Partner/spouse	53
Farm Manager	25
Agricultural Advisor	19
Financial Advisor	12
Extended family member/s	28
Children	7
Banking Advisor	9
Not sure	6
Other project manager	1

State / Territory (total sample)*	
NSW	38
VIC	27
QLD	9
SA	13
WA	9
TAS	0
NT	1
ACT	

Farm type (total sample)	
Meat, live animals and livestock products	23
Grains, oilseeds and other broadacre crops	11
Fruit, vegetables and other horticulture	40
Mixed farming	21
Other	54

Farm Size (total sample)	
\$3 million and above	13
\$1m - \$3 million	47
\$350k - \$1 million	40



Need to know more?

This information is general in nature and has been prepared without taking your objectives, needs and overall financial situation into account. For this reason, you should consider the appropriateness of the information to your own circumstances and, if necessary, seek appropriate professional advice.

If you have any questions or would like to know more about the information contained in this report, please contact:

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