

Smart Development of Future Workforce

*An audit of the skills, training and workforce development
opportunities for the North-East NSW forest and timber industry*

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We also acknowledge the custodians of the lands on which this report was prepared: the Boonwurrung and Darramurrugal people.

Our first nations people have managed the forests and waterways in this region for tens of thousands of years prior to colonization. We hope that this report in part contributes to a better understanding of the steps more recent arrivals in this country can make towards reconciliation.

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About this Report

In 2021, the North-East NSW Forestry Hub Incorporated engaged ForestWorks to prepare a report on the forest and wood products industry workforce. The purpose of the report was to:

- **Establish a regional baseline of current skills and gaps including impediments to future recruitment;**
- **Propose solutions to these impediments through a review of existing training programs, apprenticeship programs, and workplace opportunities; and**
- **Provide recommendations for skills need to increase the innovation of the industry.**

ForestWorks conducted desktop research to establish the current situation and establish trends with the available data. Sources are listed in the references and throughout. The latest information was used, however in some instances the data is a few years out of date. Particularly, Australian Bureau of Statistics (ABS) census data, as the census is due in 2021 will not be available until mid-2022, meaning the latest available census data is 5 years old (2016). ABS Data is provided for the Hub region as defined by the Local Government Areas of: Armidale, Ballina, Bellingen, Byron, Clarence Valley, Coffs Harbour, Glen Innes, Kempsey, Kyogle, Lismore, Mid-Coast, Nambucca, Port Macquarie, Port Stephens, Richmond Valley, Tenterfield, Tweed, and Walcha.

ForestWorks established a stratified (by geography and sector) sample of employers and conducted interviews with individual businesses (face-to-face and on the phone) and by conducting roundtables via videoconference.

The report:

- **Identifies current skills holdings, skills gaps and future skills by sector and across the industry;**
- **Provides the Hub with a schedule of skills need, corresponding training that could address those skills needs; how to obtain funding for the acquisition of those skills; and which training provider(s) can deliver those skills; and**
- **Provides a foundation for workforce development planning.**

1 Executive Summary

	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
What does the North East Forest and Wood Products Industry Look Like?					
Geographic Distribution Section 2.1	Clarence Valley Mid Coast Port Macquarie-Hastings Coffs Harbour	Coffs Harbour Port Macquarie-Hastings Mid Coast Clarence Valley Richmond Valley	Clarence Valley Mid Coast Coffs Harbour Port Macquarie-Hastings	Clarence Valley Port Macquarie-Hastings Mid Coast Coffs Harbour Tweed	Clarence Valley Port Stephens
Sectoral Distribution Section 2.2		Forestry (14%) Forestry Support Services (12%)	Logging (13%)	Log Sawmilling (46%) Log Sawmilling and Timber Dressing, nfd (6%) Timber Resawing and Dressing (3%)	Veneer and Plywood Manufacturing (3%) Reconstituted Wood Product Manufacturing (3%)
Resource Section 2.4	Which best describes the main forest resources for your business? (percentage of businesses surveyed)				
	Private native forests (46%) Public native forests (38%)	Private native forest (50%)	Public native forest (50%) Mix of public and private native forest (25%)	Public native forest (45%) Private native forest (45%)	Public native forest (63%)
Market Section 2.5	Within the Hub Region (48%)	Within the Hub Region (88.9%)	Within the Hub Region (50.0%)	Australia (41.7%) NSW (33.3%)	Australia (50.0%) NSW (25.0%)
	Forest Growing and Management Companies will engage a local Harvesting contractor. The logs will be transported by a local haulage contractor a local sawmill. These goods will then be sent to renovation, construction, mining and woodchip markets in Sydney and other capital cities.				
Age Section 2.6	49.4% of the respondent workforce were over 45	55.1% of the respondent workforce were over 45	65.4% of the respondent workforce were over 45	39.9% of the respondent workforce were over 45	34.3% of the respondent workforce were over 45
	The industry is aging, particularly in the Harvesting and Haulage sector. However, compared to all industries in the Hub region, the industry has a smaller proportion of people over 45. This suggests competition for new entrants to the industry will be strong.				

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	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
What does the North East Forest and Wood Products Industry Look Like?					

Diversity Section 2.7	Women: 13.4% (84.9% of Clerical and Administrative Workers)	Women: 23.5% (90.7% of Clerical and Administrative Workers)	Women: 11.3% (76.2% of Clerical and Administrative Workers)	Women: 8.7% (83.9% of Clerical and Administrative Workers)	Women: 6.1%
	Disability: 31.8% knowingly employed people with a disability	Disability: no respondents knowingly employed people with a disability	Disability: 3 respondents knowingly employed people with a disability	Disability: 4 respondents knowingly employed people with a disability	Disability: no respondents knowingly employed people with a disability
	Ethnicity: Most people working in the industry were born in Australia (88.4% compared to 85.6% for all industries in the region)	Ethnicity: Most people working in the sector were born in Australia (85.9%)	Ethnicity: Most people working in the sector were born in Australia (93.2%)	Ethnicity: Most people working in the sector were born in Australia (88.8%)	Ethnicity: Most people working in the sector were born in Australia (93.9%)
	Aboriginal and Torres Strait Islanders: 15% were aware of the benefits of employing Aboriginal people. 90% claimed the opportunities for Aboriginal people were the same as for others.				
	The importance of diversity in a workplace is well-established, not least of all because it broadens the pool of potential recruits to the Industry. However, across a range of dimensions, the Industry in the Hub Region lacks diversity. Respondents indicated a range of views in relation to gender, race, and disability which suggest that there is generally a poor understanding of unconscious bias and how it can adversely affect employment decisions. There were also views expressed by some participants which suggest that some employers may not be abiding by anti-discrimination legislation.				

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	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
Current Job Roles and Skills Holdings					
Job Roles Section 3.1	Labourers (40%) <ul style="list-style-type: none"> Timber and Wood Process Workers Other Farm, Forestry and Garden Workers Forestry and Logging Workers 	Labourers (44%) <ul style="list-style-type: none"> Other Farm, Forestry and Garden Workers Forestry and Logging Workers Garden and Nursery Labourers 	Labourers (42%) <ul style="list-style-type: none"> Forestry and Logging Workers Timber and Wood Process Workers Crop Farm Workers 	Machinery Operators and Drivers (40%) <ul style="list-style-type: none"> Paper and Wood Processing Machine Operators Forklift Drivers Truck Drivers 	Labourers (48%) <ul style="list-style-type: none"> Timber and Wood Process Workers Labourers
	Machinery Operators and Drivers (30%) <ul style="list-style-type: none"> Paper and Wood Processing Machine Operators Agricultural, Forestry and Horticultural Plant Operators Truck Drivers 	Other (24%) <ul style="list-style-type: none"> Agricultural and Forestry Scientists Environmental Scientists 	Machinery Operators and Drivers (39%) <ul style="list-style-type: none"> Agricultural, Forestry and Horticultural Plant Operators Truck Drivers Paper and Wood Processing Machine Operators 	Labourers (36%) <ul style="list-style-type: none"> Timber and Wood Process Workers Forestry and Logging Workers 	Machinery Operators and Drivers (32%) <ul style="list-style-type: none"> Paper and Wood Processing Machine Operators Storepersons Truck Drivers
	Technicians and Trades Workers (9%) <ul style="list-style-type: none"> Metal Fitters and Machinists Gardeners Science Technicians Wood Machinists Precision Metal Trades Workers 	Managers (9%) <ul style="list-style-type: none"> Production Managers Crop Farmers 	Managers (8%) <ul style="list-style-type: none"> Production Managers Crop Farmers 	Technicians and Trades Workers (11%) <ul style="list-style-type: none"> Metal Fitters and Machinists Precision Metal Trades Workers Wood Machinists 	Technicians and Trades Workers (14%) <ul style="list-style-type: none"> Wood Machinists Metal Fitters and Machinists
	Managers (7%) <ul style="list-style-type: none"> Production Managers Crop Farmers 	Clerical and Administrative Workers (9%) <ul style="list-style-type: none"> Accounting Clerks General Clerks Office Managers 	Technicians and Trades Workers (6%) <ul style="list-style-type: none"> Motor Mechanics 	Clerical and Administrative Workers (6%) <ul style="list-style-type: none"> General Clerks 	Other (6%) <ul style="list-style-type: none"> Sales representatives
	The best employees in Machinery Operators and Drivers are promoted to Managers and Supervisors.				

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	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
Current Job Roles and Skills Holdings					
Skills Holdings Section 3.2		Secondary school (26%) Certificate III/IV (25%) Bachelor Degree (24%)	Secondary school (61%) Certificate III/IV (22%) Bachelor Degree (3%)	Secondary school (65%) Certificate III/IV (26%) Adv. Diploma/Diploma (2%)	Secondary school (47%) Certificate III/IV (23%) Adv. Diploma/Diploma (4%)
	<p>Three quarters of people employed in the industry are employed in roles which are at the two lowest skills levels (4 and 5). Skill level 5 generally necessitates no post-secondary education. Skill level 4 generally requires a Certificate II or III, or relevant work experience.</p> <p>Half of employers indicated that they have a small number of employees with literacy or numeracy issues.</p> <p>Across all occupational categories, employers indicated that they were willing to take people with work experience or no post-secondary education.</p>				

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	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
Environment and Strategic Directions					
Internal Factors Section 4.1	Positive: <ul style="list-style-type: none"> Willingness to adopt new technology Knowledge sharing between peer level workers Knowledge sharing between management and other workers 	Positive: <ul style="list-style-type: none"> Knowledge sharing between peer level workers Knowledge sharing between management and other workers 	Positive: <ul style="list-style-type: none"> Willingness to adopt new technology Knowledge sharing between peer level workers Knowledge sharing between management and other workers 	Positive: <ul style="list-style-type: none"> Willingness to adopt new technology Knowledge sharing between peer level workers 	Positive: <ul style="list-style-type: none"> Knowledge sharing between peer level workers Willingness to adopt new technology Knowledge sharing between management and other workers
	Negative: <ul style="list-style-type: none"> Aging workforce Ability to attract new employees Ability to retain employees 	Negative: <ul style="list-style-type: none"> Aging workforce Ability to retain employees 	Negative: <ul style="list-style-type: none"> Aging workforce Ability to attract new employees 	Negative: <ul style="list-style-type: none"> Aging workforce Ability to attract new employees 	Negative: <ul style="list-style-type: none"> Ability to attract new employees Ability to retain employees Workforce skills Career growth prospects for current employees
External Factors Section 4.2	Positive: <ul style="list-style-type: none"> The economy Market availability Competitors Stewardship Requirements 	Positive: <ul style="list-style-type: none"> The economy 	Positive: <ul style="list-style-type: none"> The economy 	Positive: <ul style="list-style-type: none"> Market availability The economy 	Positive: <ul style="list-style-type: none"> Market availability The economy
	Negative: <ul style="list-style-type: none"> Government Policy Legislation or Regulation Access to a skilled workforce Availability of younger workers 	Negative: <ul style="list-style-type: none"> Government Policy Legislation or Regulation 	Negative: <ul style="list-style-type: none"> Government Policy Legislation or Regulation Access to a skilled workforce 	Negative: <ul style="list-style-type: none"> Access to a skilled workforce Availability of younger workers Government Policy Legislation or Regulation 	Negative: <ul style="list-style-type: none"> Access to a skilled workforce Availability of younger workers Access to an unskilled workforce

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	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
Environment and Strategic Directions					
Significant changes Section 4.3	Of those making changes in the next 2 years: New technology and processes (80%) New products and services (26.7%) New work practices (20%)	New products and services (2 businesses) New sales and marketing methods (2) New technology and processes (1) New work practices (1)	New technology and processes (5 businesses) New products and services (2) New work practices (1) New sales and marketing methods (1)	New technology and processes (5 businesses) New products and services (2) New work practices (1)	New technology and processes (5 businesses) New products and services (1) New work practices (1) New sales and marketing methods (1)
	Most employers were optimistic about the future and actively invested in capital equipment, new products and staff training and skills development. Almost all (90%) of the businesses that had made changes in the past were intending to make changes in the future. One third of businesses had not and would not make changes: all employed <35 staff. Employers that do not invest in capital equipment, new products or human resources may not be considered interesting, inviting workplaces that are preparing for a long-term future and able to provide long-term, stable employment and therefore are at a competitive disadvantage in competing for labour in the Region.				
Occupations Affected by Change Section 4.3	Machinery Operators and Drivers in 73.3% of businesses Labourers in 46.7% of businesses Technicians and Trades Workers in 26.7% of businesses Managers in 20.0% of businesses	Sales staff (in 2 businesses) All other occupations (in 1 business)	Machinery Operators and Drivers (in 5 businesses) Managers (2) Technicians and Trades Workers (2) Clerical and Administrative (2) Sales staff (1)	Machinery Operators and Drivers (in 4 businesses) Labourers (4)	Machinery Operators and Drivers (5 businesses) Labourers (4) Technicians and Trades Workers (2) Sales staff (1)

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	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
Skills Needs					
Skills Needs Section 5.1	Skills required in the Hub Region: <ul style="list-style-type: none"> • Workplace health and safety (95.5%) • First aid (90.9%) • Business and financial management (85.4%) • Chainsaw and hand-held machinery (81.8%) • Heavy machinery operation (81.8%) • Compliance (77.3%) • IT or Software specialised to the industry (68.2%) 	Skills required in all businesses in the sector in the Hub Region: <ul style="list-style-type: none"> • Workplace health and safety • Business and financial management • Compliance • Forest operations planning and management 	Skills required in all businesses in the sector in the Hub Region: <ul style="list-style-type: none"> • Workplace health and safety • First aid • Chainsaw and other handheld machinery 	Skills required in all businesses in the sector in the Hub Region: <ul style="list-style-type: none"> • Heavy machinery operation • Saw technicians 	Skills required in 8/9 businesses in the sector in the Hub Region: <ul style="list-style-type: none"> • Workplace health and safety • First aid • Business and Financial Management • IT or Software specialised to the industry
		Skills more likely in this sector than in the industry as a whole in the Hub Region: <ul style="list-style-type: none"> • IT or Software specialised to the industry • Forest ecology and silviculture • Marketing/sales • Community relations/community engagement 	Skills more likely in this sector than in the industry as a whole in the Hub Region: <ul style="list-style-type: none"> • Heavy machinery operation • Compliance • Fire-fighting • Road transport/haulage • Forest ecology and silviculture • Forest operations planning and management • Community relations/community engagement 	Skills more likely in this sector than in the industry as a whole in the Hub Region: <ul style="list-style-type: none"> • Business and financial management • Chainsaw and other hand-held machinery • Wood machining • Marketing/sales 	Skills more likely in this sector than in the industry as a whole in the Hub Region: <ul style="list-style-type: none"> • IT or Software specialised to the industry • Fire-fighting • Saw technician • Wood machining • Marketing/sales

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	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
Skills Needs					
Skills Needs Section 5.1	Skills Identified by the Forest and Wood Products industry (2019-2022): <ul style="list-style-type: none">Specialised scientists, mechanics and mobile and fixed plant operatorsHigh level financial, middle management and ICT skillsTechnology use and applicationEnvironmental and sustainabilityLanguage, Literacy and NumeracyDesign mindset, thinking critically, systems thinking, problem solvingCommunication, collaboration, social intelligence			Emerging occupations in Australia that have relevance to the industry: <ul style="list-style-type: none">Data analysts and scientistsPricing analystsLogistics analystsDigital marketing analysts and social media specialistsEnergy efficiency engineers	
Skills Shortages Section 5.2	Business identified skills shortages: <ul style="list-style-type: none">Saw technicianWood machinistMachinery operatorsElectricians, fitters, mechanicsTruck driversManagementStacking	Businesses with an identified skills shortage: 50%	Businesses with an identified skills shortage: 62.5%	Businesses with an identified skills shortage: 77.8%	Businesses with an identified skills shortage: 50%
	Key shortages identified Nationally and/or NSW where future demand is expected to be moderate: <ul style="list-style-type: none">ICT Business Analyst^{NSW only}Life Science Technician^{NSW only}MechanicsFitters, Welders and MachinistsWood MachinistOffice ManagerEarthmoving Plant OperatorsBackhoe OperatorBulldozer OperatorExcavator OperatorGrader OperatorLoader Operator			Key shortage identified Nationally and/or NSW where future demand is expected to be strong: <ul style="list-style-type: none">Forester^{NSW only}Metal fabricatorWelderElectrician	
	In addition, some employers identified a general shortage of people with “manual aptitude” and a general shortage to “keep up with ageing staff”.				

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Skills Needs					
Filling Skills Gaps Chapters 6 & 7	<p>Skills gaps are mostly filled through non-accredited training of existing workers, other than for Technicians and Trades which are filled both internally and externally. Labourers were the group most likely to be recruited from school with no work experience.</p> <p>Managers and supervisors were generally promoted from operational staff over time as their skills matured. Few employers provided specific management training.</p>				

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Filling Gaps Internally – Building Skills of the Existing Workforce					
Retention Section 6.1	Time with current employer: <3 years: 22% 3-10 years: 28% >10 years: 50%	Time with current employer: <3 years: 54% 3-10 years: 15% >10 years: 31%	Time with current employer: <3 years: 18% 3-10 years: 34% >10 years: 48%	Time with current employer: <3 years: 23% 3-10 years: 26% >10 years: 51%	Time with current employer: <3 years: 20% 3-10 years: 26% >10 years: 54%
	<p>Employers had good retention of mature workers. This provides the advantage of a reliable, skilled workforce. However, the disadvantages are:</p> <ul style="list-style-type: none"> there are fewer opportunities to recruit young people and foster their skills development; there is reduced need for employers to prepare and cater for the training of new entrants, which means that their internal induction and training processes are not well maintained (particularly for small businesses); and the whole-of-industry does not generate a sufficiently large, regular stream of learners to support a local training provider based in the region. <p>Employers reported difficulties in retention rates of people aged under 25. Employers reported the reasons for this were primarily that young people did not have the right work ethic or cultural fit within the organisation; or they could make a better income working in other industries such as civil construction or agriculture.</p>				
Reasons for Training Section 6.2	Reasons why the business supports training of existing workers: <ul style="list-style-type: none"> Improving goods and services (81.8% of businesses) To meet specific training needs (63.6%) Develop and maintain a flexible and responsive workforce (59.1%) 	Reasons why the business supports training of existing workers: <ul style="list-style-type: none"> Legislative, regulatory or licensing requirements (2) Career development (2) Improving goods and services (2) Develop and maintain a flexible and responsive workforce (2) 	Reasons why the business supports training of existing workers: <ul style="list-style-type: none"> Legislative, regulatory or licensing requirements (6) Improving goods and services (6) To meet specific training needs (4) Develop and maintain a flexible and responsive workforce (3) 	Reasons why the business supports training of existing workers: <ul style="list-style-type: none"> Improving goods and services (8) Develop and maintain a flexible and responsive workforce (8) To meet specific training needs (6) Career development (4) 	Reasons why the business supports training of existing workers: <ul style="list-style-type: none"> To meet specific training needs (8) Improving goods and services (7) Legislative, regulatory or licensing requirements (5) Develop and maintain a flexible and responsive workforce (5)
	Businesses were most likely to train when they could see a return on their investment from training, more so than the need to meet legislative, regulatory or licensing requirements. The least common reasons for training were those most likely to benefit the worker themselves. Some businesses have also identified the connection between training in qualifications and the attractiveness of roles to new entrants.				

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	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
Filling Gaps Externally					
Recruitment Challenges Section 7.1	<p>Occupations most difficult to recruit:</p> <p>Managers (rank 5.1)</p> <ul style="list-style-type: none"> 36% some or a lot of difficulty recruiting <p>Machinery Operators or Drivers (rank 4.4/6)</p> <ul style="list-style-type: none"> 69% some or a lot of difficulty of recruiting Specifically: harvester, loader, skidder <p>Technicians and Trades Workers (rank: 3.8/6)</p> <ul style="list-style-type: none"> 36% a lot of difficulty recruiting Specifically: saw technicians, fitters, machinists, electricians 	<p>Businesses recruited in the last 12 months: 2</p> <p>Don't know can't say: 3</p> <p>No difficulty: 1</p> <p>Some difficulty: 0</p> <p>A lot of difficulty: 0</p>	<p>Businesses recruited in the last 12 months: 5</p> <p>Don't know can't say: 1</p> <p>No difficulty: 2</p> <p>Some difficulty: 1</p> <p>A lot of difficulty: 4</p>	<p>Businesses recruited in the last 12 months: 11</p> <p>Don't know can't say: 2</p> <p>No difficulty: 4</p> <p>Some difficulty: 2</p> <p>A lot of difficulty: 8</p>	<p>Businesses recruited in the last 12 months: 9</p> <p>Don't know can't say: 2</p> <p>No difficulty: 4</p> <p>Some difficulty: 1</p> <p>A lot of difficulty: 2</p>
	<p>Despite the high retention rates in the industry, the most common reason to employ a new worker is not to replace a worker who has retired, but to replace a worker who has left voluntarily. Three quarters of respondents had recruited or attempted to recruit staff in the last 12 months. Recruitment was most difficult for medium sized businesses and least difficult for large businesses. Recruitment from other industries was considered more difficult than recruiting school leavers</p>				

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	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
Filling Gaps Externally					
Perceptions of Recruitment Section 7.2	Reasons for difficulties in recruitment (generally): <ul style="list-style-type: none"> • Poor attitude to work or work ethic (56%) • Lack of existing workers in the industry being skilled up (52%) • Shortage of skilled people in the industry (52%) • Limited appropriate applicants (44%) 	Reasons for difficulties in recruitment (generally): <ul style="list-style-type: none"> • Lack of existing workers in the industry being skilled up (1) • Shortage of skilled people in the industry (1) • Poor attitude to work or work ethic (1) • Wages/salaries considered too low (1) 	Reasons for difficulties in recruitment (generally): <ul style="list-style-type: none"> • Shortage of skilled people in the industry (5) • Lack of existing workers in the industry being skilled up (4) • Limited appropriate applicants (4) 	Reasons for difficulties in recruitment (generally): <ul style="list-style-type: none"> • Poor attitude to work or work ethic (9) • Lack of existing workers in the industry being skilled up (7) • Not a career which is aspired to (6) • Limited appropriate applicants (5) 	Reasons for difficulties in recruitment (generally): <ul style="list-style-type: none"> • Lack of existing workers in the industry being skilled up (5) • Shortage of skilled people in the industry (4) • Limited appropriate applicants (4) • Poor attitude to work or work ethic (4)
Perceptions of Recruitment Section 7.2	Reasons for difficulties in recruitment (from other industries): <ul style="list-style-type: none"> • Unattractive job/not a career which is aspired to (40.9%) • Shortage of skilled people in the industry (31.8%) • Poor attitude to work/work ethic (31.8%) • Limited appropriate applicants (27.3%) 	Reasons for difficulties in recruitment (from other industries): <ul style="list-style-type: none"> • Poor attitude to work/work ethic (1) 	Reasons for difficulties in recruitment (from other industries): <ul style="list-style-type: none"> • Unattractive job/not a career which is aspired to (3) • Shortage of skilled people in the industry (2) • Poor attitude to work/work ethic (1) 	Reasons for difficulties in recruitment (from other industries): <ul style="list-style-type: none"> • Unattractive job/not a career which is aspired to (5) • Limited appropriate applicants (4) 	Reasons for difficulties in recruitment (from other industries): <ul style="list-style-type: none"> • Shortage of skilled people in the industry (4) • Limited appropriate applicants (4) • Unattractive job/not a career which is aspired to (3) • Wages/salaries considered too low (3)
The perception that there is a lack of workers being skilled up and a shortage of skilled people in the industry is an interesting contradiction to the industry's preference to fill gaps through internal training.					

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	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
Filling Gaps Externally					
Other Perspectives on Recruitment Section 7.3	<p>Issues identified in other jurisdictions are:</p> <ul style="list-style-type: none"> • The Industry is competing with other primary industries which are also facing recruitment challenges. • The Industry is perceived as dangerous and hard work • Smaller businesses have limited capacity to supervise and support apprentices and trainees • Low retention rates of high schools can impact capacity to recruit and train for positions which require higher levels of literacy and numeracy • Lack of social licence for forest industries and lack of certainty around the future of native-forest dependent industry 				
<i>Not a career which is aspired to</i> Section 7.4	<p>Research by the Primary Industries Education Foundation has found that:</p> <ul style="list-style-type: none"> • A smaller proportion of students are negative towards the industry (20%) than perceptions may suggest • The greatest influencers of students were school teachers (59%) and the media (51%) 				
<i>Wages considered too low</i> Section 7.5	<p>The current rates of pay may be a relevant barrier to attracting and retaining workers in most industry sectors, but particularly in Sawmilling and Processing. For certain occupations, where the Industry is competing directly with other industries, rates of pay may be a particular issue. Examples for each occupation group:</p> <ul style="list-style-type: none"> • Production Managers – compared to the Mining Industry • Agricultural and Forestry Scientists – compared to Education and Training and Professional and Technical Services • Truck Drivers – compared to Construction, Transport Postal and Warehousing, and Manufacturing • Metal Fitters and Machinists – compared to Construction and Mining • Farm Forestry and Garden Workers – compared to Administrative and Support Services and Public Administration and Safety <p>The comparators chosen were based on the largest employing</p>				
<i>Limited appropriate applicants</i> Section 7.6	<p>The attributes sought from school leavers and people from outside the industry were similar. The most frequently cited amongst businesses were:</p> <ul style="list-style-type: none"> • Work ethic (15) • Ability or willingness to learn (7) • Aptitude for manual labour (4) and or mechanical aptitude (4) <p>Opportunities have been identified to use the North Coast Jobs program to recruit people with work readiness skills who have been displaced as a result of COVID. The industry may however need to consider the intersection between the availability of appropriate applicants and the lack of diversity in the industry.</p>				

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	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
Filling Gaps Externally					
Opportunities for New Entrants Section 7.7	Nearly a third of businesses indicated they had opportunities as Labourers for school leavers (27.3%). Only 2 businesses indicated that there were opportunities for apprenticeships. The most common response in relation to new entrants from other industries is that they would have the same opportunities as school leavers (31.8%).	Has few if any opportunities for Year 12 leavers.	Opportunities on the skidder initially – and as skills develop, moving on to dozer, excavator and loader. Truck drivers were prevalent in opportunities for new entrants from other industries.	Tailing out, stacking, sorting and docking. Opportunities for qualified trades were identified for new entrants from other industries.	De-metalling, quality control and machine hands Opportunities for qualified trades were identified for new entrants from other industries and for leading hands and supervisors.
Training for New Entrants Section 7.8	Most training provided to new entrants is on-the-job non-accredited training <ul style="list-style-type: none"> School leavers (90.9%) From other industries (77.3%) 	Most training provided to new entrants is on-the-job non-accredited training <ul style="list-style-type: none"> School leavers (2) From other industries (2) 	Training provided to new entrants is on-the-job non-accredited training <ul style="list-style-type: none"> School leavers (7) From other industries (5) AND single units of competency <ul style="list-style-type: none"> School leavers (6) From other industries (5) This is likely to be related to the requirements imposed by Forestry Corp NSW to work in the forests.	Most training provided to new entrants is on-the-job non-accredited training <ul style="list-style-type: none"> School leavers (9) From other industries (8) 	Most training provided to new entrants is on-the-job non-accredited training <ul style="list-style-type: none"> School leavers (8) From other industries (8)

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	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
Filling Gaps Externally					
Apprenticeships and Traineeships Section 7.9	Apprentice or Trainee... <ul style="list-style-type: none"> in last 12 months (31.8%) in last 5 years (52.0%) 	Apprentice or Trainee... <ul style="list-style-type: none"> in last 12 months (0) in last 5 years (2) 	Apprentice or Trainee... <ul style="list-style-type: none"> in last 12 months (4) in last 5 years (4) 	Apprentice or Trainee... <ul style="list-style-type: none"> in last 12 months (3) in last 5 years (7) 	Apprentice or Trainee... <ul style="list-style-type: none"> in last 12 months (2) in last 5 years (5)
	Reasons for Apprentice or Trainee <ul style="list-style-type: none"> to get skilled staff or improve staff skills (41%) to fill a specific role/need more staff (32%) gain skills specific to the business/train to own requirements (27%) 	Reasons for Apprentice or Trainee <ul style="list-style-type: none"> to get skilled staff or improve staff skills (2) part of the business culture (1) gain skills specific to the business/train to own requirements (1) 	Reasons for Apprentice or Trainee <ul style="list-style-type: none"> to fill a specific role/need more staff (2) to get skilled staff or improve staff skills (2) gain skills specific to the business/train to own requirements (2) 	Reasons for Apprentice or Trainee <ul style="list-style-type: none"> to get skilled staff or improve staff skills (5) to fill a specific role/need more staff (3) gain skills specific to the business/train to own requirements (2) 	Reasons for Apprentice or Trainee <ul style="list-style-type: none"> to get skilled staff or improve staff skills (5) to fill a specific role/need more staff (4) gain skills specific to the business/train to own requirements (3)
	Apprenticeships included industry specific apprenticeships like saw doctors and wood machinists as well as more general apprenticeships such as diesel mechanics and fitters. Traineeships were mostly in Harvesting and Haulage.				

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	Whole of Industry	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing	Timber Manufactured Products
Availability of Training					
Barriers to Training Section 8.1	The barriers to training were: <ul style="list-style-type: none">Location of training (20%)Lack of suitable trainers (17%)Time commitment of training (17%)	The barriers to training were: <ul style="list-style-type: none">Time commitment of training (20%)Cost of training (15%)Cost of down-time to attend training (15%)Lack of suitable trainers (15%)Accredited training not meeting needs (15%)	The barriers to training were: <ul style="list-style-type: none">Time commitment of training (26%)Cost of down-time to attend training (24%)Lack of suitable trainers (15%)	The barriers to training were: <ul style="list-style-type: none">Location of training (27%)Lack of suitable trainers (18%)Accredited training not meeting needs (14%)Lack of awareness of training options (14%)	The barriers to training were: <ul style="list-style-type: none">Location of training (21%)Accredited training not meeting needs (18%)Time commitment of training (16%)Lack of suitable trainers (16%)
Overcoming Barriers to Training Section 8.2	Employers were supportive of the following strategies to support the delivery of accredited training in the region:				
	<ul style="list-style-type: none">Scheduled industry-wide training delivered locally (26%)Develop industry-endorsed training and assessment material (20%)The provision of information to employers to support them in accessing information on formal training pathways (15%) and funding options (8%)	<ul style="list-style-type: none">The provision of information to employers to support them in accessing information on formal training pathways (42%) and funding options (32%)Develop industry-endorsed training and assessment material (16%)Develop a relationship with training providers (11%)	<ul style="list-style-type: none">Scheduled industry-wide training delivered locally (22%)The provision of information to employers to support them in accessing information on formal training pathways (17%) and funding options (19%)A purpose built training facility in the region (17%)	<ul style="list-style-type: none">Scheduled industry-wide training delivered locally (29%)Develop industry-endorsed training and assessment material (21%)A purpose built training facility in the region (14%)	<ul style="list-style-type: none">Scheduled industry-wide training delivered locally (34%)Develop industry-endorsed training and assessment material (21%)The provision of information to employers to support them in accessing information on formal training pathways and funding options (21%)
Availability of Training Section 8.3	Refer to the Training Schedule at Attachment Three for details regarding the availability of training to address skills needs and the availability of Government support for training.				

2 What does the North East NSW Forest and Wood Products Industry Look Like?

The North-East NSW Forest Hub (the Hub) region extends southwards from the Kyogle Local Government Area (LGA) on the NSW-Queensland border to roughly the Mid-Coast LGA, and from the coast westwards to the Great Dividing Range. The bulk of the employers are clustered around the Clarence Valley, Mid-Coast, Port Macquarie-Hastings and Coffs Harbour LGAs, although some significant employers operate in LGAs on the fringes of the main areas. For example, Weathertex is located in Port Stephens LGA and processes fibre produced in the Mid-Coast LGA. The Forest and Wood Products Industry in the region is based primarily on native forest hardwoods, sourced either from State forests or private native forests. There is a small volume of hardwood sawlogs grown in plantations owned by Forestry Corporation NSW. There was also a small softwood plantation estate supplying local sawmills however this plantation estate was destroyed in the 2019 bushfire season.

The highest value hardwoods are used to manufacture utility poles and girders for bridges and wharves. There are many sawmills that manufacture high-value flooring and furniture timber, structural timber including mining timbers and railway and landscaping sleepers. By-products of timber processing include firewood and sawdust for biomass energy or agriculture. Forest residues may be processed into firewood or sent to Brisbane for export into the pulp market.

Most of the processed timber is sold through timber merchants that deal with customers in the metropolitan regions of Sydney, Brisbane and Melbourne.

2.1 Geographic Distribution

The 2016 Census shows that as a whole, employment in the Industry is concentrated in the LGAs of Clarence Valley (27 per cent), Mid-Coast, Port Macquarie-Hastings and Coffs Harbour (all 11 per cent), and Richmond Valley, Tweed and Lismore (all 6 per cent). See Figure 1.

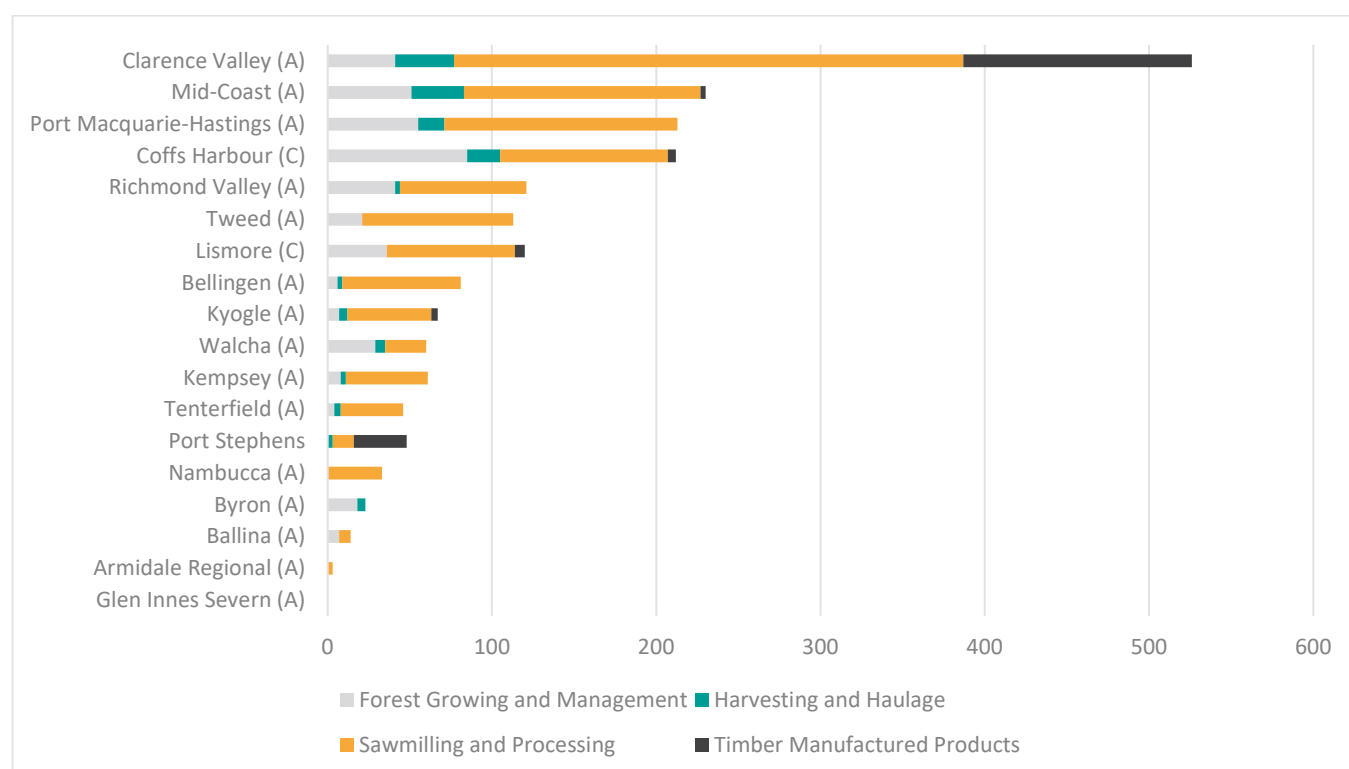
However, looking at each sector, the distribution varies.

- Forest Growing and Management: Coffs Harbour (20 per cent), Port Macquarie-Hastings (13 per cent), Mid-Coast (12 per cent), Clarence Valley and Richmond Valley (both 10 per cent)
- Harvesting and Haulage: Clarence Valley (25 per cent), Mid-Coast (23 per cent), Coffs Harbour (14 per cent) and Port Macquarie-Hastings (11 per cent).
- Sawmilling and Processing: Clarence Valley (25 per cent), Port-Macquarie Hastings and Mid-Coast (both 12 per cent) and Coffs Harbour and Tweed (both 8 per cent)
- Manufactured Wood Products: Clarence Valley (74 per cent) and Port Stephens (17 per cent)

ForestWorks has identified 74 businesses operating in each of these LGAs by sector (see Attachment One).

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Figure 1 People by Place of Work (Hub Region) and Industry Sector, 2016

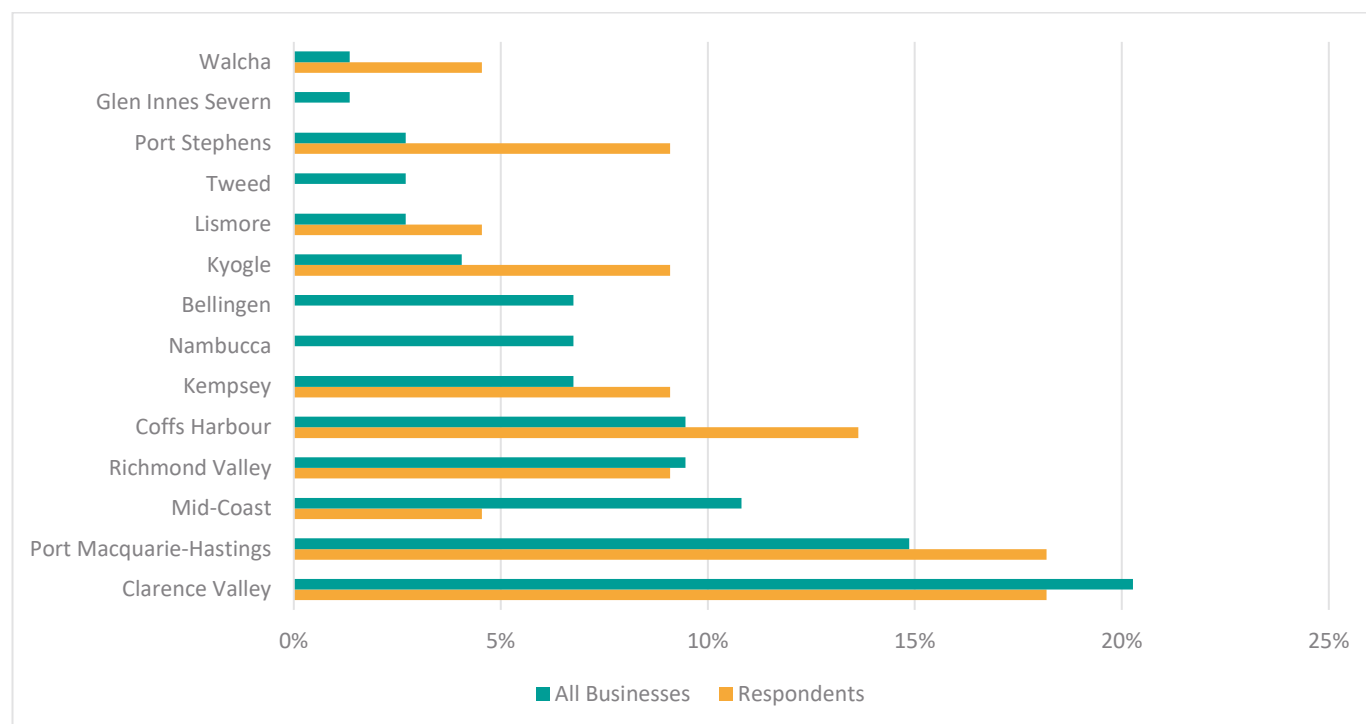


Source: Census of Population and Housing, 2016, TableBuilder

To the greatest extent possible, given the small number of businesses in each region, the businesses interviewed are representative of the localities of the businesses identified.

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Figure 2 Proportion of businesses identified in each LGA in the NE Hub Region compared to Respondents, 2021



Source: White Pages, Hub interview data 2021

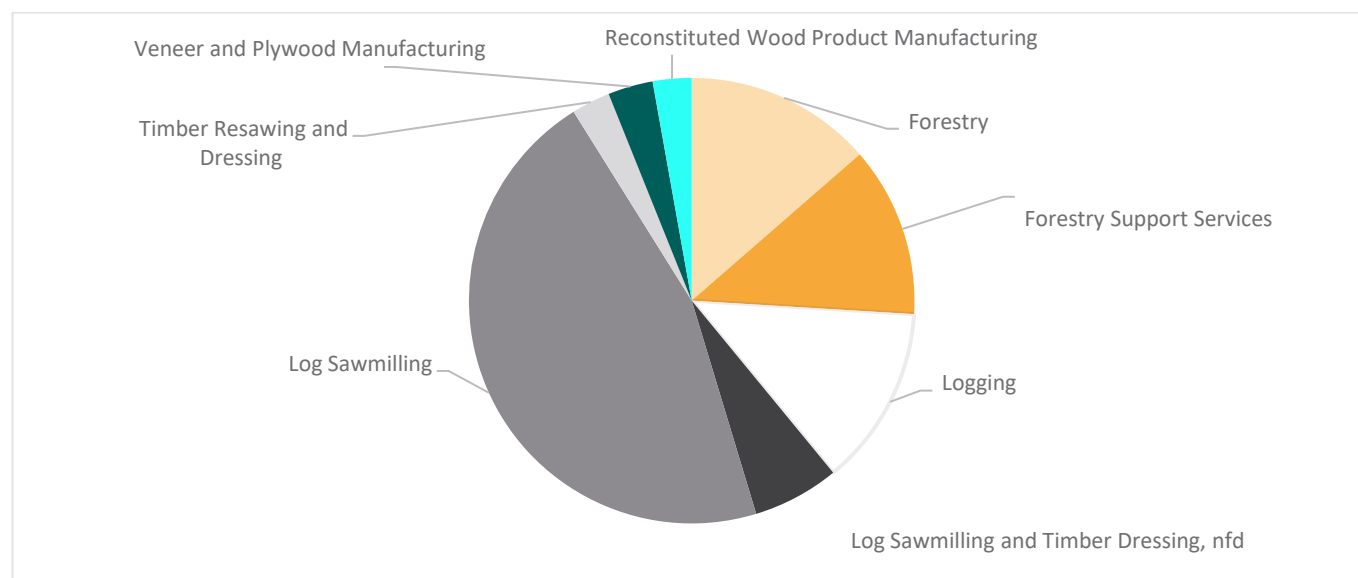
2.2 Sectoral Distribution

As at the last census, the largest employing Industry sector was Log sawmilling (46.7 per cent), followed by Forestry (13.9 per cent), Logging (13.3 per cent), and Forestry Support Services (12.6 per cent). See Figure 3.

For the purposes of this report, Forest Growing and Management refers to Forestry and Forestry Support Services; Harvesting and Haulage refers to Logging; Sawmilling and Processing refers to Log Sawmilling, Timber Resawing and Dressing; and Timber Manufactured Products refers to Veneer and Plywood Manufacturing and Reconstituted Wood Product Manufacturing.

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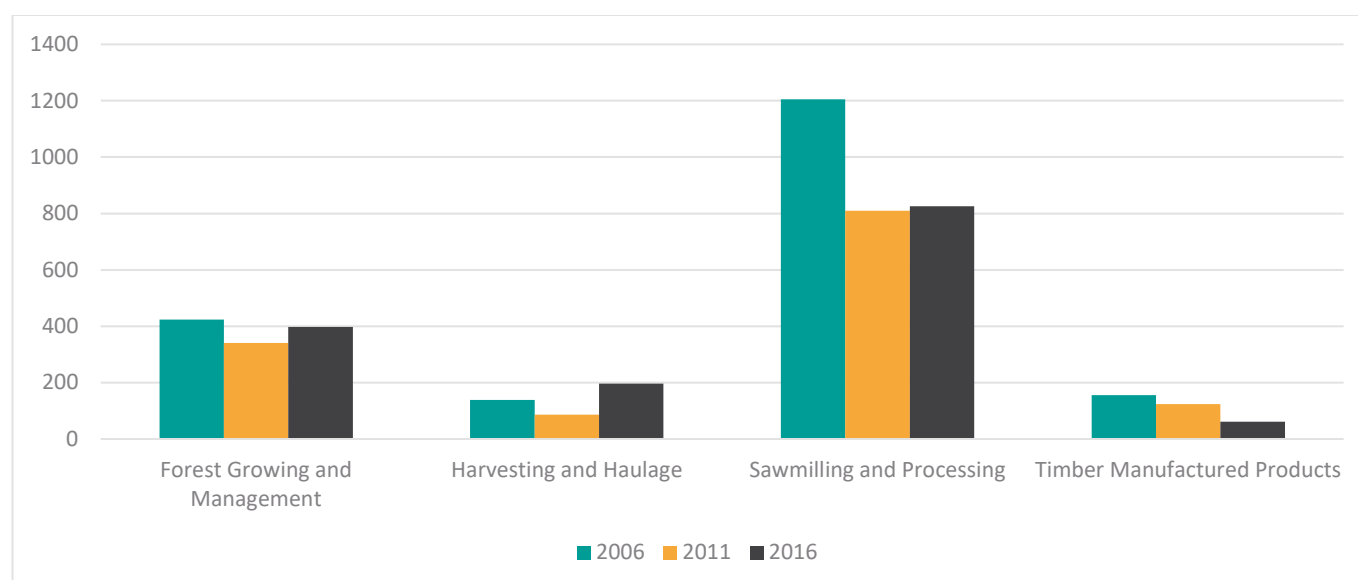
Figure 3 Distribution of Industry by sub-sector (employees in the Hub Region), 2016



Source: Census of Population and Housing, 2016, TableBuilder

Over the last three censuses, all sectors except Harvesting and Haulage have declined – by between 6 per cent (Forest Growing and Management) and 61 per cent (Timber Manufactured Products). The Harvesting and Haulage Sector grew by 42 per cent over the same period. Changes in harvest volumes over the period don't satisfactorily explain why this has occurred.

Figure 4 Change to Industry sectors over time, 2006-2016



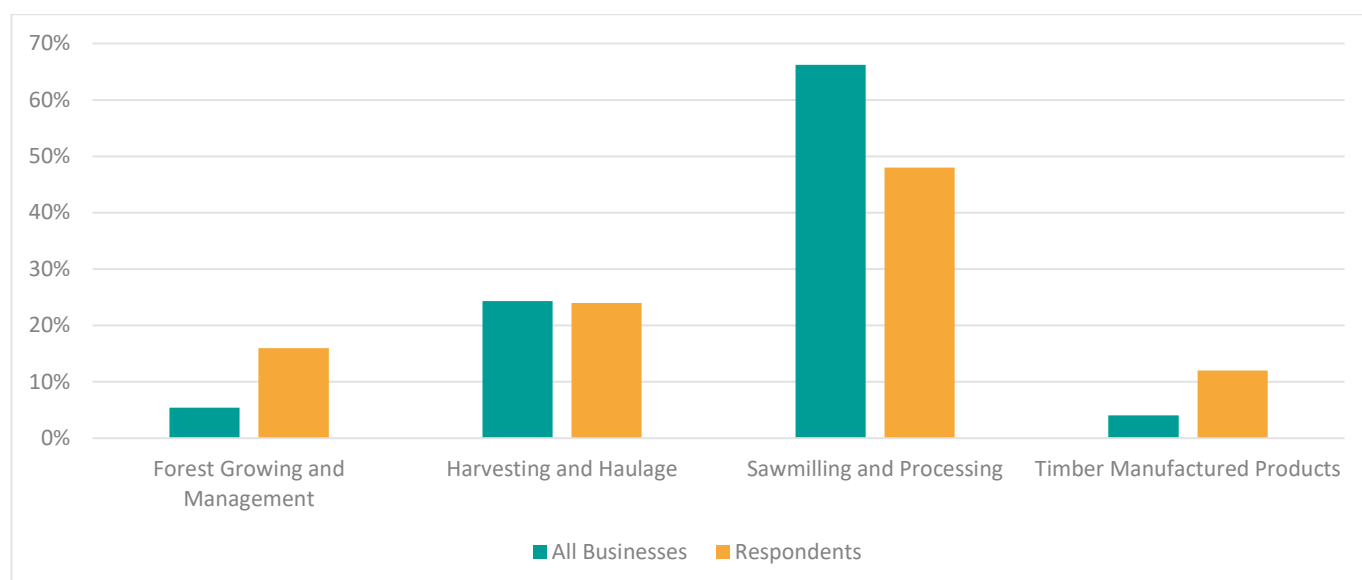
Source: Census of Population and Housing, 2016, TableBuilder

As indicated in Section 3.1 above, an attempt has been made to ensure that the businesses interviewed were representative of the businesses identified in Attachment One, with respect to their sector of operation (see Figure 5). The need to interview sufficient numbers of Forest Growing and Management Companies and Manufactured Wood Product Companies (given their small number) has skewed the distribution.

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Where a company operates across more than one sector they have been counted in each sector, rather than determining their predominant business activity.

Figure 5 Proportion of businesses identified in each sector compared to Respondents, 2021



Source: White Pages, Hub interview data 2021

2.3 Company Size

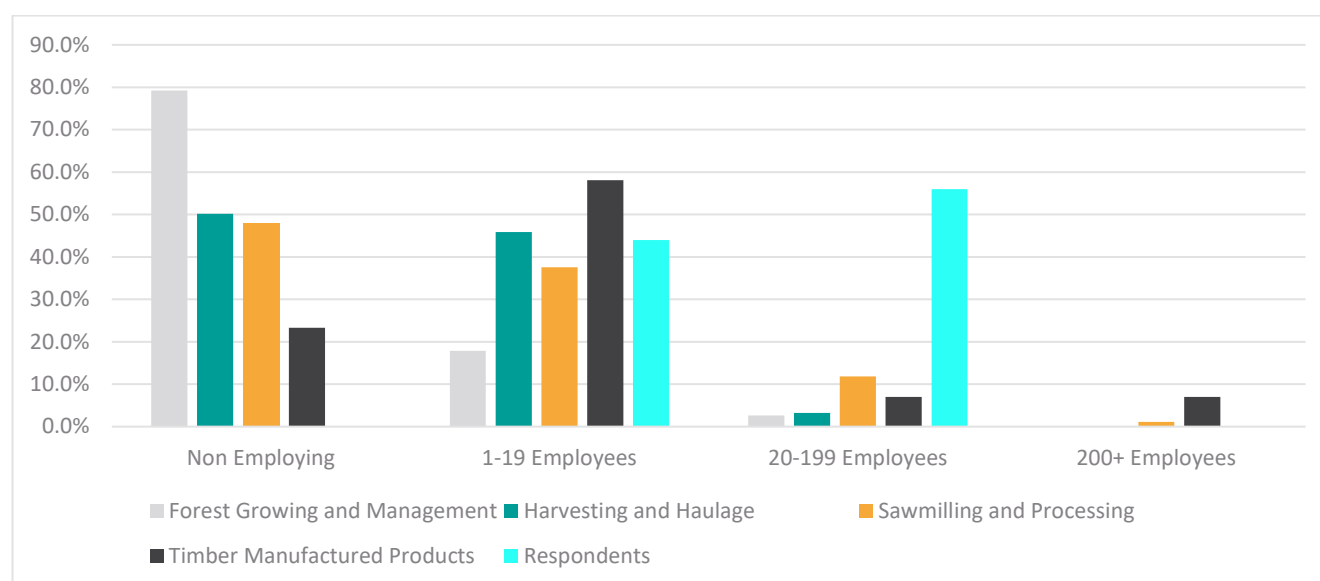
Overall, the most common business size in the Industry in NSW¹ is a non-employing business (64.5 per cent), followed by small businesses employing 1-19 people (30.0 per cent). By comparison, the most common business size interviewed were medium sized businesses employing 20-199 employees (59.1 per cent), and three quarters of these employed less than 100 people. No interviews conducted for this project were with non-employing businesses. Excluding non-employing businesses from the ABS data would result in the largest group comprising small businesses (84.6 per cent) followed by medium businesses (12.4 per cent).

Although the respondents may not be entirely representative of business size in the Industry throughout NSW, opportunities were presented to the Industry to participate in range of forums including round tables, one-on-one-interviews, and an online survey.

¹ Information on business size by industry sector is only disaggregated at the State level.

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Figure 6 Proportion of businesses in NSW by business size compared to Respondents

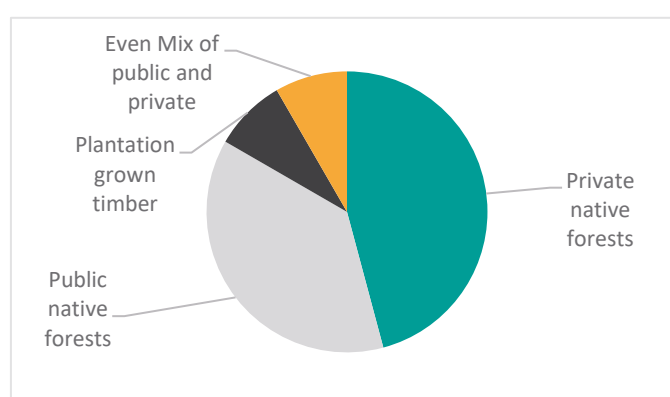


Source: 8165.0 ABS Counts of Australian Businesses June 2020, Hub interview data 2021

2.4 Resource

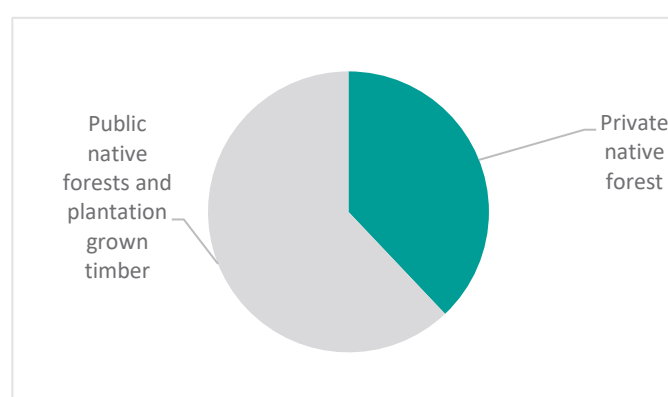
The businesses were asked “Which best describes the main forest resources for your business?”. Only two businesses operated exclusively with plantation grown timber. Most businesses drew from both native forest tenures. About half reported that the public resource made up most of their resource, about half reported that they were mostly reliant on private native forests, and two businesses stated that their resource was from an almost even mix of public and private resource. This reflects the timber yield from North Coast operations, estimated by the NSW Department of Primary Industries as 275,000 m³ per year for private native forestry, compared to 450,000 m³ per year from the public native forests and plantation grown timber.

Figure 7 Which best describes the main forest resources for your business or organisation?



Source: Hub interview data 2021

Figure 8 Timber yield from different tenure types in the North Coast, 2017



Source: Department of Primary Industries, 2017

2.5 Primary Market Location

Half of businesses interviewed sold their largest share of services and/or products during the last two years to other businesses within the north-east of NSW.

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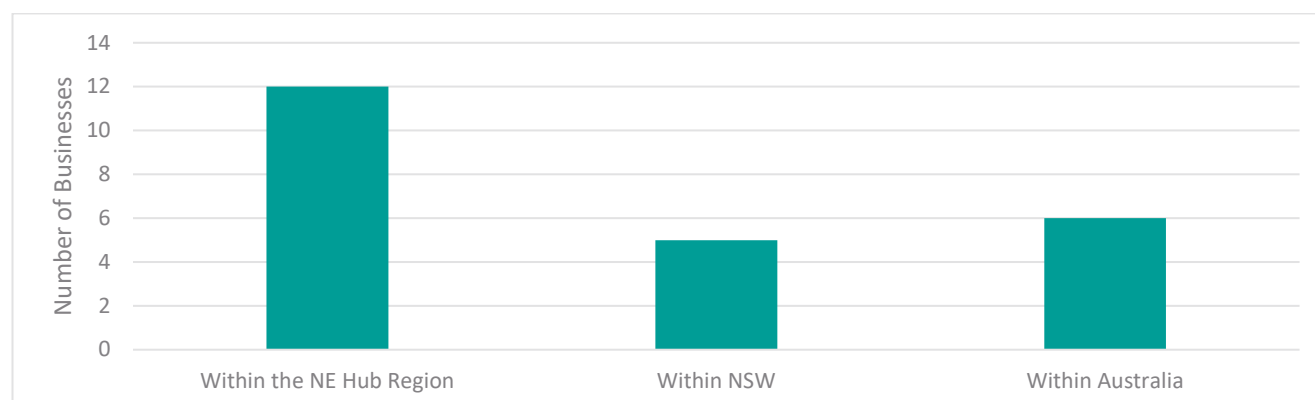
The sector with most significant local focus were Harvesting and Haulage providers (8 out of 9 supplied into the north-east region) and Forest Growing and Management companies (2 out of 4).

A forest management company in the region will engage a local harvesting contractor. The logs will be transported by a local haulage contractor to a local sawmill. These goods will then be sent to high-end renovation and construction markets in Sydney and other capital cities. However, only the sawmill will report engagement with markets outside the region.

The most outwardly focused were Sawmilling and Processing companies (out of 12, 5 were supplying Australia and 4 were supplying NSW) and timber manufactured products companies (out of 8, 4 were supplying Australia and 2 were supplying NSW).

The businesses that send product to other parts of NSW supplied the high-end Sydney renovation market, or structural supports for underground mining operations. The businesses that supplied Australia included those that supplied the construction industries in capital cities (for example, concrete formwork), architectural feature products such as weatherboards, or wood chip to the export facility in Brisbane.

Figure 9 In which geographic markets did your company sell the largest share of services and/or products during the last 2 years?



Source: Hub interview data 2021

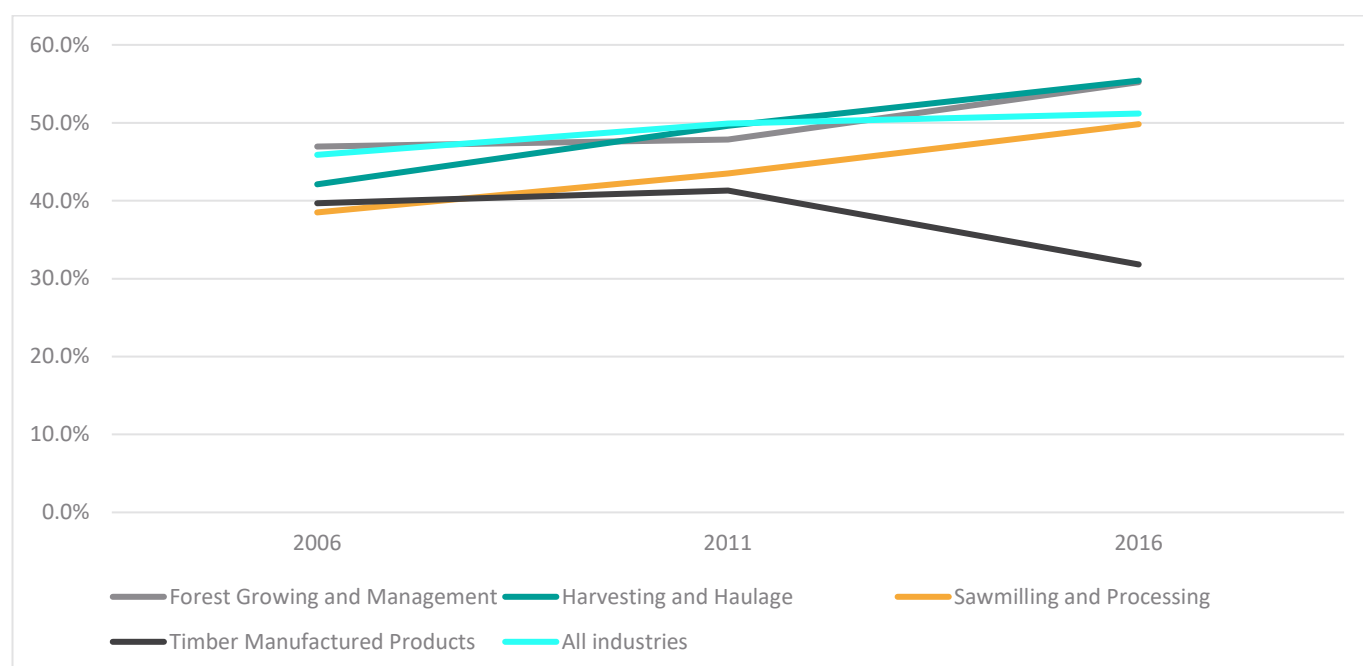
2.6 Age

Looking at the ABS data, all sectors except for Timber Manufactured Products are seeing an ageing workforce. Figure 12 shows the proportion of the workforce in each sector over 45 years of age at the time of the census. While all industries in the region are experiencing some aging (5.3 percentage points over the decade to 2016), the proportion of people over 45 in the Harvesting and Haulage sector and to a lesser extent Sawmilling and Processing has been far more significant (13.3 percentage points and 11.3 percentage points respectively).

The only sector which has a younger profile is Timber Manufactured Products (a decline of 7.8 percentage points over the decade). Given the significant decline in the Timber Manufactured Products workforce over that period (from 174 people in 2006 to 66 in 2016) it is likely that the age profile is largely due to older workers exiting the Industry rather than younger people entering the Industry.

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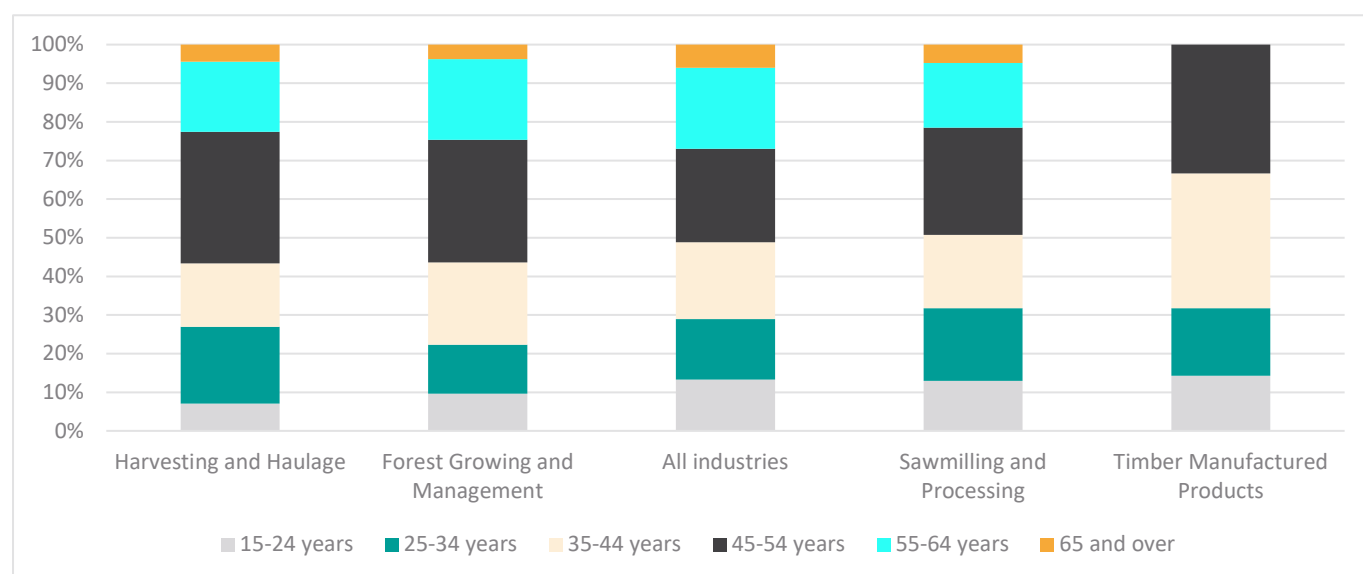
Figure 10 Percentage of workforce over 45 years of age



Source: Census of Population and Housing, 2006, 2011 and 2016, TableBuilder

This assumption is supported by Figure 13 which shows that less than a third of the Industry were under 34 years of age in 2016.

Figure 11 Age of workforce by Industry sector and all industries, NSW NE Hub, 2016



Source: Census of Population and Housing, 2006, 2011 and 2016, TableBuilder

The group interviewed indicated 49.4 per cent of their employees were over the age of 45 (see Table 1). This suggests that the general aging in the workforce has not abated since the last census. This appears to be driven by the age profile of the Harvesting and Haulage sector.

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Table 1 Proportion of workforce over the age of 45, 2006-2021

Industry Sector	2021 (Interviews)	2016 (Census)	2011 (Census)	2006 (Census)
Forest Growing and Management	55.1%	55.2%	47.9%	47.0%
Harvesting and Haulage	65.4%	55.4%	49.6%	42.1%
Sawmilling and Processing	39.9%	49.8%	43.5%	38.5%
Timber Manufactured Products	34.3%	31.8%	41.3%	39.7%
All Forest and Wood Products Industry	49.4%	51.8%	48.6%	42.0%
All Industries		63.7%	61.6%	58.9%

Source: Census of Population and Housing, 2006, 2011 and 2016, TableBuilder; NE Hub Interviews 2021

One employer discussed the cost of living in the towns surrounding the sawmill and outlined the limited availability of childcare in the region. Parents found that working within the operating hours of the sawmill whilst paying for childcare or caring for pre-school aged children meant that it was too impractical or not cost-effective for them to work at the mill. This was reflected in the age-cohort of his employees.

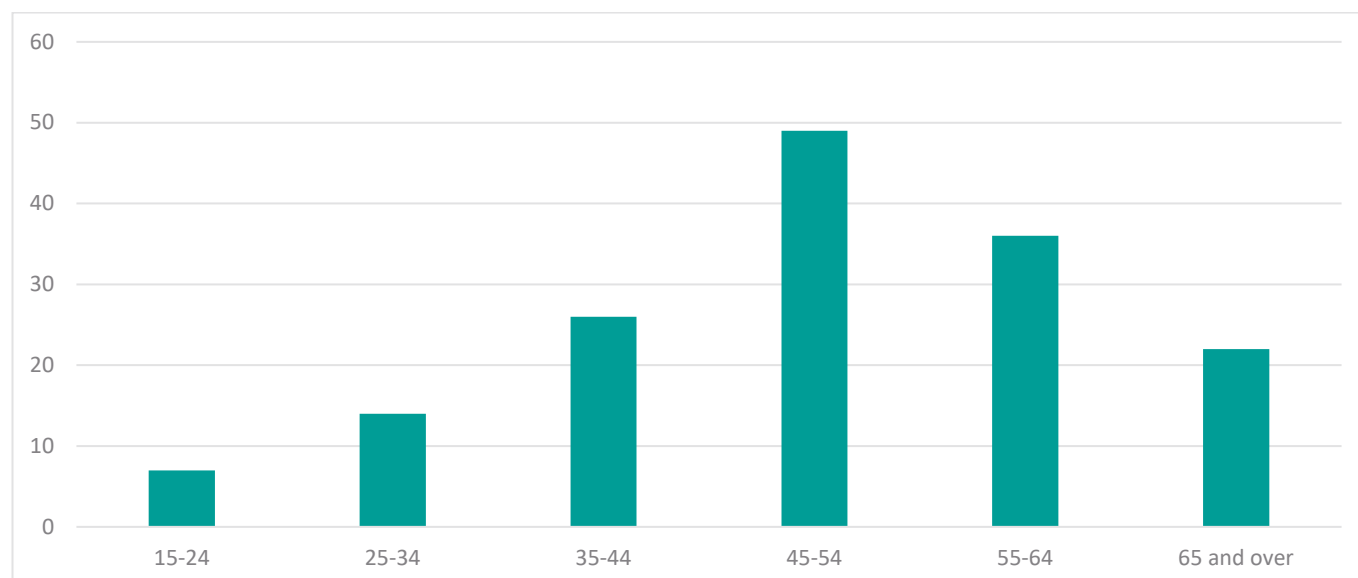
Only 3 per cent of respondent businesses had workers aged 19 and under. Discussions with respondents suggest this may be because:

- Young people are encouraged to stay in school until they complete Year 12 at age 17 or 18. They may not have the personal maturity to be ready to enter the workforce and choose to travel, take a gap year, or try convenient jobs in industries that they are familiar with.
- Younger workers may not have a driver's license in an area that is poorly serviced by public transport. This presents a challenge in getting to the workplace in regional and rural locations, particularly if they are working in the bush or in a sawmill located some distance out of town. They are then reliant on a work colleague or family member for transport.
- Employers are reluctant to take on people that cannot demonstrate a commitment to working hard, in an environment very different to that of the classroom, with a cohort of people that does not resemble the cohort that of the schoolyard. This suggests the need for greater exposure of school students to real workplaces.
- Some employers provided anecdotal evidence that schools criticise the forestry and timber industry in classroom activities. This may discourage young people from considering the industry as a viable career option. This suggests the need for greater exposure of school students and teachers to modern forestry practices and the rationale behind them.

Further evidence of the aging of the Harvesting and Haulage sector is seen in the data ForestWorks has extracted from FOLS (see Figure 14). Of the 154 FOLS holders residing in the Hub region, 69.5 per cent were over 45 years of age.

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Figure 12 FOLS Holders by Age, NE Hub Region, April 2021



Source: ForestWorks FOLS Database, 2021

2.7 Diversity

The importance of diversity in a workplace is well-established, not least of all because it broadens the pool of potential recruits to the Industry. However, across a range of dimensions, the Industry in the Hub Region lacks diversity. Respondents indicated a range of views in relation to gender, race, and disability which suggest that there is generally a poor understanding of unconscious bias and how it can adversely affect employment decisions. There were also views expressed by some participants which suggest that some employers may not be abiding by anti-discrimination legislation.

2.7.1 Gender

Women are significantly under-represented in the companies interviewed (7.7 per cent of employees were women). This is a lower proportion than suggested by the 2016 census which suggested that 13.4 per cent of employees were women.

While the proportion of women working in all industries in the Hub region has increased from 47.4 per cent in 2006 to 49.8 per cent in 2016, there is no such increase in the Forest and Wood Products Industry.

Table 2: Proportion of women in the workforce in the Hub region by Industry sector, 2006, 2011, 2016

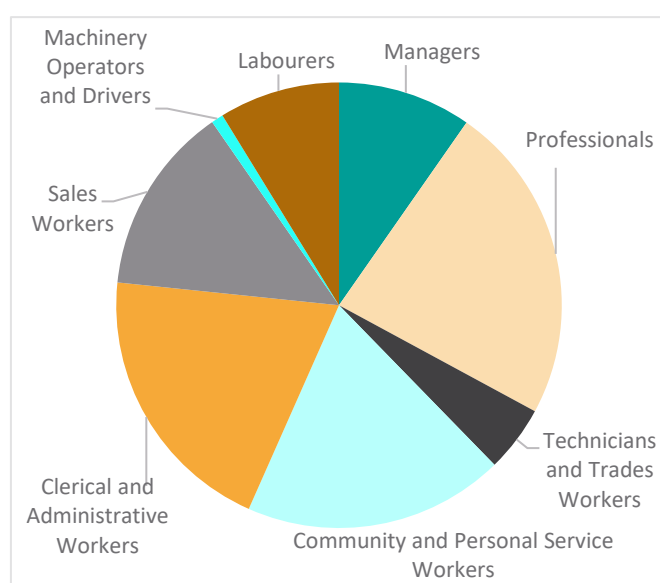
Industry Sector	2016	2011	2006
Forest Growing and Management	23.5%	16.0%	23.6%
Harvesting and Haulage	11.3%	3.1%	10.0%
Sawmilling and Processing	8.7%	8.4%	9.5%
Timber Manufactured Products	6.1%	3.3%	9.2%
All Forest and Wood Products Industry	13.4%	10.4%	12.3%
All Industries	49.8%	48.7%	47.4%

Source: Census of Population and Housing, 2016, TableBuilder and Hub Interviews, 2021

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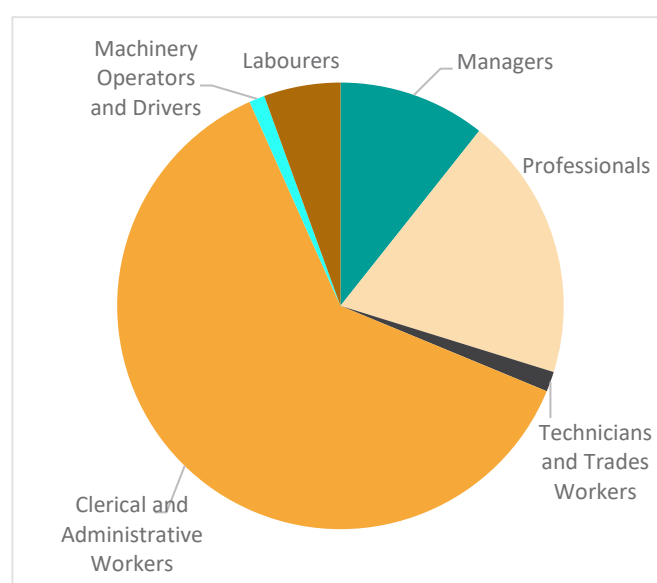
At the time of the 2016 census, nearly half of the women working in the Industry performed Clerical and Administrative roles (49.5 per cent). Labourers made up the next largest group (20.8 per cent), followed by Professionals (15.7 per cent), Managers (9.3 per cent), Machinery Operators and Drivers (3.2 per cent) and Technicians and Trades Workers (1.4 per cent). This is a very different profile to women working elsewhere in the Hub region. The industry has proportionately fewer female Managers, Professionals and Technicians and Trades Workers than in all industries in the Hub region.

Figure 13 Women in the Hub region Workforce by Occupational Category, 2016



Source: Census of Population and Housing, 2016, TableBuilder

Figure 14 Women in the Hub region Forest and Wood Products Industry by Occupational Category, 2016



Source: Census of Population and Housing, 2016, TableBuilder

As a proportion of each occupational category, women made up the largest proportion of Clerical and Administrative Workers, followed by Professionals, Managers, Labourers and Machinery Operators and Drivers (see Table 3). Compared to the Hub region as a whole, women were under-represented in every occupational category, except for Clerical and Administrative Workers.

Table 3: Proportion of women in the workforce in the Hub region by occupational category and Industry sector²

Occupational Category	Total (All Industries)	Total (Industry)	Forest Growing and Management	Harvesting and Haulage	Sawmilling and Processing
Managers	37.4%	14.6%	17.2%	-	13.3%
Professionals	61.7%	26.2%	23.1%	-	25.0%
Technicians and Trades Workers	16.7%	2.0%	-	-	-
Clerical and Administrative Workers	81.9%	84.9%	90.7%	76.2%	83.9%
Machinery Operators and Drivers	7.3%	1.5%	-	-	2.9%
Labourers	34.4%	7.6%	18.3%	4.6%	1.4%

² Note figures have not been included for the Timber Manufactured Products Sector as the numbers are too small.

Source: Census of Population and Housing, 2016, TableBuilder

This is consistent with informal conversations with respondents who indicated that female employees usually worked in administrative or clerical roles.

2.7.2 Aboriginal and Torres Strait Islander (ATSI)

The Census suggests that around 5.2 per cent of the Hub region workforce are of Aboriginal and/or Torres Strait Islander descent. In the Forest and Wood Products Industry in the region, this is estimated to be 5.6 per cent of the workforce. Looking at individual sectors, the sectors with the highest levels of employment of Aboriginal and/or Torres Strait Islander people are Veneer and Plywood Manufacturing (7.5 per cent), Log Sawmilling (6.3 per cent) and Forest Growing and Management (5.6 per cent).

However, it is worth noting that the employment rate for Aboriginal people can be unreliable due to many factors including:

- The data may overstate the number of people in the workforce of Aboriginal or Torres Strait Islander background as cells can be randomly adjusted by the ABS to avoid the release of confidential data. This means no reliance should be placed on small cells.
- Reluctance of Aboriginal people to identify as Aboriginal in the workforce.
- Census data in relation to counts of Australia's Indigenous population, which may be significantly understated.³

Employers were asked three questions about their employment of Aboriginal people.

1. *Are you aware of the benefits of employing Aboriginal people?*
2. *What opportunities are there in your organisation for Aboriginal people?*
3. *What support do you need to employ Aboriginal people?*

In relation to the first question, 35.0 per cent of respondents indicated that they were not aware of the benefits of employing Aboriginal people, compared to 15.0 per cent who were aware of the benefits. A number of respondents (10.0 per cent) indicated that they don't ask people about their race. One of these respondents said:

"We employ people based on their attitude and organisational fit. We don't have any overarching policies on increasing diversity in the workforce."

Overwhelmingly, respondents claimed that the opportunities for Aboriginal people were the same as for others (90.0 per cent). A number of respondents qualified their answer in a manner which suggested that unconscious bias exists in the Industry:

"Provided that they fit our culture and are willing to work"

"Based on attitude, reliability"

"Provided that they have commitment"

"Depends on initiative and ethic"

³ Moran, A., "Census 2016: Indigenous population could have been undercounted again", 28 June 2017, <https://www.abc.net.au/news/2017-06-28/concerns-over-undercount-of-indigenous-population-in-census/8660972>

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Unconscious biases are social stereotypes about groups or individuals from outside their own conscious awareness. Everybody holds unconscious beliefs about various social and identity groups and when it impacts on decisions being made (or results in statements as above) it is detrimental to the ability to make fair and equitable judgement.

Most respondents did not answer the third question about support required to employ Aboriginal people (59.1 per cent). Of those who answered, only one identified support by an Aboriginal employment agency.

No respondents mentioned unconscious or implicit bias training, nor did any respondents indicate a need for cultural awareness training.

Some informal conversations triggered by the formal interview process solicited observations about current and previous experiences in employing Aboriginal people. These responses reveal some explicit and implicit biases in relation to Aboriginal people and in some cases may be in breach of Racial Vilification Law in Australia as well as breaching the Racial Discrimination Act.

Some of the respondent observations are listed below:

Employers did not ask new employees about their racial background. They were employed based on their skills and attitude and informed of the expectations around performance.

Use of racial epithets when talking about previous employees. For example:

"We had problems getting our people trained in the blackfella Unit"

"We hired a darkie once"

Use of stereotypes in describing poor behaviour. For example:

"Aboriginal workers are unreliable, prefer drinking with their mates, and have a high attrition rates in the early stages of employment"

"They're always going off to go to some family funeral"

This was countered by some employers observing that poor behavior is not due to race but is related to lower socioeconomic status or regional social disadvantage.

How to make the workplace better for Aboriginal employees – Gari Yala (Speak the Truth)

A recent report⁴ has documented the challenges faced by indigenous people in Australian workplaces. This national survey of 1,033 Aboriginal and Torres Strait Islander Workers found that although the majority (78 per cent) of Aboriginal people say that it is important to identify as Indigenous within their workplace:

- 63 per cent experience stress when they, or others, view that their identify is not meeting the norms or expectations of the dominant culture in the workplace;
- 59 per cent received comments about the way they look or 'should' look as an Aboriginal or Torres Strait Islander person;
- 44 per cent hear racial slurs sometimes, often or all of the time;

⁴ Jumbunna Institute for Indigenous Education and Research Gari Yala Speak the Truth Synopsis Report, 2021, available at: https://www.dca.org.au/sites/default/files/dca_synopsisreport_web_0.pdf last accessed 15 June 2021

- 39 per cent carry the burden of cultural load – where extra work in the form of educating others in the organisation on indigenous culture;
- 38 per cent reported being unfairly treated due to their Indigenous background.

The report provided ten actions that organisations can take to foster a more inclusive workplace:

1. Commit to unearthing and acting on workplace truths – however uncomfortable this may be.
2. Ensure any Aboriginal and Torres Strait Islander-related work is Indigenous led and informed.
3. Develop organisational principles to make it clear how Indigenous community engagement and employment should work in practice.
4. Focus on workplace readiness (cultural safety) rather than worker readiness. This means being able to practise your culture free of ridicule or condemnation. It occurs when a workplace acknowledges, respects and accommodates difference.
5. Recognise identity strain and educate non-Indigenous staff about how to interact with their Indigenous colleagues in ways that reduce this.
6. Recognise and remunerate cultural load as part of an employee's workload.
7. Consult with Indigenous staff on how to minimise cultural load while maintaining organisational activity. That is, *"nothing about us, without us"*.
8. Focus on sustainable careers and career development, rather than just short-term appointments.
9. Take action to address workplace racism.
10. Look to high-impact initiatives - those that research shows are linked to better wellbeing and retention for Indigenous staff.

Employers may also consider the following actions⁵:

1. Build an appropriate Reconciliation Action Plan to turn your organisation's good intentions into action by formalising your organisation's commitment to reconciliation. Additional advice from Reconciliation Australia can be found here: <https://www.reconciliation.org.au/reconciliation-action-plans/>
2. Review your Indigenous employment policies. Additional information can be found here: <https://www.reconciliation.org.au/wp-content/uploads/2017/11/2013-Everybodys-Business-Employer-Handbook.pdf>
3. Consider the importance of the use of Indigenous language in the workplace.
4. Create mentorship programs for Indigenous employees. Support for this is provided through the NSW Government *Skilling for Employment Initiative* <https://education.nsw.gov.au/skills-nsw/apprentices-and-trainees/support-and-services/aboriginal-and-torres-strait-islander-peoples/barrangirra>

⁵ HRM, "How employers can address cultural load in the workplace", available at: https://www.hrmonline.com.au/diversity-and-inclusion/addressing-cultural-load/?utm_source=Informz&utm_medium=email&utm_campaign=EDM, last accessed 26 July 2021

2.7.3 Ethnic Diversity

Respondents indicated only 2.4 per cent of their employees were born outside Australia.

Based on 2016 census data, the Industry was less ethnically diverse than all other industries in the Hub region.

Most people working in the Industry were born in Australia (88.4 per cent), a slightly larger proportion than for all industries in the region (85.6 per cent). The next largest group with the next largest groups were born in the United Kingdom (2.7 per cent, compared to 3.7 per cent for all industries) and New Zealand (2.3 per cent, compared to 2.1 per cent for all industries). There are also a small number of people from South Africa (1.0 per cent compared to 0.5 per cent for all industries).

The sector with the most ethnic diversity was Forest Growing and Management (85.9 per cent born in Australia), followed by Sawmilling and Processing (88.8 per cent born in Australia), Harvesting and Haulage (93.2 per cent born in Australia) or Timber Manufactured Products (93.9 per cent born in Australia).

2.7.4 People with Disabilities

About one-third of employers (31.8 per cent) reported that they employed people with a disability. Most of these employers worked in Sawmilling and Processing (4) or Harvesting and Haulage (3).

In response to the question, “*what opportunities are there for people with a disability within your organisation?*” a few perspectives emerged:

- that opportunities exist for people with some disabilities in some roles (9)
- that opportunities exist as long as the person with a disability can work safely and productively (5)
- that few opportunities exist because of the work and/or work health and safety risks (3)
“few, due to the physical nature of the work”
- that the same opportunities exist for people with disability as for everyone else (3).

These responses suggest that employers may be engaged in discriminatory behaviour and may not be aware of the supports available to employer workers with disability.

“Benefits of Employing a Person with a Disability⁶”

The business case for hiring people with disability is strong. There are real cost savings through reduced staff turnover and lower recruitment and retraining costs. What’s more, because people with disability have fewer compensation incidents and accidents at work, compared to other employees, insurance cover and workers’ compensation costs are often lower.

Employing people with disability can also ensure that your team best reflects the community in which it operates. Like all employees, people with disability bring a range of skills, talents and abilities to the workplace. They work in all sorts of jobs, with many holding tertiary or trade qualification

- People with disability generally take fewer days off, take less sick leave and stay in jobs longer than other workers.
- Employment costs for people with disability can be as low as 13 per cent of the employment costs for other employees.
- Workers’ compensation costs for people with disability are as low as four per cent of the workers’ compensation costs for other employees*.
- Once in the right job, people with disability perform as well as other employees.
- People with disability build strong connections with customers.
- People with disability boost staff morale and enhance a sense of teamwork.
- Hiring people with disability enhances an organisation’s image in the general community.”

⁶ Australian Government, “Benefits of employing people with disability”, available at: <https://www.jobaccess.gov.au/employers/benefits-employing-people-with-disability>, last accessed 23 July 2021

3 Current Job Roles and Skills Holdings

Section 4 looks at the types of job roles which exist in the Hub region, in the Industry and in each sector. It also examines the skills levels that exist in the Hub region, and the skills levels employers require from workers in the different occupational categories.

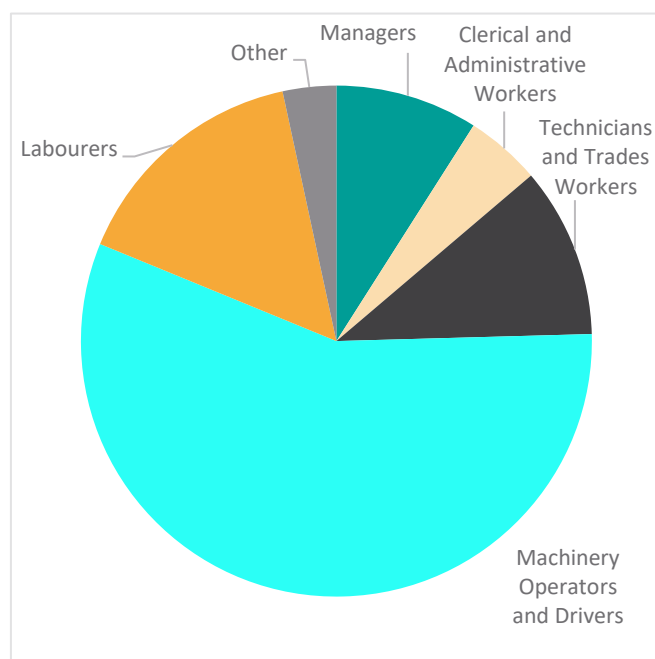
3.1 Job Roles

Employers were asked about the breakdown of their employees into occupation groups. The interview data indicated that the largest group of workers was Machinery Operators and Drivers (64 per cent) followed by Labourers (10 per cent) and Technicians and Trades Workers (10 per cent). See Figure 15 below.

The 2016 Census shows that the largest occupational group in the Industry in the hub region is Labourers (40 per cent) followed by Machinery Operators and Drivers (30 per cent). See Figure 16 below.

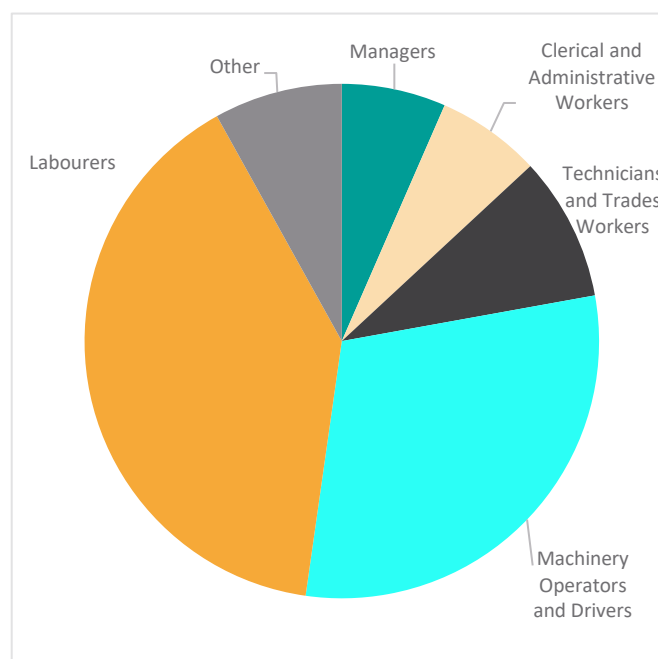
For respondents, Machinery Operators and Drivers included log truck drivers, bush harvesting crews, sawmill loader operators and timber workers within sawmills. Respondents indicated that formal vocational qualifications were not a requirement to conduct these job roles, however formal qualifications may have provided additional skills and a pathway to roles with greater responsibility. This is consistent with the ABS definition of Labourers. This would explain the difference in proportions between Figure 15 and Figure 16.

Figure 15 Distribution of Occupational Groups, NE Hub Interviews



Source: Hub interview data 2021

Figure 16 Distribution of Occupational Groups, Census Data



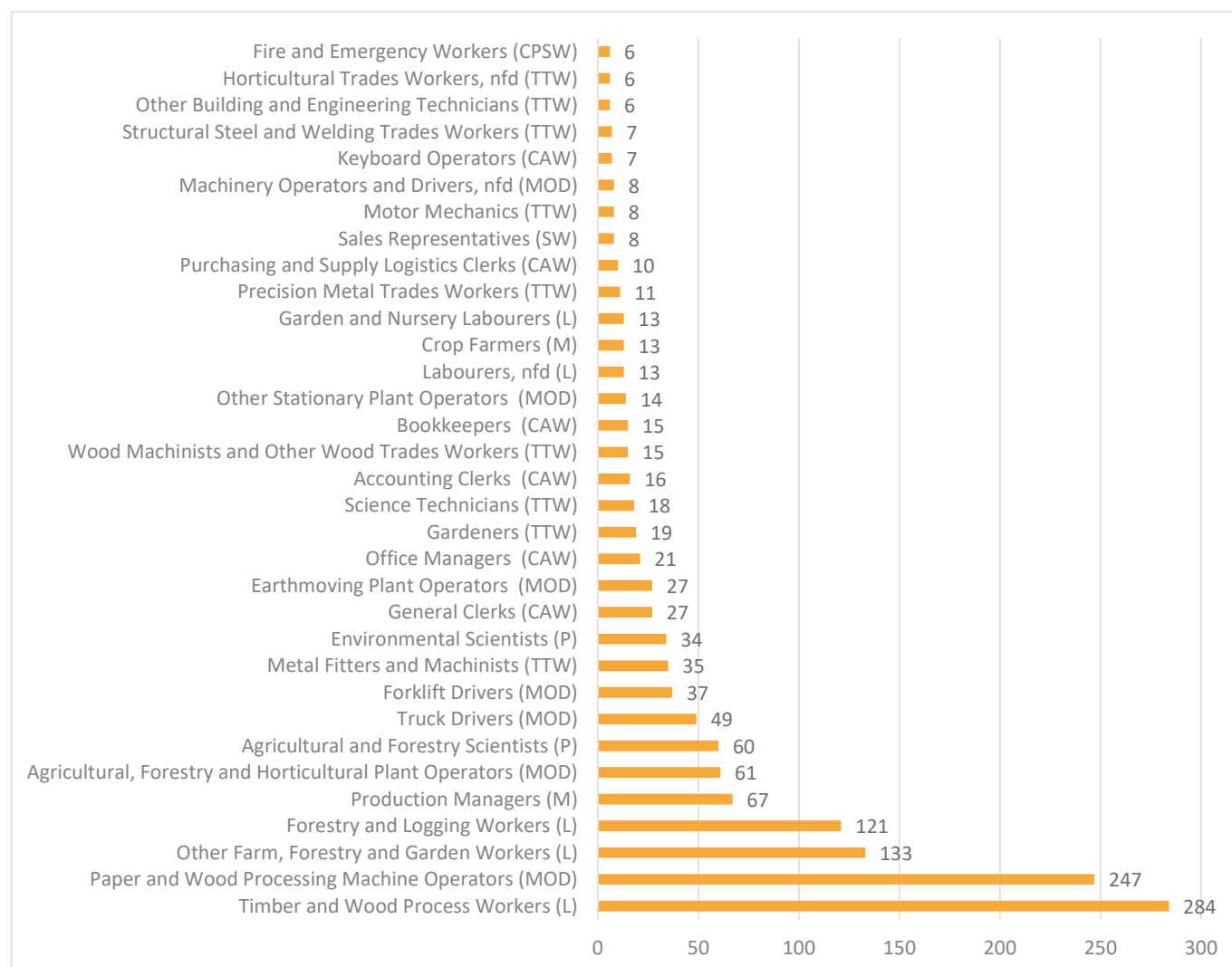
Source: Census of Population and Housing, 2016, TableBuilder

Technicians and Trades Workers were a similar proportion in the ABS data (9 per cent) and in the Hub interviews (10 per cent). This suggests a clearer understanding of the composition of this workforce. Respondents indicated that the key technicians and trade workers included fitters, mechanics, electricians, wood machinists and saw doctors (saw technicians). The specific roles identified by respondents also appeared in the ABS data shown in Figure 17.

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Figure 17 shows the distribution of people employed in the Forest and Wood Products Industry in the Hub region at the time of the census. It shows the wide variety of job roles that are available in the Industry across the range of occupational categories and skills levels. The occupational sector is bracketed after the occupation.⁷

Figure 17 People employed in the Forest and Wood Products Industry, by Occupation, Hub Region, 2016



Source: Census of Population and Housing, 2016, TableBuilder

3.1.1 Labourers

Within the Labourers group, the largest categories are Timber and Wood Process Workers (19 per cent), Other Farm, Forestry and Garden Workers (9 per cent) and Forestry and Logging Workers (8 per cent). The specific occupations in each category are described in Table 4.

Most of the **Timber and Wood Process Workers** were working in Sawmilling and Processing (83 per cent) whereas most of the **Other Farm, Forestry and Garden Workers** worked in Forest Growing and Management (96

⁷ (M) Manager; (P) Professional; (TTW) Technicians and Trades Workers; (CPSW) Community and Personal Service Workers; (CAW) Clerical and Administrative Workers; (S) Sales Workers; (MOD) Machinery Operators and Drivers; (L) Labourers

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per cent) and the **Forestry and Logging Workers** mostly worked in Harvesting and Haulage (55 per cent) and Forest Growing and Management (26 per cent).

Table 4 Labourers, ANZSCO Occupations (6 digit)

Timber and Wood Process Workers	
Sawmill or Timber Yard Worker <i>Timber Mill Worker</i> <i>Wood Processing Worker</i>	Performs routine tasks in a sawmill or timber yard such as sorting and stacking timber, assisting timber machinists, assembling orders and racking offcuts. Skill Level 5
Wood and Wood Products Factory Worker <i>Wood and Wood Products Labourer</i> <u>Specialisations:</u> Hardboard Factory Worker; Plywood Factory Worker	Performs routine tasks in a wood processing and timber product factory such as placing logs on equipment and conveyors, assisting with measuring and cutting of materials, and setting up and operating plant equipment. Skill Level 5
Other Farm, Forestry and Garden Workers	
Pest or Weed Controller	Applies pest or weed management techniques to kill and control pests or weeds in domestic, commercial and industrial areas, roadsides, and private and public lands. Registration or licensing may be required. Skill Level 4
Farm, Forestry and Garden Workers	This occupation group covers Farm, Forestry and Garden Workers not elsewhere classified <u>Includes:</u> Seed Collector Skill Level 5
Forestry and Logging Workers	
Forestry Worker <u>Specialisations:</u> Fire Lookout, Tree Planter	Assists with cultivating, maintaining and protecting forests. Registration or licensing may be required. Skill Level 4
Logging Assistant	Assists with logging, felling and sawing of trees in forests. Skill Level 4
Tree Faller <i>Tree Feller</i> <u>Specialisations:</u> Hardwood Faller, Softwood Faller	Fells trees in forests, and trims and saws them into logs. Registration or licensing may be required Skill Level 4

Source: ABS, 1220.0 ANZSCO – Australian and New Zealand Standard Classification of Occupations

3.1.2 Machinery Operators and Drivers

Within the Machinery Operators and Drivers group (see Table 5), the largest categories are **Paper and Wood Processing Machine Operators** (16 per cent), **Agricultural, Forestry and Horticultural Plant Operators** (4 per cent) and **Truck Drivers** (3 per cent).

Most of the **Paper and Wood Processing Machine Operators** are working in Sawmilling and Processing (89 per cent) with a small number also working in each of Forest Growing and Management (3 per cent), Harvesting and Haulage (4 per cent) and Timber Manufactured Products (4 per cent).

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Most of the **Agricultural, Forestry and Horticultural Plant Operators** are working in Harvesting and Haulage (56 per cent), as are most of the **Truck Drivers** (55 per cent). The second largest sector for both occupations is Sawmilling and Processing (23 per cent and 29 per cent respectively).

Table 5 Machinery Operators and Drivers, ANZSCO Occupations (6 digit)

Paper and Wood Processing Machine Operators	
Wood Processing Machine Operator <u>Specialisations:</u> Band Saw Operator, Beam Saw Operator, Cant Gang Sawyer, Debarker Operator, Docking Saw Operator, Log Preparer, Plywood and Veneer Repairer, Resawyer, Ripsaw Operator, Sawmill Moulder Operator, and Veneer Production Machine Operator.	Operates sawing, rolling, pressing and other machines to manufacture logs, timber poles and pieces, plywood, particle board, solid laminate and similar products. Skill Level 4
Agricultural, Forestry and Horticultural Plant Operators	
Logging Plant Operator <u>Specialisations:</u> Forwarder Operator; Skidder Operator; Tree Feller Operator	Operates plant to fell trees and drag, transport and load logs onto trucks. Registration or licensing may be required. Skill Level 4
Truck Driver (General)	
Truck Driver (General) <u>Specialisations:</u> Logging Truck Driver	Drives a heavy truck, requiring a specially endorsed class of licence, to transport bulky goods. Registration or licensing is required. Skill Level 4

Source: ABS, 1220.0 ANZSCO – Australian and New Zealand Standard Classification of Occupations

3.1.3 Technicians and Trades Workers

There are a relatively small number of Technicians and Trades Workers in a wide variety of categories: **Metal Fitters and Machinists** (2.0 per cent of all Forest and Wood Products Industry workers in the Hub region), **Gardeners** (1.8 per cent), **Wood Machinists and Wood Trades Workers** (1.1 per cent), **Science Technicians** (0.8 per cent), **Precision Metal Trades Workers** (0.7 per cent), **Structural Steel and Welding Trades Workers** (0.7 per cent), **Building and Engineering Technicians** (0.6 per cent), and **Motor Mechanics** (0.4 per cent). A number of other trades were also identified (including Electricians) but the numbers were so small that they cannot be used with any confidence.

The trades are most prevalent in the Sawmilling and Processing sector (58.9 per cent).

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Table 6 Technicians and Trades Workers, ANZSCO Occupations (6 digit)

Metal Fitters and Machinists	
323211 Fitter (General) <u>Specialisations:</u> Diesel Fitter- Mechanic; Fitter-Machinist; Fitter-Mechanic; Maintenance Fitter Mechanic (Diesel and Heavy Earthmoving Equipment); Plant Mechanic	Fits and assembles metal parts and subassemblies to fabricate production machines and other equipment. Skill Level 3
323212 Fitter and Turner	Fits, assembles, grinds and shapes metal parts and subassemblies to fabricate production machines and other equipment. Skill Level 3
323213 Fitter-Welder	Fits, assembles and welds metal parts and subassemblies to fabricate production machines and other equipment. Skill Level 3
323214 Metal Machinist (First Class) <u>Specialisations:</u> Automotive Machinist; Metal Machine Setter; Metal Turner; Milling Machinist; Vertical Borer	Sets up and operates machine tools to shape and form metal stock and castings to fine tolerances, using detailed drawings and specifications. Skill Level 3
Gardeners	
362212 Arborist	Maintains and cares for trees and shrubs by lopping limbs and shaping branches, treating trees with fertilisers and insecticides, removing dead or decaying trees, and advising on general tree care. Skill Level 3
Wood Machinists and Wood Trades Workers	
394213 Wood Machinist <u>Specialisations:</u> Automatic Profile Sander Operator; Copy Lathe Operator; Edge Bander Operator; Jigmaker (Wood); Panel Saw Operator; Woodworking Machine Setter	Cuts, planes, turns, shapes and sands wood stock to specifications. Skill Level 3

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Science Technicians	
311411 Chemistry Technician 311412 Earth Science Technician <u>Specialisations:</u> Meteorological Observer; Soil Science Technical Officer	<p>Performs laboratory tests on organic and inorganic chemicals, analyses test data and carries out technical functions in support of Chemists or Chemical Engineers in a wide variety of areas such as fuels, agricultural products, food, pharmaceuticals, paints, metals, plastics, textiles, detergents, paper, fertilisers and cosmetics.</p> <p>Skill level 2</p> <p>Earth Science Technical Officer</p> <p>Collects and tests earth and water samples, records observations and analyses data in support of Geologists or Geophysicists.</p> <p>Skill level 2</p>
311413 Life Science Technician Life Science Technical Officer <u>Specialisations:</u> Biological Technical Officer; Botanical Technical Officer; Ecological Technical Officer; Environmental Technical Officer; Forestry Technical Officer; Wood Technologist	<p>Identifies and collects living organisms and conducts field and laboratory studies in support of Life Scientists or Environmental Scientists.</p> <p>Skill level 2</p>
Precision Metal Trades Workers	
323315 Saw Maker and Repairer <u>Specialisations:</u> Saw Sharpener	<p>Makes, repairs, sets and sharpens blades for circular, band and other saws.</p> <p>Skill Level 3</p>
Structural Steel and Welding Trades Workers	
322311 Metal Fabricator	<p>Marks off and fabricates structural steel and other metal stock to make or repair metal products and structures such as boilers and pressure vessels.</p> <p>Skill Level 3</p>
322312 Pressure Welder	<p>Assembles, welds and repairs pressure vessels and pipes to relevant standards.</p> <p>Skill Level 3</p>
322313 Welder (First Class)	<p>Fabricates and repairs metal products using various welding techniques.</p> <p>Skill Level 3</p>
312911 Maintenance Planner Maintenance Scheduler; Shutdown Coordinator; Shutdown Planner	<p>Develops maintenance planning strategies, and schedules, coordinates and monitors the maintenance of all plant equipment.</p> <p>Skill level 2</p>

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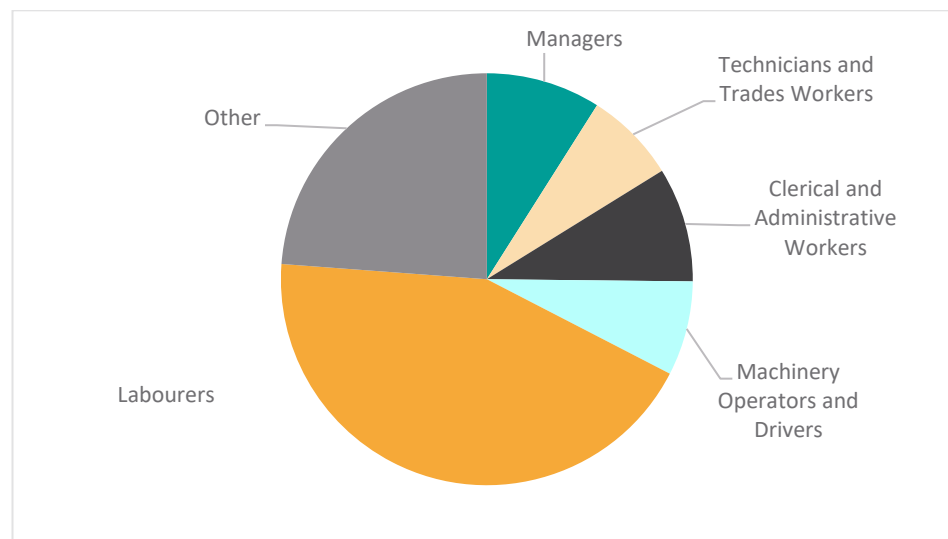
Motor Mechanics	
321211 Motor Mechanic (General)	Maintains, tests and repairs petrol engines and the mechanical parts of lightweight motor vehicles such as transmissions, suspension, steering and brakes. Registration or licensing may be required. Skill Level 3
321212 Diesel Motor Mechanic	Maintains, tests and repairs diesel motors and the mechanical parts of trucks, buses and other heavy vehicles such as transmissions, suspension, steering and brakes. Registration or licensing may be required. Skill Level 3
321214 Small Engine Mechanic <u>Specialisations:</u> Chainsaw Mechanic	Maintains, tests and repairs engines of chainsaws, lawn mowers, garden tractors and other equipment with small engines. Registration or licensing may be required. Skill Level 3

Source: ABS, 1220.0 ANZSCO – Australian and New Zealand Standard Classification of Occupations

3.1.4 Forest Growing and Management

As is the case for the Industry as a whole, the largest group of workers in Forest Growing and Management are Labourers (see Figure 18). In particular **Farm, Forestry and Garden Workers, Forestry and Logging Workers** and **Garden and Nursery Labourers** (see Figure 19).

Figure 18 Occupational Groups within the Forest Growing and Management Sector, 2016



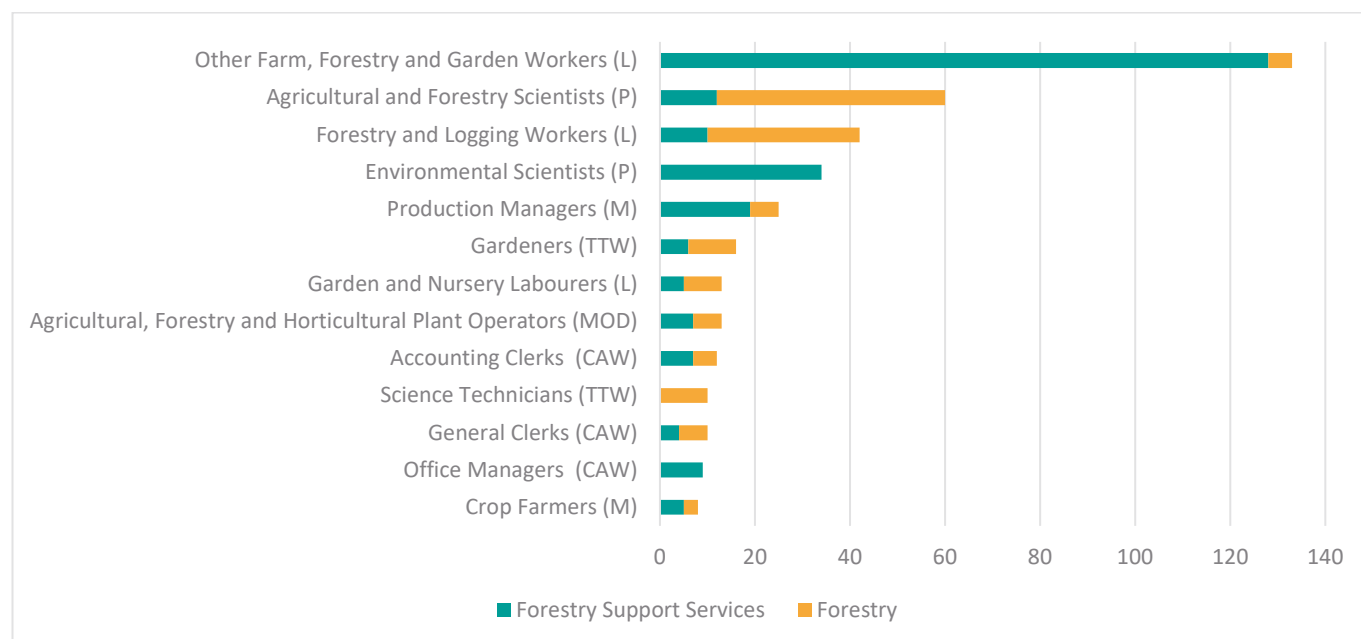
Source: Census of Population and Housing, 2016, TableBuilder

Unlike the other sectors, Forest Growing and Management also has a high proportion of Professionals (captured in the Other category for consistency with the other sectoral breakdowns). These are mainly **Agricultural and Forestry Scientists**, and **Environmental Scientists**.

This sector also employed the second largest number of **Production Managers**.

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Figure 19 Top Occupations within the Forest Growing and Management Sector, 2016

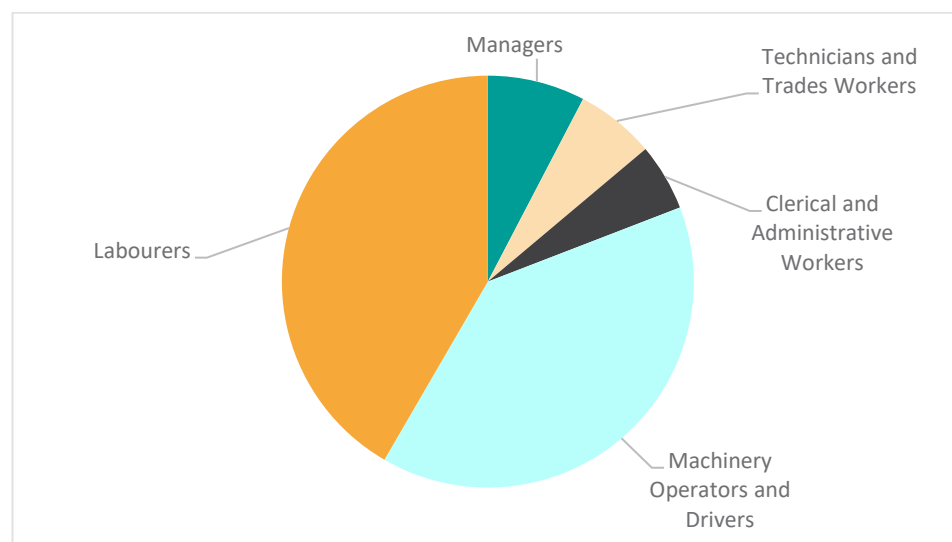


Source: Census of Population and Housing, 2016, TableBuilder

3.1.5 Harvesting and Haulage

In Harvesting and Haulage, Labourers and Machinery Operators and Drivers were the key occupational groups (see Figure 20).

Figure 20 Occupational Groups within the Harvesting and Haulage Sector, 2016



Source: Census of Population and Housing, 2016, TableBuilder

The main occupations within Labourers were **Logging Assistants** who assist with the “logging, felling and sawing of trees in forests”⁸ and **Tree Fellers** who “fell trees in forests, and trims and saws them into logs”⁹.

⁸ ABS, 1220.0 ANZSCO – Australian and New Zealand Standard Classification of Occupations

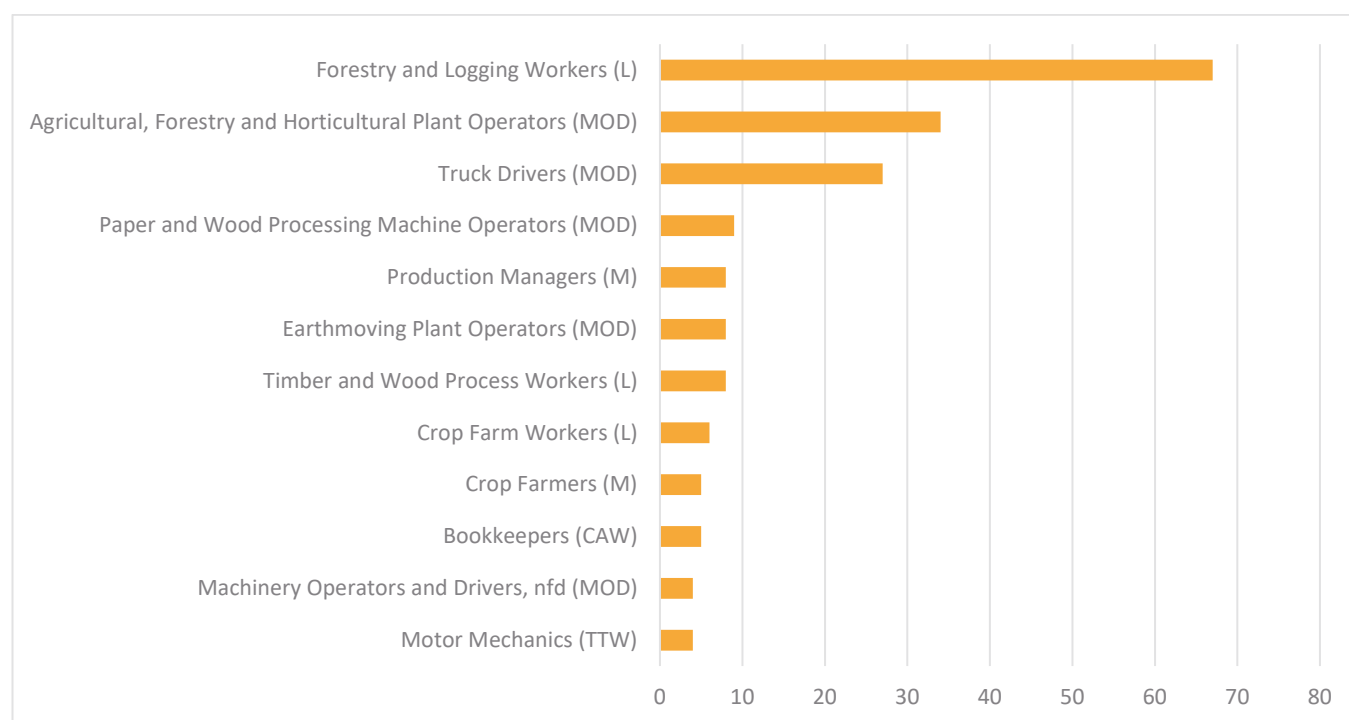
⁹ ABS, 1220.0 ANZSCO – Australian and New Zealand Standard Classification of Occupations

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In respect of Machinery Operators and Drivers (see Figure 21) the most significant occupations were: **Forestry Plant Operators** who operate “plant to fell trees and drag, transport and load logs onto trucks”¹⁰, including Forwarder and Skidder Operators; and **Log Truck Drivers**.

Motor Mechanics were the largest group of Technicians and Trades Workers supporting the sector.

Figure 21 Top Occupations within the Harvesting and Haulage Sector, 2016



Source: Census of Population and Housing, 2016, TableBuilder

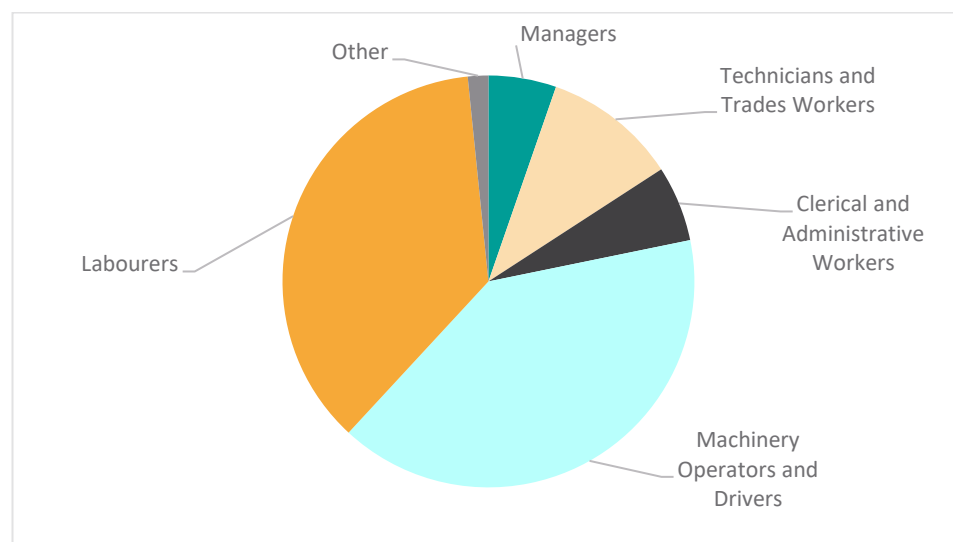
3.1.6 Sawmilling and Processing

Figure 22 shows that Labourers and Machinery Operators and Drivers make up the largest groups in Sawmilling and Processing (as is the case in Harvesting and Haulage).

¹⁰ ABS, 1220.0 ANZSCO – Australian and New Zealand Standard Classification of Occupations

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Figure 22 Occupational Groups within the Sawmilling and Processing Sector, 2016



Source: Census of Population and Housing, 2016, TableBuilder

Figure 23 shows the largest employing occupations in the Sawmilling and Processing sector. Labourers are likely to be **Sawmill or Timber Yard Workers** performing tasks such as sorting and stacking timber, assembling orders and racking offcuts.¹¹

Machinery Operators and Drivers are primarily **Wood Processing Machine Operators** operating sawing rolling pressing and other machines to manufacture logs, timber poles and pieces and other products.¹²

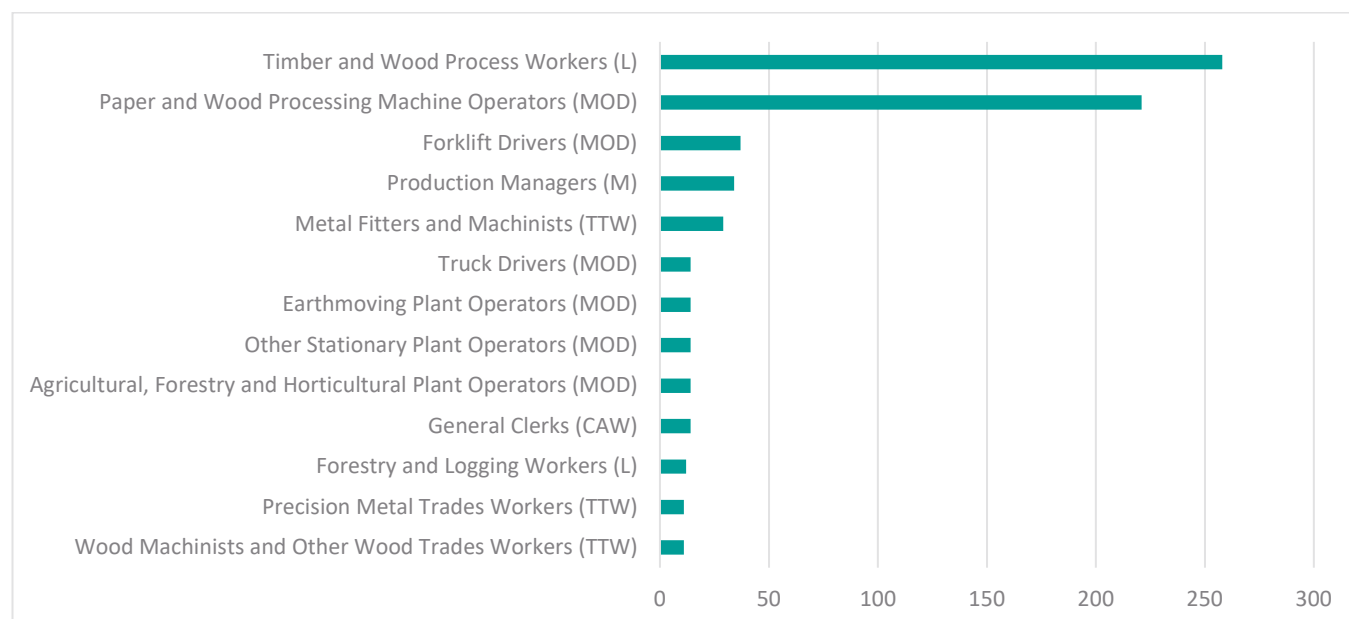
The Sawmilling and Processing sector also had the largest proportion of Technicians and Trades Workers of all the sectors including **Metal Fitters and Machinists, Precision Metal Trades Workers (Saw Maker and Repairers)** and **Wood Machinists**.

¹¹ ABS, 1220.0 ANZSCO – Australian and New Zealand Standard Classification of Occupations

¹² ABS, 1220.0 ANZSCO – Australian and New Zealand Standard Classification of Occupations

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Figure 23 Top Occupations within the Sawmilling and Processing Sector, 2016

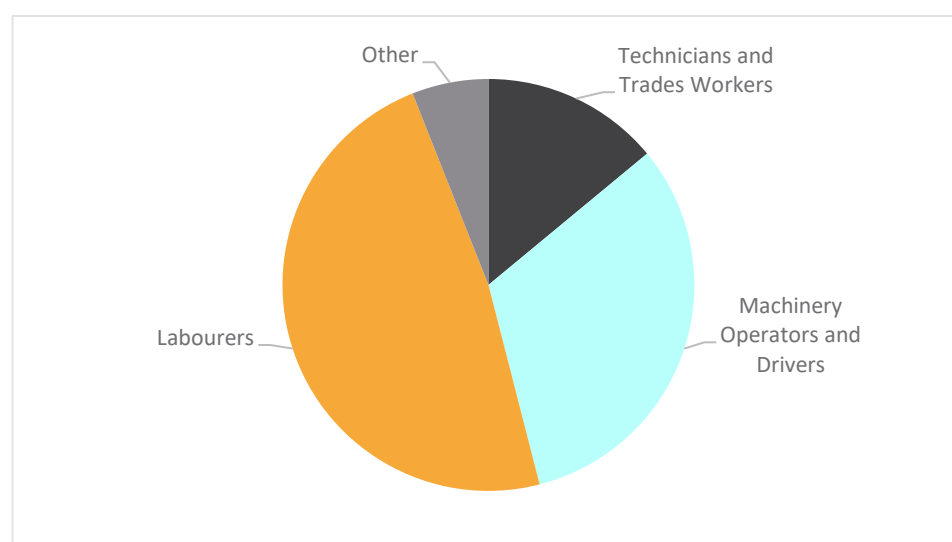


Source: Census of Population and Housing, 2016, TableBuilder

3.1.7 Timber Manufactured Products

Labourers were the most significant occupational group working in Timber Manufactured Products (Figure 24), primarily the occupation of **Wood and Wood Products Factory Worker** which performs routine tasks such as placing logs on equipment and conveyors, assisting with measuring and cutting of materials, and setting up and operating plant and equipment.¹³

Figure 24 Occupational Groups within the Timber Manufactured Products Sector, 2016



Source: Census of Population and Housing, 2016, TableBuilder

¹³ ABS, 1220.0 ANZSCO – Australian and New Zealand Standard Classification of Occupations

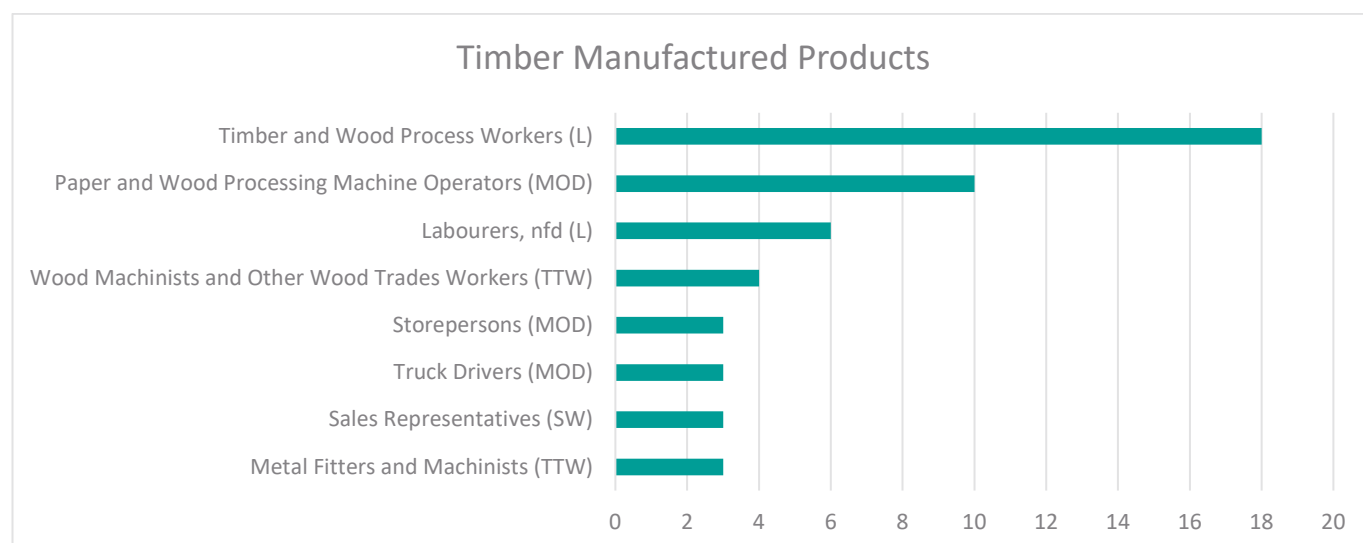
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The next largest category of Machinery Operators and Drivers includes **Wood Processing Machine Operators** who operate machines to manufacture plywood, particle board, solid laminate, and similar products.¹⁴

This sector also employs a small number of Technicians and Trades Workers: **Wood Machinists** and **Metal Fitters and Machinists**.

Figure 25 shows the other key occupations in the Timber Manufactured Products sector.

Figure 25 Top Occupations within the Timber Manufactured Products Sector, 2016



Source: Census of Population and Housing, 2016, TableBuilder

3.2 Skills Holdings

Based on the data in 4.1 three quarters of people in the Industry employed in occupations at a skill level of 4 or 5. Jobs at a Skill Level 4 are equivalent to a Certificate II or III, or at least one year of relevant work experience. Jobs at Skill Level 5 generally require compulsory secondary education but may require no formal qualification or on-the-job training.

Figure 26 shows that when it comes to vocational education and training around one quarter of workers in the Industry have a Certificate III or Certificate IV Qualification.

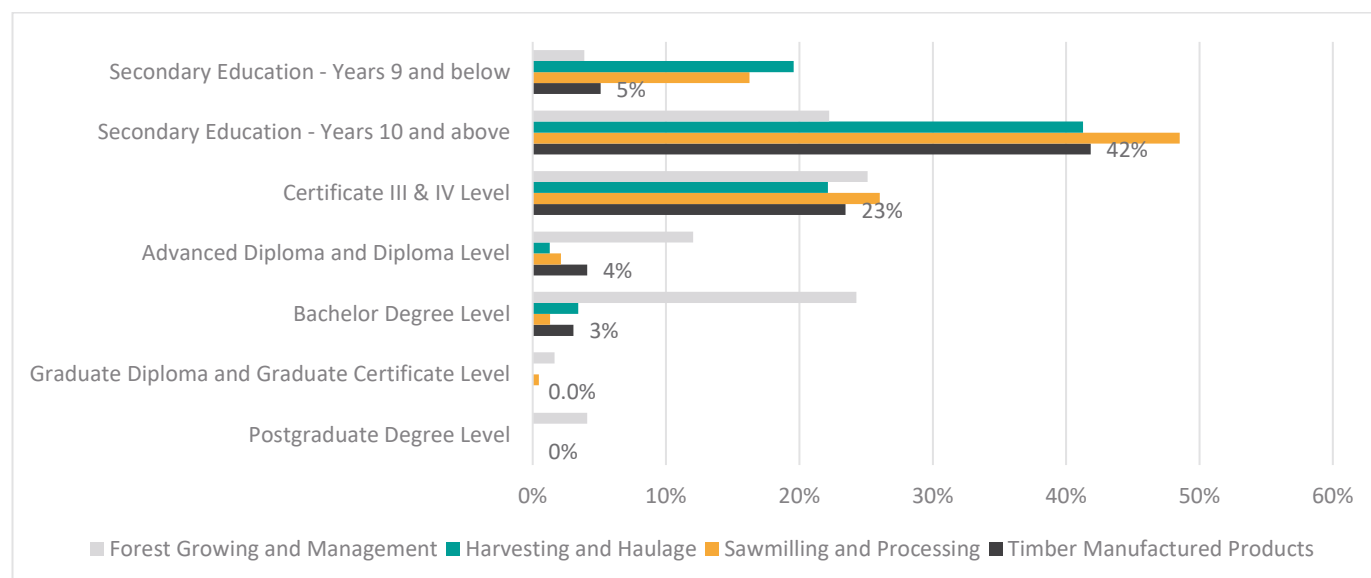
For all sectors except Forest Growing and Management the largest proportion of workers have a secondary school education (65 per cent for Sawmilling and Processing workers, 61 per cent for Harvesting and Haulage workers and 47 per cent for Timber Manufactured Products workers).

Worker in Forest Growing and Management tend to have the highest levels of educational attainment – with around a quarter (24 per cent) having a Bachelor's degree, followed by an Advanced Diploma or Diploma (12 per cent).

¹⁴ ABS, 1220.0 ANZSCO – Australian and New Zealand Standard Classification of Occupations

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Figure 26 Highest Educational Attainment (proportion of each sector), Forest and Wood Products Industry, Hub Region



Source: Census of Population and Housing, 2016, TableBuilder

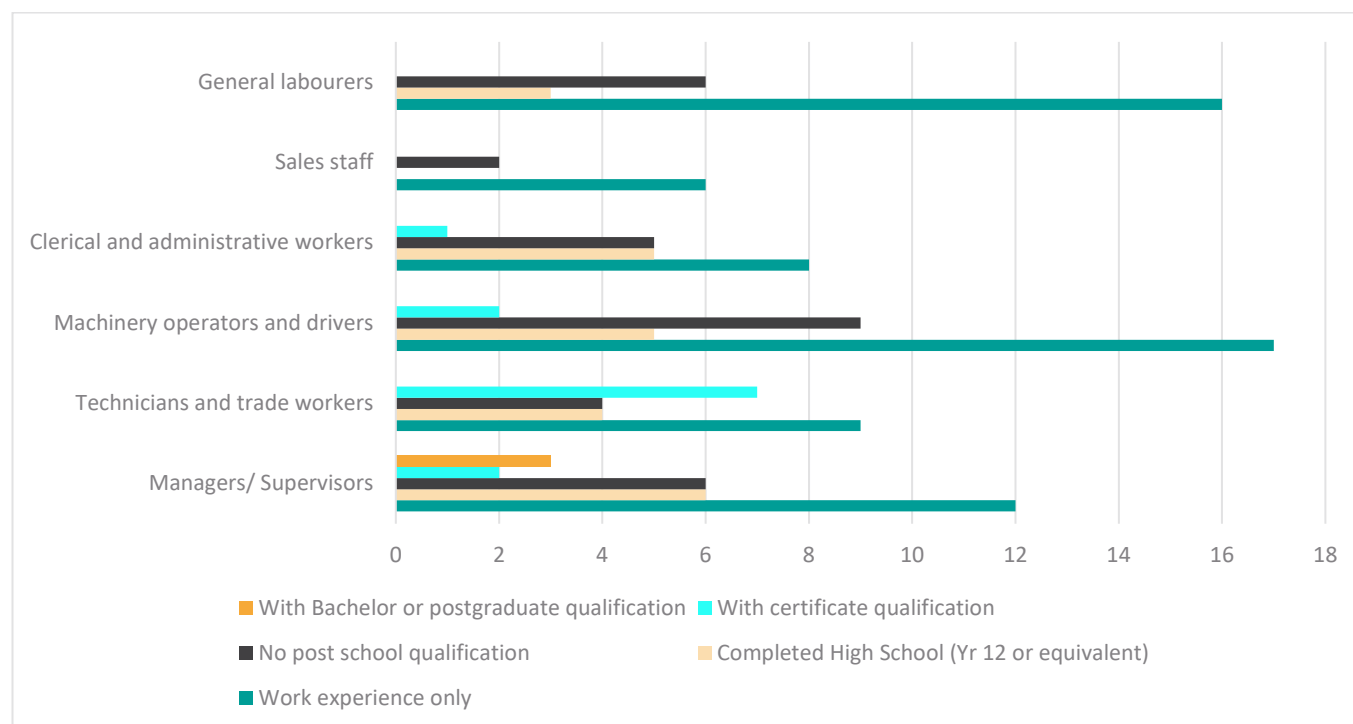
In light of this, it is not surprising that 50 per cent of respondent employers reported that they have a small number of employees with literacy or numeracy issues. Some of the comments around this included:

- “Our best grading operator is illiterate”
- Tasks are designed to avoid the need to read or perform calculations
- Some poor attitude in the workplace may be a strategy to conceal literacy or numeracy problems

The ABS data is also consistent with the experience of respondents who were asked about the minimum entry level qualifications for new employees by occupation grouping. Respondents were able to indicate more than one response. The results are presented in Figure 27 below.

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Figure 27 For each occupation group, to get a job in your business, what skills level do you require?



Source: Hub interview data 2021

Overwhelmingly, across all occupational categories employers indicated that they were willing to take people with work experience only, or no post-secondary education.

A number of respondents indicated that they were “looking for an attitude to learn and work” and that there were no minimum requirements, or no requirements based on qualifications.

Conversations with the employers for the reasons behind these educational requirements suggested that the nature of the job roles and technology in use are not particularly sophisticated and requiring of high skill levels. It also suggested the ability of employers to design job roles to match the skill level of the available labour pool.

3.2.1 Managers

Only three respondents reported that they sought Managers and supervisors with a Bachelor degree or postgraduate qualification. One of these employers was also willing to employ Managers with a vocational education, or no post-secondary education.

Most employers (9) hired Managers and supervisors based on their previous work experience and four of these employers indicated they would also employ people who had no post school qualification or who had completed high school.

Informal responses suggested that while completion of vocational qualification was not necessary, it would have been viewed favourably.

3.2.2 Technicians and Trade Workers

Seven employers indicated that they required a certificate qualification for their technicians and trade workers, and only one of these indicated they would also accept work experience or high school completion. However,

among the employers who did not require a vocational qualification, most (5) required work experience with two of them also accepting high school completion.

Informally employers indicated that technicians and trade workers were reported to be in demand but short supply. This is the reason that employers would take on an unskilled worker, have them work in the job role under supervision, and then consider enrolling them into a Certificate III qualification – if they could access a local training provider to support the learner.

3.2.3 Machinery Operators and Drivers

While two employers indicated that they required machinery operators with a certificate qualification, they were also prepared to employ machinery operators with work experience, or with high school completion and no post-school qualification.

Work experience was the most commonly accepted basis for employing machinery operators, nominated by 14 employers.

3.2.4 Clerical and Administrative Workers

For clerical and administrative workers generally work experience and or high school completion was required with one employer accepting either. One employer also indicated that a certificate qualification would be required, although they would also accept high school completion or no post school qualification.

3.2.5 Sales

The few responses received in respect of sales workers indicated that only work experience was required.

3.2.6 Labourers

Labourers were generally required to have work experience only (13 employers), and nearly half of these employers were also prepared to employ someone who had completed high school or had no post school qualification.

4 Environment and Strategic Directions

Section 5 examines the internal and external factors affecting businesses in the hub region, as an industry and by sector. It also looks at business changes in the recent past and changes intended in the near future. These elements of the report are intended to inform workforce development planning.

4.1 Internal Factors Affecting Companies

The businesses were asked about the *internal* factors that affect their ability to access markets and grow. The responses were allocated to a list of themes (see Figure 28), and respondents had the ability to provide further clarification of these themes.

The factors which were perceived by the most businesses as having a positive effect were the company's willingness to adopt new technologies (61.1 per cent), and knowledge sharing between both peer-level workers (76.2 per cent) and between management and other workers (66.7 per cent).

The factors with a negative effect for the largest number of businesses were in relation to an aging workforce (77.2 per cent) and the ability to attract new employees (59.1 per cent).

"We find that younger people that don't need to work at their stage of life tend to move on. Older people with responsibilities are more willing to stick it out to meet their responsibilities."

The ability to retain employees, and workforce skills were also seen to have a significant negative effect for some businesses (31.8 per cent), but were seen to have a positive effect for more businesses (33.4 per cent and 45.5 per cent respectively).

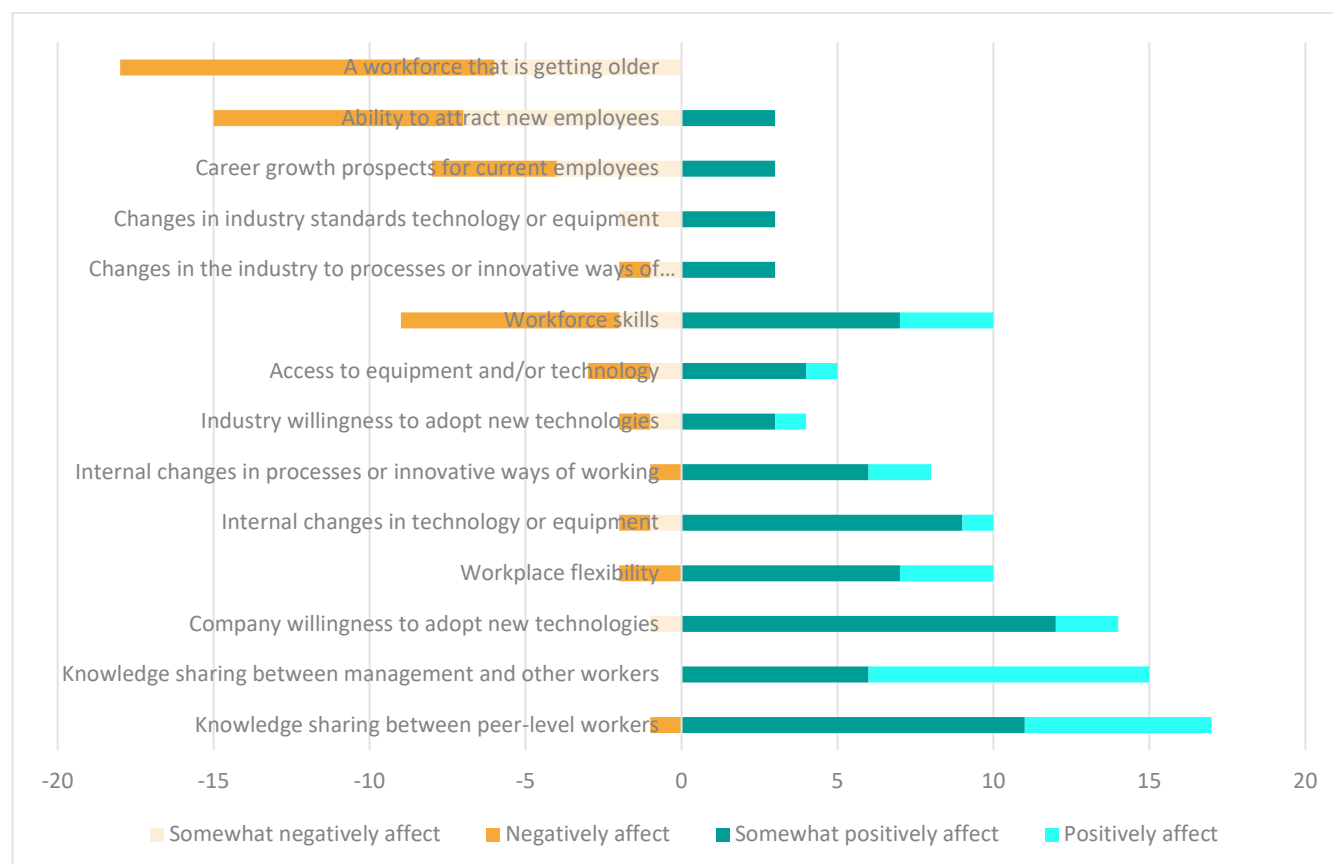
"We lose good workers (especially Excavator operators) to the mining industry. They pay a lot more, respect the timber workers higher skills."

Other issues identified by participants as negatively affecting growth included:

- Access to machinery parts
- Access to qualified tradespeople
- Compliance with the Integrated Forestry Operations Approvals (IFOA)
- Compliance of log trucks with heavy vehicle requirements
- Finding motivated workers
- Finding workers with a good work ethic

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Figure 28 On a scale of 1-5, how do the following factors inside your organisation impact on your company's ability to access markets and grow?



Source: Hub interview data 2021

4.1.1 Forest Growing and Management

The factors having a positive effect for the largest number of forest growing and management companies were knowledge sharing between peer-level workers and between management and other workers (4).

The factor having a negative effect for the largest number of businesses, was a workforce that was getting older (3), followed by the ability to retain employees (2).

4.1.2 Harvesting and Haulage

The factors having a negative effect for the largest number of harvesting and/or haulage companies were a workforce that is getting older (6) and the ability to attract new employees (5).

In terms of factors having a positive effect, the largest number of companies identified willingness to adopt new technologies, and knowledge sharing between peer-level workers and between management and other workers (5).

4.1.3 Sawmilling and Processing

A workforce that is aging was identified by the most Sawmilling and Processing companies as a factor negatively affecting growth (8). As was the ability to attract new employees (8).

In terms of factors positively affecting growth, three were considered positive by 7 companies: company willingness to adopt new technologies and knowledge sharing between peer-level workers.

4.1.4 Timber Manufactured Products

For timber manufactured products businesses the largest number of businesses regarded knowledge sharing between peer-level workers as having a somewhat positive or positive effect (7), followed by the company's willingness to adopt new technologies (6) and knowledge sharing between management and other workers. No businesses in this sector regarded these things as having a negative effect.

For timber manufactured products businesses the largest number of businesses (4) identified the ability to attract new employees and the ability to retain employees as having a negative effect, although two businesses considered those to have a positive effect instead. A significant number of timber manufactured products businesses (3) also identified workforce skills and career growth prospects for current employees as having a negative impact.

4.2 External Factors Affecting Companies

The businesses were asked about the *external* factors that affect their ability to access markets or grow. The responses were allocated to a list of themes, and respondents had the ability to provide further clarification of these themes (see Figure 29).

The economy was perceived as having a positive effect for half of respondent companies (50.0 per cent). Market access was also perceived as positive by half of companies (50.0 per cent), but seen as negative by a small number of companies (18.2 per cent). Competitors and stewardship requirements were also perceived as wholly positive, although to a lesser degree (13.6 per cent).

Overall, government policy, legislation and regulations has a negative effect on the largest number of businesses (50.0 per cent).

Access to a skilled workforce was also seen as a negative by a large number of businesses (50.0 per cent) but was seen as a positive by three businesses. The availability of younger workers was also seen as a negative factor by 40.9 per cent of businesses but seen as a positive factor by 9.1 per cent of businesses.

Access to an unskilled workforce were perceived as having mixed effects, although mainly negative (27.3 per cent).

Only a quarter of respondents thought community attitudes to forestry were an issue (22.7 per cent), and these businesses worked in a variety of forest types. Of the 10 businesses working in public native forests, only one considered that community attitudes to forestry were an issue affecting growth (negatively).

The most significant other issues identified included log supply (31.8 per cent) and weather (13.6 per cent), which in turn affects log supply. 'Log supply' also includes concerns over wood supply agreements with Forestry Corporation NSW for the supply of sawlogs from State forests. If the mill does not have confidence in securing a long-term supply of logs then they are less willing to invest in commencing employees in apprenticeships or traineeships. This sentiment was expressed in one of the Roundtables. It is consistent with informal conversations conducted with other mills interviewed as part of this project, one of which had ceased production until they could obtain logs.

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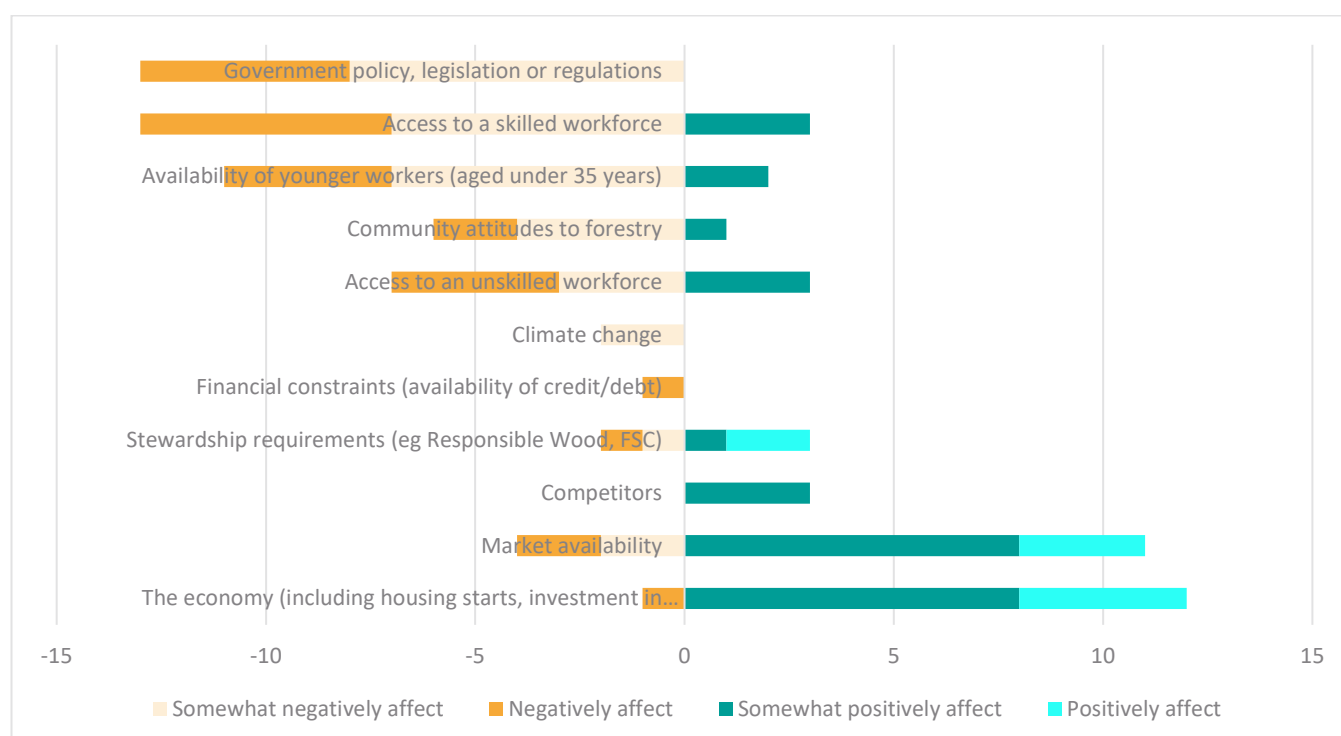
Other negative issues identified by respondents included:

“Lack of turnover means no need to train. Which means that SOPS etc. get neglected. So when a new entrant does need to be trained, they don’t have the documentation to support training.”

“Species mix is broad and inconsistent.”

“Job keeper, minimum wage, social security for parents.”

Figure 29 On a scale of 1-5, how do the following external factors impact upon your company’s ability to access markets or grow?



Source: Hub interview data 2021

4.2.1 Forest Growing and Management

The economy was seen by half of the forest growing and management companies as having a positive effect (2). Half of businesses also perceived government policy, legislation and regulation has having a significant negative effect (2).

4.2.2 Harvesting and Haulage

For Harvesting and Haulage businesses government policy, legislation and regulation was seen as the most significant issue with 87.5 per cent businesses somewhat negatively or negatively affected.

Access to a skilled workforce was also a big issue for Harvesting and Haulage companies (5), but the availability of younger workers was seen as negative for 2 companies and positive for 1.

For most Harvesting and Haulage businesses access to an unskilled workforce had no effect (87.5 per cent).

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The economy was the only factor perceived by Harvesting and Haulage businesses as having a positive affect (4).

4.2.3 Sawmilling and Processing

The most significant positive factors for Sawmilling and Processing companies were market availability (6) and the economy (5).

Access to a skilled workforce and the availability of younger workers were the issue for the largest number of Sawmilling and Processing companies with 6 businesses somewhat negatively or negatively affected.

For Sawmilling and Processing businesses, access to an unskilled workforce was seen as both positive (3) and negative (4). Government policy and regulation was also seen as a negative factor by 5 companies.

4.2.4 Timber Manufactured Products

Market availability was perceived as the most positive factor for timber manufactured products companies (6 businesses). The economy was also seen as a positive factor for 4 companies.

Access to a skilled workforce and the availability of younger workers were the issue for the largest number of timber manufactured products companies (5). Access to an unskilled workforce was seen more negatively by the timber manufactured products companies than for other sectors (4).

Unlike other sectors, government policy, legislation and regulation was perceived as having no effect on timber manufactured products businesses.

Stewardship requirements were seen as a positive mostly for timber manufactured products companies (3)

4.3 Significant changes to the business over the last 2 years and the next 2 years

Nearly one-third of respondents (32.0 per cent) were not planning on introducing any new or significantly improved changes to their businesses. Only one of these businesses had introduced changes in the preceding two years. All of these businesses employed less than 35 people and most were small businesses. All of these businesses worked in private native forests and/or public native forests.

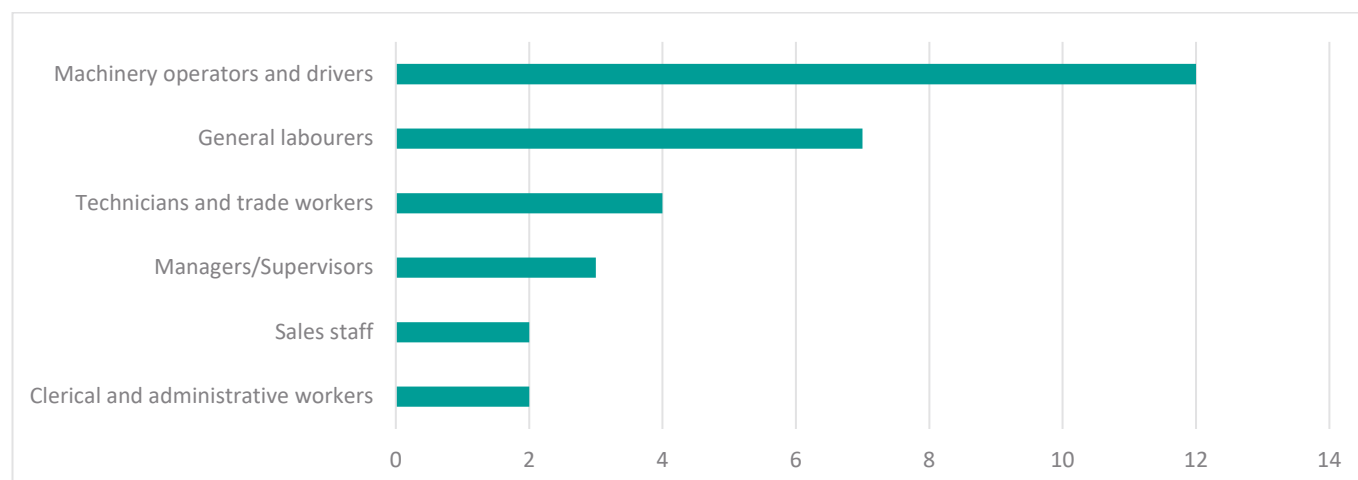
“NONE. Because we are getting out.”

Of those who were intending to make changes to their business in the next 2 years most were intending to introduce new technology and processes (72.2 percent), followed by new products and services (26.7 per cent), new work practices (20.0 per cent) and new sales and marketing methods (16.7 per cent).

As a result of these changes, the largest number of businesses identified Machinery Operators and Drivers (73.3 per cent) as affected occupations, followed by Labourers (46.7 per cent), Technicians and Trades Workers (26.7 per cent) and Managers (20.0 per cent). Only the businesses which planned to introduce new sales and marketing methods identified sales staff as occupations affected by the change (see Figure 30).

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Figure 30 What occupations will be affected by these changes? (Number of businesses)



Source: Hub interview data 2021

In respect of changes in the preceding two years, technology and process changes were again the most common (45.5 per cent), with there being significant overlap between those investing in technology and process changes in the recent past and in the near future (90.0 per cent). New sales and marketing methods were introduced in 9.1 per cent) businesses (the same businesses were intending to make changes in the future). Only one company had introduced new products and services in the preceding 2 years. This company was intending to make further changes in the future.

Examples provided of new technology and processes included:

- New green mill
- Grading and quality control
- Firewood, kindly, pellets, biodiesel
- Software in machinery
- Wood machining equipment
- Harvester, processor, skidders
- Yearly upgrades on capital projects
- Vacuum lifters
- Docking saw

In relation to products and processes comments included:

- Constant new products: *"The best employers are always evolving."*
- Moved into civil since the fires
- Moving into plantation establishment

The reasons for people making changes (historically) were primarily to maintain or gain improved productivity or efficient production. Other reasons provided included:

- To access plantation harvesting
- To save on labour costs
- To diversify access to markets

Reasons provided for not investing included:

- The size of the business
- Lack of resource security due to Wood supply agreement about to expire
- Have never bought any new equipment, will not start now

4.3.1 Forest Growing and Management

Within this sector, 3 of the 4 companies had plans to introduce new or significant improvements: one company intended to introduce changes across all four dimensions. This company also indicated that all occupations would also be affected.

Of the other two companies, one intended to introduce new sales and marketing methods and one intended new products or services. The former indicated that sales staff would be affected.

In the previous period, two companies indicated that they had introduced new sales and marketing methods.

4.3.2 Harvesting and Haulage

Of the respondent Harvesting and Haulage companies, most (5) were intending to introduce new technology and processes. One of these companies was also intending to introduce new sales and marketing methods, new work practices and new products and services. One company was intending to introduce new products and services.

Four of the five companies introducing new technology processes had also done so in the preceding period. One company had introduced new sales and marketing methods, and one had introduced new products and services. Again, the company introducing new sales and marketing methods anticipated that this would affect sales staff.

Two companies had no planned changes, and had made no changes in the preceding period.

Of the companies intending to make changes, most identified Machinery Operators and Drivers as being affected (5). Two businesses identified Managers, Technicians and Trades Workers and clerical and administrative staff as being affected.

4.3.3 Sawmilling and Processing

Of the Sawmilling and Processing companies five companies intended to introduce new technology and processes in the next two years. All of these companies had also introduced new technology and processes in the preceding two years. One of the companies also intended to introduce new work practices and new products and services.

One Sawmilling and Processing company also intended to introduce new products and services.

Three companies had no intention to make improvements in the next two years. One of these had made changes to technology and processes in the previous period.

Of the companies intending to make improvements, most (4) thought the changes would affect Machinery Operators and Drivers and/or Labourers.

4.3.4 Timber Manufactured Products

In the Timber Manufactured Products Sector, most businesses were intending to introduce new or significantly improved technology and processes (5), with one company also intending to adopt new sales and marketing methods, and one company intending to adopt new work practices and new products and services, as well as new technology and processes. Two of the companies in this sector had no plans for the upcoming period. One of these had adopted new technology and processes in the preceding period.

Of those with plans to adopt changes in the upcoming years, Machinery Operators and Drivers were identified by the most companies as affected. In all cases this related to new technology and processes being introduced. General labourers were identified as affected by four businesses and two companies indicated that Technicians and Trades Workers would be affected: again, all intended to introduce new technology and processes. The company intending to introduce new sales and marketing methods indicated that it was sales staff who would be affected.

5 Future Skills Needs of Businesses in the Region

Section 6 examines the skills needs and skills shortages at the level of the Hub region and the Industry. It also examines how skills needs and shortages nationally may affect the Hub region.

5.1 Skills Needs in the Hub Region

Employers were also asked which skills are required in their business, regardless of whether there was a shortage in the business. This provides a different perspective to the occupational analysis of ABS data at (Figure 17). The results are presented in Figure 31.

Figure 31 Which of the following skills are needed in your business? (number of businesses)



Source: Hub interview data 2021

The skills in most common requirement in the Industry are common to all sectors:

- Workplace health and safety (95.8 per cent)
- First aid (91.7 per cent)
- Business and financial management (83.3 per cent)

These are also required in most businesses and are not unique to the Industry.

Most respondents reported the need for skills in compliance and practical skills:

- Heavy machinery operation (83.3 per cent)
- Chainsaw and other hand-held machinery (79.2 per cent)
- Compliance (75.0 per cent)
- IT or Software specialised to the industry (62.5 per cent)

The cluster of skills in the next lowest reported requirement may reflect sectoral skills specialisations rather than broader need across the whole of Industry:

- Fire-fighting (45.8 per cent)
- Saw technician (41.7 per cent)
- Road transport (33.3 per cent)
- Wood machining (29.2 per cent)

Finally, the skills in lowest reported requirements indicate some niche high-value operations or the small number of large employers:

- Forest ecology and silviculture (25.0 per cent)
- Marketing/sales (25.0 per cent)
- Forest operations planning and management (20.8 per cent)
- Community relations/ community engagement (16.7 per cent)

5.1.1 Forest Growing and Management

Respondents from the Forest Growing and Management sector indicated that the skills required in all businesses were workplace health and safety, business and financial management, compliance and forest operations planning and management.

Forest Growing and Management businesses were more likely than businesses in the Industry as whole to require skills in:

- IT/software specialised to the Industry
- Forest ecology and silviculture
- Marketing/sales
- Community relations/community engagement

5.1.2 Harvesting and Haulage

Respondents from the Harvesting and Haulage sector indicated that the skills required in all businesses were workplace health and safety, first aid, chainsaw and other hand-held machinery.

Harvesting and haulage businesses were more likely than businesses in the Industry as a whole to require skills in:

- Heavy machinery operation
- Compliance
- Fire-fighting
- Road transport/haulage
- Forest ecology and silviculture
- Forest operations planning and management
- Community relations/community engagement

5.1.3 Sawmilling and Processing

Respondents from the Sawmilling and Processing sector indicated that the skills required in all companies were heavy machinery operation and saw technicians.

Sawmilling and Processing businesses were more likely than businesses in the Industry as a whole to require skills in:

- Business and financial management
- Chainsaw and other hand-held machinery
- Wood machining
- Marketing/sales

5.1.4 Timber Manufactured Products

Respondents from the Timber Manufactured Products sector indicated that there were no skills required in all businesses, however the skills required in the largest proportion of businesses (8/9) were workplace health and safety, first aid, business and financial management and IT/software training specialised to the Industry.

Timber Manufactured Products businesses were more likely than businesses in the Industry as a whole to require skills in:

- IT/software training specialised to the industry
- Fire-fighting
- Saw technician
- Wood machining
- Marketing/sales

5.2 Skills Shortages in the Hub Region

More than half (56.0 per cent) of respondents reported that they have a skills-shortage. The occupations that were reported as being of most concern to employers were:

- Saw doctor/sawying
- Wood machinist/timber machining
- Machinery operators (generally) and specifically: Harvester operator and Skidder operator
- Electricians
- Service departments (eg fitters, mechanics)
- Truck drivers
- Management skills
- Stacking

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In addition, some employers identified a general shortage of people with “manual aptitude” and a general shortage to “keep up with ageing staff”.

The job roles of Wood Machinist, Maintenance Workers and Truck Drivers were identified by more than one respondent as difficult to recruit. The breadth of responses may, however, indicate a difficulty in Industry recruitment rather than difficulty in recruiting for specific job roles.

The sectors with the highest proportion of businesses with an identified skills shortage during interview were Sawmilling and Processing (77.8 per cent) and Harvesting and Haulage (62.5 per cent). Half of timber manufactured products (50.0 per cent) and forest growing and management (50.0 per cent) companies also identified this as an issue.

5.3 Skills Needs in the Forest and Wood Products Industry

For the Industry as a whole, priority skills have been identified for the period 2019-2022 by Industry Reference Committees¹⁵:

- Specialised skills, including scientists, mechanics and mobile and fixed-plant operators; and
- Workers with high level financial, middle management and information and communications technology (IC) skills.¹⁶

The Commonwealth Department of Education and Training has also identified 13 generic skills which the industry has ranked from most-least important. The top five are outlined in Table 7.

Table 7 Priority Generic Skills for the Forest and Wood Products Industry

Generic Skill	Description
Technology use and application	Ability to create and/or use of technical means understand their interrelation with life, society and the environment. Ability to understand and apply scientific or industrial processes, inventions, methods, etc. Ability to deal with increasing mechanisation and automation and computerisation. Ability to do work from mobile devices rather than from paper.
Environmental and sustainability	Ability to focus on problem-solving and the development of applied solutions to environmental issues and resource pressures at local, national and international levels
Language, Literacy and Numeracy (LLN)	Foundation skills of literacy and numeracy.
Design mindset Thinking critically Systems thinking Problem-solving	Ability to adapt products to rapidly shifting consumer tastes and trends. Ability to determine the deeper meaning or significance of what is being expressed via technology. Ability to understand how things that are regarded as systems influence on another within a complete entity, or larger system. Ability to think holistically
Communication Collaboration Social Intelligence	Ability to understand and apply the principle of creating more value for customers with fewer resources (lean manufacturing) and collaborative skills. Ability to critically assess and develop content that uses new media forms and leverage these media for persuasive communications. Ability to connect with others deeply and directly, to sense and stimulate reactions and desired interactions.

Source: IRC Skills Forecast 2019-2022

¹⁵ Industry Reference Committees are the formal channel within the VET system for considering industry skills requirements in the development and review of training packages. They ensure training packages meet the needs and concerns of employers, employees, training providers, and people seeking training qualifications.

¹⁶ Skills Impact, *Forest and Wood Products Industry Sector IRC Skills Forecast and Proposed Schedule of Work 2019-2022*, available at: https://www.skillsimpact.com.au/site/skillimpactmedia/uploads/2019/05/ISF.FWP_IRCSkillsForecast.2019-2022.Final_.pdf?x98929 last accessed 28 July 2021

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The most recent update to the forecast has identified two areas of skills need. The first is associated with changing technology in the Sawmilling and Processing and Timber Manufactured Products sectors and the other is associated with the role played by the industry in fighting fires.

The IRCS have identified the need for skills to work with new technologies and produce innovative products such as cross-laminated timber (CLT) and glue laminated timber (GLT). The IRCs have also said that

“demand for skills to monitor, maintain, optimise and troubleshoot highly specialised automated equipment that moves, grades, assesses, scans, cuts and assembles timber pieces and products is surpassing the need for operators to pass, move, lift, grade, assess, stack and sort timber and wood products”¹⁷.

The IRCs have highlighted the importance of forestry operators having effective bushfire-related skills as they are increasingly involved in bushfire management (including mechanical thinning), mitigation and firefighting. These roles are distinct from their forestry operations roles and include:

- Defending resource and forestry assets
- Salvage operations after the fire has passed
- Fire suppression efforts in land use such as farms and national parks
- Make-safe operations and road clearing
- Re-establishing plantations

5.4 Skills Needs in Australia

The National Skills Commission has identified 25 “emerging occupations”, which did not exist at the time of the last classification of occupations.¹⁸ Of most potential relevance to the Forest and Wood Products Industry are the occupations identified in Table 8. Potential implications of those emerging occupations have been identified in Column 4.

Table 8 Emerging Occupations relevant to the Forest and Wood Products Industry

Occupation	Description	Task	Implications
Data analysts	Import, inspect, clean, transform, validate, model, or interpret data. They ensure that data sources and repositories provide consistent and reliable information. Data analysts use algorithms and IT tools to prepare visualisations such as graphs, charts, and dashboards	Gathering and analysing data, developing data visualisations or dashboards, writing data reports, and conducting statistical analysis	Forestry roles may relate to mapping, forest inventory and productivity.

¹⁷ Skills Impact, *Forest and Wood Products Industry Sector Annual Update 2021 IRC Skills Forecast and Proposed Schedule of Work*, available at: https://www.skillsimpact.com.au/site/skilliampactmedia/uploads/2021/07/ISF.FWP_IRCSkillsForecast.2021AnnualUpdate.pdf?x98929 last accessed 28 July 2021

¹⁸ National Skills Commission, *25 Emerging Occupations*, available at: <https://www.nationalskillscommission.gov.au/25-emerging-occupations> last accessed 28 July 2021

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Data scientists	Find and interpret rich data sources, manage large amounts of data, merge data sources, ensure consistency of data-sets, and create visualisations to aid in understanding data. They build mathematical models, present and communicate data insights and findings, and recommend ways to apply data	Developing machine learning models, data mining, data analytics, visualisation, reporting and consultation	Forestry roles may include modelling of fire behaviour and communicating this in real-time
Pricing Analysts	Analyse production prices, market trends and competitors in order to establish the right price, taking brand and marketing concepts into consideration	Analysis and setup of product prices, revenue and scenario forecast modelling, and coordinating and reviewing pricing agreements	Long term modelling of forest productivity and revenues
Logistics Analysts	Analyse product delivery or supply chain processes to identify or recommend changes. They may manage route activity including invoicing, electronic bills, and shipment tracing	Identifying areas for efficiency improvement in supply chains, analysing logistics data to provide insights and recommendations, liaising with different business areas to implement changes and new systems, planning logistics and forecasting and monitoring inventory	Log truck marshalling services
Digital Marketing Analysts	Responsible for analysing statistics and looking for ways that businesses can improve online marketing efforts. These efforts include things like social media ads, website banner ads, and online branding	Online marketing, social media marketing and campaign monitoring (e.g. through web analytics).	Industry associations may use these roles for campaigning, community engagement in the pursuit of social licence
Social Media Specialists	Provide and maintain an interactive environment facilitated by applications such as social media, forums and wikis. They maintain relationships between different digital communities	Developing, implementing and managing social media strategy, content and campaigns.	Industry associations may use these roles for campaigning, community engagement in the pursuit of social licence
Energy Efficiency Engineers	Design, develop, or evaluate energy-related projects or programs to reduce energy costs or improve energy efficiency during the designing, building, or remodelling stages of construction. They may specialise in electrical systems, green buildings, lighting, air quality, energy procurement or Heating, Ventilation, and Air-conditioning (HVAC) systems	Designing controls for energy systems, designing and coordinating construction activities with energy considerations, implementing programs to reduce energy waste, and analysing and reporting on energy data.	Design and construction of timber buildings for residential and commercial purposes.

Source: National Skills Commission, 25 Emerging Occupations

5.5 Skills Shortages in NSW and Australia

The Australian Government National Skills Commission has published a Skills Priority List which considers which occupations (at a six digit level) in Australia are in demand and/or in shortage (see Figure 32).

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Technicians and Trades Workers is the occupational group in greatest shortage with 15 occupations in shortage in NSW, of which 14 were also in shortage Nationally. Of these, 6 are expected to have strong future demand. Interestingly the National Skills Commission has not identified Saw Technicians as being an occupation in shortage, although strong future demand is expected.

Of the occupations in shortage Wood Machinist and Forester are the only two which it will fall solely on the Industry to solve. For all the other occupations in shortage, the Industry will be competing with other industries to attract talent.

Of the occupations with strong future demand expected Logging Plant Operator and Saw Maker are the only two which are specific to our Industry. For all other occupations expecting strong future demand, the Industry will again be competing with other industries to attract talent.

Figure 32 Skills Shortage and Future Demand, by occupation, NSW and Australia

Future Demand	No shortage	Shortage in NSW	National Shortage
Moderate	Manager		
	Manufacturer		
	Production Manager (Forestry)		
	Production Manager (Manufacturing)		
	Transport Company Manager		
Moderate	Professional		
	Conservation Officer	ICT Business Analyst	
	Environmental Consultant		
	Environmental Research Scientist		
Moderate	Technicians and Trades Workers		
	Systems Analyst	Life Science Technician	
	Chemistry Technician	Motor Mechanic	Motor Mechanic
	Earth Science Technician	Diesel Motor Mechanic	Diesel Motor Mechanic
	Construction Estimator	Small Engine Mechanic	Small Engine Mechanic
	Surveying and Cartographic Technician	Fitter (General)	Fitter (General)
		Fitter and Turner	Fitter and Turner
		Fitter-Welder	Fitter-Welder
		Metal Machinist (First Class)	Metal Machinist (First Class)
		Wood Machinist	Wood Machinist

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Future Demand	No shortage	Shortage in NSW	National Shortage
Moderate	Clerical and Administrative Worker		
	Data Entry Operator	Office Manager	
	Word Processing Operator	Bookkeeper	
	Accounts Clerk	Production Clerk	
	Cost Clerk	Purchasing Officer	
	Payroll Clerk		
	Order Clerk		
	Stock Clerk		
Moderate	Warehouse Administrator		
	Sales		
Moderate		Sales Representative (Building and Plumbing Supplies)	
	Machinery Operators and Drivers		
	Wood Processing Machine Operator	Earthmoving Plant Operators (General)	Earthmoving Plant Operators (General)
	Crane, Hoist or Lift Operator	Backhoe Operator	Backhoe Operator
	Engineering Production Systems Worker	Bulldozer Operator	Bulldozer Operator
	Boiler or Engine Operator	Excavator Operator	Excavator Operator
	Bulk Materials Handling Plant Operator	Grader Operator	Grader Operator
	Forklift Driver	Loader Operator	Loader Operator
Moderate	Labourers		
	Product Examiner		
	Product Grader		
	Forestry Worker		
	Logging Assistant		
Strong	Tree Faller		
	Managers		
	Finance Manager	Supply and Distribution Manager	Quality Assurance Manager
	Environmental Manager		
Strong	Laboratory Manager		
	Professionals		
	Management Consultant	Organisation and Methods Analyst	Surveyor
	Advertising Specialist	Marketing Specialist	
	Market Research Analyst	Forester	
	Cartographer		

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Future Demand	No shortage	Shortage in NSW	National Shortage
Strong	Technicians and Trades Workers		
	Maintenance Planner	Metal Fabricator	Metal Fabricator
	Saw Maker and Repairer	Pressure Welder	Pressure Welder
		Welder (First Class)	Welder (First Class)
		Electrician (General)	Electrician (General)
		Electrician (Special Class)	Electrician (Special Class)
		Arborist	Arborist
Strong	Clerical and Administrative Worker		
	General Clerk		
Strong	Machinery Operators and Drivers		
	Logging Plant Operator		
	Truck Driver (General)		
	Storeperson		

Source: National Skills Commission, 2021

5.6 How are Skills Gaps Filled?

About half the businesses employ less than 20 people. There are very few businesses that employ more 100 people. The implications for building skills are that small businesses are less capable of allocating internal resources to the training of new entrants to the industry. They either need to engage an external training provider or bear the cost of non-accredited internal training in the form of reduced productivity.

Having identified the skills needs and skills shortages we consider how skills gaps can be filled. In short, skills gaps can be filled by recruiting people from outside the organisation (external), or by skilling people up within the organisation (internal).

Respondents have indicated that skills gaps are primarily filled from their existing workforce or a mix of existing workforce and external applicants (see Table 9.) This may be a matter of preference, but it may also reflect a shortage of suitably experienced and competent candidates available in the local area.

Table 9 For each occupation group, nominate how you fill gaps in your organisation (number of businesses)

Method of gap filling	Managers/ Supervisors	Technicians and Trades	Labourers	Machinery Operators and Drivers	Clerical and Administrative	Sales
Only internal	10	5	9	9	10	5
Only external	2	2	4	2	4	1
Both	3	7	5	9	-	-

Source: Hub interview data 2021

Skills gaps are mostly filled through non-accredited training for existing workers, for all occupation groups other than Technicians and Trades Workers (see Table 9). Technicians and Trades Workers were most likely to be filled through accredited training of existing workers.

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Technicians and trade workers included those with formal qualifications that were not directly involved in the processing of wood products. This included fitters, electricians, diesel mechanics or welders. These job roles do require the completion of an apprenticeship. Most employers reported that finding qualified candidates is difficult in regional areas with a relatively small labour pool.

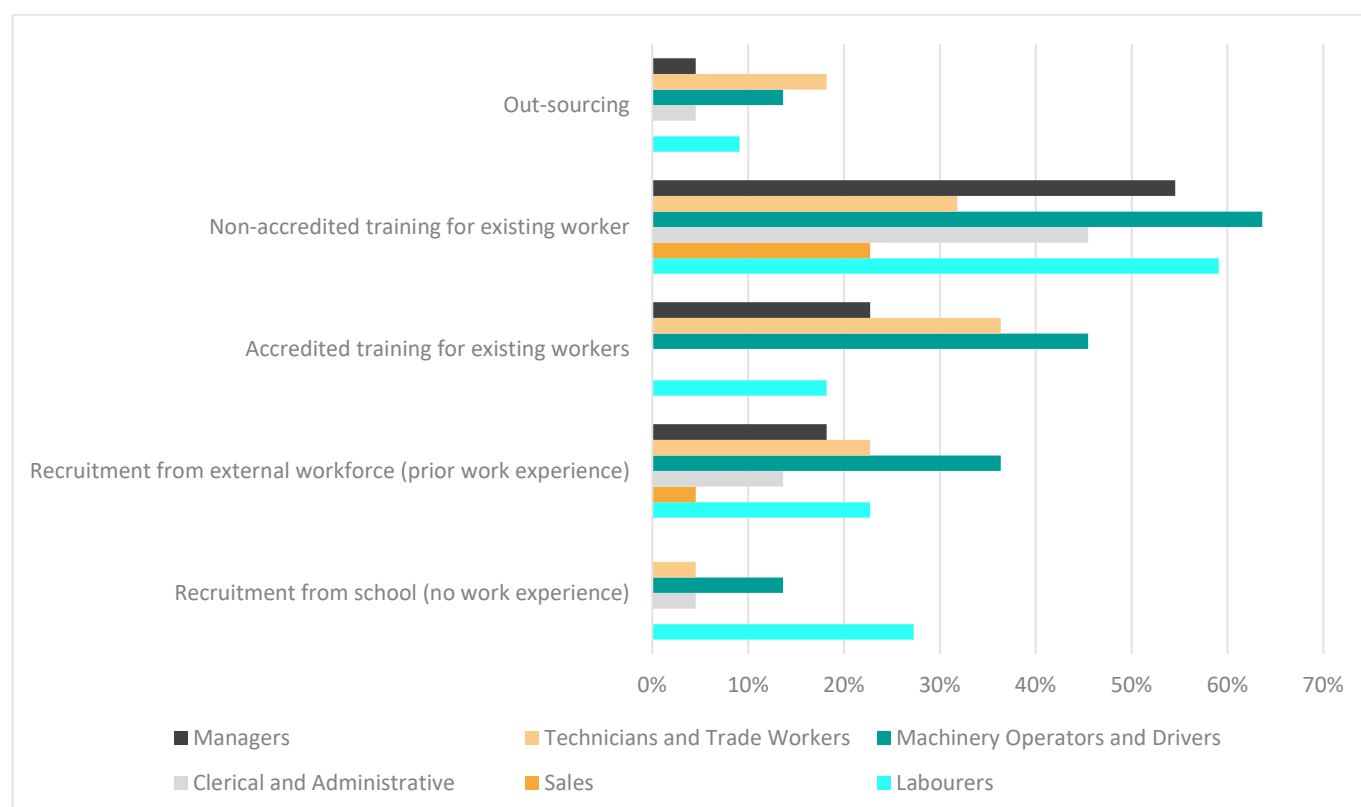
Managers and supervisors were generally promoted from operational staff. They commenced their careers as unskilled labourers or machinery operators and gained familiarity with the production process. They were promoted to more senior positions over time. Few employers provided management training for this role. The low numbers recruited from an external workforce is a reflection of a shortage of suitably experienced and competent candidates available.

The low number of records in clerical and administrative and sales staff reflects the fact that a lot of the employers consulted did not have any people dedicated to these roles. Very few employers had a large enough workforce or operational budget to dedicate employees in these groupings.

As might be anticipated, the largest group recruited straight from school (with no work experience) were Labourers.

A number of respondents indicated that they filled skills gaps with family members. Another business identified that they recruit using an employment agency or social media.

Figure 33 For each occupation group, nominate how you fill gaps in your organisation (proportion of respondents)



Source: Hub interview data 2021

5.6.1 Forest Growing and Management

Forest Management companies were most likely to recruit from the external workforce (prior work experience) in relation to Managers, Technicians and Trades Workers and Machinery Operators and Drivers.

Machinery Operators and Drivers gaps were also filled by accredited and non-accredited training of existing workers.

The full suite of options was used to recruit Labourers.

5.6.2 Harvesting and Haulage

Managers were most likely to be filled from existing workers through non-accredited training (3) or accredited training (2).

Technicians and Trade Workers were equally likely to be filled by non-accredited or accredited training, or by out-sourcing (2).

Machinery Operators and Drivers were mostly filled by training existing workers, either through non-accredited (6) or accredited training (4). A number of businesses also used recruitment externally (with prior work experience) (3) or out-sourcing (2).

Labourer gaps were filled through all options, but predominantly non-accredited training of existing workers (4).

5.6.3 Sawmilling and Processing

Managers were most likely to be filled by non-accredited training of existing workers (6); or a combination of non-accredited training and either accredited training (2) or recruitment of external candidates with work experience (1).

Technicians and Trade Workers were most likely to be filled by non-accredited training of existing workers (5) or accredited training of existing workers (4) or a combination of both.

Machinery Operators and Drivers were mostly filled by training existing workers through non-accredited training (7) as was the case for Labourers (8). Machinery Operators and Drivers were filled through accredited training of existing workers by twice as many businesses (4) as Labourers were.

5.6.4 Timber Manufactured Products

Managers were most likely to be filled by non-accredited training of existing workers (6), or a combination of that and accredited training (2) and/or external recruitment (1).

Technicians and Trades Workers were most likely to be filled by accredited training for existing workers (5). A number of businesses (3) also used external recruitment, non-accredited training of existing workers (3) or outsourcing (2), mostly in combination with accredited training for existing workers.

Labourers in this sector were most likely to be recruited from school with no work experience (5) and/or some work experience (3). Non-accredited training for existing workers was also used in some cases (4).

6 Filling gaps internally (building skills of the existing workforce)

Section 8 considers the duration of employment of staff in the Hub region. It also looks at the training of those existing staff, including the reasons for investing in training.

6.1 Retention and Attrition of Employees

Employers had good retention of mature workers. This provides the advantage of a reliable, skilled workforce. However, the disadvantages are:

- there are fewer opportunities to recruit young people and foster their skills development;
- there is reduced need for employers to prepare and cater for the training of new entrants, which means that their internal induction and training processes are not well maintained (particularly for small businesses); and
- the whole-of-industry does not generate a sufficiently large, regular stream of learners to support a local training provider based in the region.

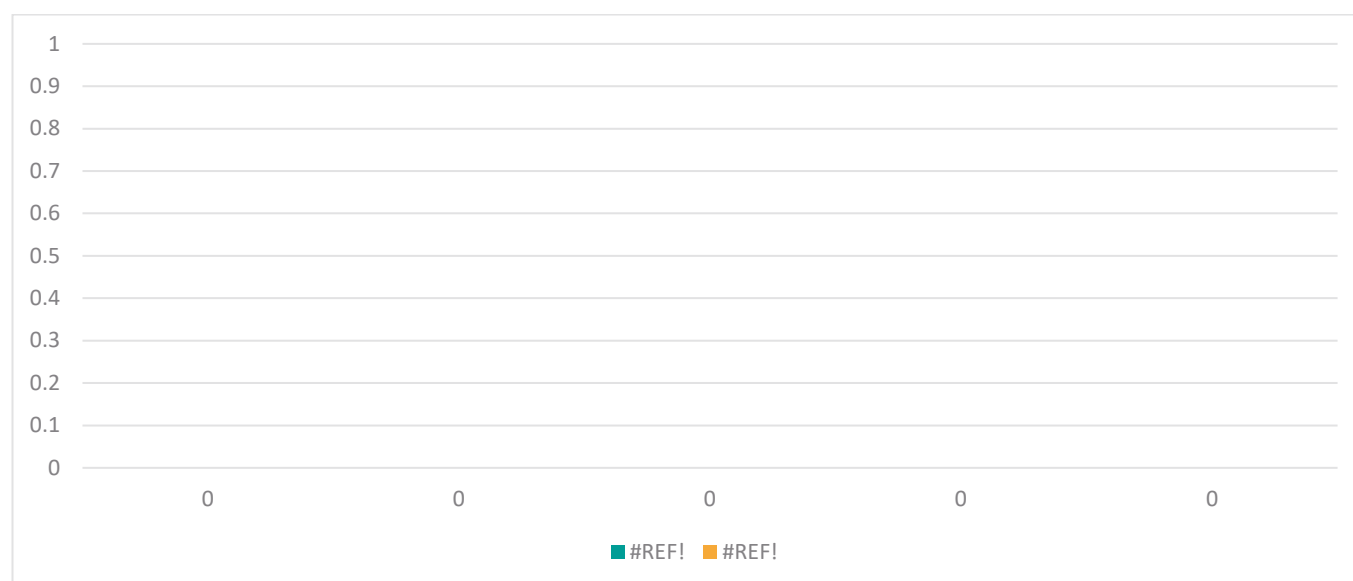
Employers reported difficulties in retention rates of people aged under 25. Employers reported the reasons for this were primarily that young people did not have the right work ethic or cultural fit within the organisation; or they could make a better income working in other industries such as civil construction or agriculture.

Respondents provided a breakdown of the number of their current employees and their employment duration. Half of the workforce has been with their current employer for more than 10 years.

This has been compared with the employment duration for industries generally in NSW. It is apparent that workers in respondent businesses tend to stay longer with their current employer than in NSW generally.

While the general NSW population has about a third employed in their current role less than 3 years, a third in the category 3-10 years, and a third longer than 10 years, respondents had a distribution that was skewed to the greater than 10 years. This is consistent with the findings at 3.6.4 above showing an aging workforce.

Figure 34 Employment duration, 2021 (percentage of employees)



Source: ABS 6291.0.55.001 EQ02 May 2021, Hub interview data 2021

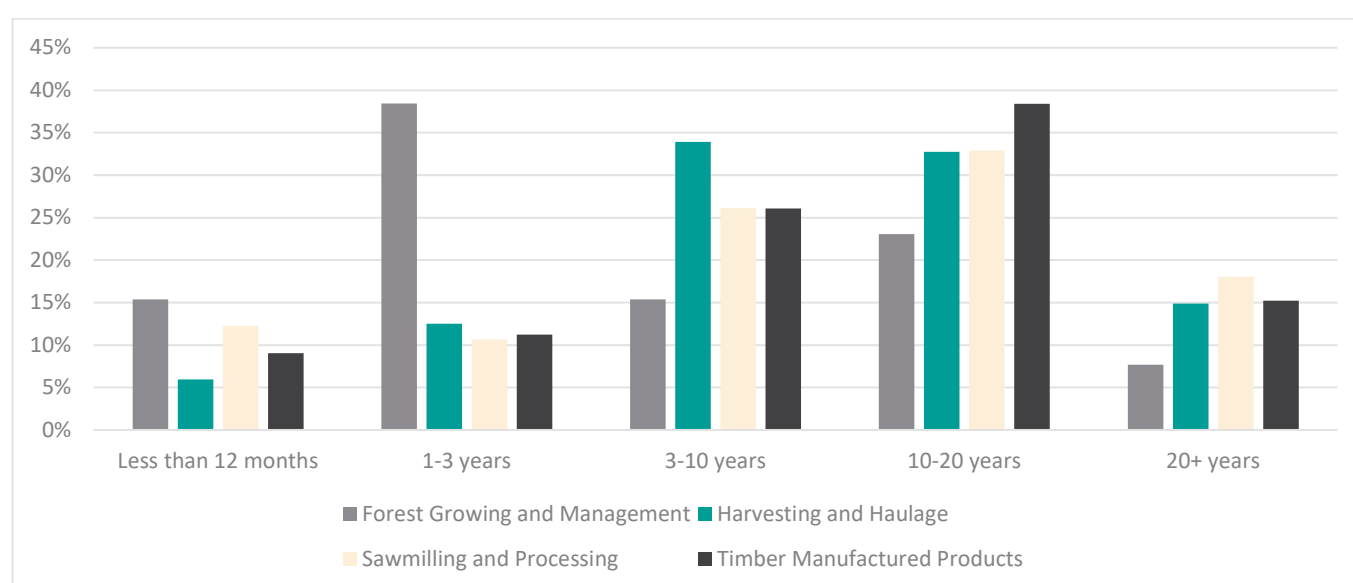
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Looking at the data by sector of the respondents (see Figure 35), it is apparent that Forest Growing and Management has the highest proportion of workers who have been with the business less than three years (54 per cent) whereas the Timber Manufactured Products, Sawmilling and Processing, and Harvesting and Haulage businesses all have highest proportion of people employed in the business for more than 10 years (54 per cent, 51 per cent and 48 per cent respectively). Within that Sawmilling and Processing has the largest proportion of workers who have been in the Industry for more than 20 years (18 per cent).

One employer indicated:

“We have a low turnover; if they can make it through the first year or two, then they generally stay for the long term”

Figure 35 Employment duration by Industry sector, (percentage of employees)



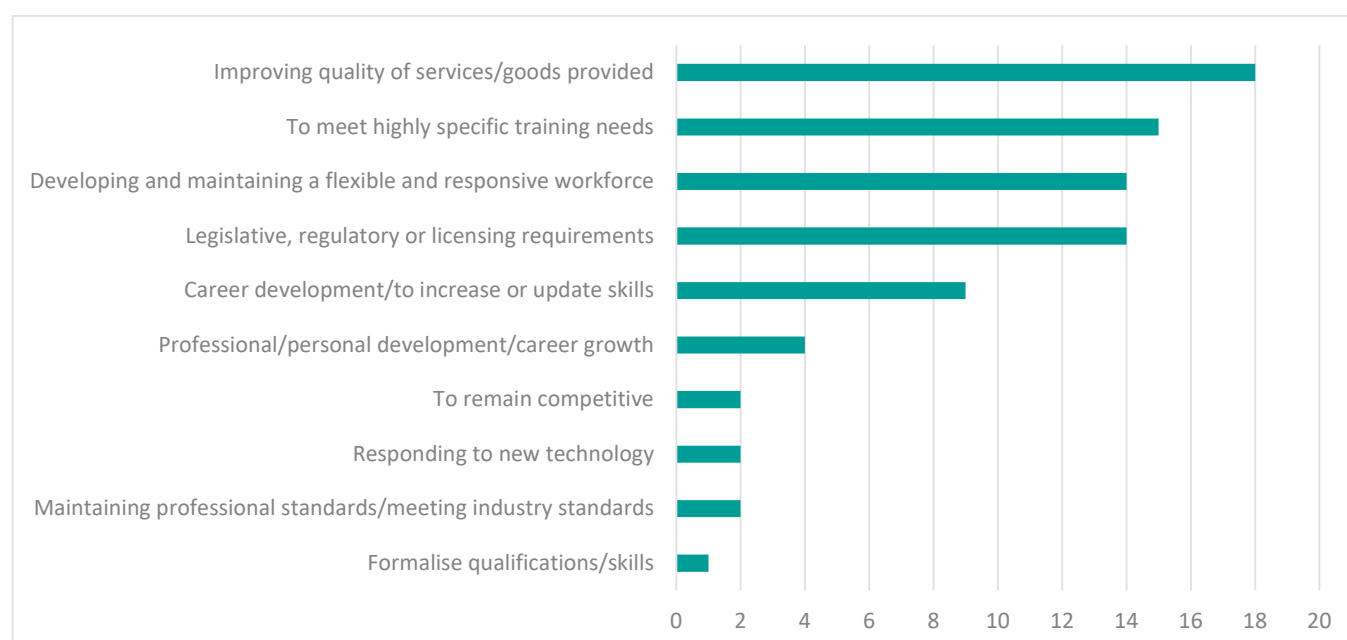
Source: Hub interview data 2021

6.2 Reasons for Training of Existing Employees

As discussed at 6.6 skills gaps are mostly filled through training existing workers and mostly through non-accredited (in-house) training. Figure 36 shows the reasons why respondents chose to invest in training.

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Figure 36 Thinking of training other than apprenticeships and traineeships, why does your organisation support employees to undertake training? (number of businesses)



Source: Hub interview data 2021

Responses suggest organisations see a return on investment for their businesses from training and that businesses value training for the impact it has on productivity and commercial outcomes. The reasons identified most frequently for investing in training were:

- Improving the quality of their goods and services (81.8 per cent)
- Meeting highly specific training needs (63.6 per cent)
- Developing and maintaining a flexible and responsive workforce (59.1 per cent)

These reasons were as significant or more significant than the need to meet legislative, regulatory or licensing requirements (59.1 per cent) (training because they had to).

Less common reasons for training were clustered around the theme of benefiting the individual workers:

- Career development/to increase or update skills (31.8 per cent)
- Professional or personal development or career growth (18.2 per cent)
- Maintaining professional standards/meeting industry standards (9.1 per cent)

However, during a discussion during the second Roundtable meeting, attendees agreed that learners and their parents prefer full qualifications due to the perceived higher social status and improved future career prospects of having a trade qualification instead of minimal training.

6.2.1 Forest Growing and Management

Three out of four Forest Growing and Management companies indicated why they supported employees to undertake training – each for a different combination of reasons. The most common reasons for supporting employees to undertake training were legislative, regulatory or licensing requirements (2), career development

(2), improving quality of services/goods provided (2), and developing and maintaining a flexible and responsive workforce.

6.2.2 Harvesting and Haulage

Six out of seven Harvesting and Haulage companies provided their reasons for supporting employees to undertake training. The most common reasons for training were for legislative, regulatory or licensing requirements (6) and to improve the quality of services/goods provided (6). Other reasons identified were to meet highly specific training needs (4) and to develop and maintain a flexible and responsive workforce (3).

6.2.3 Sawmilling and Processing

The most common reasons for Sawmilling and Processing companies to support employees to undertake training were to improve the quality of services/goods provided (8) and to develop and maintain a flexible and responsive workforce (8). The next most common reasons were to meet highly specific training needs (6) and career development (4). Several businesses (3) also identified professional/personal development/career growth and/or legislative, regulatory or licensing requirements.

6.2.4 Timber Manufactured Products

Every Timber Manufactured Products company (8) indicated that training occurred to meet highly specific training needs. The next most common reasons for training was to improve the quality of services or goods provided (7), followed by legislative, regulatory or licensing requirements (5) and developing and maintaining a flexible and responsive workforce (5).

7 Filling Gaps Externally

Part 8 looks at the challenges associated with filling gaps externally – in general, but also specifically by school leavers and people in other industries. This part also looks at the industry's perceptions of the reasons for recruitment challenges and digs into those reasons in more detail, looking at experiences in other jurisdictions, other research, and other objective data sources.

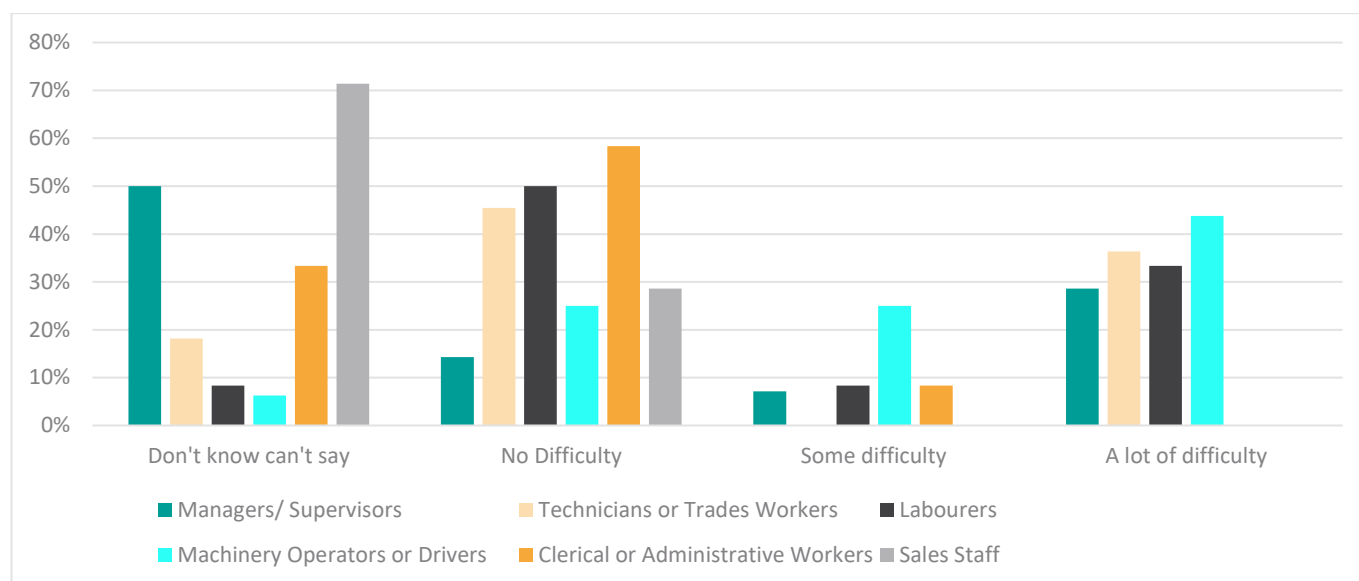
7.1 Recruitment Challenges

Despite the retention rates described in 7.1, and the aging workforce (3.6.4) the most common reason to employ a new worker is not to replace a worker who has retired, (9.1 per cent), but to replace a worker who has left voluntarily (64.0 per cent). Only two respondents indicated that the most common reason for employing a new worker was for company growth.

Over three quarters of respondents (80.0 per cent) had recruited or attempted to recruit staff in the last 12 months.

Employers reported different levels of difficulty with recruitment for different occupational groups (see Figure 37).

Figure 37 How much difficulty, if any, has your organisation experienced in recruiting staff? (Percentage of responses, by occupational category)



Source: Hub interview data 2021

Respondents were also asked to rank the difficulty recruiting each occupational group from 1 (least difficult) to 6 (most difficult). This question was answered by fewer respondents than the more general question about difficulty in recruiting staff shown in Figure 37.

While Figure 37 suggests that Machinery Operators or Drivers are the most difficult to recruit, followed by Technicians and Trades Workers, Labourers and Managers/Supervisors, the ranking suggests that Manager/Supervisors (5.1) are the most difficult to recruit, followed by Machinery Operators or Drivers (4.4) and Technicians or Trades Workers (3.8).

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Similarly, while more respondents indicated that they had no difficulty in recruiting Clerical and Administrative Workers, followed by Labourers and Technicians or Trades Workers, the ranking suggested that Labourers (2.3) were the easiest to recruit, followed by Clerical or Administrative Staff (2.6) and Sales Staff (2.9).

The reason for these differences may be that responses in the *Don't know/Can't say* category included those that have not tried to recently recruit in that occupational group. For example, the businesses that do not employ sales staff would have reported this. There are a small number of Managers and Supervisors in the Industry and they generally have a lower turnover, so few employers have made recent attempts to actively recruit for this group.

Table 10 Rank from hardest to easiest the difficulty recruiting each occupational group? (number of responses)

Occupational Category	Easiest			Hardest			Average
	1	2	3	4	5	6	
Manager	0	1	0	0	3	4	5.1
Technicians or Trades Workers	2	0	1	2	1	2	3.8
Labourers	2	2	4	0	0	0	2.3
Machinery Operators or Drivers	0	0	1	4	2	1	4.4
Clerical and Administrative Workers	3	2	0	1	2	0	2.6
Sales Staff	1	3	2	1	0	1	2.9

Source: Hub interview data 2021

When explaining their reasons for their difficulty in recruiting Machinery Operators or Drivers, respondents said:

"Hard to find people that commit to the physical workload and fit in".

"Very few good operators in bush."

When explaining their reasons for their difficulty in recruiting Managers, respondents said:

"Managers with industry experience are hard to find."

"Managers are industry specific – there's very few coming through the ranks."

"Manager/Supervisors don't exist! Not up here anyway."

"Not a large number coming through the ranks".

When explaining their reasons for their difficulty in recruiting Technicians and Trades Workers, respondents said:

"Saw Doctor."

"Tradespeople seem to be leaving the industry"

"No training around here for trades workers. Some go to high paid industries."

Respondents were also asked to identify specific roles where recruitment was difficult. Despite the answers provided to the previous questions, the specific job roles identified primarily fell into two categories – Technicians and Trades Workers and Machinery Operators and Drivers.

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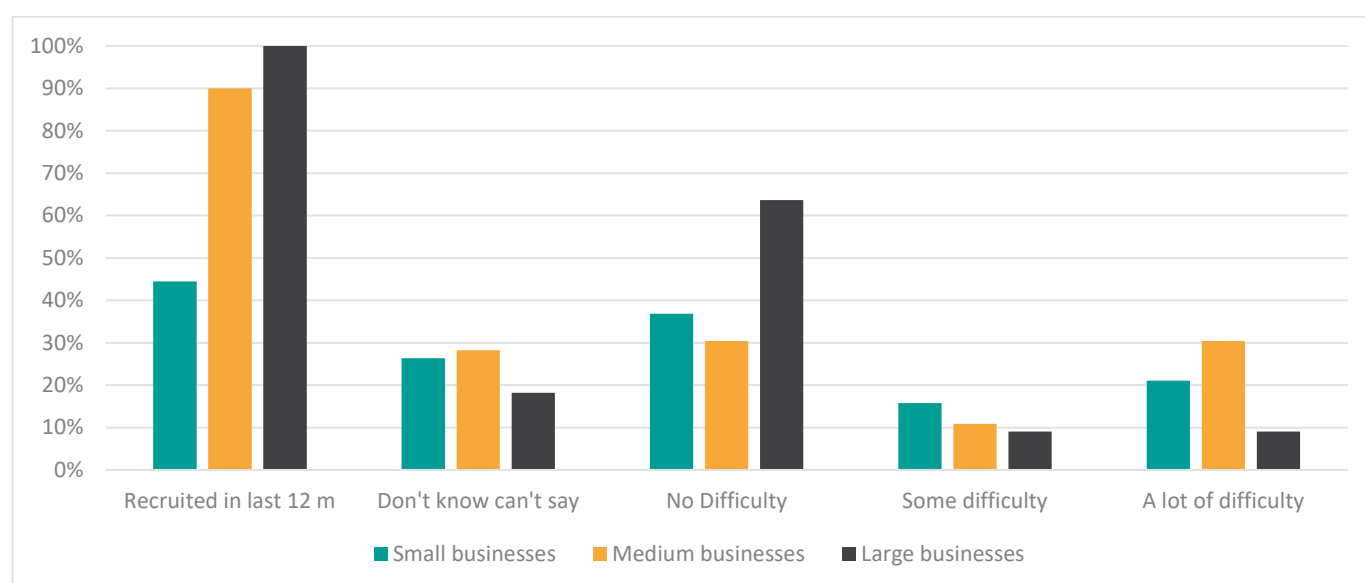
In particular:

- Saw Doctors/Saw Technicians (3 respondents)
- Fitters (2)
- Machinists (2)
- Harvester Drivers (2)
- Electricians
- Loader
- Skidder
- Dumpman (grading and excavator)
- Timber Stackers

The Machinery Operators and Drivers were identified by Harvesting and Haulage Businesses. The recruitment difficulties for Technicians and Trades Workers were mainly in Sawmilling and Processing and Timber Manufactured Products.

Recruitment was most difficult for medium sized businesses and least difficult for large businesses (see Figure 38).

Figure 38 How much difficulty, if any, has your organisation experienced in recruiting staff? (Percentage of responses, all occupations, by business size)

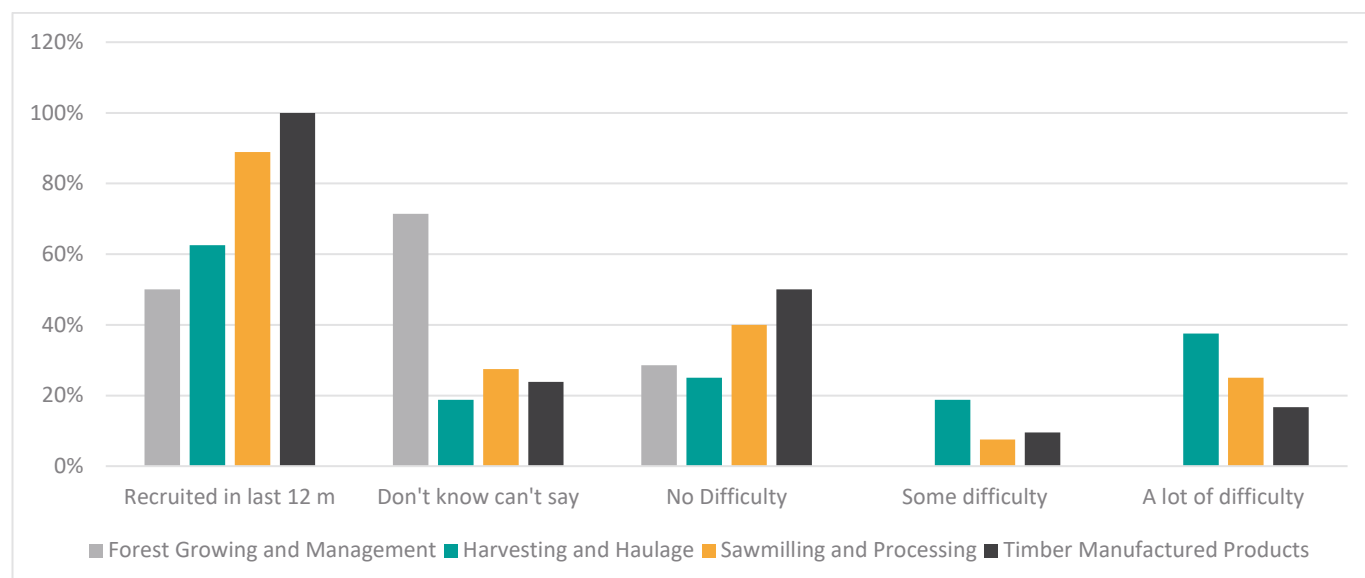


Source: Hub interview data 2021

Recruitment was also most difficult for respondents from the Harvesting and Haulage sector (see Figure 39).

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Figure 39 How much difficulty, if any, has your organisation experienced in recruiting staff? (Percentage of responses, all occupations, by Industry sector)



Source: Hub interview data 2021

Respondents were also asked how much difficulty, if any, their organisation experienced in recruiting school leavers. The most common responses were that they did not know or couldn't say (31.8 per cent) or that there was no difficulty (31.8 per cent). No respondents indicated that they had any difficulty in recruiting school leavers.

One respondent indicated that the biggest challenge was *"getting them to stay. We're addressing this by vetting people before we put them on"*. Other respondents indicated that they mostly hired through word of mouth, or that *"most young people are sons of employees"*.

Only one employer referenced a local school – they dealt with *"Newmans college [Newman Senior Technical College, Port Macquarie]. Mainly for the sawshop"*.

Recruiting of workers from other industries was perceived as more difficult. Only 9.1 per cent indicated that they couldn't say and 36.4 per cent indicated that there was no difficulty. The same proportion (36.4 per cent) had some or a lot of difficulty. Sawmilling and processing had the greatest difficulty in recruiting from other industries.

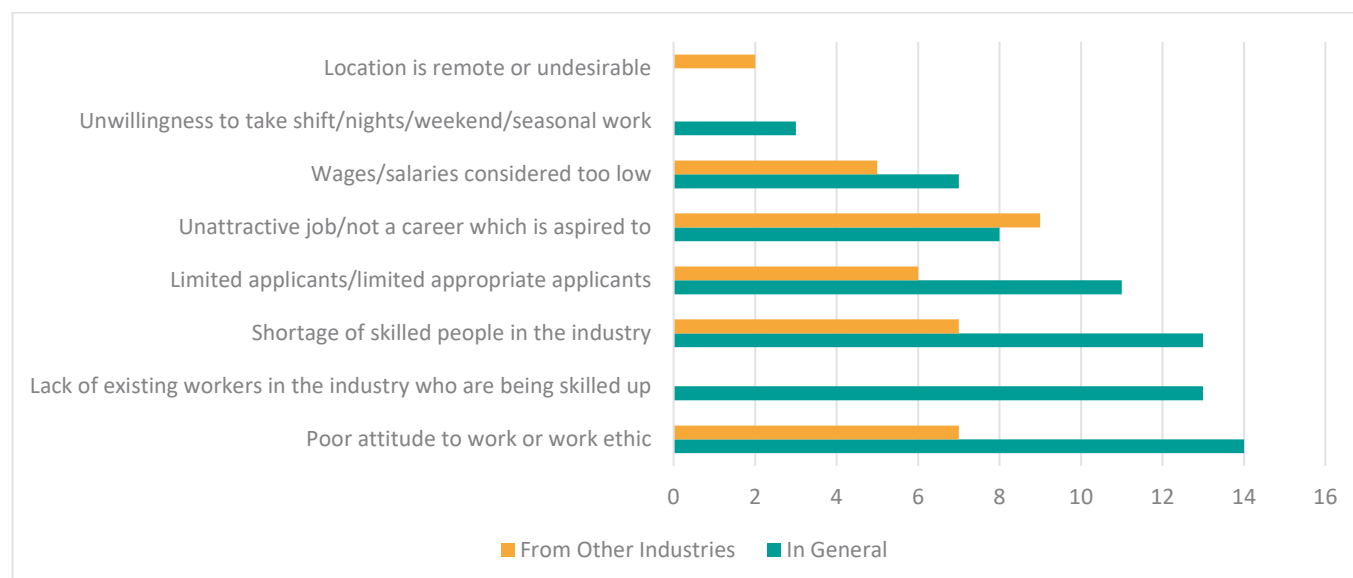
7.2 Perceptions of Recruitment Challenges

Respondents have indicated the reasons why they have difficulty recruiting staff in general is largely due to a poor attitude to work or work ethic (56 per cent) lack of existing workers in the Industry who are being skilled up (52 per cent), a shortage of skilled people in the Industry (52 per cent) and limited applicants/limited appropriate applicants (44 per cent) (see Figure 40).

This is particularly interesting given that respondents have also indicated that they fill skills gaps through internal training. It would appear this is not sufficient to meet demand at an industry level.

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Figure 40 Reasons for your difficulties in recruiting staff (in general and from other industries)? (number of respondents)



Source: Hub interview data 2021

Interestingly no respondents indicated that the reason for general recruitment challenges related to the location being remote or undesirable, however this was an issue for a number of businesses in relation to recruiting from other industries. Similarly, the attractiveness of the job was seen as a bigger issue in recruiting from other industries than for recruitment in general.

7.2.1 Forest Growing and Management

The issues identified by forest growing and management companies were a lack of existing workers being skilled up (1), a shortage of skilled people in the industry (1), poor attitude to work or work ethic (1), and wages/salaries considered too low (1).

Only a poor attitude to work or work ethic was identified as an issue (1) with recruiting to forest growing and management from other industries.

7.2.2 Harvesting and Haulage

For Harvesting and Haulage companies the issue most frequently identified was a shortage of skilled people in the industry (5), followed by a lack of existing workers in the industry who are being skilled up (4) and limited appropriate applicants (4).

One Harvesting and Haulage company indicated: *"It is hard work, and some people try it but get tired quickly: 12 hour days"*.

In relation to recruiting from other industries, the attractiveness of the job was identified as the key issue (3), followed by a shortage of skilled people in the industry (2) or a poor attitude (2).

One company identified the issue of *"older workers having a problem with a younger boss"*. Other issues identified were the early starts and *"more money in mining"*.

7.2.3 Sawmilling and Processing

The most common issue identified by Sawmilling and Processing companies was the lack of existing workers in the industry who are being skilled up (7), followed by a poor attitude to work or work ethic (9). Limited appropriate applicants (5) and not a career which is aspired to (6) were also identified as issues in this sector.

The attractiveness of the job was again identified as an issue with recruiting from other industries (5). This did not rate as an issue generally. Other issues included limited appropriate applications (4) and not a career which is aspired to (4) which were both also seen as general issues.

One sawmilling respondent indicated that *“wages are low compared to local infrastructure jobs”* and another that *“agencies don’t have people on their books”*.

In relation to recruiting from other industries one business indicated they looked for painters, concreters and plasters who were *“good for quality control”*.

7.2.4 Timber Manufactured Products

A lack of existing workers in the industry who are being skilled up was the most frequently cited issue for timber manufactured products businesses (5). The next most commonly cited issues (4) were: a shortage of skilled people in the industry, limited appropriate applicants, and a poor attitude to work.

Issues in recruiting from other industries were mostly a shortage of skilled people in the industry (4) and limited appropriate applicants (4). The attractiveness of the job and wages and salaries were also identified as issues here (3), which they were not in relation to recruitment in general.

7.3 Other Perspectives on Recruitment Challenges

The Industry in Australia and around the world has been grappling with the same recruitment challenges. Attachment Two details the approach and strategy in a number of other jurisdictions. In summary:

The forest industry plans of Scotland¹⁹, England and Wales²⁰, New Zealand²¹ Maine, USA²² and South Australia²³ were reviewed. A number of common barriers to recruitment were identified, in particular:

- The lack of knowledge of the sector leads to potential new recruits choosing other career paths. Forest industries in Tasmania, New Zealand and Scotland observed that they are facing the same attraction problems as other primary industries which are often competing for the same people who tend to move across sectors. A shared approach to attraction would be more efficient across either this sector or the primary industries in general.
 - Several jurisdictions are seeking to counter this by taking actions to establish forestry education programming in primary and secondary schools (Maine, England and Wales, Scotland)
- The perception of forest industries as being hard physical and potentially dangerous work as well as not technologically advanced or innovative, with little scope for promotion and reward. This negative perception was found to be having an impact on sector’s ability to recruit young staff, supervisory and

¹⁹ Skills Action Plan 2020, Scottish Forest & Timber Technologies,

²⁰ Forestry Skills Plan 2019-2024 (2019), Forestry Skills Forum: A plan for England and Wales,

²¹ Forestry and Wood Processing Workforce Action Plan 2020 – 2024, Forestry New Zealand (The Forestry and Wood Processing Workforce Action Plan Working Group) 2020.

²² Forest Opportunity Roadmap / Maine, 2018, For/Maine.

²³ Blueprint for the future South Australian forest and wood products industry (2014-2040) 2014, South Australian Forest Industry Advisory Board.

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management roles. It also affects recruitment from sections of the community who were not currently well represented in the forestry workforce (England and Wales, Tasmania). Scotland is working to raise the perception of the sector among young people and their key influencers, celebrating and raising awareness of our sectors positive impact on climate change.

- The capacity for small business owners to supervise apprentices. Owner/operators do not have a great deal of time available to focus on the needs of apprentices or trainees and to undertake the requirements of the accredited training system. Furthermore, there is limited scope to take on full time permanent positions (England and Wales; Tasmania).
- The cost and availability of housing in the South East of England was cited as a barrier to businesses and organisations being able to employ forestry staff, given the relatively low level of wages in the sector (England and Wales). This may have parallels with the study region, given the change in the demographics due to ‘Covid migration’ in the past year and the rapid escalation of rental payments and low availability of rental properties.
- In Tasmania, low retention rates of high school students to Year 12 constrain the capacity to train, and therefore recruit, local staff for positions that require higher levels of literacy and numeracy.
- Tasmania also reported the following recruitment barriers:
 - the reluctance of workers to work in remote regional areas;
 - mobilising entry level labour in laborious roles for low wages;
 - the lack of social licence for forest industries; and
 - the lack of certainty about the future of the native-forest dependent industry.

7.4 “Not a career which is aspired to”

Possible reasons for the lack of applicants could include the negative perception of forestry mean it is not seen by many as a preferred career. This negative perception can stem from family backgrounds, assumptions about long working hours and low incomes, and a lack of diversity in the workforce.

This should be countered by the work conducted by the results of the Primary Industries Education Foundation Australia, titled *Food, Fibre and Our Future 2020*²⁴ where researchers asked over 1,100 students on their knowledge and perceptions of a range of primary industries. The results showed that:

- 43 per cent of students considered that Australian forestry is renewable: harvesting of trees in productive forests is followed by replanting for the long term, and 26 per cent of students considered this to be false.
- 65 per cent considered that Forests can be managed to produce wood at the same time as protecting the environment, and only 17 per cent of students believed this statement to be false.
- When asked about forestry within the larger question ‘*how do you feel personally about the following industries involved in producing Food and Fibre in Australia?*’, 53 per cent were somewhat or very positive, 27 per cent were ambivalent, and 20 per cent were somewhat or very negative.
- The greatest influencers of the students on this topic were school teachers (59 per cent), media (51 per cent), family and friends (44 per cent) and social media (34 per cent).
- Only 22 per cent of school students had knowledge of the job role referred to as ‘forester’.

²⁴ Primary Industries Education Foundation Australia, 2020, *Food, Fibre and Our Future 2020*.

This indicates that there is good support for the Industry among school students even though there is low awareness of career opportunities. Closer engagement with school teachers can present the greatest gains in school students' sentiment towards the Industry.

7.5 “Wages considered too low”

We have examined the role income might play in recruitment and retention, looking at a number of occupations where competition may exist between the Industry and other sectors of the economy.

Figure 41 shows the income distribution of full-time workers in the North-East NSW Hub region.

It shows that the workers in the Timber Manufactured Products and Sawmilling and Processing industry have the smallest proportion of workers earning more than \$78,000 a year relative to all other industries in the region.

At the other end of the spectrum, workers in the Timber Manufactured Products sector are less likely to earn incomes less than \$41,600 and has the highest proportion of workers in the region in the \$41,600-\$77,999 range. On the other hand, Sawmilling and Processing has the fifth largest proportion of workers earning less than \$41,599. It has a similar earning profile to workers in Transport, Postal and Warehousing; Electricity, Gas, Water and Waste Services, Wholesale Trade and Retail Trade.

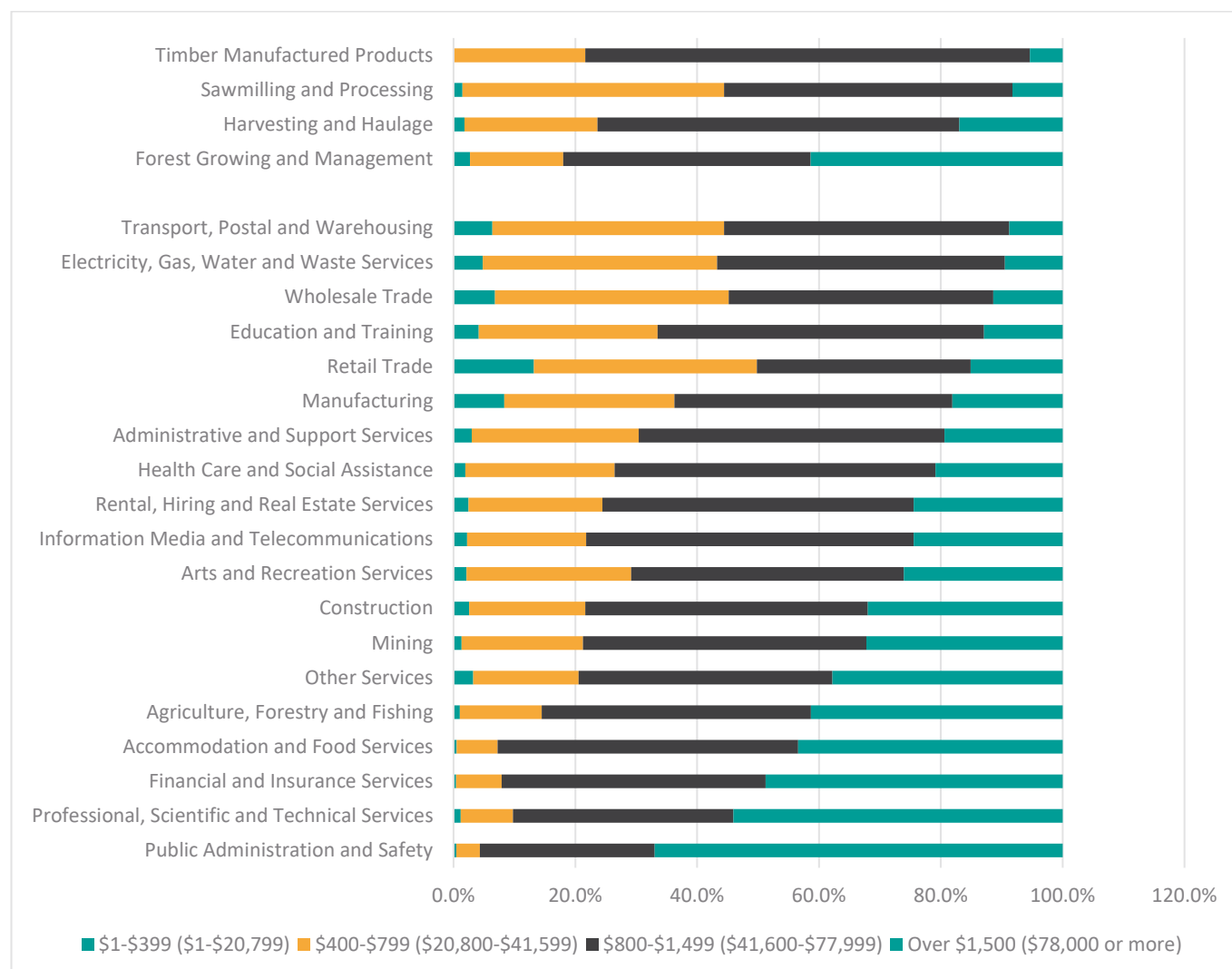
Harvesting and Haulage is the 6th lowest looking at the top income category, but has the second highest proportion of workers in the \$41,600-\$77,999 range (behind Timber Manufactured Products workers).

Forest Growing and Management is ranked 5th in terms of having the highest proportion of those earning above \$77,999 and having the lowest proportion earning less than \$41,600.

This suggests that current rates of pay may be a relevant barrier to attracting and retaining workers in the most industry sectors, but particularly in Sawmilling and Processing.

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Figure 41 Incomes by industry and forestry industry sectors (Hub region)



Source: Census of Population and Housing, 2016, TableBuilder

At a more granular level we have looked at a selection of occupations where the Industry employs less than two-thirds of people in that occupation in the North-East NSW Hub Region. This analysis should be treated cautiously, given the age of the data, and the limitations of small sample sizes.

Production Managers

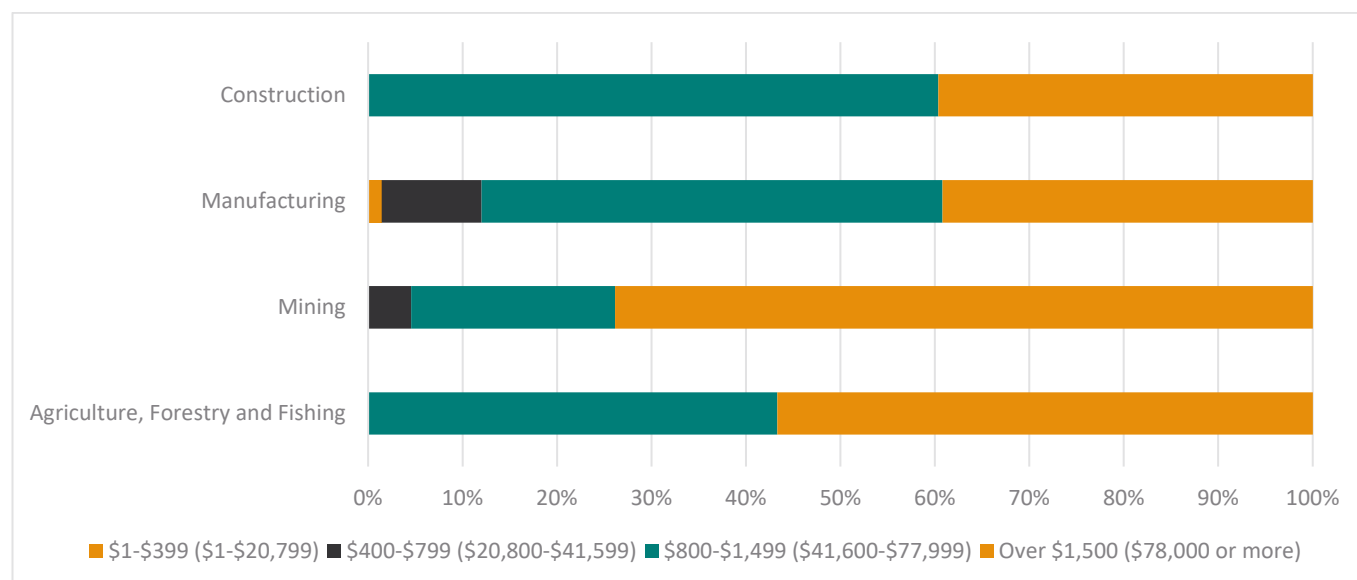
The largest group of Managers in the Industry which are also employed in significant proportion outside of the Industry are Managers working in the occupation *Production Managers*.

The industry employs 67 production managers out of 806 (8 per cent). Most of these work in Sawmilling and Processing and are therefore counted as part of the Manufacturing Industry. The remainder work in Forest Growing and Management and would be counted as part of Agriculture, Forestry and Fishing. Significant employing industries in the region are Manufacturing (53 per cent), Mining (11 per cent), Construction (7 per cent) and Agriculture, Forestry and Fishing (6 per cent).

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As Figure 42 shows, the Mining industry is likely to be the biggest competitor for production managers from all other industry sectors given the pay differential. There may also be an issue for Sawmilling and Processing relative to other sectors and industry in terms of a wage gap.

Figure 42 Income, Production Managers by industry



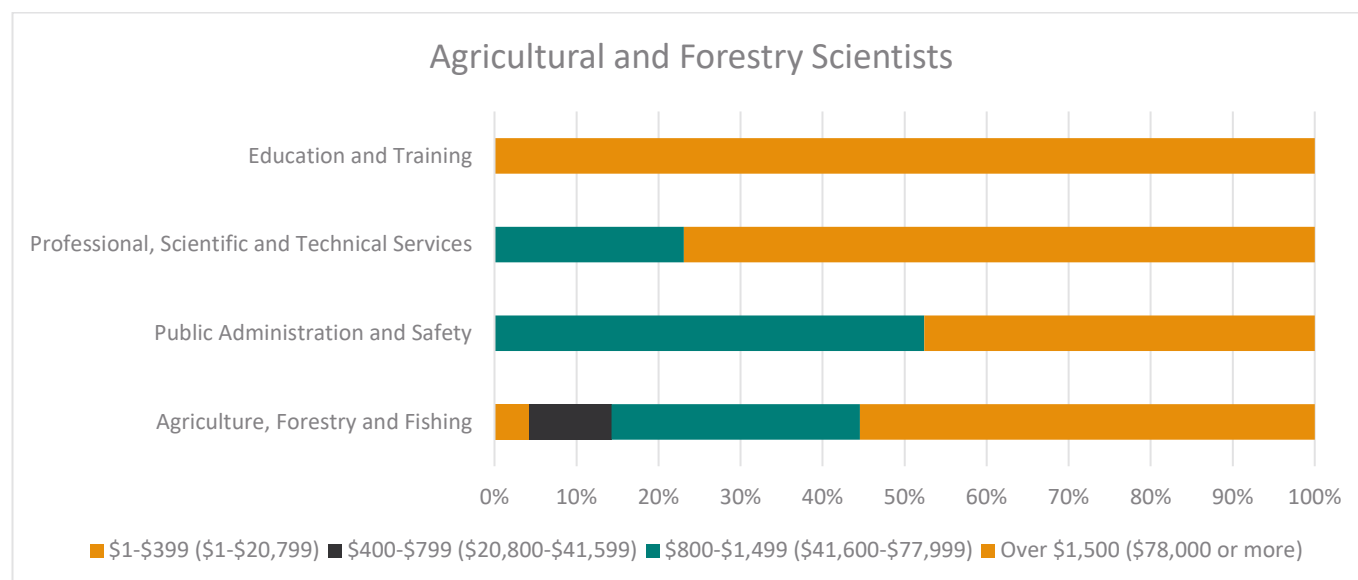
Source: Census of Population and Housing, 2016, TableBuilder

Agricultural and Forestry Scientists

The largest group of professionals in the Industry which are also employed in significant proportion outside of the Industry are *Agricultural and Forestry Scientists*. Forest Growing and Management employs 60 people, out of 208 in the region (29 per cent). Other significant employing industries are other sectors of Agriculture, Forestry and Fishing (25 per cent), Public Administration and Safety and Professional, Scientific and Technical Services (11 per cent), and Education and Training (5 per cent). As Figure 43 shows, while the Agricultural, Forestry and Fishing industry may be more competitive compared to Public Administration, there are still significant opportunities to earn more in other industries.

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Figure 43 Income, Agricultural and Forestry Scientists by industry



Source: Census of Population and Housing, 2016, TableBuilder

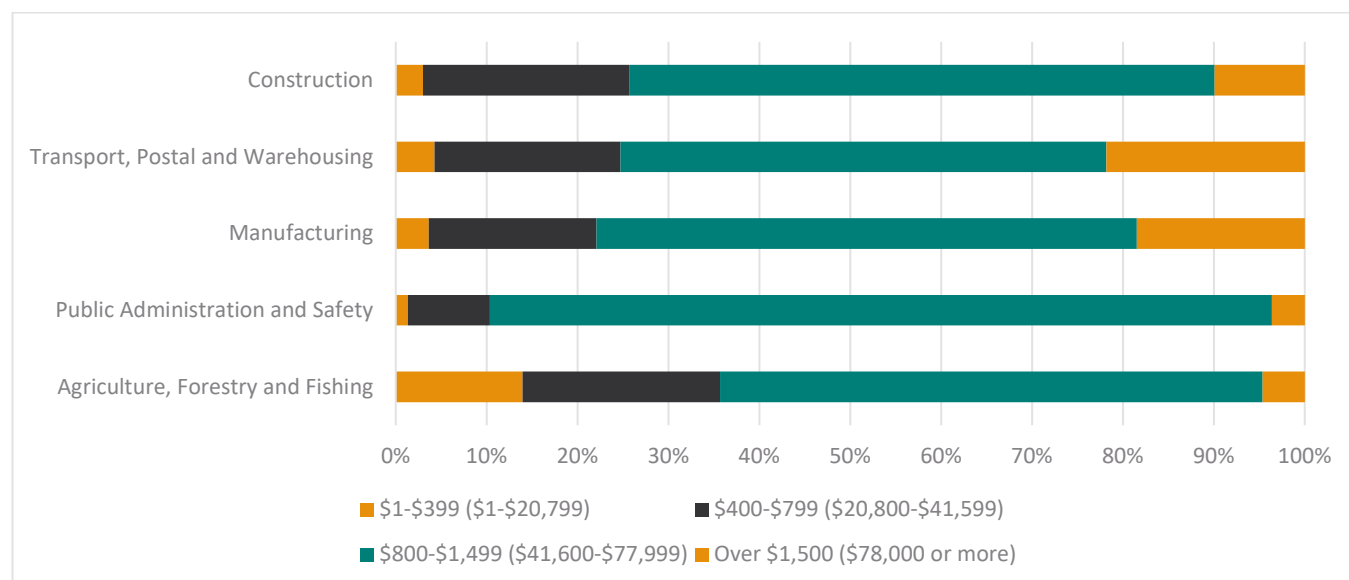
Truck Drivers

The largest group of Machinery Operators and Drivers in the Industry which are also employed in significant proportion outside of the Industry are people working in the occupation *Truck Drivers*.

Harvesting and Haulage employs 26 people in this occupation, and industry more broadly employs 23, out of 4,826 in the region (1 per cent). Significant employing industries in the region are Transport, Postal and Warehousing (52 per cent), Construction (13 per cent), Public Administration and Safety (5 per cent), Manufacturing (5 per cent) and other parts of Agriculture, Forestry and Fishing (3 per cent). As **Error! Reference source not found** Figure 44 shows, the Industry may not be offering competitive wages compared to opportunities in other industries in the region.

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Figure 44 Income, Truck Drivers by industry

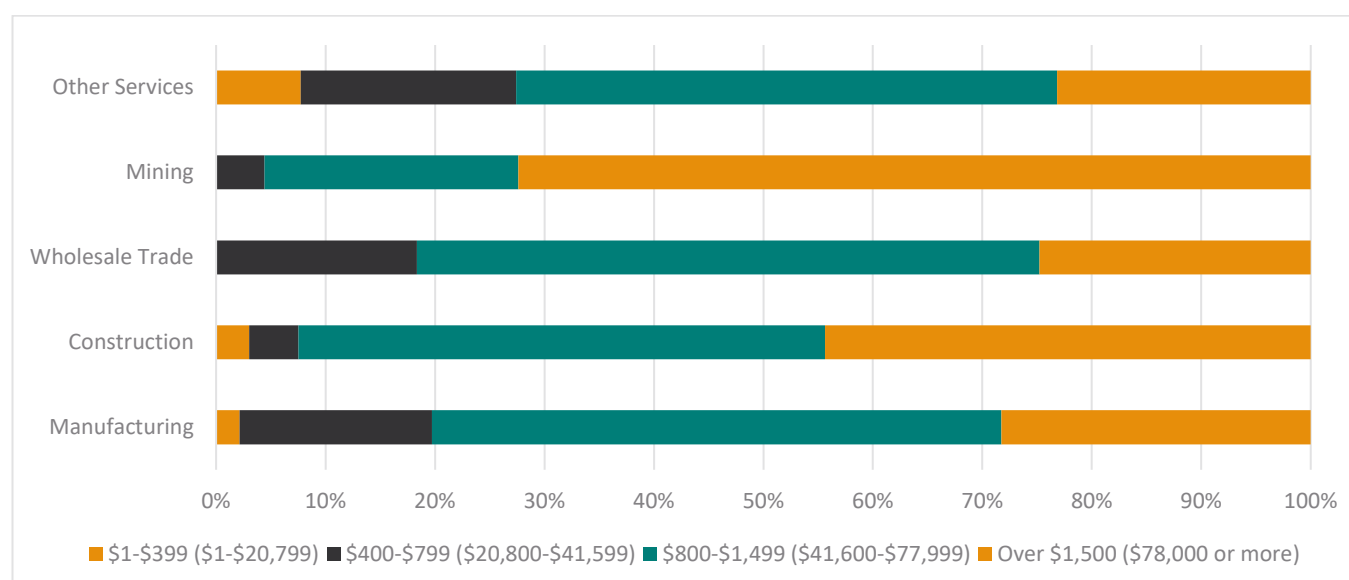


Source: Census of Population and Housing, 2016, TableBuilder

Metal Fitters and Machinists

There are 35 Metal Fitters and Machinists working in the Industry, mainly in Sawmilling and Processing (part of the Manufacturing industry, statistically). There are 1,647 Metal Fitters and Machinists working in other industries and sectors in the North-East NSW Hub region: Manufacturing (26 per cent), Other Services (16 per cent), Mining (11 per cent), Construction (9 per cent), and Wholesale Trade (7 per cent). Figure 45 shows that higher incomes may be available in Mining and Construction, relative to the Manufacturing industry.

Figure 45 Income, Metal Fitters and Machinists by industry

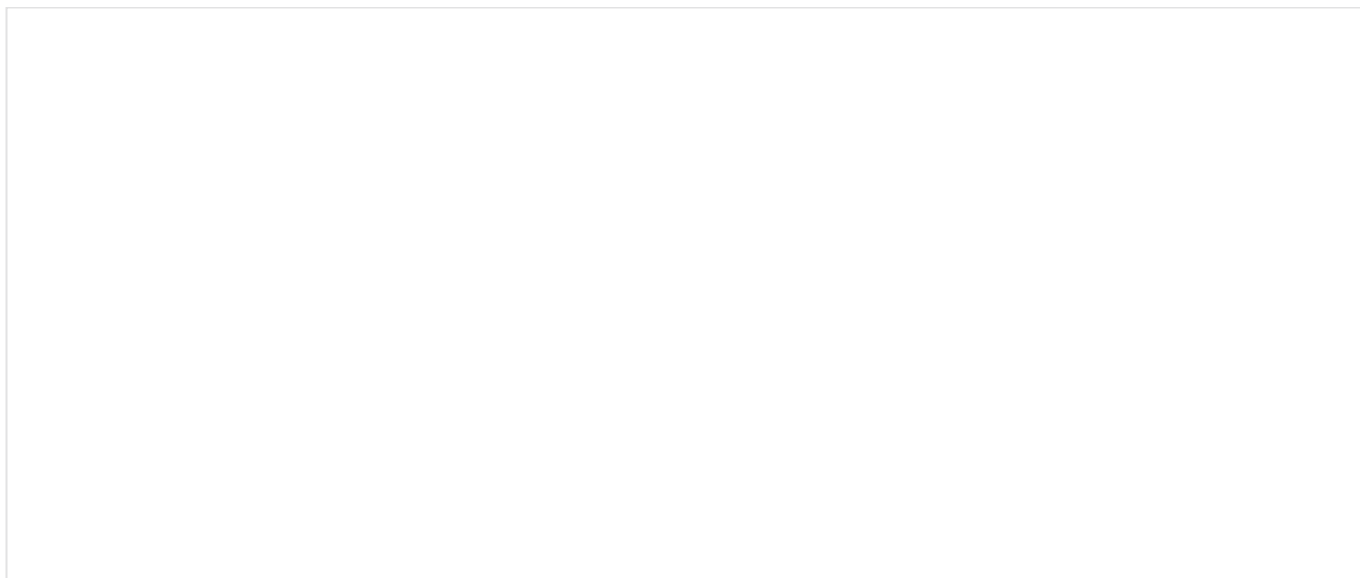


Source: Census of Population and Housing, 2016, TableBuilder

Other Farm, Forestry and Garden Workers

The largest group of Labourers in the Industry which are also employed in significant proportion outside of the Industry are Labourers working in the occupation *other farm, forestry and garden workers*. Forest Growing and Management employs 133 people, out of 546 in the region (24 per cent). Other significant employing industries are Administrative and Support Services (40 per cent), other sectors of Agriculture, Forestry and Fisheries (10 per cent), and Public Administration and Safety (9 per cent). Labourers in the category *Other Farm, Forestry and Garden Workers* could potentially earn more in either of the local industries employing people in this occupation (see Figure 46).

Figure 46 Income, Other Farm, Forestry and Garden Workers by industry



Source: Census of Population and Housing, 2016, TableBuilder

7.6 “Limited appropriate applicants”

7.6.1 Personal attributes sought from school leavers

Respondents were asked about the attributes they were looking for when recruiting workers from school. There were a number of themes which came out:

- Work ethic, including commitment, conscientiousness, reliability/punctuality and attitude (15)
- Ability or willingness to learn (7)
- Aptitude for manual labour (4)
- Mechanical aptitude (4)
- Interest in the job/working in the bush, including the hours (4)
- Common sense or initiative (4)
- Ability to work in a team (3)
- Honesty (3)
- Down to earth
- Presentable
- Communication skills

Most employers indicated that recruits from other industries required the same attributes as school leavers. Two additional observations made were:

“There is a challenge with attracting people to the industry. They will be on good money eventually.”

“Only people from other industries are fitters. Most new people are from within the industry, through word of mouth.”

7.6.2 Work Readiness

“Work Readiness Skills” includes qualities such as working as a team member, motivation, communication skills, problem solving and reliability.²⁵ A more detailed definition of Work Readiness is that it is a mixture of values, behaviours and skills.²⁶

One point raised in both Roundtable sessions, and in conversations with two of the local governments within the study region, is the “work readiness skills” of new employees, particularly those sourced through jobactive employment agencies.

²⁵ *Learning to work: A helping hand for young Australians* 2014, Australian Chamber of Commerce and Industry.

²⁶ *Being work ready: A guide to what employers want* 2016, Business Council of Australia.

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According to the local governments and non-employer stakeholders²⁷ present within this project, the issue is not confined to the Forest and Wood Products industry. One attendee of the Roundtables suggested that the lack of work readiness skills of their new recruits was due to their labour force being drawn from a socially disadvantaged region with a high prevalence of dysfunctional families. Their drug testing program reported a high incidence of alcohol and amphetamine abuse within their workforce.

The second Roundtable videoconference included a discussion on the need for and the logistics of initial development of work readiness skills in a program prior to recruitment by employers in the Sawmilling and Processing and Timber Manufactured Products sectors. Such a program could be developed by the Australian Government's Local Jobs Program, Training Services NSW, a Forest and Wood Products industry training provider and other stakeholders.

The Chair of the North Coast Jobs program indicated that in the North Coast region, there are typically around 10,000 people on Australian Government income support per year but that this had grown to about 21,000 since the Covid pandemic began in mid-2020, indicating a labour pool of about 11,000 people that could potentially have established work readiness skills and would only need basic Industry training prior to recruitment by the local industry. For the whole hub region, there are 43,235 people in receipt of the JobSeeker Payment as at March 2021, and increase of 10,801 from the pre-pandemic number of 32,434 (in March 2020).²⁸

7.7 Opportunities for new entrants

Respondents were asked what job roles they might have that would be suitable for workers who have recently left or completed year 12 and for workers who have come out of other industries.

The most common response in relation to new entrants from school was Labourer (27.3 per cent responses). A number of businesses also indicated that there were no opportunities for school leavers (18.2 per cent). Two respondents indicated that there were opportunities for apprenticeships – as a fitter or wood machinist in particular.

One indicated that they *"tend to avoid people this young"*.

Another highlighted the difficulties of transportation:

"They need to be able to get there – the mill starts at 6:30am and it's out of town, in farmland".

In the sawmills opportunities included: *"on the bench"*, tailing out, stacking (4), sorting, and docking, de-metalling, quality control, machine hands.

In Harvesting and Haulage a career path was outlined by a number of respondents, starting on a skidder.

"If you show better skills, you move on to excavator or loader. If you're exceptional you move on to harvester."

"Skidder operator. Pick up other skills along the way. Then dozer."

The Forest Growing and Management sector has few if any opportunities for Year 12 leavers.

²⁷ MEGT, TABMA, Local Jobs Program Employment Coordinators

²⁸ Department of Social Services, "Payment recipients by Local Government Area and payment type", available at <https://data.gov.au/data/dataset/dss-payment-demographic-data/resource/f72fe318-bfec-46e0-9f54-3c4efacf93c0>, last accessed 26 July 2021

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When asked the same question about opportunities for workers from other industries a number of respondents indicated that their answer would be the same as for year 12 leavers (31.8 per cent). The key difference was in the identification of truck drivers (13.6 per cent). The career path identified for Harvesting and Haulage contractors did not change with the age/experience of the worker.

Another difference was in identifying an opportunity for workers from other industries in leading hands and supervisors.

7.8 Training provided to new entrants

Consistent with the skills development of existing staff, the vast majority of training provided to school leavers was on the job non-accredited training by an internal trainer (90.9 per cent). This was also true for workers from other industries (77.3 per cent).

Only 40.9 per cent of businesses provided accredited training to school leavers and less to workers from other industries (31.8 per cent).

Most of the accredited training was single units (36.4 per cent for school leavers, 27.3 per cent for workers from other industries), followed by part qualifications (22.7 per cent for school leavers, 3.6 per cent for workers from other industries). Most of the single unit (27.3 per cent) and part qualification (13.6 per cent) training was provided in the Harvesting and Haulage sector with the remainder being provided in Sawmilling and Processing and/or timber manufactured products businesses.

Figure 47 What training do you provide to workers...? (number of respondents)

Training Provided to New Employees	From school	From other industries
On the job (non-accredited) (internal trainer)	20	17
Single units of competency	8	6
Part qualification/skill set	5	3
Full qualification/traineeship/apprenticeship	2	1
Other non-accredited training (External trainer)	2	3

Source: Hub interview data 2021

Only two businesses (one for workers from other industries) indicated they provided a full qualification or apprenticeship or traineeship: one was a Sawmilling and Processing company and the other Harvesting and Haulage.

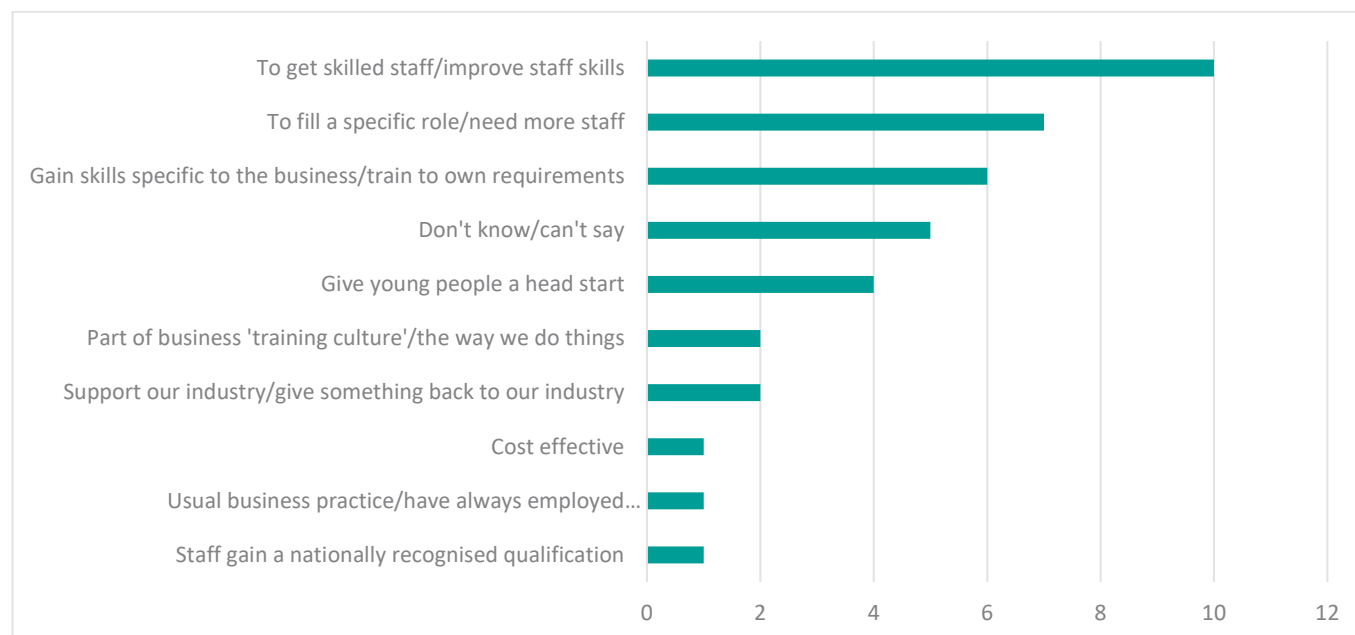
7.9 Apprenticeships and Traineeships

Of the respondents, one-third had put on an apprentice or trainee in the past 12-months (31.8 per cent). About half (52.0 per cent) had put on an apprentice or trainee in the past 5 years. Apprenticeships included industry specific apprenticeship like saw doctors and wood machinists as well as more general apprenticeships such as diesel mechanics and fitters. Traineeships were mostly in Harvesting and Haulage. This information is included in this section because it is likely that most apprenticeships and traineeships are new entrants, apprentices and/or trainees may also be existing workers.

Employers cited several reasons for taking on an apprentice or trainee. The most common reasons were to get skilled staff or improve staff skills; to fill a specific role; or to gain skills that are specific to the business. See Figure 48.

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Figure 48 What are the main reasons your organisation has had apprentices or trainees? (number of businesses)



Source: Hub interview data 2021

Other reasons identified by employers included:

- For compliance reasons, for example an electrician or a boiler attendant
- Succession planning and to address the ageing workforce
- To reward the loyalty of long-term employees.

7.9.1 Forest Growing and Management

Half (2) of forest growing and management companies had apprentices or trainees in the last five years, and none in the last 12 months. Both businesses identified the need to get skilled staff or improve staff skills as one of the main reasons the organisation had apprentices or trainees. One company also identified that it was part of the business culture, and the other indicated they had apprentices or trainees to gain specific skills or to fill a specific role.

7.9.2 Harvesting and Haulage

Four Harvesting and Haulage companies had apprentices or trainees in the last 12 months, and in the last five years. There was no common reason for taking on apprentices or trainees. One company indicated they took on trainees to fill a specific role or to gain specific skills. Another indicated that it was to get skilled staff, to gain specific skills and/or because it was part of the business 'training culture'. The third company indicated it was to give young people a head start, and the fourth indicated that it was cost effective, as well as to get skilled staff and/or to fill a specific role.

7.9.3 Sawmilling and Processing

Seven Sawmilling and Processing companies had apprentices or trainees in the last five years, and three of these companies had also had apprentices or trainees in the last 12 months. All 5 companies indicated that they had

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apprentices or trainees to get skilled staff. The next most common reason (for 3 businesses) was to fill a specific role, followed by gaining specific skills (2).

7.9.4 Timber Manufactured Products

Five timber manufactured products had apprentices or trainees in the last five years, and two of these had also had apprentices or trainees in the last 12 months. All 5 companies indicated that they had apprentices or trainees to get skilled staff. The next most common reason (for 4 businesses) was to fill a specific role, followed by gaining specific skills (3) and giving young people a head start (2).

8 Availability of Relevant Training

8.1 Barriers to Training

The employers were asked about the barriers to building skills via training by each occupation group. The results across all occupation groupings are presented in Figure 49.

Employers reported several inter-related challenges with obtaining accredited training that met their needs:

- The shortage of local trainers and assessors, and challenges of having a non-local trainer attend the region.
- The location of dedicated training facilities. This may include forests and plantations available for training of harvester operators.
- The financial cost of training in the form of time away from meeting production targets.

The largest number of businesses identified the lack of suitable trainers as an issue (19.1 per cent), mostly in relation to Machinery Operators and Drivers and/or Technicians and Trades Workers.

Nearly half of businesses (45.5 per cent) identified the time commitment of training as a barrier. Fewer businesses (40.9 per cent) identified the location of training as an issue, even though they identified it as an issue across more occupations. The same number of businesses indicated that accredited training did not meet their needs (40.9 per cent).

Just over a third of businesses (36.4 per cent) indicated that they had a lack of awareness of training options, and/or that they weren't sure how to enrol in training.

The cost of training was an issue for 18.2 per cent of businesses. For one business it was the cost of training Managers, Clerical and Administrative Workers and Sales Staff. For the other three businesses it was the cost of training Machinery Operators and Drivers. The cost of downtime to attend training was a bigger issue – identified as a barrier by 31.8 per cent of businesses.

“Wages, travel expenses, production down time.”

There is no doubt however, that these issues are interlinked. The financial cost of training is related to the time commitment of training and the shortage of suitable trainers. For example, an employee may need training in the use of a piece of harvesting equipment or in a full qualification. The *lack of suitable trainers* in the Industry means that the employee will need to travel to the *location of training facility*. This takes them away from the workplace for an extended period and increases the *time commitment* required. Travel increases the *cost of downtime to attend training*, and compounds the cost to the employer particularly if the learner is part of team that cannot meet production targets because a critical member is absent.

Other observations that were reported in the survey were:

- The need for trainers to have credibility with the learners. Ideally, the trainer would have worked in the timber industry in the job roles that they are now training.
- Employers had well-developed and effective training systems which resulted in their workforces being well-trained. This would be compromised if a small number of experienced, skilled, and respected employees were to leave the organisation with short notice.

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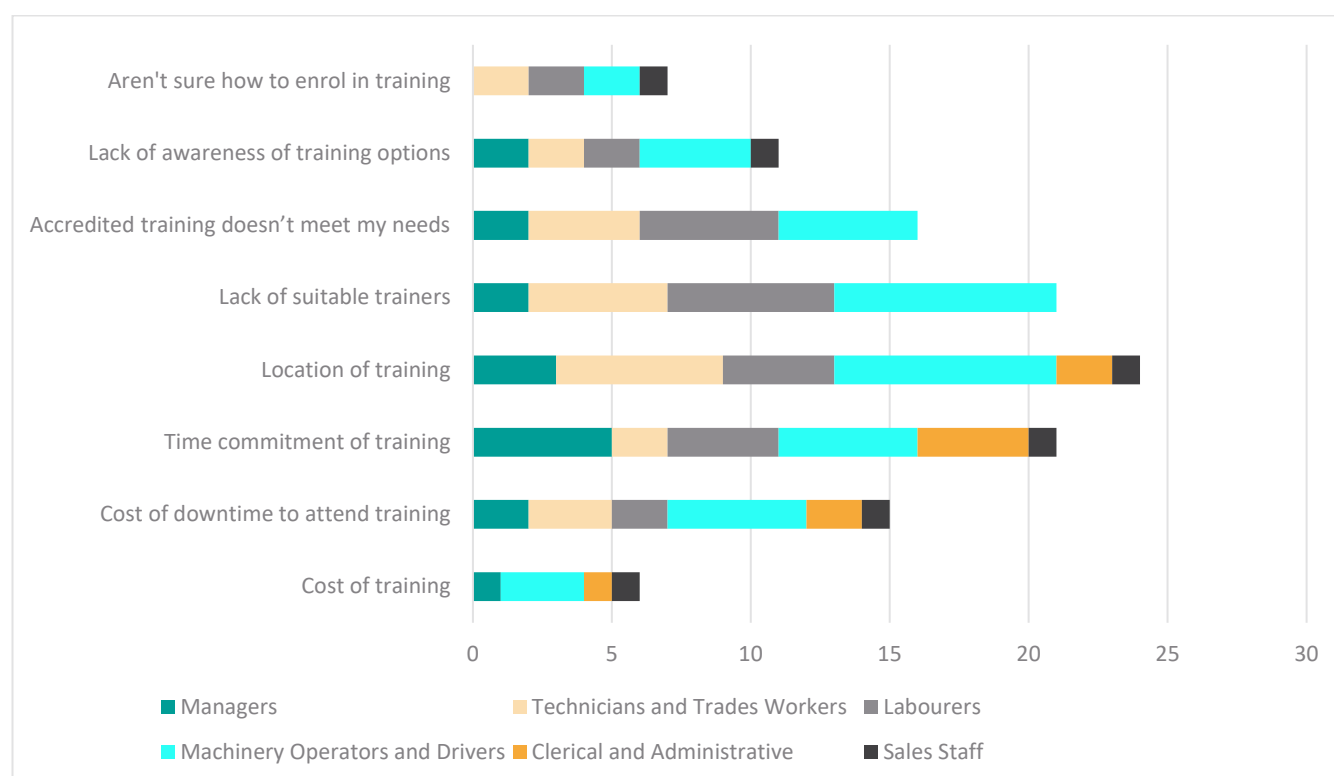
- The issue of the lack of local trainers and assessors, and a local training facility, was raised in both Roundtable videoconferences. One of the attendees mentioned that in the early 2000's they had all workers within their mill trained in the Certificate II or Certificate III in Sawmilling and Processing. Although they are interested in conducting this training again, they can't find a local training provider.

The barriers to training varied by occupation group. For Managers, the time commitment of training was most commonly identified by businesses as a barrier. For Technicians and Trades Workers the location of training was most common.

The location of training and the lack of suitable trainers were equally significant for Machinery Operators and Drivers. Businesses identified the most barriers for this group. Conversely training for clerical and administrative workers faced the fewest barriers for businesses, with the time commitment of training identified by the largest number of businesses.

The largest number of businesses identified a lack of suitable trainers as the issues for training Labourers, with a substantial proportion also indicating that the accredited training did not meet their needs.

Figure 49 What training barriers are there to filling skills gaps? (percentage of businesses, by occupation)



Source: Hub interview data 2021

Counterintuitively medium sized businesses identified a larger number of barriers on average (6.4) compared to smaller businesses (Small businesses tended to identify a larger number of barriers across the occupations (an average of 5.7)).

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8.1.1 Forest Growing and Management

Barriers to training were identified by three respondents. A lack of suitable training was cited by one in respect of each of Managers, Machinery Operators and Drivers, and Labourers, as was accredited training does not meet my needs.

8.1.2 Harvesting and Haulage

Harvesting and Haulage mostly identified barriers to training in relation to Machinery Operators and Drivers (7 responses compared to 2 responses for the other occupations). The cost of down time and lack of suitable trainers were identified as barriers by four respondents, as was the cost of downtime. The time commitment of training and the location of training were identified by three respondents each.

8.1.3 Sawmilling and Processing

Six responses were made by Sawmilling and Processing companies. Barriers to training were identified in relation to the location of training (4), mostly for Technicians and Trades Workers (4), followed by Labourers (3) and Machinery Operators and Drivers (3) and then Managers (2).

A lack of suitable trainers was also identified as a barrier for four respondents, again mostly for Technicians and Trades Workers (4), followed by Labourers (2) and Machinery Operators and Drivers (2), and then Managers (1).

Three respondents indicated that Accredited training doesn't meet their needs in relation to Technicians and Trades Workers (3), Labourers (2) and Machinery Operators and Drivers (2).

8.1.4 Timber Manufactured Products

The time commitment of training was raised by four respondents as a barrier, mostly in respect of Labourers (3) and Managers (3), but also Machinery Operators and Drivers (2) and Technicians and Trades Workers (2).

Five respondents indicated that Accredited Training doesn't meet their needs, against mostly in respect of Labourers (4), followed by Technicians and Trades Workers (3), Machinery Operators and Drivers (2) and Managers (1).

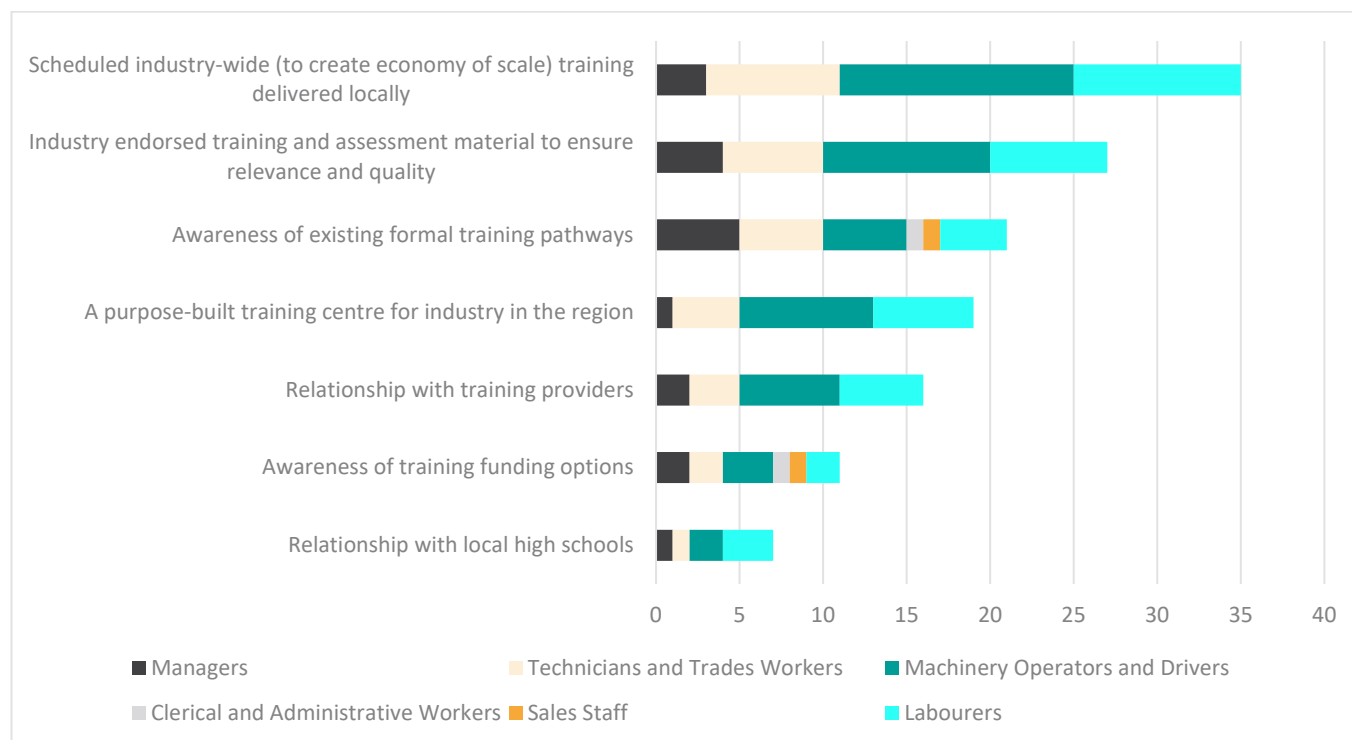
Five respondents identified a lack of suitable trainers was a barrier. Again, this was mostly in respect of Labourers (4) followed by Machinery Operators and Driver (3) and Technicians and Trades Workers (2).

8.2 Overcoming Barriers to Training

Survey participants were provided with a list of potential methods to overcome the barriers to training for each occupation group.

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Figure 50 What would help remove or reduce barriers to training, skills or education? (number of businesses, by occupation)



Source: Hub interview data 2021

Table 11 What would help remove or reduce barriers to training, skills or education? (number of businesses, by occupation)

	Managers	Technicians and Trade workers	Machinery operators and drivers	Labourers	Clerical and administrative workers	Sales staff	Total business responses
Scheduled industry-wide (to create economy of scale) training delivered locally	3	8	14	10	0	0	17
Industry endorsed training and assessment material to ensure relevance and quality	4	6	10	7	0	0	12
A purpose-built training centre for industry in the region	1	4	8	6	0	0	8
Awareness of existing formal training pathways	5	5	5	4	1	1	7
Relationship with training providers	2	3	6	5	0	0	6
Awareness of training funding options	2	2	3	2	1	1	3
Relationship with local high schools	1	1	2	3	0	0	4
Total business responses	8	12	20	15	1	1	25

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Source: Hub interview data 2021

The respondents identified that a significant barrier to training in the Industry is the shortage of trainers and assessors. The respondents provided some options to address this that can be classified as short, medium and long-term solutions.

In the short term:

- Multiple employers from within the same sector could cooperate to build a sufficient cohort of learners to minimise the financial cost of bringing in a trainer from outside the region; and
- The NSW ITAB could support employers to access information on formal training pathways and funding options, including how to access relevant training providers.

In the medium term, develop industry-endorsed training and assessment material to ensure relevance and quality. This step would go in conjunction with identifying appropriate local workers to become qualified as trainers and assessors, that can then train their peers prior to endorsement by a Registered Training Organisation (RTO).

A longer-term solution could be to establish a purpose-built training centre for the Industry in the region, particularly for Machinery Operators and Drivers.

8.2.1 Forest Growing and Management

Options to remove or reduce barriers to training were identified by three respondents. Awareness of training pathways was the most commonly cited: by two respondents (in respect of Managers and Technicians and Trades Workers) and by one respondent (in respect of Labourers and Machinery Operators and Drivers).

8.2.2 Harvesting and Haulage

The Harvesting and Haulage sector mostly identified options to remove barriers in relation to Machinery Operators and Drivers (7 response). Scheduled industry wide training were the most commonly cited options (6) followed by a purpose built training centre for the region (3).

8.2.3 Sawmilling and Processing

Responses to this questions were received from 8 Sawmilling and Processing companies. Scheduled industry wide training delivered locally was identified by 7 respondents, for Labourers and for Technicians and Trades Workers, and by 6 respondents in respect of Machinery Operators and Drivers.

A purpose built training centre was identified as a way of reducing or removing barriers, mainly for Machinery Operators and Drivers (5), followed by Labourers (4), Technicians and Trades Workers (3) and Managers (1).

Industry endorsed training and assessment was identified by 6 respondents in total, five each in respect of Technicians and Trades Workers, Labourers and Machinery Operators and Drivers; and one in relation to Managers.

8.2.4 Timber Manufactured Products

Scheduled industry-wide training was identified by six respondents as a way to remove or reduce barriers, mostly in respect of Managers, Technicians and Trades Workers and Labourers (5).

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Industry endorsed training material was identified as a way to remove or reduce barriers by four respondents for Machinery Operators and Drivers (4), Labourers (3), Technicians and Trades Workers (2) and Managers (1).

Raising awareness of existing formal training pathways was identified as a way to remove or reduce barriers by four respondents, mostly in respect of Managers (3) and Technicians and Trades Workers (3).

8.3 Availability of Training

An employer considering skills development of their employees has a number of options available to them:

- **Enrolling employees into accredited apprenticeships or traineeships.**

This provides the highest standard of training quality. The employer, the learner, the training provider and the NSW Government (through Training Services NSW) will enter into a training contract; the learner will be enrolled into a full-qualification; training fees will be subsidised under the Smart and Skilled program and training quality will be monitored by the NSW Government.

An employer that is considering taking on an apprentice or trainee should first contact a local Group Training Organisation (GTO) who can advise them on employment conditions, the most suitable qualification and training provider, and the most recent advice on state and federal funding arrangements and programs.

- **Enrolling learners into a Part Qualification**

This option provides accredited, nationally recognised training in subjects of immediate interest and value to both the learner and the employer, without the need to enter into a full qualification or a full training contract. Some part qualifications can be subsidised under Smart and Skilled at the discretion of the Training Services NSW regional office.

An employer that is considering a part qualification should first contact either their local office of Training Services NSW or a registered training organisation with the authority to deliver the accredited training. They will be able to determine the appropriate training for the job roles and advise on funding arrangements from state and federal governments.

- **Fee for Service Training**

This mode of training is a private arrangement between the training provider and the employer and learner. It offers the maximum flexibility in the design and delivery of training. The stakeholders can design the training plan to incorporate accredited or non-accredited topics; and the training provider can be a Registered Training Provider or not. All training fees are paid by the employer or learner without NSW Government involvement.

An employer that is considering this mode of training can contact the training provider directly to negotiate a training plan, lessons, and training fees.

8.3.1 Full Qualifications

There are 19 nationally recognised qualifications specifically developed for the Industry in the Forest and Wood Products training package. According to training.gov.au, there are about 21 Registered Training Providers (RTOs) that carry at least one FWP qualification on their scope of registration. Not all of these RTOs are active in NSW, even though NSW has the largest forestry industries and therefore has the largest training market.

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The VET qualifications that are specialised for the Forest and Wood Products industry are delivered by a relatively small number of training providers (refer to Attachment Three for a list of qualifications and providers broken down by industry sector).

The scheme to provide subsidies for vocational education and training as apprenticeships and traineeships in NSW is known as Smart and Skilled. Only 5 RTOs have been endorsed by the NSW Government to deliver apprenticeships and traineeships under Smart and Skilled in respect of the FWP Training Package. This is noted in Attachment Three.

8.3.2 Part Qualifications

An alternative to training as apprenticeships and traineeships, and even to full qualifications, is training as Part-Qualifications or Skill Sets. These are programmes of training to a set of nationally accredited Units that are much smaller and flexible compared to full qualifications. Funding for part qualifications may be available under Smart and Skilled: further advice on this can be provided by a regional office of Training Services NSW. Part qualifications and skill sets are suited to:

- Targeted, specific training for existing employees to acquire skills for their job role;
- To meet minimum competency requirements for a job role. For example, the *Skill set for a native forest operator*, made up of just 6 units of competency;
- Pre-apprenticeships, to gain basic skills for a worker prior to commencing a full apprenticeship.

8.3.3 Apprenticeships and Traineeships

Apprenticeships and traineeships involve a combination of on-the-job training and formal education. Apprenticeships are generally available in traditional skilled trades whereas traineeships are offered across many vocations.

The two apprenticeships in the FWP training package are Saw Technicians and Wood Machinists. Both these qualifications require the learner to complete nationally accredited Certificate III training. All qualifications in the FWP Training Package are available as traineeships, however thin markets, regional locations, and difficulty in attracting young people to the Industry are all factors inhibiting the uptake of these traineeships.²⁹

Over 99,000 people are currently undertaking an apprenticeship or traineeship in NSW (as of 1 May 2021³⁰). Of these, the Hub region of North Coast Mid North Coast, Hunter and Central Coast accounts for about 24,500 places.

There are just 49 apprentices and trainees associated with specialised Forest and Wood Products qualifications in NSW. This is a tiny fraction (0.06 per cent) of all apprenticeships and traineeships in the state. These placements are in both the hardwood and softwood industries and include all industry sectors including the timber truss and frame sector. The number in the Forest and Wood products Industry from the North Coast Mid North Coast, Hunter and Central Coast is 14.

²⁹ Skills Impact, FWP, *Annual Update to Industry Skills Forecast and Proposed Schedule of Work 2021*, p.24 available at

³⁰ Training Services NSW Apprenticeship and Traineeship data, accessed 14 May 2021

<https://public.tableau.com/profile/business.reporting#!/vizhome/ATTrainingContractsInTraininganalysis/InTrainingbyGender>

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Table 12 Numbers of Registered apprentices and trainees in all industries in NSW

Industry	Apprenticeship	Existing Worker Traineeship	New Entrant Traineeship	Grand Total
Building and Construction	19,571	53	657	20,281
Utilities and ElectroTechnology	13,087	0	162	13,249
Automotive	8,769	15	208	8,992
Community Services and Health	0	994	7,514	8,508
Finance, Insurance and Business Services	0	2,196	4,548	6,744
Manufacturing Engineering	5,578	104	187	5,869
Retail and Wholesale	2,561	407	2,741	5,709
Tourism	2,090	400	2,289	4,779
Transport and Distribution	0	364	3,529	3,893
Primary Industry	2,150	172	833	3,155
Property Services	0	469	2,086	2,555
Furnishing, Light Manufacturing, Textile	2,066	0	80	2,146
Food Industry	1,077	442	545	2,064
Information Technology	814	46	291	1,151
Public Sector Industry	0	5	450	455
Mining	0	14	393	407
Process Manufacturing	15	73	311	399
Sport and Recreation	0	3	199	202
Racing	31	3	128	162
Communications	130	0	8	138
Forest Industry	12	4	33	49
Arts and Entertainment	0	0	35	35
Total	57,951	5,764	27,227	90,942

Source: Training Services NSW Apprenticeship and Traineeship Statistics, 2021

Smart Development of Future Workforce

Training Services NSW has reported the numbers and age distribution of all registered apprenticeships and traineeships, in full-time, part-time and school-based training, in the North Coast and Mid-North Coast region. The results are presented in Table 13 below. The region makes up about 8 per cent of NSW apprentices and trainees. Around 9 per cent of the learners in the region are Aboriginal and Torres Strait Islander, which is the third-highest proportion in NSW.

Apprentices may have to attend the RTO campus for training. Due to the small number of RTOs delivering Saw Technology and Woodmachining, this could mean leaving their home to stay in Creswick, Victoria or Tumut, NSW for about a week at a time. This can be challenging for young people with little life experience or transport options or workers with family commitments.

Table 13 Age class distribution of registered apprentices and trainees in the North Coast & Mid North Coast region

Training Type	19 and under	20 - 25	26 - 45	46 - 60	Over 60	Grand Total
Apprenticeship	1,644	1,783	985	101	10	4,523
Existing Worker Traineeship	16	103	174	69	9	371
New Entrant Traineeship	826	706	696	256	19	2,503
Grand Total	2,486	2,592	1,855	426	38	7,397

Source: Training Services NSW Apprenticeship and Traineeship Statistics, 2021

The age class distribution of all apprentices and trainees is quite broad. Understandably, the majority (68 per cent) are aged 25 or below. However, almost one third are aged over 26 (see Table 13).

8.3.4 Group Training Organisations (GTOs)

A GTO is the direct employer of apprentices and trainees, who then places the learner with a host employer. The learner attends the workplace of the host employer whilst receiving on-the-job training for their apprenticeship or traineeship from their workplace mentor as well as being enrolled in a VET qualification. GTOs may be registered or un-registered, operate for profit or not-for-profit. They may also be labour hire companies. Some GTOs are also RTOs or they may only be the direct employer of the learner and then work with a separate RTO for the VET component of the apprenticeship/traineeship.

GTOs support the apprenticeship and traineeship system in Australia by providing opportunities for employers who can't support an apprentice or trainee for the full term of an apprenticeship or traineeship, or think it is too administratively cumbersome, to still take on an apprentice or trainee. They can also provide employment opportunities for apprenticeships and traineeships that otherwise might not have existed.

8.3.5 School Based Apprenticeships and Traineeships

There are a number of accredited VET qualifications that are available to students as they complete the final years of their schooling and are considering their career options. Naturally, a school-leaver with a formal Certificate has an interest in building on their qualification in the years following their schooling. They may choose to continue on with a full-time apprenticeship or traineeship that builds on the training that they have just completed.

Smart Development of Future Workforce

School-based apprenticeships and traineeships (SBATs) allow school students to commence an apprenticeship or complete a traineeship while still at school³¹. They are a combination of paid employment, schoolwork and vocational education and training that leads towards an industry recognised national qualification. SBATs are available to all Year 10, 11 and 12 high school students in NSW. SBATs are regulated, overseen and supported by Training Services NSW.

The VET component of the SBAT is generally delivered by a registered training organisation such as TAFE NSW. This component of the education generally contributes 4 units towards the Higher School Certificate (HSC).

The benefits of SBATs are that they provide a pathway from school into paid employment; learners obtain workplace skills that are required by employers; contribute towards a nationally recognised qualification; and expose the students to the range of career opportunities within the Industry.

The following forest and wood products qualifications are currently listed as being suitable for school-based delivery:

- FWP20116 Certificate II in Forest Growing and Management
- FWP20216 Certificate II in Harvesting and Haulage
- FWP20316 Certificate II in Sawmilling and Processing
- FWP20516 Certificate II in Timber Manufactured Products

In NSW, since January 2020, there have been around 2,500 students register for a school-based apprenticeship or traineeship. The breakdown by region and industry is presented below in Table 14.

The trends in this table indicate some positive points:

1. There is a significant number of students that have an interest in taking up a trade while still at school.
2. The update of VET and trades is supported by the NSW Government.
3. Although the industries that take on the majority of VET students do not have many transferable skills with the forest and wood products sector, there are still significant numbers of students in Building and Construction; Transport and Distribution; Primary Industries; Utilities and ElectroTechnology; Automotive; Manufacturing Engineering; Furnishing, and Light Manufacturing and Textiles; than could potentially enter the forest and wood products industry.
4. The North-Coast and Mid-North Coast region has about 20 per cent of NSW school-based apprentices and trainees (outside of the Sydney metropolitan regions).

Table 14 shows that, since March 2014, there have been a total of 12 school-based apprenticeships in Forest and Wood Products qualifications in NSW³². They were spread across three qualifications: Certificate II in Harvesting and haulage, Certificate II in Sawmilling and processing and Certificate II in Timber manufactured products. They were delivered in the regions of Illawarra & South East NSW and Western Sydney & Blue Mountains. There has been no delivery of school-based training in Forest and Wood Products in the Hub region to date.

³¹

³²

Smart Development of Future Workforce

Table 14 Commencements in school-based apprenticeships and traineeships in NSW, by region and industry (NSW Department of Education).

Industry	Hunter & Central	Western Sydney & Blue	Southern & South Western	Illawarra & South East	North Coast & Mid	Central & Northern	New England	Western NSW	Riverina	Total
Retail and Wholesale	130	216	109	100	64	49	25	17	6	716
Community Services and Health	167	18	14	43	43	6	57	36	40	424
Building and Construction	19	82	72	20	33	45	11	8	6	296
Finance, Insurance and Business Services	27	29	19	37	31	12	12	29	17	213
Transport and Distribution	28	22	27	12	12	16	5	5	1	128
Primary Industry	8	9	2	21	15	6	12	20	15	108
Utilities and ElectroTechnology	18	20	28	8	8	12	4	5	3	106
Automotive	7	12	16	7	15	6	15	10	8	96
Tourism	9	4	3	14	31	6	6	12	7	92
Sport and Recreation	6	1	44	7	9	5		5	2	79
Manufacturing Engineering	8	1	2	3	3		3		9	29
Food Industry	1	1		3	1		6	6	4	22
Furnishing, Light Manufacturing, Textile		3	4	2	2	1	4			16
Property Services	2		2	1	2		1	1	1	10
Arts and Entertainment	5		2					1		8
Information Technology		1		2		1	1	2	1	8
Forest Industry		1		2						3
Total	435	420	344	282	269	165	162	157	120	2,354

Source: Training Services NSW Apprenticeship and Traineeship Statistics, 2021

8.3.6 School – Forest Learning and Secondary Education

The Australian Forest Education Alliance (AFEA) is a network of forest educators and forestry communication specialists from organisations such as

- Australian Forest Products Association
- Forestry Corporation of New South Wales
- Forest Education Foundation, Tasmania
- Forest Products Commission, Western Australia
- Forest and Wood Products Australia Limited
- Primary Industries and Regions, South Australia
- Sustainable Forestry Program, Southern Cross University, NSW
- VicForests, Victoria

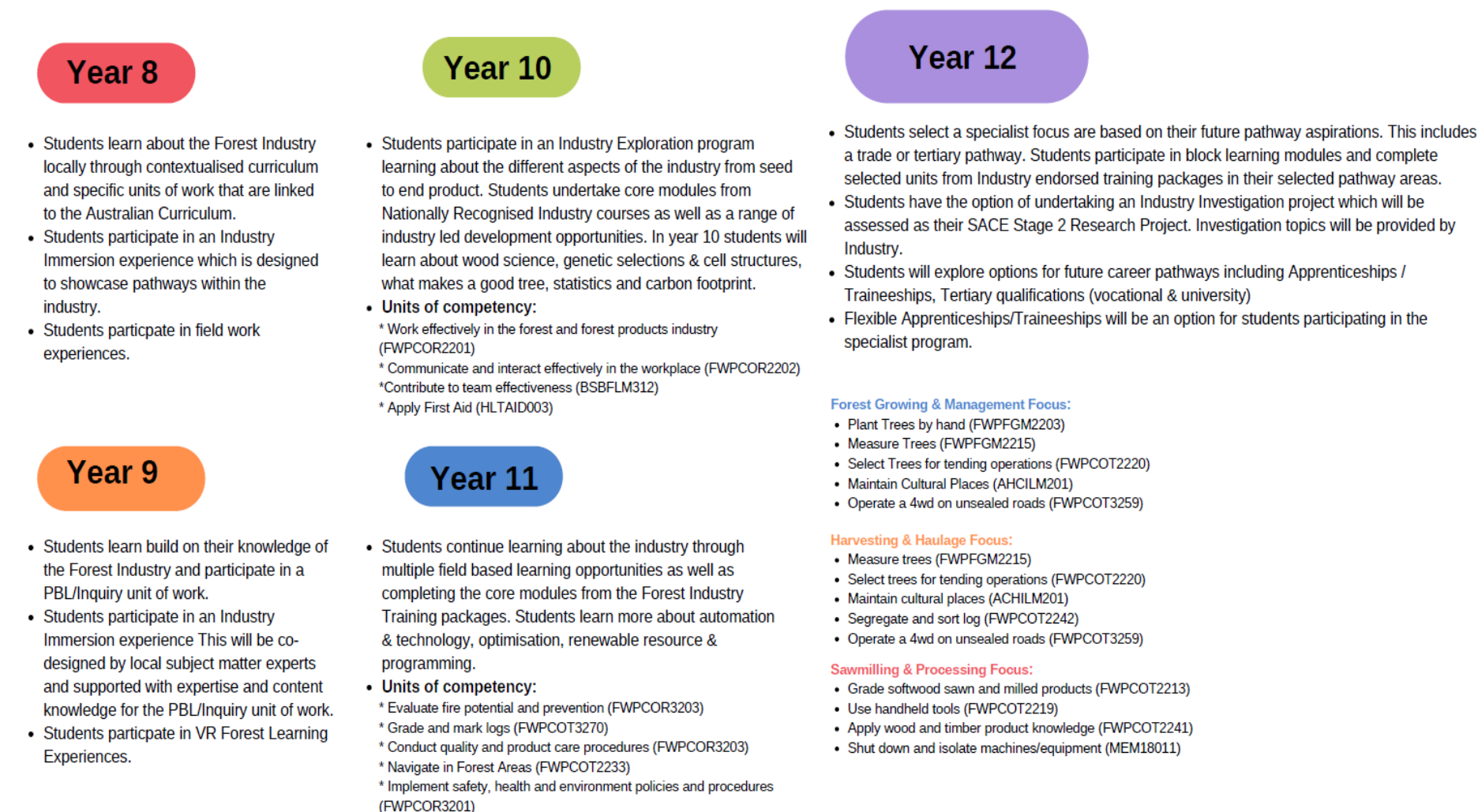
AFEA maintains the Forest Learning website (forestlearning.edu.au) to provide school teachers, school students and the general public with educational resources on Australian forests and forest-based products and services. It also provides access to forestry teaching resources.

AFEA collaborates with the Australian Curriculum, Assessment and Reporting Authority (ACARA) to support the delivery of their forestry educational resources in against the state school syllabi. These resources are provided free of charge.

Forest Learning has collaborated with the Green Triangle forest industry to build a learning pathway for school students entering their Industry. Students are introduced to forest science, wood science, forest management practices and technological advances. A summary of the program is supplied in Figure 50 below.

Smart Development of Future Workforce

Figure 51 Pathway to a career in the forest and timber industry



Source: Forest Learning, The Ultimate Renewable Pathway Program

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8.4 Government Support for Training

The three tiers of government in Australia offer support for training and skills development.

The Australian Government, through the Department of Education, Skills and Employment (DESE), operates the Local Jobs Program that “... *brings together expertise, resources and access to funding at the local level to support job seekers and their communities in each region. The program has a particular focus on reskilling, upskilling and employment pathways and is part of supporting Australia’s economic recovery from the COVID-19 pandemic*”³³. There are two Local Jobs Program regions within the study region (North Coast and Mid North Coast), each with their own Employment Facilitator, Local Jobs and Skills Taskforce, and Local Jobs plan for the region.

The NSW State Government operates Training Services NSW (TSNSW) as a division of the NSW Department of Education. The functions of TSNSW include:

- leading strategic policy, planning, funding, regulation and advice on VET;
- the implementation of funded programs, including Smart and Skilled, apprenticeships and traineeships and adult and community education. This includes
 - the Regional Industry Education Partnerships (RIEP) program which strengthens connections between local industry and secondary schools to support students in planning their career pathways;
 - Skills Brokers that assist employers to local new staff that are ready to fill roles, find ways to upskill existing staff that have been stood down or are at risk of being stood down or facing retrenchment.
- undertaking contract management of approved Smart and Skilled training providers and implementing quality assurance and performance monitoring to achieve the best possible outcomes for students;
- managing a number of initiatives to support the training and employment of Aboriginal and Torres Strait Islander people.

The NSW State Government has also assisted local councils to develop Regional Economic Development Strategies (REDS) to guide government investment in development initiatives in regional NSW. All of these REDS recognised forestry as a significant industry within the region, and almost all of them include strategic priorities to grow the forestry and timber industries as they are “Engines of Growth”³⁴.

8.4.1 Smart and Skilled

Smart and Skilled provides eligible students with:

- an entitlement to government-subsidised training up to and including Certificate III
- government funding for higher-level courses (Certificate IV and above) in targeted priority areas.

The NSW Skills List covers the subsidised qualifications, from Certificate II to Advanced Diploma, selected Foundation Skills courses, all apprenticeships and traineeship and all the qualifications where their units can be

³³ Department of Education, Skills and Employment, Australian Government, <https://www.dese.gov.au/local-jobs-program>, accessed 22 July 2021.

³⁴ NSW Government, Regional Economic Development Strategies <https://www.nsw.gov.au/regional-nsw/regional-economic-development-strategies>, accessed 22 July 2021.

selected for part qualifications. Qualifications on the Skills List are those that will lead to jobs and further career options. There are about 700 qualifications on the NSW Skills List.

To be eligible for Smart and Skilled training you must:

- Be an Australian citizen, permanent resident, humanitarian visa holder or New Zealand citizen
- Be aged 15 years or older
- Live or work in NSW, and
- No longer be at school.

8.4.2 Training Services NSW Aboriginal Initiatives

The NSW Department of Education is committed to improving the vocational outcomes and wellbeing of Aboriginal and Torres Strait Islander people so that they excel and achieve in every aspect of their education and training.

In line with this policy, Training Services NSW has created the Aboriginal Initiatives unit to manage a number of programs. These programs focus on providing workplace mentoring, improving access to employment and training and creating business opportunities for Aboriginal and Torres Strait Islander people.

- **Barrangirra: Skilling for Employment Initiative.** This initiative consolidates the long-standing “The Way Ahead for Aboriginal People” and “New Careers for Aboriginal People” programs to strengthen the end to end support for Aboriginal and Torres Strait Islander learners. This includes culturally appropriate mentoring, improved post-training outcomes and building stronger links for Aboriginal people with current opportunities for employment and training flowing from broader Department and Government priorities for Aboriginal participation in the NSW workforce and in major projects.
- **Aboriginal Business Advisory Initiative.** This initiative support for existing Aboriginal owned and operated businesses to grow and diversify their business.
- **Bert Evans Apprentice Scholarships**
https://www.training.nsw.gov.au/apprenticeships_traineeships/students/bert_evans_scholarships.html
 The Bert Evans Apprentice Scholarships were first launched in 2014 to assist apprentices who have experienced hardship in their life to successfully complete their apprenticeship. The Bert Evans Apprentice Scholarships assist apprentices in NSW who have demonstrated:
 - hardship in their personal circumstances;
 - aptitude for vocational education and training to lead to successful completion of their trade training; and
 - a positive attitude and application in the workplace and in off-the-job training.

The Scholarships are worth \$5,000 each year for up to three years.

Applicants must be active in an approved apprenticeship at the time of being awarded the Scholarship.

Continued funding is subject to the Scholarship holder maintaining their eligibility during the life of the Scholarship as outlined in the Bert Evans Apprentice Scholarships Guidelines.

9 Workforce development plan

There are three models for workforce development planning that may be appropriate for the Industry in the North-East NSW region. The models can be thought of as short-term, medium term and long term solutions for skills development:

- The first is skills development of the existing workforce;
- The second is the recruitment of new entrants to the Industry as apprentices and trainees;
- The third is building the skills of school students so that they are ready to enter the workforce at the completion of their school studies.

9.1 Skills development of the existing workforce

This can be done using the existing networks of stakeholders and their current projects that support skills development:

- The lead agencies in this would be the DESE Local Jobs Program and the TSNSW Skills Brokers. The involvement of the Local Jobs Program will provide the links to the local government REDS and linkages to a range of Australian Government employment programs.
- Funding for training would primarily come from NSW Government Smart and Skilled for full qualifications listed in Appendix A: List of Training Providers by Industry Sector and Qualification.

Employers may need assistance in developing training plans that are appropriate for their business operations, their employees and their job roles. ForestWorks or an RTO may be able to offer this assistance.

Ideally, a number of employers in a small geographical region would coordinate the training of their workforces in the same qualifications at the same time to enhance the financial viability of the program for the RTO.

9.2 Recruitment of Apprentices and Trainees

Employers can use the supporting services of TSNSW and their Skills Brokers and RIEP program to take advantage of local knowledge and networks to boost student engagement with local industry. The RIEP program is designed to:

- build partnerships between employers and local schools
- support employers to engage with schools and share their expectations for their future workforce
- help students develop the skills they need to get a job; and
- strengthen links between what is learned at school and what is needed in the workplace.

Again, funding for training is provided through Smart and Skilled that will subsidise the cost of the training fees for apprenticeships and traineeships in qualifications listed in Attachment Three.

Engagement with local schools will assist in identifying suitable candidates for apprenticeships and traineeships. Once they are ready to transition to full-time employment, they can then be employed by a GTO. It is possible for the GTO to place the learner with a number of employers during their apprenticeship.

9.3 Forest Education in Schools

Under this system, the local forest and wood products industry would need to support the delivery of resources developed by Forest Learning into local schools so that lessons align with the state school curriculum. Alternatively, it could mean school-based traineeships of VET qualifications with appropriate work placement. For example, one model may be the Certificate II in Forest growing and management, Certificate II in Harvesting and haulage of Certificate II in Sawmilling and processing delivered to Years 10-11-12

Units could include the Skill Set for native forest operator; Maintain & Operate chainsaws; Log Grading; Sawn Timber grading; stacking timber. This meets bare minimum employment Units and introduces concepts of WHS, environmental compliance in a commercial environment. Alternatively, it could include skill sets in:

- AHCSS00032 - Identify Plants for Indigenous Land Management Skill Set
- AHCSS00117 - Introduction to Conservation and Ecosystem Management Skill Set
- PUASS00086 - Simple Prescribed Burn Officer

The training may have greater uptake by students if the skills developed can provide pathways into other allied local industries so that participants can see that they have options available to them. For example, parks management, fire control, agriculture, manufacturing. The training should be promoted as building transferable skills. Graduates of this training would have a good foundation in forestry and timber knowledge and skills; exposure to a workplace; and provided with options for further study or career aspirations.

9.4 Schedule of Skills Needs

Table 15 and Table 16 are a schedule of skills need and corresponding qualifications that could address those skills needs.

Table 18 to Table 25 provide advice about available training providers and availability of funding.

The report only includes skills needs with related vocational solutions.

The skills needed are described by occupation and job role.

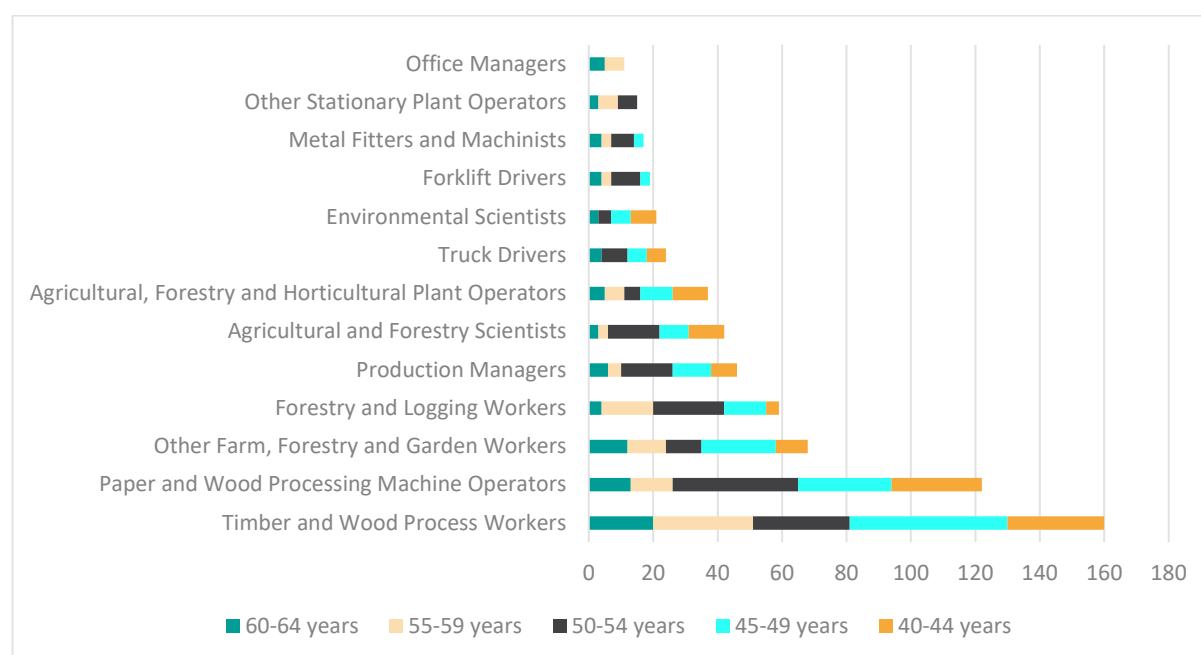
Occupations have been selected based on:

- their prevalence in each sector (see XR);
- whether the skills are presently in shortage (see XR);
- estimated future demand (see XR); and
- estimates of numbers exiting the industry in the short-medium term.

Estimated numbers of people exiting the industry are based on the age classes of workers at the last census 2016 (see Figure 52).

Smart Development of Future Workforce

Figure 52 Age of workers in prevalent occupations



A schedule of vocational education and training (VET) sector qualifications has been provided in Attachment Three: List of Training Providers by Industry Sector and Qualification.

This table also outlines:

- The availability of the qualification to be delivered as an apprenticeship or traineeship;
- The option of the qualification to be delivered as school-based training;
- Whether the qualification is eligible for government funding under the NSW Government Smart and Skilled program;
- The list of registered training organisations (RTOs) that are registered to deliver the qualification. Please note that although these RTOs can deliver these qualifications, they may not always be eligible for Smart and Skilled funding for a range of reasons. For example, they may have not applied to the NSW Government for recognition as Smart and Skilled providers.

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Table 15 Certificate II and III Qualifications (ANZSCO Skill Level 4 or 3)

	Certificate II (Skill Level 4)	Certificate III (Skill Level 4 or 3)
AHC		Arboriculture (AHC30820) 362212 Arborist <ul style="list-style-type: none"> Arborist Consulting Arborist Rural and Environmental Pest Management (AHC30318) 841912 Pest or Weed Controller <ul style="list-style-type: none"> Pest Control Project Officer
AUR		Automotive Diesel Engine Technology 321212 Diesel Motor Mechanic 321214 Small Engine Mechanic <ul style="list-style-type: none"> Diesel Engine Technician Automotive Diesel Fuel Technology (AUR31420) 321212 Diesel Motor Mechanic <ul style="list-style-type: none"> Automotive Heavy Vehicle Diesel Fuel Technician Diesel Fuel Specialist Automotive Engine Reconditioning (AUR31316) 321214 Small Engine Mechanic <ul style="list-style-type: none"> Engine Reconditioner
FWP	Forest Growing and Management (FWP20116) 841311 Forestry Worker <ul style="list-style-type: none"> Forest Nursery Production Worker (Assistant) Silviculture Worker Tree Planter Tree Pruner Pest and Weed Controller Chainsaw Operator – Basic Forestry Worker Farm Forestry Worker 	Forest Growing and Management (FWP30116) 841311 Forestry Worker <ul style="list-style-type: none"> Forest Nursery Production Operator Silviculture Operator Chainsaw Operator (Tree Feller) – Intermediate to Advanced Forest Firefighter
	Harvesting and Haulage (FWP20216) 841312 Logging Assistant 841313 Tree Faller <ul style="list-style-type: none"> Harvesting Worker (Assistant) Chainsaw Operator (Tree Feller and Cross Cutter) – Basic 	Harvesting and Haulage (FWP30216) 721112 Logging Plant Operator Operator <ul style="list-style-type: none"> Mechanical Site Preparation Operator Earthmoving Plant Operator Bulldozer Operator Excavator Operator Mechanised Harvesting Machine Operator Feller Buncher Operator Single Grip Harvester Operator Log Extraction Machine Operator Forwarder Operator Loader Operator Skidder Operator Cable Logging Operator Chainsaw Operator (Tree Feller) – Intermediate to Advanced Mechanised In-field Wood Chipper Operator Log truck driver Forest Firefighter

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	Certificate II (Skill Level 4)	Certificate III (Skill Level 4 or 3)
	Sawmilling and Processing (FWP20316) 711312 Wood Processing Machine Operator 839412 Sawmill or Timber Yard Worker <ul style="list-style-type: none"> • Kiln Worker • Timber Grader • Treatment Plant Worker • Production Worker • Sawmill Worker 	Sawmilling and Processing (FWP30316) 711312 Wood Processing Machine Operator 839412 Sawmill or Timber Yard Worker <ul style="list-style-type: none"> • Benchman • Chipper Operator • Head Rig Operator • Kiln Operator • Machine Operator (e.g. Finger Jointing, Moulding, Planning) • Production Technician • Timber Grader • Timber Products Technician • Treatment Plant Operator • Saw Technician • Optimisation Technician • Wood Machinist • Technician • Sawyer
	Timber Manufactured Products (FWP20516) 839412 Sawmill or Timber Yard Worker 839413 Wood and Wood Products Factory Worker <ul style="list-style-type: none"> • Grader • Manufacturing Assistant (Timber Products) • Saw Operator • Timber Manufacturing Worker • Engineered Wood Product Manufacturing Worker • Timber Products Worker • Timber Puller 	Timber Manufactured Products (FWP30516) 839412 Sawmill or Timber Yard Worker <ul style="list-style-type: none"> • Press Operator • Jig Setter • Machine Operator (e.g. Finger Jointing, Moulding, Planning) • Saw Operator • Kiln Operator • Timber Manufactured Products Technician • Engineered Wood Products Technician
		Saw Technology (FWP31019) 323315 Saw Maker and Repairer <ul style="list-style-type: none"> • Saw Technician
		Wood Machining (FWP31119) 394213 Wood Machinist <ul style="list-style-type: none"> • Wood Machinist
MEM		Engineering – Fixed and Mobile Plant Mechanic (MEM31419) 321211 Motor Mechanic (General) 321212 Diesel Motor Mechanic 321214 Small Engine Mechanic 323211 Fitter (General) <ul style="list-style-type: none"> • Plant Mechanic
		Engineering – Mechanical Trade (MEM30219) 321211 Motor Mechanic (General) 323212 Fitter and Turner 323214 Metal Machinist (First Class) <ul style="list-style-type: none"> • Fitter Machinists • Fluid Power Mechanics • Maintenance Fitter • Maintenance Mechanic • Mechanical Engineering Tradesperson • Mechanical Fitters • Metal Machinists
		Engineering – Fabrication Trade (MEM30319) 323213 Fitter-Welder Welder

Smart Development of Future Workforce

Table 16 Certificate IV, Diploma and Advanced Diploma (Skill Level 3 or 2)

	Certificate IV (Skill Level 3)	Diploma (Skill Level 2)	Adv. Diploma (Skill Level 2)
AHC		Agriculture (AHC50116) 121299 Crop Farmers (Tree Farmer) <ul style="list-style-type: none"> • Farm Manager • Farmer • Production Horticulture Manager 	Arboriculture (AHC60520) 362212 Arborist <ul style="list-style-type: none"> • Senior Consulting Arborist
BSB	Business (BSB40120) 512111 Office Manager <ul style="list-style-type: none"> • Administrator • Office Administrator 	Business (BSB50120) 512111 Office Manager <ul style="list-style-type: none"> • Administration Manager • Administrator • Customer Service Manager • Office Manager • Team Leader • Unit Leader 	
FWP	Timber Processing (FWP40216) <ul style="list-style-type: none"> • Customer Service Manager • Production Supervisor (Timber) • Timber Manufacturing Supervisor 	Forest and Forest Products 133511 Production Manager (Forestry) <ul style="list-style-type: none"> • Forestry Manager 133512 Production Manager (Manufacturing) <ul style="list-style-type: none"> • Production Manager (Timber) • Timber Manufacturing Manager 	

10 Methodology

10.1 Survey

ForestWorks conducted face-to-face or telephone meetings with 22 businesses in March and April of 2021. In addition, 47 employers were emailed a hyperlink to a comparable Survey Monkey survey that was open for two weeks to provide additional information on skills shortages and employment issues. There were 3 responses, of which 2 were incomplete.

The Interview Questions used is at Attachment Four.

Respondents were broadly representative of the industry in terms of location (3.1), sector (3.2), company size (3.3) and resource (3.4).

The survey of a sample of employers in the region revealed trends that were common across and within the sectors of the Forest and Wood products in the region, although individual employers may deviate from these trends due to other factors.

10.2 Roundtables

ForestWorks originally planned to conduct four roundtables in Grafton, Coffs Harbour, Lismore and Port Macquarie. These forums were intended to gather information from employers in the regions without an in-depth survey, as well as contribute to the validation of the initial findings of our report. However, due to the Covid-19 travel restrictions of June/July 2021, the roundtables were changed to two Zoom videoconferences held after work hours. Virtual attendance provided the opportunity for contributions from more geographically distant employers.

ForestWorks invited:

- Employers from the forest and wood products industry;
- Department of Education, Training Services NSW to speak on state-government support for vocational education and training;
- Local government representatives to provide advice on support from local government economic development teams;
- Group Training Organisations (GTOs) to speak on the process of employing an apprentice or trainee.

Invitations were emailed to participants who could then register via EventBrite. Registrants received an email with a hyperlink to a Zoom videoconference.

The participants were presented with the initial findings of the ForestWorks research as a prompt for discussion, to either validate or contradict our findings.

The first session had 10 registration and 5 attendees; the second session had 8 registrations and 4 attendees.

10.3 Workforce development tool

The ForestWorks workforce development tool was intended to be applied to a small number of businesses in face-to-face meetings at the same time as the Roundtables were being conducted. However, due to the Covid-related travel restrictions of July 2021, the roundtables were converted to online videoconferences. ForestWorks remains available to apply the workforce development tool to a small number of businesses in the region once travel restrictions have been lifted.

10.4 ABS and other Data Sources

Desktop research was conducted to establish the current situation and establish trends with the available data. Sources are listed in the references and throughout. The latest information was used, however in some instances the data is a few years out of date. Particularly, Australian Bureau of Statistics (ABS) census data, as the census is due this year (2021) meaning the latest available census data is 5 years old (2016). ABS Data is provided for the Hub region as defined by the Local Government Areas of:

- Armidale
- Byron
- Glen Innes
- Lismore
- Port Macquarie
- Tenterfield
- Ballina
- Clarence Valley
- Kempsey
- Mid-Coast
- Port Stephens
- Tweed
- Bellingen
- Coffs Harbour
- Kyogle
- Nambucca
- Richmond Valley
- Walcha

For the purposes of this report, data from the ABS defines the Forest Industry using the following ANZSIC Divisions and Subdivision Codes and Titles:

A Agriculture, Forestry and Fishing

03 Forestry and Logging

030 Forestry and Logging

0301 Forestry

This class consists of units mainly engaged in growing standing timber in native or plantation forests, or timber tracts, for commercial benefit. This class also includes the gathering of forest products such as mushrooms, kauri gum or resin from forest environments.

0302 Logging

This class consists of units mainly engaged in logging native or plantation forests, including felling, cutting and/or roughly hewing logs into products such as railway sleepers or posts. This class also includes units mainly engaged in cutting trees and scrubs for firewood.

05 Agriculture, Forestry and Fishing Support Services

051 Forestry Support Services

0510 Forestry Support Services

This class consists of units mainly engaged in providing support services to forestry. Services include silvicultural services, such as planting, pruning and thinning trees, forest reforestation, forest plantation conservation or maintenance. This class also includes units mainly engaged in operating forestry planting stock nurseries.

C Manufacturing

14 Wood Product Manufacturing

141 Sawmilling and Processing

1411 Log Sawmilling

This class consists of units mainly engaged in manufacturing rough sawn timber, and boards.

1412 Wood Chipping

This class consists of units mainly engaged in manufacturing softwood or hardwood wood chips.

1413 Timber Resawing and Dressing

This class consists of units mainly engaged in resawing or dressing timber, timber boards and mouldings. Dressing timber includes seasoning (kiln or air drying) or chemical preservation.

149 Other Wood Product Manufacturing

1493 Veneer and Plywood Manufacturing

This class consists of units mainly engaged in manufacturing veneers and plywood

1494 Reconstituted Wood Product Manufacturing

This class consists of units mainly engaged in manufacturing wood boards and sheets from reconstituted wood fibres such as wood chips, sawdust, wood shavings, slabwood or off-cuts. Also included are units that manufacture laminations of timber and non-timber materials (including decorative plastic laminates on boards or other substrates).

Data has also been obtained from the NCVER database. Where possible this data is provided for the following Statistical Area Level 2 (SA2) regions:

- | | | |
|------------------------|---------------------------|------------------------------|
| • Armidale | • Clarence Valley | • Coffs Harbour |
| • Inverell-Tenterfield | • Kempsey-Nambucca | • Port Macquarie |
| • Port Stephens | • Richmond Valley Coastal | • Richmond Valley Hinterland |
| • Tweed Valley | | |

LGA boundaries are considered in the design of SA2s and a reasonable degree of concordance could be expected between the Hub Region LGAs and SA2s.

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For the purposes of this report, data from the ABS defines occupations in the Forestry Industry using the following ANZSCO. This list of occupations is based on cross-referencing the Unit Group with the ANZSIC codes identified above. Some decisions have been taken to eliminate occupations within a unit group which are unlikely to be applicable to the Industry:

Minor Group	Unit Group	Occupations	Specialisations
1 Managers			
121 Farmers and Farm Managers plan, organise, control, coordinate and perform farming operations in agricultural establishments to grow crops, and breed and raise livestock, and fish and other aquatic life.	1212 Crop Farmers plan, organise, control, coordinate and perform farming operations to grow crops.	121299 Crop Farmers nec This occupation group covers Crop Farmers not elsewhere classified. <i>Skill Level 1</i>	Tree Farmer
132 Business Administration Managers plan, organise, direct, control and coordinate the corporate, financial, human resource, policy, planning, research and development activities and guidelines within organisations.	1322 Finance Managers plan, organise, direct, control and coordinate the financial and accounting activities within organisations.	132211 Finance Manager Chief Financial Officer Finance Director Financial Controller Plans, organises, directs, controls and coordinates the financial and accounting activities within an organisation. <i>Skill Level 1</i>	
133 Construction, Distribution and Production Managers plan, organise, direct, control and coordinate building and construction, engineering, importing, exporting	1334 Manufacturers plan, organise, direct, control and coordinate the operations of small manufacturing establishments.	133411 Manufacturer Plans, organises, directs, controls and coordinates the operations of a small manufacturing establishment.	

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Minor Group	Unit Group	Occupations	Specialisations
and wholesaling, manufacturing, production, supply and distribution activities within organisations.	1335 Production Managers plan, organise, direct, control and coordinate the production activities of forestry, manufacturing and mining organisations including physical and human resources.	Skill Level 1	
		133511 Production Manager (Forestry) Plans, organises, directs, controls and coordinates the production activities of a forestry operation including physical and human resources.	Harvest Manager (Forestry) Operations Manager (Forestry)
	1336 Supply and Distribution Managers plan, organise, direct, control and coordinate the supply, storage and distribution of goods produced by organisations.	Skill Level 1	
		133512 Production Manager (Manufacturing) Plans, organises, directs, controls and coordinates the manufacturing activities of an organisation including physical and human resources.	Operations Manager (Production) Plant Manager (Manufacturing) Works Manager (Manufacturing)
139 Miscellaneous Specialist Managers	1336 Supply and Distribution Managers	133611 Supply and Distribution Manager Plans, organises, directs, controls and coordinates the supply, storage and distribution of goods produced by an organisation.	Logistics Manager Supply Chain Manager
	1399 Other Specialist Managers This unit group covers Specialist Managers not elsewhere classified. It includes Arts Administrators or	139912 Environmental Manager Plans, organises, directs, controls and coordinates the development and implementation of an environmental	

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Minor Group	Unit Group	Occupations	Specialisations
This minor group covers Specialist Managers not elsewhere classified.	Managers, Environmental Managers, Laboratory Managers, Quality Assurance Managers and Sports Administrators.	<p>management system within an organisation by identifying, solving and alleviating environmental issues, such as pollution and waste treatment, in compliance with environmental legislation and to ensure corporate sustainable development.</p> <p>Skill Level 1</p> <p>139913 Laboratory Manager</p> <p>Plans, organises, directs, controls and coordinates the operations of a research or production laboratory</p> <p>Skill Level 1</p> <p>139914 Quality Assurance Manager</p> <p>Quality Facilitator</p> <p>Plans, organises, directs, controls and coordinates the deployment of quality systems and certification processes within an organisation.</p> <p>Skill Level 1</p> <p>139999 Specialist Managers nec</p> <p>This occupation group covers Specialist Managers not elsewhere classified.</p>	

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Minor Group	Unit Group	Occupations	Specialisations
149 Miscellaneous Hospitality, Retail and Service Managers This minor group covers Hospitality, Retail and Service Managers not elsewhere classified.	1494 Transport Services Managers organise and control the buying and selling of vehicles for rental agencies and coordinates the leasing of vehicles, the operations of railway stations, and the operations of enterprises that operate fleets of vehicles to transport goods and passengers.	<i>Skill Level 1</i>	
		149413 Transport Company Manager Organises and controls the operations of an enterprise that operates a fleet of vehicles to transport goods and passengers. Registration or licensing may be required.	
		<i>Skill Level: 2</i>	
2 Professionals			
224 Information and Organisation Professionals support organisations, government, individuals and the community by analysing, organising and managing information and data, and by providing advice on policy, business and organisational methods, and the value of property and other items.	2247 Management and Organisation Analysts assist organisations to achieve greater efficiency and solve organisational problems, and study organisational structures, methods, systems and procedures.	224711 Management Consultant Business Consultant Assists organisations to achieve greater efficiency and solve organisational problems.	Business Analyst
		<i>Skill Level 1</i>	
		224712 Organisation and Methods Analyst Procedures Analyst Studies organisational structures, methods, systems and procedures.	Change Management Facilitator Industry Analyst Quality Auditor Skills Auditor
		<i>Skill Level 1</i>	

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Minor Group	Unit Group	Occupations	Specialisations
225 Sales, Marketing and Public Relations Professionals plan, develop, coordinate and implement programs of information dissemination to promote organisations, goods and services, and represent companies in selling a range of technical, industrial, medical, pharmaceutical and ICT goods and services.	2251 Advertising and Marketing Professionals develop and coordinate advertising strategies and campaigns, determine the market for new goods and services, and identify and develop market opportunities for new and existing goods and services.	225111 Advertising Specialist Advertising Account Executive Advertising Account Manager Creative Director (Advertising) Devises and coordinates advertising campaigns which encourage consumers to purchase particular goods or services.	
		Skill Level 1 225112 Market Research Analyst Determines the market for new goods and services, develops advertising strategies, and evaluates the best business sites for commercial organisations.	
		Skill Level 1 225113 Marketing Specialist Marketing Consultant Marketing Coordinator Marketing Officer Identifies market opportunities and advises on the development, coordination and implementation of plans for pricing and	Brand Manager Product Manager Sales Promotion Officer

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Minor Group	Unit Group	Occupations	Specialisations
232 Architects, Designers, Planners and Surveyors design building exteriors and interiors, and landscapes; conduct survey work to precisely position geographical features, and design, prepare and revise maps; design information for visual communication, publication and display, and products for manufacture; and develop and implement plans and policies for controlling the use of land.	2322 Cartographers and Surveyors apply scientific and mathematical principles to design, prepare and revise maps and charts, plan, direct and conduct survey work to determine, delineate, plan and precisely position tracts of land, natural and constructed features, coastlines, marine floors and underground works, and manage related information systems.	promoting an organisation's goods and services. <i>Skill Level 1</i> 232211 Cartographer Map Maker Applies scientific and mathematical principles to design, prepare and revise maps and charts. Registration or licensing may be required.	
		<i>Skill Level 1</i> 232212 Surveyor Geomatician Geomatic Engineer Plans, directs and conducts survey work to determine, delineate, plan and precisely position tracts of land, natural and constructed features, coastlines, marine floors and underground works, and manages related information systems. Registration or licensing may be required.	
	2341 Agricultural and Forestry Scientists advise farmers, rural	234113 Forester	Forestry Adviser Forestry Consultant

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Minor Group	Unit Group	Occupations	Specialisations
234 Natural and Physical Science Professionals perform analytical, conceptual and practical tasks in relation to environmental factors and agricultural production, the chemical and physical properties of the universe, the extraction and processing of mineral ores, life forms including the physiology and biochemistry of humans, plants and animals, and disease prevention.	industries and government on aspects of farming, develop techniques for increasing productivity, and study and develop plans and policies for the management of forest areas.	Studies, develops and manages forest areas to maintain commercial and recreational uses, conserve flora and fauna, and protect against fire, pests and diseases. <i>Skill Level 1</i> 234311 Conservation Officer Environmental Officer Develops and implements programs and regulations for the protection of fish, wildlife and other natural resources. <i>Skill Level 1</i>	Silviculturist Landcare Facilitator
	2343 Environmental Scientists	234312 Environmental Consultant Environmental Adviser Environmental Analyst Analyses and advises on policies guiding the design, implementation and modification of government or commercial environmental operations and programs. <i>Skill Level 1</i>	
	study, develop, implement and advise on policies and plans for managing and protecting the environment, flora, fauna and other natural resources.	234313 Environmental Research Scientist Environmental Scientist	Air Pollution Analyst Ecologist Water Quality Analyst

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Minor Group	Unit Group	Occupations	Specialisations
Skill Level 1			
3 Technicians and Trades Workers			
311 Agricultural, Medical and Science Technicians perform tests and experiments, and provide support to Professionals engaged in agriculture, medicine and science including inspecting animals, plants and agricultural produce.	3114 Science Technicians perform tests and experiments, and provide technical support functions to assist with research, design, production and teaching in chemistry, earth sciences, life sciences, and physical sciences.	311411 Chemistry Technician <i>Chemistry Technical Officer</i> Performs laboratory tests on organic and inorganic chemicals, analyses test data and carries out technical functions in support of Chemists or Chemical Engineers in a wide variety of areas such as fuels, agricultural products, food, pharmaceuticals, paints, metals, plastics, textiles, detergents, paper, fertilisers and cosmetics.	
		Skill level 2 311412 Earth Science Technician Earth Science Technical Officer Collects and tests earth and water samples, records observations and analyses data in support of Geologists or Geophysicists.	Meteorological Observer Soil Science Technical Officer
		Skill level 2 311413 Life Science Technician Identifies and collects living organisms and conducts field and laboratory studies	Biological Technical Officer Botanical Technical Officer Ecological Technical Officer

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Minor Group	Unit Group	Occupations	Specialisations
		in support of Life Scientists or Environmental Scientists.	Environmental Technical Officer Forestry Technical Officer Wood Technologist
		Skill level 2	
		311499 Science Technicians nec	
		This occupation group covers Science Technicians not elsewhere classified.	
		Skill level 2	
		312114 Construction Estimator	
		Building Estimator	
		Prepares and delivers estimates and cost plans for construction projects up to the tender settlement stage.	
		Skill level 2	
		312116 Surveying and Cartographic Technician	
		Surveying Technologist	
		Collects, records and evaluates survey data and prepares maps, charts and plans in support of Surveyors or Cartographers. Registration or licensing may be required.	Aerial Survey Technician Photogrammetrist
		Skill level 2	
		312911 Maintenance Planner	
312 Building and Engineering Technicians	3121 Architectural, Building and Surveying Technicians		
perform tests and provide technical support to Construction Managers, Architects and Engineering Professionals in research, design, construction, operation and maintenance of equipment, distribution systems and installations, and resource estimation and site inspection.	perform technical functions to assist Construction Managers, Architects and Surveyors by supervising and inspecting construction sites, estimating time, costs and resources, inspecting plumbing work, and collecting and evaluating survey data and preparing maps and plans.		

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Minor Group	Unit Group	Occupations	Specialisations
		Maintenance Scheduler	
		Shutdown Coordinator	
		Shutdown Planner	
	3129 Other Building and Engineering Technicians	Develops maintenance planning strategies, and schedules, coordinates and monitors the maintenance of all plant equipment.	
	This unit group covers Building and Engineering Technicians not elsewhere classified. It includes Maintenance Planners, Metallurgical or Materials Technicians, and Mine Deputies.	Skill level 2	
		312999 Building and Engineering Technicians nec	
		This occupation group covers Building and Engineering Technicians not elsewhere classified. Registration or licensing may be required.	
		Skill level 2	
321 Automotive Electricians and Mechanics	3212 Motor Mechanics	321211 Motor Mechanic (General)	
repair and maintain automotive electrical systems and motor vehicle and other internal combustion engines	repair, maintain and test motor vehicle and other internal combustion engines and related mechanical components.	Maintains, tests and repairs petrol engines and the mechanical parts of lightweight motor vehicles such as transmissions, suspension, steering and brakes. Registration or licensing may be required.	
		Skill Level 3	

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Minor Group	Unit Group	Occupations	Specialisations
322 Fabrication Engineering Trades Workers cast, shape, cut, join and finish metal.	3223 Structural Steel and Welding Trades Workers cut, shape, join and repair metal components of iron and steel structures, boilers, pressure vessels and pipes, ships and other vessels.	321212 Diesel Motor Mechanic Maintains, tests and repairs diesel motors and the mechanical parts of trucks, buses and other heavy vehicles such as transmissions, suspension, steering and brakes. Registration or licensing may be required. Skill Level 3	
		321214 Small Engine Mechanic Maintains, tests and repairs engines of chainsaws, lawn mowers, garden tractors and other equipment with small engines. Registration or licensing may be required. Skill Level 3	Chainsaw Mechanic
		322311 Metal Fabricator Marks off and fabricates structural steel and other metal stock to make or repair metal products and structures such as boilers and pressure vessels. Skill Level 3	
		322312 Pressure Welder Assembles, welds and repairs pressure vessels and pipes to relevant standards.	

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Minor Group	Unit Group	Occupations	Specialisations
323 Mechanical Engineering Trades Workers machine and prepare aircraft systems, metal parts, subassemblies and precision instruments.	3232 Metal Fitters and Machinists fit and assemble fabricated metal parts into products, set up machining tools, production machines and textile machines, and operate machining tools and machines to shape metal stock and castings.	Skill Level 3 322313 Welder (First Class) Fabricates and repairs metal products using various welding techniques.	
		Skill Level 3 323211 Fitter (General) Fits and assembles metal parts and subassemblies to fabricate production machines and other equipment.	Diesel Fitter- Mechanic Fitter-Machinist Fitter-Mechanic Maintenance Fitter Mechanic (Diesel and Heavy Earthmoving Equipment) Plant Mechanic
		Skill Level 3 323212 Fitter and Turner Fits, assembles, grinds and shapes metal parts and subassemblies to fabricate production machines and other equipment.	
		Skill Level 3 323213 Fitter-Welder Fits, assembles and welds metal parts and subassemblies to fabricate production machines and other equipment.	
		Skill Level 3 323214 Metal Machinist (First Class) Sets up and operates machine tools to shape	Automotive Machinist Metal Machine Setter

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Minor Group	Unit Group	Occupations	Specialisations
		and form metal stock and castings to fine tolerances, using detailed drawings and specifications.	Metal Turner Milling Machinist Vertical Borer
		Skill Level 3	
		323299 Metal Fitters and Machinists nec	
		This occupation group covers Metal Fitters and Machinists not elsewhere classified.	Printing Engineer
		Skill Level 3	
		323315 Saw Maker and Repairer	
	3233 Precision Metal Trades Workers fabricate, assemble, maintain and repair metal precision instruments	Makes, repairs, sets and sharpens blades for circular, band and other saws.	Saw Sharpener
		Skill Level 3	
341 Electricians	3411 Electricians	341111 Electrician (General)	
design, assemble, install, test, commission, diagnose, maintain and repair electrical networks, systems, circuits, equipment, components, appliances and facilities for industrial, commercial and domestic purposes, and service and repair lifts, escalators and related equipment.	design, assemble, install, test, commission, diagnose, maintain and repair electrical networks, systems, circuits, equipment, components, appliances and facilities for industrial, commercial and domestic purposes, and service and repair lifts, escalators and related equipment	Electrical Fitter	
		Installs, tests, connects, commissions, maintains and modifies electrical equipment, wiring and control systems. Registration or licensing is required.	Electrical Contractor
		Skill Level 3	
		341112 Electrician (Special Class)	

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Minor Group	Unit Group	Occupations	Specialisations
		Services and repairs intricate and complex electrical and electronic circuitry. Registration or licensing is required.	
		Skill Level 3	
362 Horticultural Trades Workers	3622 Gardeners	362212 Arborist	
prepare and sell floral arrangements and flowers, establish and maintain gardens, parks and surfaces used for sport, and plant, cultivate and maintain plants and trees.	plant, cultivate, maintain, plan and construct parks, gardens and landscapes, and inspect, diagnose and treat trees and shrubs.	Maintains and cares for trees and shrubs by lopping limbs and shaping branches, treating trees with fertilisers and insecticides, removing dead or decaying trees, and advising on general tree care.	Tree Surgeon
		Skill Level 3	
394 Wood Trades Workers	3942 Wood Machinists and Other Wood Trades Workers	394213 Wood Machinist	Automatic Profile Sander Operator Copy Lathe Operator Edge Bander Operator Jigmaker (Wood) Panel Saw Operator Woodworking Machine Setter
fabricate, repair and finish wooden furniture and fit and assemble prepared wooden parts to make furniture, set up and operate woodworking machines and wood turning lathes to shape wood stock, and make picture frames and other wood products.	set up and operate woodworking machines and wood turning lathes to shape wood stock, finish and polish furniture, and make picture frames and frame paintings, photographs and other artwork.	Cuts, planes, turns, shapes and sands wood stock to specifications.	
		Skill Level 3	
		394299 Wood Machinists and Other Wood Trades Workers nec	
		This occupation group covers Wood Machinists and Wood Trades Workers not elsewhere classified.	Cooper
		Skill Level 3	
4 COMMUNITY AND PERSONAL SERVICE WORKERS			

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Minor Group	Unit Group	Occupations	Specialisations
441 Defence Force Members, Fire Fighters and Police protect and preserve property, public order and safety through the provision of specialised military services to the defence forces, the enforcement of laws, attendance at emergencies, and control and extinguishment of fires.	4412 Fire and Emergency Workers attend emergencies to minimise risk to community safety and security and protect life and property.	441212 Fire Fighter Responds to fire alarms and emergency calls, controls and extinguishes fires, and protects life and property. Registration or licensing is required. <i>Skill Level 3</i>	Fire Prevention Officer
5 CLERICAL AND ADMINISTRATIVE WORKERS			
512 Office and Practice Managers organise and manage the functions and resources of offices and professional practices such as administrative systems and office personnel.	5121 Office Managers organise and control the functions and resources of offices such as administrative systems and office personnel.	512111 Office Manager Organises and controls the functions and resources of an office such as administrative systems and office personnel. <i>Skill Level 2</i>	
531 General Clerks perform a range of clerical and administrative tasks	5311 General Clerks perform a range of clerical and administrative tasks	531111 General Clerk Performs a range of clerical and administrative tasks. <i>Skill Level 4</i>	
532 Keyboard Operators	5321 Keyboard Operators	532111 Data Entry Operator Data Processing Operator	

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Minor Group	Unit Group	Occupations	Specialisations
input and process text and data, and prepare, edit and generate documents for storage, processing, publication and transmission.	input and process text and data, and prepare, edit and generate documents for storage, processing, publication and transmission.	<p>Operates a keyboard to input and transfer data into a computer for storage, processing and transmission.</p> <p>Skill Level 4</p> <p>532113 Word Processing Operator</p> <p>Typist</p> <p>Operates a computer to type, edit and generate a variety of documents and reports.</p> <p>Skill Level 4</p> <p>551111 Accounts Clerk</p> <p>Accounts Payable or Receivable Clerk</p> <p>Monitors creditor and debtor accounts, and undertakes related routine documentation. May work in a call centre.</p> <p>Skill Level 4</p> <p>551112 Cost Clerk</p> <p>Calculates and investigates the cost of wages, materials, overheads and other operating expenses.</p> <p>Skill Level 4</p>	
551 Accounting Clerks and Bookkeepers compile, record and process documents relating to creditors and debtors, operating costs, financial transactions and payrolls.	5511 Accounting Clerks monitor creditor and debtor accounts, undertake related routine documentation, and calculate and investigate the cost of wages, materials, overheads and other operating costs.		
	5512 Bookkeepers	551211 Bookkeeper	Financial Administration Officer

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Minor Group	Unit Group	Occupations	Specialisations
591 Logistics Clerks coordinate the purchasing, receipt, recording, monitoring, and distribution of goods and services, and the clearance and collection of imported cargo and shipment of cargo for export.	maintain and evaluate records of financial transactions in account books and computerised accounting systems	Maintains and evaluates records of financial transactions in account books and computerised accounting systems. Skill Level 4 551311 Payroll Clerk Pay Clerk Payroll Officer Prepares payroll and related records for employee salaries and statutory record-keeping purposes. Skill Level 4	
	5513 Payroll Clerks prepare payrolls and related records for employee salaries and statutory record-keeping purposes.		
	5911 Purchasing and Supply Logistics Clerks prepare and process orders for goods and services, monitor stock levels and supply sources and maintain stock and inventory levels, record and coordinate the flow of materials between departments, prepare production schedules, and administer and coordinate storage and distribution operations within organisations.	591111 Order Clerk Customer Orders Clerk Receives purchase requests for good and services, checks requests against inventory records and stock, and processes orders. Skill Level 4 591112 Production Clerk Production Recorder Schedule Clerk Records and coordinates the flow of work and materials between departments,	Delivery Clerk Logistics Clerk

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Minor Group	Unit Group	Occupations	Specialisations
		examines orders for goods, and prepares production schedules.	
		Skill Level 4	
		591113 Purchasing Officer	
		Procurement Clerk	
		Prepares purchase orders, monitors supply sources and negotiates contracts with suppliers.	
		Skill Level 4	
		591114 Sales Clerk	
		Internal Salesperson	
		Receives and processes purchase orders for goods and services, and provides information and advice about goods and services.	Engineering Sales Clerk Lay-by Clerk
		Skill Level 4	
		591115 Stock Clerk	
		Stock Control Clerk	
		Stores Clerk	Inventory Clerk Supply Clerk
		Monitors stock levels and maintains stock, order and inventory records.	

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Minor Group	Unit Group	Occupations	Specialisations
		<i>Skill Level 4</i>	
		591116 Warehouse Administrator	
		Administers and coordinates storage and distribution operations within an organisation.	
		<i>Skill Level 4</i>	
6 SALES WORKERS			
611 Insurance Agents and Sales Representatives represent companies in selling their goods and services, and sell property on behalf of clients.	6113 Sales Representatives represent companies to sell their goods and business services to wholesale and retail establishments.	611311 Sales Representative (Building and Plumbing Supplies)	
		Represents their company in selling builders' timber, and building and plumbing hardware and supplies to wholesale and retail establishments.	
		<i>Skill Level 4</i>	
		611399 Sales Representatives nec	
		This occupation group covers Sales Representatives not elsewhere classified.	
		<i>Skill Level 4</i>	
7 MACHINERY OPERATORS AND DRIVERS			

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Minor Group	Unit Group	Occupations	Specialisations
711 Machine Operators operate stationary machines to process, manufacture, treat and finish a range of products	7113 Paper and Wood Processing Machine Operators operate machines to manufacture paper packaging and other paper products, fibreboard stock, logs, plywood, particle board, solid laminate and similar timber products.	711312 Wood Processing Machine Operator Operates sawing, rolling, pressing and other machines to manufacture logs, timber poles and pieces, plywood, particle board, solid laminate and similar products. <i>Skill Level 4</i>	Band Saw Operator Beam Saw Operator Cant Gang Sawyer Debarker Operator Docking Saw Operator Log Preparer Plywood and Veneer Repairer Resawyer Ripsaw Operator Sawmill Moulder Operator Veneer Production Machine Operator
	7121 Crane, Hoist and Lift Operators operate stationary and mobile cranes, hoists, lifts and winches to lift, move and place materials, equipment and people in areas such as building sites, factories, mines, sawmills, wharves and shipyards.	712111 Crane, Hoist or Lift Operator Operates stationary and mobile cranes, hoists, lifts and winches to lift, move and place materials, equipment and people in areas such as building sites, factories, mines, sawmills, wharves and shipyards. Registration or licensing is required. <i>Skill Level 4</i>	Elevated Work Platform Operator Pile Driver Winch Operator Winding Engine Driver
712 Stationary Plant Operators operate stationary plant to perform a range of activities such as extracting minerals from the earth; refining and treating metals and mineral ore, and producing basic metal products; lifting, moving and placing materials and equipment; and loading and stacking bulk materials.	7123 Engineering Production Systems Worker perform a range of production process tasks to refine and treat metals and mineral ore, fire ceramics, and operate plant to produce and finish metal products such as rods, tubing and	712311 Engineering Production Systems Worker Performs a range of production process tasks to refine and treat metals and mineral ore, fire ceramics, and operate plant to produce and finish metal products such as rods, tubing and	Tool Setter

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Minor Group	Unit Group	Occupations	Specialisations
	structural shapes, and moulds for casting	structural shapes, and moulds for casting. Registration or licensing is required. Skill Level 4 712911 Boiler or Engine Operator Operates and maintains stationary engines, boilers, refrigeration and airconditioning systems, and associated mechanical plant. Registration or licensing is required. Skill Level 4 712912 Bulk Materials Handling Plant Operator Operates plant to load, unload, move, store and stack bulk materials such as grain, sugar and mineral ore Skill Level 4 712999 Stationary Plant Operators nec This occupation group covers Stationary Plant Operators not elsewhere classified. Skill Level 4	Timber Treatment Plant Operator
721 Mobile Plant Operators	7211 Agricultural, Forestry and Horticultural Plant Operators This unit group covers Stationary Plant Operators not elsewhere classified. It includes Boiler or Engine Operators, Bulk Materials Handling Plant Operators, Cement Production Plant Operators, Concrete Batching Plant Operators, Concrete Pump Operators, Paper and Pulp Mill Operators, Railway Signal Operators, Train Controllers, Waste Water or Water Plant Operators and Weighbridge Operators.	721112 Logging Plant Operator	Forwarder Operator Skidder Operator Tree Feller Operator

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Minor Group	Unit Group	Occupations	Specialisations
operate mobile plant to clear and cultivate land, sow and harvest crops, fell trees, move and excavate rock and soil, move pallets and containers, and lay roads and railway tracks.	operate agricultural, forestry and horticultural plant to clear and cultivate land, sow and harvest crops, and fell trees and move logs.	Operates plant to fell trees and drag, transport and load logs onto trucks. Registration or licensing may be required. Skill Level 4 721211 Earthmoving Plant Operators (General) Construction Plant Operator (General) Operates a range of earthmoving plant to assist with building roads, rail, water supply, dams, treatment plants and agricultural earthworks. Registration or licensing is required.	
	7212 Earthmoving Plant Operators operate plant to excavate earth, ore and rock, break up pavement, road, rock and obstructions, move and load earth, rock and debris, and level, smooth and compact surfaces in construction and other projects.	Skill Level 4 721212 Backhoe Operator Operates a backhoe and attachments to excavate, break, drill, level and compact earth, rock and other material. Registration or licensing is required. Skill Level 4 721213 Bulldozer Operator Operates a bulldozer using blades and other attachments to gouge out, level and move materials in construction, forestry,	

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Minor Group	Unit Group	Occupations	Specialisations
		mining and other projects. Registration or licensing is required.	
		Skill Level 4	
		721214 Excavator Operator	
		Operates heavy excavation plant to excavate, move and load earth, rock and rubble. Registration or licensing is required.	
		Skill Level 4	
		721215 Grader Operator	
		Operates a grader to spread and level materials in construction projects. Registration or licensing is required.	
		Skill Level 4	
		721216 Loader Operator	
		Operates a motorised loader to move and load soil, rock and other material. Registration or licensing is required.	
		Skill Level 4	
	7213 Forklift Drivers operate forklifts to move bulk materials, containers, crates, palletised goods, cartons and bales.	721311 Forklift Driver	
		Forklift Operator Fork Truck Operator	
		Operates a forklift to move bulk materials, containers, crates, palletised goods,	

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Minor Group	Unit Group	Occupations	Specialisations
		cartons and bales. Registration or licensing may be required.	
		Skill Level 4	
733 Truck Drivers	7331 Truck Drivers	733111 Truck Driver (General)	
drive heavy trucks, removal vans, tankers and tow trucks to transport bulky goods and liquids	drive heavy trucks, removal vans, tankers and tow trucks to transport bulky goods and liquids.	Drives a heavy truck, requiring a specially endorsed class of licence, to transport bulky goods. Registration or licensing is required.	Logging Truck Driver
		Skill Level 4	
741 Storepersons	7411 Storepersons	741111 Storeperson	
receive, handle and despatch goods in stores and warehouses.	receive, handle and despatch goods in stores and warehouses.	Stores Assistant	
		Warehouse Assistant	Manufacturing Storeperson
		Receives, handles and despatches goods in a store or warehouse.	Stores Despatch Hand
		Skill Level 4	
8 LABOURERS			
811 Cleaners and Laundry Workers	8112 Commercial Cleaners	811211 Commercial Cleaner	
clean vehicles, commercial, industrial and domestic premises, construction sites and industrial machines, and clothing and other items in laundries and drycleaning establishments.	clean offices, residential complexes, hospitals, schools, industrial work areas, industrial machines, construction sites and other commercial premises using heavy duty cleaning equipment.	Cleans offices, residential complexes, hospitals, schools, industrial work areas, industrial machines, construction sites and other commercial premises using heavy duty cleaning equipment.	

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Minor Group	Unit Group	Occupations	Specialisations
821 Construction and Mining Labourers perform a variety of routine tasks in house building, and road, rail and general construction, and in drilling, mining and mineral ore treatment, usually under close supervision.	8211 Building and Plumbing Labourers perform a variety of routine tasks associated with erecting and repairing structures and facilities, maintaining stormwater, drainage and sewerage systems, excavating earth and clearing and levelling sites, and installing and maintaining piping systems, fixtures and water regulators.	<i>Skill Level 5</i> 821112 Drainage, Sewerage and Stormwater Labourer Performs routine tasks in maintaining drainage, sewerage and stormwater systems. <i>Skill Level 5</i> 821113 Earthmoving Labourer Performs routine tasks in excavating earth, clearing and levelling sites, and digging irrigation channels. <i>Skill Level 5</i> 821511 Paving and Surfacing Labourer Performs routine tasks associated in laying bituminous and other paving materials on roads, runways, parking areas and other surfaces to be paved. <i>Skill Level 5</i>	
		832 Packers and Product Assemblers wrap and place items into containers and seal containers in preparation for despatch to customers, and	
		8321 Packers weigh, wrap, seal and label chocolate, fruit, vegetables, meat, seafood and other products.	
		832199 Packers nec This occupation group covers Packers not elsewhere classified. <i>Skill Level 5</i>	

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Minor Group	Unit Group	Occupations	Specialisations
assemble components and subassemblies of products.			
		839311 Product Examiner	
		Quality Assurance Assessor Quality Control Assessor	
		Examines products to ensure conformity to specifications and standards of presentation and quality.	
		Skill Level 4	
839 Miscellaneous Factory Process Workers	8393 Product Quality Controllers	839312 Product Grader	
This minor group covers Factory Process Workers not elsewhere classified. It includes Metal Engineering Process Workers, Plastics and Rubber Factory Workers, Product Quality Controllers, and Timber and Wood Process Workers.	examine manufactured products and primary produce to ensure conformity to specifications and standards of presentation and quality.	Grades primary produce by evaluating individual items or batches against established standards and records results.	Timber Grader
		Skill Level 4	
		839313 Product Tester	
		Collects product samples, conducts tests to determine quality of produce and maintains records of results.	
		Skill Level 4	
	8394 Timber and Wood Process Workers	839411 Paper and Pulp Mill Worker	
		Pulp, Paper Making and Paper Products Labourer	

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Minor Group	Unit Group	Occupations	Specialisations
	perform routine tasks in paper and pulp mills, sawmills, timber yards, and wood processing and timber products factories.	<p>Performs routine tasks in a paper and pulp mill such as placing logs onto conveyors for chipping, and loading woodchip and pulp for processing.</p> <p>Skill Level 5</p> <p>839412 Sawmill or Timber Yard Worker</p> <p>Timber Mill Worker</p> <p>Wood Processing Worker</p> <p>Performs routine tasks in a sawmill or timber yard such as sorting and stacking timber, assisting timber machinists, assembling orders and racking offcuts.</p> <p>Skill Level 5</p> <p>839413 Wood and Wood Products Factory Worker</p> <p>Wood and Wood Products Labourer</p> <p>Performs routine tasks in a wood processing and timber product factory such as placing logs on equipment and conveyors, assisting with measuring and cutting of materials, and setting up and operating plant equipment.</p> <p>Skill Level 5</p>	<p>Tailer-out</p> <p>Hardboard Factory Worker Joinery Factory Worker Particleboard Factory Worker Plywood Factory Worker</p>

Smart Development of Future Workforce

Minor Group	Unit Group	Occupations	Specialisations
841 Farm, Forestry and Garden Workers perform a variety of routine tasks in cultivating and harvesting crops, plants and forests, breeding and raising of livestock and aquatic stock, and the management of pests and weeds.	8412 Crop Farm Workers perform routine tasks in producing crops such as fruit, nuts, grains and vegetables.	841299 Crop Farm Workers nec This occupation group covers Crop Farm Workers not elsewhere classified <i>Skill Level 5</i> 841311 Forestry Worker Assists with cultivating, maintaining and protecting forests. Registration or licensing may be required. <i>Skill Level 4</i>	Fire Lookout Tree Planter
	8413 Forestry and Logging Workers perform routine tasks associated in cultivating and maintaining natural and plantation forests, and logging, felling and sawing trees.	841312 Logging Assistant Assists with logging, felling and sawing of trees in forests. <i>Skill Level 4</i> 841313 Tree Faller Tree Feller Fells trees in forests, and trims and saws them into logs. Registration or licensing may be required <i>Skill Level 4</i>	Hardwood Faller Softwood Faller
	8414 Garden and Nursery Labourers S perform a variety of routine tasks in propagating, cultivating and	841412 Horticultural Nursery Assistant Nursery Hand (Horticulture)	

Smart Development of Future Workforce

Minor Group	Unit Group	Occupations	Specialisations
	maintaining plants in gardens and horticultural nurseries.	Assists in propagating, cultivating and harvesting plants in a horticultural nursery. <i>Skill Level 5</i> 841912 Pest or Weed Controller Applies pest or weed management techniques to kill and control pests or weeds in domestic, commercial and industrial areas, roadsides, and private and public lands. Registration or licensing may be required. <i>Skill Level 4</i> 841999 Farm, Forestry and Garden Workers nec This occupation group covers Farm, Forestry and Garden Workers not elsewhere classified	Fumigator
	8419 Other Farm, Forestry and Garden Workers nec This unit group covers Farm, Forestry and Garden Workers not elsewhere classified.	<i>Skill Level 4</i> 841999 Farm, Forestry and Garden Workers nec This occupation group covers Farm, Forestry and Garden Workers not elsewhere classified <i>Skill Level 5</i>	Coral Collector Indoor Plant Technician Irrigationist Kelp or Seagrass Gatherer Seed Collector
899 Miscellaneous Labourers This minor group includes Labourers not elsewhere classified. It includes Caretakers, Deck and Fishing Hands, Handypersons, Motor Vehicle Parts	8993 Handypersons clean, paint, repair and maintain buildings, grounds and facilities.	899311 Handyperson Cleans, paints, repairs and maintains buildings, grounds and facilities. <i>Skill Level 5</i>	

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Minor Group	Unit Group	Occupations	Specialisations
and Accessories Fitters, Printing Assistants and Table Workers, Recycling and Rubbish Collectors, and Vending Machine Attendants.		899914 Electrical or Telecommunications Trades Assistant Assists Electrotechnology and Telecommunications Trades Workers to install and maintain electrical and telecommunications systems. <i>Skill Level 5</i>	
	8999 Other Miscellaneous Labourers This unit group covers Labourers not elsewhere classified. It includes Bicycle Mechanics, Car Park Attendants, Crossing Supervisors, Electrical or Telecommunications Trades Assistants, Leaflet or Newspaper Deliverers, Mechanic's Assistants, Railways Assistants, Sign Erectors, Ticket Collectors or Ushers, and Trolley Collectors.	899916 Mechanic's Assistant Assists Motor Mechanics to replace and repair worn and defective parts, re-assemble mechanical components, change oil and filters, and perform other routine mechanical tasks. <i>Skill Level 5</i>	
		899999 Labourers nec This occupation group covers Labourers not elsewhere classified <i>Skill Level 5</i>	

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Attachment One: Companies identified in the Hub Region

Name	LGA	Sector	Interviewed
A.E. Gibson & Sons	Port Macquarie-Hastings	SM	
A.W. Moran Sawmilling	Coffs Harbour	SM	
Adam's Sawmill	Coffs Harbour	SM	Yes
Albert Johnson	Port Stephens	SM	Yes
Grafton Hardwood Timber Mills	Clarence Valley	SM	
Aquafern (Warrell Creek Sawmill)	Nambucca	SM	
Armfield's Earthmoving & Logging Pty Ltd	Richmond Valley	HH	Yes
Ashby Hardwoods (Ashby Sawmill)	Clarence Valley	SM	
Australian Architectural Hardwoods	Kempsey	SM	Yes
Batterson Sawmill	Kempsey	SM	
Big River Group	Clarence Valley	MWP	Yes
Boral Timber - Herons Creek	Port Macquarie-Hastings	SM	Yes
Boral Timber - Koolkhan	Clarence Valley	SM	
Boral Timber - Murwillumbah	Tweed	SM	
Bowraville Sawmilling (M&B Dyer)	Nambucca	SM	
Brian Smith Timber Transport Pty Ltd	Walcha	HH	
Burgundy Heights Pty Ltd	Coffs Harbour	HH	Yes
C & E Logging Pty Ltd	Nambucca	HH	
Campbell Sawmills	Clarence Valley	SM	
Cockatoo Creek Timbers	Clarence Valley	SM	
Coffs Harbour Hardwoods	Clarence Valley	MWP	Yes
Cooper Logging Pty Ltd	Port Macquarie-Hastings	HH	Yes
Cover It Pty Ltd	Bellingen	HH	
Cross & McLeod Sawmill	Mid-Coast	SM	Yes
CSI - Glen Innes Correctional Centre Sawmill	Glen Innes Severn	SM	
DJ & JB Logging Pty Ltd	Port Macquarie-Hastings	HH	
Doug Rhodes Sawmilling	Coffs Harbour	SM	
DTM Timber	Richmond Valley	SM	
Forest Enterprises Development & Consulting	Richmond Valley	HH	Yes
Forestry Corporation NSW	Port Macquarie-Hastings	FGM	Yes
Glenn Poole Contracting Pty Ltd	Coffs Harbour	HH	
Greensill Bros	Clarence Valley	HH	Yes
Hanna Timbers	Richmond Valley	SM	
Haulers & Fallers Pty Ltd	Port Macquarie-Hastings	HH	Yes
Hayden Timbers	Port Macquarie-Hastings	SM	Yes
Henson Sawmilling	Clarence Valley	SM	
Hoffmans Haulage Pty Ltd	Port Macquarie-Hastings	HH	
Hoffmans Timberline Pty Ltd	Port Macquarie-Hastings	HH	
Hogans Sawmills	Kyogle	SM	
Hurford Sawmilling - Kyogle	Kyogle	SM	Yes
Hurford Hardwood – Kempsey	Mid-Coast	SM	

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Name	LGA	Sector	Interviewed
Hurford Hardwoods - Lismore	Lismore	SM	
Ironwood Australia	Mid-Coast	SM	
J. Notaras & Sons	Clarence Valley	SM	Yes
Jamax Forest Solutions	Port Macquarie-Hastings	FGM	Yes
Koppers Wood Products	Clarence Valley	SM	
Kruger Enterprises	Clarence Valley	SM	
L G Gordon (Wootton Timber)	Mid-Coast	SM	
MA & TM Thorley Sawmilling	Clarence Valley	SM	
Machin's Sawmill	Mid-Coast	SM	Survey
Macleay River Hardwoods	Kempsey	SM	
Macleay River Haulage	Kempsey	HH	Yes
Newee Creek Sawmill	Nambucca	SM	
Newell's Creek Sawmilling Co (S A Relf & Sons)	Mid-Coast	SM	
Newville Hardwoods (Nambucca Heads)	Nambucca	SM	
North Coast Forest Management	Coffs Harbour	FGM	Yes
North Coast Hardwood (Kundabung)	Kempsey	SM	
Osmond's Sawmill	Bellingen	SM	
Paul Herbert Timbers	Mid-Coast	SM	
Prattford Enterprises (Biggins Sawmill)	Coffs Harbour	SM	
RJ & MJ Hodgson	Bellingen	SM	
Silvertop Logging	Clarence Valley	HH	
Smith & Cotten Saw Milling	Clarence Valley	SM	
Super Forest Plantations	Lismore	FGM	Yes
Taminda Timbers Sawmill	Tamworth	SM	Survey
Tarmac Sawmilling	Richmond Valley	SM	
Thora Sawmilling	Bellingen	SM	
Two Matt's Pty Ltd	Bellingen	HH	
Uki Sawmill	Tweed	SM	
Warda Pty Ltd	Kyogle	HH	
Weathertex	Port Stephens	MWP	Yes
Woodharvesters Pty Ltd	Port Macquarie-Hastings	HH	
Yates Bros (Stratford)	Mid-Coast	SM	

Attachment Two: Other Jurisdictional Responses to Recruitment Challenges

11.1 International experiences and responses

Scotland

The Scottish Forest and Timber Technologies (SFTT) initiative is a Scottish Enterprise and industry-supported group which aims to grow and promote the sector. Comprised of the Industry Leadership Group, four Regional Groups and a wide range of delivery colleagues, the SFTT work collaboratively to encourage and promote sustainable development and meet the needs of the sector. In 2018, the SFTT published *Roots for Further Growth: An Economic Strategy for Scotland's Forest & Timber Technologies Sector to 2030*³⁵. The strategy identified and described five immediate strategic priorities for the forest and timber technologies sector:

- 1) Maximise the economic outputs of Scotland's forest and fibre resource.
- 2) Improve the safety and productivity of the wood fibre supply chain.
- 3) Expand markets and add value.
- 4) Develop a work force with skills for the future which support inclusive growth.**
- 5) Understand and communicate the forest and wood-based industries' contributions to Scotland's economy.

The industry has articulated the need for talented people who are enterprising and ambitious, willing to learn and work hard to continuously improve the sector. This theme was explored further and reported on in the SFTT *Skills Action Plan 2020*³⁶ under for areas that require intervention:

Talent attraction	<ul style="list-style-type: none"> • Develop a strong pipeline of talent • Improve the perception of the sector among young people and their key influencers • Awareness of the breadth and depth of different entry points and career pathway opportunities
Supporting new entrants	<ul style="list-style-type: none"> • Support new entrants and existing workers to remain and progress within the sector (retention and succession planning). This involves providing and signposting career pathways that are attractive and rewarding; • Embedding and linking apprenticeship frameworks to industry training • Supporting the sector to enhance mentoring skills
Workforce development	<ul style="list-style-type: none"> • Existing and future workforce will require technical, operational and leadership skills development; • Workforce development requirements are not static, and need to be refreshed and developed in line with employer and employee needs, technological progress, legislation and new ways of working; • Ensure that the workforce develop and improve their skills to match those requirements and to support business resilience and growth, and employee satisfaction.

³⁵ *Roots for Further Growth: An Economic Strategy for Scotland's Forest & Timber Technologies Sector to 2030* (2018), Scottish Forest & Timber Technologies.

³⁶ *Skills Action Plan 2020* (2020), Scottish Forest and Timber Technologies initiative.

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Curriculum Review

- A flexible approach to the delivery of education, skills and training is required;
- One of the main challenges identified was around geography and accessibility of provision. Work will focus on how to support access across Scotland, in particular for more provision in remote and rural areas, which can be low volume both for health and safety, as well as reasons related to location and seasonality of work. This leads to costly and challenging training arrangements;
- There are issues around the provision of continuing professional development training and stimulating demand among micro business and self-employed.

England and Wales

The Forestry Skills Forum (FSF) of England and Wales, supported by the Forestry Commission of England, is dedicated to promoting education, skills learning and development across the forestry sector of their region³⁷. FSF is an independent group made up of training providers, employers, trade associations, education providers, funders, research centres, and include specialists in all age groups: early years, primary, secondary, further and higher education. The FSF research into forestry skills identified the following challenges:

- The availability and skills of machine operators. Employers need operators who are more technically competent and able to work in more demanding situations;
- The availability of chainsaw operators, especially those able to fell larger hardwoods;
- The supply of competent tree planters;
- The practical and business skills of graduate recruits;
- The absence of British forestry related content in both the primary and secondary school national curricula;
- The decline in the number of students enrolling in forestry degree courses in England and Wales (although some universities report higher enrolment in the 2017/18 cohort);
- The lack of focus on forestry related skills training in further education colleges; and
- A lack of female and racial minority recruits to the industry.

A number of these challenges are shared with the Australian forestry industry. For example, the availability of machine operators and the decline in numbers of students enrolling in forestry degree courses. However, some items are not relevant to the native Forest and Wood Products Industry of NSW due to the different silvicultural and harvesting systems in place. For example, the transition to machine falling has largely replaced the need for manual fallers, and eucalypt forests are generally regenerated by seedfall rather than planting.

The FSF developed a *Forestry Skills Plan* around four key themes:

Talent attraction

- Promote forestry careers to a diverse audience
- Increase forestry awareness in primary and secondary schools

³⁷ *Forestry Skills Plan 2019-2024* (2019), Forestry Skills Forum.

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Skills and technical knowledge	<ul style="list-style-type: none"> • Machine operator training • Technical skills of new entrants and mid career managers • More skills planting contractors • Promote forestry skills in other sectors eg. Planting / establishment
Education provision	<ul style="list-style-type: none"> • Improve further education provision • Engage with Government reforms • Liaise with higher education providers • Support the delivery of apprenticeships • New higher/degree apprenticeship • Support PhD provision
Employer support	<ul style="list-style-type: none"> • Promote informal professional development within and between organisations • Improve employers understanding of education • Influence funding for skills

Maine, United States of America

The Maine forest industries collaborated with communities, government, education providers and non-profit organisations with the support of the United States Government and Maine Timberlands Charitable Trust to create the Forest Opportunity Roadmap/Maine (FOR/Maine). The objective was to assess Maine's current industry, assets and readiness, and determine a strategy to capitalize on new opportunities.

Like the Scottish experience, the 5 overarching goals of FOR/Maine were:

1. Sustain and grow Maine's existing and emerging forest products economy.
2. Manage the wood resource using sustainable and responsible forest management practices.
3. ***Prepare workforce for the future of the forest products economy.***
4. Increase prosperity in Maine forest economy communities, especially those in rural Maine, including those affected by mill closures.
5. Organize the forest products industry with committed public sector partners, including the University of Maine, to implement the vision and goals.

Like forest industries in other parts of the world, there was recognition of the need to attract new entrants to the industry, providing incumbent workers with new skills to replace retirees, and fill new jobs in emerging products manufacturing. The three strategies identified by FOR/Maine are:

Attract young people into the industry	<ul style="list-style-type: none"> • Inform young people of forest products career opportunities by partnering with school guidance counsellors, teaches, community colleges and technical schools; • Establish a forestry education programme for K-12; • Provide industry with resources to market career opportunities requiring post-secondary training and education.
Ensure that new, replacement and	<ul style="list-style-type: none"> • Assess the need for replacement workers in the industry based on expected retirements;

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incumbent workers have the skills needed for existing jobs

- Develop a plan for recruiting new workers that includes:
 - identifying the skills needed for employment and
 - working with education and training providers.

Prepare workforce for emerging products/technologies in the forest products industry

- In some cases, new and emerging forest products manufacturing will require new skills. We need to:
 - identify the skills and competencies needed to support emerging products, e.g. chemists, and
 - work with educators and trainers to develop and deliver curriculum that address the new requirements.

New Zealand

In 2020, the New Zealand Forestry and Wood Processing Workforce Council published their *Forestry and Wood Processing Workforce Action Plan 2020–2024*³⁸. The Action Plan aims to support the development of a workforce that meets the current and future needs of the forestry and wood processing sector. It does this by delivering on the following focus areas:

The forestry and wood processing sector makes good workforce decisions based on robust information and data

- forestry and wood processing workforce requirements are anticipated through robust analysis and forecasting; and
- the sector has a good understanding of programmes that eliminate barriers and prepare people for working in the sector.

The forestry and wood processing sector inspires and attracts a larger, more diverse workforce

- a diverse range of people want to study and work in the forestry and wood processing sector;
- potential new employees understand the range of career paths available and the prerequisites for their areas of interest;
- employers easily fill vacancies with quality, skilled employees;
- new recruits ready to be upskilled; and
- the public views the forestry and wood processing sector as a respected and attractive career choice.

People have the right skills, knowledge and capabilities to be successful in the forestry and wood processing sector

- the education and training system meets the needs of the sector and of trainees and employees with specific learning requirements;
- individuals on different career pathways are supported to train and gain relevant credentials at any stage of their careers and lives;
- young people, particularly Māori rangatahi, see forestry and wood processing as viable career choices that are compatible with their cultural values and worldviews.

³⁸ *Forestry and Wood Processing Workforce Action Plan 2020 – 2024* (2020), Forestry New Zealand (The Forestry and Wood Processing Workforce Action Plan Working Group).

People thrive in forestry and wood processing workplaces with good practices and conditions

- all contractors and forestry employers run sustainable businesses and provide fair pay, stable work, and positive employment experiences;
- forestry is seen as a safe industry to work in; and
- employees remain in the sector because of good conditions and a sense of pride in their work.

In contrast to most jurisdictions of Australia, native forest operations on Crown land have essentially ceased, however there is a regulated harvesting industry in native forests on private land. The forestry industry is therefore effectively based on plantation softwood, *Pinus radiata*. In this respect, the conversation around social licence of forest industries relates to the use of plantation forestry competing with and affecting the productivity of cleared agricultural land.

11.2 Domestic experiences and responses

North-North West Tasmania Regional Forestry Hub

The North-Northwest Tasmania Regional Forestry Hub was established in 2019 as part of the Australian Government's 2018 National Forest Industries Plan: *Growing a Better Australia – A Billion Trees for Jobs and Growth* to support growth in the renewable timber and wood fibre industry. This Hub, in consultation with industry, community and government stakeholders, identified four priority themes aimed at delivering against the Commonwealth's objectives under the Plan. One priority theme related to "Culture, skills and training" and this theme was researched by Melbourne University³⁹.

The analysis found that although those leading Tasmania's forest sector aspire for it to be a high-quality, high-technology industry employing more highly skilled workers, a major transformation in the current workforce is required. Workers in the Tasmanian forestry industry are generally older, less educated and lower skilled than the workforces in other states and Tasmanian industries. Highly skilled, knowledge-based staff are increasingly more mobile with evolving expectations of their workplace. The sector does not receive the public recognition it makes to the state economy and society but is challenged by community perceptions around the science of native forest management and the conversion of agricultural land to timber plantations.

Additional challenges that were identified included:

- Younger workers had limited career progression due to the retention of older workers and their delayed retirement;
- Uncertainty over the future of the sector meant that skilled operators transferred to jobs that they perceived to be more stable in mining or construction;
- Workers with low literacy and numeracy skills faced barriers when trying to access skills and training opportunities to improve productivity and performance;

³⁹ Anderson, NM, H Stewart and RJ Keenan. 2020. *Culture, Training and Skills Assessment Report*. Prepared for the North-North West Tasmania Regional Forestry Hub. 17 November 2020. School of Ecosystem and Forest Sciences, Faculty of Science, University of Melbourne, Melbourne. 110p.

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- The industry is not effectively promoting the benefits of forest-relevant training as a set of transferable skills that can be taken to other workplaces and industries. This contributes to problems in attracting young people to the industry.

The recommendations from the report have been reviewed for relevance to the North-East NSW sector and adapted in Table 17.

Table 17 Recommendations for the Tasmanian forestry sector (adapted).

Objective	Action
Improve the profile of forestry	<p>Identify and engage with key stakeholders to:</p> <ul style="list-style-type: none"> • promote the sustainability of wood and timber products; • demonstrate commitment to continuing improvement based on evidence and positive public engagement; • use alumni to promote the benefits of forest training for a broad skill set applicable to other workplaces; • support training for rural landowners and others in agribusiness about the financial and farm benefits of integrating trees on farms. • Encourage industry awareness of community attitudes towards forestry and the need for compliance with environmental care and sustainability principles; • active promotion of training in these areas in forest management and harvesting.
Address the lack of diversity in the workforce	<ul style="list-style-type: none"> • Promote the benefits of diversity across the forestry sector; • Develop a culture within the industry that is supportive of diversity; • Encourage greater participation by women; • Promote the forest industry within the wider community as a diverse, inclusive and innovative workplace.
Inform industry decisions on employment and skills needs, and to identify factors leading to loss of skilled operators.	Support the collection of more contemporary data on workforce and employment
<p>Ensure that training:</p> <ul style="list-style-type: none"> • is relevant to industry needs • aligns with career pathways. 	<p>Support:</p> <ul style="list-style-type: none"> • the development of a Workforce Development Plan; • a review of the curriculum and provision arrangements for the vocational training sector; • the provision of more flexible training delivery arrangements, including modular training programs and remote learning; • staff participation in programs to develop leadership skills. <p>Within the Workforce Development Plan:</p> <ul style="list-style-type: none"> • align training to future jobs and export markets involving more local processing, innovation and sale of value-added products; • potentially, develop skills and training pathways that do not currently exist;

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Objective	Action
	<ul style="list-style-type: none"> • support the case for more investment in qualified trainers; • support the integration of training in people management, commerce, financial literacy and business management.
Address the projected demand for forestry workers with high level tertiary skills	<ul style="list-style-type: none"> • Investigate options for embedding forestry relevant units and streams within allied degrees within [local tertiary providers]; • Investigate options for introducing graduate certificate level qualifications in forestry, especially given the scarcity of tertiary undergraduate places; • Support the incorporation of farm forestry and basic forestry concepts in university agricultural degrees and investigate options to introduce graduate certificate level qualifications in forestry.
Improve understanding of the breadth of employment opportunities in the sector and to build a connection to future employees at all levels	<ul style="list-style-type: none"> • Support maintaining and expanding funding for school-based programs, pre-vocational programs with primary and secondary schools • Support development of a website where information about forests and forest careers is attractive and easy to access

Attachment Three: List of Training Providers by Industry Sector and Qualification

Refer to Section 9.3.5 for further information on school based delivery.

The following tables are provided to assist employers find potential training providers for qualifications that may be useful to the industry based on the information in Table 15 and Table 16 above. The tables:

- Indicate the total number of training providers that have delivered the traineeship or apprenticeship in NSW;
- A maximum of five training providers per qualification are suggested, prioritized on whether or not they have been approved for subsidized training under Smart and Skilled and by the proximity of the training centre to NE NSW.
- If no provider has been approved for the Smart and Skilled subsidy then the provider will be indicated as Fee for Service.

Note that an RTO must be approved for Smart and Skilled subsidies qualification by qualification. For example, Gimbal have been approved for the Smart and Skilled subsidy for two out of three of the metals and engineering qualifications. This may be because they have not applied for the subsidy against this qualification.

The following tables indicate the RTOs that are available to deliver apprenticeships and traineeships in the relevant qualifications.

Funding options are also indicated:

- SSA indicates that the RTO has been approved for delivery under Smart and Skilled.
- FFS indicates that the RTO can deliver the qualification on a fee for service basis.

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Table 18 Delivery of Qualifications in Forest Growing and Management (FGM)

	Cert II in FGM (FWP20116)	Cert III in FGM (FWP30116)	Cert IV in Forest Operations (FWP40116)	Diploma of Forest and Forest Products (FWP50116)	Advanced Diploma of Forest Industry Sustainability (FWP60116)
Apprenticeship / Traineeship	Traineeship	Traineeship	Traineeship	Traineeship	No
Option for school-based delivery	Yes	No	No	No	No
Funded on the NSW Skills List⁴⁰	Yes	Yes	Yes	Yes	No
Training Provider					
FITEC Australia (TABMA Training)	FFS	FFS	FFS	FFS	FFS
Timber Training Creswick (Vic)	FFS	FFS	FFS	FFS	FFS
South Regional TAFE (WA)	FFS	FFS	FFS	FFS	FFS
MTO Group (HS Business School)	-	FFS	-	FFS	FFS
TasTAFE	-	FFS	FFS	-	-
Down Under Training (Qld)	FFS	FFS	-	-	-
TAFE Gippsland	FFS	FFS	-	-	-
Intrain National Training Academy	FFS	FFS	-	-	-
TAFE NSW	-	-	SSA	-	-
Southern Training Organisation	-	FFS	-	-	-
FITS Training Centre (WA)	-	FFS	-	-	-
Total College	FFS	-	-	-	-
Walan Miya	SSA	-	-	-	-
THS Training	FFS	-	-	-	-
Western Australian College of Agriculture	FFS	-	-	-	-

Source: Training.gov.au

⁴⁰ Smart and Skilled NSW Skills List – v12.1, for training commencing from 1 July 2021, NSW Government.

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Table 19 Delivery of Qualifications in Harvesting and Haulage

	Certificate II in Harvesting and Haulage (FWP20216)	Certificate III in Harvesting and Haulage (FWP30216)	Certificate IV in Forest Operations (FWP40116)	Diploma of Forest and Forest Products (FWP50116)
Apprenticeship / Traineeship	Traineeship	Traineeship	Traineeship	Traineeship
Option for school-based delivery	Yes	No	No	No
Funded on the NSW Skills List	Yes	Yes	Yes	Yes

Training Provider

Timber Training Creswick (Vic)	FFS	FFS	-	FFS
TasTAFE	FFS	FFS	FFS	-
MTO Group (HS Business School)	-	FFS	-	FFS
South Regional TAFE (WA)	-	FFS	-	FFS
TAFE NSW	-	SSA	SSA	-
ABC Training & Consulting	FFS	SSA	-	-
Forest Industries Skills Training (Tas)	FFS	FFS	-	-
TAFE Gippsland	FFS	FFS	-	-
National Workplace Services Group	FFS	FFS	-	-
Southern Training Organisation	FFS	FFS	-	-
Intrain National Training Academy	-	FFS	-	-
LITA Training	-	FFS	-	-
FITS Training Service (WA)	-	FFS	-	-
THS Training	FFS	-	-	-

Source: Training.gov.au

Table 20 Delivery of Qualifications in Sawmilling and Processing (S&P)

	Cert II in S&P (FWP20316)	Cert III in S&P (FWP30316)	Cert III in Saw Technology (FWP31019)	Cert III in Wood Machining (FWP31119)	Cert IV in Timber Processing (FWP40216)	Diploma of Forest and Forest Products (FWP50116)
Apprenticeship / Traineeship	Traineeship	Traineeship	Apprenticeship	Apprenticeship	Traineeship	Traineeship
Option for school-based delivery	Yes	No	No	No	No	No
Funded on the NSW Skills List	Yes	Yes	Yes	Yes	No	Yes

Training Provider

Timber Training Creswick (Vic)	FFS	SSA	SSA	SSA	FFS	FFS
FITEC Australia (TABMA Training)	-	SSA	-	-	FFS	FFS
South Regional TAFE (WA)	-	-	-	-	FFS	FFS
TAFE Gippsland	FFS	FFS	-	-	-	-
MTO Group (HS Business School)	-	-	-	-	-	FFS
Southern Training Organisation	-	FFS	-	-	-	-
TAFE NSW	SSA	-	-	-	-	-

Source: Training.gov.au

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Table 21 Delivery of Qualifications in Timber Manufactured Products

	Certificate II in Timber Manufactured Products (FWP20516)	Certificate III in Timber Manufactured Products (FWP30516)	Certificate IV in Timber Processing (FWP40216)	Diploma of Forest and Forest Products (FWP50116)
Apprenticeship / Traineeship	Traineeship			Traineeship
Option for school-based delivery	Yes	No	No	No
Funded on the NSW Skills List	Yes	Yes	No	Yes

Training Provider

FITEC Australia (TABMA Training)	SSA	SSA	FFS	FFS
Timber Training Creswick (Vic)	FFS	FFS	FFS	FFS
South Regional TAFE (WA)	-	-	FFS	FFS
MTO Group (HS Business School)	-	-	-	FFS
Activ Pathways (WA)	FFS	-	-	-

Source: Training.gov.au

Table 22 Delivery of Qualifications in Engineering Training Package

	Cert III Mechanical Trade (MEM30219)	Cert III Fabrication Trade (MEM30319)	Cert III Fixed and Mobile Plant Mechanic (MEM31419)
Apprenticeship/Traineeship	Apprenticeship	Apprenticeship	Apprenticeship
Option for school-based delivery	Yes	Yes	Yes
Funded on the NSW Skills List	Yes	Yes	Yes

Training Provider

	37 in NSW	46 in NSW	9 in NSW
Central Coast Community College	SSA (Rutherford)	SSA (Rutherford)	
John Henry Institute	SSA (Port Macquarie)	SSA (Port Macquarie)	
Community College – Northern Inland		SSA (Singleton, Gloucester)	
Gimbal Engineering	SSA	SSA	FFS
Educational Living Pty Ltd	SSA	SSA	
Komatsu Australia			FFS
Axial Training			FFS
Major Training Group			FFS
Outsource Institute			FFS

Source: Training.gov.au

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Table 23 Delivery of Qualifications in Automotive Training Package

	Cert III Diesel Engine Technology (AUR31520)	Cert III Diesel Fuel Technology (AUR31420)	Cert III Engine Reconditioning (AUR31316)
Apprenticeship/Traineeship	Apprenticeship	Apprenticeship	Apprenticeship
Option for school-based delivery	No	No	No
Funded on the NSW Skills List	Yes	Yes	Yes
Training Provider	5 in NSW	4 in NSW	3 in NSW
TAFE Queensland	FFS	FFS	FFS
Oceania College of Technology	FFS	FFS	
Ashton College	FFS		
Central Australian College	FFS		
inTech Institute of Technology	FFS		
Axial Training		FFS	
MTA Group Training Scheme		FFS	
TAFE NSW			FFS
Bendigo Kangan Institute			FFS

Source: Training.gov.au

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Table 24 Delivery of Qualifications in Agriculture, Horticulture and Conservation and Land Management Training Package

	Cert III in Rural and Environmental Pest Management (AHC30318)	Cert III in Arboriculture (AHC30820)	Diploma of Agriculture (AHC50116)	Diploma of Arboriculture (AHC50520)	Adv Dip of Arboriculture (AHC60520)
Apprenticeship/Traineeship	None	Traineeship	None	None	None
Option for school-based delivery	No	No	No	No	No
Funded on the NSW Skills List	Yes	Yes	Yes	Yes	No
Training Provider	2 in NSW	12 in NSW	13 in NSW	5 in NSW	1 in NSW
Ballistic Training Solutions	FFS				
PEST Education Services and Training	FFS				
Power Safety Training		SSA (Tamworth)			
Training for Trees		FFS		FFS	
Interlink Training		FFS		FFS	
Australian Institute of Arboriculture		FFS			
Training for Trees		FFS		FFS	
Arbortrim Training & Consultancy		FFS		FFS	
Kreate			SSA		
TAFE NSW			SSA		
Tocal College			SSA		
Agforce Training			FFS		
Australian Institute of Agriculture			FFS		
MTO Group				FFS	FFS

Source: Training.gov.au

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Table 25 Delivery of Qualifications in Business Services Training Package

	Cert IV in Business (BSB40120)	Diploma of Business (BSB50120)
Apprenticeship/Traineeship	Traineeship	Traineeship
Option for school-based delivery	No	No
Funded on the NSW Skills List	Yes	Yes
Training Provider	244 in NSW	263 in NSW
Academic Pavilion	SSA (Lismore, Grafton, Port Macquarie)	
Education Training and Employment Australia	SSA (Grafton)	SSA (Grafton)
BSI Learning Institute	SSA (Coffs Harbour)	SSA (Coffs Harbour)
Barrington Training Services	SSA	SSA
Booroongen Djugun College	SSA (Coffs Harbour)	
Novaskill	SSA	SSA
FITEC Australia	SSA	
Australian Institute of Management Education and Training		SSA

Source: *Training.gov.au*

Attachment Four: Interview Questions

11.3 Workforce Profile

Business Name

Contact and Job Role

- Sector(s)
- ☐ Forest owner or grower
 - ☐ Forest management company
 - ☐ Sawmilling and processing company
 - ☐ Timber manufactured products company
 - ☐ Timber merchandising company
 - ☐ Silvicultural contractor
 - ☐ Harvesting and haulage service provider
 - ☐ Wood panel and board production company
 - ☐ Timber truss and frame design and manufacture company
 - ☐ Nursery
 - ☐ Other, please provide details
- Which best describes the main forest resources for your business or organisation. Select as many that apply.
- ☐ Plantation grown timber
 - ☐ Private native forests
 - ☐ Public native forests
 - ☐ Farm forestry
 - ☐ None of the above, please give details
- What is your company size?
- ☐ 0-19 employees
 - ☐ 20-99
 - ☐ 100-199
 - ☐ 200+
- What percentage and/or number of your workers are in the the following occupation groups?
- ☐ Managers / Supervisors
 - ☐ Technicians and trade workers
 - ☐ General labourersMachinery Operators and drivers
 - ☐ Clerical and administrative workers
 - ☐ Sales staff
 - ☐ Other

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11.4 Business External and Internal Factors

In which geographic markets did your company sell the largest share of services and/or products during the last 2 years?

- ☐ Within the NE Hub Region
☐ Within NSW
☐ Within Australia
☐ Exported

How do the following external factors impact upon your company's ability to access markets and grow?

- | 1=Negatively affect | 2=Somewhat negatively affect | 3=No affect | 4=Somewhat positively affect | 5=Positively affect |
|--------------------------|--|--------------------------|------------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Competitors | | | |
| <input type="checkbox"/> | Financial constraints (availability of credit/debt) | | | |
| <input type="checkbox"/> | The economy (including housing starts, investment in infrastructure) | | | |
| <input type="checkbox"/> | Access to a skilled workforce | | | |
| <input type="checkbox"/> | Availability of younger workers (aged under 35 years) | | | |
| <input type="checkbox"/> | Government policy, legislation or regulations | | | |
| <input type="checkbox"/> | Market availability | | | |
| <input type="checkbox"/> | Climate change | | | |
| <input type="checkbox"/> | Community attitudes to forestry | | | |
| <input type="checkbox"/> | Stewardship requirements | | | |
| <input type="checkbox"/> | Other – please describe | | | |

How do the following factors inside your organisation impact on your company's ability to access markets and grow?

- | 1=Negatively affect | 2=Somewhat negatively affect | 3=No affect | 4=Somewhat positively affect | 5=Positively affect |
|--------------------------|--|--------------------------|------------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Changes in industry standards technology or equipment | | | |
| <input type="checkbox"/> | Changes in the processes or innovative ways of working | | | |
| <input type="checkbox"/> | Internal changes in processors or innovative ways of working | | | |
| <input type="checkbox"/> | Company willingness to adopt new technologies | | | |
| <input type="checkbox"/> | Industry willingness to adopt new technologies | | | |
| <input type="checkbox"/> | Knowledge sharing between peer level workers | | | |
| <input type="checkbox"/> | Knowledge sharing between management and other workers | | | |
| <input type="checkbox"/> | Access to equipment and/or technology | | | |
| <input type="checkbox"/> | Workforce skills | | | |
| <input type="checkbox"/> | Ability to attract new employees | | | |
| <input type="checkbox"/> | Career growth prospects for current employees | | | |
| <input type="checkbox"/> | Ability to retain employees | | | |
| <input type="checkbox"/> | A workforce that is getting older | | | |
| <input type="checkbox"/> | Workplace flexibility | | | |
| <input type="checkbox"/> | Other, please specify. | | | |

In the next 2 years: Are you planning to introduce any new or significantly improved...

- ☐ Products and services
☐ Technology and processes (either for producing products or supplying services)
☐ Sales and marketing methods
☐ Work practices for high performance
☐ Practices, technology, products and services due to regulations or legislation
☐ Other

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What occupations will be affected by these changes?

- ☐ Managers / Supervisors
- ☐ Technicians and trade workers
- ☐ General labourers
- ☐ Machinery Operators and drivers
- ☐ Clerical and administrative workers
- ☐ Sales staff
- ☐ Other

In the last 2 years: Did your company introduce any new or significantly improved...

- ☐ Products and services
- ☐ Technology and processes (either for producing products or supplying services)
- ☐ Sales and marketing methods
- ☐ New Work practices
- ☐ Other (please specify)

Why?

☐

11.5 Diversity in the Workplace

Are you aware of the benefits of employing aboriginal people?

- ☐ 0 – 10%
☐ 11 – 25%
☐ 26 – 80%
☐ 81 – 100%

What opportunities are there for ATSI people within your organisation?

What kind of support would you need when employing Aboriginal people?

What percentage and/or number of your workers are:

Male
 Female
 Other

How many employees are born outside Australia?

Number of employees by age group

19 and under
 20 – 25
 26 – 45
 46 - 60
 Over 60

Do any employees have a disability, impairment or long-term condition?

Yes
 No

What opportunities are there for people with a disability within your organisation?

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11.6 Skill Shortages

Do you think your organisation has a Skills Shortage?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not sure <input type="checkbox"/> In what areas? (please specify)					
Which of the following skills are needed in your business or your area of work? Select as many as apply	<input type="checkbox"/> Workplace health and safety <input type="checkbox"/> First aid <input type="checkbox"/> Chainsaw and other hand-held machinery (e.g. brushcutter, pruning) <input type="checkbox"/> Compliance (e.g. needed for regulatory or certification bodies) <input type="checkbox"/> Heavy machinery operation <input type="checkbox"/> Fire-fighting <input type="checkbox"/> IT/ software training specialised to the industry (e.g. for plant operation, in-field survey) <input type="checkbox"/> Marketing/sales <input type="checkbox"/> Community relations/ community engagement <input type="checkbox"/> Business and financial management <input type="checkbox"/> Forest operations planning and management <input type="checkbox"/> Forest ecology and silviculture including plant identification <input type="checkbox"/> Road transport/drivers for haulage <input type="checkbox"/> Saw technician <input type="checkbox"/> Wood machining <input type="checkbox"/> Other new or emerging technology, please give details <input type="checkbox"/> Other, please give details					
For each occupation group, How do you fill skills gaps in your organisation?	Recruitment from school (no work experience)	Recruitment from external workforce (prior work experience)	Accredited training for existing workers	Non-accredited training for existing workers	Out-sourcing	Other
	(By occupation group)					
	<input type="checkbox"/> Managers/Supervisors <input type="checkbox"/> Technicians and trade workers <input type="checkbox"/> General labourers <input type="checkbox"/> Machinery operators and drivers <input type="checkbox"/> Clerical and administrative workers <input type="checkbox"/> Sales staff <input type="checkbox"/> Other					

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For each occupation group, what training barriers, if any, are there to filling skills gaps?	Cost of training	Time commitment of training	Location of training	Lack of suitable trainers	Accredited training doesn't meet my needs	Lack of awareness of training options	Lack of knowledge of how to enrol in formal training	Other
	By occupation group)							
	<input type="checkbox"/> Managers/Supervisors							
	<input type="checkbox"/> Technicians and trade workers							
	<input type="checkbox"/> General labourers							
	<input type="checkbox"/> Machinery operators and drivers							
	<input type="checkbox"/> Clerical and administrative workers							
	<input type="checkbox"/> Sales staff							
What would help remove or reduce barriers to training, skills or education?	Awareness of existing formal training pathways	Awareness of training funding options	Relationship with training providers	Relationship with local high schools	Scheduled industry-wide (to create economy of scale) training delivered locally	Industry endorsed training and assessment material to ensure relevance and quality	A purpose-built training centre for industry in the region	Other – please specify
	(By occupation group)							
	<input type="checkbox"/> Managers/Supervisors							
	<input type="checkbox"/> Technicians and trade workers							
	<input type="checkbox"/> General labourers							
	<input type="checkbox"/> Machinery operators and drivers							
	<input type="checkbox"/> Clerical and administrative workers							
	<input type="checkbox"/> Sales staff							

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11.7 Worker Skills

For each occupation group, to get a job in your business, what skills level do you require?

Work
experience only

Completed High
School (Yr 12 or
equivalent)

No post school
qualification

With certificate
qualification

With Bachelor
or postgraduate
qualification

- ☐ Managers/Supervisors
- ☐ Technicians and trade workers
- ☐ General labourers
- ☐ Machinery operators and drivers
- ☐ Clerical and administrative workers
- ☐ Sales staff

What percentage and/or number of your workers would benefit from LLN training or support?

- ☐ 0
- ☐ 1-25
- ☐ A 25-50
- ☐ 50-75
- ☐ 100

Has your organisation had any employees undertaking apprenticeships or traineeships in the last ...

- ☐ In the last 12 months
- ☐ In the last 5 years
- ☐

What are the main reasons your organisation has had apprentices or trainees?

- ☐ To get skilled staff/improve staff skills
- ☐ To fill a specific role/need more staff
- ☐ Gain skills specific to the business/train to own requirements
- ☐ Give young people a head start
- ☐ Part of business 'training culture'/the way we do things
- ☐ Support our industry/give something back to our industry
- ☐ Usual business practice/have always employed apprentices/trainees
- ☐ Cost effective
- ☐ Staff gain a nationally recognised qualification
- ☐ Other
- ☐ Don't know/can't say

Thinking of training other than apprenticeships and traineeships, Why does your organisation support employees to undertake training?

- ☐ Provides skills required for the job
- ☐ To meet highly specific training needs
- ☐ Legislative, regulatory or licensing requirements
- ☐ Career development/to increase or update skills
- ☐ Maintaining professional standards/meeting industry standards
- ☐ Improving quality of services/goods provided
- ☐ Formalise qualifications/skills
- ☐ Developing and maintaining a flexible and responsive workforce
- ☐ Responding to new technology
- ☐ Professional/personal development/career growth
- ☐ To remain competitive
- ☐ Don't know/can't say

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11.8 Attrition and Recruitment

What percentage and/or number of your workers have been with the company for the following periods:

- ☐ Less than 12 months
☐ 1-3 years
☐ 3-10 years
☐ 10-20 years
☐ 20+ years

What is the most common reason for you to employ a new worker?

- ☐ Company growth
☐ New skills required
☐ Replace worker who has left voluntarily
☐ Replace worker who has left involuntarily
☐ Replace worker who has retired
☐ Other (please specify)

In the last 12 months, has your organisation recruited, or attempted to recruit, any staff?

- ☐ Yes
☐ No
☐ Don't know

How much difficulty, if any, has your organisation experienced in recruiting staff?

A lot of difficulty Some difficulty No difficulty Don't know/can't say

(By occupation group)

- ☐ Managers/Supervisors
☐ Technicians and trade workers
☐ General labourers
☐ Machinery operators and drivers
☐ Clerical and administrative workers
☐ Sales staff

Please rank from hardest to easiest (1 being easiest and 6 being hardest) the difficulty in recruiting each operational group

Managers/
Supervisors

Technicians
and trade
workers

General
labourers

Machinery
operators
and drivers

Clerical and
administrative
workers

Sales staff

Please describe your reasons for the above responses

In relation to the occupations you have had a lot of difficulty recruiting staff, what job roles have been the most difficult?

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In general, what are the reasons for your difficulties in recruiting staff?

- ☐ Shortage of skilled people in the industry
- ☐ Limited applicants/limited appropriate applicants
- ☐ Location is remote or undesirable
- ☐ Poor attitude to work or work ethic
- ☐ Lack of existing workers in the industry who are being skilled up
- ☐ Unattractive job/not a career which is aspired to
- ☐ Wages/salaries considered too low
- ☐ Unwillingness to take shift/nights/weekend/seasonal work
- ☐ Other
- ☐ Don't know/can't say?

11.9 Attractiveness of industry to new entrants to the industry

From High School

What job roles in your business are suitable for workers who have left or completed year 12?

How much difficulty, if any, has your organisation experienced in recruiting workers out of high school?

- ☐ A lot of difficulty
- ☐ Some difficulty
- ☐ No difficulty
- ☐ Don't know/can't say

What personal attributes are you looking for when recruiting workers out of high school?

What training do you provide to workers who have come out of high school?

- ☐ Full qualification/traineeship/apprenticeship
- ☐ Part qualification/skill set
- ☐ Single units of competency
- ☐ On the job (non-accredited) (internal trainer)
- ☐ Other non-accredited training (External trainer)

From Other Industries

What challenges do you face when recruiting workers who have come out of other industries?

- ☐ Shortage of skilled people in the industry
- ☐ Limited applicants/limited appropriate applicants
- ☐ Location is remote or undesirable
- ☐ Poor attitude to work or work ethic
- ☐ Unattractive job/not a career which is aspired to
- ☐ Wages/salaries considered too low
- ☐ Other
- ☐ Don't know/can't say?

What job roles in your business are suitable for workers who have come out of other industries?

What training do you provide to workers who have come out of other industries?

- ☐ Full qualification/traineeship/apprenticeship
- ☐ Part qualification/skill set
- ☐ Single units of competency
- ☐ On the job (non-accredited) (internal trainer)
- ☐ Other non-accredited training (External trainer)

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How much difficulty, if any, has your organisation experienced in recruiting workers out of other industries?

- ☐ A lot of difficulty
- ☐ Some difficulty
- ☐ No difficulty
- ☐ Don't know/can't say

Please rank from hardest to easiest (1 being easiest and 6 being hardest) the difficulty recruiting each occupational group from other industries.

- ☐ Manager / Supervisor
- ☐ Technical or trade workers
- ☐ General labourer
- ☐ Machinery operator or driver
- ☐ Clerical or administrative Staff
- ☐ Sales staff

What personal attributes are you looking for, when recruiting workers who have come out of other industries?

