

Submission
No 45

**INQUIRY INTO IMPACT OF TECHNOLOGICAL AND
OTHER CHANGE ON THE FUTURE OF WORK AND
WORKERS IN NEW SOUTH WALES**

Organisation: NSW Farmers' Association

Date Received: 19 March 2021



James Jackson
President

Ref: 21610C

19 March 2021

Hon Daniel Mookhey MLC
Committee Chair
Select Committee on the future of work and workers in NSW

Dear Mr Mookhey,

RE: Inquiry into the impact of technological and other change on the future of work and workers in New South Wales

The NSW Farmers' Association welcomes the opportunity to provide the agricultural industry and regional community perspective to this inquiry into the impact of technological change on the future of work and workers in New South Wales.

Agriculture and regional NSW will be influenced by a number of megatrends over the coming decades. Population growth, an expanding middle class, more informed consumers, and an uncertain outlook shaped by globalisation and environmental change will all have a bearing on the sector and regional NSW. Technology will play a critical role in ensuring that both industry and community can adapt and succeed.

- *Automation and technological development*

Innovation in agricultural technology is an exciting space. High-tech protected green-houses, vertical farming, precision agriculture, drone technology and robotics have the potential to transform primary production in Australia. However, the practical adoption and integration of these technologies on farms will depend upon the ease of integration, return on investment, and the availability of a sufficiently skilled workforce.

A recent CSIRO study identified that there is varying application of agricultural technologies between sub-sectors within farming that will likely demand different skill sets.¹ For example, GPS enabled technologies are widely used on horticulture and grain farm, electronic identification and herd management tools are commonly used on dairy and livestock farms, while automated precision agriculture technologies have seen a high uptake from the grains industry.

As industries continue to value-add on farm and introduce new technologies to assist operations, the need for workers to be further skilled will only increase. Whilst this may over time reduce demand for semi-skilled worker jobs, these on-farm improvements will, in the first instance, only be undertaken by the early adopters. In livestock industries, particularly intensive industries, a large pool of workers and skills will still be required to continue caring for animals, and completing husbandry practices and farm operations, even as technology improves and changes.

¹ Wu W, Dawson D, Fleming-Muñoz D, Schleiger E and Horton J. 2019. The future of Australia's agricultural workforce. CSIRO Data61: Canberra, Australia

- *On demand workforce and flexibility*

On-demand or 'gig' workforce has been a long standing feature of the agriculture sector due to seasonality of operations inherent in primary production. The agriculture industry in NSW directly employed more than 83,000 workers in the period of 2018/2019.² Throughout the year, the proportion of casual or contract workers fluctuated between 31 per cent to 39 per cent.

In many cases, individuals choose to offer their services as contractors rather than as employees, because the arrangement offers them greater independence and higher hourly rates. As farming operations are consolidating and become larger, more specialised services are required to assist in the running of the farm, often for a limited timeframe or for particular purposes.

There are also a significant, and increasing, number of roles that are specialist contractors (e.g. shearing, transport) along with higher demand for emerging ancillary business services (e.g. succession planning, accounting, technology and data specialists), or contracting services provided by a farmer using their skill set or machinery (e.g. harvesting and sowing) that bring in off farm income. As recognised in the National Agricultural Workforce Strategy released in March 2021, the farming workforce is becoming more complex with a diverse range of specialization and roles, from consultants in agronomy to contractors providing sowing, weed, pest control, fencing and harvesting services.

Around 10 per cent of the agriculture workforce are independent contractors. While the distinction between employment and contracting is known for the majority of arrangements, it is not infrequent for confusion to arise about what is a contractor. This is due, in part, to inconsistencies of contractor definition under the common law approach, which involves a complex weigh up of various factors. These include the level of control, the rules adopted by the Australian Taxation Office for the purposes of determining superannuation guarantee contributions requirement, and workers compensation rules in NSW.

These inconsistencies create a risk for employers and uncertainty for workers. Employers may have agreed arrangements undone at some future point or be required by the relevant regulator to back-pay an amount that was already contemplated in the agreed contract rate with the worker. Ultimately these complexities and rule inconsistencies undermine farming businesses' confidence.

Moving forward, agriculture requires a flexible workforce with a variety of skill levels to cater for changing demands. Increased and consistent standards for recognition of existing skills is also critical, as is cross skilling to fill employment gaps. The pandemic has demonstrated how quickly the status quo can be shifted, and governments and industry need to develop ways of ensuring the sector is responsive to change. Greater flexibility in managing the seasonal labour force is an immediate priority.

- *Skills and education*

To deliver this workforce, the industry requires a fit for purpose training and education strategy that is developed through engagement and collaboration between industry, training providers and government to ensure that it delivers for the end-user the skills needed to both enter and progress a career in agriculture. The NSW education and skills system will play a critical role in preparing current and new generations of farmers for a changing technological landscape. School and tertiary education must, in the first instance, build awareness of the diversity of opportunities available across the sector in delivering food and fibre to the consumer. In doing so STEM must be prioritised to reflect contemporary technological offerings, while up-skilling opportunities should exist for farmers looking to diversify their operations through value-adding.

- *Workforce strategy*

² Labour use in Australian agriculture, Australian Bureau of Agriculture and Resource Economics – Department of Agriculture, <https://www.agriculture.gov.au/abares/research-topics/labour> (Accessed 11 March 2021).

A long-term workforce strategy for regional NSW must consider how regional communities can attract and retain those with the skills to enable a productive and sustainable workforce while at the same time having access to reliable pool of seasonal workers Agriculture is an employment pillar in most inland regional communities, yet agriculture faces several labour challenges. For example, the sector's reliance on overseas workers to fill gaps in our seasonal workforce, amplified during international border closures over COVID-19, is multifaceted as the experience of last few months has demonstrate that there is insufficient interest from Australian workers to undertake these positions. High displacement of workers in COVID affected industries and targeted initiatives to encourage the take up of seasonal farming work (e.g. relocation assistance) have not dented the acute shortage of seasonal workers currently being experienced by the industry.

NSW Farmers also supports reform to the workplace relations framework. While in many respects the current system works, some elements are out of balance and overly complex. Undue restraints on business decision-making impede growth and innovation, while complexity and uncertainty drives up compliance costs. We consider that a balanced workplace relations framework is one of the key enablers of sustainability and growth for the sector.

The NSW agriculture sector has the aspiration of reaching \$30 billion in output by 2030. A functioning workforce will be integral to meeting this target. Please find attached a copy of the NSW Farmers submission to the National Agricultural Workforce Strategy to learn how we envisage this success.

Yours sincerely

James Jackson
President





NSW Farmers' response to the National Agricultural Workforce Strategy Consultation

August 2020

**NSW Farmers' Association
Level 4, 154 Pacific Highway
St Leonards NSW 2065**

T: (02) 9478 1000 | F: (02) 8282 4500

W: www.nswfarmers.org.au | E: emailus@nswfarmers.org.au

 @nswfarmers  nswfarmers

For further information about this submission, please contact:
Kathy Rankin, Policy Director – Rural Affairs & Business, Economics & Trade

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About NSW Farmers

The NSW Farmers' Association is Australia's largest state farming organisation representing the interests of its farmer members. NSW Farmers is Australia's only state-based farming organisation that represents the interests of farmers of all agricultural commodities. Our purpose is to build a profitable and sustainable New South Wales farming sector.

Our focus is not just on issues affecting particular crops or animals – it extends to the environment, biosecurity, water, economics, trade, and rural and regional affairs. Our industrial relations section provides highly specialised advice on labour and workplace matters.

Farmers across New South Wales produce many billions of dollars' worth of food and fibre every year, including exporting a quarter of Australia's total agricultural output.

Our regional branch network ensures local voices guide and shape our positions on issues which affect real people in real communities. Our Branch members bring policy ideas to Annual Conference, our Advisory Committees provide specialist, practical advice to decision makers on issues affecting the sector, and our member Executive Council is the final arbiter of the policies of the Association.

Executive summary

As the COVID-19 pandemic has highlighted, food security is more important now than ever.

Knowledge of how and where food and fibre is produced is an important cornerstone of food security, promoting connection between production and consumption, attracting a skilled workforce, and developing a positive and valued awareness of the food and fibre industry.

Agricultural education needs to be introduced at a young age, educating children about food and fibre, and planting the seeds for potential careers in agriculture.

This must continue to be fostered through a variety of training and skills/knowledge development options including through TAFE, private Registered Training Organisations, and universities.

A mix of formal education, short course and recognition of prior learning must be available.

It is critical that the agricultural workforce is appropriately skilled for the tasks now and into the future to ensure our high quality, high value product continues to be available to Australians and consumers around the world.

Adaptability is key as agricultural industries, technologies and workforces change over time.

This means that workplace regulations, red tape, and education and training need to be sufficiently flexible, and fit for purpose, to enable this.

Regional communities must also continue to have the capacity to attract and retain those with the skills to enable ongoing productivity, profitability and sustainability of the agriculture sector and associated agri-business and value adding opportunities. While not specifically an agriculture workforce issues - the provision of equitable access to telecommunications, health and education services are critical to ongoing productivity.

It is important that the skills and knowledge of the agricultural workforce can be retained, and that options such a cross skilling can be employed to smooth over seasonal work and work shortages due to events such as drought.

Labour needs, regulation and red tape

In forecasting the labour needs of the agricultural sectors, it is useful to consider the five megatrends identified by Hajkowicz and Eady¹ that will be impacting the agriculture industries in the next two decades:

- A hungrier world – population growth will drive global demand for food and fibre
- A wealthier world – a new middle income class will increase food consumption, diversify diets and eat more protein
- Choosy customers – information empowered consumers of the future will have expectations for health, provenance, sustainability and ethics
- Transformative technologies – advances in digital technology, genetic science and synthetics will change the way food and fibre products are made and transported
- A bumpier ride – globalisation, climate change and environmental change will reshape the risk profile for agriculture

These megatrends will create opportunities and challenges for small and large farm businesses.

Changing pattern in agricultural workforce

In 1970, Australia had 192,550 farm establishments. This number has fallen progressively since then and the latest available data indicates there are 89,400 farming businesses². Notwithstanding the trend towards larger farms, the majority remain relatively small enterprises. Only 6% of total farms have operations exceeding \$1 million per year³. The family farm remains the most common ownership structure despite emerging new business model. Within a changing operating environment these critical farm structures are increasingly facing pressure to grow and maintain efficiency. Improved management skills has been identified as a crucial element to enable these farming businesses to take advantage of the opportunities presented in Australian agriculture, both in business management as well as people management.

This trend of amalgamation and increased size of operations, has led to changing composition of agricultural workforce in the past decade. The ABARES Farm Survey Result 2018 identified that the number of owner managers and contributing family workers on family farms has declined while the number of employees and owner managers with employees have increased. Consequentially, there is greater need for semi-skilled workers, technical specialists, para-professional roles and operational management roles.

Data Gaps

NSW Farmers considers there are deficiencies with the Australian and New Zealand Classification of Occupations Code (ANZSCO Code) that result in gaps of the statistical information collected by the government. The ANZSCO Code underpins most formal studies, survey and census, which in turn inform government's approach in a range of issues including immigration and training.

The ANZSCO Code does not adequately represent the range of occupations available in agriculture, nor does it accurately reflect the skill level of these agriculture related occupations. Agriculture related roles

¹ AgriFutures Australia. (2015). [Megatrends impacting Australian agriculture over the coming twenty years.](#)

² Australian Bureau of Statistics, 7121-Agricultural Commodities, Australia, 2018-19, <https://www.abs.gov.au/ausstats/abs@.nsf/mf/7121.0>

³ <https://www.agrifutures.com.au/wp-content/uploads/publications/15-065.pdf>

are represented in ANZSCO either as highly skilled, such as Farmer or Farm Manager, or unskilled. Crop Farm Worker and Livestock Farm Worker are categorised as level 5, the lowest skill level. There is a “missing middle” roles that are not represented in ANZSCO like Overseer, Assistant Manager.

Categorisation of the skill levels of some of the roles, in NSW Farmers opinion, are inaccurate. For example, a Mixed Crop and Livestock Farm Worker who needs to have the skills to operate machineries, perform basic maintenance of farm machineries, handle chemicals and apply low stress handling techniques on livestock is far from being unskilled, however this role is currently categorise in ANZSCO as skill level 5.

The ANZSCO Code underpins most formal studies, survey and census, which in turn inform government’s approach in a range of issues including immigration and training. NSW Farmers recommends a significant review of the ANZCO Code to better identify the skill needs for agriculture to enable more informed data collection and reporting as more meaningful data would benefit the national agriculture sectors.

Seasonal workers

Due to the seasonality of agricultural operations where there are peak seasons requiring increased workers, seasonal workers make up an important part of the agriculture workforce across the various sectors, including broad acre industries, dairy industry, and horticulture industries. These workers are typically employed as casual workers or through labour hire contractor. While horticultural farms have greater use of more flexible casual and contract labour reflecting the highly seasonal labour demand, other sectors such as broad acre and dairy also have peak periods, such as harvest or calving, where they are reliant on short term workers to support their operations.

These short term work opportunities have not attracted sufficient interests from local Australian workers despite targeted initiatives to encourage higher participation from local workers. Working holiday maker visa holders (colloquially referred to as backpackers) have been the common source of workers for these seasonal work due to their mobility, willingness to travel and work for specified period of work (instead of permanent work). The advent of COVID-19 has demonstrated that backpackers is a transient pool of workers that can dissipate in a short period of time, as at June 2020 there were 40% less backpackers in Australia compared to February 2020.

Workers sponsored through the Seasonal Workers Program is another pool of seasonal labour, however they only represent a small proportion of the overall seasonal workers required due to the complexities and high cost involved in becoming an approved sponsor.

NSW Farmers is supportive of the introduction of a purpose built Agriculture visa to meet the needs of the industry in accessing available international labour pool to fill the labour gaps.

Overly complex workplace relations framework

The current workplace relations framework is comprehensive and broad in reach. In many respects it works, but some of the elements are out of balance, overly complex and require reform.

The ability to adapt to change is crucial for farm businesses to respond to the challenges facing the industry. Undue restraints on business decision-making impede growth and innovation, while complexity and uncertainty drives up compliance costs. We consider that a balanced workplace relations framework is one of the key enablers of sustainability and growth for the sector.

At the time of writing, five working groups convened by the Commonwealth Attorney General, Christian Porter, are considering various facets of the workplace relations, including casual employment and award simplification. NSW Farmers is hopeful that the outcome of the working groups will result in reforms that favours job creation, flexibility, simplification and certainty of employment rules.

Contracting

In many cases, individuals choose to offer their services as contractors rather than as employees, because the arrangement offers them greater independence and higher hourly rates. As farming operations are consolidating and become larger, more specialised services are required to assist in the running of the farm, often for a limited timeframe or for particular purposes.

There are also a significant, and increasing, number of roles that are specialist contractors (e.g. shearing, transport) along with higher demand for emerging ancillary business services (e.g. succession planning, accounting, technology and data specialists), or contracting services provided by a farmer using their skill set or machinery (e.g. harvesting and sowing) that bring in off farm income.

Around 8.9% of the agriculture workforce are independent contractors⁴. However there is confusion about what is a contractor, due in part to inconsistencies of contractor definition under the common law approach which involves a complex weigh up of various factors. These include the level of control; the rules adopted by the Australian Taxation Office for the purposes of determining superannuation guarantee contributions requirement; and the workers compensation rules that apply differently in each state for the purposes of insurance premium calculation.

These inconsistencies create a perception of risk for employers and uncertainty for workers. Employers may have agreed arrangements undone at some future points or be required by the relevant regulator to back-pay an amount that was already contemplated in the agreed contract rate with the worker. Ultimately these complexities and rule inconsistencies undermine farming businesses' confidence.

NSW Farmers strongly urges work to be undertaken to create a consistent definition of "contractor" for the purposes of superannuation, workers compensation and sham contracting rules in the *Fair Work Act*.

Unlawful dismissal

The current process for dealing with unlawful dismissal involves the Fair Work Commission to have issued a certificate when conciliation has failed for the matter to progress to the federal court. However, there is no requirement to certify that the claim has reasonable prospects of success. As a result, parties are put to significant and unnecessary costs in connection with federal court proceedings when unfair dismissal claims are wrongly made as unlawful dismissal claims.

⁴ Australian Bureau of Statistics, Characteristics of Employment, Australia, August 2019, <https://www.abs.gov.au/ausstats/abs@.nsf/mf/6333.0>

Skills, training and education

As noted in the discussion paper, the Australian agriculture industry is changing, with adoption of technologically advanced equipment and techniques, amongst other factors. The industry continues to evolve to adapt to limitations and opportunities presented by drought, bushfires, COVID-19 and market changes.

One such adaptation is the increased adoption of value adding. This reduces wastage of farmers' produce and will create a premium product alongside their traditional produce. In some cases, it also provides further local employment opportunities in this additional processing of the product, and broadens opportunities for required skills to include operating different types of machinery and manufacturing.

As industries continue to value-add on farm and introduce new technologies to assist operations, such as traceability, robotics, improved infrastructure, and drone technology, the need for workers to be further skilled in more areas will only increase.

Whilst this may reduce over time demand for semi-skilled worker jobs, these on-farm improvements will in the first instance only be undertaken by the early adopters. In livestock industries, particularly intensive industries, a large pool of workers and skills will still be required to continue caring for the animals, and completing husbandry practices and farm operations, even as technology improves and changes.

Moving forward, agriculture requires a flexible workforce with a variety of skill levels to cater for changing demands. Increased and consistent standards for recognition of existing skills is also critical, as is cross skilling to fill employment gaps.

To deliver this workforce, workers require fit for purpose training and education, and exposure to agriculture as a career opportunity from a young age. This starts with an understanding and connection to food and fibre from an early age. In NSW there is a compulsory Agricultural Technology 7-10 Syllabus which is a positive inclusion, however more needs to be done for primary school students. NSW Farmers notes the Australian Governments new Kids of Farms initiative as a positive approach to building familiarity with food and fibre production.

Careers in agriculture need to be promoted as viable and worthwhile, attracting high quality entrants across a variety of roles. Public perception can either enhance or inhibit the pool of talent available to pursue agricultural careers.

One NSW Farmer Young Farmer member noted:

"When I was doing my HSC, my support network seemed to think agriculture was 'below me'. My support network included my family, who are all farmers. I never considered studying agriculture in high school and, looking back, I still wouldn't have. The agriculture facilities and teaching at my local high school are dismal and it reflected poorly on the subject itself.

Agriculture could make a better effort as a whole to invite women into the industry, across all levels, but especially at a grassroots/labour force level. The industry has certainly made great strides and I have witnessed firsthand that attitudes are starting to change in regard to women's involvement, however there is still a long way to go."

School education

Knowledge of how and where food and fibre is produced is an important cornerstone of food security, promoting connection between production and consumption, attracting workforce, and developing a positive and valued awareness of the food and fibre industry. In the current context of COVID-19 and concerns over food security, this is more important than ever. It is critical that the agricultural workforce is appropriately skilled and filled to continue providing food to Australians and consumers around the world.

Food and fibre production systems must be considered an important contextual resource across all learning areas for students. This will introduce students to agriculture in a variety of contexts, through Science, Technology, Engineering, Maths and English, for example, and encourage familiarity and further thought of potential agricultural career pathways.

Farmers and primary industries production systems must be presented accurately and positively to ensure the understanding of paddock to plate within an urban increasing population that will require healthy sustainable food and fibre resources into the future.

It is also important that Agriculture continues as a stand-alone elective subject at all levels of secondary school and that primary industries be included in the learning experiences for all primary school students. Well trained, enthusiastic and capable teachers form the backbone of Agriculture as an elective subject.

Tertiary education

All levels of the education system need to work in collaboration to ensure that training and pathways are available for students into post-secondary education. Students must be able to achieve sound training at the earliest possible opportunity to enable them to advance their chosen career.

NSW Farmers is supportive of advanced learning in a local regional environment, through a well-resourced institution with assistance funding where needed. All large regional centres should have a well-staffed and resourced tertiary education facility for agriculturally minded students to enhance their chosen career.

Strong tertiary level agricultural training must be available at both VET and university levels to cater for the broad range of careers in agriculture and to appropriately resource the whole agricultural workforce. It is critical that agricultural careers are promoted to raise awareness of the opportunities that are available and to attract high quality graduates into the workforce.

It is equally important to enable skills based training and licence or compliance training. It is vital for the industry as it evolves and innovations are adopted to be able to upskill an existing employee or gain required licencing that is in addition to existing skills and knowledge. This could be achieved through greater availability of short courses, or developing greater opportunities for just in time training.

Educational requirements and preferences in the workforce

Many workers in the agriculture sector either learned their trade growing up on farm, or learn on the job, rising from lower skilled positions to higher skilled roles. Whilst it is important that this on the job training is complemented by formal training, particularly for technical and regulatory requirements (e.g. Work Health and Safety), existing skills and knowledge should be recognised broader than an expectation that all

engage in formal courses – without adequate strategies for recognition of prior learning or current competencies. This would allow greater flexibility in filling positions, particularly those with varied roles, where applicants can demonstrate skills but perhaps cannot produce a formal qualification to support it.

For example, in livestock industries a critical element of the business is animal health and welfare. Farmers invest many hours and resources into proper training for workers so that they can maintain a high level of animal welfare.

Skill retention is incredibly important and the ability for skills to be recognised in some form would be beneficial. This could help ensure people stay within the industry as they are being recognised for the skills and training they have, and would enable future employers to understand the knowledge workers have already acquired.

Formal recognition of prior learning exists to some extent, and can count towards qualifications.

Recognition of prior learning:

- identifies skills and knowledge used in work and life;
- highlights opportunities for personal and professional development, builds self-confidence;
- shows that many skills are transferable to other roles or careers;
- establishes a springboard into other areas, such as university courses, consultancy roles, roles off-farm like boards and committees, scholarships and grants;
- assists in compliance with Duty of Care, Codes of Conduct and legislation,; and
- demonstrates professionalism that can assist in applying for finance or jobs.⁵

Essentially, it provides career progression and pathway opportunities for workers, encouraging them to stay within the agricultural sector and to build and diversify their existing skill base. However we note there are complications for complicated for the employee if they don't have good technology, literacy and numeracy skills, currently it is also costly for the Registered Training Organisation under current funding models.

Increasing the availability of general training for farm work (e.g. chain saw operations, motor bike safety, basic mechanics, fence repairs etc.) would also be beneficial, to enable greater flexibility of employment and choice of employment types. Currently many qualifications are specialised to a particular industry, but many entry-level farm skills are common to multiple positions and enterprises. This is particularly important in the current context of workforce adaptation due to the COVID-19 pandemic. It would enable workers who have never held an on farm role to gain initial, basic skills through this training before furthering their learning in a particular industry or industries.

An increasing need for the agricultural workforce relates to technology. Data analysis is becoming a standard operating requirement to improve efficiency, deliver high quality produce, and minimise operating costs. Skills to expand technology for on-farm use, particularly for remote monitoring of infrastructure and/or livestock will be critical into the future.

Anecdotally, a workforce barrier is that many farmers want to train people on their own farm even though practices might be the applicable to most farms. Many dairy farmers are seeking employees with university qualifications as they have an increased understanding of all levels of farm business. However, due to the

⁵ Total College Recognition of Prior Learning Student Handbook 2020

current operating environment and significant pressure on costs in a challenging market environment salaries able to be offered are less attractive than in other sectors.

Farm businesses require workers to possess a variety of skills due to the varied nature of on farm work and often limited number of workers. This is particularly the case for higher level managerial roles overseeing the farm and other workers. The skills and knowledge required for these roles will depend upon a variety of factors including farm enterprise, farm size, staff availability and the farmers' own preference. It is therefore important that a variety of training is available to appropriately educate the workers needed for each situation.

Cross-skilling is therefore increasingly important, for example in times of drought. If young people, in particular, possess a variety of skills and have demonstrated competence in a variety of areas, they will be better equipped to maintain employment throughout the year despite seasonal employment or drought. Off farm income including contracting and part time or full time job often involves transferable skills. This will also better support regional communities through the increased opportunity to retain a rural workforce.

The ageing population in the farming sector also presents an opportunity to share resources and provide support and training to the next generation. Retired or semi-retired farmers are a huge asset that can be mobilised to fill manpower or skill shortages depending on the seasonal requirements.

Training availability and cost

NSW Farmers supports continued prioritisation of agricultural skills and training, and associated incentives and subsidies to encourage take up of these career pathways, and provide increased certainty for career longevity for those in the agricultural workforce.

Formal recognition of prior learning is available, but its cost can be prohibitive, in part due to cost pressures of delivering training in thin markets which must factor in travel costs to rural and remote locations. For example through a formal learning environment in NSW, a full Certificate III or IV qualification obtained through recognised prior learning can be \$2850 or \$300 per unit. Further informal recognition of learning would also benefit the sector, providing further scope to recognise a variety of skills at different levels.

Connectivity between Registered Training Organisations and universities, streamlining further study pathways and flexibility is also important for building further career pathways. For example, Tocal College and the University of New England have developed a Diploma, Advanced Diploma, Bachelor degree pathway that highlights to students their potential pathways and opportunities.

An added challenge of agricultural upskilling is that time off farm is often challenging for both the farm owner and the employee. Additionally many vocational units have a number of individual components to access, which may discourage participation. The development of competence occurs through partnership, guidance and practice. Any perceived barriers need to be addressed in a positive way to overcome tensions between generations rather than employer-employee relationship.

Agriculture is a relatively traditional sector with new approaches in the main being introduced by younger farmers. Strategies that aid and enhance the adoption of new practices and roles need to be supported through behavioural and attitudinal change and acceptance, along with formal skill development.

Further flexibility in training could be supported by increased options outside of work hours, such as online and weekend training, and short courses. This could assist filling small knowledge and skill gaps in an expedient, efficient way. A mix of on-farm, off-farm and fit for purpose training would be beneficial.

For example, some farmers have found courses such as spray drift courses a poor use of their time as they were not fit for purpose. Farmers felt that these courses used a blanket approach trying to cover everyone so that when farmers or workers went to retrain they were not learning anything new and were not upskilling. In order to be effective, programs need to target skills gaps and be delivered in an accessible, practical way.

Effective skills and awareness programs

A number of past and present programs have proved effective in addressing agricultural workforce issues, including the following:

Example 1 – AgSkilled (NSW Funded)

AgSkilled is widely acknowledged as a very effective skills program that provides targeted funding for skill development in the sectors of agriculture. This is partly due to its continuity as a long-running program, co-contributions and industry input, and trust of its outputs. Whilst it is currently confined to a few industries, it has the potential to be expanded across the agricultural sector, with much of its core content relating to Work Health & Safety, relevant to all industries. With ongoing funding and a commitment to strong industry input and governance, it has the potential to provide further and expanded key industry training.

Example 2 – 2 Workin Oz

NSW Farmers encourages consideration of a national pilot of the Western Australian *2 Workin Oz* model. The program provides four-day training workshops for local and international workers to upskill in heavy machinery and harvest equipment before taking on work in the grains sector. *2 Workin Oz* employs a small number of full-time staff and operates on a private property, offering small group training of no more than four participants. A similar model in NSW could be run on DPI farm sites, including through Tocal.

Example 3 - Agriculture and Food in the Australian Curriculum

Taking Agriculture into schools, this was a partnership between the Australian Government's Department of Agriculture and AgriFood Skills Australia. A clearly defined and tested strategy involved:

- raising awareness of and enhancing teaching and learning about the Australian agriculture, food and the supply chain;
- supporting teachers in the implementation of the new Australian Curriculum in English, Maths, Science, History, Geography and Technologies; and
- raising awareness of career opportunities in agriculture and food systems to young people.

Over its 15 month duration - July 2013 - October 2014, the Programme:

- appointed a national team of six qualified teachers;
- engaged 14,677 students in classroom presentations - range of topics linked directly to the new Australian curriculum;
- provided professional development to 1,000 classroom teachers and 1,100 teacher trainees;
- produced an initial series of curriculum-linked educational resources;
- equipped participants with curriculum focussed teaching resources; and
- promoted career opportunities in agriculture and food systems, with demand far exceeding expectations.

Example 4 – Primary Industries Education Foundation (PIEFA)

PIFA is a well-regarded organisation that since 2009 has aided the expansion of knowledge about agriculture through engagement of Australian schools and communities. Through its membership structure there is active engagement of industry associations, peak agriculture and education bodies, and local schools. It is a critical resource for teachers and students providing peer reviewed teaching resources and

delivers critical career information and opportunities for teachers of agriculture to support currency of information. Specifically PIEFA:

- provides national leadership and coordination of initiatives to encourage primary industries education in schools through a partnership between industry, government and educators;
- commissions, coordinates, facilitates and manages national projects to encourage primary industries education in schools;
- provides a source of credible, objective and educational resources for schools to maintain and improve community confidence in Australia's primary industries; and
- communicates primary industries research and development outcomes in a format accessible for schools and encourage interest from schools in primary industries related careers.

Example 5 - Agriculture in Education

Developed new resources to help teachers better understand food and fibre production and processing, and promote the range of agricultural careers available. Resources used agricultural examples to teach mainstream subjects such as maths, science, history, geography etc. This program:

- enhanced teacher understanding of food and fibre products and processes;
- provided strategies for incorporating agricultural concepts in the Australian curriculum; and
- promoted greater appreciation of the importance of agriculture to the Australian economy and our way of life.

Example 6 - Agrifood National Regional Initiative: Warren Blackwood WA, Eyre Peninsula SA, Loddon Mallee Vic, Western Downs Qld)

Around 2,500 participants and learners engaged with this project in 100 individual projects (including Employer of Choice surveying) across the four regions. A key factor to success was having a funded Regional Project Manager in each of the four regions, to work with stakeholders and drive the projects.

The project used an integrated, interdependent five-part strategy to enable local industry and community-based groups to address the challenges of structural adjustment through workforce development, skills training and retention, and attraction of new workers and families. The project was designed to be broad enough to address the skill needs of large and small enterprises, including new corporate agricultural and resource sector models. The key components of the project were:

- *Research*: skills demand timeline – regional workforce and skills need profiles; peak labour demands mapped; structural adjustment challenges identified. This was fed directly into a Regional Jobs Summit which also enriched the research results;
- *Skills Needs Analysis*: innovative ‘employer of choice’ survey tool already developed by AgriFood Skills Australia, enhanced and tested by the University of Sydney; contributed to diagnosis of sector and enterprise skills and workforces needs;
- *Skills Recognition*: effective tool in a workforce retention strategy; also identified skill gaps and incorporated provision for up-skilling, gap training and achieving qualifications;
- *Employer capability*: enhanced employee engagement and retention and adoption of best practice business management; collaboratively addressed structural adjustment in the workplace; accredited facilitator in place; and
- *Cross-industry Skilling*: transferrable skills, mobile workforce deployment strategy, local mentors in place.

Agricultural workforce needs

Workforce needs and educational requirements can vary substantially across different agricultural industries. They can vary due to a number of factors including the particular crop or animal enterprise, and the different farm operations involved. Key drivers of workforce needs can also include consumer demands on products, size of the industry, and farm sizes (increasing or decreasing).

For example, in the horticulture sector, farmers can predominately rely on unskilled or semi-skilled workers who build capability through participating in daily operations, but in the grains industry, skilled workers are usually required to complete harvest. For both these sectors, there are seasonal employment demands that are activity specific and for specified periods of time. The impacts of COVID-19 and access to workers will be demonstrated during harvest time at the end of 2020. COVID-19 has put significant pressure on harvest labour mobility and availability for the horticulture and grains sectors. Horticulture enterprises make use of international labour to undertake low-skilled tasks, including picking and packing. Despite much research and multiple trials, there has been no program that has found success in encouraging local workers to undertake these roles. A case in point was the failure of the Seasonal Work Incentives Trial. The recent closure of international borders means that this workforce will likely not be available to growers in the second half of 2020 and early 2021. Labour cannot simply be sourced from metropolitan workers receiving JobSeeker payments; domestic workers have little incentive to leave their families and support networks to take up short-term work at minimum wage while having to pay for separate accommodation in the regional area.

In the grains sector, producers make use of skilled international workers during the harvest season. These workers generally come from countries like the UK, France, the Netherlands and Germany, and have a background in broadacre farming. Local university students also make up part of this labour market. The sector relies on skilled workers to prepare for harvest as well as operate technical and heavy machinery, and farm operators are often unable to dedicate the time or resources to continually train backpackers and local unskilled workers. A model such as the 2 Workin Oz program in Western Australia would be useful to pilot on a national basis to train local workforces in safe environments.

In comparison, the livestock industry needs a more consistent workforce as there is a constant requirement for care of the animals; farmers are unable to just stop production. This is more prevalent in the intensive livestock industries which include poultry, pigs, and dairy.

For example, the pork industry relies on semi-skilled and skilled workers on an ongoing basis. Work can range from feeding and monitoring of pigs to veterinary care, sometimes on a weekly basis depending on the scale of the operation. COVID-19 has highlighted that there is a drastic shortage of these skilled workers, and if one person or a team of workers were unable to work there would be very serious implications. There are also a large number of work visa holders working in the pork industry who are stranded overseas unable to return to Australia. As a result, many piggeries have contacted retired staff members just in case they are needed.

Like other agricultural industries, the oyster industry also has difficulty attracting low skilled workers to remote locations, such as the far south coast of NSW. This issue is exacerbated by the inability for oyster growers to offer wages higher than minimum award rates, difficulty in locating nearby accommodation, and the nature of seasonal work.

A NSW oyster industry survey on bushfire and COVID-19 impacts showed that around 30% of growers are currently experiencing issues with labour. The feedback showed the main area of concern was lack of cash flow to pay staff, and that as many staff were casual seasonal employees, they were not eligible for the Job-keeper allowance.

Impacts of climate change, severe droughts and long fire seasons on the agricultural workforce

Environmental situations not only impact on a potential workforce, but on whether a farm business can even remain viable. Drought leads to a reduced on-farm activity, meaning lower demand for additional workers. Drought also leads to closure of those businesses in rural and regional towns that support agriculture leading to reduced opportunity to access essential skills and services locally.

Livestock

The negative effects of natural disasters have been experienced by all livestock industries. This includes:

- off-loading of cattle and sheep due to the expense of maintaining them through droughts and high grain prices, with many farms yet to restock;
- the dairy industry requires access to water but this past year saw some areas less than a month away from running out of water and the potential that they would be unable to continue dairying;
- the pork industry was recently coming out of a price downturn only to be then faced with very high grain prices due to the poor harvest results in 2019; and
- high grain prices felt by all industries.

Grains

For the grains sector, severe drought resulted in much lower rates of sowing and harvesting crops. For example, summer crop production in New South Wales is estimated to have fallen by 62% in 2019–20 to around 350,000 tonnes, and cotton production is estimated to have decreased by 70% in the same period. Prolonged drought conditions severely limited the area planted to summer crops and yields.⁶ The limited supply of grain then caused an increase in price for livestock industries needing to feed their animals throughout the drought.

Reduced grain harvest also led to companies seeking to import grain from international markets, a process that was strictly managed as per biosecurity protocols. Any increased reliance on imported grain or other product will likely require workers to upskill in biosecurity practices, including designing and implementing biosecurity plans; on-farm surveillance and detection; and biosecurity incursion management.

Oysters

Aquaculture industries were also impacted by the 2019-20 bushfires, and will continue to be detrimentally affected by longer fire seasons in the future.

The bushfire impact on the oyster industry has been considerable. Producers were forced to prioritise emergency management over farm-work, and extensive road-closures prevented product reaching markets and quality assurance checks. With large-scale fire activity, well over half of the state's oyster producers were cut off at one point or another.

⁶ <https://www.agriculture.gov.au/abares/research-topics/agricultural-outlook/australian-crop-report/new-south-wales>

The aftermath of the fires, coupled with significant rainfall resulted in substantial ash deposits, which blanketed estuaries across NSW. Farmers reported a three times increase in labour and time required to clear from growing infrastructure. With the oyster industry dependent on water quality, the mid to long term impact of ash break-down, and exposure of soil in surrounding catchment will likely take years to fully realise. These impacts have been linked with oyster mortalities in some estuaries, for example in Nambucca, Macleay & Shoalhaven Rivers.

The inability to sell stock has also increased labour requirements, as the product continues to grow and needs to be repeatedly worked to maintain oyster health and quality. This is at a time when the industry is unable to re-establish cash-flow after missing the peak sales periods of spring & summer.

A recent survey of bushfire and COVID-19 impacts revealed 60% of farmers had experienced a downturn in retail sales > 80%, and 75% of farmers experienced a downturn in wholesale trade > 80%.

Business enhancement and workforce skills

While technology will never replace the centuries old practice of growing food and fibre it will provide the critical difference in delivering the best quality produce to the consumer. Digital capabilities to enable and progress process improvement, collaboration and business transformation – digital literacy; technology operation; data management, monitoring; analysis and interpretation; digital communication; incident management

To ensure ongoing productivity of the agricultural industry and the provision of appropriate skills and knowledge for the agricultural workforce, all levels of the workforce need to be catered for, from semi-skilled roles up to the management level. This includes ensuring those who are seeking business improvements are able to access the skills and knowledge they require and importantly that we engage those recalcitrant to improve or change. To ensure ongoing productivity of agriculture, we need to move as a collective industry.

The dairy industry has seen a large push from Dairy Australia, the industry R&D body, and its regional dairy programs, such as Dairy NSW, to upskill farm businesses in key areas where previously knowledge and training had been lacking. These included farm financial literacy and business planning to equip farmers to clarify their long term goals, identify the actions needed and to manage uncertainty and risk. Investment in these industry specific initiatives and the on-farm knowledge of workers and owners enables industry sustainability and growth.

Young Farmers

A key business impediment for NSW Farmers Young Farmer members is gaining access to finance to start their own farm business and ensuring they have the right skillset to be successful. As one member noted:

“It’s almost impossible to start a farming business without inheriting land. I’m not really aware of any other industry where you’re expected to have such enormous capital to start a business in an industry which is notorious for its low wages. The alternative is slogging it out in a higher paying job until you earn enough money for a deposit - but then you don’t have the skillset required to run a farm.”

“The government seems to give small band aid hand-outs during drought, bushfires etc. but the real issue is that farmers are so busy just trying to keep the farm running well enough to pay off their loans that they don’t have time to sit down and think about strategy, finance and growth.”

“You can’t expect people to have an entrepreneurial mindset if they don’t have a safety net. Unfortunately, the cycle will continue if it takes you until 30 to save enough to buy a farm and you spend the rest of your life chasing your tail.”

Regional communities

Strong and vibrant rural centres, and rural and remote communities deliver amazing outcomes for individuals and families. A dedicated approach to supporting agriculture as an essential part of decentralisation and economic growth, not an incidental in development discussions. Such centres need to be supported to aid the attraction and retention of the agricultural workforce to rural, regional and remote areas. It is often difficult to attract staff to country areas due to factors including perceived geographical isolation, poor connectivity, and limited work opportunities for partners, and poor remuneration. These factors also make it more difficult to attract employees and complementary agri-business services, including those with the diversity of experience to meet the range of skills required for roles that will evolve as innovation is implemented and practice evolves. However, the required change to working practice caused by the COVID-19 movement restrictions has shown new opportunities to connect and deliver services – virtually and remotely.

Connectivity

Access to affordable, quality, reliable mobile and internet services is critical as the tools required in agricultural production expand. As highlighted by COVID-19, there is now an expectation that all Australians have access to these services as many businesses and government services moved online.

Connectivity is also crucial for business, wellbeing, and safety. If an individual or a family are considering moving to a regional area, they will likely require quality, reliable internet for work and/or study, as well as to remain connected with friends and family who do not live locally.

Improved mobile service and internet is also necessary for many technological agricultural innovations. Currently, many farmers are unable to utilise this technology to improve their productivity as they cannot access reliable internet. This impedes the take up of new technology and operations and also impacts upon workforce needs including level and type of skill, and number of workers.

Support Industries

A key consideration in moving to a regional area is likely to be access to health and education services, particularly if the person is moving their family to the region.

All Australians deserve access to excellent health care and education. This provides another incentive to continually improve these services in regional areas, and in doing so grow regional communities and services offered.

Conclusion

Australian Agriculture is well placed to exceed \$100 billion in farm gate output by 2030. However, this will be dependent upon, in part, an appropriately skilled workforce. This will be achieved by ensuring that:

- Australia becomes a Top 20 nation for innovation efficiency;
- Every farm has access to infrastructure and skills to connect to the internet of things;
- The number of tertiary and vocational agriculture graduates is doubled;
- The available workforce grows by 25% (from 2019 data); and
- 90% of family farms have documented business plans, including succession plans.⁷

In the short term, labour shortages including a potential shortfall of adequately trained agricultural workers will need to be addressed due to the COVID-19 pandemic. While this is a major impact requiring an immediate response, it is also an opportunity to undertake a redevelopment of strategies to ensure agriculture remains an attractive and viable employment choice.

Consideration should be given to reducing red tape and further flexibility for workplace relations requirements. Agricultural opportunities should also be promoted, with new training opportunities provided, led by industry input. If large numbers of workers from other sectors seek agricultural work, they will need initial, basic farm training that in the past has often been learned on farm.

In the medium term, effective programs to build worker skills and recognise capabilities will increase visibility of opportunities for rewarding career progression; and highlight the specialist knowledge and STEM requirements for the sector – both on farm and through research and extension – to enable growth, profitability and productivity.

In the long term, as agricultural industries continue to adapt to changing technologies, environments and consumer requirements, regional communities will be bolstered. This will aid retention of the agricultural workforce and attract new workers to regional, rural and remote communities. However, this will require an ongoing commitment to bolster industry led research and innovation, building of certainty of access to evolving technology and access to enable maximum utilisation of connected and shared networks.

⁷ National Farmers Federation (2019) Australian Agriculture's Plan for \$100 Billion Industry