



**NSW Farmers submission to
the Productivity Commission
Australia's Productivity Pitch
Pillar 2: Building a skilled and adaptable
workforce**

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About NSW Farmers

NSW Farmers is Australia's largest state farming organisation, representing farmers on the issues that matter to them such as the environment, biosecurity, water, animal welfare, economics, trade, workforce, and rural affairs.

Agriculture is a vital sector, quite literally feeding the nation. Farming directly employs more than 75,000 people across New South Wales, and underpins rural and regional communities, producing more than \$24 billion in food and fibre and making a significant contribution to the state and national economy.

Our aim is to support stronger farming businesses and reach \$30 billion in output by 2030. We ensure genuine voices from the paddock identify issues and shape policies, with teams in regional NSW and Sydney. We provide specialist advice and offer partner benefits that deliver excellent value for members.

Introduction

NSW Farmers welcomes the opportunity to respond to the Productivity Commission's consultation on Pillar 2 of the Productivity Pitch: Building a skilled and adaptable workforce. NSW Farmers acknowledges the important work of the Productivity Commission in promoting the governance and institutional arrangements to enable the economy to grow, even as productivity growth slows. The Australian Bureau of Agricultural and Resource Economics (ABARES) has reported that productivity growth in agriculture has slowed to 0.72% per year since 2001, compared to 2.18% between 1978-2000¹ (see figure 1). While labour-saving advances in technology have been a hallmark of the largest improvements in agriculture productivity in the past century and more, labour still accounts for a relatively large proportion of inputs on farms, particularly livestock. Therefore, improvements in the quality and efficient use of labour in agriculture is one of the most important opportunities for the sector in reaching its goal of becoming a \$100B industry by 2030².

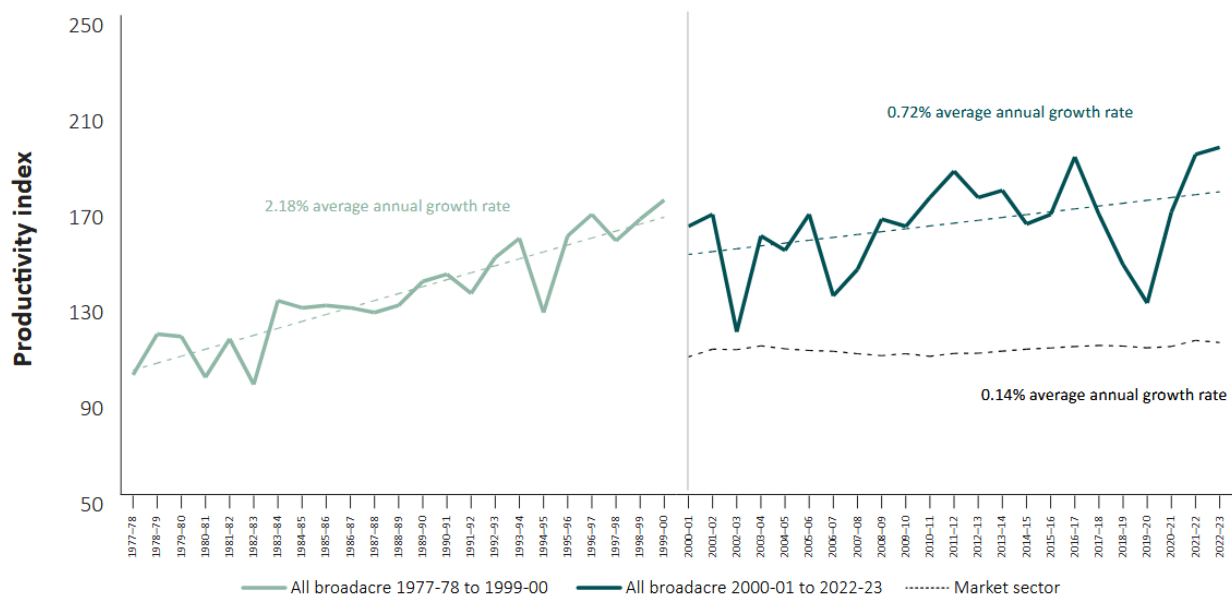


Figure 1: Farm productivity slowdown. Source: ABARES.

While the opportunities are great, so too are the challenges. More than 40 percent of farms report difficulty recruiting the workforce they need, particularly in seasonal periods. The average age of farmers has increased from 55 in 2000 to 62 today, while the requirements to adopt high-level technological skills are only growing. As well as a reliance on sustainable and vibrant remote and regional communities to provide critical farm-related services such as agronomy, veterinary, and healthcare³. All these issues are relevant to the three initiatives outlined in the Productivity Commission's consultation paper on enhancing the uptake on educational technology, and increasing the flexibility of workplace learning and occupational licensing.

¹ ABARES. 2024. Australia's farm productivity slowdown – why it matters, and what it means for policy makers. ABARES Insights, Issue 2. <https://www.agriculture.gov.au/abares/research-topics/productivity/australias-farm-productivity-slowdown>

² Department of Agriculture, Fisheries and Forestry. 2022. Delivering Ag2030. <https://www.agriculture.gov.au/agriculture-land/farm-food-drought/ag2030>

³ Standing Committee on Agriculture and Water Resources. 2020. Inquiry into growing Australian agriculture to \$100 Billion by 2030. Growing Australia. 7. Education and Workforce Issues. https://www.aph.gov.au/Parliamentary_Business/Committees/House/Former_Committees/Standing_Committee_on_Agriculture_and_Water_Resources/Agriculturegrowth/Report/section?id=committees%2Freportrep%2F024453%2F73407

Therefore, with respect to the initiatives outlined in the Productivity Commission's consultation paper, **NSW Farmers recommends that:**

1. the value proposition for the use of edtech in educational institutions emphasises the benefits to digital and nutritional literacy and exposure to the types of technologies driving productivity gains in agriculture, agtech, food product manufacturing and logistics, and the rest of the economy.
2. the 2024 Regional Telecommunications Review are fully implemented to support students in regional and remote areas to fully engage with edtech opportunities.
3. the government explore opportunities to increase flexibility and service delivery, including models for funding certainty and micro-credentials, to promote increased uptake and completion of VET qualifications for agriculture and agriculture dependent occupations across regional and rural Australia.
4. the government expedite processes for the registration of overseas veterinarians wanting to work in Australia, with a particular emphasis on streamlining the administrative burden and regulatory barriers in the event of an animal disease outbreak.

1. Improve school student outcomes with the best available tools and resources

Benefits of edtech

The Productivity Commission's consultation paper identifies education technology (edtech), including generative artificial intelligence (GenAI) as promising avenues to increase the effectiveness of teaching and improving student outcomes. However, the paper also notes that there are significant disparities between jurisdictions regarding the uptake and actual benefits arising from the use of edtech.

NSW Farmers agrees that improving the use and efficacy of edtech is critical to enable the agrifood sector to harness to opportunities identified in Food Innovation Australia's (FIAL) *Capturing the Prize* report in achieving a \$200 billion sector by 2030⁴, or the Australian Farm Institute's (AFI) report *Digital literacy the key to agritech adoption*⁵. The Ag2030 Plan outlines that by 2030, 1-in-3 new jobs created in the agriculture industry will be technology related⁶.

However, both FIAL and AFI have noted that meeting these goals requires a step change in the skills held by workers, given that agriculture ranks as one of the lowest for digital proficiency and technological adoption⁷. Addressing the broad digital literacy spectrum of producers through tools such as edtech is necessary to bridge the discrepancies that arise in the adoption of digital agriculture technologies⁸.

As digital tools become more advanced, continued investment in training and workforce development will be critical to ensure that technology is adopted and delivers real productivity gains⁹. Therefore, the use of edtech, including tools like GenAI, is critical not only to improve student outcomes, but to expose them to the technologies that will drive productivity growth throughout their chosen career. NSW Farmers have advocated, such as through the submission to the Proposed NSW Primary Industries Workforce Strategy 2025-2030, that there must be targeted actions to build digital skills and support for technology adoption across the agricultural workforce in NSW¹⁰. The deployment of edtech throughout the school, VET and university sector is a crucial aspect of that goal.

In addition, the use of edtech can help to address the disconnect between young people in metropolitan areas and farms. Recent research highlights the fact that young people continue to have a poor understanding of primary production, with 60 percent believing that cotton was an animal or plant and animal product and 40 percent failing to identify that food in their lunchboxes like bread and cheese came from farms¹¹. Initiatives like Future Farmers are an example of how multimedia is able to

⁴ FIAL 2020, Capturing the prize: The A\$200 billion opportunity in 2030 for the Australian food and agribusiness sector. Available at: <https://www.fial.com.au/sharing-knowledge/capturing-the-prize>

⁵ AFI 2018, Digital literacy the key to agtech adoption. Available at: <https://www.farminstitute.org.au/digital-literacy-the-key-to-agtech-adoption/>

⁶ Department of Agriculture, Fisheries and Forestry. 2022. Delivering Ag2030. <https://www.agriculture.gov.au/agriculture-land/farm-food-drought/ag2030>

⁷ Digital Transformation & Tech Adoption by Sector (2025) - Whatfix

⁸ Dibbern, T. Romani, L. Massruhá, S. .2024. 'Main drivers and barriers to the adoption of Digital Agriculture technologies', Smart Agricultural Technology, Volume 8 <https://doi.org/10.1016/j.atech.2024.100459>

⁹ NSW Farmers submission to the Inquiry into artificial intelligence (AI) in New South Wales

¹⁰ NSW Farmers submission to the Proposed NSW Primary Industries Workforce Strategy 2028-2030

¹¹ Cosby, Amy, Eloise S. Fogarty, and Jaime Manning. 2023. "Australian Primary School Students' Knowledge of the Agricultural Industry." *Education Sciences* 13 (2): 206. <https://doi.org/10.3390/educsci13020206>.

better bridge the gap between young people and food systems¹², and further advances in edtech utilising technology such as virtual reality (for example, see FarmVR¹³) should be supported in schools. Research shows that young people with a better understanding of farming and food systems also have better nutrition and consumption behaviour¹⁴.

Therefore, it is clear there are 'double dividends' to increasing the use of edtech throughout schools, VET and universities. Not only can student learning outcomes be improved, but their future productivity through exposure to the tools they will use throughout their careers will be enhanced. Better articulating this dual benefit is key towards increasing the adoption of edtech as outlined in the Productivity Commission's consultation questions.

Recommendation: That the value proposition for the use of edtech in educational institutions emphasises the benefits to digital and nutritional literacy and exposure to the types of technologies driving productivity gains in agriculture, agtech, food product manufacturing and logistics, and the rest of the economy.

Telecommunications and connectivity

A fundamental enabler of the use of edtech, and the adoption of technological advances in general is the availability of digital connectivity and telecommunications. A lack of telecommunications services is a major barrier to the use of digital tools on farms, and to the use of edtech for students at all levels in regional and remote areas. The *Digital Equity and Education* report compiled by researchers at the Whitlam Institute finds that only 39 percent of students in regional NSW have access to digital devices for learning activities compared to 60 percent for metropolitan Sydney¹⁵.

While programs like the Rural Access Gap¹⁶ have made material improvements to the availability of edtech in classrooms, the digital divide remains an issue especially for students who require a stable internet connection at home to access learning resources. The internet speeds experienced by students in regional NSW towns during COVID-19 lockdown period were found to be significantly slower than their metropolitan counterparts¹⁷.

"It takes an eternity to download lectures and streaming them requires extensive buffering. Uploading any files for group work or assignments is extremely slow and frustrating when deadlines are looming. The fluctuating connection which completely drops at times makes live tutorials or meetings pointless."

Student - Broken Hill¹⁸

¹² ABC. 2023. Young farmers show Aussie kids where their food comes from.

<https://www.abc.net.au/education/young-farmers-show-aussie-kids-where-their-food-comes-from/101971654>

¹³ FarmVR. <https://farmvr.com/>

¹⁴ Moss, Ashley, Sylvia Smith, Dawn Null, Sara Long Roth, and Ulrike Tragoudas. 2013. "Farm to School and Nutrition Education: Positively Affecting Elementary School-Aged Children's Nutrition Knowledge and Consumption Behavior." *Childhood Obesity* 9 (1): 51–56. <https://doi.org/10.1089/chi.2012.0056>.

¹⁵ Dastyari, A., Itaoui, R., Hawkes, G. Notley, T. 2024. Digital Equity and Education: a NSW Case Study. Whitlam Institute and Centre for Western Sydney. <https://doi.org/10.26183/z20r-9j98>

¹⁶ Digital NSW. 2022. <https://www.digital.nsw.gov.au/article/rural-access-gap-closing-digital-education-divide>

¹⁷ Stone, C., Davis, M. 2020. New Evidence: Stark inequality of online access for rural and remote students. Australian Centre for Student Equity and Success. <https://www.acses.edu.au/stark-inequity-online-access-remote-students/>

¹⁸ Ibid.

The regional connectivity issues in regional areas have been exacerbated recently by the closure of the 3G network throughout regional, rural and remote communities where wireless connections are the only option. Surveys of NSW Farmers members, as well as qualitative feedback, have indicated a drastic decline in the quality of internet service on farms (see Figure 1). The impact of this decline in connection quality cuts across workforce safety, health, and the ability access educational resources.

To address these challenges, it is critical that State and Federal Government's prioritise solutions with telecommunications providers to, at a minimum, recover the coverage footprint and service quality that farming communities had prior to the closure. Essential to ensure that farm businesses can thrive in the digital age, NSW Farmers has specially advocated for commitments to:

- Fully implement and adequately fund delivery of the 2024 Regional Telecommunications Review recommendations¹⁹.
- Commit to ongoing co-investment to expand terrestrial coverage beyond critical areas such as roads to ensure connectivity is fit for purpose for farming communities.

Has your mobile phone service changed since the closure of the 3G network on 28 October for internet/data usage?

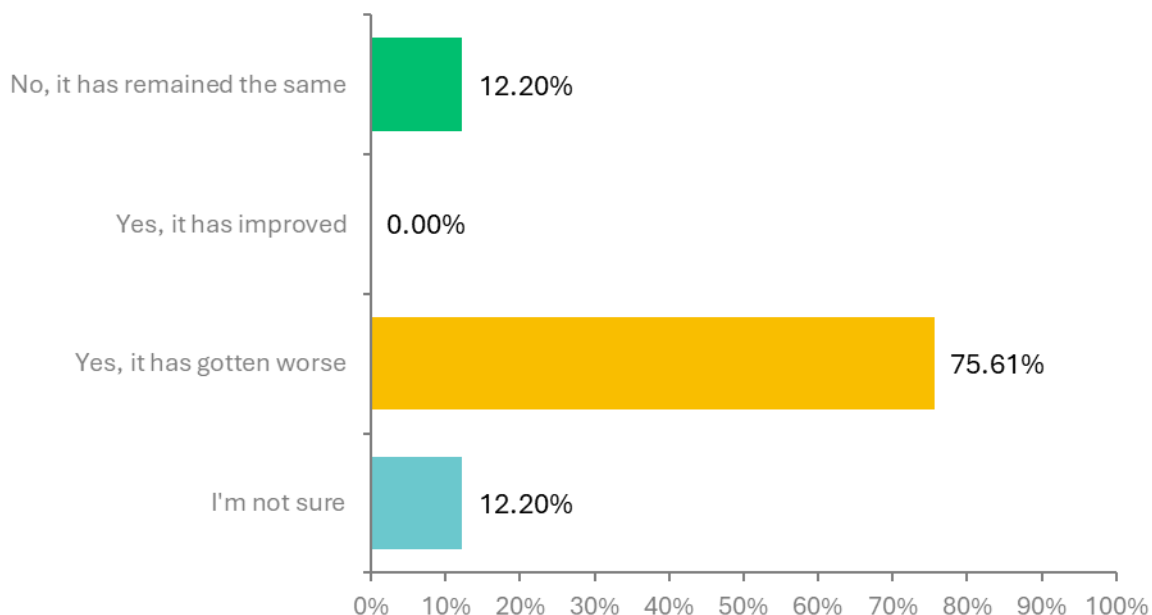


Figure 2: NSW Farmers Telecommunications survey of member experiences, November-December 2024. N=123.

Especially important are reforms that:

- Accelerate improvements to connectivity infrastructure to ensure farm businesses have access to quality and reliable telecommunications including government co-investment programs.
- Ensure key redundancies and protections are in place for rural, regional and remote customers during the universal services modernisation.
- Accelerate the introduction of mandatory emergency roaming for mobile devices.
- Establish greater government oversight of largescale telecommunications transitions.
- Develop a Regional Telecommunications Strategy that provides certainty and continuity for future investments and the regulatory environment.
- Promote competition for regional mobile services.

¹⁹ Australian Government. 2024. 2024 Regional Telecommunications Review. <https://www.rtirc.gov.au/>

Recommendation: That the 2024 Regional Telecommunications Review are fully implemented to support students in regional and remote areas to fully engage with edtech opportunities.

2. Support the workforce through a flexible post-secondary education and training sector

The Productivity Commission's consultation paper identifies a need to lower barriers to reskilling and upskilling through structured non-formal work-related training. The paper examines recognition of prior learning, and measures to enable lifelong skill development. The skillset required in agricultural jobs is changing to reflect increased adoption of technology. Examples include skills in data analysis, working with robots, understanding legislation, and interpreting ecosystem requirements²⁰. As the skills needed for the sector have evolved, the skilled worker shortage is brought into sharper focus. Attracting the right skills into the regions requires long-term multi-level Government approach. The Federal Government's Occupation Shortage List identifies shortages in two out of three core agricultural occupation categories in NSW²¹.

In NSW the AgSkilled Program²² has been critical in delivering industry relevant vocational training to develop and upskill existing agricultural workers with access to short courses through a range of high-quality training providers. It has been a highly valuable program for the NSW agriculture sector to access micro credentials, particularly as industry has been so strongly engaged and actively involved in setting the priorities for short courses in previous rounds. The National Agricultural Workforce Strategy identified AgSkilled as a case study of a successful agrifood workforce retention initiative²³.

The experience of AgSkilled demonstrates the importance of industry-driven and demand-led qualification initiatives, as well as the VET/TAFE sector to delivering those outcomes. However, in addition to the digital barriers outlined in section 1, agriculture students must grapple with significant geographical barriers. Apprentices in rural areas often have to travel more than 60km to attend TAFE or other Registered Training Organisations (RTOs), and face prohibitive costs for fuel and accommodation. In addition, agriculture is highly dependent on a workforce of core related occupations, including veterinarians²⁴, machinery technicians, irrigation specialists, and truck drivers.

In addition, micro-credentials offer a valuable avenue to accessing flexible skills development by enabling farmers to upskill quickly in emerging areas such as precision agriculture, agtech, data analysis, and sustainability practices—without the time and administrative barriers associated with formal qualifications. These short, targeted learning programs can be developed and updated in real-time, ensuring farmers have access to the latest knowledge and tools as technologies evolve.

Importantly, micro-credentials support lifelong learning and practical application, making them highly relevant for time-poor farmers who need on-the-job solutions. Whether it's learning to operate drone technology, interpret soil sensor data, or adopt new biosecurity protocols, micro-credentials can deliver immediate value on-farm. Recognising and investing in non-certified but industry-aligned training pathways will help future-proof the sector.

²⁰ Australian Farm Institute. 2021. Stronger ag sector, stronger regions – Research Report August 2021.

²¹ Jobs and Skills Australia. Occupation Shortage List. <https://www.jobsandskills.gov.au/data/occupation-shortages-analysis/occupation-shortage-list?level=4>

²² NSW Government. AgSkilled. <https://www.nsw.gov.au/education-and-training/vocational/vet-programs/agskilled>

²³ National Agricultural labour Advisory Committee. 2020. National Agricultural Workforce Strategy – learning to excel. <https://www.agriculture.gov.au/sites/default/files/documents/national-agricultural-workforce-strategy.pdf>

²⁴ NSW Farmers. 2025. Submission into the Veterinary Workforce Shortage in NSW.

To the extent that greater flexibility in the post-secondary education market can improve accessibility, such as by shortening courses by incentivising RTOs to recognise prior learning or experience, or by encouraging alternative modes of delivery through edtech digital tools, then this would lead to greater uptake of training and qualifications. A key element in ensuring greater diversity, flexibility and availability of courses is certainty of funding. Currently, AgSkilled is only funded year-by-year, which limits the ability for RTOs to plan to expand or improve the range of courses available.

Recommendation: That the government explore opportunities to increase flexibility and service delivery, including models for funding certainty and micro-credentials, to promote increased uptake and completion of VET qualifications for agriculture and agriculture dependent occupations across regional and rural Australia.

3. Balance service availability and quality through fit-for-purpose occupational entry regulations

While there are few occupational licensing requirements for farmers, for related occupations there are often significant requirements to practicing, which exacerbates workforce shortages. The *NSW Farmers submission to the Inquiry into the Veterinary Workforce Shortage in NSW* outlines several concerns regarding the ability to attract and retain animal healthcare specialists, which is crucial for maintaining upholding the strict animal welfare standards that the industry relies upon. The Committee's Report outlined several recommendations to enhance the availability of veterinary specialists with respect to occupational licensing and registration requirements, including:

- **Recommendation 4** – making it easier for mobile veterinary clinics to be registered
- **Recommendation 6** – aligning visa requirements for veterinarians with those in human medicine
- **Recommendation 12** – seeking national support for a national veterinary workforce database
- **Recommendations 24, 25 & 26** – introduce a regulatory framework for veterinary nurses and technicians, including minimum qualifications, registration scheme and professional standards – and that it be consistent with that already established in Western Australia
- **Recommendation 27** – to review what restricted acts of veterinary practice could be extended to veterinary nurses and technicians²⁵

The National Skills Commission Skills Priority List has formally recognised that the whole veterinary sector has workforce shortages. Of particular concern, a recent survey by the Australian Veterinary Association (AVA) demonstrates that over 40% of veterinary job vacancies took more than 12 months to fill with the issue being more acutely felt in regional areas.

While there are several issues contributing to the shortage of veterinary practitioners, one key issue that has been raised are the onerous requirements to registering overseas vets to work in Australia. The administrative burden and regulatory barriers for local registration as well as the excessive costs of accessing public indemnity insurance is creating a significant barrier for local and international entrants into the profession.

During an animal disease outbreak, it is even more important to be able to expedite registration processes to ensure that contagions can be effectively managed, and the biosecurity of Australia's production systems can be preserved. AUSVETPLAN – the nationally agreed approach for the response to emergency animal disease outbreaks²⁶ – requires a range of overseas workers to assist in the event of an outbreak, however, there are technical and language barriers that would hinder the potential success of the response.

Recommendation: That the government expedite processes for the registration of overseas veterinarians wanting to work in Australia, with a particular emphasis on streamlining the administrative burden and regulatory barriers in the event of an animal disease outbreak.

²⁵ Portfolio Committee No. 4 – Regional NSW. 2024. Report No.58 Veterinary workforce shortages in New South Wales. NSW Legislative Assembly.

<https://www.parliament.nsw.gov.au/lcdocs/inquiries/2964/Report%20No.%2058%20-%20PC%204%20-%20Veterinary%20workforce%20shortage%20in%20New%20South%20Wales.pdf>

²⁶ Animal Health Australia. 2025. AUSVETPLAN – A NEW ERA.

<https://animalhealthaustralia.com.au/ausvetplan-a-new-era/>