Skills Insight Jobs and Skills Council Initial Workforce Plan

2023

Skills Insight

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Purpose of this Initial Workforce Plan

This Initial Workforce Plan for the Agribusiness, Fibre and Furnishing industries is intended to inform the strategies and actions of Skills Insight, one of ten newly created Jobs and Skills Councils (JSCs). It is an opportunity to consider existing industry data and evidence and to begin prioritising and diagnosing workforce challenges.

It is not intended to be comprehensive of all jobs and skills-related challenges, but indicative of the many areas in which Skills Insight will develop collaborative relationships, conduct further research and evidence collection, and build workforce planning capability and expertise.

Workforce Planning is the strategic centrepiece for JSCs to inform and establish each of their other functions. Workforce Plans present data and analysis that feed into Strategic Plans and provide a critical focus for Annual Activity Schedules. As JSCs mature, the key objectives for Workforce Planning are to understand current, emerging and future workforce challenges and opportunities, including skills gaps and shortages, for all industries within their remit, including small, niche and regional sectors, and to develop appropriate strategies and advice for addressing diagnosed challenges. Consideration of how effectively the supply of and demand for skilled labour is aligning within each sector will involve collaboration with other JSCs, especially where jobs, skills and value chains overlap, and Jobs and Skills Australia to refine data collection and analysis processes.

This Initial Workforce Plan presents a preliminary examination of industry sectors, labour source characteristics, labour market dynamics, gaps in national data collections, national and state-based strategies that address industry and workforce challenges, and identifies initial strategies, activities and collaborations that may be undertaken as a result, including for:

- further workforce planning
- training product development
- implementation, promotion and monitoring of skills development
- industry stewardship.

This Initial Workforce Plan may be used by employee bodies, employers, businesses, industry peak bodies, and research and development agencies for the development of policies and proposals.

Executive Summary

Initial Workforce Plans by Jobs and Skills Councils (JSCs) are an opportunity to examine existing data and information on the jobs and skills system and to set the agenda for JSCs' strategies and activities. Skills Insight's Initial Workforce Plan covers the Agribusiness, Fibre and Furnishing industries.

Methodology: This Initial Workforce Plan was developed using data and evidence from the previous industry engagement arrangements (when Industry Reference Committees were supported by Skills Service Organisations), desktop analysis of national workforce and skills data (principally data published by Jobs and Skills Australia, the Australian Bureau of Statistics, and the National Centre for Vocational Education Research), and preliminary stakeholder engagement and industry insights collected by Skills Insight.

Key workforce challenges: This Initial Workforce Plan commences with a summary of workforce planning priorities, which summarise, and cross-reference to, the emergent challenges and opportunities identified in the content that follows. An overview of the industries within Skills Insight's coverage is provided, including identification of key drivers of change and skills needs, including climate change adaptation and mitigation, biosecurity, digital and automation practices, and workplace safety and risk management. There is then a focus on 16 industry sector groups that share explicit jobs and skills commonalities. There are a multitude of labour market dynamics and workforce challenges experienced across these industry groups, including labour shortages, an ageing workforce, challenges in attracting and retaining diverse workers (including young people, women, First Nations peoples, people with disabilities, and skilled migrants), a need for leadership development to drive decision-making and succession planning, and lack of access to skilling opportunities for new and existing workforces (especially in rural, regional and remote Australia).

Gaps in evidence identified: National data collections presented by Jobs and Skills Australia, the Australian Bureau of Statistics and others are considered for their suitability in facilitating insights that can inform strategies to address the above challenges. Evidence gaps are noted, including their nature, extent and impact on effective workforce planning activities. It is highlighted that datasets such as the Skills Priority List, Australian Skills Classification and others, many of which use the ANZSIC and ANZSCO, can provide a platform for national consistency, but data analysis issues emerge due to aggregated data, outdated variables, misalignments between datasets, small sample sizes impacting on data integrity (especially for small workforces), and reductionism through the relative exclusion of qualitative data. Strategies are proposed for further collaboration with data-collecting agencies, JSCs and other stakeholders to support the continuous improvement of Australian jobs and skills information.

Existing workforce and skilling strategies: There is a summary of current government and industry strategies to address workforce, jobs and skills challenges, and gaps in evidence, as identified in the previous two sections. Key activities and recommendations from these strategies are highlighted, before noting current or potential areas of collaboration between these key stakeholders and Skills Insight to advance workforce planning priorities. These relate to the four themes of: improve data and evidence to inform strategies and decision-making; support skills and workforce leadership; support skilling; and support attracting and retaining of a diverse workforce.

Planned and ongoing engagement: This section outlines the consultative strategies that will underpin Skills Insight's workforce planning, including to address workforce challenges and data gaps, as it builds to a more comprehensive Year 2 Workforce Plan. Within the framework of Skills Insight's stakeholder engagement governance, consultation and collaboration will be undertaken through multiple settings, incorporating online forums, industry networks, training package product consultation and validation, and applied research and data collection.

1. Summary of Skills Insight workforce planning priorities and associated activities

These Skills Insight workforce planning priorities and associated activities both emerge from, and connect, the data and information that follows in the rest of the document. In so doing, they provide a reference for how identified workforce and skills challenges, data and evidence gaps, existing industry and skills strategies, and stakeholder engagement plans relate to overarching workforce planning strategies and activities.

Throughout this Initial Workforce Plan there are cross-references where identified challenges, and any proposed activities to address them, relate to the below priorities. For example, where an issue or proposed activity aligns with '**3.** Support skilling' and '**b)** Promote upskilling and re-skilling opportunities for the current and prospective workforce' it is cross-referenced in the format '**(3b)**'.

Workforce Planning Priorities

1. **Improve data and evidence to inform strategies and decision-making**

   a) Support data improvement: Work with key agencies and partners to improve the evidence base, including national data assets, that informs forward strategies and decision-making.

   b) Promote place-based approaches: Develop workforce planning methodologies wherein the power of national data collections may be complemented by nuanced, local data and information to address shortages and supply/demand issues.

   c) Holistic workforce planning: explore challenges from all angles, including how broader issues, often beyond the remit of JSCs, enterprises and the VET sector, contribute to jobs and skills issues in, for example, regional, rural and remote Australia.

2. **Support skills and workforce leadership**

   a) Support industry skills and workforce leadership development.

   b) Support and contribute to existing industry strategies and resources aimed at addressing skill and labour shortages.

   c) Support industry and VET sector decision-making skills for the adoption of innovation, including digital technologies.

   d) Promote succession planning, especially in small and niche industries with an ageing workforce.

3. **Support skilling**

   a) Support the appropriate skilling of the workforce by developing flexible training and education products and pathways that are industry-led and responsive to current and emerging trends.

   b) Promote upskilling and re-skilling opportunities for the current and prospective workforce.

   c) Develop resources to support training and assessment practices, including for workplace-based learning and training delivery in small or 'thin' regional, rural and remote markets.

   d) Support relationship building and collaboration between employers and training organisations, including to connect national training products with delivery of training 'on the ground'.

   e) Monitor the outcomes of skilling strategies and adapt strategies where necessary.

4. **Support attraction and retention of a diverse workforce**

   a) Support industry to promote, and raise the profile of, careers, education and learning pathways.

   b) Support industry to attract a diverse workforce, including by supporting work with equity groups to understand and address workforce imbalances.

   c) Support industry in attracting skilled migrant and seasonal workers to address shortages.

The strategies, listed above, are applicable to identified workforce planning challenges and opportunities to be addressed in ongoing and future activities. The table below summarises initial proposed workforce planning activities that are relevant across multiple industries and workforces covered by Skills Insight (activities to address specific industry challenges are detailed in the *Industry sector scans* section). While the activities are categorised under the four main strategy headings, many traverse multiple strategies. These activities are responses to workforce and skills dynamics, evidence and data gaps, and existing industry strategies, as identified in subsequent sections of this report.

Example Workforce Planning Activities (Cross-Industry)

1. **Improve data and evidence to inform strategies and decision-making**

   - Work with Jobs and Skills Australia (JSA) to develop A National Skills Taxonomy for Agriculture to: build on the Australian Skills Classification; support quantifying skills needs in each sector; understand specific sector-based use cases of a national skills taxonomy; and evaluate the taxonomy with stakeholders to ensure currency and relevance to current and emerging skills needs. **(1a)**
   - Participate in reviews of the ANZSCO and ANZSIC by the Australian Bureau of Statistics (ABS). **(1a)**
   - Develop further data and knowledge about workforce skilling strategies encompassing all educational pathways, including secondary schools, higher education, industry accredited training, and non-accredited training and development. **(1a, 1c, 3b)**

2. **Support skills and workforce leadership**

   - Support the development of leadership strategies concerning key trends, including workplace safety; adopting sustainable, climate-smart and natural resource management practices; implementing value chain traceability practices and relevant Environmental, Social and Governance (ESG) criteria. **(2a, 2c)**

3. **Support skilling**

   - Incorporate new and updated units (and delete identified units) from recent AHC Training Package projects into relevant qualifications to ensure access to the latest training. **(3a)**
   - Complete the final round of the Unit Sector Approach for reviewing the AHC Training Package, including the shearing, wool and livestock sectors, the potential for greater recognition of ecosystem management skills and knowledge, and review of the Rural Operations qualifications (as agreed with the NT STA and ISACNT). **(3a)**
   - Undertake Workforce Function Analyses and industry consultation on creating an agricultural trade pathway to complement existing qualifications (as supported by the Agricultural Workforce Working Group and Minister for Agriculture, Fisheries and Forestry). **(3a, 3d, 3e, 4a)**

4. **Support attraction and retention of a diverse workforce**

   - Building new, and consolidating recently developed, relationships with First Nations stakeholders, including skills for the development of First Nations enterprises and working within Traditional Owner and Custodian contexts. **(4b)**
   - Research and analysis on State/Territory and local initiatives to build employment opportunities for First Nations people, women in trades, and for people living with disabilities, initially focusing on regional, rural and remote Australia. **(4b)**

The next section of this Initial Workforce Plan explores key workforce issues and trends that are common across the Agribusiness, Fibre and Furnishing industries, before focussing on industry sectors groups.

2. Agribusiness, Fibre and Furnishing industries overview

2.1. Labour market contexts

The Agribusiness, Fibre and Furnishing industries comprise a vast array of sectors, jobs and skills, and produce food, fibre, furnishing and textile products essential for Australia's homes, health and wellbeing. Activities across these industries may be summarised as follows:

Working with Animals • Animal breeding and growth • Animal health and welfare • Animal training, retraining, rehoming and end-of-life • Animal biosecurity and WH&S	**Working with plants and trees** • Forest and plant cultivation and growth • Cropping and harvesting • Plant biosecurity and WH&S
Working in processing • Processing animals for food • Processing plants and trees for fibre (including pulp and paper) • Producing timber and wood products • Producing textiles, clothing, footwear, furnishing and upholstery	**Leadership and business management** • Business leadership and management (value chain logistics, technology adoption) • Ecosystem and land management (soils, water and land care) • Regulatory and legislative compliance • Export and trade

The Agribusiness, Fibre and Furnishing industries directly employ 544,000 people, accounting for around 8% of total employment nationally and are responsible for working with and protecting Australia's environmental assets, now valued at more than $5.7 trillion[1].

Key workforce statistics from the 2021 Census of Population and Housing include:

- 34% are women.
- 42% of the workforce are over 50 years of age.
- 2.5% of the workforce are people living with disabilities.
- The highest educational attainment of almost half (48%) of this workforce is secondary education, while 35% have vocational education and training-level qualifications, and 17% have a degree in higher education.
- There is a spread of skill levels required of workers across the Agribusiness, Fibre and Furnishing industries; for example, over half of all workers in livestock farming, the livestock processing supply chain, and broadacre cropping are employed in occupations that align with skill level 1 in the Australian and New Zealand Standard Classification of Occupations

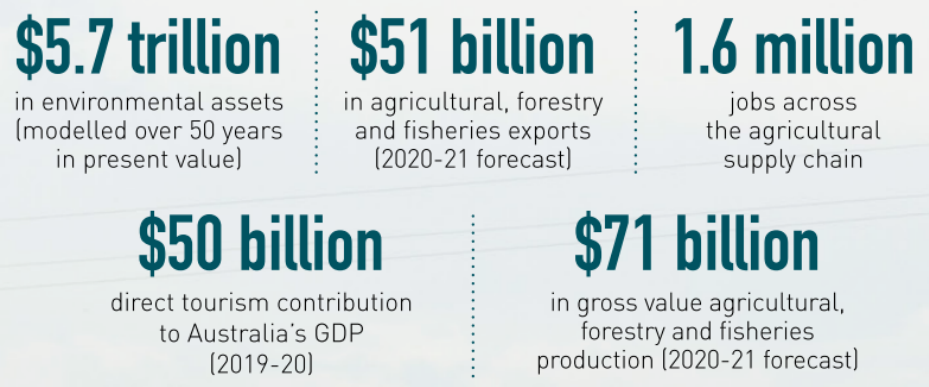
(ANZSCO). When compared to the highest educational attainment of workers (noted above), this may indicate a shortage of highly skilled workers in relevant occupations.

- Nearly half of the workforce (47%) worked for an average of 47 hours per week. This suggests that overemployment is common for the full-time working cohort, especially the significant proportion of owner-operators in agriculture.[2] For pieceworkers covered under the Horticulture Award, overemployment can be a significant issue as piecework may not attract overtime payments.

There are around 247,000 individual industry businesses, which operate and trade in all states and territories, and comprise a variety of small, medium and large enterprises.[3] Collectively, these operators form a sophisticated value chain with a total revenue of almost $215 billion and contribute $66 billion to overall GDP.[4]

Australia's extreme variety of climactic, geographic and geological conditions results in highly diversified production and products, including in niche and specialist sectors and a predominance of jobs in regional, rural and remote Australia. This involves working with and protecting Australia's environmental assets, now valued at more than $5.7 trillion.[5]

Table 1: Agriculture, forestry and fisheries assets



Source: Department of Agriculture, Water and the Environment (2022) Commonwealth Biosecurity 2030

ABARES highlights that Australian agriculture accounts for 55% of Australian land use and 24% of water extractions (these figures do not include other industries under the coverage of Skills Insight, such as timber production). This is in the context that there is formal recognition of First Nations peoples' rights and interests in over 50% of Australia's land.[6] According to the 2021 Census, almost 4% of the total population of Australia[7] identified as Aboriginal and/or Torres Strait Islander, but this group only accounts for 2% of the Agribusiness, Fibre and Furnishing workforce. The participation of, and collaboration with, First Nations peoples in Agribusiness, Fibre and Furnishing industries must be promoted to help Close the Gap, apply appropriate skills and knowledge, and address workforce shortages.

The Agribusiness, Fibre and Furnishing industries are constrained by widespread labour and skills shortages, jeopardising the short- and long-term viability of many businesses. These issues were prevalent prior to the COVID-19 pandemic, but shortages were exacerbated because of disruption to many sectors' usual reliance on overseas workers, especially during peak labour use periods. Despite various measures to attract local workers to industry careers, there continues to be significant shortfalls. To support new and existing workforce attraction and retention strategies, there is a need to understand and address the push and pull factors for jobs for prospective industry entrants. This should also be supported with improved national employment data provision to capture the variability of industry workforces[8], including seasonal work, off-farm roles and participation by under-represented cohorts, while preparing all levels of the existing workforce through 'learning in all its forms, at all levels, in all the relevant parts of the nation'. (The *National Agricultural Workforce Strategy*).[9]

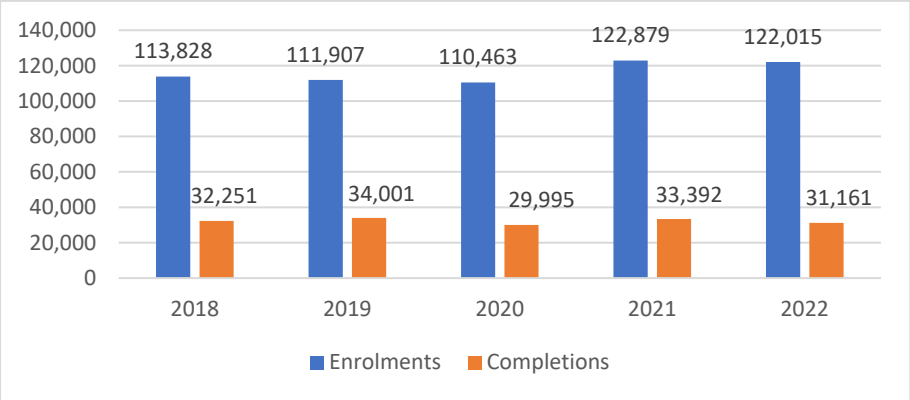
Workforce Planning Priorities

- Conduct research on why certain populations find it harder to participate in the Agribusiness, Fibre and Furnishing industries, including across variables such as age, gender, culture, location and disability status. **(4b)**
- Collaborate with industry and RTOs to bolster the participation of under-represented cohorts. This may include identifying and incentivising under-represented populations, working with industry to reduce barriers to employment, targeted marketing, and exploring flexible working arrangements. **(4a, 4b)**

2.2. Education and training

There are a variety of ways in which the Agribusiness, Fibre and Furnishing workforce develops skills for industry jobs. This includes informal and on-the-job training, unaccredited learning, higher education, and vocational education and training (VET) qualifications and micro-credentials (including skill sets and stand-alone units of competency) that may be undertaken through an apprenticeship, traineeship, subsidised or fee-for-service enrolment. In 2022, there were over 122,000 enrolments in Agribusiness, Fibre and Furnishing-related training package qualifications, generally sustaining the upward trend shown in 2021, including from pre-COVID.[10] Further research is required to understand the drivers and contexts around qualification completion and non-completion figures (this is the subsect of NCVER research, described in the *Existing workforce and skilling strategies* section).

Figure 1: Agribusiness, Fibre and Furnishing Enrolments and Completions



Source: NCVER VOCSTATS (2022)

The majority of employers adopt a mixed model of nationally recognised and non-nationally recognised training. This may purely be a decision based on the perceived relevance and convenience of the training in meeting workplace needs, but is often a result of there being few, if any, registered training organisations (RTOs) to deliver relevant training in rural, regional and remote areas. In 2022, while 23% of industry employment was based in outer regional areas, only 14% of qualification enrolments were undertaken in those locations.

	Major cities	Inner regional	Outer regional	Remote	Very remote
VET Qualification Enrolments	53%	28%	14%	2%	2%
Industry Employment Locations	40%	30%	23%	4%	2%

Sources: a) NCVER VOCSTATS (2022) b) ABS 2021 Census of Population and Housing

Another phenomenon is that there is a proliferation of a large proportion of enrolments in few qualifications. In 2022, 49% of Agribusiness, Fibre and Furnishing-related qualification enrolments were in ten qualifications. This is partly a reflection of some occupations and industry sectors being small in size (if not in impact); for example, NCVER data shows there were around 57 enrolments in the Certificate IV in Equine Dentistry (now superseded by the Diploma of Equine Allied Health) between 2018 and 2022. Regardless of the industry sector in which horses participate (be it for racing, breeding, competition, working or leisure), engaging service providers regularly for equine dental care is vital for positive health and quality of life outcomes.[11] However, ensuring continuing training supply for niche sectors with modest current and anticipated learner cohorts has been challenging for industries.[12]

There is a need for research to document why different qualifications have low enrolment figures. In some cases, low enrolments are purely a reflection of low-volume, low-turnover, specialist occupations but, in other cases, there appears to be an imbalance between the supply of training delivery and demand for it. Making explicit the variable contexts and dynamics behind the enrolment levels of different qualifications will allow JSCs to develop targeted strategies to help balance training supply and demand, especially in challenging thin markets.[13]

Workforce Planning Priorities

- Research and document relationships between the labour market, VET qualification enrolments, and specific contexts and dynamics that impact on these relationships. Assess:
    - the currency of training products and the flexibility of education and training pathways for occupational outcomes and industry needs.
    - whether subsidies are sufficient for RTOs to consider training delivery viable, especially in rural, regional and remote areas.
    - perceptions of the attractiveness of industry careers and associated VET training, and the potential for promotional activities to support prospective participants' decisions.
    - whether the development of nationally consistent training and assessment materials may be an enabling factor for RTOs to deliver training and ensure that all learners have equitable access to quality resources.
    - where there is a need to support RTOs and industry in exploring the potential for new partnerships and delivery models that suit all parties. Consider the development of new mechanisms and data that will help publicly advertise local industry skills and training needs and corresponding market opportunities for RTOs.
    - the outcomes of implemented skilling support strategies.

(1a, 1b, 1c, 3a, 3b, 3c, 3d, 3e, 4a)

2.3. Drivers of change and skills needs

The Agribusiness, Fibre and Furnishing industries require the application of a multitude of skills across roles in their value chains. These value chains shift and change in accordance with local and global trends and emerging consumer demands; hence the skills required by workers, and the industries they represent, change too. Businesses are adapting to perpetually changing physical, economic and legislative environments, which requires the adoption of new practices and business structures.

Workforce planning strategies must map the diversification of roles and skills needed by industries, which may require different job candidate 'profiles' over time (though this occurs variably according to the work requirements, sizes and locations of businesses). The composition of occupations required by industry may then change; for example, with the proportion of higher-skilled roles becoming more prevalent with the greater adoption of digital technologies. Over the last few decades, there has been a trend of corporate agribusinesses purchasing and consolidating multiple family farm properties and utilising advanced techniques such as automation to maximise productivity on a large scale. Such processes are changing the complexion of the agribusiness workforce, which now includes many more roles and skills than ones that are exclusively on-farm.

The Agribusiness, Fibre and Furnishing industries are, however, experiencing persistent challenges in responding to the drivers of change and associated skills needs due to operational pressures that are the result of workforce shortages, technological changes, value/supply chain challenges, and external impacts (such as biosecurity and climate change issues). There is a need to document these drivers and associated challenges, as well as to improve data provision, planning and strategies at all levels to contend with them.

This following summary of drivers and skills needs provides information and data that was initially published by Skills Impact in Industry Skills Reports in September 2022 and has subsequently been updated following more recent industry engagement.[14]

2.3.1. Interconnected value chains

A key feature of the Agribusiness, Fibre and Furnishing industries is that every link of their value chains must be managed as part of end-to-end systems, from growing and sustaining plants, trees and animals through to the consumption of associated products.

The disruption of COVID-19-related measures on supply chains highlighted the need for ensuring connection, shared responsibility and risk mitigation strategies be enacted across all value chain businesses. The requirement for robust and adaptable value chains, which comply with numerous regulatory frameworks, requires a skilled and agile workforce with high-level technical and leadership skills that are applied across complex business operations.

As one part of the process to attract a new generation of workers, it is necessary to reframe perceptions of the Agribusiness, Fibre and Furnishing industries as comprising multifaceted and modern roles that are concerned with sustainability and data-driven product tracking and decision-making. To promote their credentials, businesses are increasingly adopting Environmental, Social and Governance (ESG) criteria, which comprise non-financial indicators associated with the stewardship of nature, community relations, and industry standards leadership. This is supported by digital strategies such as traceability systems that record the origins of ingredients and materials to ensure compliance with national and international markets, prevent fraud, and validate production methods, safety and welfare standards.

Workforce Planning Priorities

- Collaborate with other JSCs to map cross-industry value chains (inclusive of workforces, skills, systems, and legislation) and develop workforce skilling strategies. **(1a, 2c, 3a, 3b)**
- Promote modern career roles and pathways to attract new entrants. **(4a)**
- Work with stakeholders to support updating the ANZSCO, including to ensure the appropriate sectoral classification of occupations. **(1a, 4a)**
- Support and provide input into industry strategies, such as the Agricultural Workforce Working Group's proposed inclusion of a Food Supply Chain Workforce Capacity Study in Jobs and Skills Australia's work plan. **(1a, 2b)**

2.3.2. Climate change adaptation and mitigation

Climate change adaptation and mitigation is an area of major and critical change given Australia's commitments to target net zero emissions by 2050[15]. As a result of climate change, food and fibre systems are projected to experience reductions in production across the cropping, livestock and fisheries sectors, while the International Labour Organisation estimates that 10,000 Australian jobs will be lost because of heat stress by 2030 (ILO, 2019).

The Agribusiness, Fibre and Furnishing industries are planning for and investing in a low-emissions future, including through changing land use practices. Farmers and landowners are stewards of the land on which they work, and maintain much of Australia's natural capital, including trees and grasslands. Sustainability and food/fibre security are mutually dependent, and therefore the industry workforce must be an integral part of the solutions proposed for climate change mitigation.

Small businesses in particular need to be supported in understanding climate change adaptations that have land management, productivity and profitability benefits, which in turn will likely boost demand for skilled workers to implement these strategies. The development of place-based data and metrics is required to prove to industry the value proposition of investing in natural capital (soils, water, agroforestry, animals) and the leadership and management skills to implement change.

With the changing ownership and custodianship of Australian land and water masses, managing the protection, utilisation, sustainability and health of Australia's ecosystem is increasingly under the purview of First Nations communities, employers, and service providers. This has increased employment opportunities for First Nations peoples and led to changes in how conservation work is undertaken. Workforce planning activities will continue to assess opportunities for creating training support resources to achieve community aims, promote the potential of partnerships to help 'close the gap', and formally recognise new and emerging conservation and ecosystem management occupations in data collections, such as the ANZSCO, which determine eligibility for vocational education and training subsidies.

Workforce Planning Priorities

- Support the development of data sources that provide industry leadership with evidence of the value proposition of adopting sustainable, climate-smart and natural resource management practices (including to improve soil health, protect natural capital, and participate in carbon and biodiversity markets). **(1a, 2a, 2c)**
- Work with stakeholders to support updating the ANZSCO to ensure that new and emerging environmental occupations are recognised. **(1a, 4a)**
- Support and promote partnerships between First Nations peoples and industry to address collective workforce and skills challenges. **(2a, 4b)**
- Support systematic upskilling and reskilling of the workforce to address any climate change adaptation and mitigation skills and knowledge gaps (with potentially significant collaboration with other JSCs) **(2a, 3a, 3b)**

2.3.3. Biosecurity and contamination

Biosecurity and contamination prevention are key issues for Australian industry, as demonstrated throughout the pandemic and ongoing climate change. As the world becomes more interconnected through the movement of people and products, biosecurity incursions in Australia are increasing, as has been seen in 21st Century outbreaks of myrtle rust that infects eucalyptus and other myrtacaea, equine influenza, Japanese encephalitis virus in piggeries, varroa mites in honeybee populations, canine ehrlichiosis, white spot disease in prawns, and QX disease in oysters. Skills associated with the prevention, detection, eradication and ongoing management of outbreaks are a critical and emergent industry requirement for protecting our human and animal populations, food, fibre and furnishing products, lands, seas and waterways from invasive species, pests and contamination.

Stakeholders have recommended to Skills Insight that research work be undertaken to explore how biosecurity measures align across all industries. Analysing the jobs and skills system holistically will enable cross-sector priority activities to be identified to support preparedness and response measures in all businesses, whether small or large, urban or regional.

Workforce Planning Priorities

- Support systematic upskilling and reskilling of the workforce to address any biosecurity and contamination skills and knowledge gaps (with potentially significant collaboration with other JSCs) **(2a, 3a, 3b)**

2.3.4. Digital and automation practices

The Agribusiness, Fibre and Furnishing industries are often early and enthusiastic adopters of innovative methods, especially where technology can help minimise operating environment risks and increase productivity. However, adopting new systems and accessing the skills to implement robotics, automation and data-driven practices can be challenging for many businesses. Compounding barriers are experienced by industries in regional, rural and remote areas, with connectivity issues often preventing the rollout of new technologies and hence workforce skills development.

In 2019, Rural Research and Development Corporations (RDCs) led the development of an *Agriculture Workforce Digital Capability Framework*, supported by Skills Impact, which has the capacity to be applied across all industries.[16] Industry leaders, including the Agriculture and Production Horticulture Industry Reference Committee, also supported the development of the *VET Digital Capability Framework*.

In current and future workforce planning activities, it will be important for Skills Insight to collaborate with other JSCs to document and improve digital capabilities across workforces, and to partner with RDCs to promote the adoption of, and education and training for, digital technologies by industries.

Workforce Planning Priorities

- Collaborate with other JSCs, especially Future Skills Organisation, to review digital skills in selected high-use qualifications using the *Australian Digital Capability Framework*[17] and *Agricultural workforce digital capability framework*[18] **(2a, 2c)**
- Update training packages to incorporate new skills **(3a)**
- Upskill and reskill the existing workforce to bridge digital skills gaps **(3b)**
- Promote industry careers to attract new and adjacent workforces with appropriate skills **(4a)**

2.3.5. Product safety, quality assurance (QA) and regulatory compliance

Agribusiness, Fibre and Furnishing industry sectors must be compliant with specific environmental regulations and codes of practice to ensure safe practices and product quality. The variety, complexity and changeability of these regulatory frameworks across value chains means it is extremely difficult for new and emerging sectors to stabilise and grow, to gain access to national and international markets, and to develop and retain the skills and knowledge to improve competitiveness.

Workforce development activities are required to develop leaders, support staff, inspectors, compliance officers and auditors relative to all Agribusiness, Fibre and Furnishing commodities. Only with workers educated and trained to ensure monitoring, record-keeping, quality assurance procedures, auditing and certification can Australian products maintain their reputation as being 'clean, green and safe'.

Workforce Planning Priorities

- Support systematic upskilling and reskilling of the workforce to address any product safety, QA or regulatory compliance skills and knowledge gaps (with potentially significant collaboration with other JSCs) **(2a, 3a, 3b)**

2.3.6. Sustaining plants, trees, animals and materials

Agribusiness, Fibre and Furnishing workers must have skills to care for living plant, soil, water-based and animal organisms and to appropriately provide the services and products associated with them.

Animal welfare is a complex and growing skills and regulatory environment that is crucial for accessing national and international markets, qualifying for certification, and meeting consumer demands.

Sustaining plant health is vital because plants provide oxygen, food, clothing fibres, and natural building materials. According to Plant Health Australia, 40% of global food crops are lost every year due to plant pests and diseases.[19] While Australian producers have developed skills and systems to maintain crop resilience, plants are still susceptible to a range of stressors, meaning growers need to actively manage their crops to minimise losses.

Workforce Planning Priorities

- Promote quality education and training delivery strategies that enable hands-on, workplace-based experiences for working with living and organic materials. **(3c, 3d)**

2.3.7. Workplace safety and risk management culture

Safety should always be a holistic consideration, whether in the education and training of new workers or the risk management culture nurtured by experienced leaders.

Safe Work Australia data shows that agriculture is one of the most dangerous industries in which to work because employees are routinely exposed to risk, including operating heavy, complex machinery and vehicles, exposure to animals and chemicals, hazardous weather conditions (including droughts, bushfires and floods), and fatigue-related risk; for example, long hours and worker shortages, especially when working alone and in remote locations. In 2021, agriculture had 9.2 deaths per 100,000 workers,[20] second only to road transport, and each non-fatal injury caused an average loss of six working weeks.

Improving safety training, practices and attitudes may lead to positive outcomes for employers, including enhanced workplace health and wellbeing, reduced employee turnover and improved productivity. The Agricultural Workforce Working Group (AWWG) has requested that Skills Insight work collaboratively through existing mechanisms, including the Rural Safety and Health Alliance and SafeWork Australia, to improve workplace health and safety data to underpin workforce safety policy-making and programs. The AWWG recognise that prioritising workplace health and safety will require industry-wide attitudinal, behavioural and cultural change. This necessitates awareness raising and the promotion of induction programs and further training that are contextualised to specific workplace contexts and cohorts. Safety data should also be considered as an important variable in datasets such as the Australian Skills Classification to caution against de-contextualised assumptions about skills transferability between occupations and industries.

Workforce Planning Priorities

- Work with Jobs and Skills Australia to explore how workforce safety data, including from SafeWork Australia and state/territory bodies, can be integrated with existing datasets. **(1a)**
- Support systematic upskilling and reskilling of the workforce to address any workplace safety and risk management skills and knowledge gaps (with potentially significant collaboration with other JSCs) **(2a, 3a, 3b)**

The above drivers of change and skills needs are common across Agribusiness, Fibre and Furnishing industry sectors. These will continue to be actively monitored and researched for how they impact on the structure of industries and new and emerging workforce development requirements. Key labour market dynamics will also be monitored for how they relate to skills and workforce trends across all industries, including those under the coverage of other JSCs, which will require significant collaboration. Relevant data collections will continue to be investigated, analysed and utilised in the evidence base as appropriate.

3. Industry sector scans

This section provides initial analyses of 16 groups of related industry sectors based on published data and evidence. Each industry group has specific labour market dynamics and skills contexts that mean engagement must concentrate on their unique circumstances as much as cross-industry commonalities (as detailed in the previous section). There is consideration of opportunities and challenges faced by each industry group, and priority workforce planning strategies and activities are identified.

While the data and evidence presented for each industry group enables insights into labour force dynamics, industry stakeholders have provided feedback that data alone cannot accurately illustrate the breadth of challenges faced or the nuance of local contexts and market environments. Stakeholders' initial input on data limitations is acknowledged below selectively but is explored in greater depth in the following section, *Initial workforce planning evidence gaps*. In future Workforce Plans, the identification of data and evidence trends will be complemented with richer contextual information to explain the place-based challenges and opportunities experienced by stakeholders, and to propose appropriate strategies to address them.

Notes on data:

- Occupational employment figures presented here indicate the number of people employed in jobs within that industry grouping only – not the total number of people employed in those jobs across all industries.
- 'nec' beside an occupation denotes that it is 'not elsewhere classified' within that dataset. Occupations are coded to nec categories in instances where a suitable substantive category is not included in the classification.
- The most recent employment projection figures were released by the National Skills Commission in 2021 and Jobs and Skills Australia (JSA) have yet to publish updated projections. All figures quoted cover '5 years to 2026'.
- Each industry sector scan below is intended to present a consistent snapshot of data and measures across all industries. For individual industries, notably agriculture (which is often grouped with forestry and fishing), there are a plethora of agencies that publish data that may not align with what the figures presented; for example, ABARES is generally considered to be the best source of information for Australian agricultural commodities, but, for the purposes of consistency, this Initial Workforce Plan focuses on datasets with industry-wide coverage.
- VET enrolment and completion figures include only those qualifications that map exclusively to those industry groupings. High-volume qualifications, such as Certificate III in Agriculture, which have multiple occupational outcomes, are not included (but are reflected in the Education and training overview above).

3.1. Production Horticulture

Production Horticulture

ANZSIC A0111, A0112, A0113, A0114, A0115, A0121, A0122, A0123, A0131, A0132, A0133, A0134, A0135, A0136, A0137, A0139

Industry snapshot

$16,069 M
Revenue
(2022-2023)

22,318
Establishments
(2022-2023)

$2,080 M
Export value
(2022-2023)

39%
Women (2021)
↑ 2% from 2016

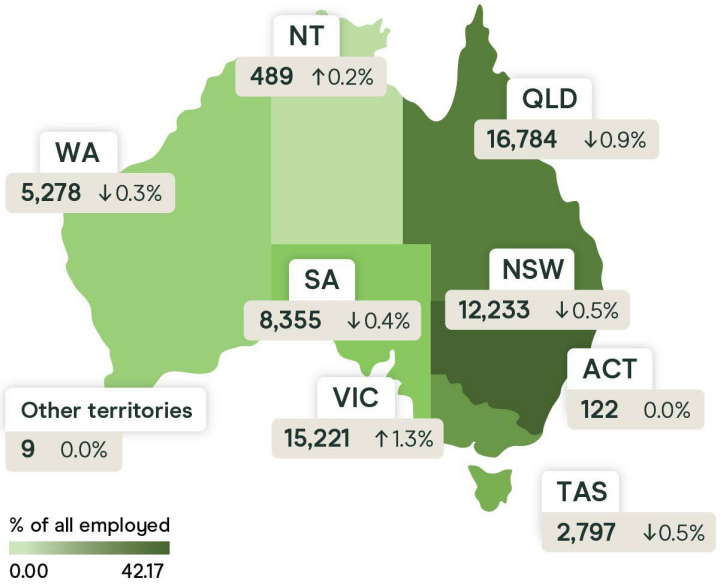
1,058
Indigenous workers (2021)
↑ 226 from 2016

12.7%
Projected growth in employment
(2026)

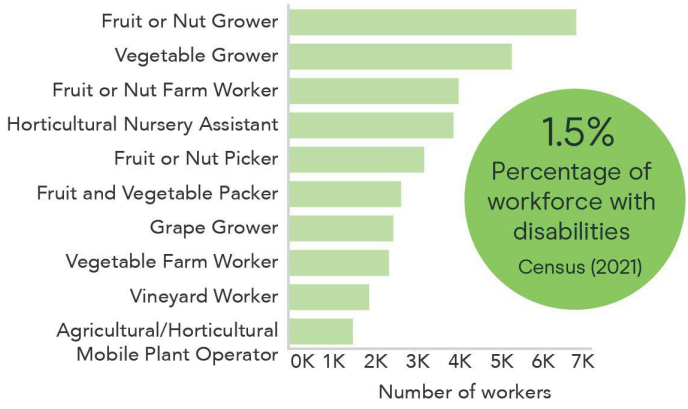
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016

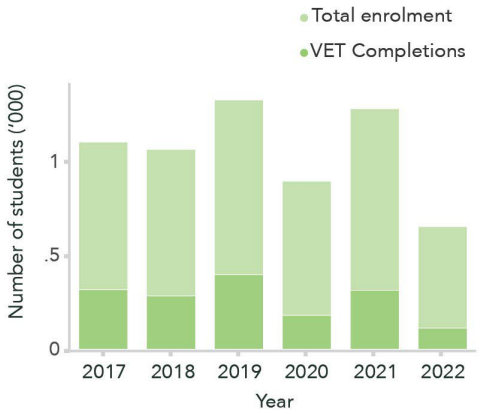


Key Occupations, by employment



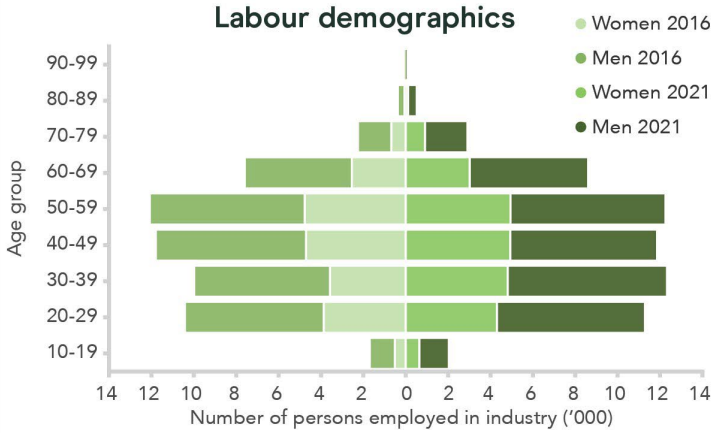
Source: ABS Census (2021)

VET Enrolments and completions



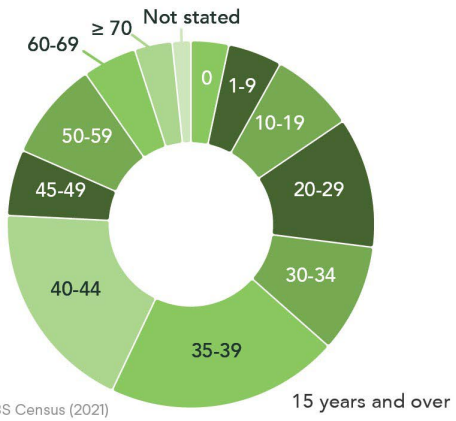
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



Source: ABS Census (2021)

3.1.1. Industry sectors (ANZSIC Classes)

- Nursery Production (Under Cover)
- Nursery Production (Outdoors)
- Turf Growing
- Floriculture Production (Under Cover)
- Floriculture Production (Outdoors)
- Mushroom Growing
- Vegetable Growing (Under Cover)
- Vegetable Growing (Outdoors)
- Grape Growing
- Kiwifruit Growing
- Berry Fruit Growing
- Apple and Pear Growing
- Stone Fruit Growing
- Citrus Fruit Growing
- Olive Growing
- Other Fruit and Tree Nut Growing

Key insights from industry sector infographic and other data	Priority
Labour shortages	High
Seasonal and migrant labour needs	High
Lack of workforce diversity	Medium

Production horticulture is a diverse industry that plants, grows and harvests fruit, nuts and vegetables on a large scale, in both under-cover (hydroponics/greenhouse) and outdoor (field) production systems. Operators use automated planting and transplanting processes, integrated biological and chemical pest control, mechanical harvesting, and micro-irrigation and wireless sensors for maintaining soil moisture levels. There is also increasing use of controlled atmosphere storage to regulate temperature, oxygen, carbon dioxide and humidity of storage conditions to maintain supplies of fresh produce out of season.

The workforce has highly specialised skills in establishing horticultural crops, identifying and reporting signs of unusual disease or pests, applying fertilisers and pesticides according to regulatory and legislator requirements, operating machinery and equipment, harvesting crops (including with robotics, and autonomous precision systems), implementing a post-harvest program, and applying environmentally sustainable work practices, including to maintain soil health and water use efficiency. The industry is developing further skills in cultivating new food sources, landcare, farm management, digital literacy and compliance to address emerging needs and pursue new opportunities.

The National Training Register details qualifications corresponding to specialised job roles in this industry, including:

- Production Horticulture (Certificates II, III, IV, Diploma)
- Protected Horticulture (Certificates II, III IV)
- Medicinal Cannabis Cultivation and Production (Certificates III, IV)
- Viticulture (Diploma)

Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent industry workers:

Unit title	Unique skills and knowledge
Perform manual pollination of crops (AHCPHT212)	This unit applies to individuals who manually pollinate crops, including preparation and implementation for pollination activities.
Apply security measures for medicinal cannabis (AHCMDC401)	This unit applies to individuals who apply measures for the security of a controlled growing, licensed medicinal cannabis site.
Establish and monitor hydroponic crops (AHCHYD401)	This unit applies to individuals who establish hydroponic crop nutrient requirements, supervise crop planting activities and monitor nutrient concentrations of hydroponic crops.

3.1.2. Drivers of workforce dynamics

Sector growth

Hort Innovation recently predicted strong growth in the sector through to 2030. Says Hort Innovation chief executive officer Brett Fifield: 'The data shows the Aussie horticulture sector is on a significant growth trajectory, driven largely by strong export growth from trade-focused commodities, as well as productivity increases and population growth.'[21]

Seasonal and migrant labour needs

There are data and evidence gaps relating to season and migrant labour (see the section on data and evidence gaps below for further discussion). ABARES reports that throughout the year there are great variations in total employment on farms, reflecting the timing of labour-intensive operations. For planting and harvesting, the total number of people employed on farms is highest in late summer and dips significantly in late winter. Sectors such as production horticulture use large amounts of casual and contract labour for this (in contrast, broadacre and dairy farms tend to employ workers on a permanent basis, reflecting their year-round operations). [22]

Production horticulture farms normally rely on workers from overseas during peak seasons, including Pacific Australia Labour Mobility (PALM) workers and Working Holiday Makers (WHMs), who may not be included in various data collection publications, making evidence for future need difficult to quantify (see data gaps section for further discussion). It also means unforeseen disruptions such as COVID-19, when the number of WHMs in Australia declined by 87%, can leave employers with severe skills and labour shortages that are unlikely to be filled by domestic workers in the short term or without significant government incentives.

ABARES has also suggested the need for further research and analysis of worker productivity, costs and outcomes for growers under different labour supply models such as labour hire and contractors (relating to both seasonal workers and working holiday makers).[23]

Labour shortages

The National Skills Commission's (2022) Skills Priority List drew attention to occupations that are in national shortage, such as Sports Turf Trades Worker, and in regional shortage, including Horticultural Crop Growers nec.

In their White Paper Submission to the 2022 Jobs and Skills Summit, AUSVEG, which represents the major industry vegetable associations across Australia, noted that 'The Australian vegetable industry faces significant challenges in securing a sufficient, competent, and reliable workforce' with the labour shortage identified to be approximately 10,000 individual workers. They further identified that the ongoing labour shortage resulted not just in the economic cost of lost production, but also a reduction in investment to improve future efficiencies and profitability.[24]

The Queensland Agricultural Industry Workforce Plan 2022-2027, prepared by Queensland Farmers' Federation and Jobs Queensland in collaboration with the Rural Jobs and Skills Alliance, noted that the fruit, nut, and vegetable sectors all rely heavily on casual labour, which generates high training and administration costs and that this, in turn, has a negative impact on workforce efficiency.[25]

Sustaining plants

Within the overarching strategy of sustaining plants, trees, animals, and materials, there are specific issues in production horticulture around the use of pesticides. The introduction of a single national law covering the use of pesticides has been proposed[26] and, if introduced, is likely to have a significant impact on the requirements for operations and workplace safety training in this sector.

Vertical farming is an emerging method of growing and sustaining fruit and vegetables in vertically stacked layers in an indoor, controlled environment. Vertical farming utilises horticultural techniques but usually without natural light and soil. Such approaches will be monitored for their impact on skills and workforce needs.

Digital and automation practices

Agricultural technology is already extensively utilised in production horticulture, including with robotics and automation, and will continue to have a significant impact on the skills required in the sector.

Pay rates

Pay rates in Victoria for production horticulture workers have recently increased and are anticipated to have flow-on impacts on workforce dynamics,[27] including in the workforce attraction and retention strategies of businesses. Such developments will be monitored nationally.

Production Horticulture Summary

Workforce challenges

- The attraction of casual and migrant labour, especially during peak seasons.
- Workforce diversity and culture: gender disparity, ageing workforce, long working hours.
- The adoption of automation and robotics technologies, which is augmenting skills and job roles.

Key evidence gaps

- Data on seasonal and migrant labour employment supply and demand.

Workforce planning priorities

- Research on the productivity and profitability outcomes of different hiring practices and the efficacy of different labour models. **(1a, 1b, 1c, 2a, 2b, 4a, 4b, 4c)**
- Support industry to attract a diverse workforce, including skilled migrant and seasonal workers, to address imbalances and skills shortages. **(2d, 4b, 4c)**
- Identify opportunities for the greater application of emerging methods, e.g. automation, robotics and vertical farming, and develop new training products where necessary. **(2a, 2b, 2c, 3a, 3b)**

3.2. Broadacre Cropping (dryland and/or irrigated)

Broadacre Cropping (Dryland and irrigated)

ANZSIC A0146, A0149, A0151, A0152, A0159

Industry snapshot

$27,486 M
Revenue
(2022-2023)

22,372
Establishments
(2022-2023)

$15,176
Export value
(2022-2023)

25%
Women (2021)
↑ 1% from 2016

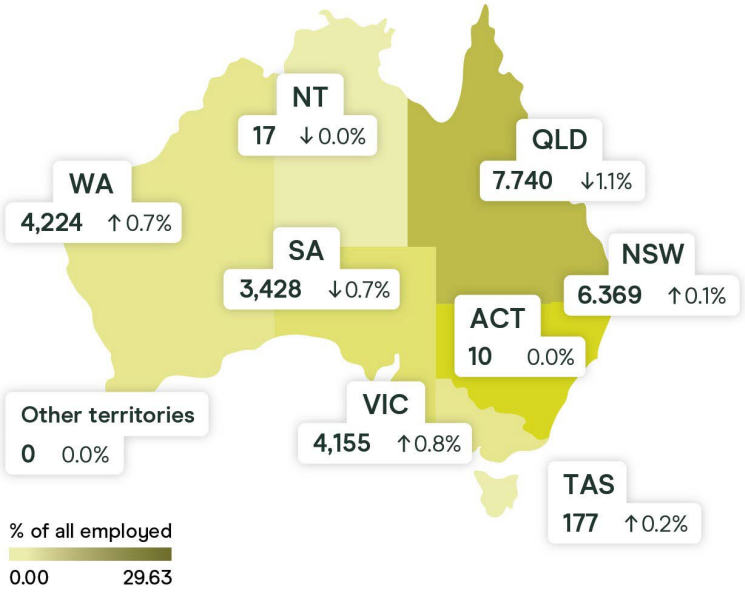
389
Indigenous workers (2021)
↑ 139 from 2016

6.6%
Projected growth in employment
(2026)

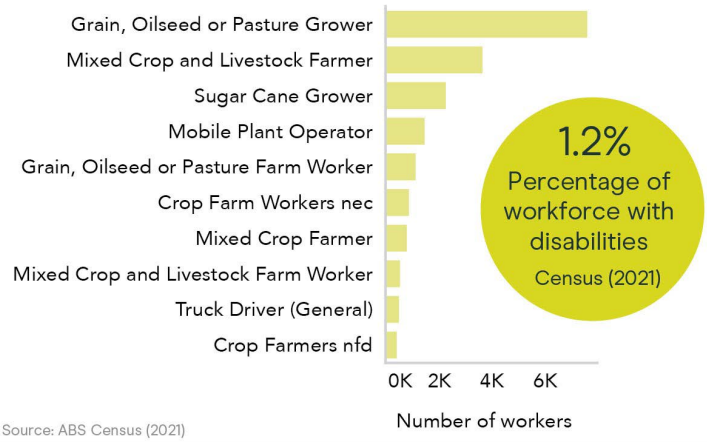
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016



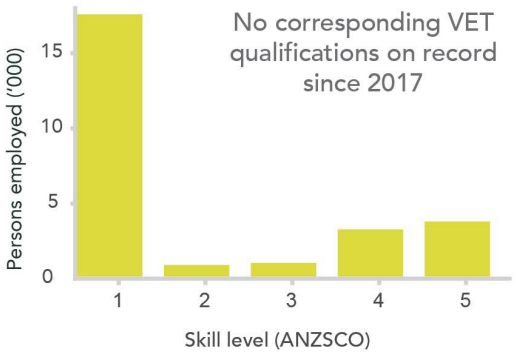
Key Occupations, by employment



1.2%
Percentage of workforce with disabilities
Census (2021)

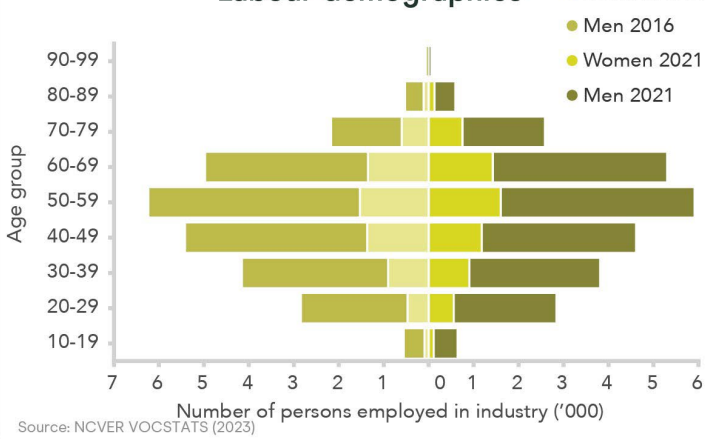
Source: ABS Census (2021)

Industry Skill Level



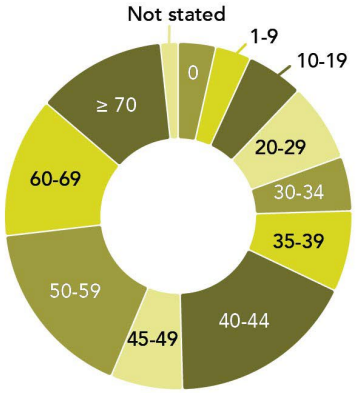
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



Source: ABS Census (2021)

3.2.1. Industry sectors (ANZSIC Classes)

- Rice Growing
- Other Grain Growing (including wheat and barley)
- Sugar Cane Growing
- Cotton Growing
- Other Crop Growing

Note: mixed livestock/crop farming operations are included in the Livestock Farming grouping

Key insights from industry sector infographic and other data	Priority
Labour shortages	High
Lack of gender diversity	Medium
Ageing workforce	Medium

Australia's broadacre cropping industries comprise generally large-scale operations that produce a range of high-quality commodities, including wheat, rice, oats, rye, barley, corn, peas, millet and sorghum. Many broadacre farms also diversify into different cereal-cropping activities and sometimes into livestock farming.

Operations in this industry typically utilise capital-intensive equipment, such as tractors and irrigation systems, and advanced technologies to monitor planted areas, test soil, and irrigate and harvest crops. Rice farms, which are water-intensive operations, use laser technology and advanced software to design farm irrigation systems and achieve water savings. Broadacre cropping businesses also integrate digital technologies and sensors to accurately identify and spray weeds to achieve efficient use of herbicides. Global positioning systems, geographic information systems and spectral imaging for remote sensing assist grain farmers to determine which crops are best suited to each area.

The workforce applies skills to achieve sustainability, efficient water use, soil health, reduced fertiliser use (e.g. through composting), manage pests and adopt new technologies.

Below are examples of units of competency, primarily delivered as part of Certificate III in Agriculture, that are unique to the skills and knowledge applied by competent broadacre cropping workers:

Unit title	Unique skills and knowledge
Operate broadacre and row crop harvest machinery and equipment (AHCMOM308)	This unit applies to individuals who operate broadacre or row crop harvesting machinery and equipment.
Operate broadacre sowing machinery and equipment (AHCMOM309)	The unit applies to individuals who operate broadacre sowing machinery and equipment

3.2.2. Drivers of workforce dynamics

Labour shortages

Broadacre cropping is one of the many sectors within agriculture in which the disparity between new entrants and retirements is predicted to result in a need for additional participants.

The National Skills Commission's 2022 Skills Priority List shows there are regional and state-based shortages, particularly in NSW, Queensland and the NT, for the following occupations:

- Cotton Grower
- Grain, Oilseed, Pulse or Pasture Grower / Field Crop Grower
- Sugar Cane Grower
- Broadacre Crop Growers nec
- Flower Grower
- Senior Broadacre Crop Farm Worker
- Senior Broadacre Crop and Livestock Farm Worker
- Broadacre Crop and Livestock Farmer
- Grain, Oilseed, Pulse and Pasture Farm Worker

The Victorian Skills Authority estimates that Victoria will need an additional 750 crop farmers and workers by 2025, which is one of the largest labour deficits for any industry in the State.[28] Labour shortages for long haul drivers and technical advisors in the sugar cane industry, and a more general seasonal labour shortage in the cotton industry have also been identified in Queensland.[29]

Workforce diversity

Women are under-represented in the broadacre cropping workforce (25% in the 2021 Census, which was only up 1% from 2016). Meanwhile, older age groups are over-represented (54% are aged 50 years and over). Workforce planning strategies, therefore, may focus on the attraction and retention of women and younger people in order to meet succession planning needs.

Digital and automation practices

ABARES data indicates that climate-adjusted productivity in Australia's broadacre industries grew by 0.6% per year on average between 1988–89 and 2021–22. Grain industries in particular had a year-on-year average productivity increase of 1.4% over the same period.[30] According to ABARES Executive Director Jared Greenville, 'Significant advancements in technology and management practices were essential in achieving this result and we need that to continue that.'[31]

Within the broad theme of digital and automation practices, access to labour with competencies in monitoring highly complex and expensive machinery, including mechanics and service people, has been identified as a pressing issue within the grain sector, particularly in Queensland.[32]

Broadacre Cropping Summary

Workforce challenges

- Labour shortages.
- Workforce diversity and culture: gender disparity, ageing workforce, long working hours.
- The adoption of automation and robotics technologies, which is augmenting skills and job roles.

Key evidence gaps

- Relevant VET training is contained within qualifications with broad application and outcomes (e.g. Certificate III in Agriculture and Certificate III in Rural Operations) and there is an evidence gap concerning the flow of graduates to for the broadacre cropping industries.

Workforce planning priorities

- Support industry skills and workforce leadership development, notably to help implement succession planning strategies **(2a, 2d)**
- Support industry to attract a diverse workforce to address imbalances and labour shortages **(4b)**
- Support strategies to address skills shortages, especially concerning digital technology and machinery operation. **(2a, 2c, 3a, 3b, 4b)**
- Research on the flow of graduates from relevant VET qualifications, and other education and training pathways, to/within the broadacre cropping industries. This may support the identification of skills gaps, duplication in existing training pathways, and the extent to which delivering more graduates may help to alleviate skills shortages. **(1a, 3a)**

3.3. Livestock Farming

Livestock farming

ANZSIC A0141, A0124, A0143, A0144, A0145, A0180, A0191

Industry snapshot

$48,049 M
Revenue
(2022-2023)

95,003
Establishments
(2022-2023)

$3,759 M
Export value
(2022-2023)

32%
Women (2021)
↑ 1% from 2016

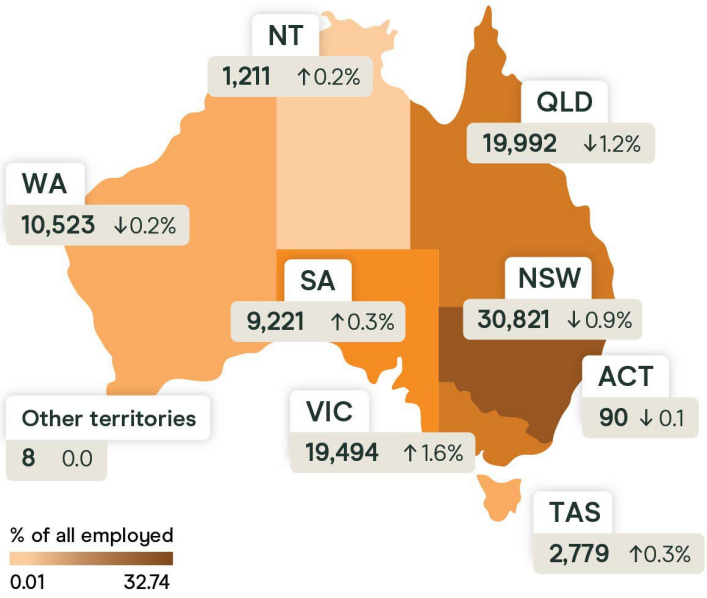
1,506
Indigenous workers (2021)
↑ 296 from 2016

6.1%
Projected growth in employment
(2026)

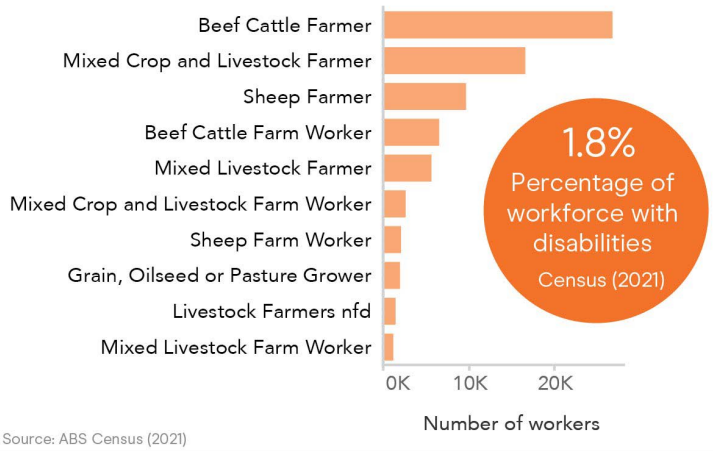
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016

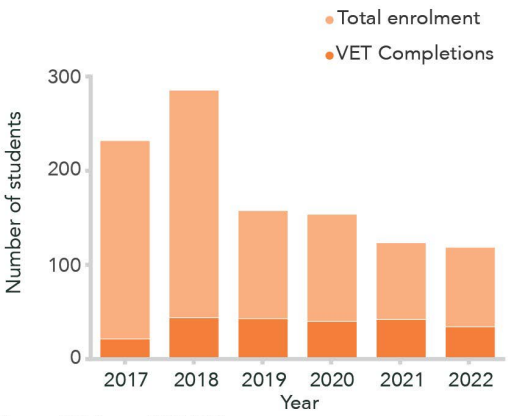


Key Occupations, by employment



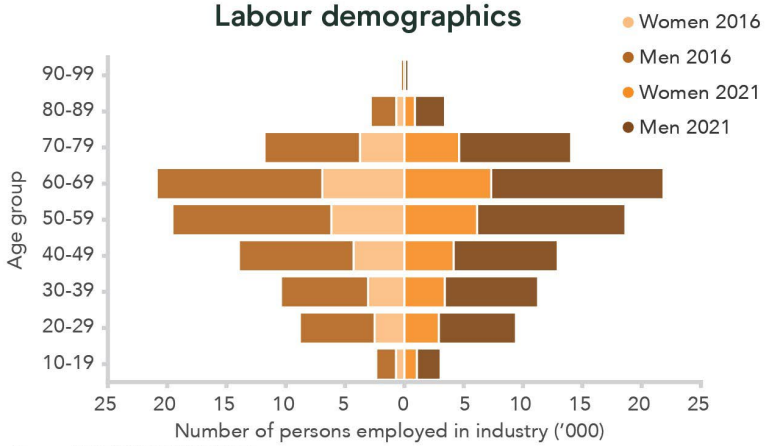
Source: ABS Census (2021)

VET Enrolments and completions



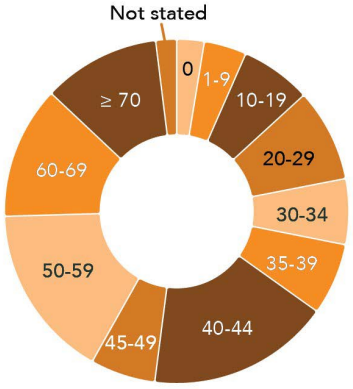
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



Source: ABS Census (2021)

3.3.1. Industry sectors (ANZSIC Classes)

- Sheep Farming (Specialised)
- Beef Cattle Farming (Specialised)
- Beef Cattle Feedlots (Specialised)
- Sheep-Beef Cattle Farming
- Grain-Sheep or Grain-Beef Cattle Farming
- Deer Farming
- Horse Farming

Note: this grouping includes mixed livestock and mixed livestock/crop farming operations

Key insights from industry sector infographic and other data	Priority
Labour shortages	High
Workplace health and safety issues	High
Fluctuations in VET qualification enrolments and completions	High
Ageing workforce	Medium

The livestock industry plans, organises, controls, coordinates and performs farming operations to breed and raise livestock for the production of breeding stock, meat and other products and uses (see also: Livestock Product Processing Supply Chain industry grouping, which covers the value chain associated with products such as milk, eggs, and honey).

This industry consists of either specialised or mixed livestock farms that breed and farm one or a variety of animals, including horses (associated with the horse racing industry), sheep and beef cattle. This grouping also includes mixed crop and livestock farming operations, which grow grain in conjunction with beef cattle or sheep farming activities to reduce business risks associated with unfavourable weather conditions and volatile markets. Safety risks are inherent to working with animals, especially on crocodile farms.

The skills and knowledge applied by the Livestock Farming workforce relate to implementing breeding, feeding and nutrition programs; monitoring and maintaining the health, welfare and condition of livestock; managing biosecurity and other risks; providing water, pastures and fodder crops to maintain livestock health and condition; and organising the sale, purchase and transportation of livestock; and managing farm business finances and records. Livestock farming generally involves capital-intensive technologies and machinery to maintain cattle grazing pastures, equipment for branding, electric cattle tagging, vehicles for navigating large properties, and digital systems to monitor, analyse and record data relating to herd movement and health.

The National Training Register details qualifications corresponding to specialised job roles in Livestock Farming, including Feedlot Operations (Certificate III) and Working with Crocodiles (Certificate III). Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent industry workers:

Unit title	Unique skills and knowledge
Remove and facilitate reuse of effluent and manure from an intensive production system (AHCLSK328)	This unit applies to individuals who remove and facilitate reuse of effluent and manure from an intensive livestock production system. Work must comply with animal welfare and biosecurity legislation, as well as relevant local council, State or Commonwealth licensing requirements for operations involving effluent and manure.
Harvest crocodile eggs (SFICRO304)	This unit applies to individuals who collect crocodile eggs from crocodile nests. Harvesting activities mainly relate to saltwater crocodile eggs but may also entail other crocodile species.

3.3.2. Drivers of workforce dynamics

Labour shortages

The National Skills Commission's 2022 Skills Priority List data shows there are regional and state-based shortages, particularly in NSW, Queensland and the NT, for the following occupations:

- Livestock Farmers nec
- Livestock Husbandry Worker
- Beef Cattle Farmer
- Sheep Farmer
- Mixed Cattle and Sheep Farmer
- Broadacre Crop and Livestock Farmer
- Senior Broadacre Crop and Livestock Farm Worker
- Senior Beef Cattle Station Worker
- Senior Cattle and Sheep Farm Worker
- Senior Sheep Farm Worker
- Senior Livestock Farm Workers nec
- Beef Cattle Farm Worker
- Cattle and Sheep Farm Worker
- Sheep Farm Worker

The Victorian Skills Authority calculated that, to meet anticipated demand, Victoria will need an additional 1350 livestock farmers and 150 workers in the 2022 to 2025 period.[33] This was mainly attributed to a disparity between new entrants and retirements in the industry. This Victorian Skills Authority data is not reflected in the National Skills Commission's 2022 Skills Priority List, however, and this evidence gap will be investigated further.

Workplace Health and Safety

Based on industry feedback, the Queensland Agricultural Industry Workforce Plan 2022-2027 identified that the rate of cattle mustering-related WHS incidents and injuries could be reduced if there was greater access to induction training for new entrants. The report suggested that the limited capacity of RTOs to support the industry may need to be addressed.[34]

Ageing workforce

The 2021 Census indicates that the livestock farming sector has an ageing workforce, with workers over 50 years accounting for 61% of the workforce. Workforce planning strategies, therefore, may focus on the attraction and retention of younger people to meet succession planning needs.

Livestock Farming Summary

Workforce challenges

- Labour shortages.
- Workforce diversity and culture: gender disparity, ageing workforce, long working hours.
- Workplace health and safety.
- Declining VET enrolments in sector-specific qualifications (though outcomes from general qualifications with multiple potential outcomes may be a mitigating factor).

Key evidence gaps

- National and state-based jobs and skills priorities data disparities.
- Integration of workplace health and safety data within national datasets, such as the Australian Skills Classification, for greater rigour when considering transferable skills.

Workforce planning priorities

- Support industry skills and workforce leadership development, notably to help implement succession planning strategies. **(2a, 2d)**
- Support industry to attract a diverse workforce to address imbalances and labour shortages. **(4b)**
- Work with Jobs and Skills Australia to explore how workforce safety data, including from SafeWork Australia and state/territory bodies, can be integrated with existing datasets. **(1a)**
- Work with key agencies to assess gaps in jobs and skills shortage datasets and to collaborate on potential solutions. **(1a, 1b)**
- Research on declining enrolments, relevant outcomes from other qualifications (including ones with multiple potential outcomes, such as Certificate III in Agriculture), and other training pathways to/within livestock farming. This may support the identification of barriers to training delivery, skills gaps, duplication in existing training pathways, and the extent to which delivering more graduates may help to alleviate skills shortages. **(1a, 3a)**
- Support relationship building and collaboration between employers and training organisations, including to connect national training products with delivery of training 'on the ground'. **(3d)**

3.4. Livestock (product processing supply chain)

Livestock (Product processing supply chain)

ANZSIC A0141, A0124, A0143, A0144, A0145, A0180, A0191

Industry snapshot

$10,054 M
Revenue
(2022-2023)

9,376
Establishments
(2022-2023)

$65 M
Export value
(2022-2023)

35%
Women (2021)
↑ 2% from 2016

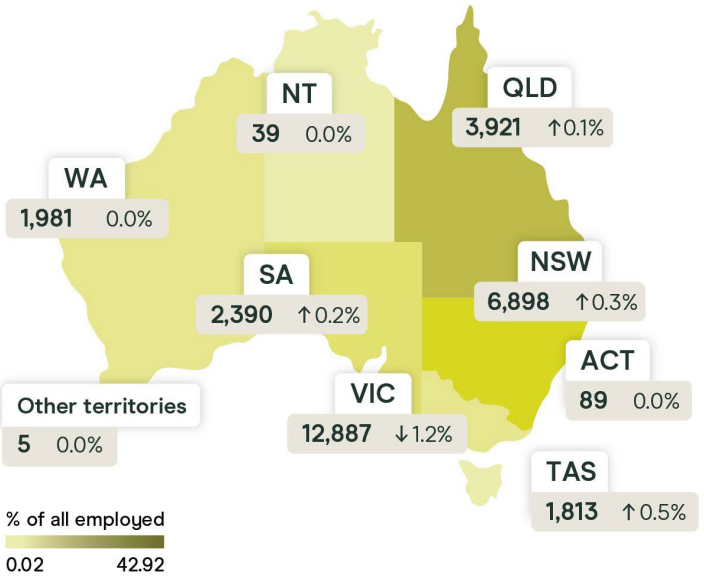
703
Indigenous workers (2021)
↑ 95 from 2016

9.9%
Projected growth in employment
(2026)

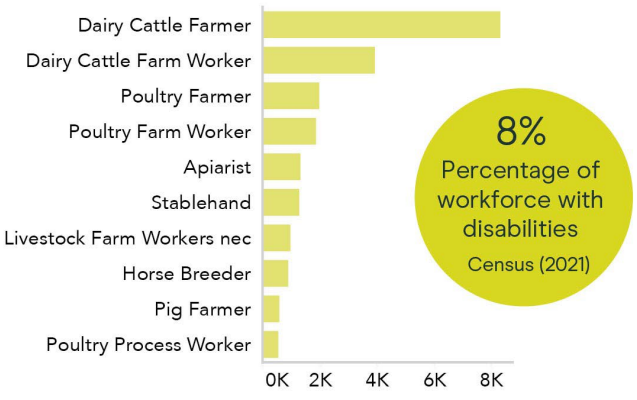
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016



Key Occupations, by employment

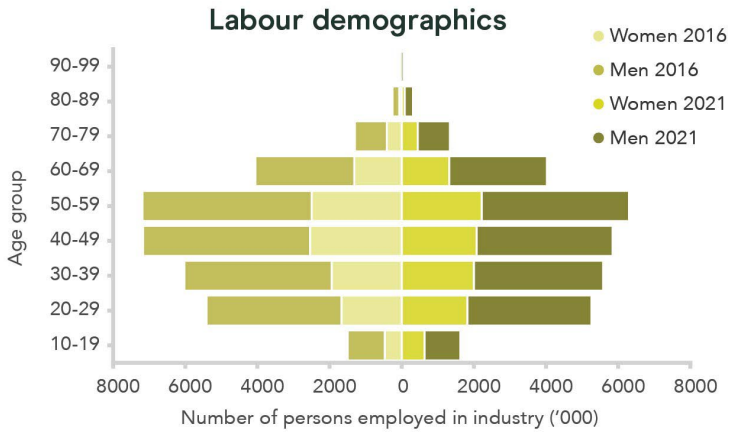


Source: ABS Census (2021)

VET Enrolments and completions

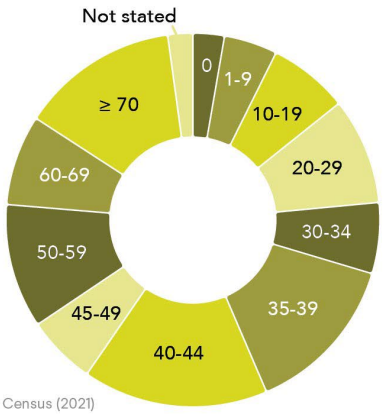
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



Source: ABS Census (2021)

3.4.1. Industry sectors (ANZSIC Classes)

- Dairy Cattle Farming
- Poultry Farming (Meat)
- Poultry Farming (Eggs)
- Pig Farming
- Beekeeping
- Other Livestock Farming

Key insights from industry sector infographic and other data	Priority
Labour shortages	High
Lack of gender diversity	Medium
Ageing workforce	Medium

Operations in the Livestock Product Processing Supply Chain are generally more intensive than in Livestock Farming, often with small land footprints or undertaken in sheds. Livestock are grown for meat and to produce milk or eggs. Farmers supply live animals to meat processors, or supply animal products, such as honey, to wholesalers or food processors.

The Livestock Product Processing Supply Chain workforce perform farming operations, such as handling animals, drenching and milking livestock, identifying and sexing chickens, operating and sterilising machines, coordinating apiary production of honey, queen bee pollen, beeswax and royal jelly, and collecting, grading and packaging produce. The workforce also undertakes activities to maintain infrastructure, such as sheds, pens and water supply systems, and collect and analyse data from automated or robotic systems. Skills in biosecurity and quality assurance are vital for this workforce to ensure animal health and product safety.

The National Training Register details qualifications corresponding to specialised job roles in this industry, including:

- Certificate III in Dairy Production
- Certificate III in Poultry Production
- Certificate III in Pork Production
- Certificate III in Beekeeping

Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent industry workers:

Unit title	Unique skills and knowledge
Remove a honey crop from a hive (AHCBEK304)	This unit applies to individuals who separate bees from ripe honeycomb and remove the full comb from the hive for transport to the extracting facility. State and territory legislation and local government by-laws apply in some jurisdictions to beehive ownership, including for biosecurity and food safety.

Grade and pack eggs for human consumption (AHCPLY209)	This unit applies to individuals who grade and pack eggs from a variety of poultry species intended for human consumption. Work environments may include poultry farms and packing sheds. Commonwealth and/or state/territory health and safety, environmental protection and biosecurity legislation, regulations and codes of practice apply to keeping and working with poultry, and food safety regulations and codes also apply to eggs that are produced and sold for human consumption.
Implement feeding plans for intensive production (AHCLSK310)	This unit applies to individuals who implement feeding plans in accordance with workplace health and safety, animal welfare, sustainability and biosecurity legislation and codes of practice.

3.4.2. Drivers of workforce dynamics

Labour Shortages

The National Skills Commission's (2022) Skills Priority List drew attention to the following occupations in this industry group as experiencing skills shortages.

The National Skills Commission's 2022 Skills Priority List data shows national shortages of:

- Apiarists
- Piggery Farm Workers
- Senior Piggery Stockpersons

There are also regional and state-based shortages for the following occupations:

- Dairy Cattle Farmer
- Senior Dairy Cattle Farm Worker
- Pig Farmer
- Dairy Cattle Farm Worker
- Poultry Farmer
- Poultry Farm Worker

A 2022 industry survey that found that 22% of dairy farmers were also unable to fill vacant positions within three months, with 40% losing at least one or more workers.[35]

Livestock (product processing supply chain) Summary

Workforce challenges

- Labour shortages.
- Workforce diversity and culture: gender disparity, ageing workforce, long working hours.

Key evidence gaps

- No noted gaps specific to Livestock (product processing supply chain) at this time.

Workforce planning priorities

- Support industry skills and workforce leadership development, notably to help implement succession planning strategies. **(2a, 2d)**
- Support industry to attract a diverse workforce to address imbalances and labour shortages. **(4b)**

3.5. Agriculture, Forestry and Fishing Support Services

Agriculture, Forestry and Fishing Support Services

ANZSIC A0111, A0112, A0113, A0114, A0115, A0121, A0122, A0123, A0131, A0132, A0133 A0134, A0135, A0136 A0137, A0139

Industry snapshot

$7,800 M
Revenue
(2022-2023)

18,655
Establishments
(2022-2023)

$2,751 M
Export value
(2022-2023)

28%
Women (2021)
↑ 2% from 2016

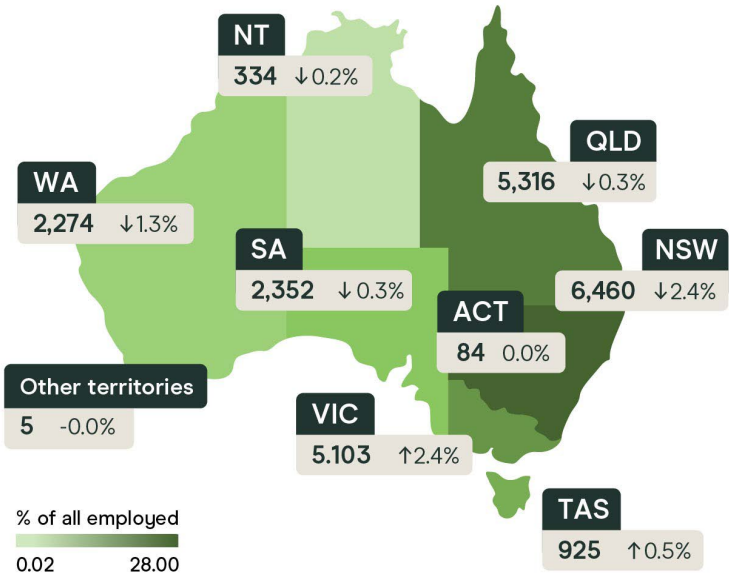
1,025
Indigenous workers (2023)
↑ 292 from 2016

1.9%
Projected decline in employment
(2026)

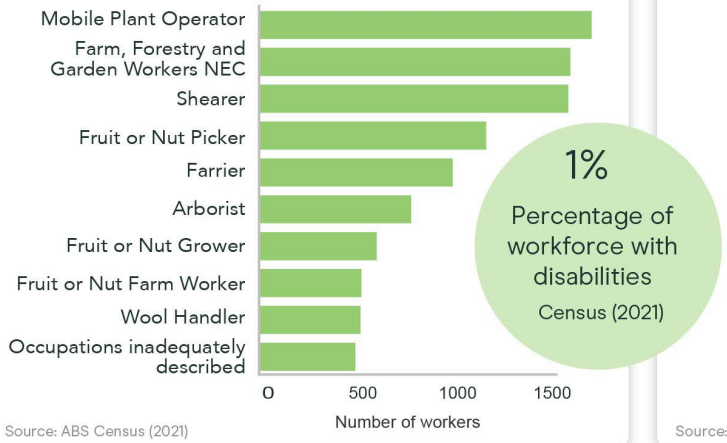
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016



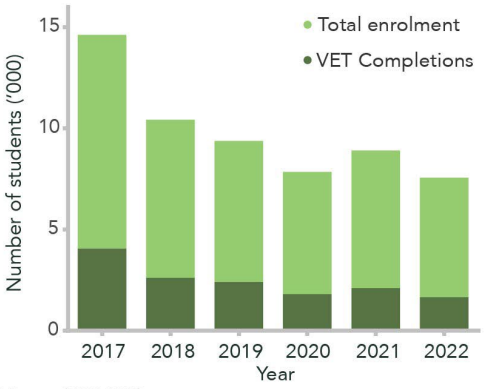
Key Occupations, by employment



1%
Percentage of workforce with disabilities
Census (2021)

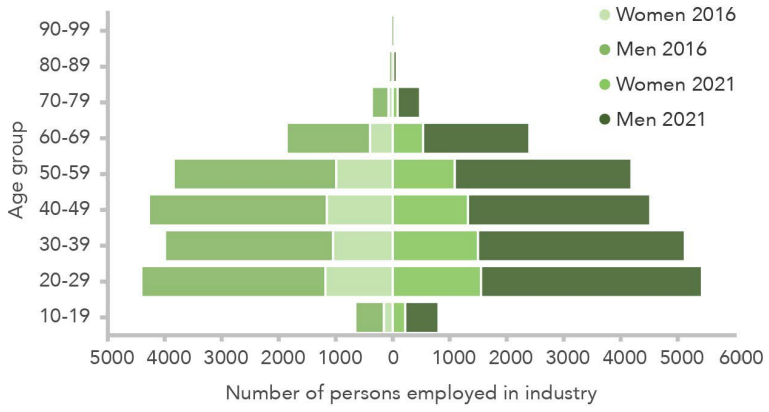
Source: ABS Census (2021)

VET Enrolments and completions



Source: ABS Census (2016, 2021)

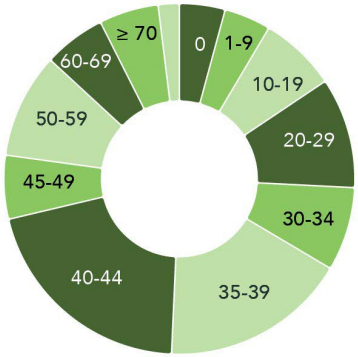
Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly

15 years and over



Source: ABS Census (2021)

3.5.1. Industry sectors (ANZSIC Classes)

- Hunting and Trapping
- Forestry Support Services
- Cotton Ginning
- Other Agriculture and Fishing Support Services
- Shearing Services
- Farm Animal and Bloodstock Leasing

Key insights from industry sector infographic and other data	Priority
Labour shortages	High
Declining VET programme enrolments and completions	High
Lack of gender diversity	Medium

Agriculture, Forestry and Fishing Support Services are a highly specialised group of industry sectors, whose functions are critical to the safe and effective operations of multiple other industries, and in responding to external drivers of change, including climate change, digital practices and biosecurity threats. Businesses in *agriculture, forestry and fishing* have increasingly been seeking support services to improve efficiencies and productive capabilities in cropping, marketing and handling, irrigation, shearing and crutching, wool classing, aerial pest control or baiting, seed cleaning and grading, pruning, animal artificial insemination, reforestation, conservation and landcare. The skills and knowledge applied by the *Agriculture, Forestry and Fishing Support Services* workforce relate to cross-industry needs, such as to ensure high animal welfare, but are highly contextualised and cannot be immediately transferred from job roles in other industries.

The National Training Register details qualifications corresponding to specialised job roles in *Agriculture, Forestry and Fishing Support Services*. These include:

- Irrigation (Certificate II)
- Shearing (Certificates II and III)
- Wool Handling (Certificate II)
- Rural and Environmental Pest Management (Certificate III)
- Irrigation Technology (Certificate III)
- Rural Merchandising (Certificate III)
- Wool Clip Preparation (Certificate III)
- Advanced Wool Handling (Certificate III)
- Irrigation Management (Certificate IV)
- Wool Classing (Certificate IV)
- Pest Management (Certificate IV and Diploma)
- Irrigation Design (Diploma)
- Applied Agronomy (Diploma)

Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent workers in *Agriculture, Forestry and Fishing Support Services*:

Unit title	Unique skills and knowledge
Apply poison baits for vertebrate pest control in rural and environmental landscapes (AHCPMG312)	This unit describes the skills and knowledge required for the safe preparation and distribution of poison baits for the control of vertebrate pest animals affecting the rural and natural environment according to legislative and regulatory requirements.
Collect samples for a rural production or horticulture monitoring program (AHCWRK313)	This unit describes the skills and knowledge required to collect samples as part of a rural production or horticulture monitoring program or while conducting post-mortem examination of livestock or other animals.
Class fleece wool (AHCWOL405)	The unit applies to wool classers who class wool as a professional service after consultation with the grower or shed manager. This unit describes the skills and knowledge required to class fleece wool from merino and crossbred sheep into lines that meet the requirements of the Code of Practice for the Preparation of Australian Wool Clips. All work must be carried out to comply with workplace procedures, work health and safety, animal welfare and biosecurity legislation and codes.
Apply plant biology to agronomic practices (AHCBAC513)	This unit applies to individuals who apply specialised skills and knowledge to the application of plant biology, including plant taxonomy, plant morphology and plant physiology, to a wide range of agronomic practices, and take personal responsibility and exercise autonomy in undertaking complex analytical work.

3.5.2. Drivers of workforce dynamics

Labour shortages

The National Skills Commission's 2022 Skills Priority List data shows national shortages of the following occupations:

- Agronomist
- Agricultural Consultant
- Agricultural Research Scientist
- Agricultural and Agritech Technician

There are also regional and state-based shortages for the following occupations:

- Agricultural Engineer
- Agricultural and Agritech Technician
- Shearer
- Wool Classer
- Agricultural and Horticultural Mobile Plant Operator

Agriculture, Forestry and Fishing Support Services Summary

Workforce challenges

- Labour shortages.
- Workforce diversity and culture: gender disparity, long working hours.
- Declining VET enrolments in sector-specific qualifications (though outcomes from general qualifications with multiple potential outcomes may be a mitigating factor).

Key evidence gaps

- No relevant qualifications outcomes data presented in NCVER's 'VET student outcomes 2022: qualification completer outcomes by qualification'.

Workforce planning priorities

- Support industry skills and workforce leadership development. **(2a)**
- Support industry to attract a diverse workforce to address imbalances and labour shortages. **(4b)**
- Research on declining enrolments, relevant outcomes from other qualifications (including ones with multiple potential outcomes, such as Certificate III in Agriculture), and other training pathways to/within Agriculture, Forestry and Fishing Support Services. This may support the identification of barriers to training delivery, skills gaps, duplication in existing training pathways, and the extent to which delivering more graduates may help to alleviate skills shortages. **(1a, 3a)**
- Support relationship building and collaboration between employers and training organisations, including to connect national training products with delivery of training 'on the ground'. **(3d)**

3.6. Aquaculture

Aquaculture

ANZSIC A0201, A0202, A0203

Industry snapshot

$2,315 M
Revenue
(2022-2023)

1,271
Establishments
(2022-2023)

$36 M
Export value
(2022-2023)

26%
Women (2021)
↑ 4% from 2016

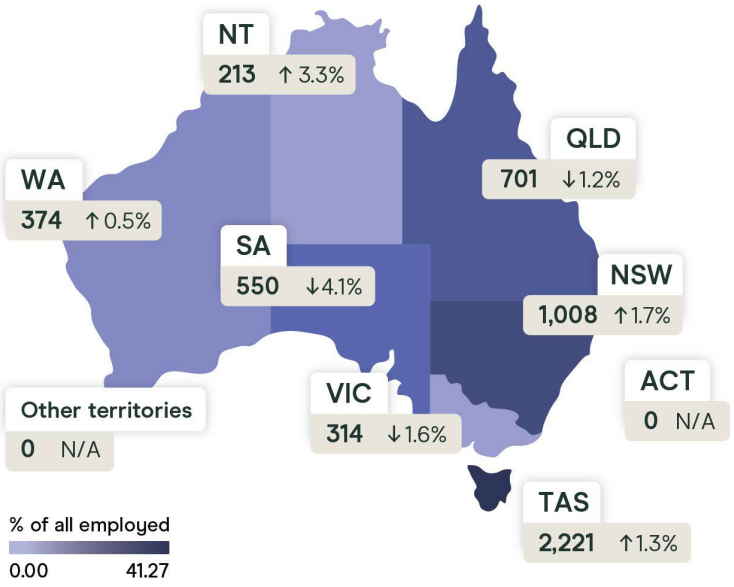
275
Indigenous workers (2021)
↑ 97 from 2016

11.7%
Projected decline in employment
(2026)

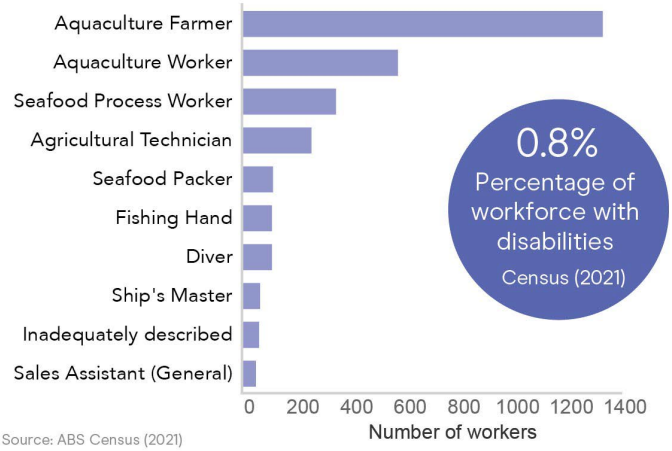
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016

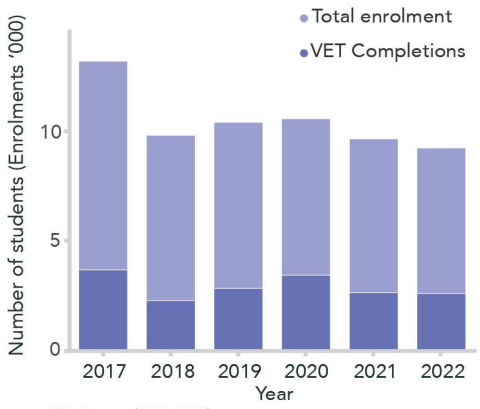


Key Occupations, by employment



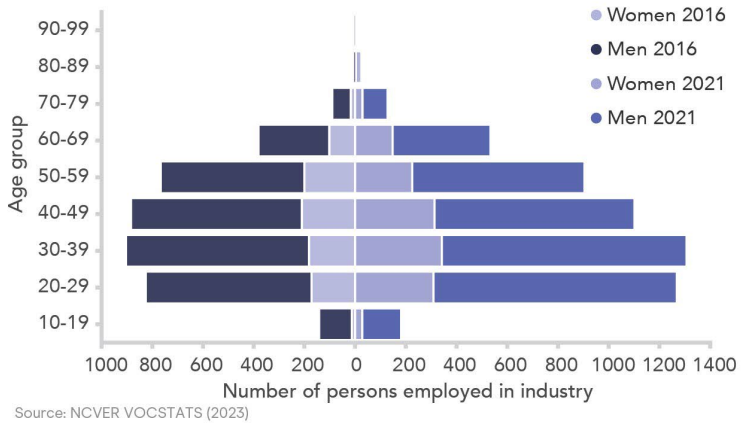
Source: ABS Census (2021)

VET Enrolments and completions



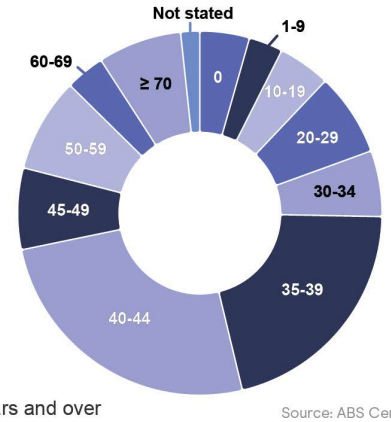
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



15 years and over

Source: ABS Census (2021)

3.6.1. Industry sectors (ANZSIC Classes)

- Offshore Longline and Rack Aquaculture
- Offshore Caged Aquaculture
- Onshore Aquaculture

Key insights from industry sector infographic and other data	Priority
Labour shortages	High
Declining VET qualification enrolment and completions	High
Lack of workforce diversity	Medium

High level skills in aquatic biosecurity and sustainability are foundational to the aquaculture workforce and Australia's continuing reputation for producing high quality seafood. This is underpinned by current and emerging practices utilising technology and traceability systems to provide consumers with information on seafood provenance and production methods, inclusive of maintaining aquatic animal health, carbon emission mitigation, and regulatory compliance.

The skills and knowledge applied by the aquaculture workforce are highly contextualised and cannot be immediately transferred from job roles in other industries. The National Training Register details qualifications corresponding to specialised job roles in *aquaculture*. These include Certificates II, III and IV, and Diploma of Aquaculture. Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent aquaculture workers:

Unit title	Unique skills and knowledge
Manage water quality and environmental monitoring in enclosed systems (SFIAQU403)	This unit applies to individuals who develop and implement water quality and environmental monitoring programs and procedures for enclosed systems.
Culture new aquaculture species (SFIAQU511)	This unit applies to individuals who undertake to introduce new aquatic species that has not been previously cultured in the workplace. It includes the ability to research information on new target species, condition broodstock, rear larvae, and analyse and record data.
Conduct an aquatic environmental audit (SFIEMS502)	This unit of applies to individuals who contribute to the development and implementation of aquatic plans and strategies by conducting an aquatic environmental audit that incorporates ecological issues and the management of aquatic species. All work must be carried out to comply with relevant state/territory health and safety, food safety, biosecurity and environmental regulations, legislation and standards.

Design a recirculating aquaculture system (SFIAQU510)	This unit applies to individuals who design, upgrade, set up, review and/or modify a recirculating aquaculture system to suit changing circumstances.

3.6.2. Drivers of workforce dynamics

Labour Shortages

The aquaculture workforce in Queensland is projected to increase by over 18% between 2020-21 and 2024-25.[36] Similar growth is likely to be experienced in other regions with an established or developing aquaculture industry.

The House of Representatives Standing Committee on Agriculture and Water Resources have detailed evidence of issues in attracting and retaining sufficient skilled labour to the industry, including from industry submissions relating to shortages of skilled labour, and dramatic increases in the number of job advertisements. There was also criticism of the current education and training provided by universities and RTOs.[37]

The Victorian Skills Authority identified an ageing workforce in aquaculture, leaving fewer workers to provide mentoring and leadership to help develop the next generation of the workforce.[38]

The National Skills Commission's 2022 Skills Priority List identified state-based shortages of:

- Aquaculture Farmers
- Aquaculture or Fisheries Scientists
- Aquaculture or Fisheries Technicians
- Fisheries Officers
- Aquaculture Supervisors
- Senior Aquaculture, Crop and Forestry Workers nec

However, these shortages are identified primarily in NSW and Queensland, and not in Victoria. The apparent inconsistency between these findings and those of the Victorian Skills Authority will be investigated further.

Digital and automation practices

In the aquaculture industry, underwater drones, and other remotely operated vehicles (ROVs) are used to monitor fish health and environmental conditions and to inspect and repair nets. Industry feedback provided to Skills Impact indicated a high level of demand for training in multiple aspects relating to drones.[39]

Aquaculture Summary

Workforce challenges

- Labour shortages.
- Workforce diversity and culture: gender disparity, long working hours.
- The adoption of digital technologies, which is augmenting skills and job roles.
- Declining VET enrolments and completions.

Key evidence gaps

- No relevant qualifications outcomes data presented in NCVER's 'VET student outcomes 2022: qualification completer outcomes by qualification'.
- National and state-based jobs and skills priorities data disparities.

Workforce planning priorities

- Support industry to attract a diverse workforce to address imbalances and labour shortages. **(4b)**
- Work with key agencies to assess gaps in jobs and skills shortage datasets and to collaborate on potential solutions. **(1a, 1b)**
- Research on declining enrolments and completions, and other education and training pathways to/within Aquaculture. This may support the identification of barriers to training delivery, skills gaps, duplication in existing training pathways, and the extent to which delivering more graduates may help to alleviate skills shortages. **(1a, 3a)**
- Create a pilot database or tool that identifies similar performance criteria across multiple units of competency that may be trained and assessed simultaneously. This tool may help in the creation of assessment and training resources for aquaculture qualifications to be delivered. **(3c)**
- Support relationship building and collaboration between employers and training organisations, including to connect national training products with delivery of training. **(3d)**

3.7. Fishing and Wild Catch

Fishing and Wild catch

ANZSIC A0411, A0413, A0414, A0419

Industry snapshot

$1,494 M
Revenue
(2022-2023)

448
Establishments
(2022-2023)

$992 M
Export value
(2022-2023)

19%
Women (2021)
↑ 1% from 2016

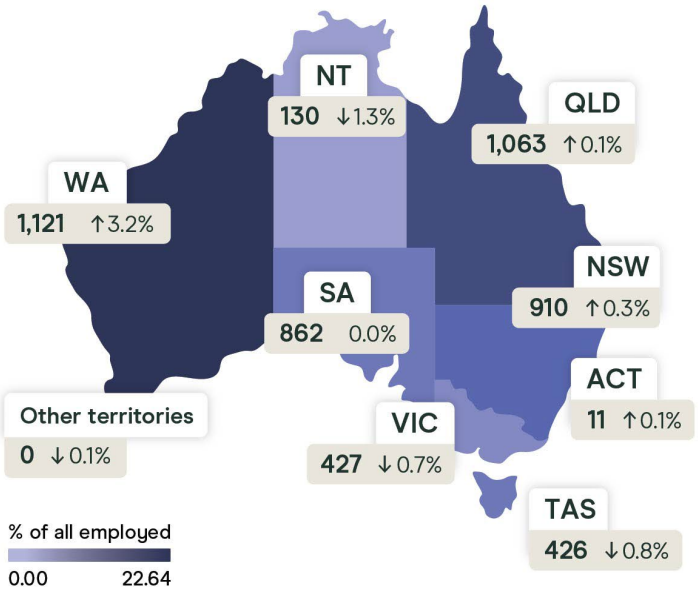
208
Indigenous workers (2021)
↑ 50 from 2016

1.3%
Projected decline in employment
(2026)

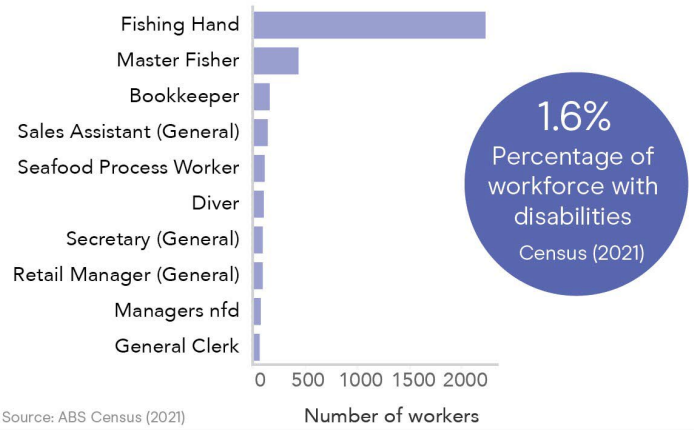
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016



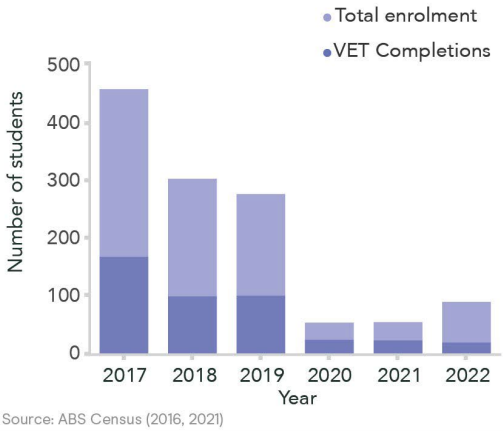
Key Occupations, by employment



1.6%
Percentage of workforce with disabilities
Census (2021)

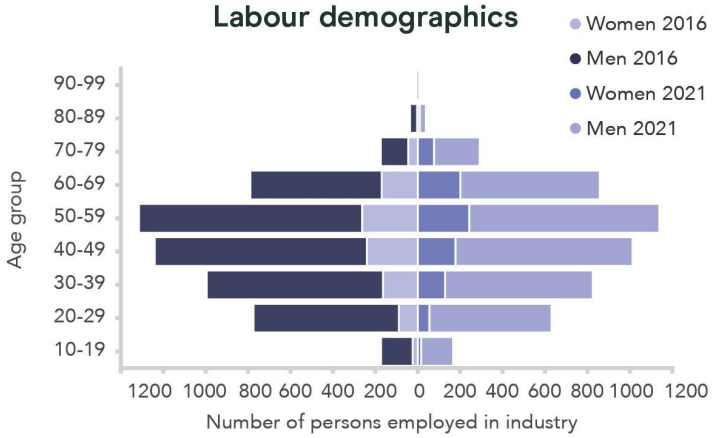
Source: ABS Census (2021)

VET Enrolments and completions



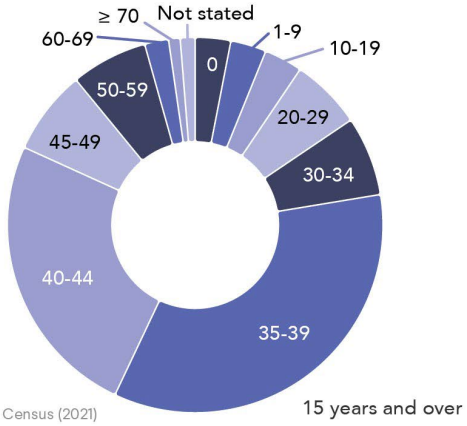
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



Source: ABS Census (2021)

3.7.1. Industry sectors (ANZSIC Classes)

- Prawn Fishing
- Line Fishing
- Fish Trawling, Seining and Netting
- Other Fishing and wild catch

Key insights from industry sector infographic and other data	Priority
Labour shortages	High
Declining VET programme enrolment and completions	High
Lack of workforce diversity	High

Businesses in this industry catch inshore, estuarine, offshore and freshwater fish, finfish, molluscs, crustaceans, prawns, rock lobsters, oysters and pearls. The commercial fishing industry operates with advanced vessel design and technologies, including global positioning systems (GPS) and colour sounders, providing real-time updates on tides, weather conditions and indications of productive fishing zones. The sector is highly regulated across every level, meaning that businesses must adhere to complex and overlapping international, national, state/territory and local compliance legislation.

The industry covers a broad range of occupations, with highly contextualised skills and knowledge, including in the custodianship and roles performed by First Nations peoples, that cannot immediately be transferred from jobs in other industries. The National Training Register details qualifications corresponding to specialised job roles in fishing and wild catch:

- Fishing Operations (Certificates II and III)
- Fisheries Compliance (Certificate II, III, IV and Diploma)

Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent industry workers:

Unit title	Unique skills and knowledge
Monitor fish catches for legal compliance (SFICPL308)	This unit applies to individuals who monitor fish catches and fisheries quotas for legal compliance, and record and report all compliance activities. All work must be carried out to comply with relevant state/territory health and safety, food safety, biosecurity and environmental regulations, legislation and standards.
Construct nets and customise design (SFIFSH303)	This unit applies to individuals who construct nets used as fish or prawn trawls, purse seines, beach seines, gill nets and the net component of holding cages.
Locate fishing grounds and stocks of fish (SFIFSH305)	This unit applies to individuals who position the fishing operation to locate concentrations of fish and fishing environments. It includes the ability to use electronic aids and sources of information to position the vessel and locate fishing grounds. Maritime authority licencing and regulatory requirements apply to this unit.

3.7.2. Drivers of workforce dynamics

Labour Shortages

The National Skills Commission's 2022 Skills Priority List identified state-based and regional shortages of:

- Master Fisher
- Aquaculture or Fisheries Scientist
- Aquaculture or Fisheries Technician
- Fishing Leading Hand
- Deck Hand
- Fishing Hand

Data from the 2021 Census shows that women only account for 19% of the fishing and wild catch workforce (only up 1% from 2016). Participation by First Nations peoples rose by 1.4% between 2016 and 2021.

The Australia Government *National Fisheries Plan 2022-2030* identifies multiple initiatives with the intended outcome being a prosperous workforce and a health fishing, aquaculture and seafood community.[40] The implementation of the Plan is being driven through the National Fisheries Plan Coordination Group, made up of members from Commonwealth and state and territory governments, and sector representatives. The Coordination Group has agreed to progress work to support employment, participation and health in the fishing, aquaculture, and seafood sectors.[41]

First Nations collaboration

Collaborating with First Nations stakeholders means working with different groups and communities to ensure mutually agreed aspirations and objectives are being met, as well as supporting the development of the First Nations fishing sector.

Consideration of the skills required to work with traditional owners and custodians are included in workforce planning activities. This is a priority strategy following recent examples of commercial fishers being banned from important fishing areas in the Northern Territory after the breakdown of negotiations between the Northern Territory Government and the Northern Land Council, which represents traditional owners, who are concerned about overfishing. This move has impacted the local commercial fishing industry and may result in job losses.[42]

The National Fisheries Plan aims to empower the First Nations fishing sector and actively involve customary practices. Initiatives are being led by the Fisheries Research and Development Corporation Indigenous Reference Group and the Australian Fisheries Management Forum Indigenous Working Group to implement these objectives. Through this work it is envisioned that employment may be created in the seafood industry as well as in fisheries management.

Biosecurity and contamination

As part of their Northern Biosecurity Strategy 2030, the Northern Australian Framework Reference Group singled out marine and aquatic environments as requiring additional workforce biosecurity skills. Their recommendations included to build incursion response capability through the training of industry participants and Indigenous Rangers. There are additional requirements for building subject matter expertise capability for pest management, response, diagnostics and for endemic pests in Northern Australia.[43]

Fishing and Wild Catch Summary

Workforce challenges

- Labour shortages.
- Workforce diversity and culture: gender disparity, ageing workforce and long working hours.
- Empowering the First Nations fishing sector.
- Declining VET enrolments and completions.

Key evidence gaps

- No noted gaps specific to Fishing and Wild Catch at this time.

Workforce planning priorities

- Support industry to attract a diverse workforce to address imbalances and labour shortages. **(2d, 4b)**
- Research on declining enrolments and completions, and other education and training pathways to/within Fishing and Wild Catch. This may support the identification of barriers to training delivery, skills gaps, duplication in existing training pathways, and the extent to which delivering more graduates may help to alleviate skills shortages. **(1a, 3a)**
- Support relationship building and collaboration between employers and training organisations, including to connect national training products with delivery of training. **(3d)**
- Research and analysis of skills and workforce issues in the fishing industry in Northern Australia, particularly in First Nations communities (including biosecurity and Indigenous Ranger program skills). **(1b, 3b)**

3.8. Meat, Poultry, and Seafood Processing/ Manufacturing

Meat, Poultry and Seafood Processing and Manufacturing

ANZSIC A1111, A1112, A1113, A1120

Industry snapshot

$37,888 M
Revenue
(2022-2023)

1,739
Establishments
(2022-2023)

$17,065 M
Export value
(2022-2023)

33%
Women (2021)
↑ 3% from 2016

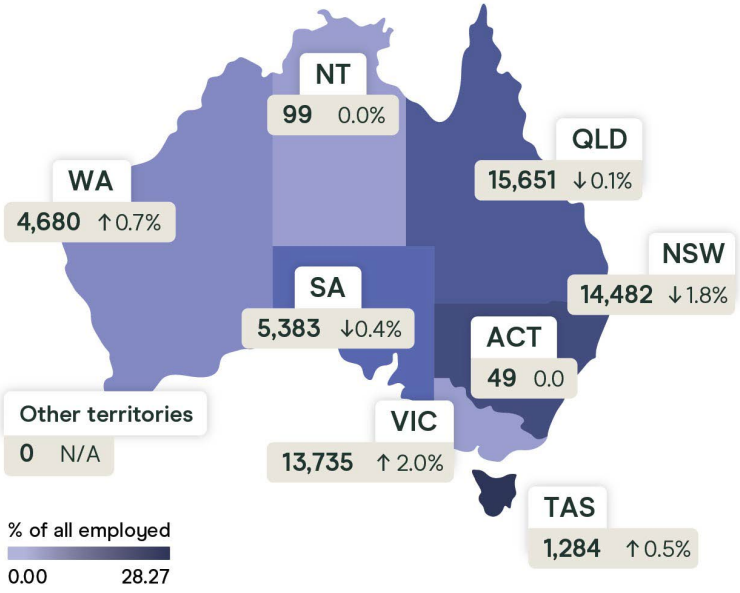
1447
Indigenous workers (2021)
↑ 198 from 2016

11.6%
Projected decline in employment
(2026)

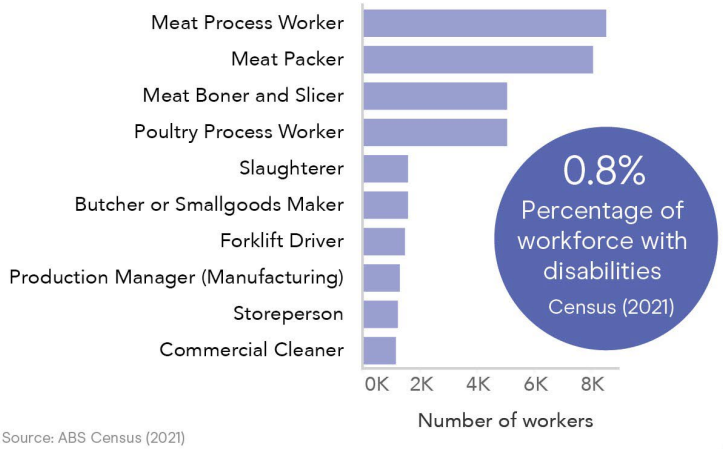
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016

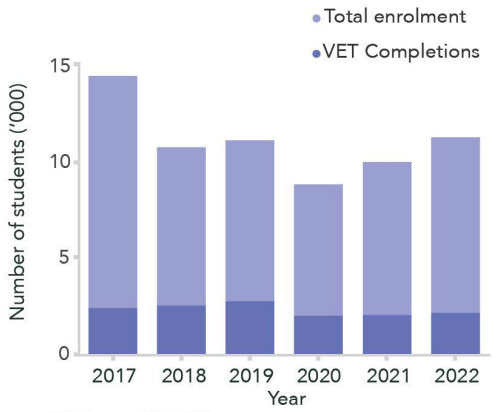


Key Occupations, by employment



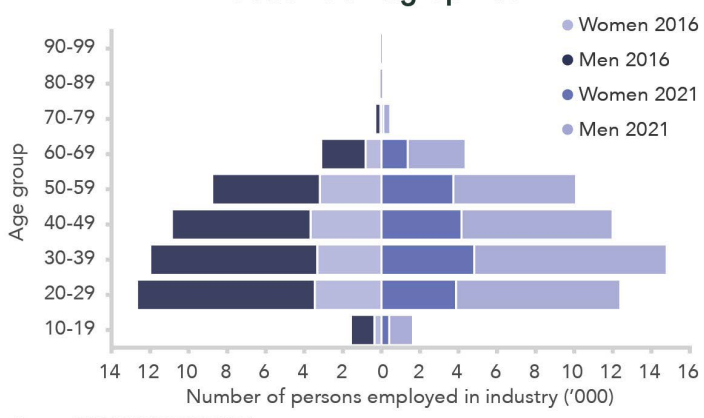
Source: ABS Census (2021)

VET Enrolments and completions



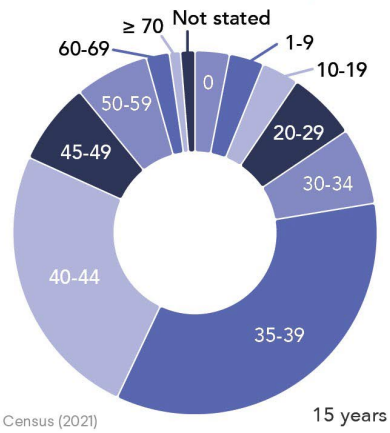
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



Source: ABS Census (2021)

3.8.1. Industry sectors (ANZSIC Classes)

- Meat Processing
- Poultry Processing
- Cured Meat and Smallgoods Manufacturing
- Seafood Processing

Key insights from industry sector infographic and other data	Priority
Labour shortages	High
Increasing employment of First Nations peoples	High
Lack of gender diversity	Medium

The Australian meat, poultry and seafood processing and manufacturing industries are comprised of processors, wholesalers, retailers and exporters who collectively are responsible for supplying products to domestic and international markets. Domestic consumer demand and tastes and global markets have a strong impact on industry trends, promoting new innovations, increased automation, and use of big data.

Meat, poultry and seafood process workers process, grade and package meat, poultry, fish and shellfish. This variably involves processing offal and tripe, moving carcasses to chillers and freezers, loading meat products into trucks, packing boned and sliced meat into cartons, removing viscera and residual material from poultry carcasses, separating organs and glands (e.g. sweetbreads, livers, hearts and spleens), inspecting and grading poultry, fish and shellfish for size and quality, packing and freezing fish, operating machines which slice, peel, skin and crumb fish, and cleaning and sanitising equipment and work areas.

Strong skills in food safety, quality control, animal welfare and compliance requirements underpin Australia's reputation for producing high-quality meat, poultry and seafood products. The National Training Register details qualifications corresponding to specialised job roles in this industry, including:

- Meat Processing (Certificates III, IV, Diploma, Advanced Diploma)
- Meat Processing – Food Services (Certificates II and III)
- Meat Processing – Abattoirs (Certificate II)
- Meat Processing – Meat Retailing (Certificate II)
- Meat Processing – Boning Room (Certificate III)
- Meat Processing – Rendering (Certificate III)
- Meat Processing – Slaughtering (Certificate III)
- Meat Processing – Retail Butcher (Certificate III)
- Meat Processing – Smallgoods - General (Certificate III)
- Meat Processing – Smallgoods - Manufacture (Certificate III)
- Meat Processing – Livestock Handling (Certificate III)

- Meat Processing – Packing Operations (Certificate III)
- Meat Safety Inspection (Certificates III and IV)
- Seafood Post Harvest Operations (Certificates II, III and IV)

Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent industry workers:

Unit title	Unique skills and knowledge
Utilise refrigeration index (RI) (AMPQUA403)	This unit applies to individuals who work in quality assurance roles and who utilise the RI to validate compliance of a chilling or freezing process. Legislative and regulatory requirements apply to meat inspection and meat safety and are enforced through state/territory jurisdictions.
Oversee meat processing establishment's Halal compliance (AMPX431)	This unit applies to individuals who oversee the procedures and personnel required to gain and/or maintain Halal approvals in a meat processing establishment. The role requires a detailed knowledge of Halal requirements in Australia and of nominated overseas customers.
Handle animals humanely while conducting ante-mortem inspection (AMPLSK301)	This unit applies to individuals who work in a meat processing environment and who undertake, or assist with, ante-mortem inspection. Such inspection may take place in a slaughtering establishment or stockyard or lairage.
Prepare animals for slaughter (AMPA2000)	This unit applies to individuals who manage and handle animals in lairage prior to slaughter in a slaughtering establishment.
Prepare, pack and dispatch stock for live transport (SFISTR204)	This unit applies to individuals who prepare, pack and dispatch wild caught (fished), cultured or held seafood stock for live transport to other facilities. Licences may be required if operating load-shifting equipment.

3.8.2. Drivers of workforce dynamics

Labour Shortages

Labour shortages have been widely reported across the meat, poultry and seafood processing industries. Over half of all workers in the meat, poultry and seafood processing industries are employed in occupations that align with ANZSCO skill level 5. Further consideration will be given to the needed composition of lower- and higher-skilled industry workers.

The National Skills Commission's (2022) Skills Priority List drew attention to the following occupations as experiencing nationwide shortages:

- Meat Inspector
- Butcher or Smallgoods Maker
- Meat Boner and Slicer
- Slaughterer

- Food Technologist

A 2022 industry survey conducted by the Australian Meat Industry Council suggested shortages of skilled labour were contributing to over 50% of establishments operating below 80% capacity. A variety of reasons for these shortages were suggested, including unwillingness to work in the industry, competition from other sectors and lack of international worker availability.[44]

In Victoria, the Victorian Skills Authority calculated that to meet anticipated demand, Victoria will need an additional 600 meat, poultry, and seafood process workers, and 300 additional workers as slaughterers and meat boners and slicers in the 2022 to 2025 period.[45] This was mainly attributed to a disparity between new entrants and retirements in the industry, along with the recent trend of removing butchers from major supermarkets, which has required upskilling workers in meat processing by local butchers (e.g. meat selection). [46]

Meat, Poultry, and Seafood Processing / Manufacturing Summary

Workforce challenges

- Labour shortages.
- Workforce diversity and culture: gender disparity, long working hours.

Key evidence gaps

- No noted evidence gaps specific to Meat, Poultry, and Seafood Processing / Manufacturing at this time.

Workforce planning priorities

- Support and contribute to existing industry strategies and resources, notably by MINTRAC, aimed at addressing skills and labour shortages. **(2b)**
- Support industry to attract a diverse workforce, including migrant workers, to address imbalances and labour shortages. **(4b)**
- Undertake state and territory consultation and engagement workshops with the meat and post-harvest seafood industries to understand workforce challenges and to pilot approaches for raising the profile of industry careers. **(4a)**
- Develop materials for a new Meat Safety Induction program. **(3a, 3c)**
- Develop nationally consistent assessment and training materials to support the delivery of recently updated and new training products for the meat processing sector. **(3c)**
- Complete Stage 2 of the AMP Training Package review project to ensure it is ready for the implementation of forthcoming qualifications reforms. **(3a)**

3.9. Forestry and Logging

Forestry and Logging

ANZSIC A0301, A0302

Industry snapshot

$3,827 M
Revenue
(2022-2023)

3,780
Establishments
(2022-2023)

$662 M
Export value
(2022-2023)

17%
Women (2021)
↑ 2% from 2016

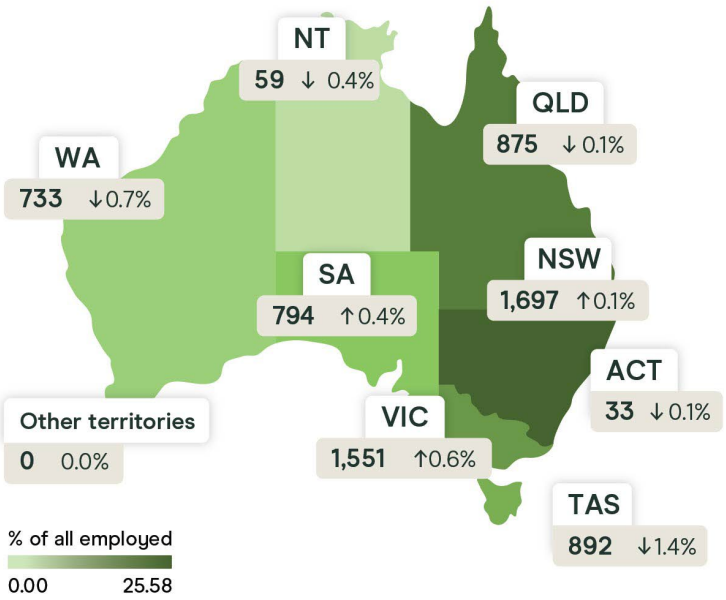
241
Indigenous workers (2021)
↑ 105 from 2016

0.8%
Projected decline in employment
(2026)

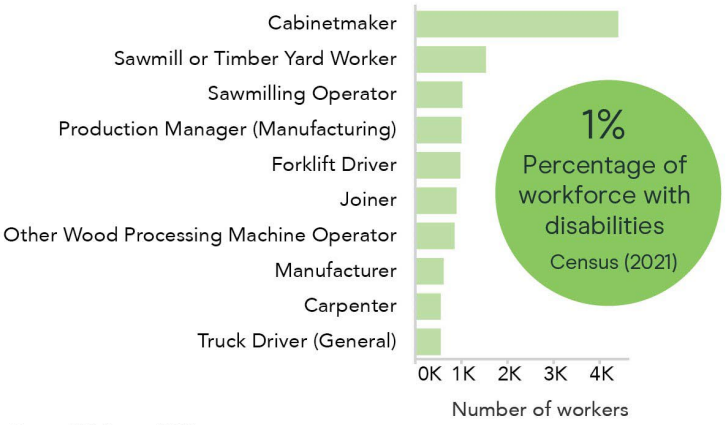
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016



Key Occupations, by employment

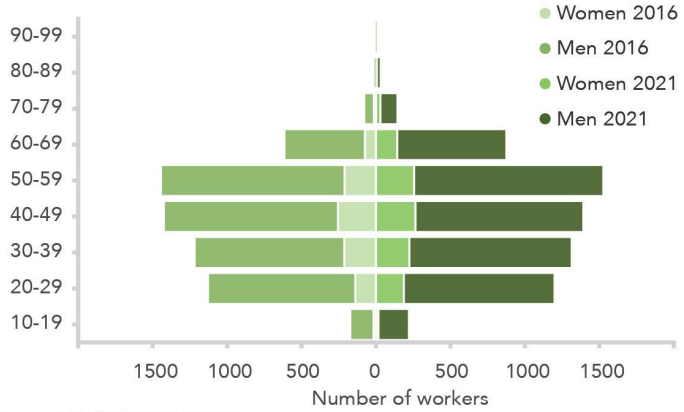


Source: ABS Census (2021)

VET Enrolments and completions

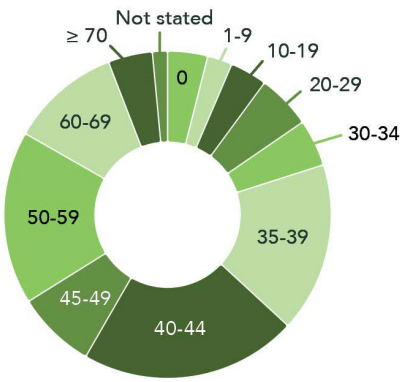
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



Source: ABS Census (2021)

3.9.1. Industry sectors (ANZSIC Classes)

- Forestry
- Logging

Key insights from industry sector infographic and other data	Priority
Labour shortages	High
Declining enrolments in VET programs and completions	High
Lack of workforce diversity	Medium

The forestry workforce is responsible for the management of industrial plantation estates, native forests and farm forests, while logging operations fell, cut and/or hew logs into products such as railway sleepers. Expert skills are required to meet the various challenges of managing forests sustainably and mitigating the effects of disasters, such as bushfires, as well as utilising data and digital technologies to undertake planning and certification activities. Logging workers use specialist tree felling and log loading equipment, chainsaws and automated heavy machinery, including mechanical harvesters, debarking and de-limbing machines, excavators and log grab machines, forwarders and skidders.

The skills and knowledge applied by people in this specialised workforce are detailed in the National Training Register, including in the Certificates II, III, IV and Diploma of Forest Operations.

Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent workers in *Forestry and Logging*:

Unit title	Unique skills and knowledge
Conduct tree hazard assessment post-fire (FWPFIR4001)	This unit applies to individuals authorised by emergency management agencies to conduct hazard assessment of fire-affected or -damaged trees during the early stages of bushfire recovery and make recommendations on risk treatment.
Apply sustainable silviculture treatments (FWPSIL3001)	This unit applies to individuals who assess tree condition and select and apply sustainable silviculture treatments to meet environmental and production requirements in plantation and native forest settings.
Contribute to and implement a forest regeneration plan (FWPFOM5004)	This unit applies to individuals who contribute to the planning and implementation of the regeneration or revegetation of an area of forest for timber production.
Plan for and coordinate construction of log landings and snig tracks (FWPCOT4216)	This unit applies to individuals who plan for and coordinate the construction of log landings and snig tracks in a forest or farm forest setting.

3.9.2. Drivers of workforce dynamics

Labour shortages

The National Skills Commission's 2022 Skills Priority identified state-based and regional shortages in the following occupations:

- Forestry Worker
- Forester / Forest Scientist
- Logging Assistant
- Senior Aquaculture, Crop and Forestry Workers nec
- Forestry Operations Supervisor
- Tree Worker

Addressing shortages in the Forestry and Logging industries may involve actively attracting more women to the workforce. Despite a 2% rise from 2016, women accounted for only 17% of workers in 2021. Participation by First Nations peoples is increasing, rising by 1.4% between 2016 and 2021.

Native timber harvesting ending in Victoria and Western Australia

In Victoria and Western Australia, businesses across the forest and wood products value chain are preparing for native timber harvesting to be discontinued from 2024.

The 2022 Victorian Skills Plan reported on industry concerns over displaced workforce and the supply of timber in Victoria for key products into the future. The Victorian Government has published a range of support mechanisms for workers, businesses and communities.[47] This includes the Victorian Forestry Worker Support Program, delivered by ForestWorks, which will deliver support through 1:1 case management. ForestWorks will support workers in accessing training and reskilling opportunities, formalising skills through recognition of prior learning (RPL) and current competencies, finding employment (e.g. matching workers to jobs in their local area), and providing information on a range of social support initiatives.

In Western Australia, the state government will also end native timber harvesting from 2024. The decision is part of the state's upcoming Forest Management Plan 2024-33. The announcement also included $350 million to expand Western Australia's softwood timber plantations.

While the Victorian and Western Australian state governments have committed to increase support and funding to further the development of plantation forestry, there is widespread industry concern over:

- the future supply of timber
- the impact on regional businesses across the value chain
- the impact on regional communities previously sustained by native forestry value chain operations.

Machinery and operations used in native timber harvesting are not readily interchangeable with machinery and operations used in plantation forestry, and there is concern for the impact on businesses due to the loss of investment. It is further important to identify all value chain interdependencies because of the impact that changes in one sector can have on connected sectors, including up- and downstream supply chain industries and local communities.

Challenges for workforce planning include that 'native forestry' is not identified as a unique ANZSIC Class independent of general 'forestry' and it is therefore difficult to quantify and locate the workforce being displaced and potentially in need of reskilling or upskilling. This point is discussed further in the 'data and evidence gaps' section below.

Digital and automation practices

Digital and automation practices are already firmly embedded in the forestry and logging industries. Specific technologies that have been identified as impacting employment in the sector include drones, scanners, laser scanners, cutters and finishing systems, plant genomes, block-chain applications, big data analytics, and new technologies, such as digital maps, which are changing industry skills requirements.[48]

Forestry and Logging Summary

Workforce challenges

- Labour shortages.
- Workforce diversity and culture: gender disparity, ageing workforce, long working hours.
- Declining VET qualification enrolments and completions.

Key evidence gaps

- Quantifying the 'native forestry' industry workforce, especially in VIC and WA.

Workforce planning priorities

- Support and contribute to existing industry strategies and resources, notably by ForestWorks, aimed at addressing skills and labour shortages. **(2b)**
- Support industry to attract a diverse workforce to address imbalances and labour shortages. **(2d, 4b)**
- Support upskilling and re-skilling opportunities for displaced native forestry workers. **(3b)**
- Participate in reviews of the ANZSCO and ANZSIC by the Australian Bureau of Statistics (ABS). **(1a)**
- Develop nationally consistent assessment and training tools for selected qualifications in the *FWP Training Package* to support training delivery. **(3c)**
- Review three units of competency that describe the skills for manual tree felling to determine the number of trees an individual must fell in order to demonstrate competency. Solutions will consider the safety and competence of all learners, accessibility of resources, competency development and training resources. **(3a)**

3.10. Wood Product Manufacturing

Wood Product Manufacturing

ANZSIC A1411, A1412, A1413, A1491, A1492, A1493, A1949, A1499

Industry snapshot

$14,329 M
Revenue
(2022-2023)

6,639
Establishments
(2022-2023)

$1,640 M
Export value
(2022-2023)

19%
Women (2021)
↑ 1% from 2016

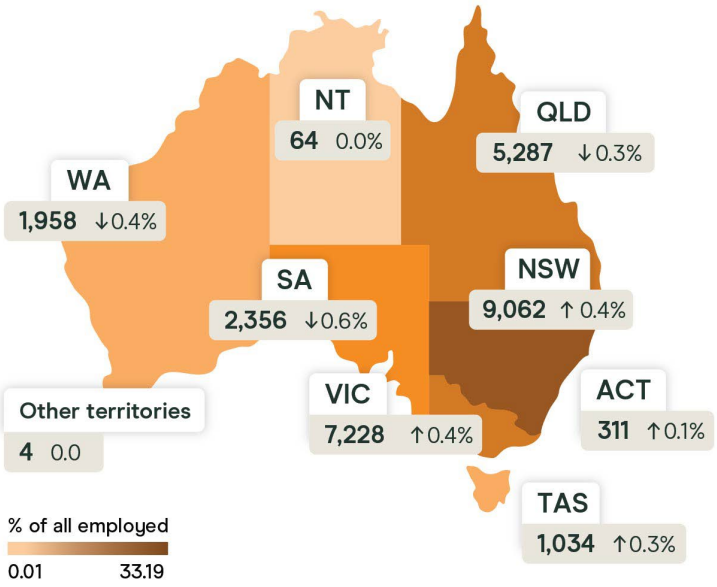
651
Indigenous workers (2021)
↑ 99 from 2016

4.6%
Projected decline in employment
(2026)

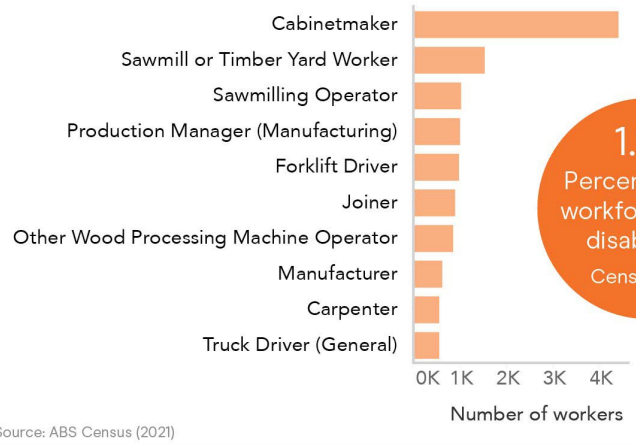
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016



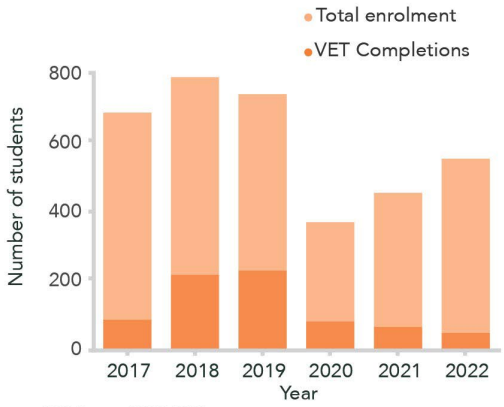
Key Occupations, by employment



1.2%
Percentage of workforce with disabilities
Census (2021)

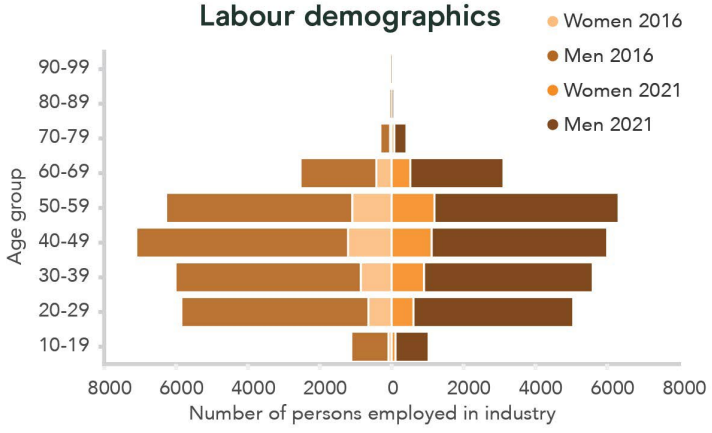
Source: ABS Census (2021)

VET Enrolments and completions



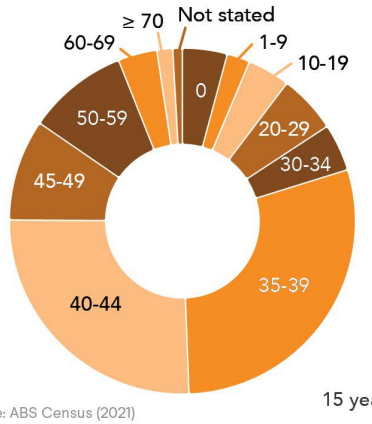
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



Source: ABS Census (2021)

3.10.1. Industry sectors (ANZSIC Classes)

- Log Sawmilling
- Wood Chipping
- Timber Resawing and Dressing
- Prefabricated Wooden Building Manufacturing
- Wooden Structural Fitting and Component Manufacturing
- Veneer and Plywood Manufacturing
- Reconstituted Wood Product Manufacturing
- Other Wood Product Manufacturing

Key insights from industry sector infographic and other data	Priority
Volatile industry conditions	High
Labour shortages	High
Declining VET qualification completions	High
Lack of gender diversity	Medium

The wood product manufacturing industry is a vital part of the timber value chain, turning harvested trees into materials that can be used to construct buildings, furniture, flooring, timber products and other items. In keeping up with the high demand for these materials, industry has adopted new technologies and equipment to improve safety, sustainability, and efficiency. High levels of technical skills are required for operating the latest technologies in drying and cutting, including optimisation equipment, allowing industry to continue to supply the high-quality timber that is used to produce some of our most essential structures and products.

This industry requires high level safety skills for working with diverse tools and machinery, including saws, finger jointing equipment, moulders, chippers, kilns and boilers, cranes, log loaders, forklifts and timber stacking machines. The workforce also implements digital operations associated with log and timber transfer, drying and packaging, and X-ray scanning technologies for optimising log cutting patterns.

The National Training Register details qualifications corresponding to specialised job roles in this industry:

- Timber and Wood Products Operations (Certificates II, III, IV)
- Timber Building Products Supply (Certificate III)
- Timber Frame or Truss Manufacture (Certificate III)
- Saw Technology (Certificate III)
- Wood Machining (Certificate III)
- Timber Systems Design (Certificates III, IV)

Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent industry workers:

Unit title	Unique skills and knowledge
Sharpen and position blades or knives in chipper, canter and reducer (FWPCOT3283)	This unit applies to individuals who set up, sharpen and use either babbitt or set screw processes for positioning straight and angled blades or knives in disc chippers, chipping heads, canters and reducers to process logs.
Build and maintain timber stacks (FWPCOT3320)	This unit applies to individuals who undertake to safely build and maintain timber stacks in a variety of workplace settings, according to regulations and site procedures.
Prepare timber or related products to meet import/export compliance requirements (FWPCOT3310)	This unit applies to individuals who ensure timber or related products meet compliance requirements for import/export. It includes reviewing existing workplace procedures for timber import/export for compliance with regulatory requirements, checking that import/export timber meets biosecurity requirements, and completing compliance documentation.

3.10.2. Drivers of workforce dynamics

Volatile industry conditions

The house construction industry is a major customer of this industry group and is currently going through a period of turbulence with the collapse of multiple major construction companies. Raw timber prices have also fluctuated widely in the past two years, driven by multiple demand and supply factors which may drive the development of alternative products either within or outside of the sector. The mid- to long-term labour market implications of these changes are unclear at this stage.

Labour shortages

The National Skills Commission's 2022 Skills Priority List data shows national shortages of the following occupations:

- Wood Machinist
- Carpenter

There are also regional and state-based shortages for the following occupations:

- Saw Doctor
- Wood Turner
- Wood Machinists and Other Wood Trades Workers nec
- Sawmilling Operator
- Logging Plant Operator

The Department of Agriculture, Forestry and Fisheries advises their understanding is that Saw Doctor shortages are National not in isolated regions/states.

Gender diversity

Addressing shortages in the Wood Product Manufacturing industry may involve actively attracting more women to the workforce. Despite a 1% rise from 2016, women accounted for only 19% of workers in 2021.

Wood Product Manufacturing Summary

Workforce challenges

- Labour shortages.
- Workforce diversity and culture: gender disparity, ageing workforce, long working hours.
- Declining VET qualification completions.

Key evidence gaps

- Disparities between occupations classified as 'in shortage' in the Skills Priority List and intelligence held by Australian Government Department of Agriculture, Forestry and Fisheries.

Workforce planning priorities

- Support industry to attract a diverse workforce to address imbalances and labour shortages. **(2d, 4b)**
- Research on declining Wood Product Manufacturing completions. This may support the identification of barriers to training delivery and learner retention. **(1a, 3a)**
- Work with key agencies to assess gaps in jobs and skills shortage datasets and to collaborate on potential solutions. **(1a, 1b)**

3.11. Pulp, Paper, and Converted Paper Product Manufacturing

Pulp, Paper and Converted Paper Product Manufacturing

ANZSIC A1510, A1521, A1522, A1523, A1524, A1529

Industry snapshot

$10,284 M
Revenue
(2022-2023)

911
Establishments
(2022-2023)

$1,108 M
Export value
(2022-2023)

23%
Women (2021)
↑ 1% from 2016

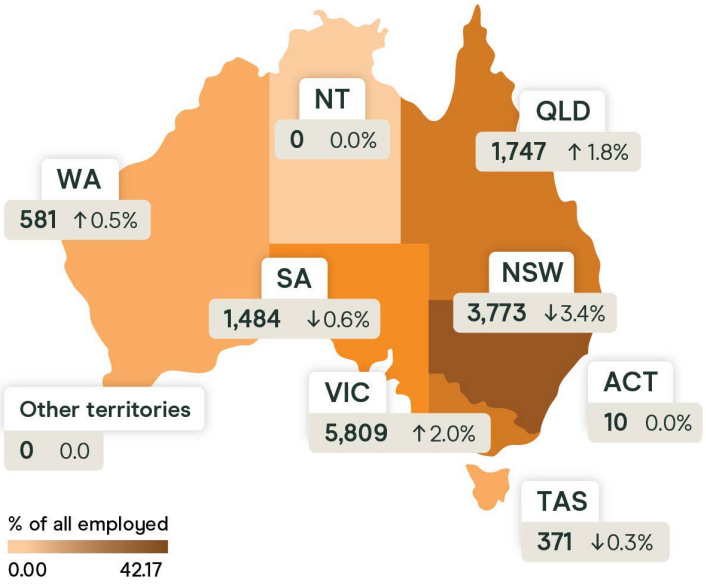
140
Indigenous workers (2021)
↑ 31 from 2016

12.1%
Projected growth in employment
(2026)

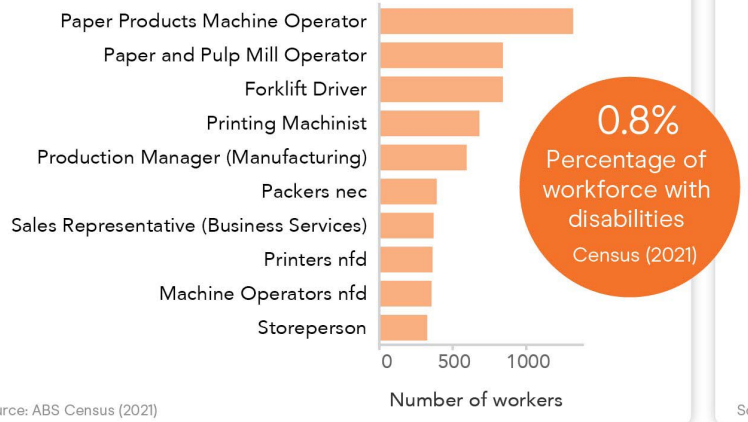
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016



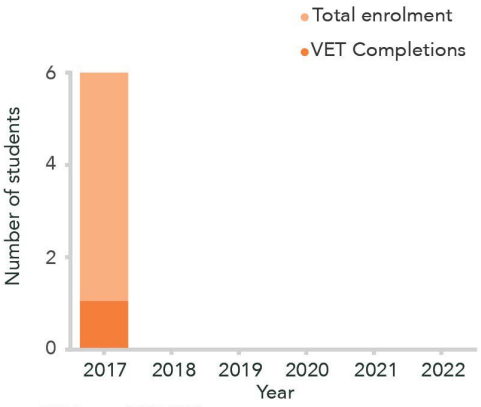
Key Occupations, by employment



0.8%
Percentage of workforce with disabilities
Census (2021)

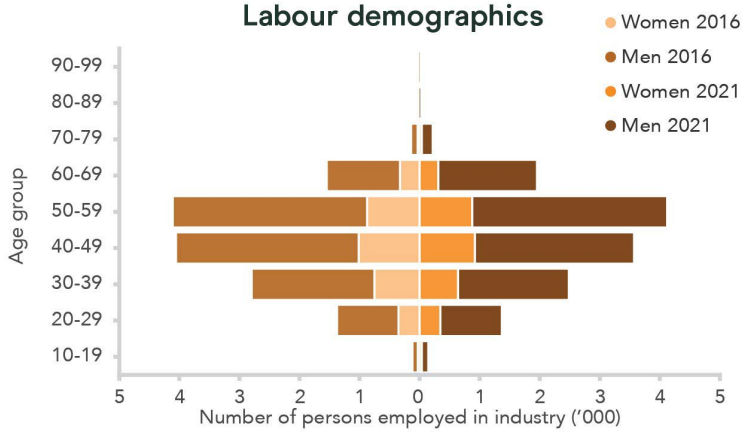
Source: ABS Census (2021)

VET Enrolments and completions



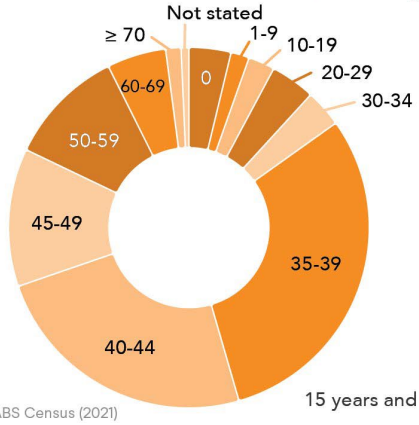
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



Source: ABS Census (2021)

3.11.1. Industry sectors (ANZSIC Classes)

- Pulp, Paper, and Paperboard Manufacturing
- Corrugated Paperboard and Paperboard Container Manufacturing
- Paper Bag Manufacturing
- Paper Stationery Manufacturing
- Sanitary Paper Product Manufacturing
- Other Converted Paper Product Manufacturing

Key insights from industry sector infographic and other data	Priority
Absence of RTOs that can deliver training	High
Labour shortages	High
Low workforce diversity	Medium

Manufacturing of Pulp, Paper and Converted Paper Products is critical for our households, offices, hospitals, food outlets and public buildings – from tissues and toilet paper, medical and sanitary products, to packaging and printing. In order to meet consumer demands for sustainability, the industry is at the forefront of circular economy practises, where the cycle of 'make, use, dispose' is replaced by a philosophy for 'reusing and recycling', which extracts maximum value from materials and resources, and largely eliminates waste. Transitioning to a circular economy involves exploiting new bioenergy and biomass opportunities.

The workforce typically specialises in one or more pulping and papermaking operations, including wet end, dry end, pulping, stock preparation and handling, chemical recovery, electrical power generation, paper finishing and converting, primary resource, steam generation, recovered fibre, and water services. Senior operators, technicians and production specialists implement production plans, provide technical advice and support to teams, and troubleshoot and rectify complex pulp and papermaking production problems relating to specialist equipment, processes, outputs and quality.

The National Training Register details qualifications corresponding to specialised job roles in this industry, including Pulp and Paper Operations (Certificates II, III and IV) and Pulp and Paper Operations Management (Diploma). Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent industry workers:

Unit title	Unique skills and knowledge
Perform steam boiler operations (PPMSTM301)	This unit applies to production operators who perform unattended steam boiler operations and respond to contingencies that occur working with complex integrated equipment and continuous operations. It describes the skills and knowledge required to prepare for, start up, stabilise and shut down systems for unattended stream boiler operations.

Perform paper finishing and converting operations (PPMFCO301)	The unit applies to production operators who perform paper finishing and converting operations in a paper manufacturing facility and respond to contingencies that occur working with complex integrated equipment and continuous operations. It describes the skills and knowledge required to prepare for, start up, stabilise and shut down systems for paper finishing and converting operations.

3.11.2. Drivers of workforce dynamics

Digital and automation practices

The Pulp, Paper, and Converted Paper Product Manufacturing industries continue to invest in automation, in some cases reducing the number of employees required. However, industry revenues are declining at a faster rate than automation-related cost savings, which is adding to the pressure on employers to reduce staff costs.[49]

Training packages

In their 2022 report, the Pulp and Paper Manufacturing Industry Reference Committee (IRC) noted that employers believe that there being zero enrolments in the *PPM Training Package* is not a reflection of its quality but a lack of RTOs who can deliver relevant training flexibly while meeting specific workplace needs. The IRC attributed this partly due to the low financial viability for RTOs in continuing to offer such training when there is a relatively low workforce turnover and hence a low or inconsistent pool of new enrolees. This represents a thin training market.

Labour shortages

The National Skills Commission's 2022 Skills Priority List data shows shortages in NSW of the following occupations:

- Paper Products Machine Operator
- Paper and Pulp Mill Operator

Addressing shortages in the Pulp, Paper, and Converted Paper Product Manufacturing industries may involve actively attracting more women to the workforce. The 2021 Census showed women only accounted for 23% of this workforce, a 1% decline from 2016.

Pulp, Paper, and Converted Paper Product Manufacturing Summary

Workforce challenges

- Labour shortages.
- Workforce diversity and culture: gender disparity, ageing workforce, long working hours.
- An absence of RTOs that can deliver training.

Key evidence gaps

- Research that substantiates the extent of barriers to training delivery of PPM Training Package products.

Workforce planning priorities

- Support industry to attract a diverse workforce to address imbalances and labour shortages. **(2d, 4b)**
- Research to substantiate and strengthen evidence on the barriers to RTOs delivering training (including local challenges and opportunities). Employers will be further consulted to understand the current demand for training delivery (including through non-VET education and training pathways). This will inform strategies for building relationships and collaboration between employers and training organisations. Potential support will be provided through the development of nationally consistent training and assessment tools for selected qualifications (subject to the identification of RTOs prepared to deliver training). **(1a, 3a, 3b, 3c, 3d)**

3.12. Furniture and Other Manufacturing

Furniture and other Manufacturing

ANZSIC A2010, A2511, A2512, A2513, A2519

Industry snapshot

$8,509 M
Revenue
(2022-2023)

5,620
Establishments
(2022-2023)

$190 M
Export value
(2022-2023)

19%
Women (2021)
↑ 1% from 2016

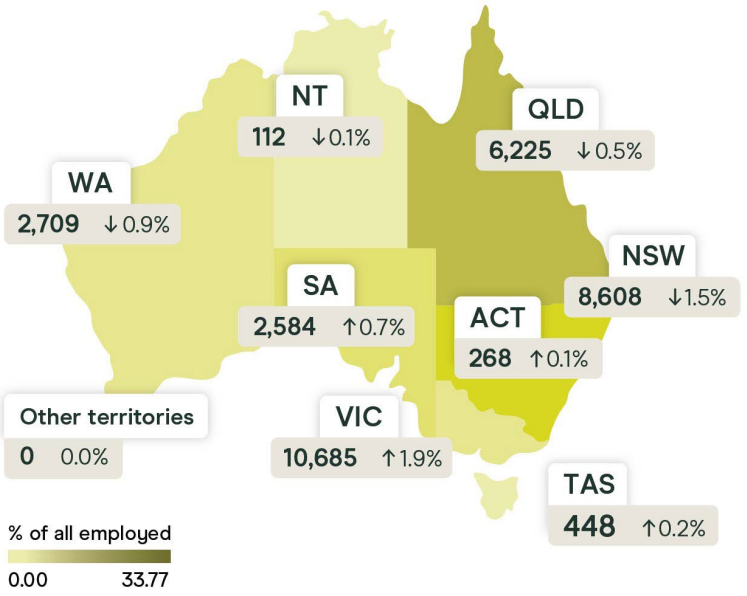
275
Indigenous workers (2021)
↑ 97 from 2016

2.5%
Projected decline in employment
(2026)

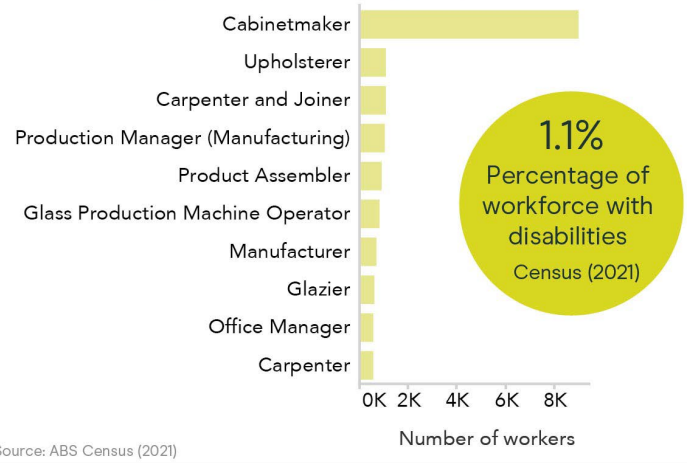
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016

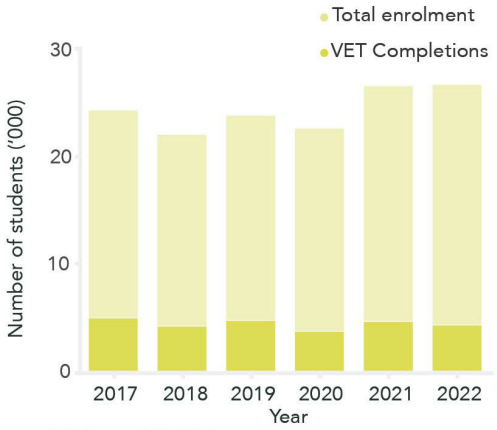


Key Occupations, by employment



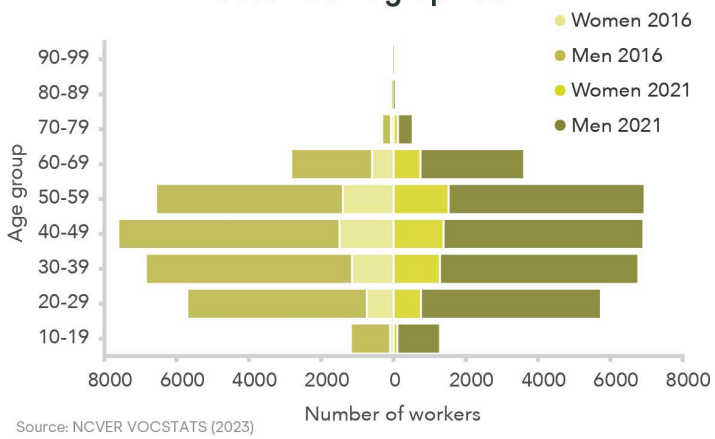
Source: ABS Census (2021)

VET Enrolments and completions



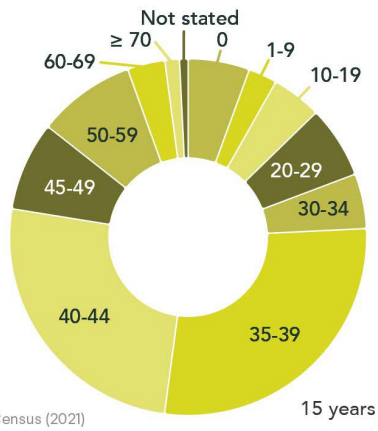
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



Source: ABS Census (2021)

3.12.1. Industry sectors (ANZSIC Classes)

- Glass and Glass Product Manufacturing
- Wooden Furniture and Upholstered Seat Manufacturing
- Metal Furniture Manufacturing
- Mattress Manufacturing
- Other Furniture Manufacturing

Key insights from industry sector infographic and other data	Priority
Volatile industry conditions, international competition	High
Labour shortages	High
Low workforce diversity	Medium

The furnishing industry covers a broad range of sectors relating to furniture and fittings for residential and commercial buildings. This includes furniture manufacturing and finishing; interior design and decorating; design, flooring, manufacturing and installation of cabinets, fittings and décor; glass and window manufacturing; upholstery, doors, grilles, awnings and blinds. It also includes niche sectors, such as coopering, mattress manufacturing and piano tuning. Emerging trends include the increasing demand for home automation and smart furnishings, as well as sustainable practices and materials, including through biophilic, natural design principles.

The National Training Register details qualifications corresponding to specialised job roles in Furniture and Other Manufacturing

- Furnishing (Certificates I and II)
- Cabinet Making and Timber Technology (Certificates II and III)
- Glass and Glazing (Certificates II, III and IV)
- Furniture Making Pathways (Certificate II)
- Furniture Finishing (Certificate III)
- Picture Framing (Certificate III)
- Upholstery (Certificate III)
- Flooring Technology (Certificate III)
- Blinds, Awnings, Security Screens and Grilles (Certificate III)
- Interior Decoration Retail Services (Certificate III)
- Interior Decoration (Certificate IV)
- Furniture Design and Manufacturing (Certificate IV and Diploma)
- Kitchen and Bathroom Design (Certificate IV)
- Piano Technology (Certificate IV)
- Interior Design (Diploma and Advanced Diploma)

Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent workers in Furniture and Other Manufacturing:

Unit title	Unique skills and knowledge
Glaze and reglaze residential windows and doors (MSFGG2011)	This unit applies to individuals who install glass to metal or timber doors, windows and other frames and applies to glaziers working in accordance with pre-determined work orders.
Regulate actions, keys and pedals of grand pianos (MSFPT4005)	This unit applies to individuals who regulate grand piano actions, keys and pedals, including adjusting glide bolts, striking distance, hammer running alignment, key height and depth, set off and drop, checking distance, damper regulation, damper stop rail, jack and repetition lever adjustment, sustain, soft and sostenuto pedals.
Design commercial interior lighting (MSFID6010)	This unit applies to individuals who assess natural light and determine supplementary lighting requirements in both existing and potential commercial interior spaces, and design lighting as part of an integrated interior solution.
Install anti-static and conductive resilient floor coverings (MSFFL3071)	This unit applies to individuals who prepare, cut, lay and fix anti-static and conductive resilient floor coverings using specialised techniques in residential or commercial properties in accordance with pre-determined work orders.

3.12.2. Drivers of workforce dynamics

Volatile industry conditions

Sales of household goods surged during the COVID-19 lockdowns. As furniture is an infrequently replaced item, this led to a lower overall demand post-lockdowns. The market dynamics changed again post-lockdown as new home construction surged based on accumulated savings. Domestic construction is a key industry driver as people buy new furniture for their new homes. However, major disruptions in the domestic construction industry, including the collapse of multiple national builders, are expected to significantly reduce this demand for new furniture.

These factors may also impact a wide range of other household furnishing product manufacturers, including those making wooden blinds and metal security doors.

Demand for wooden furniture is also expected to fall as homeowners delay the purchase of replacement furniture as the cost-of-living increases.[50]

In addition, the removal of tariffs between Australia, New Zealand, China, and the ASEAN region are expected to increase the import of lower cost wooden furniture and place cost pressures on local wooden furniture manufacturers.[51]

The longer-term impact of these industry dynamics is unclear.

International competition

The metal furniture manufacturing industry is facing strong competition from low-cost imports and is expected to increase its focus on more complex manufacturing that offers a higher value add. This may lead to a greater demand for higher skilled workers.[52]

In contrast, glass and glass product manufacturers are predicted to address low-cost import competition via increasing automation to reduce labour costs.[53] This may result in a decline in employment of lower skilled workers.

Mattress manufacturers are facing particularly strong import competition along with industry consolidation that may force the closure of many smaller operators and a net decline in employment.[54]

Labour shortages

The National Skills Commission's 2022 Skills Priority List data shows national shortages of the following occupations:

- Floor Finisher
- Glazier
- Upholsterer
- Cabinetmaker
- Furniture Finisher
- Picture Framer
- Home Improvement Installer

There are also state-based shortages for the following occupations:

- Building Associate
- Machine Operators nec

Addressing shortages in the Furniture and Other Manufacturing industries may involve actively attracting more women to the workforce. Despite a 1% rise from 2016, women accounted for only 19% of workers in 2021.

Furniture and Other Manufacturing Summary

Workforce challenges

- Labour shortages.
- Workforce diversity and culture: gender disparity, ageing workforce, long working hours.

Key evidence gaps

- Skills Insight are in establishment phase with stakeholders in these industries and are currently working to identify evidence gaps.

Workforce planning priorities

- Support industry to attract a diverse workforce to address imbalances and labour shortages. **(2d, 4b)**
- Conduct research and analysis to identify if there are implementation support needs for delivering the recently approved MSF Furnishing Training Package – Release 8.0 training products. **(3a, 3b, 3c, 3d)**
- Undertake Workforce Function Analyses to support the articulation of skills and assess training gaps in the Furnishing and Other Manufacturing industry. **(1a)**

3.13. Textile, Leather, Clothing and Footwear Manufacturing and Services

Textiles, Clothing and Footwear Manufacturing and Services

ANZSIC A1311, A1312, A1313, A1320, A1331, A1332, A1333, A1334, A1340, A1351, A1352, A9531

Industry snapshot

$9,314 M
Revenue
(2022-2023)

10,694
Establishments
(2022-2023)

$1,290 M
Export value
(2022-2023)

57%
Women (2021)
↑ 4% from 2016

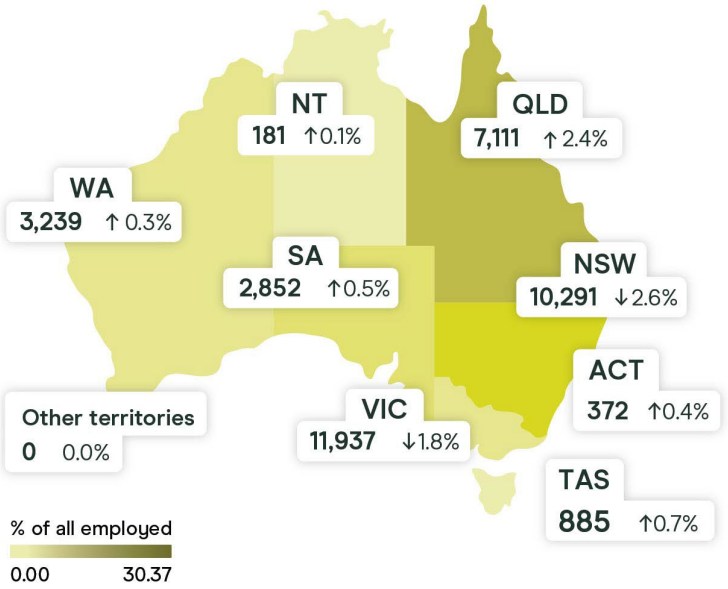
521
Indigenous workers (2021)
↑ 120 from 2016

14.4%
Projected growth in employment
(2026)

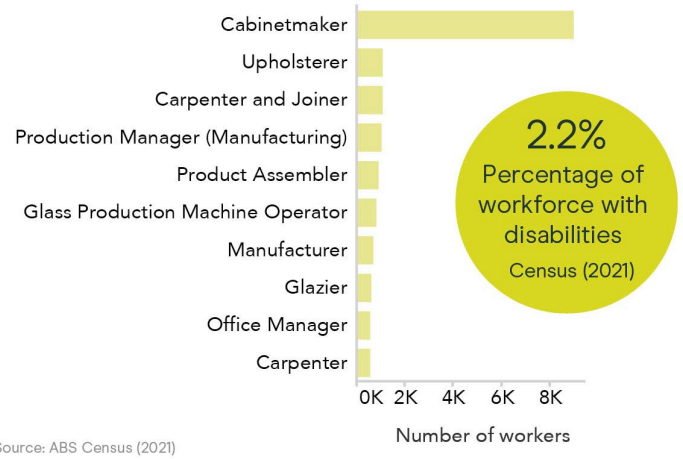
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016



Key Occupations, by employment



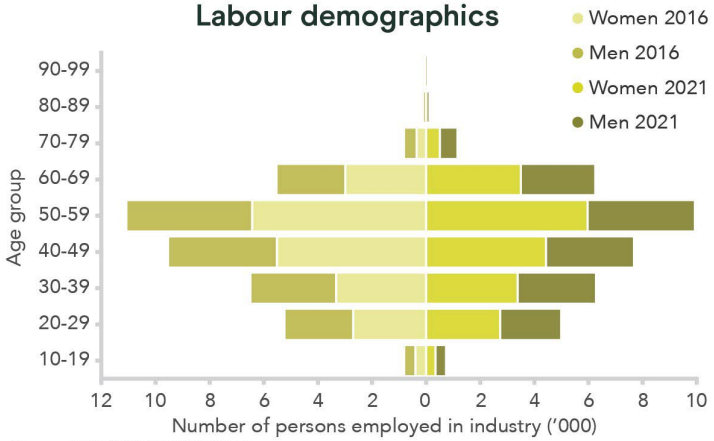
2.2%
Percentage of workforce with disabilities
Census (2021)

Source: ABS Census (2021)

VET Enrolments and completions

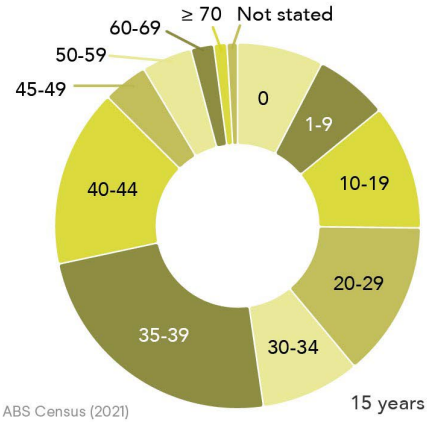
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



Source: ABS Census (2021)

3.13.1. Industry sectors (ANZSIC Classes)

- Wool Scouring
- Natural Textile Manufacturing
- Synthetic Textile Manufacturing
- Leather Tanning, Fur Dressing and Leather Product Manufacturing
- Textile Floor Covering Manufacturing
- Rope, Cordage and Twine Manufacturing
- Cut and Sewn Textile Product Manufacturing
- Textile Finishing and Other Textile Product Manufacturing
- Knitted Product Manufacturing
- Clothing Manufacturing
- Footwear Manufacturing
- Laundry and Dry-Cleaning Services

Key insights from industry sector infographic and other data	Priority
Ageing workforce	High
High gender diversity	Low

This industry consists of businesses that process and manufacture natural (e.g. wool, cotton and leather) and synthetic (e.g. polyvinyl chloride: PVC) materials, for the production of textiles, leather, clothing and footwear goods. It also covers services associated with these goods, including fashion and textile design, dry cleaning operations, laundry operations and clothing and footwear repairs.

The impact of cheap imports saw traditional textiles, leather, clothing and footwear manufacturing largely replaced by sophisticated manufacturers offshoring all or some production work, and local boutique manufacturers carving out niche and specialised market segments. However, increasing consumer interest in locally made, ethical and sustainable products is providing a new focus for businesses. This shift to more bespoke products relies on the availability of quality craftsmanship and strong technical skills.

The National Training Register details qualifications corresponding to specialised job roles in this industry:

- Leather Production (Certificates II, III)
- Laundry Operations (Certificates II, III)
- Apparel, Fashion and Textiles (Certificates II, III, IV, Diploma, Advanced)
- Manufactured Textile Products (Certificate III)
- Millinery (Certificates III, IV)
- Footwear (Certificate III)
- Custom-Made Footwear (Certificate IV)
- Dry Cleaning Operations (Certificate III)
- Textile Design and Technology (Certificate IV)

Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent industry workers:

Unit title	Unique skills and knowledge
Manipulate fabrics to create new finishes (MSTAT5004)	This unit applies to individuals who use manipulation techniques for design effects on textile products.
Dry clean garments with special treatment requirements (MSTDC3006)	This unit applies to individuals who determine the requirements and dry clean garments that require special treatment and handling, such as leather, suede, wedding gowns and vintage clothing.
Block and shape millinery by hand (MSTML2007)	This unit applies to individuals who perform blocking and shaping processes of millinery by hand and includes selecting and, where applicable, modifying the block.

3.13.2. Drivers of workforce dynamics

New and emerging skills

The rapid increase in the repair, reuse and recycling of textiles is predicted to have a significant impact on the Textile, Leather, Clothing and Footwear industries, including the development of new skills and changing workforce requirements.[55] A major research program conducted by Monash University concluded that there is a strong need for investment in fashion and textiles education and upskilling programs to build knowledge and capacity for implementing responsible and sustainable industry practices.[56]

International competition

The leather and leather substitute product manufacturing sector has been negatively impacted as buyers further down in the supply chain, including wholesalers and retailers, have switched to lower cost imports.

To compensate, it is expected that local manufacturers will attempt to reduce operating costs with investments in new technologies.[57] This may in turn lead to an increased demand for higher skilled workers but a reduction in demand for lower skilled workers.

Changing consumer preferences

There are competing consumer trends within different markets that impact on the leather footwear manufacturing industry. On one hand, there is an increasing preference for non-leather materials in footwear, which requires different manufacturing approaches and labour skills profiles.[58] This will likely have flow-on impacts on the Natural Textile Manufacturing Synthetic Textile Manufacturing industries.

On the other hand, other consumer segments are increasingly purchasing high-quality and, in particular, handmade leather shoes, which is likely to grow the size and profitability of the domestic leather footwear manufacturing sector and lead to higher demand for specialised leatherworking skills.[59]

Labour shortages

The National Skills Commission's 2022 Skills Priority List data shows national shortage of Screen Printers, and a strong future demand for workers for numerous occupations.

Textile, Leather, Clothing and Footwear Manufacturing and Services Summary

Workforce challenges

- The impact of consumer preferences and competition on workforce composition and skills needs.

Key evidence gaps

- Skills Insight are in establishment phase with stakeholders in these industries and are currently working to identify evidence gaps.

Workforce planning priorities

- Review qualifications relating to the footwear, leather production and millinery sectors, which were not updated as part of the previous qualification reform process (and are currently non-compliant). **(3a)**

3.14. Animal Care and Management

Animal Care and Management

ANZSIC A6970

Industry snapshot

$5,250 M
Revenue
(2022-2023)

4,148
Establishments
(2022-2023)

100%
Revenue from domestic demand
(2022-2023)

83%
Women (2021)
↑ 3% from 2016

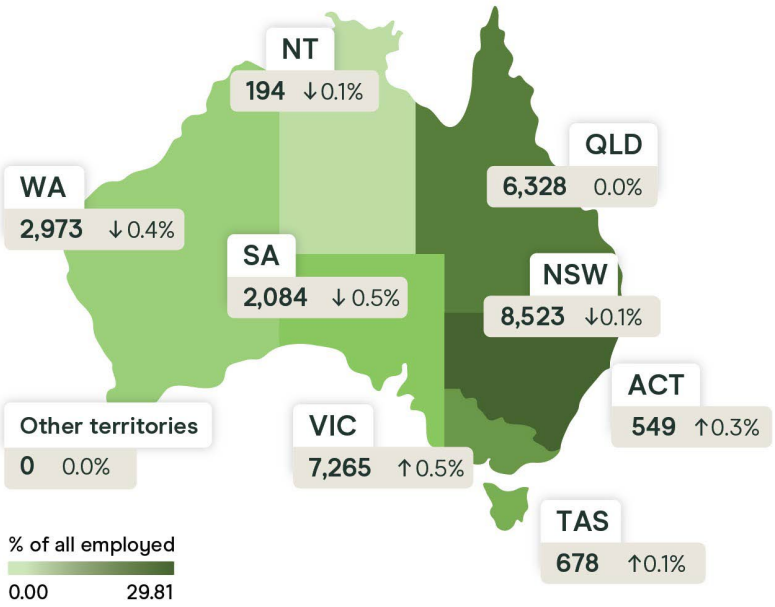
357
Indigenous workers (2021)
↑ 161 from 2016

13%
Projected decline in employment
(2026)

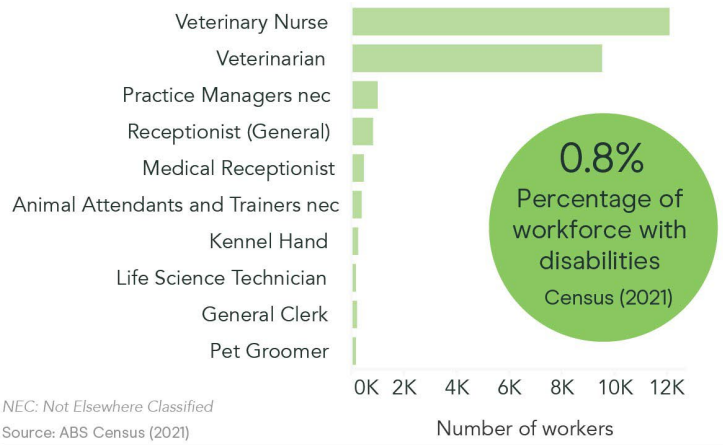
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016



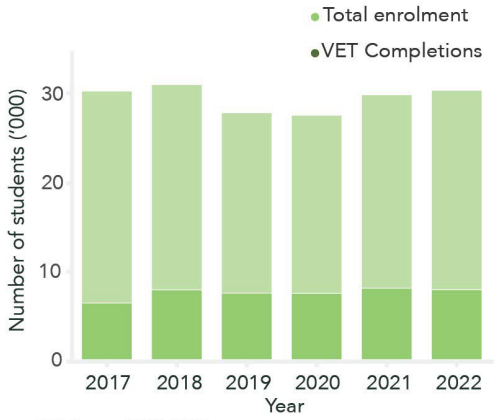
Key Occupations, by employment



NEC: Not Elsewhere Classified

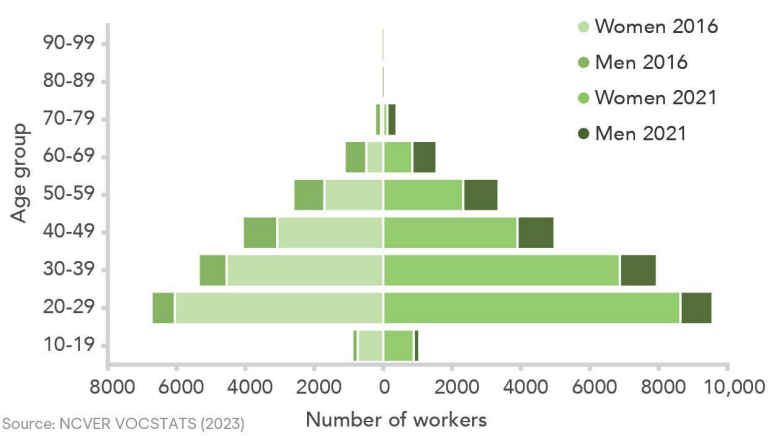
Source: ABS Census (2021)

VET Enrolments and completions



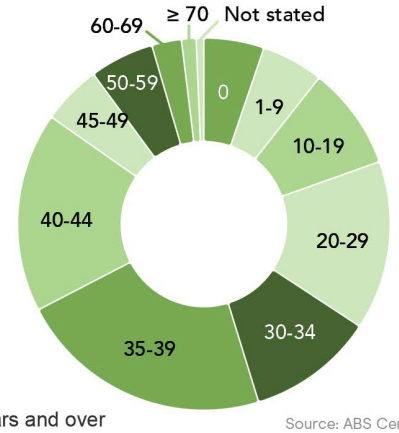
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



15 years and over

Source: ABS Census (2021)

3.14.1. Industry sectors (ANZSIC Classes)

- Veterinary services

Please note: Zoological and Botanical Gardens Operations is in the Amenity Horticulture, Landscaping, and Conservation & Ecosystem Management industry grouping. There are other animal care and management services covered by Skills Insight, but they are not articulated in the ANZSIC. This is addressed in further detail below and in the section on 'data and evidence gaps'.

Key insights from industry sector infographic and other data	Priority
Under-representation in the ANZSCO and ANZSIC	High
Labour shortages	High
Lack of workforce diversity	High
Underemployment and overemployment	Medium

Australia's animal care and management industry workers are continually adapting and progressing their skills to work with and support the welfare of wildlife, exhibited, working, and domestic animals. The animal care and management industry is experiencing accelerated growth, with increasing opportunities and challenges for pet-related businesses, many of which are seeking to expand operations but facing issues with attracting skilled workers, especially in regional, rural and remote Australia.

The highly contextualised skills and knowledge applied by the animal care and management workforce support multiple industries that work with animals, to whom they provide essential services.

The National Training Register details qualifications corresponding to specialised job roles in animal care and management. These include:

- Animal Care Industry Pathways (Certificate I)
- Animal Care (Certificate II)
- Horse Care (Certificate II and III)
- Animal Care Services (Certificate III)
- Animal Technology (Certificate III and Diploma)
- Wildlife and Exhibited Animal Care (Certificate III)
- Equine Hoof Care (Certificate III)
- Animal Regulation and Management (Certificate IV)
- Animal Facility Management (Certificate IV)
- Animal Behaviour and Training (Certificate IV)
- Veterinary Nursing (Certificate IV and Diploma)
- Farriery (Certificate IV)
- Equine Care (Certificate IV)
- Equine Management (Diploma)
- Equine Allied Health (Diploma)

Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent workers in animal care and management:

Unit title	Unique skills and knowledge
Respond to marine wildlife stranding (ACMAIM308)	The unit applies to individuals who work in a team to assess, stabilise and release stranded live marine wildlife, typically whales, dolphins and dugongs, and assist with the handling of deceased marine wildlife. All work must comply with workplace procedures according to Commonwealth and state/territory health and safety, wildlife, and animal welfare regulations, legislation and standards. Most government jurisdictions allow only appropriately authorised agencies to undertake response operations.
Fit shoes to alleviate severe abnormalities and defects in equines (ACMFAR403)	The unit applies to individuals who perform farriery services across different equine industry sectors. It describes the skills and knowledge required to fit shoes to equines that exhibit a range of severe abnormalities and defects where the level of assessment and remedial technique is regarded as severe. It includes shaping and fitting heart bar, straight bar and lateral extension hind shoes.
Manage and maintain the health of research animals (ACMATE502)	This unit describes the skills and knowledge required to manage the health of animals in a research environment. All work practices must be undertaken in accordance with legislative requirements, the current Australian Code for the Care and Use of Animals for Scientific Purposes, and follow protocols, policies and procedures approved by the organisation's Animal Ethics Committee (AEC). Individuals are also required to minimise stress and discomfort for animals through gentle and calm handling and appropriate care.
Instruct handlers with disability to train assistance dogs (ACMADT402)	This unit applies to individuals who instruct handlers to train and socialise their assistance dogs in domestic and public access environments. It describes the skills and knowledge required to prepare and conduct assistance dog instruction for handlers with mental health, physical, sensory, neurological or developmental disability.
Provide general care of common native mammals (ACMSPE315)	This unit applies to individuals who may be responsible for caring for native mammals, including in animal shelters or rehabilitation organisations, pet shops, zoos and animal technology facilities or similar workplaces. In some cases, animals may have been rescued from the wild and successful rehabilitation is required to restore animal health and wellbeing before their releasing back to their natural environment.
Develop a plan for the rescue of companion animals during major incidents (ACMAIM501)	This unit applies to individuals who apply research and planning skills and knowledge to prepare for companion animal emergency rescue activity during major incidents.

Assist with the preparation of veterinary drugs and poisons (ACMVET416)	The unit applies to veterinary nurses who work under the supervision of a registered veterinarian. Veterinary nurses who assist with the preparation of veterinary drugs and poisons for animals need to hold and apply specialised knowledge of animal pharmaceuticals, and the relevant legislation and regulations that apply to working with veterinary drugs and poisons.
Evaluate saddlery and gear fit for horse and rider combination (ACMEQU419)	The unit applies to individuals who have responsibility for assessing the fit, condition and suitability of saddles and gear for rider and horse safety and comfort for a range of horse sport or work activities.

3.14.2. Drivers of workforce dynamics

Under-representation in the ANZSCO and ANZSIC

Animal grooming and allied health services, such as physiotherapy and massage, are a growing market; however, they are under-represented in the ANZSIC and so there is limited data available on this workforce. Likewise, the ANZSCO is reported by stakeholders by under-representing animal care and management occupations. Skills Insight will participate and make appropriate, industry-informed recommendations to the ABS for the creation and refinement of appropriate ANZSIC industry sectors and ANZSCO occupations (see the section below on 'data and evidence gaps'). There may also be a need to further develop training products to ensure that animal welfare standards are described for these sectors.

The animal care and management workforce

There are a recorded 58,400 animal care and management employees in Australia, though industry stakeholders estimate the true number to be much higher because of the large workforce not classified under the ANZSCO. Workers in the animal care and management value chain include animal ethicists, wildlife conservationists, laboratory workers, veterinary pharmaceutical manufacturers, animal feed processors, farmers, breeders, shelters and boarding services, animal rescue services, veterinary services, animal therapy services, pet insurance services, transport services, assistance animal services, traders (including wholesalers), pet product manufacturers and processors, zoos and other exhibited animal businesses, hunters and trappers, pet groomers, animal behaviourists and trainers, animal attendants, dog walkers, sport industry participants (e.g. horse and greyhound racing), inspectors and regulatory officers, and retailers.

Labour shortages

The National Skills Commission's 2022 Skills Priority List data shows national shortages of the following occupations:

- Veterinarian
- Veterinary Nurse
- Farrier

There are also state-based and regional shortages in the following occupations:

- Boarding Kennel or Cattery Operator
- Pet Groomer
- Animal Husbandry Technician
- Kennel Hand

- Animal Attendants and Trainers nec
- Dog Handler or Trainer
- Inspectors and Regulatory Officers nec

Veterinarians and others working in related fields are central to Australia's animal health and biosecurity. There is evidence of labour shortages in this sector, including in a 2021 workforce survey conducted by the Australian Veterinary Association, which found almost 31% of veterinary job vacancies took over 12 months to fill or were still not filled.

The Australian Veterinary Association have also signalled ongoing concerns over there being an insufficient number of veterinarians in rural, regional, and remote areas to adequately assist with biosecurity control and response measures. The view of the Veterinary Nurses Council of Australia (VNCA) is that there is scope for a greater role for veterinary nurses and veterinary technicians in assisting veterinarians in their biosecurity role in rural, regional, and remote areas.

The National Skills Commission reported in *The Shape of Australia's Post COVID-19 Workforce* that 'animal attendants and trainers' was one of the top 20 most resilient occupations in Australia.[60] Stakeholder feedback indicates this is due to high levels of skills that can withstand structural changes, which cannot be replaced by automation, and for which future demand is likely to be sustained or grow. By 2026, there is projected to be 14.9% more 'animal attendants and trainers' and 15.4% more 'veterinary nurses' employed in Australia than in 2021.[61]

The very low participation of men in the animal care and management sector (17% in 2021, which was a 3% decline from 2016) is worthy of attention, particularly in light of the anticipated increases in labour demand in this sector.

Underemployment and overemployment

The 2021 Census shows that 54% of Animal Care and Management workers are employed full-time but 45% of these people work under 35 hours weekly. This may be indicative of underemployment in these industries, with potential productivity growth in the future if such issues are addressed.

On the other hand, 32% of the workforce works over 39 hours per week, which exceeds industry award standards. This suggests that a significant portion of the workforce works longer hours.

Animal Care and Management Summary

Workforce challenges

- Labour shortages.
- Underemployment and overemployment.

Key evidence gaps

- Significant under-representation in the ANZSIC.

Workforce planning priorities

- Participate in reviews of the ANZSCO and ANZSIC by the Australian Bureau of Statistics (ABS). **(1a)**
- Support industry to address labour shortages, especially through holistic workforce planning strategies in rural, regional and remote areas. **(1b, 1c)**
- Support industry skills and workforce leadership development, and contribute to existing industry strategies and resources aimed at addressing workplace conditions, skill and labour shortages. **(2a, 2b)**

3.15. Amenity Horticulture, Landscaping, and Conservation & Ecosystem Management

Amenity Horticulture, Landscaping, and Conservation and Ecosystem management

ANZSIC A7313, A8921, A8922

Industry snapshot

$6,835 M
Revenue
(2022-2023)

33,698
Establishments
(2022-2023)

100%
Revenue from domestic demand
(2022-2023)

22%
Women
(2021)
↑ 8% from 2016

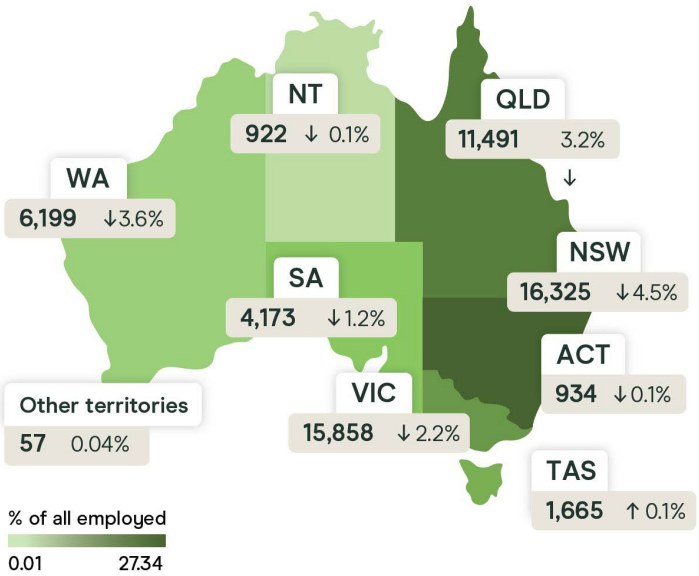
2,225
Indigenous workers (2021)
↑ 875 from 2016

16.1%
Projected growth in employment
(2026)

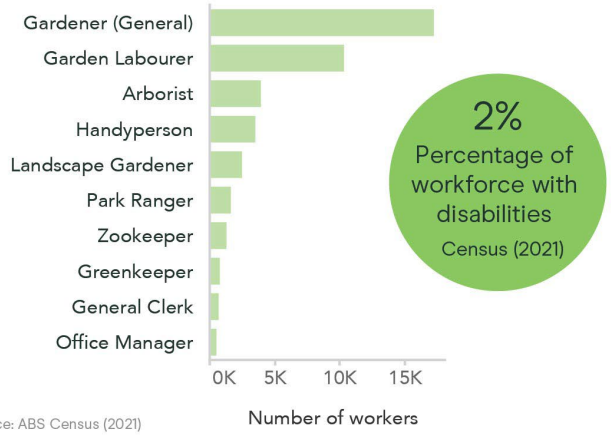
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016



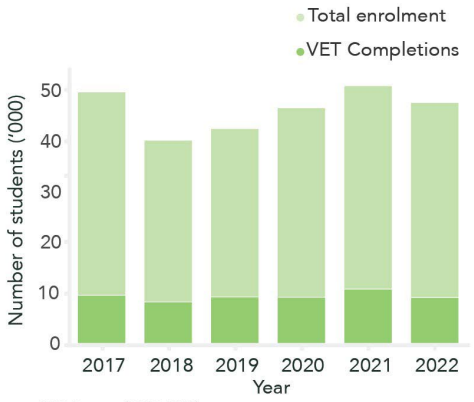
Key Occupations, by employment



2%
Percentage of workforce with disabilities
Census (2021)

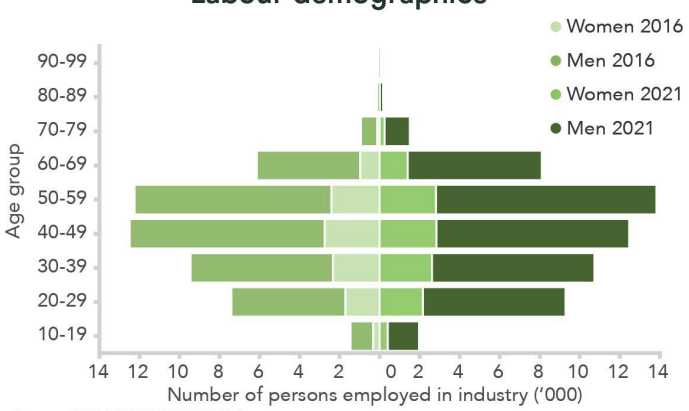
Source: ABS Census (2021)

VET Enrolments and completions



Source: ABS Census (2016, 2021)

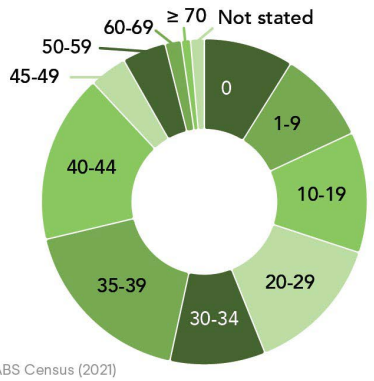
Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly

15 years and over



Source: ABS Census (2021)

3.15.1. Industry sectors (ANZSIC Classes)

- Gardening Services
- Nature Reserves and Conservation Parks Operation
- Zoological and Botanical Gardens Operation

Key insights from industry sector infographic and other data	Priority
Labour shortages	High
Potential new skills requirements	Medium
Lack of workforce diversity	Medium

Australia's numerous public and private green spaces can be enjoyed thanks to the hard work of the Amenity Horticulture, Landscaping, and Conservation & Ecosystem Management industries. Drawing on a vast array of skills, the workforce cares for and maintains vast natural areas and bushlands, Indigenous Protected Areas, coastal landscapes, national and state parks, public gardens, sporting grounds, and green spaces, and supports private gardening and growing activities. As climate change mitigation becomes a global priority, there is a growing demand for skills and labour across these industries, including to sustain biodiversity, and to restore and rehabilitate landscapes with ecological and cultural importance.

The skills and knowledge applied by the Amenity Horticulture, Landscaping, and Conservation & Ecosystem Management are highly contextualised, as demonstrated in the qualifications corresponding to specialised job roles in The National Training Register. These include:

- Conservation and Ecosystem Management (Certificates I, II, III, Diploma, Advanced Diploma)
- Permaculture (Certificates I, II, III, Diploma)
- Arboriculture (Certificates II, III, Diploma, Advanced Diploma, Graduate Diploma)
- Parks and Gardens (Certificates II & III)
- Nursery Operations (Certificates II, III, IV)
- Sports Turf Management (Certificates II, III, Diploma)
- Landscaping (Certificate II)
- Landscape Construction (Certificate III)
- On Country Management (Certificate III)
- Aboriginal and/or Torres Strait Islander Cultural Sites Work (Certificate III)
- Landscape Construction Management (Certificate IV and Diploma)
- Landscape Design (Certificate IV and Diploma)
- Nursery Management (Diploma)
- Community Group Coordination and Facilitation (Diploma)

Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent workers in Amenity Horticulture, Landscaping, and Conservation & Ecosystem Management:

Unit title	Unique skills and knowledge
Construct vertical gardens and green facades (AHCGRI402)	The unit applies to individuals who build or install vertical gardens and green facades on new or existing residential or commercial buildings in consultation with architects, engineers and other building and/or landscape and horticultural professionals. It is suitable for individuals who decide on solutions to a range of complex problems during the building or installation process through research, analysis and consultation. Vertical garden and green facade installation or construction must meet all regulatory requirements of national, state, territory and local government authorities and building regulations, standards and codes.
Implement cultural burning practices on Country (AHCOCM304)	This unit applies to cultural sites workers and land managers who use cultural burning practices on Country to manage natural and cultural resources. It requires a high level of awareness and experience working with local cultures and Communities, and it is expected that this work will be undertaken as part of a team working under supervision in most cases.
Develop conservation strategies for cultural resources (AHCOCM502)	This unit applies to those who develop conservation strategies and management policies for cultural resources as part of the overall park management and planning process.
Manage sports turf renovation programs (AHCTRF506)	This unit applies to individuals who are responsible for assessing a sports turf surface and developing programs and procedures to implement renovation activities appropriate to the sport and sporting regulations.
Design a rural permaculture system (AHCPER419)	This unit describes the skills and knowledge required to negotiate with clients to develop a design brief, undertake a site assessment, develop design concepts and produce final design specifications for a rural permaculture system.

3.15.2. Drivers of workforce dynamics

The rise of conservation and ecosystem management services

The diversity and size of Australia's conservation and ecosystem management services has not yet been sufficiently captured in national datasets, including the ANZSCO and ANZSIC. This is arguably because they are considered to be support services embedded within larger industries, such as agriculture; however, the national and international movement to mitigate climate change and enact sustainable practices has seen a massive surge in interest and investment in this industry. This includes a greater recognition for the traditional methods and knowledge of First Nations peoples and businesses.

Labour shortages

The National Skills Commission's 2022 Skills Priority List data shows national shortages of the following occupations:

- Nurseryperson
- Arborist

- Gardener (General)
- Landscape Gardener
- Earthmoving Plant Operator (General

There are also state-based and regional shortages in the following occupations:

- Conservation Officer
- Environmental Consultant
- Environmental Research Scientist
- Park Ranger
- Environmental Scientists nec
- Earth Science Technician
- Sports Turf Manager

These results are consistent with those from the Victorian Skills Authority who calculated that, to meet anticipated demand, Victoria will need an additional 700 gardeners and 350 garden and nursery workers in the 2022 to 2025 period.[62]

In 2021, women accounted for 22% of this sector and, while this was a remarkable rise of 8% since 2016, there may still be opportunities for a greater participation of women to address the labour shortages noted above.

Amenity Horticulture, Landscaping, and Conservation & Ecosystem Management Summary

Workforce challenges

- Labour shortages.
- Workforce diversity and culture: gender disparity, long working hours.
- Recognition of, and collaboration with, First Nations businesses and methods.

Key evidence gaps

- The ANZSCO and ANZSIC have yet to sufficiently capture current and emerging conservation and ecosystem management services and occupations.

Workforce planning priorities

- Support industry to attract a diverse workforce to address imbalances and labour shortages. **(4b)**
- Collaborate with project leader, the First Nations Land and Sea Corporation, to develop immersive technology training and assessment resources to support delivery of the Respect for Country qualifications and Indigenous Ranger skills development. **(2c, 3c)**
- Review of the Diploma of Arboriculture and Advanced Diploma of Arboriculture to accommodate the specialist arborist unit AHCARB613 Conduct complex tree hazard and health assessment post-fire, which was developed in the FWP Bushfire project and recoded to AHC. **(3a, 3b)**

3.16. Horse and Dog Racing

Horse and Dog Racing

ANZSIC A9121, A9129

Industry snapshot

$5,942 M
Revenue
(2022-2023)

6,103
Establishments
(2022-2023)

$109 M
Export value
(2022-2023)

45%
Women (2021)
↑ 2% from 2016

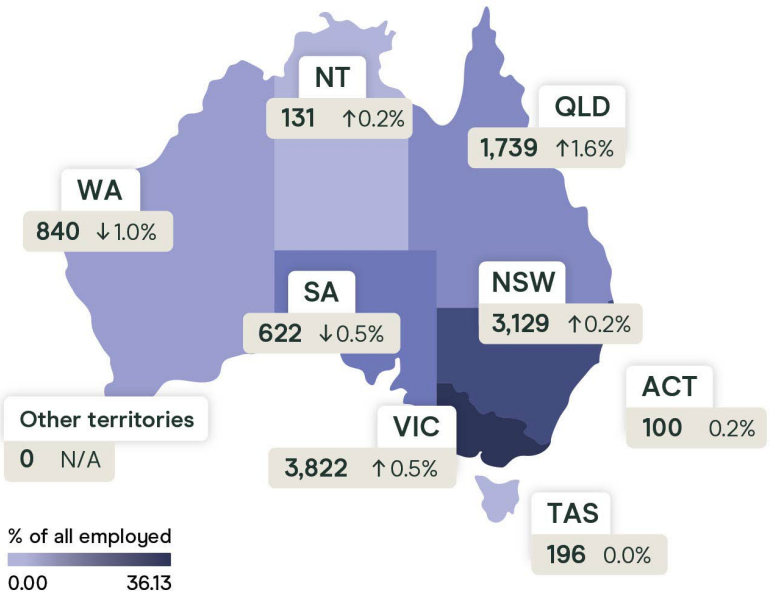
234
Indigenous workers (2021)
↑ 77 from 2016

12%
Projected decline in employment
(2026)

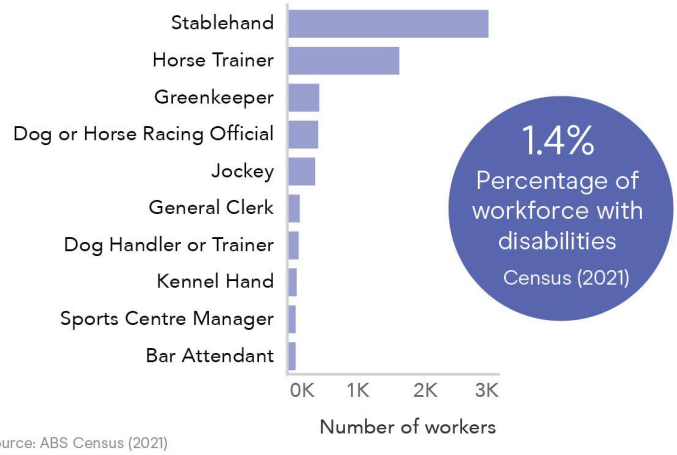
Source: IBISWorld, ABS Census (2016, 2021), NSC Employment projections (2021)

Employment count, by state

% of change 2016

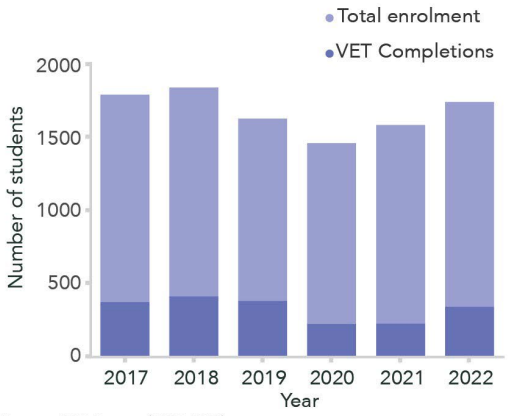


Key Occupations, by employment



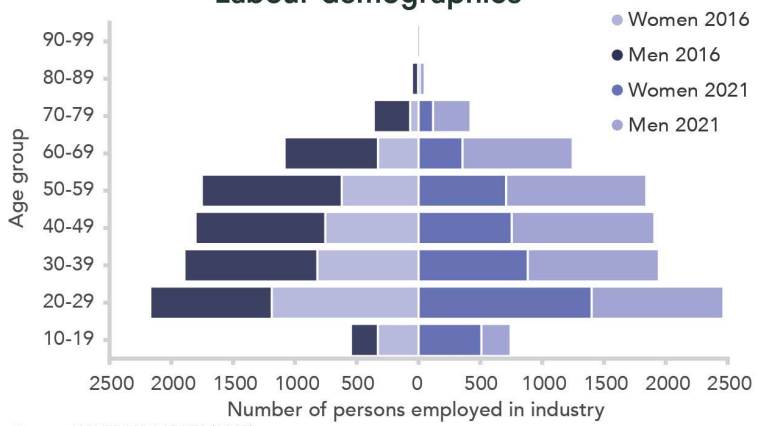
Source: ABS Census (2021)

VET Enrolments and completions



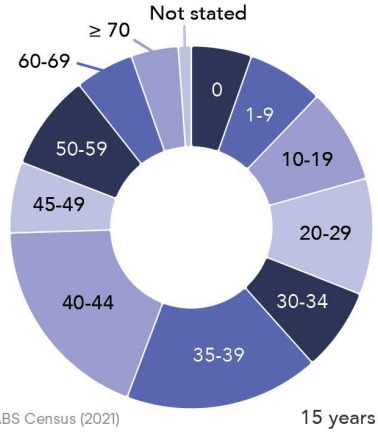
Source: ABS Census (2016, 2021)

Labour demographics



Source: NCVER VOCSTATS (2023)

Number of hours worked, weekly



Source: ABS Census (2021)

15 years and over

3.16.1. Industry sectors (ANZSIC Classes)

- Horse and Dog Racing Administration and Track Operations
- Other Horse and Dog Racing Activities

Key insights from industry sector infographic and other data	Priority
Labour shortages	High
Long working hours	Medium

The Horse and Dog Racing industries include racing authority operation, racehorse and race dog ownership and training, and racetrack and race club operation. Businesses are engaged in operating facilities that are specially designed and used for thoroughbred horse racing, harness (standardbred) horse racing and greyhound racing. Main activities include the operation of racing stables and kennels, the operation of horse or greyhound racing courses or tracks, the administration of racing clubs, the provision of riding or harness driving services, and horse or greyhound training for racing.

The Horse and Dog Racing workforce are expected to achieve the highest possible standards of safety and animal welfare across all areas of their work, while also supporting the success of each animal in sport and breeding activities. Reputable workers in this industry are skilled in training, nutrition, and biomechanics to care for dogs or horses actively participating in racing, keeping them physically healthy and preventing injury. Expertise is also required to retrain animals and support their welfare as they move into breeding or other environments. Knowledge of pedigrees, animal welfare issues, business management, and regulations are needed across the industry to maintain the high standards expected by the public.

The National Training Register details qualifications corresponding to specialised job roles in Horse and Dog Racing. These include:

- Racing – Greyhound (Certificate II and III)
- Racing Industry (Certificate II)
- Racing – Stablehand (Certificate I and III)
- Racing – Driving Stablehand (Certificate III)
- Racing Services (Certificate III)
- Racing – Trackwork Rider (Certificate III)
- Racing – Racehorse Trainer (Certificate IV, Diploma)
- Racing – Jockey (Certificate IV)
- Racing – Harness Race Driver (Certificate IV)
- Greyhound Racing Industry (Certificate IV)
- Racing Integrity (Certificate IV)
- Racing Integrity Management (Diploma)
- Horse Stud Management (Diploma)
- Horse Breeding (Certificate III and IV)

Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent industry workers:

Unit title	Unique skills and knowledge
Relate animal welfare to track and environmental conditions (RGRTRK402)	This unit applies to individuals who relate the injuries and performance of racing animals to external conditions and present options for improving performance and safety.
Manage reproductive outcomes of stallions and mares (RGRHBR502)	This unit applies to individuals who maximise breeding outcomes through preparing stud stock for breeding, assessing and maximising fertility, responding to foaling problems and emergencies, and managing contracts and leases for breeding stock.

3.16.2. Drivers of workforce dynamics

Labour shortages

The National Skills Commission's 2022 Skills Priority List data shows national shortages in Horse Trainers.

There are also state-based and regional shortages in the following occupations:

- Dog Handler or Trainer
- Horse Breeder
- Track Rider
- Dog and Horse Racing Official
- Jockey

Training provision

In its 2022 report, the Racing and Breeding Industry Reference Committee noted high levels of unacknowledged employment in the sector, including volunteers and race-day participants. The report also remarked that in the relative absence of formal training delivery, enterprises seek alternative training options for their staff, leading to an overall lowering of formal demand. With both supply and demand suffering, these VET markets are characterised as 'thin'. An example of a thinning VET market is typified by the discontinuation of the highly regarded Equine Section at Richmond TAFE from February 2022.[63]

Horse and Dog Racing Summary

Workforce challenges

- Labour shortages.
- Workplace culture: long working hours.
- Thin training markets in specific locations.

Key evidence gaps

- Unacknowledged employment in the sector, including volunteers and race-day participants.

Workforce planning priorities

- Development of nationally consistent training and assessment tools for select qualifications in the *RGR Training Package* (to be submitted after identification of RTOs prepared to deliver training). **(1b, 3c, 3d)**
- Pilot the mapping of career pathways by using the RGR Training Package and building on the approaches developed by industry stakeholders. **(3a, 3b)**

4. Initial workforce planning evidence gaps

This section provides feedback on the data gaps encountered when preparing this Initial Workforce Plan and from extensive feedback provided by stakeholders across industries and education and training organisations. It relates to *workforce planning priorities* **1a, 1b and 1c**. It also covers data and evidence gaps identified in *industry sector scans*, but does not differentiate industry sectors in the discussion of each evidence gap, besides key examples, because of the value that improving national datasets has to *all* industry sectors. Feedback here is aimed to support the continuous improvement of data collections and analyses that inform government and industry workforce strategies.

4.1. Context

Jobs and Skills Councils (JSCs) are tasked with engaging with national datasets to evaluate workforce trends and to identify and consider evidence gaps, including their nature, extent and impact on industries, workforces, and the ability to conduct effective workforce planning. By their very nature, datasets can only ever be partial and reductive: they are a means to analysing complex populations by pre-defined variables, which may only tell half of the story or be outdated as a description or organising principle for a workforce attribute. Industries and workforces change dynamically usually becoming more complex, and it is incumbent upon governments and industry leaders to continue striving for up-to-date data variables and collections to reflect these changes so that effective strategies and solutions may be implemented.

If the ambition of workforce planning is to ensure the right *skills* for the right *jobs* in the right *places* at the right *times*, accurate and timely workforce data and analyses are critical for meeting current and future demand. Incomplete or deficient data may cause slow or misdirected responses from industry, governments or education and training providers. As such, industry workforce data, including projections, must be improved to support:

- targeted strategies and investments for meeting workforce demand, including through skilled migration
- education and training providers realising the nature and quantity of future demand to inform their preparations for delivering needed skills.
- holistic planning to facilitate the workforce, including to provide sufficient housing and local amenities in regional, rural and remote Australia.

In 2020, the *National Agriculture Workforce Strategy* (Azarias Nettle & Williams, 2020, p.204) contended that national data collections did not reflect modern industry, entailing that quantifying the workforce was not possible, nor was anticipating demand for different jobs, skills and education and training provision. It recommended developing a systematic approach to workforce data collection to enable federal and state and territory governments, research organisations, industry bodies and education and training providers to analyse and understand the current and emerging workforce, including labour market dynamics at the national *and* local levels. This would necessitate collaboration between key data-collecting and -using organisations to improve national consistency and avoid duplication, and increased investment and resourcing for data collection and analysis. The creation of Jobs and Skills Australia and the industry-led JSCs will assist in this challenge providing the current shortcomings in data are recognised and addressed.

4.2. Collaboration with Jobs and Skills Australia

Jobs and Skills Australia (JSA) was formed to advise the Minister for Skills and Training and to collaborate productively with JSCs. JSA has the remit for functions including monitoring Australia's current and emerging labour market, and advising on workforce, skills and training needs and priorities.

While JSA has broad tripartite representation from business, unions, government, and the tertiary education system (incorporating both the skills training and higher education sectors), there is a need for more detailed, workforce-specific information relating to the industries within its purview. This need is being addressed through the work of the industry-led JSCs.

JSA has responsibilities for collecting and presenting national, industry-wide information, including from original research and primary data collected by the Australia Bureau of Statistics (ABS), the Australian Government Department of Immigration and Australian Taxation Office. The ambition is for JSCs to be able to treat JSA as their primary data source; however, at present, both JSA and JSCs are in their 'establishment phase', and JSA is taking a consultative approach to improving and refining their data and information provision. A reciprocal relationship is forming, such that JSCs may comment upon or request JSA data (especially at the national level), while JSA may comment upon or request JSC workforce planning reports, especially concerning local and industry sector issues that may have broader ramifications across the workforce.

To assist with the consideration of existing evidence gaps and to support the prioritisation of future work by JSA, constructive feedback is provided here, reflecting data analysis challenges faced by JSA and JSCs and from stakeholder feedback.

4.3. Industry/occupation/training package coverage

Defining the workforces to which JSCs are responsible is not a straightforward task. This is because JSCs have been assigned industry groupings according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), and these industries comprise numerous occupations defined in the Australian and New Zealand Standard Classification of Occupations (ANZSCO), many of which function within multiple industries. In turn, these occupations are the intended outcomes for graduates of related training package qualifications in the National Training Register (training.gov.au). Training packages dictate which industries and occupations must be engaged with as part of each JSC's remit so that vocational education and training can be informed by workforce planning strategies and training package products can be created, reviewed and/or updated as appropriate (see below for discussion on the untapped potential of the National Training Register).

However, there are misalignments and ambiguities across these three variables. Many ANZSCO occupations do not function exclusively within a single ANZSIC industry (please see the below discussion on *data collections that use the ANZSCO*), and JSCs will have to collaborate to ensure any single JSC or industry does not have disproportionate 'ownership' over how the required competencies for an occupation are described. Collaboration between JSCs is likely to help improve workforce, education and training outcomes, and the articulation of transferable skills, for industries and current and prospective workers alike.

A more fundamental issue is that the structure of the ANZSIC does not align with training packages, which are themselves organised according to industry groupings, as defined through extensive and ongoing consultation with stakeholders and subject matter experts. While Skills Insight have been allocated specific training packages as part of their contract, some of the ANZSIC titles associated with those training packages are not included in the formal acknowledgement of industry coverage [64]

announced by the Australian Government or, subsequently, in JSA data. The ANZSIC Class Titles and Associated Training Package(s) below show the industry sectors that Skills Insight must engage with, but which are not included in their formal coverage.

Division Title	Subdivision Title	Group Title	Class Title	Associated Training Package(s)
MANUFACTURING	Food Product Manufacturing	Meat and Meat Product Manufacturing	Meat Processing	AMP
MANUFACTURING	Food Product Manufacturing	Meat and Meat Product Manufacturing	Poultry Processing	AMP
MANUFACTURING	Food Product Manufacturing	Meat and Meat Product Manufacturing	Cured Meat and Smallgoods Manufacturing	AMP
MANUFACTURING	Food Product Manufacturing	Seafood Processing	Seafood Processing	SFI
MANUFACTURING	Non-Metallic Mineral Product Manufacturing	Glass and Glass Product Manufacturing	Glass and Glass Product Manufacturing	MSF
ADMINISTRATIVE AND SUPPORT SERVICES	Building Cleaning, Pest Control and Other Support Services	Building Cleaning, Pest Control and Gardening Services	Gardening Services	AHC
ARTS AND RECREATION SERVICES	Heritage Activities	Parks and Gardens Operations	Zoological and Botanical Gardens Operation	ACM, AHC
ARTS AND RECREATION SERVICES	Heritage Activities	Parks and Gardens Operations	Nature Reserves and Conservation Parks Operation	AHC
OTHER SERVICES	Personal and Other Services	Other Personal Services	Laundry and Dry-Cleaning Services	MST

Addressing key data and evidence gaps

Issue

- The industries and occupations under the coverage of each JSC are not satisfactorily defined.

Impact

- Industry sectors and related occupations will be excluded from aggregated workforce data provision, notably by JSA.
- Analyses of workforce planning issues, and resulting strategies, may be incomplete.
- The 'voice of industry' and stakeholders' contributions may be unsupported – and undermined – if industry sectors are not assigned appropriately.
- There may be missed opportunities for inter-JSC collaboration if coverage is not clarified.

Priority and strategy

- High priority: defining industry coverage ensures stakeholders are not excluded during this important JSC/JSA establishment phase.
- Skills Insight will work with JSA and other partners to define industry coverage, including overlaps with other JSCs.

4.4. ANZSIC

The Australian and New Zealand Standard Industrial Classification (ANZSIC) provides a standardised definition of industries in increasing levels of detail, from Division (e.g. Agriculture, Forestry and Fishing), Subdivision (e.g. Agriculture), Group (Fruit and Tree Nut Growing), to Class (e.g. Berry Fruit Growing).

The ANZSIC is slow to update descriptions of existing industries and sectors and to identify and add classifications for emerging sectors in the Australian economy. While the ANZSIC is an important tool for comparing industry statistics, it has not been subject to a major review since 2006 and requires more contemporary industry classifications to ensure the collection and production of high-quality industry statistics that support evidence-based workforce planning and strategies. Updating the ANZSIC would enable greater consideration of industries and skills needs across relevant value chains.

Particular industries under the coverage of Skills Insight are poorly serviced by the ANZSIC:

- Animal care and management: 'veterinary services' is the only relevant ANZSIC class defined (apart from Zoological and Botanical Gardens Operation, which is classified in another sector) despite there being various established and emerging industry sectors, especially for animal services, such as grooming and physiotherapy, and pet product retailers. Most of these markets – and their value – continue to be hidden from standard government and market analyses. This means relevant workforces are not quantified and any opportunities associated with having an ANZSIC, such as being included on skilled migrant and training subsidy lists, remain unavailable.
    - This constrains market growth, the opportunities and value assigned to emerging sectors and occupations and, in some cases, the quality of care that animals may receive.

- Forestry and Logging: native forestry is not separated from plantation forestry – both are under 'forestry' – but disaggregated data is required for workforce planning strategies to address the phasing out of native forestry in Western Australian and Victoria and the need to support displaced workers.

In 2022, the ABS reported on their survey[65], in which 'There was widespread acknowledgement from respondents that ANZSIC 2006 hasn't kept pace with Australia's changing industry structure over the last 15 years and improvements need to be made to the classification. Feedback recommended improvements to classification structure and industry coverage. […] Feedback indicated that the benefit of having an updated classification outweighed the initial barriers to implementing a new classification, however, the ABS acknowledges that implementation concerns raised by some respondents will require further exploration and consultation.'

Addressing key data and evidence gaps

Issue

- The ANZSIC requires updating to reflect current and emerging industries and so improve the collection and production of industry data that supports evidence-based workforce planning and strategies.

Impact

- Until the ANZSIC is reviewed, there will continue to be significant data and evidence gaps across multiple, especially emerging, industries, denying them of the opportunities formal recognition unlocks.

Priority and strategy

- High priority (contingent): if/when the ANZSIC is reviewed Skills Insight will engage with stakeholders to provide input so that improvements can be made and, therefore, data-supported decision-making can be better informed.

4.5. ANZSCO

The Australian and New Zealand Standard Classification of Occupations (ANZSCO) provides a basis for the standardised collection, analysis and dissemination of occupation data for Australia and New Zealand. It was established in 2006 and has been reviewed intermittently. ANZSCO is used in ABS Censuses and Labour Force Surveys to collect and analyse occupation data. For information on the principal titles, alternative titles and specialisations relating to ANZSCO occupations, see the ANZSCO Index of principal titles, alternative titles and specialisations[66].

In 2021, a review of 'agriculture, forestry and fishing' occupations resulted in the creation of new, and the refinement of existing, ANZSCO occupations. In 2023-2024, ABS is conducting four rounds of further reviews, principally by inviting responses to a survey seeking feedback on the appropriateness of the descriptions and skill levels of current occupations, and on occupations that should be created or differently classified.

Inaccurate or missing ANZSCO classifications can have numerous impacts, including:

- rendering occupations and associated education and training ineligible for government-funded programs and subsidies (including Skilled Migration, Skills Priority Lists and state-based VET funding).
- making jobs potentially seem unattractive to candidates when they are represented at an inappropriate skill level.
- workforce skills misalignments, which are difficult to address through workforce planning that rely on datasets that utilise the ANZSCO.
- businesses experiencing difficulties in accurately identifying skills and training gaps.

Informed by stakeholder feedback and input, Skills Insight have and will submit responses to each round of the ANZSCO review for relevant occupations. So far, responses have proposed creating new ANZSCO codes for emerging occupations and altering the ANZSCO skill levels of existing multiple occupations from 'requiring a bachelor degree or higher' (Skill Level 1) to being aligned with the VET qualification that 'qualifies' graduates for those occupations. Recommendations for updating descriptions and creating new classifications have also been included.

Continuous improvement of the ANZSCO to better reflect the breadth of occupations and skills in the economy will benefit government and industry programs that aim to reframe misconceptions about industry occupations to attract new entrants. It will also help industries address workforce shortages that have inadvertently been sustained through occupations being mis-classified in, or absent from, the ANZSCO.

Addressing key data and evidence gaps

Issue

- There is a broad consensus among stakeholders and JSCs that the ANZSCO needs to be updated to reflect current and emerging occupations.

Impact

- Inaccurate or incomplete ANZSCO classifications limits eligibility for government-funded programs and subsidies (associated with Skilled Migration, Skills Priority Lists and state-based VET funding) and, therefore, strategies to address jobs and skills shortages.

Priority and strategy

- High priority: at the time of writing, Skills Insight have submitted survey responses, based on desktop analysis and stakeholder feedback, to two rounds of the ABS Review of the ANZSCO in 2023. Skills Insight will continue to engage with stakeholders to provide input to further rounds of review so that improvements can be made and, therefore, data-supported decision-making can be better informed.

4.5.1. Data collections that use the ANZSCO

The significance of the ANZSCO cannot be underestimated. Use of the ANZSCO to produce nationally consistent datasets is a logical approach; however, it is important to recognise that limitations in the ANZSCO will be reproduced, and often exacerbated, through its further use. While in many cases unavoidable, these limitations must be acknowledged in order to analyse datasets appropriately and avoid extrapolating trends from incomplete or partial data and evidence. Skills Insight will work with

all stakeholders through every possible avenue for the continuous improvement of the ANZSCO and the data collections that use it.

Census: gaps in coding of occupations/industries

There is no definitive categorisation linking occupations to industries. The Australian Bureau of Statistics' *2021 Census of Population and Housing* data include interpretations of respondents' answers, which may not accurately represent the industry of employment or the multiple industry sectors that engage the services of people in particular occupations. For example, 'Fruit or Nut Picker' is the fourth top occupation employed in 'Agriculture, Forestry and Fishing Support Services' (983 people) when arguably most should be classified under 'Production Horticulture' (in which 'Fruit or Nut Picker' is the top occupation, employing 3,227 people).

Industry and occupation employment data from the 2021 Census also shows evidence gaps and data limitations in the number that are classified as 'not further defined' (nfd), meaning individuals' responses did not contain enough information for them to be accurately mapped to an ANZSCO identifier or ANZSIC Class. This makes a comprehensive representation of industry workforces difficult to construct but as there are 46,887 people in 'nfd' occupations these data gaps must be investigated further.

Census data, however, can be extremely useful for elucidating the distribution of occupations across industries – especially for those occupations not usually assumed to 'belong' to particular industries (see the text box 'Skills Insight's coverage of the ANZSCO' below). An industry/occupation concordance using 2021 Census data shows there were 5,444 'Truck Driver (General)' workers in the industries covered by Skills Insight. It is the 3rd top occupation in Turf Growing, the 6th top in Sugar Cane Growing, the 5th top in Forestry, the 2nd top in Logging, the 5th top in Poultry Farming (Eggs), and the 6th top in Dairy Cattle Farming.

Census 2021 data also shows that there were 4,944 General Clerks, 4,497 Bookkeepers, 4,214 Office Managers, 3,735 Forklift Drivers, and 3,564 Handypersons employed in the industries covered by Skills Insight. As Agribusiness, Fibre and Furnishing businesses become more professionalised, it will be important to assess whether they are experiencing skills shortages and low job fill rates for such occupations, perhaps because of qualified job candidates not having contextualised industry knowledge, with resulting concerns over their ability to make informed decisions concerning workplace safety, tasks, production and investment (as has been suggested by stakeholders).

This demonstrates the need for cross-industry engagement, training package development and other JSC activities to be highly collaborative due to the potential impact – and safety risks – of not adequately considering the industry-specific skills that these occupations demand in different contexts; for example, for the safe loading and unloading of livestock by Truck Drivers. Through JSC collaboration, it will also be important to investigate the variable duties of occupations such as Truck Driver at different points across supply chains and to ensure they are covered by relevant education and training.

Skills Insight's coverage of the ANZSCO

Please see *Skills Insight Workforce Plan, 2023 – Attachment A: Coverage of the ANZSCO*[67], which displays Skills Insight's coverage of the ANZSCO. Using *2021 Census* data, the table indicates how ANZSCO occupations map to ANZSIC industry divisions by virtue of at least 10% of occupational employment being classified under those industry divisions. This data was analysed to inform workforce planning activities for those industries and to help establish which JSCs should be engaged as partners when jobs needs are being considered. Please note that this mapping is not

exhaustive and that an analysis of relevant inter-sectoral skills will supplement the consideration of which stakeholders and JSCs should be engaged. Furthermore, this is a high-level workforce planning tool: it is indicative, not definitive, and will not preclude under-represented/equity groups or niche industries from being consulted (these cohorts may, for example, have a greater weighting in research participant sampling).

Gaps in seasonal, temporary and migrant workforce data

The most comprehensive and complete workforce data source is provided by the *2021 Census of Population and Housing*; however, as the Census is only conducted every five years, other sources of data released by ABS and JSA have an important role in assessing workforce dynamics and trends.

Census data offers only a 'snapshot in time' and is therefore unable to facilitate insights on industries' large seasonal and temporary workforces (or, as the National Agriculture Workforce Strategy suggests, the potentially high levels of unpaid family labour). Census data, therefore, may be supplemented with Australian Government and Jobs and Skills Australia datasets (e.g. Nowcast of Employment by Region and Occupation). Such datasets can be used to gain some insights into the cycle of seasonal work and to observe historical changes and projected needs in regional employment.), some of which derive from quarterly Labour Force surveys by the ABS (though utilising different datasets must be approached with caution because of methodological inconsistencies). However, while these are helpful for considering seasonal workforce flows, they may still suffer from large margins for error in some cases, especially when accounting for niche and regional industries, causing unreliable and volatile data reporting. Gaps and inconsistencies in these datasets are to an extent unavoidable, thus posing barriers to workforce planning, but Skills Insight will collaborate with other JSCs and Jobs and Skills Australia to identify inaccurate – and likely underestimated – workforce data, and work to bridge these gaps, including by using qualitative data to examine local workforce issues and trends.

Similar to the seasonal workforce, there is an overall evidence gap concerning temporary and migrant workers. Census and Labour Force Survey data only includes migrant workers (visa holders) who have resident status or expect to be residing in Australia for one year or more. Workers intending to stay in Australia for less than 12 months are not included in the Census and Labour Force Surveys. This is a significant workforce planning limitation for sectors that rely on temporary workers; e.g. farms producing vegetables, fruit, nuts, grain, cotton and dairy.

Evidence gaps due to data aggregation

While many non-Census data collections are released more regularly, disaggregated data are not often available. This is a barrier for workforce planning, especially concerning six-digital ANZSCO occupations that are misclassified. For example, 'farriers' (six-digit ANZSCO code 322113) are grouped under the four-digit classification '3221 Metal Casting, Forging and Finishing Trades Workers', along with disparate occupations such as 'blacksmith' and 'metal polisher'. As these occupations are associated with other, or multiple, industries, ascertaining overall figures for '3221 Metal Casting, Forging and Finishing Trades Workers' does not elucidate the number of farriers employed; hence the data cannot be used in workforce planning in any meaningful way.

Similarly, in non-Census data collections, it is not possible to map the workforce employed in different occupations across industries. While it may be assumed an Aquaculture Farmer works in aquaculture, participation of contractors, professional service providers and transport workers cannot be quantified in specific industries. Such workforces are more likely classified under non-Agribusiness, Fibre and Furnishing industries, including professional services and transport and freight services. This makes it difficult to analyse trends for workforce planning strategies, and this is becoming increasingly significant as Agribusiness, Fibre and Furnishing jobs and skills become integrated across the value

chain and evolve into highly-skilled roles in line with technological adoption and data-driven management practices.

The relationship between the ANZSCO and training package qualifications

Stakeholders have also commented on the association of the ANZSCO and VET qualifications. Currently, one ANZSCO occupation is allocated to each VET qualification in the National Training Register (NTR). Industry participants have previously advocated for this to change to better reflect the *range* of occupational outcomes associated with each qualification. This recommendation has not previously been accepted, but should be considered further in future qualifications reform to achieve:

- broader vocational outcomes by recognising skills commonality and promote labour mobility, where feasible
- an enhanced relationship between training products, training needs and pathways to employment and further education
- greater training product flexibility and enhanced responsiveness to changing industry needs through short courses (micro-credentials and skill sets)
- improved articulation and pathways between education sectors, building on the Australian Qualifications Framework (AQF) Review recommendations.

See below for further consideration of the nexus between ANZSCO, the National Training Register and the Australian Skills Classification.

Addressing key data and evidence gaps

Issue

- While the ANZSCO supports multiple nationally consistent datasets, there are inherent limitations in its coding and publication, including:
    - a significant number of workforce participants whose occupations cannot adequately be defined;
    - tendencies to categorise occupations and associated industries reductively;
    - difficulties in consistently publishing data to the detail required for assessing yearly trends (e.g. in seasonal, temporary and migrant workforces);
    - the unavailability of disaggregated data, which is a barrier to constructing meaningful insights; and
    - misalignments between the purposes of datasets and their use of the ANZSCO (e.g. intended occupational outcomes and skill levels in the NTR).

Impact

- A significant proportion of the workforce may be excluded from workforce planning data analyses.
- There may be insufficient data to inform strategies to address jobs and skills shortages, including through skilled migration or peoples' transferability across occupations and industries.
- Opportunities for meaningful collaboration between JSCs on jobs and skills challenges may be missed.

Priority and strategy

- High priority: Skills Insight will work with all stakeholders through every possible avenue for the continuous improvement of the ANZSCO and the data collections that use it.
- Collaboration among the JSCs must include addressing data and evidence gaps. This will involve documenting the intersection of industries, occupations and skills to ensure adequate stakeholder engagement, training package development and consideration of the skills (including safety skills) that occupations demand in different contexts.

4.6. Occupation and skills priorities

Addressing industry and occupational skills priorities requires both reactive and proactive strategies. Workforce planning must be concerned with observed skills shortages and surpluses but also where employment levels and skills needs are projected to change in the future.

Different labour market dynamics impact the supply of and/or demand for people with distinct sets of skills in a workforce. These labour market dynamics may emanate from various underlying issues or external impacts, which can have wide-ranging implications across socio-cultural, geographical, environmental, technological, economic, political, and regulatory domains. When labour market dynamics are out of balance it can result in observable workforce supply/demand misalignment symptoms such as skills shortages or surpluses. At the same time, these influence projections of industry employment growth or contraction over the coming years.

The complexity of addressing current and emerging skills priorities requires consideration of numerous sources of information and place-based contexts. A key dataset is the *Skills Priority List* (SPL), which was produced by the National Skills Commission in 2022, and is the responsibility of Jobs and Skills Australia from 2023.[68] This work will inform and support Skills Insight workforce planning activities to identify where the economy's skill shortages are most acute and where various potential national, state and regional strategies may be most effective.

The SPL provides a current labour market rating for occupations, which are considered to be in shortage when 'employers are unable to fill or have considerable difficulty filling vacancies for an occupation or cannot meet significant specialised skill needs within that occupation, at current levels of remuneration and conditions of employment and in reasonably accessible locations'. The SPL also presents a future demand rating for occupations nationally, which expresses the prospects for an occupation relative to that occupation's size. Future demand rating data will be considered alongside forthcoming industry and occupation employment projection data (last released by the National Skills Commission in 2021).

Continuous improvement of the Skills Priority List and Internet Vacancy Index

The SPL is based on the ANZSCO, which is currently being updated (see above). Numerous stakeholders believe that, with the benefit of new and refined ANZSCO classifications, future releases of the SPL will display shortages in a greater number of occupations associated with the Agribusiness, Fibre and Furnishing industries.

Feedback from stakeholders further suggests that the National Skills Commission's methodology for the SPL under-represented shortages in occupations that are predominately located in regional, rural and remote areas. The SPL used data sources such as the Internet Vacancy Index (IVI), which only monitors mainstream job websites, e.g. Seek, and therefore did not account for the predominance of jobs advertised through local and informal networks by regional, rural and remote businesses. The National Skills Commission did attempt to balance the proportion of employers in metropolitan and regional

areas (as discussed in their SPL methodology paper); however, stakeholders' concerns persisted over the SPL not reflecting their knowledge of skills shortages, and the fact that occupations were classed as having 'no shortage' when there was inadequate evidence of a shortage (e.g. as a result of too few stakeholders participating in the research).

An occupation being erroneously classified as 'not in shortage' means it will not be considered for the Priority Migration Skilled Occupation List, Australian Apprenticeships Priority List or vocational education and training subsidies. This is a significant hindrance to workforce planning strategies and addressing occupational and skills shortages.

Addressing key data and evidence gaps: SPL

Issue

- The SPL Indicator Model is based on inputs from problematic data sources (including the IVI and ANZSCO – see above).
- Stakeholder input and feedback on the SPL is sought from businesses, employers and industry bodies, unions, Federal and state/territory governments; however, there is no transparency over participants, and key industry bodies report having been excluded.
- Where there is insufficient evidence collected for the SPL, this is not made explicit and relevant occupations are erroneously classified as 'not in shortage' (rather than acknowledging 'insufficient evidence').
- It is reported that qualitative feedback on the SPL is collected from stakeholders; however, this is not published. This is potentially a rich source of data and information that could be used to develop industry- and location-specific nuance to the workforce planning issues reported, including why employers cannot fill vacancies, why applicants may be considered unsuitable, and the impact of recruitment challenges on employers.

Impact

- It is reported that only 13 Agriculture, Forestry and Fishing industry stakeholders provided submissions for the 2023 SPL consultation. This is a low number of stakeholders to provide feedback relative to the number of relevant occupations and may entail data integrity issues.
- Small sample sizes mean there is limited or mixed evidence of the occupational shortages that are reported by industry as widespread. This may limit access to government-funded programs, such as Skilled Migration and education and training subsidies.
- Numerous stakeholders report having a low estimation of the SPL and often place greater faith in industry-specific reports that reflect their experiences.

Priority and strategy

- High priority: Skills Insight will support JSA in the continuous improvement of the SPL for the benefit of the Australian workforce, industries and economy.

Addressing key data and evidence gaps: IVI

Issue

- The IVI considers major online job boards. Jobs advertised through local and informal networks in regional, rural and remote areas and by other channels (e.g. word of mouth) might not be fully reflected on those online job boards.

Impact

- Industry demand for workers in regional, rural and remote areas and some occupations is likely to be underestimated.

Priority and strategy

- Medium priority: Skills Insight will support JSA and others in the continuous improvement of the IVI.

4.7. Place-based data gaps and opportunities

Data provided by the SPL and IVI are vital for considering what jobs and skills are needed and where (on a state-level). This will help Skills Insight to undertake an active place-based approach to workforce planning activities. Such an approach acknowledges that there are variable factors influencing jobs and skills supply and demand in different contexts across regions, industries, and education and training delivery.

Regional workforce shortages, for example, indicate that the availability of jobs alone is not enough to attract and retain skilled workers. Place, in the context of housing availability, infrastructure and services, is a huge influence on peoples' willingness to remain in, or move to, work locations. Regional industries' workforce attraction and retention strategies, therefore, cannot be disentangled from prospective workers' perceptions of a location's liveability (which includes education and training opportunities). This requires further consideration of the datasets and strategies being implemented to analyse the issues identified. Explicit information and data on workforce contexts would provide nuance to the challenges – and shortages – being experienced by industry and education and training providers, and would facilitate the proposal of appropriate, place-based solutions.

To that end, JSA and JSCs would benefit from enhancing their place-based evidence and data collections. To address existing gaps, it is appropriate that JSCs work closely with agencies in the state and territories; for example, the Food, Fibre & Timber Industries Training Council[69] in Western Australia, which contributes to drafting the State Training Plan and makes recommendations to the Western Australian Government on apprenticeships and traineeships and other training and workforce development issues. Other state bodies include the Agriculture, Food and Animal Management[70] Industry Training Advisory Body[71], which is funded by the NSW Government to provide industry-led advice about VET and skills related matters, and the Industry Skills Advisory Council NT[72], which gathers intelligence on training package development, workforce skill shortages and solutions in the Northern Territory.

Addressing key data and evidence gaps

Issue

- JSCs must develop sophisticated place-based approached to workforce planning.

Impact

- Highly variable factors influence jobs and skills supply and demand in different contexts across regions, industries, and education and training delivery. State-based, regional and local knowledge, evidence collection and collaboration need to be improved if workforce planning strategies are to be successful.

Priority and strategy

- High priority: In September 2023, Skills Insight will meet with state and territory agencies and JSA representatives to establish a Memorandum of Understanding for developing formal supportive partnerships. Key issues to be discussed are approaches to liaising at the conceptual stage of workforce planning strategies so that workplans may be complementary, and minimising duplication of data and evidence collection to ensure the efficient allocation of time, money, and human capital. This will involve reviewing current workforce planning priorities, evidence gaps, and developing best-practice guidelines for sharing data and information.

4.8. Vocational Education and Training data

The National Centre for Vocational Education Research (NCVER)[73] is the national body responsible for collecting, analysing and communicating data and research on the VET sector. NCVER collect training delivery data from RTOs according to the Australian Vocational Education and Training Management Information Statistical Standard (AVETMISS), and present cleansed datasets through tools including VOCSTATS, an interactive web interface that enables users to construct their own tables from various NCVER data collections.

The datasets in VOCSTATS – Apprentices and trainees, VET in schools, Government-funded students and courses, and Total students and courses (TVA) – support all reporting on VET participation. While some datasets are released quarterly (Apprentices and trainees), the most comprehensive dataset, TVA, is released yearly in August to provide data up to the end of the previous year. NCVER should be supported in releasing this data sooner to support decision-making around training package review and development work. A Minister's priority is to streamline training packages and decisions are sometimes required over whether to retain qualifications or units of competency in the National Training Register if they have attracted few enrolments over the preceding years. Hypothetically, work being undertaken in July 2024 to assess whether to retain specific training package products would only have 2022 enrolment data to inform the decision and may be *uninformed* of a significant upturn in enrolments in 2023 due, perhaps, to cyclical industry demand. It would be of advantage to all users if data were available in a timelier manner to inform decision-making that, at current state, may ignore significant recent developments due to this lag.

NCVER release other key datasets for workforce planning, including on Employers' Use and Views of the VET System, VET qualification completer outcomes by qualification, and Student Outcomes Surveys. These help to inform assessments of the effectiveness of education and training solutions as a response to jobs and skills needs. NCVER datasets, however, currently have gaps that mean desired data is not presented or should be used with caution. For example:

- ‘Student Outcomes Survey’: small participant and sample sizes means estimates can have a large margin of error (especially for qualification part-completers), which should therefore be used with caution.
- ‘VET student outcomes: qualification completer outcomes by qualification’: data are shown for qualifications with 100 or more qualification completer responses. In 2017, data for only 17 of 204 qualifications under the coverage of Skills Insight were presented.
- ‘Employers’ Use and Views of the VET System’: data is aggregated by ANZSIC Division, meaning insights can only be gained for ‘Agriculture, forestry and fishing’ industry employers, when more granular data would be helpful.

Such data gaps mean there are significant limitations in assessing the flows from qualifications to occupations and considering appropriate strategies to support improvements. It will be difficult to analyse with certainty whether delivering more graduates may be an effective source of labour to alleviate supply pressure on the target workforce.

Addressing key data and evidence gaps

Issue

- Lags in the release of Total VET Activity data.
- Low participation rates in outcomes surveys.

Impact

- Workforce planning strategies and activities are not informed by up-to-date VET participation information.
- There are significant limitations in assessing and extrapolating VET outcomes for students and employers.

Priority and strategy

- High priority: Skills Insight will consult with NCVER on their National VET Research Program to provide constructive feedback on evidence gaps and potential future research and evidence collection.

4.9. The untapped use-value of the National Training Register

The National Training Register (NTR),[74] training.gov.au, is an extremely valuable national resource that holds information on skills standards in qualifications, units of competency (units), skill sets, and accredited courses, and registered training organisations (RTOs) that are approved to deliver nationally recognised VET training.

The NTR also has many uses beyond the education and training sector, including for business planning, job descriptions, and industrial award guidance. Promoted this way, it would be an extremely useful asset for industry and could be developed accordingly.

However, the value of the NTR is often overlooked because of erroneous terminology, notably ‘training package’, which implies that qualifications and units make up a complete package of training. In

reality, they define occupational skills standards and include a range of knowledge and assessment requirements, but do not describe the training activities that need to take place.

A consequence of this mistaken connotation of 'training package' is under-utilisation of the NTR in the development of products such as occupation profiles (work Jobs and Skills Australia has inherited from the National Skills Commission's program), which use the ANZSCO to define jobs and the Australian Skills Classification (ASC) to list specialist tasks and core competencies. The NTR, ANZSCO and ASC have the potential to complement one another, but the significance of the extensive industry input into the NTR seems to have been underappreciated in the design of occupational profiles. Industry experts engaged by Skills Insight consider that, while the NTR can sometimes be slow to articulate emerging skills, the ANZSCO and ASC currently have greater shortcomings, including incorrect or outdated descriptions of jobs, tasks and skill levels.

More closely aligning the NTR, ANZSCO and ASC could have benefits for the recognition of current and emerging skills, their development and associated pathways. It could facilitate more effective analyses of skills and training gaps, which would assist with Workforce Planning activities for the many occupations showing skills shortages. Any qualification reforms processes should also consider these issues, including the need to allocate more than a single ANZSCO code to each qualification (as noted earlier in this document), which would help mitigate against inappropriate code allocations (over which industry has no control) and to reflect the training package product design imperative of describing skills that can be applied across multiple job roles and sectors. In turn, this would help ensure that occupations with skills shortages are covered by government funding programs, notably education and training subsidies.

Addressing key data and evidence gaps

Issue

- The NTR is an under-used informational asset.
- There is limited productive alignment between the ANZSCO, ASC and NTR.

Impact

- The NTR does not receive the level of attention and resulting funding that it merits.
- Misalignments between datasets create, or exacerbate, barriers to identifying skills and training gaps and opportunities.

Priority and strategy

- High priority: Skills Insight will continue to work to develop and promote the content and use-value of the NTR. Skills Insight will participate in continuous improvement activities for the NTR, including to explore the possibility of collecting and publishing data on the Registered Training Organisations (RTOs) that are currently *delivering* training package products – rather than just having them on scope – to help inform potential enrolees and employers of the availability of training, and to facilitate workforce planning and implementation and promotion activities.
- Medium priority: Skills Insight will work with all partners to better align national datasets to support the recognition of current and emerging skills, their development, and associated pathways. This is a medium priority because it is an ambitious proposition involving multiple parties and is hence outside of immediate scope.

4.10. Risk as a critical factor in describing skills

Recently, significant work has been undertaken to identify commonalities between the skills described in the National Training Register and in different ANZSCO occupations in an effort to reduce duplication and to elucidate potential pathways between similar occupations. The Australian Skills Classification (ASC) is intended as a tool to aid this process by offering a common language for skills and drawing connections between skills and jobs.

The ASC (November 2022 release) includes 111 occupations under the scope of Skills Insight in the 'Specialist tasks' dataset. This dataset describes and classifies day-to-day work within occupations, including their clustering by skills family (Cluster Families). The 111 occupations under the scope of Skills Insight include skills from 27 of the 29 Cluster Families defined, indicating the breadth of skills needed to undertake job roles in the Agribusiness, Fibre and Furnishing industries.

The ASC is relatively new and continues to develop, including through the design of occupational profiles and the addition of jobs and skills not yet included. Currently, there are data gaps that will need to be addressed; for example, the specialist task 'Assist with handling of horses' is assigned only to the occupation 'Racecourse Barrier Attendant' when there are other occupations included in the ASC that undertake this task, such as 'Animal Attendants and Trainers', 'Veterinary Nurses', 'Livestock Farm Workers', 'Animal Trainer' and 'Horse Trekking Guide'. These gaps mean it is difficult for JSCs to use the ASC in workforce planning activities to assess potential strategies for drawing labour from workforces that share similar skills and flexible pathways, where people may be employed with limited reskilling requirements.

Another major challenge for utilising for ASC is due to the assumptions in its methodology. The use of Artificial Intelligence and machine learning to undertake textual analysis needs to be supported by a more rigorous qualitative analysis (in addition to the stakeholder feedback being sought, which may be of variable quality and scope). A key contention here is that, without further analyses to overlay the machine learning outputs, there needs to be additional nuance when considering the transferability of highly contextual skills to different occupations and industries.

The crucial variable of 'risk' represents a data gap because of its significance to the health and safety of workers, products and consumers. There may be severe consequences if there is a failure to recognise that similarly described skills can have dramatically different risk profiles depending on the context of their application. Consideration must be given to the nature of and level of risk depending on the locations and environments in which the skills are applied, and whether there is risk to self and/or others, the environment, the product, the reputation of the industry or the workplace. 'Risk' is transformative to skills, thus there is a marked danger in reducing seemingly 'portable' skills when they have may been developed in vastly different, non-transferable contexts.

Supplementing current ASC data with the concept of risk may strengthen and safeguard future iterations. This may be achieved by integrating or mapping datasets published by agencies such as Safe Work Australia, which presents statistics on trends in fatalities and injuries broken down by jurisdiction, occupation and industry sector, workers' compensation claims, the cause of injury or disease, type of tool involved in incidents, and the type of activity performed when an injury was sustained. This is especially significant for industries with inherent workplace risks, notably agriculture, for which industry leadership are seeking to address safety challenges, including through the promotion of education and training.

Addressing key data and evidence gaps

Issue

- ASC data has gaps and irregularities.
- The application of skills is always highly contextual and contingent, and so stakeholders are unclear as to the use-value of homogenising and clustering skills.

Impact

- Data gaps and irregularities cause confusion and loss of credibility.
- There may be risks in overstating potential skills transferability.

Priority and strategy

- Medium priority: Skills Insight will continue to engage with national data agencies, such as JSA, to ensure that there is appropriate consideration and development of the ASC concept and data. This will involve recommendations for the concept of risk and other contextual variables to overlay datasets intended to show skills transferability across occupations and industries.

4.11. Harnessing qualitative evidence and data

JSCs have a clear mandate to utilise data published by JSA and associated agencies, such as ABS. Relevant data products released by these bodies represent the most detailed and comprehensive datasets in existence for analysing the Australian workforce and economy. While committing to engage with the data outputs of partnering organisations, JSCs continue to conduct extensive horizon scanning and stakeholder engagement. These stakeholders are embedded in different places, networks and contexts and often ask questions about specific issues that cannot be addressed using existing national datasets.

There is a need to continue to improve current data collections so that more detailed and nuanced insights may be unlocked, especially concerning variables such as regional and seasonal workforces. Identified limitations in national datasets, whether in gaps or restricted disaggregation, must temper ambitions for the immediate comprehensiveness and accuracy of workforce planning strategies. At the same time, it will be important for JSA, along with JSCs, to develop capabilities in triangulating their extensive, though partial, quantitative data with the insights gained from qualitative research.

The approach to integrating qualitative findings must be considered carefully. Qualitative research may have a narrow focus on specific industry or workforce issues without necessarily exploring challenges on a national level, rendering findings unable to be extrapolated. Likewise, qualitative, independent and 'grey' literature findings often emerge from standalone projects, which cannot easily be integrated with other projects' findings such that they form a coherent and consistent overview, or assessment of trends over time.

Qualitative research, on the other hand, can exhibit very useful insights that may be illustrative of wider issues that can be addressed through place-based workforce planning activities. The value of qualitative research data is in its power to describe the lived experiences of people, industries and regions as they relate to the jobs and skills system, both to enrich and explain quantitative data but also, where appropriate, to call it into question. This can support examinations of the drivers of labour market dynamics; for example, socio-cultural workforce norms (behaviours, experiences, attitudes,

perceptions), which impact on decisions concerning strategies for the development, attraction and retention of skilled workers.

Addressing key data and evidence gaps

Issue

- There is currently a focus on national datasets to develop workforce planning insights. JSCs and JSA must develop capabilities in triangulating quantitative data with the insights gained from qualitative research.

Impact

- A greater balance between qualitative and quantitative analysis and reporting will help to construct richer insights into complex jobs and skills challenges and opportunities.

Priority and strategy

- High priority: Skills Insight will continue to utilise and develop multiple methods, notably qualitative research, to address key data and evidence gaps. Qualitative and quantitative data and evidence will be part of a two-way 'conversation' that seeks to understand and respond to stakeholders' challenges and opportunities in different contexts.

4.12. Better access to existing research and data

Many jobs and skills system organisations, including JSCs, lack access to valuable existing research and data. These sources should be identified, and JSA could play an important role in facilitating access (with appropriate recognition and limitations) so that existing research could be better utilised to fill data gaps. While NCVER and others provide access to significant VET-specific research, there is a plethora of additional research available through higher education institutions, Cooperative Research Centres (CRCs) and Rural Research and Development Corporations (RDCs). Skills Insight would welcome any reciprocal arrangement that allows research bodies to access the intelligence, data and networks established by JSCs; in turn, it would be extremely useful for JSCs to gain access to relevant online research libraries, such as those available to university students. This would offer access to the latest research and evidence relating to industry, skills, education and training.

Addressing key data and evidence gaps

Issue

- Inaccessible data, evidence and research materials.

Impact

- Inaccessible data, evidence and research materials represent a gap in the evidence base for developing informed strategies and solutions to jobs and skills challenges.

Priority and strategy

- Medium priority: Skills Insight will explore gaining access to existing and new research and data libraries.

4.13. Summary

Skills Insight will continue to identify and report on gaps in the available evidence and data both to provide constructive feedback to Jobs and Skills Australia (and others) and to develop workforce planning strategies and activities that aim to bridge those gaps. Continuous improvement of data collection methods by JSA, with support from JSCs, may assist in the development of more integrated and detailed approaches to identifying jobs and skills priorities. These priorities will shape JSC workforce planning activities as well as workforce strategies implemented by governments and the Agribusiness, Fibre and Furnishing industries.

In the next section, existing workforce and skilling strategies are mapped with reference to the key industry workforce challenges and evidence gaps noted in the sections above, including consideration of how these relate to Skills Insight's strategies, before current and future workforce planning consultations are outlined in the final section.

5. Existing workforce and skilling strategies

This section of the Initial Workforce Plan maps some of the known existing workforce strategies, their owners, objectives and recommendations, and indicates connections between these and Skills Insight workforce planning strategies and activities. There is also further consideration of opportunities for cross-JSC collaboration and to bridge some of the evidence and data gaps identified in the previous section. The list is not exhaustive but indicative of the many government, industry, workforce, national and state strategies that are, and will be, considered in workforce planning activities.

There are a multitude of workforce strategies across the Agribusiness, Fibre and Furnishing industries that contain ambitious, evidence-based plans for addressing workforce challenges and opportunities. Many of these strategies influence investment in, and perceptions of, the Agribusiness, Fibre and Furnishing industries. They cover a broad scope, from the international to national and state-based, address industries with a collective or sectoral focus, and segment workforce cohorts according to different populations (e.g. women or First Nations peoples).

A key challenge for JSC mapping of existing industry strategies is to draw connections between these diverse strategies and to engage with them in a productive manner. Skills Insight, and all other JSCs, are currently in establishment phase, thus connections with disparate industry strategies are in different stages of development. This will continue to be addressed through workforce planning activities in the immediate future and over the coming years.

5.1. Improve data and evidence to inform strategies and decision-making

The strategies mapped in this section relate back to the section above on *Initial workforce planning evidence gaps*. Key challenges and data gaps identified in this document are of concern to a multitude of stakeholders, including federal and state/territory government agencies, industry bodies, unions and other JSCs. Various existing strategies published by these stakeholders seek to address the need for an expanded and more detailed evidence base to inform workforce and skilling solutions. It is in the interests of all parties to support this broad agenda, collaborate when possible and to avoid duplication of efforts by communicating data collection and research work plans.

Overarching strategies guiding data and evidence collection include:

- working with key agencies and partners to improve the quality and detail of evidence, including national data assets, that inform forward strategies and decision-making.
- promoting place-based approaches to evidence collection and decision-making through multiple research methodologies, wherein the power of national data collections may be complemented by nuanced, local data and information to address shortages and supply/demand issues.
- holistic approaches to data analysis to explore challenges from all angles, including how broader issues contribute to jobs and skills challenges in, for example, regional, rural and remote Australia.

Existing strategy/lead stakeholder(s): Labour and skills data provision by Jobs and Skills Australia (JSA)

Key objectives/recommendations:

JSA's vision is for the full skills potential of our nation to be realised, resulting in improved workforce participation, productivity, wages and equity. JSA aim to be a key player in unlocking the potential of Australia's human capital to meet current and future skills needs. JSA has an experienced team working with stakeholders, including JSCs, to provide expert advice on the current, emerging and future skills and workforce needs of the economy, and on the effectiveness of the national skills system in meeting these needs. JSA oversee existing and new labour market and skills data publications, including the Australian Skills Classification, which is subject of a review, with a view to being replaced by an Australian Skills Taxonomy.

Link to workforce planning priorities:

See above section on 'Collaboration with Jobs and Skills Australia'. Together with JSA, Skills Insight aims to improve data collection and evidence provision to inform workforce planning strategies and decision-making. Skills Insight is working with Jobs and Skills Australia to consider agricultural taxonomies as part of a proposed Australian Skills Taxonomy.

Existing strategy/lead stakeholder(s): Workforce planning by Jobs and Skills Councils (JSCs)

Key objectives/recommendations:

Workforce planning is the strategic centrepiece of every JSC.

Link to workforce planning priorities:

JSCs are contracted to take an economy-wide approach in collaboration with other JSCs, thus there is a shared responsibility to support improvements in data and evidence collection and analysis to inform strategies and decision-making. Early sharing of information has identified concerns over data and evidence quality shared by all JSCs, including over the ANZSCO, small and niche industry sectors, under-represented workforce cohorts, foundation skills, digital capabilities, and inabilities to disaggregate more detailed data in national collections. There is a shared commitment to addressing these challenges.

Existing strategy/lead stakeholder(s): Workforce planning by state-based industry skills and training advisory bodies:

- Western Australia
    - FFTITC
    - FutureNow
- Northern Territory
    - ISACNT
- South Australia
    - SA Skills Commission/Agribusiness Industry Skills Council

- Queensland
    - MSQ
    - QFF
    - AQIA
- Tasmania
    - Skills Tasmania
- Victoria
    - Food & Primary Skills Vic
- Victoria/NSW
    - ForestWorks
- NSW
    - Manufacturing Skills Australia
    - AFAM
    - Mintrac
- ACT
    - To be advised

Key objectives/recommendations:

While the above agencies have different coverages and contracts, there are shared obligations to address workforce and skills priorities and shortages in their respective jurisdictions. They provide strategic information and advice to state governments on workforce development issues and recommend which VET qualifications should be subsidised based on data and evidence.

Link to workforce planning priorities:

See the section on *Place-based data gaps and opportunities* above. In September 2023, Skills Insight will meet with state and territory agencies and JSA representatives to work on a Memorandum of Understanding for developing formal supportive partnerships. Key issues to be discussed are approaches to liaising at the conceptual stage of workforce planning strategies so that workplans may be complementary, and minimising duplication of data and evidence collection to ensure the efficient allocation of time, money, and human capital. This will involve reviewing current workforce planning priorities, evidence gaps, and developing best-practice guidelines for sharing data and information.

Existing strategy/lead stakeholder(s): **Review of occupation and industry classifications by the Australian Bureau of Statistics (ABS)**

Key objectives/recommendations:

See the above discussion of the ABS's review of the Australian and New Zealand Standard Classification of Occupations (ANZSCO). This comprehensive review is to ensure ANZSCO better reflects the contemporary labour market and can meet stakeholders' needs. The ANZSCO is nearly twenty years old, and many traditional occupations have now evolved or new ones emerged. Reviewing the ANZSCO[75] will help inform and update educational pathways, skilled migration programs and workforce strategies that equip Australians with skills to get jobs and stay employed.

The ABS are currently consulting[76] on a potential review of the 2006 Australia and New Zealand Standard Industrial Classification (ANZSIC).

Link to workforce planning priorities:

Skills Insight will continue to collect stakeholder feedback on the ANZSCO and ANZSIC, both for targeted ABS reviews and ongoing mapping of barriers to accessing needed workforces. Updating the ANZSCO and ANZSIC will better equip industries with the data that they require for all workforce planning strategies.

Existing strategy/lead stakeholder(s): **The National VET Research Program by National Centre for Vocational Education Research (NCVER)**

Key objectives/recommendations:

NCVER is the national research body and key data custodian for the VET sector, funded by the federal government (DEWR). NCVER's research has national relevance and addresses VET sector issues that cut across jurisdictions and industries. NCVER are consulting stakeholders, including JSCs, on their National VET Research Program to set an agenda for VET research priorities. These are then discussed with federal, state and territory jurisdictions at a National Research Roundtable each October. The outcomes of these consultations are research proposals that are submitted to Senior Skills Officials Network (SSON) for endorsement.

From previous consultations, numerous VET research projects have been completed, while the following research topics are currently being investigated:

- Building effective RTO-Industry partnerships – examples of good practice
- Mapping the student journey in VET: the many faces of completion and non-completion
- From VET to employment: sustainable employment outcomes for Aboriginal and Torres Strait Islanders
- Zero sum game? The impact of increasing university participation on the pool of apprentices and trainees
- Assessing the value of pre-apprenticeship programs in delivering improved further education and employment outcomes
- How foundation skills programs contribute to learners' employment and further study outcomes, and the relationship between learner's characteristics and outcomes.
- Learner intention and outcomes: case studies of learners of non-English speaking backgrounds and First Nations learners.
- Understanding quality teaching and learning to build the capacity of VET teachers
- Good practice interventions and supports that reduce student non-completion.

Link to workforce planning priorities:

See above section on supporting NCVER to address data and evidence gaps.

Skills Insight will work with NCVER to meet collective priorities and avoid duplicating work to ensure complementary VET research that maximises the use of available resources.

Skills Insight will explore further opportunities for research that supports workforce planning of all JSCs and JSA, including exploring how RTOs determine training delivery viability and the subsequent impact

on access to training across different industries and locations, especially rural, regional and remote Australia. Further research may consider how, in the absence of VET delivery options, prospective learners and existing employers develop the job skills they need, including an analysis of education and training options outside of VET.

Existing strategy/lead stakeholder(s): Mapping the Workforce for Australian Agriculture by AgriFutures Australia

Key objectives/recommendations:

AgriFutures Australia is one of 15 Research and Development Corporations (RDCs) that address the Research, Development and Extension (RD&E) needs of rural industries. They research issues relevant to established industries, such as chicken meat, rice, and thoroughbred horses, and emerging sectors.

AgriFutures have identified the need for the agriculture, forestry and fisheries sectors to align and coordinate on workforce data collection. They note that a range of organisations collect workforce data, including the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), individual Research and Development Corporations (RDCs), the Australian Bureau of Statistics (ABS), state and federal government agencies, employers and industry bodies. AgriFutures have stated that an opportunity exists for cross-sector collaboration amongst data collectors and rural industries to align workforce data collection and improve existing datasets. This would allow for rural industries to measure progress areas such as gender and cultural diversity. AgriFutures are seeking to determine what workforce data currently exists, consult with stakeholders to identify data gaps, and to consider what information is needed to support future workforce planning.

Link to workforce planning priorities:

AgriFutures' stated objective of mapping the workforce has clear parallels with the work of Skills Insight and connections have been made in order to consider points of collaboration or support and to avoid duplication. AgriFutures also lead and collaborate on a multitude of workforce planning programs, consisting of 16 priorities across five focus areas[77]: key industries, emerging industries, workforce and leadership, national challenges and opportunities, and global innovation networks. AgriFutures representatives are also collaborators in the AWWG, discussed below.

5.1.1. Other stakeholders boosting data and evidence strategies

Skills Insight will seek to develop further relationships and explore potential collaborations with data-collecting and -using government agencies, industry bodies and research communities of practice, including:

- Labour forecasting by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)
    - ABARES is the research arm of the Australian Government Department of Agriculture, Fisheries and Forestry. Their purpose is to publish independent data, research, analysis and advice that informs public and private decisions affecting Australian agriculture, fisheries and forestry. Through their relationships with national and state organisations and industry bodies, and by conducting their own surveys, ABARES has access to data unavailable to most researchers.
    - ABARES are a key source of evidence concerning seasonal and migrant labour, off-farm roles and participation by under-represented cohorts. Skills Insight will seek to

develop productive relationships with this agency to mutually benefit workforce planning evidence and strategies.

- Rural Research and Development Corporations (RDCs)
    - There are 15 RDCs (five Commonwealth statutory bodies and ten industry-owned companies) across the agriculture, fisheries and forestry industries. Funding for the RDCs is from the Australian Government and industry contributions, usually collected as levies on production. Each RDC focuses on specific commodities and sectors. The RDCs also collaborate to address cross-industry issues and challenges.
    - Each RDC is tasked with delivering tangible and practical improvements for industry in the areas of sustainability, productivity and profitability, and the community. They do this with evidence and data from strategic, targeted investments and partnerships in research, development and the adoption of new methods and technologies.
    - Informal, unaccredited and extension training is facilitated by RDCs. Whether through grower groups or activities such as field days, there is extensive evidence of primary producers using a variety of informal education to increase their capabilities and capacity.[78] There is scope to assess whether there may be benefits in aligning these skilling activities with VET.
- The Australasian Vocational Education and Training Research Association (AVETRA)
    - AVETRA is Australasia's only national, independent association of VET researchers. AVETRA is committed to furthering the contribution of VET research to the development of Australian VET policy, independently reviewing VET research priorities, promoting significant research in VET, and raising the profile of the VET evidence base in academic and training communities, especially qualitative research.

5.2. Support skills and workforce leadership

The strategies mapped under this heading have a double significance: they both *demonstrate* and *promote* strategic leadership concerning skills and workforce challenges. In turn, Skills Insight supports these leaders' strategies, while also working collaboratively on strategies that further support the development of skills and workforce leaders. Invariably, the strategies detailed below have a broad and comprehensive scope and, therefore, reflect or influence each of the subsequent strategy areas.

The importance of supporting skills and workforce leadership is an attempt to continue the effort to harmonise, where possible, the strategies of various stakeholders across multiple contexts. While there may be various areas of contention, every stakeholder wishes to raise the leadership skills of the workforce to support:

- the fulfilment of existing skills and workforce strategies to improve peoples' education and employment outcomes, business productivity and profitability, and industry diversity.
- leadership for responding to *drivers of change and skills needs*, including to interconnect value chains, support the adoption of new and innovative digital technologies, enact sustainable methods with Environmental, Social and Governance (ESG) credentials, and prepare and respond to disruptions such as biosecurity incursions.
- succession planning, including attraction, retention and diversity strategies, especially in small and niche industries with an ageing workforce.

Existing strategy/lead stakeholder(s): **2030 Roadmap by The National Farmers' Federation (NFF)**

Key objectives / recommendations

The National Farmers' Federation (NFF) is the peak national body representing the farming workforce and agricultural industries across Australia. It is one of the nation's foremost and respected advocacy organisations. The NFF's 2030 Roadmap sets out its vision for the industry to exceed $100 billion in farm gate output by 2030. It identifies the significant opportunities and challenges that may be faced, and maps the steps required to achieve the objectives. For 'people and communities', these objectives include:

- Build leadership capability, including initiatives for financial literacy, corporate governance and regional development 'literacy' and practice.
- Establishing a nationally consistent, 'trade-equivalent' job brand for skilled farm workers.
- Doubling the number of tertiary and vocational agriculture graduates.
- Clear career pathways to attract workers and develop their skills, with tailored streams for new entrants through to seasoned professionals.
- Increasing the available workforce by 25%, including from the Australian labour force and migration.
- Creating pathways for unemployed Australians to find on-farm work.
- Promote initiatives that facilitate inclusion of under-represented cohorts in the agriculture industry.
    - Work with indigenous leaders to grow opportunities for Aboriginal and Torres Strait Islander people in agriculture, including within industry leadership.
    - Achieving gender parity in the agricultural workforce and doubling the number of women in management roles.
- Attracting new entrants by publicising the compelling rationale for a career in agriculture.
- Adopting methods and strategies for the continuous improvement of sustainability and land use, workplace safety, digital practices, traceability and product integrity, and domestic biosecurity.
- Continue to promote proactive succession planning.

Link to workforce planning strategies (e.g. map to recommendation/ opportunity for collaboration/data gap)

The NFF's 2030 Roadmap is a wide-ranging national agenda-setting document that covers all areas of workforce development. The NFF's influence in promoting leadership initiatives to attract new workers, including school leavers and under-represented cohorts, is critical to all Agribusiness, Fibre and Furnishing value chains. The recommendation to establish a nationally consistent, 'trade-equivalent' job brand for skilled farm workers is the subject of an approved workforce planning project activity by Skills Insight and partners, including the Agricultural Workforce Working Group (see below).

Existing strategy/lead stakeholder(s): **National Agricultural Workforce Strategy**[79]

Key objectives/recommendations:

- Federal, state and territory ministers and industry leaders should prioritise continuous capabilities development, including for owners, managers and workers (Recommendation 1).
- Lift leadership capabilities to:
    - Enhance sustainability (Recommendation 2)
    - Value-add across the supply chain (Recommendations 3-5)
    - Adopt digital technologies and develop associated skills (Recommendations 6-8)
    - Attract and retain the future workforce (Recommendations 9-13)
    - Strengthen education and training (Recommendations 14-17)
    - Improve workforce planning, management, health and safety, and wellbeing (Recommendation 18)
    - Empower place-based and locally-led approaches (Recommendation 19)
    - Attract and protect the seasonal and transient workforce (Recommendations 20-31)
    - Improve workforce data and information to bridge evidence gaps and inform policy (Recommendations 32-35)
    - Work collaboratively to implement workforce planning strategies (Recommendations 36-37).

Link to workforce planning priorities:

The *National Agricultural Workforce Strategy* is highly instructive. It concludes that the key enabling factor for supporting industry is lifting the capabilities and diversity of the workforce. It invites industry leaders to make workforce skills development planning core to their strategies, and to collaborate widely with federal and state government agencies, employers, industry bodies, and unions.

The Australian Government response to the National Agricultural Workforce Strategy was clear that addressing workforce needs is a shared priority across state and territory governments and will continue to be a key strategic focus for all Australian agriculture ministers. The government supported the recommendations of the *National Agricultural Workforce Strategy* in principle, and various associated initiatives have already been implemented. These include funding the ABS to update agriculture, forestry and fishing occupations in the ANZSCO in 2021, which has paved the way for further rounds of review in 2023-2024. Skills Insight have and will provide survey responses to each round of review.

5.2.1. Other stakeholders boosting skills and workforce leadership

Across Australia, there are a multitude of stakeholder networks that demonstrate skills and workforce leadership. Skills Insight will continue to access these groups through ongoing stakeholder engagement and members' networks. For example, Skills Insight will look to develop further collaborations with Regional Development Australia (RDA) Committees, which are made up of local people creating local opportunities. RDA committees comprise local leaders who coordinate and communicate across government, industry and local communities to support regional development. One of four key priorities for RDA Committees is a 'skilled and ready workforce'.

5.3. Support skilling

Under the new jobs and skills program, industries are being empowered to provide strategic leadership on skills and workforce challenges, including for upskilling and reskilling workers to meet emerging needs and jobs, and to ensure that the education and training system supports employers by equipping learners with the necessary skills for a broad range of career pathways. This necessarily involves collaboration and relationship building, as well as leadership and evidence-based decision-making (as above). It is well documented that there is unequal access to education and training due to various factors. Skills Insight will develop new and extended networks to address barriers to skilling through all pathways, including VET, higher education, and informal training, for people of every age, level of experience, background and location.

Skills Insight will engage with existing strategies by bodies in the jobs and skills system and seek to collaborate in their development and implementation. This includes:

- Supporting the appropriate skilling of the workforce by developing flexible training and education products and pathways that are industry-led and responsive to current and emerging trends
- Promoting upskilling and re-skilling opportunities for the current and prospective workforce
- Developing resources to support training and assessment practices, including for workplace-based experience and training delivery in small or 'thin' regional, rural and remote markets
- Supporting relationships and collaboration between employers and training organisations, including to connect national training products with delivery of training 'on the ground'
- Monitoring the outcomes of skilling strategies and adapting strategies where necessary

Existing strategy/lead stakeholder(s): VET Reform

Key objectives/recommendations:

VET reform is typified by the new JSC/JSA arrangements discussed above. There are also multiple ongoing consultations over sub-strategies that are being established as part of this program, including qualification reform. Recent reviews, including the Joyce Review, the Productivity Commission (National Agreement for Skills and Workforce Development Review) and other VET reform initiatives, have recommended ways in which the VET system can be improved, including with enhanced data and evidence to support a priority framework under the following broad principles that VET should be:

- Learner/worker-centred
- Industry-focussed
- Competency-based
- Government policy-aligned.

Link to workforce planning priorities:

Skills Insight will continue to engage with and, where possible, contribute to all aspects of the jobs and skills systems.

Existing strategy/lead stakeholder(s): National Regional, Rural and Remote Tertiary Education Strategy[80]

Key objectives/recommendations:

The National Regional, Rural and Remote Education Strategy was released in 2019 to focus on improving tertiary education participation and outcomes for students from regional, rural and remote areas. Five key issues were identified as significant dynamics causing individuals from regional, rural and remote (RRR) areas to have lower levels of tertiary education participation and attainment (lack of: access, opportunity and choice, student support, aspiration, career advice and schooling, support for equity groups, and regional development). The Strategy includes seven recommendations:

- Improve access to tertiary study options for RRR students
- Improve access to financial support, to support greater fairness and more equal opportunity
- Improve the quality and range of student support services for RRR students to address the challenges of transition and higher rates of attrition
- Build aspiration, improve career advice and strengthen RRR schools to better prepare RRR students for success, including by:
    - establishing aspiration-raising initiatives covering both VET and higher education, and expanding access to high quality VET programs in RRR schools.
- Improve participation and outcomes for RRR students from equity groups including low socio-economic status students, Indigenous students, students with disability and remote students
- Strengthen the role of tertiary education providers in regional development and grow Australia's regions
- Establish mechanisms to coordinate the implementation effort and support monitoring of the Strategy.

Link to workforce planning priorities:

The industries covered by Skills Insight are largely based in rural, regional and remote Australia. Many industry sectors, especially in these areas, are experiencing severe workforce shortages that may be addressed with greater access to education and training (as part of a Regionalisation Agenda[81], which is a holistic, placed-based approach to regional development in consideration of linked issues such as available and affordable housing, cultural and social amenity, and digital connectivity). However, rural, regional and remote Australia represents 'thin' training markets for registered training organisations, whereby delivering training to few, and geographically dispersed learners, is an unviable proposition. Given regional industries' importance to the whole Australian population, including for food security, Skills Insight will continue to work with all stakeholders to promote effective skilling and attraction strategies for rural, regional and remote workforces.

Existing strategy/lead stakeholder(s): Australian Universities Accord, Australian Government[82]

Key objectives/recommendations:

The Australian Universities Accord interim report considers current and future skills needs, learning and teaching, access and opportunity, research, funding and regulatory settings, employment conditions and strengthening engagement between the higher education and vocational education and training (VET) sectors. It also acknowledges the barriers regional, rural and remote Australians face in

undertaking tertiary learning. The Accord sets out an agenda for addressing skills needs inclusive of all educational pathways, including:

- the higher educations and VET systems should work together to deliver the flexible, transferable skills people want and need
- increase educational opportunities in regional, rural, remote Australia
- improve student understanding and navigation of pathways
- improve migration opportunities for addressing skills needs
- increase industry engagement in learning
- achieve equity in participation across different population cohorts.

Link to workforce planning priorities:

There is a critical need to broaden the remit of the previous industry engagement arrangements (when Industry Reference Committees were supported by Skills Service Organisations) so that the exclusive focus on training package development can be broadened to achieve better outcomes across industries and education pathways, including for school-based learners and higher education.

Workforce planning by Skills Insight will seek to address workforce challenges through strategies to identify, forecast and respond to skills needs across a range of educational pathways, including VET and higher education.

5.4. Support attraction and retention of a diverse workforce

Attracting more people, whether school leavers or career changers, to enter pathways for industry occupations necessitates a better understanding of the variables that impact on their decision-making. It is well documented that there are widespread negative perceptions of careers in industries such as agriculture and forestry, associated with long-held perceptions of manual, physically demanding occupations, with long hours and scarce modern technology, with an ageing, male-dominated workforce. There is also public scepticism over the Agribusiness, Food and Fibre industries' record on environmental and animal welfare issues, with 'social licence' an on-going challenge. Research in Western Australia observed that:

> 'The appeal of the sector is low due to a misunderstanding of what a career in agriculture offers. The technological innovation that is taking place within the sector and the new careers that are possible are not being communicated to students. In particular, urban students are unlikely to realise that the majority of roles in the agriculture sector occur after the farm gate.'
>
> YouthInsight (2017); Developing student interest in the agriculture sector; Southern Forests SEED Program, Shire of Manjimup

The Department of Agriculture, Water and the Environment (DAWE; now the Department of Agriculture, Fisheries and Forestry: DAFF) identified that 'Efforts to attempt to change how agricultural occupations are perceived will require a multi-faceted approach that engages both the individual and the broader socio-economic system'.[83] Further, DAWE saw value in Pratley's recommendations to strengthen agricultural education and so reframe it as a modern industry with a large array of technical jobs, with extensive career development opportunities and mobility, including for women, young people and career changers.[84]

Skills Insight will map further existing strategies, including by the Australian Government, for increasing diversity and inclusion, attracting young people (especially through initiatives such as AgATTRACT), and supporting the workforce. Engaging with existing workforce attraction and retention strategies will help to:

- support industry efforts to raise the profile, and awareness, of careers, education and learning pathways.
- assist industry to attract a diverse workforce, including by supporting industry in working with equity groups to understand and address workforce barriers and imbalances.
- explore our inputs to support industry efforts to attract skilled migrant and seasonal workers to address shortages.

Existing strategy/lead stakeholder(s): National Careers Institute

Key objectives/recommendations:

The National Careers Institute (NCI) ensures Australians have access to reliable and accurate careers information and resources. The NCI make extensive use of data and evidence provided Jobs and Skills Australia.

The Australian Government has funded the NCI to build an interactive career map on their YourCareer website to showcase the breadth and diversity of occupations in the agriculture, fisheries and forestry industries. The career map will seek to increase awareness of traditional, non-traditional, new and emerging agricultural occupations, and provide information on the transferability of workers' skills to, and between, industry careers and sectors.

Link to workforce planning priorities:

Skills Insight will develop relationships with the National Careers Institute to develop and promote career pathways into, within and across industries.

Existing strategy/lead stakeholder(s): Agricultural Workforce Working Group (AWWG)

Key objectives/recommendations:

The tripartite Agricultural Workforce Working Group (AWWG) was established as part of the Jobs and Skills Summit held in September 2022 to bring employer groups, unions and the Australian Government together to pursue solutions to better attract, skill, protect and retain workers in agriculture and processing.

AWWG recommendations have been reported in meeting communiques. The AWWG have advised that 'the development of a range of quality, accessible and relevant training options, from flexible accredited short courses to trade apprenticeships, will be key to positioning the sector for success into the future' and have recommended that all states and territories consider implementing programs like the AgSkilled program in NSW, which has achieved positive outcomes.

The AWWG have been critical of current VET sector offerings due to their limited scope. The group has recommended an apprenticeship qualification be created to meet the needs of some sectors, including broadacre, livestock and dairy farming (the irrigation sector has already been seeking an apprenticeship qualification). The proposed trade apprenticeship would consist of 30 or more units of competency, most of which would be mandatory. Advice received indicates that current units could be used to develop the qualification, subject to consultation.

The AWWG has identified the potential coverage of the qualification, with mandatory units on the following:

- work health and safety requirements
- workplace entitlements and obligations
- property and equipment maintenance
- equipment operation including heavy machinery
- chemical handling
- farm business management
- biosecurity measures
- tractor and other vehicle operation
- fencing construction
- irrigation and fertigation.

Elective units could cover the following broad themes:

- animal handling
- livestock operations
- cropping principles and basic plant technology
- dairy operations.

The AWWG has also requested that Skills Insight lead and collaborate on other workforce initiatives with an impact on workforce planning, which are:

- to work with a range of agencies, including Jobs and Skills Australia and SafeWork Australia (and State/Territory safety bodies) to improve safety data and other workforce data for Agribusiness, Fibre and Furnishing
- to undertake the development of a Meat Safety Induction program.

Plans for these activities are being developed by Skills Insight for further consideration.

Link to workforce planning priorities:

The AWWG has a broad remit, with which Skills Insight will continue to engage, but notably, immediate workforce planning strategies include advancing the proposal for an agricultural trade apprenticeship pathway, as first recommended in the NFF's 2030 Roadmap and National Agriculture Workforce Strategy (see above), agriculture taxonomy, data improvements and meat safety induction (potentially as a pilot for broader use across agriculture). Skills Insight will collaborate with the AWWG and other key stakeholders to consult with industry on the development of a model for the proposed trade apprenticeship qualification. Skills Insight will further work with State and Territory Training Authorities on apprenticeship support.

Potential outcomes of this activity, which has already been the subject of media interest, represent workforce planning strategies for raising the profile, and awareness, of careers, education and pathways opportunities.

Existing strategy/lead stakeholder(s): Closing the Gap

Key objectives/recommendations:

Only 2% of people employed in the Agribusiness, Fibre and Furnishing industries identified as Aboriginal and/or Torres Strait Islander in the 2021 Census. The *National Agricultural Workforce Strategy* reports on calls for increasing diversity, both to meet workforce needs and shortages, and to recognise the value and benefit of a more diverse workforce to improving innovation and productivity.

The renewed national focus on custodianship of the land and water has led to greater recognition of the agricultural and ecosystem management practices that have been adopted for centuries by First

Nations peoples. Activities by First Nations peoples are also often at the forefront of emerging sectors, coinciding with national demand for sustainable practices. The Northern Land Council has stressed the significance of 'flexible, adaptive and creative' undertakings for developing economic activities that are compatible with First Nations skills and approaches.[85] They emphasise First Nations peoples' contributions to sectors with substantial growth opportunities, such as the bush foods sector, while highlighting the promise of activities associated with areas such as blue carbon farming (carbon stored in coastal and marine ecosystems).

There are persisting challenges in unlocking opportunities for First Nations peoples due to education provision shortcomings, a lack of tailored resources, and inadequate support for traditional owner organisations to generate substantive outcomes. In 2021, people identifying as Aboriginal and Torres Strait Islander accounted for 9.4% of enrolments in Agribusiness, Fibre and Furnishing-related training packages, but only 6.9% of completions. The *National Regional, Rural and Remote Tertiary Education Strategy* describes that First Nations learners in remote and very remote areas are particularly vulnerable to attrition in thin VET markets, where low levels of access and support impact negatively on completion rates and subsequent participation at higher AQF levels.[86] The report cites a lack of flexible, face-to-face and On Country delivery, with RTOs often unable to facilitate flexible modes of delivery that are co-designed and co-implemented with the local First Nations community.[87] Such research highlights the need for greater engagement with First Nations communities, including for strategies to increase business development, education retention, workforce entry and development pathways.

The 2023 draft review[88] of Closing the Gap determined that targets relating to jobs and skills are not being met:

- Target 6: By 2031, increase the proportion of Aboriginal and Torres Strait Islander people aged 25-34 years who have completed a tertiary qualification (Certificate III and above) to 70%.
    - Nationally in 2021, 47% of Aboriginal and Torres Strait Islander people aged 25–34 years had completed non-school qualifications of Certificate III or above. The target shows improvement but is not on track to be met.
- Target 7: By 2031, increase the proportion of Aboriginal and Torres Strait Islander youth (15-24 years) who are in employment, education or training to 67%.
    - Nationally in 2021, 58% of Aboriginal and Torres Strait Islander people aged 15–24 years were fully engaged in employment, education or training. The target shows improvement but is not on track to be met.

Link to workforce planning priorities:

Skills Insight will continue engaging with First Nations peoples and communities to improve opportunities for participation in the Agribusiness, Fibre and Furnishing industries and relevant education and training.

While the relevant qualifications for occupations covered by Skills Insight have been developed in consultation with industry, they may be underused in First Nations communities. NCVER research in 2017 indicates that improved participation rates of First Nations learners in VET, including improvements at higher levels (Certificate III and above), are not necessarily translating into employment outcomes, and this disparity is more acute in remote areas.[89] These issues may also contribute to the poor outcomes reported through the Closing the Gap program. Skills Insight will conduct research and develop strategies to address any barriers that are being experienced. This will build on advice and published best-practice guidelines, including identified factors critical to positive and improved VET outcomes for First Nations peoples:

- Community ownership
- Trusting relationships and partnerships with communities
- Respect for cultural knowledge and capacity
- The utilisation of local capabilities and aspirations
- Culturally aligned policies and practices.[90]

Delivering outcomes identified by national Skills Ministers, Closing the Gap and other national policy settings will require tailored training solutions. Initial workforce planning strategies include:

- Building new, and consolidating existing, relationships with First Nations stakeholders.
- Collaborating with project leader, the First Nations Land and Sea Corporation, to develop immersive technology assessment and training resources to support delivery of the Respect for Country qualifications and Ranger skills development.
- Research and analysis of skills and workforce issues in the fishing, aquaculture and crocodile industries in Northern Australia, particularly in Aboriginal and Torres Strait Islander communities (including biosecurity and Ranger program skills).
- Supporting projects being developed by stakeholders, such as the Agricultural Workforce Working Group, to encourage the wider participation of First Nations Australians in the Agribusiness, Fibre and Furnishing industries.

Existing strategy/lead stakeholder(s): Australian Government's Migration Strategy

Key objectives/recommendations:

The Australian Government's Review of the Migration System - Final Report and other reports[91] highlight key programs and schemes to address labour shortages, including:

- The Working Holiday Maker (WHM) program incentivises participants to undertake regional work by providing access to a second or third year in Australia.
- The Pacific Australia Labour Mobility Scheme (PALM) allows eligible Australian businesses to hire workers from nine Pacific islands and Timor-Leste. PALM is designed to fill workforce gaps in regional Australia, while also fulfilling the Government's international objectives. PALM workers can undertake seasonal or longer-term semi-skilled and lower-skilled jobs, most commonly in the agricultural industries. The scheme has grown rapidly since 2020 and there are currently about 35,000 PALM visa holders working in Australia.

The Review also notes shortcoming in the migration system:

- The system fails to prioritise the migrants needed to enhance Australia's economic prosperity and security, and the system is too complex for employers and migrants.
- Australia lacks the data needed to properly evaluate the migration system's performance and understand the full range of migrant outcomes. The agriculture sector experiences a substantial ongoing shortage of workers, but data gaps continue to be a barrier to addressing workforce needs.
- Current visa options provide limited and inflexible access to lower paid labour, particularly in the agricultural industries.

The Review endorses potential strategies, including:

- set out clear guidelines for skills assessments and occupational licensing to enable a strategic approach to balancing the need to unlock the full potential of migrants, while ensuring quality and safety is maintained
- focus on data and evaluation to monitor the outcomes of migration strategies
- improve international mutual recognition of qualifications and licences; and
- drive better coordination between industry peak bodies (employer associations and unions).

Link to workforce planning priorities:

JSCs have a remit to engage with economy-wide issues such as skilled migration. Many of the industry sectors under the coverage of Skills Insight are experiencing skills shortages and there may be utility in advocating for changes to immigration policy to fill occupation gaps in the short term and promoting the international or intra-national migration of people with needed skills to address increasing demand. This would involve consulting with federal and state government to understand current immigration policy, including specific visa programs and categories, and assessing the overall appetite for addressing key challenges though this potential strategy.

Existing strategy/lead stakeholder(s): Industry attraction and retention strategies

Key objectives/recommendations:

There are a multitude of industry-specific plans to attract and retain a new and diverse workforce. Below are some examples of relevant strategies.

National Fisheries Plan

The National Fisheries Plan includes plans to target greater access to an engaged, skilled workforce by 2030. This includes:

- Developing and embedding effective pathways for people to be engaged and employed in the fishing, aquaculture and seafood sectors, including job creation and growing the industry.
- Promoting diversity in career opportunities and investing in education and training to ensure career succession and participation in fishing, aquaculture and seafood fields, as well as career opportunities in research, habitat protection and restoration.
- Identifying barriers to participation and opportunities for young Australians, including Aboriginal and Torres Strait Islander peoples and communities, to be engaged in the fishing, aquaculture and seafood sectors.[92]

Australian Meat Processor Corporation (AMPC) Strategic Plan 2020–2025

A strategic priority is that, by 2030, the processing sector is seen as a diverse, safe and attractive industry of choice for employment. Research and development is to focus on:

- addressing the sector's image and changing current perceptions to attract a talented, diverse and dedicated workforce.
- investing in best practice frameworks to retain talent and embed cultural change.

Queensland Farmers' Federation and Jobs Queensland in collaboration with the Rural Jobs and Skills Alliance

This workforce plan states that 'attracting a more diverse and inclusive workforce can address issues of succession in the industry while also contributing to regional community vibrancy.' It highlights two key strategies for industry attraction:

- Reframe negative perceptions of industry and showcase a modern, skilled and diverse workforce; and
- Ensure that school students and their parents/carers are aware of careers, educational opportunities and pathways, and facilitate workplace-based experiences for prospective workers.

These strategies support broader principles for industry to directly address regional liveability concerns, encourage more industry-led training, and replace retiring or leaving workers with a more diverse workforce. They recommend that industry and educational institutions work together to promote industry careers and pathways that build the required skills and experience.

Forestry Workforce Training Program

The Australian Government is investing $10 million over four years in the Forestry Workforce Training Program. The forestry industry is a significant employer in rural and regional Australia and, due to its remote operating locations and ageing workforce, increased participation by First Nations peoples and women in the workforce is important to securing the industry's future.

ForestWorks have been contracted to undertake a scoping study to outline existing education and training services, summarise barriers to training delivery and present an overview of existing and projected jobs and skills needs. This includes providing recommendations on how to increase the participation of First Nations peoples in the forestry and wood products industries and enhance the workforce gender balance. ForestWorks has been conducting stakeholder consultation, with a final report to be submitted to the Department of Agriculture, Fisheries and Forestry by the end of 2023.

Link to workforce planning priorities:

Skills Insight will seek to collaborate on projects to enact the strategies of industry partners with shared objectives. This will involve potentially sharing information and avoiding duplication.

5.4.1. Industry attraction and retention strategies for further consideration and connection

Workforce attraction and retention strategies must reflect the changing world of work and workers' aspirations. Industries must appeal to the unemployed and young people, for example, not just through promotional and advertising activities but by *becoming* the industries that they would purport to be. Therefore, factors like implementing sustainable practices and active education and training provision are the best attraction methods for people for whom those are priorities.

AgriFutures' *Community Perceptions and Worker Experience Project* highlighted that negative community perceptions of industry occupations constrain the attraction of skilled workers. AgriFutures documented the push and pull factors for considering work in rural industries, including:[93]

Push factors	Pull factors
Peoples' belief that there will be limited social connections in rural areas	Spending time on learning and development
Low pay	Hands-on education/training provided on-site
Lack of staff diversity	High variation within roles for tertiary-educated workers
Lack of visibility over career paths and appealing careers	High renumeration for speciality skills (e.g., shearing)
Lack of investment in staff beyond internal training	Mentorship, training and working in small teams

These findings have been highly valued by industry and have facilitated informed consideration of strategies to address misconceptions about working in agriculture, including by leveraging key pull factors when seeking to attract new workers. Such research will help inform activities to improve rural industries' capacity to attract and retain workers, including from under-represented groups such as First Nations peoples and women in male-dominated industries,[94] and to establish a baseline against which the effectiveness of strategies can be monitored. Clearly, education and training opportunities (and delivery type), and developing a culture that values peoples' diversity and skills are primary factors in industry attraction and retention.

New strategies must consider push and pull factors holistically, including to address concerns over the liveability of regional communities. They should also be based on data and evidence concerning what young people and equity cohorts value when choosing occupations and education and training courses. Nowadays, one of the first things job applicants look for when they research employers is their commitment to progressive values and principles, such as sustainability and capabilities development.[95] To attract a new generation of workers, it is necessary to reframe perceptions of the Agribusiness, Fibre and Furnishing industries as comprising multifaceted and modern roles that are concerned with sustainability, including through the adoption of Environmental, Social and Governance (ESG) systems and measures.

Skills Insight Workforce Planning and Implementation, Promotion and Monitoring activities will proceed in recognition that the perception, status and attractiveness of industry *occupations* is a key influence on the perception, status and uptake of industry *education and training*.[96] A new pipeline of skilled workers is unlikely to be developed unless there is a concerted effort to promote industry occupations at Commonwealth level. State and Territory industry and training advisory bodies will also have a continuing role to play in connecting employers with RTOs locally and documenting barriers to training delivery that may be addressed with further support.

6. Outline of planned and ongoing engagement

The jobs and skills system requires Skills Insight to support a broad range of ways of participating and to engage a diversity of voices, including for:

- broad coverage of the sectors within the Agribusiness, Fibre and Furnishing industries, including relevant workforce unions
- suitable coverage of all Australian jurisdictions
- equitable and fair representation, including for stakeholders who may be under-represented or face difficulties participating, such as:
    - regional, rural and remote stakeholders
    - small businesses, individual operators and family enterprises
    - niche industries
- representation of First Nations peoples and enterprises
- diversity to generate informed consensus-based decision-making.

Planned and ongoing workforce planning consultation will require working cooperatively with data-collecting and -using bodies and agencies, as well as with the stakeholders who are the subject of that data.

Skills Insight will maintain regular contact and feedback loops with Jobs and Skills Australia, State and Territory State Training Authorities and their related industry training advisory bodies, local and regional government and governance bodies, as well as with industry and education stakeholders.

Over the first year of operations, Skills Insight will collaborate with these groups to develop shared approaches to the collection of data and evidence, on a national, state/territory and local level, and to minimise duplication of workforce planning activities. Once stakeholder connections have been made or consolidated, forward plans will be further developed for collaborating on and influencing different data collection activities, including national, state/territory and industry-specific surveys. This will help to construct workforce planning evidence and data with improved accuracy, consistency and depth that is mutually shared, supported and promoted.

6.1. Stakeholder engagement governance

Stakeholder engagement by Skills Insight is overseen by a Stakeholder Forum, which is responsible for functions including governance and industry stewardship. The Stakeholder Forum has oversight of:

- ensuring opportunities for diverse stakeholder voices
- ensuring sufficient engagement to be a strong, strategic industry voice
- receiving and considering reports from three steering committees
- addressing alternate views, reducing disagreements and managing conflicts.

Workforce Planning is overseen by the Strategic Workforce Planning Steering Committee. Steering committees will oversee:

- activity-based guidance and information to provide oversight for the JSC Stakeholder Forum
- work being undertaken to meet the priorities and aims of projects approved by the JSC Stakeholder Forum
- report drafting and submissions, including report recommendations to the JSC Stakeholder Forum
- identifying skills gaps and needs, including from feedback gained during activities, and reporting these to the JSC Stakeholder Forum.

It is expected that this Steering Committee will be established before the end of 2023, after the establishment of the JSC Stakeholder Forum.

6.2. Working with Jobs and Skills Australia

Jobs and Skills Australia (JSA) are leading national workforce planning data collection and JSCs have been asked to assist through four key areas:

- sharing data, analysis and collaborating to improve the design and utility of data products
- sharing intelligence on emerging skills across industries including specific industry capacity studies
- responding to regional and local needs
- engaging in constructive dialogue on key challenges.

Skills Insight will hold regular meetings with the JSC Information and Advice section of JSA to:

- ensure that JSC avenues of industry engagement can be utilised by JSA
- identify key stakeholders to provide value to JSA work
- share available industry data collected and collated by the JSC
- minimise duplication of data and research collection between JSA, the JSC and the state and territory mechanisms.

Skills Insight will also attend the regular workshops and meetings arranged with all JSCs and prioritise the submission of feedback on JSA consultations. Skills Insight has arranged for JSA to participate in an initial meeting with State and Territory Industry Training Advisory Bodies to help provide background about the various approaches of the jurisdictions in the Agribusiness, Fibre and Furnishing sector and to ensure there is consistency of data usage.

6.3. Working with State Training Authorities and state-based industry skills and training advisory bodies

States and territories are key stakeholders in the policies and systems supporting vocational education and training, and the major funders of delivery. They also have important local, regional and statewide strategies and policies which need to be considered in the development of the Jobs and Skills system.

Skills Insight is in regular contact with States Training Authorities (STAs):

- prior to, during and at the finalisation of Activity-funded projects

- during the development and after the initial drafting of Workforce Plans
- in annual meetings with the leaders of STAs
- through regular contact with state-based industry skills and training advisory bodies (e.g. ITABs), who are advised of any travel taking place in their jurisdiction by Stakeholder Engagement Managers and for public consultation meetings/validation meetings.

Working with STAs and state-based industry skills and training advisory bodies facilitates the sharing of workforce planning data and evidence on an ongoing basis.

6.4. Consolidating stakeholder relationships

Skills Insight will work to consolidate stakeholder relationships developed by Skills Impact, its predecessor organisation, and to progress these relationships based on the greater opportunities presented by the Jobs and Skills Council remit. In so doing, Skills Insight will continue to engage through preferred industry channels, including partnerships with ForestWorks and Mintrac, and peak bodies established by and for industry.

A summary of existing stakeholders and key areas of collaboration are as follows:

- Government Departments and STAs
    - To support the development, submission and approval of training products
    - To support future qualifications reform, and other VET reforms.
- Industry participants who actively participated in the previous AISC-led system
    - To ensure the continuation of relevant and appropriate work from previous industry engagement arrangements, including to implement the extensive work and recommendations published by Skills Impact (Skills Service Organisation) through Industry Skills Forecasts, Annual Updates and Industry Skills Summaries
    - To demonstrate that experienced industry leadership is valued by new JSCs.
- RTO industry trainers
    - To support training delivery beyond training package solutions.
- Regional, rural and remote stakeholders
    - To support training delivery and educational outcomes in thin markets.
- First Nations peoples, communities and enterprises
    - To continue developing relationships first established by stakeholders with Skills Impact
    - To support these stakeholders in closing the gap.

6.5. Developing new relationships and networks

In the tripartite JSC system, Skills Insight has a clear stakeholder focus, built on productive networks and outcomes shared with various entities, including unions, governments and industries. This entails ongoing relationship building with current and new stakeholders, supporting industry and VET thought leadership (including innovative solutions for delivering current and future skills needs), supporting the implementation and success of skills reforms, empowering diverse stakeholders, and delivering substantive results that make a real contribution to stakeholders' jobs and skills challenges.

Skills Insight is developing relationships with stakeholders across a broader range of work functions within the new JSC system. This includes:

- Stakeholders from the Furnishing, Textiles, Clothing and Footwear industries
    - To build relationships and trust with these stakeholders (the previous Skills Service Organisation, Skills Impact, did not cover these industries or related training packages).
    - To rapidly build knowledge of these industries so that they can be covered with the level of detail and attention paid to all other industry sectors.
- RTOs
    - To establish and build relationships with all levels of RTO operations, including management, trainers and assessors, compliance, enrolment attraction and career advice departments (where relevant).
    - To understand RTOs' training delivery viability challenges and support potential solutions.
- Other skills and training providers
    - To consider workforce planning strategies encompassing all educational pathways, including the higher education sector and informal training providers, and informal and industry-accredited training (e.g. by Rural Research and Development Corporations).
    - To map the skills landscape and engage with stakeholders who were previously outside of the scope of the Skills Service Organisation system.

6.6. First Nations stakeholders

While Skills Insight's predecessor organisation, Skills Impact, and First Nations stakeholders had begun to develop relationships, additional and ongoing work is required to build new, and consolidate existing, relationships that generate progressive outcomes. Preliminary observations from Skills Impact consultations included:

- Education, training and skills are critical for young First Nations people, especially those parts of the system that retain young people in formal education until at least Year 12. Delivered appropriately, school-based traineeships and apprenticeships help to retain First Nations learners in the formal education system.
    - There is a critical economic and social need for training and employment that keeps young First Nations people motivated, engaged and occupied in worthwhile learning and jobs, especially in roles that contribute to community wellbeing.
- Access to water, both offshore and onshore, is of increasing concern for industry and communities, and may require both policy and innovative training-based solutions that comply with and respect the approaches of rights holders.
- Work within First Nations communities is increasingly based on fee for service and gig economy approaches that may be more suited to local culture-based economies, and there is a need for different approaches to facilitate training access, support and delivery.
- There are an increasing number of schemes designed to support First Nations people to live, access education and obtain employment in cities and major regional centres; however, people

in remote communities and smaller regional centres experience difficulties in accessing economic and skills development opportunities, and often have to rely on local informal training that may be of variable quality.

- Working with and in partnership with First Nations communities requires direct relationships. This requires first visiting the community to show respect and to establish trust. It requires significant work to build relationships with First Nations communities because of a history of broken promises and failure to deliver outcomes.

6.7. Stakeholder Engagement Plan

Stakeholder engagement for workforce planning purposes is both ongoing (including general stakeholder information sharing) and targeted. This section identifies engagement approaches relating to each Initial Workforce Plan strategy:

- Improve data and evidence to inform strategies and decision-making
- Support skills and workforce leadership
- Support skilling
- Support attraction and retention of a diverse workforce.

All strategies will require engagement with Jobs and Skills Australia, State Training Authorities, state-based industry skills and training advisory bodies, industry stakeholders (current and prospective relationships), and key equity cohorts (e.g. First Nations peoples), as outlined above.

To support workforce planning, stakeholders will be engaged through multiple methods, including:

- stakeholder meetings and discussions, individual meetings, phone calls and emails, group discussions and site visits
- working groups and subject matter expert meetings, organised by Skills Insight or by other groups with relevant expertise
- attendance and participation in industry conferences and events, including support for those conferences and events through presentations, assistance with organisation, financial and in-kind support and promotion of events
- virtual communities of interest/practice:
    - Industry communities
    - RTO communities
- website, general communication and information activities.

The table below details key stakeholders, how they will contribute to workforce planning strategies, and anticipated methods of engagement.

6.7.1. Stakeholder engagement plan

Key Stakeholder	Strategy/ies Engaged On	Contribution	Methods
Agrifutures	• Support attraction and retention of a diverse workforce	Identifying potential future leaders and opportunities for development. Data source and potential research and workforce planning partnerships, mutual contributions to activities	• Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Virtual communities
AMIEU	• Support skills and workforce leadership	Identifying potential future leaders and opportunities for development, providing access to branches for place-based solutions, potential data source and research partner	• Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches • Virtual communities
Australasian Meat Industry Employees Union (AWWG Member)	• Improve data and evidence to inform strategies and decision-making • Support attraction and retention of a diverse workforce	Identifying industry data needs, guiding AWWG support, providing access to branches for place-based solutions, potential data source and research partner	• Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches • Virtual communities
Australian Dairy Farmers (AWWG Member)	• Improve data and evidence to inform strategies and decision-making • Support attraction and retention of a	Identifying industry data needs, guiding AWWG support, providing access to branches for place-based solutions, potential data source and research partner	• Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches

	diverse workforce		• Virtual communities
Australian Forest Products Association	• Support skills and workforce leadership	Identifying potential future leaders and opportunities for development, providing access to branches for place-based solutions, potential data source and research partner	• Conferences and events • Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches • Virtual communities
Australian Meat Industry Council (AWWG Member)	• Improve data and evidence to inform strategies and decision-making • Support attraction and retention of a diverse workforce	Identifying industry data needs, guiding AWWG support, potential data source and research partner	• Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches • Virtual communities
Australian Workers Union (AWWG Member)	• Improve data and evidence to inform strategies and decision-making • Support skills and workforce leadership • Support attraction and retention of a diverse workforce	Identifying potential future leaders and opportunities for development. Identifying industry data needs, guiding AWWG support, providing access to branches for place-based solutions, potential data source and research partner.	• Conferences and events • Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches • Virtual communities
AVETRA	• Improve data and evidence to inform	Obtaining jobs and skills (particularly VET) data,	• Stakeholder meetings and discussions

	strategies and decision-making	access to research, potential research partner	• Conferences and events
Career Development Association Australia and similar career development based peak bodies	• Support attraction and retention of a diverse workforce	Identifying career advisor needs, access to latest research and data, access to environmental scanning and trends identification, potential partnerships	• Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Virtual communities
CFMEU	• Improve data and evidence to inform strategies and decision-making • Support skills and workforce leadership	Identifying potential future leaders and opportunities for development. Identifying industry data needs, providing access to data for place-based solutions, data source and potential research partner	• Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches • Virtual communities
Federal Government Departments and Agencies including: Agriculture, Fisheries and Forestry Foreign Affairs and Trade Austrade	• Support attraction and retention of a diverse workforce	Access to data and research, access to strategies and reviews, alignment with government priorities	• Stakeholder meetings and discussions • Working groups and subject matter expert meetings
Future Skills Organisation (JSC)	• Support skills and workforce leadership	Guidance on digital skills and frameworks, development of data, identification of digital and specialist industry skills	• Cross-JSC collaboration
ITECA	• Support skilling	Identification of data and research needs, development of collaborative approaches	• Conferences and events • Stakeholder meetings and discussions • Working groups and subject matter expert meetings

			• Virtual communities
Key Bodies to provide input from identified cohorts, including (illustrative selection only): ILSC Guide Dogs Assoc Riding for the Disabled Women in Trades bodies	• Support skills and workforce leadership • Support skilling	Identifying potential future leaders and opportunities for development, providing access to data and stakeholders for place-based solutions, potential data source and research partner	• Conferences and events • Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches • Virtual communities
Key First Nations Bodies, including (illustrative selection only): ILSC NAILSMA Indigenous Business Australia	• Improve data and evidence to inform strategies and decision-making	Identifying First Nations and Communities data needs, providing access to data for place-based solutions, data source and potential research partner	• Conferences and events • Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Virtual communities
Key Industry peak Bodies (illustrative selection only): AFPA SIA Racing Australia Animal Health Australia APPITA Aust Chicken Meat fed AIG AVA AusVeg	• Improve data and evidence to inform strategies and decision-making • Support skills and workforce leadership • Support skilling • Support attraction and retention of a diverse workforce	Identifying industry and regional data needs, providing access to data for place-based solutions, data source and potential research partner	• Conferences and events • Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches • Virtual communities

EWPAA Farmsafe Australia Forestry Australia FTMA Guide Dogs Assoc VNCA ATFA Specialised Textiles Assoc AFA ACFA			
National Farmers Federation (AWWG Member)	• Improve data and evidence to inform strategies and decision-making • Support skills and workforce leadership • Support attraction and retention of a diverse workforce	Identifying potential future leaders and opportunities for development. Identifying industry data needs, guiding AWWG support, providing access to branches for place-based solutions, potential data source and research partner.	• Conferences and events • Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches • Virtual communities
National Horticulture Council (AWWG Member)	• Improve data and evidence to inform strategies and decision-making • Support attraction and retention of a diverse workforce	Identifying industry data needs, guiding AWWG support, potential data source and research partner	• Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches • Virtual communities
NCVER	• Improve data and evidence to inform	Obtaining jobs and skills (particularly VET) data,	• Stakeholder meetings and discussions

	strategies and decision-making	access to research, potential research partner	• Conferences and events
Other Unions	• Support skills and workforce leadership	Identifying potential future leaders and opportunities for development, providing access to branches for place-based solutions, potential data source and research partner	• Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches • Virtual communities
Racing Australia	• Support skills and workforce leadership	Identifying potential future leaders and opportunities for development, providing access to branches for place-based solutions, potential data source and research partner	• Conferences and events • Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches • Virtual communities
Regional Australia Institute and Australian Farm Institute	• Improve data and evidence to inform strategies and decision-making	Identifying industry and regional data needs, providing access to data for place-based solutions, data source and potential research partner	• Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Conferences and events
Regional Development Australia network	• Improve data and evidence to inform strategies and decision-making	Identifying regional and industry data needs, providing access to data for place-based solutions, data source and potential research partners	• Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Conferences and events
RTO trainers	• Support skilling	Identification of data and research needs, development of collaborative approaches, provision of industry and	• Conferences and events • Stakeholder meetings and discussions

		industry training experience	• Working groups and subject matter expert meetings • Virtual communities
Rural Research & Development Corporations	• Improve data and evidence to inform strategies and decision-making • Support skills and workforce leadership	Identifying industry leadership and data needs, providing access to data for place-based solutions, data source and potential research partner	• Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Conferences and events
Seafood Industries Australia	• Support skills and workforce leadership	Identifying potential future leaders and opportunities for development, providing access to branches for place-based solutions, potential data source and research partner	• Conferences and events • Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Formal and Informal Network approaches • Virtual communities
TAFE Directors	• Support skilling	Identification of data and research needs, development of collaborative approaches, channel to drive State and territory participation and perspectives	• Conferences and events • Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Virtual communities
VELG	• Support skilling	Identification of data and research needs, development of collaborative approaches	• Conferences and events • Stakeholder meetings and discussions • Working groups and subject matter expert meetings • Virtual communities

VETASSESS	• Support attraction and retention of a diverse workforce	Access to data and experience about skilled migration assessment	• Stakeholder meetings and discussions

Note: In some sections above, an illustrative group of stakeholders has been identified. This will not exclude other stakeholders from participation, and nor does it indicate that named stakeholders have greater influence or primacy over other stakeholders. The names are provided only to demonstrate the potential range and coverage of stakeholders that may be involved to enable feedback on this Initial Workforce Plan and future strategies.

6.7.2. Priorities and timelines

Improve data and evidence to inform strategies and decision-making

Year 1 Engagement Priorities:

- Support data improvement
- Promote place-based approaches
- Holistic workforce planning

Timeline, 2023 – 2024

Q1	Q2	Q3	Q4
Initial Contact and discussions with AWWG members	Commence planning on priority data work with JSA, State and Territory Bodies, and AWWG members Contact RAI, RDCs and commence contacting RDA network	Develop information and draft Workforce Plan for 2024-25	Update and finalise the Workforce Plan

Support skills and workforce leadership

Year 1 Engagement Priorities:

- Support industry skills and workforce leadership development.
- Support and contribute to existing industry strategies and resources aimed at addressing skill and labour shortages.
- Support industry and VET Sector decision-making skills for the adoption of innovation, including digital technologies.
- Promote succession planning, especially in small and niche industries with an ageing workforce.

Timeline, 2023 – 2024

Q1	Q2	Q3	Q4
Continue planning of activities and seek approval for the plan	Commence contact with key stakeholders for planning purposes and establish the Workforce plan Steering Committee	Undertake Stakeholder Engagement and data collection to feed into the Workforce Plan and develop a draft of the plan for 2024 - 2025	Update and finalise the Workforce Plan

Support skilling

Year 1 Engagement Priorities:

- Support by developing flexible training and education products and pathways.
- Promote upskilling and re-skilling opportunities.
- Develop resources to support training and assessment practices.
- Build and support the building of relationships and collaboration between employers and training organisations.
- Monitor the outcomes of skilling strategies and adapt strategies where necessary.

Timeline, 2023 – 2024

Q1	Q2	Q3	Q4
Continue planning of activities and seek approval for the plan	Commence contact with key stakeholders for planning purposes	Undertake Stakeholder Engagement and data collection to feed into current and future activities. Identify gaps and needs to be part of the Workforce Plan and develop a draft of the plan for 2024 - 2025	Continue to provide research, data and other support for JSC activities Update and finalise the Workforce Plan

Support attraction and retention of a diverse workforce

Year 1 Engagement Priorities:

- Support industry to promote the need and develop the capacity to raise the profile of careers, education and learning pathways.
- Support industry to attract a diverse workforce, including by supporting industry in working with equity groups to understand and address workforce imbalances.
- Support industry in attracting skilled migrant and seasonal workers to address shortages.

Timeline, 2023 – 2024

Q1	Q2	Q3	Q4
Continue planning of activities and seek approval for the plan	Commence contact with key stakeholders for planning purposes	Undertake Stakeholder Engagement and data collection to feed into current and future activities. Identify gaps and needs to be part of the Workforce Plan and develop a draft of the plan for 2024 - 2025	Continue to provide research, data and other support for JSC activities Update and finalise the Workforce Plan

6.8. Opportunities for Cross-JSC Workforce Planning

As most JSCs are newly established, there will be limited opportunities for cross-JSC workforce planning activities. Each JSC will focus on developing an Initial Workforce Plan, followed by a broadening of scope to consider areas of collaboration, including with JSA.

On initial analysis, there are five priority areas that are likely to be the focus for collaborative development by the JSCs, which are:

1. A diverse and inclusive workforce
2. Ensuring ANZCO codes accurately reflect the workforce
3. Supporting teachers and trainers' capacity and skills development
4. Digital capability
5. Workforce transition.

Skills Insight will work throughout the next year with other JSCs, including through the JSC CEO network and the JSC workforce planning community of practice.

7. Towards a Year 2 Workforce Plan

Skills Insight will continue to work with all stakeholders to better understand labour market dynamics, labour source characteristics, and symptoms of imbalances in jobs and skills supply and demand. This Initial Workforce Plan has mapped workforce planning priorities in line with the four key strategies outlined in the *Summary of Skills Insight workforce planning priorities and associated activities*.

Identification of these strategy areas will underpin Skill Insight's activities and stakeholder engagement in Year 1, especially to assess supply and demand issues, and develop plans to implement, influence and collaborate on strategies that have broad application across industries, workforces and education and training pathways.

A Year 2 Workforce Plan, to be published in 2024, will go beyond identifying the symptoms of workforce challenges: it will include diagnoses of the most pressing issues and determine strategies to address them, informed by stakeholder engagement, collaboration with JSA, extensive consultation other JSCs, and detailed research and data analysis.

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